

3. Producing Areas

This section of the report details the natural gas wellhead productive capacity by State or area where Dwight's gas-well gas production data are available. From these data, individual studies are made for each of six States: California, Kansas, Louisiana, New Mexico, Oklahoma, Texas, and the Gulf of Mexico Federal Offshore Outer Continental Shelf (OCS).

The remaining Dwight's data are combined into 3 groups of States (Figure 3). Five states are grouped together as *Rocky Mountains*: Colorado, Montana, North Dakota, Utah, and Wyoming. Three states are combined as the *Southeast* group, consisting of Alabama, Arkansas, and Mississippi. The third group is made up of *18 States*: 3 States with Dwight's data—Michigan, Nebraska, and South Dakota and 15—Arizona, Florida, Illinois, Indiana, Kentucky, Maryland, Missouri, Nevada, New York, Ohio, Oregon, Pennsylvania, Tennessee, Virginia, and West Virginia— for which no Dwight's data are available.

Each State or group of States has its own unique, initially scheduled monthly gas production rate for January 1996 set to the same values for the *low*, *base*, and *high* cases. However, the actual production rate in an area will be less

than its initially scheduled production rate if its scheduled production rate exceeds its gas productive capacity. Scheduled gas production is the production demand for the United States taken from the Energy Information Administration's Short-Term Integrated Forecasting System, August 1997, {12} and prorated among the States and areas.

For each State or area where the scheduled production exceeds the gas productive capacity, the deficit capacity (the negative difference between capacity and scheduled production) is rescheduled to States and areas with surplus capacity. The production for these deficit capacity States will be greater in the *base* and *high* cases because there will be more well completions. The larger number of well completions adds more capacity and reduces or eliminates the deficit capacity.

For States or areas where the scheduled production does not exceed capacity, the surplus capacity (the positive difference between capacity and scheduled production) is used to replace the deficit capacity of the States and areas with deficit capacities. For these surplus capacity States, the production rate will be highest in the *low* case because there is a larger deficit capacity to make up.

Gulf of Mexico OCS

The Gulf of Mexico OCS is a prolific natural gas producer with large seasonal variations in producing rate. In 1995, more than a quarter of the lower 48 States' dry gas production came from this area. Mobile Block 823 producing 81 Bcf, was the largest OCS natural gas producer in 1995. Garden Banks 236 was the second largest producer making 76 Bcf, and Matagorda Island 623, the third largest producer, producing 70 Bcf.

Surplus capacity was adequate from 1986 through 1996. Future projections show increases for the *low*, *base*, and *high* cases.

Figure 11 shows the dry gas production rate and wellhead productive capacity from 1986 through 1996, with projections through 1998. The January, June, and December historical production rates and capacities are presented in Table 3. Dry gas production and wellhead productive capacity projections are shown by Table 4.

Figure 12 shows the number of gas-well completions added during each year from 1986 through 1996 and projected through 1998. There is an increase in the Gulf of Mexico completions for 1997 and 1998.

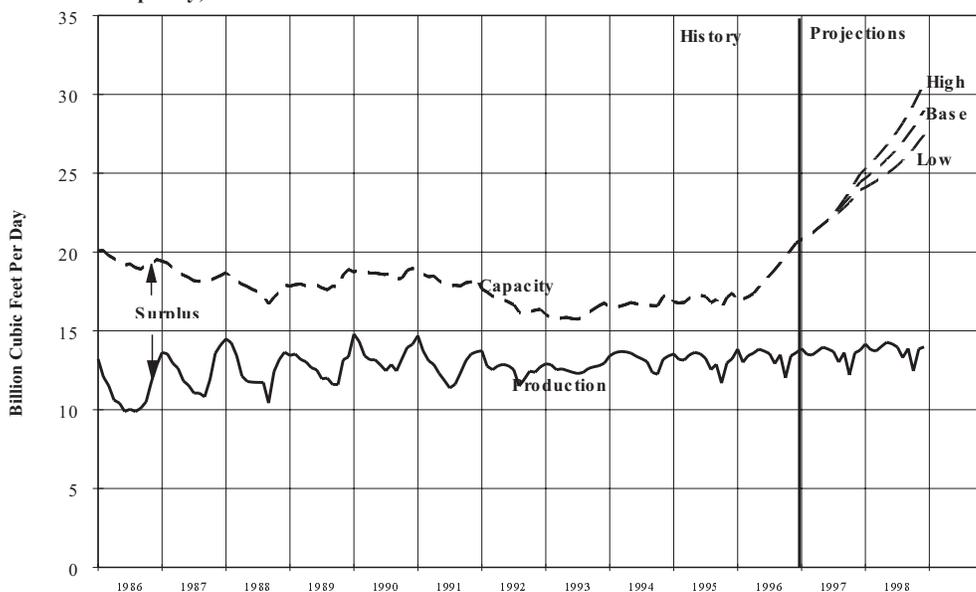
The initial flow rate per well completion for the Gulf of Mexico is about eight million cubic feet per day (Appendix C). Most reservoirs in the Gulf of Mexico have high permeabilities and are water-drive reservoirs. This means that the reservoir can sustain a high flow rate throughout most of its producing life. However, the recovery efficiency is generally less than the recovery efficiency for reservoirs with other types of drive mechanisms.

Figure 13 shows the percent of the Gulf of Mexico OCS gas-well productive capacity in December of each year by age of the well. gas-well completions that have been producing for less than one year contributed from 18 to 44 percent of the productive capacity from 1986 through 1996.

The gap between the capacity and production curves begins to widen in 1996 and continues through 1997. Several deep water projects are scheduled to commence production in 1997 and 1998.

The OCS area provides surplus capacity to meet major seasonal swings in the lower 48 States gas requirements. The future for this area to meet this role looks bright, especially if successful deep water projects continue to add adequate gas-well completions.

Figure 11. Gulf of Mexico OCS Dry Gas Monthly Production Rate and Wellhead Productive Capacity, 1986-1998



Note: Production projection plotted for base case only. The 1996 estimated history is based on Model GASCAP94 C102997 projections.
 Sources: Production History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc.; and Model GASCAP94 C102997.
 Productive Capacity: Model GASCAP94 C102997. Production Projections: Energy Information Administration, Short-Term Integrated Forecasting System, August 1997, and Model GASCAP94 C102997.

Table 3. Gulf of Mexico OCS Dry Gas Production and Wellhead Productive Capacity, 1986-1996
(Million Cubic Feet Per Day)

| Month-Year | Dry Production | Dry Gas Productive Capacity | | | Total Surplus | Utilization (percent) |
|------------|----------------|-----------------------------|--------------|-----------|---------------|-----------------------|
| | | Gas-Well Gas | Oil-Well Gas | Total Gas | | |
| Jan-86 | 13,210 | 18,478 | 1,585 | 20,063 | 6,853 | 65.8 |
| Jun-86 | 9,878 | 17,706 | 1,460 | 19,166 | 9,288 | 51.5 |
| Dec-86 | 12,845 | 18,038 | 1,489 | 19,527 | 6,682 | 65.8 |
| Jan-87 | 13,624 | 18,006 | 1,416 | 19,422 | 5,798 | 70.1 |
| Jun-87 | 11,534 | 17,068 | 1,317 | 18,385 | 6,851 | 62.7 |
| Dec-87 | 14,118 | 17,264 | 1,252 | 18,516 | 4,398 | 76.2 |
| Jan-88 | 14,481 | 17,446 | 1,254 | 18,700 | 4,219 | 77.4 |
| Jun-88 | 11,747 | 16,319 | 1,309 | 17,628 | 5,881 | 66.6 |
| Dec-88 | 13,654 | 16,607 | 1,314 | 17,921 | 4,267 | 76.2 |
| Jan-89 | 13,441 | 16,557 | 1,286 | 17,843 | 4,402 | 75.3 |
| Jun-89 | 12,535 | 16,690 | 1,224 | 17,914 | 5,379 | 70.0 |
| Dec-89 | 13,346 | 17,825 | 1,085 | 18,910 | 5,564 | 70.6 |
| Jan-90 | 14,792 | 17,516 | 1,220 | 18,736 | 3,944 | 78.9 |
| Jun-90 | 12,831 | 17,420 | 1,184 | 18,604 | 5,773 | 69.0 |
| Dec-90 | 14,144 | 17,730 | 1,228 | 18,958 | 4,814 | 74.6 |
| Jan-91 | 14,698 | 17,554 | 1,301 | 18,855 | 4,157 | 78.0 |
| Jun-91 | 11,845 | 16,645 | 1,314 | 17,959 | 6,114 | 66.0 |
| Dec-91 | 13,676 | 16,917 | 1,434 | 18,351 | 4,675 | 74.5 |
| Jan-92 | 13,746 | 16,344 | 1,325 | 17,669 | 3,923 | 77.8 |
| Jun-92 | 12,786 | 15,546 | 1,297 | 16,843 | 4,057 | 75.9 |
| Dec-92 | 12,717 | 15,134 | 1,233 | 16,367 | 3,650 | 77.7 |
| Jan-93 | 12,919 | 14,677 | 1,353 | 16,030 | 3,111 | 80.6 |
| Jun-93 | 12,376 | 14,395 | 1,377 | 15,772 | 3,396 | 78.5 |
| Dec-93 | 12,948 | 15,397 | 1,378 | 16,775 | 3,827 | 77.2 |
| Jan-94 | 13,414 | 14,989 | 1,538 | 16,527 | 3,113 | 81.2 |
| Jun-94 | 13,388 | 15,180 | 1,548 | 16,728 | 3,340 | 80.0 |
| Dec-94 | 13,409 | 15,709 | 1,632 | 17,341 | 3,932 | 77.3 |
| Jan-95 | 13,530 | 15,266 | 1,575 | 16,841 | 3,311 | 80.3 |
| Jun-95 | 13,551 | 15,595 | 1,662 | 17,257 | 3,706 | 78.5 |
| Dec-95 | 13,233 | 15,704 | 1,692 | 17,396 | 4,163 | 76.1 |
| Jan-96 | 13,843 | 15,150 | 1,718 | 16,868 | 3,025 | 82.1 |
| Jun-96 | 13,718 | 16,431 | 1,698 | 18,129 | 4,411 | 75.7 |
| Dec-96 | 13,614 | 18,691 | 1,889 | 20,580 | 6,966 | 66.2 |

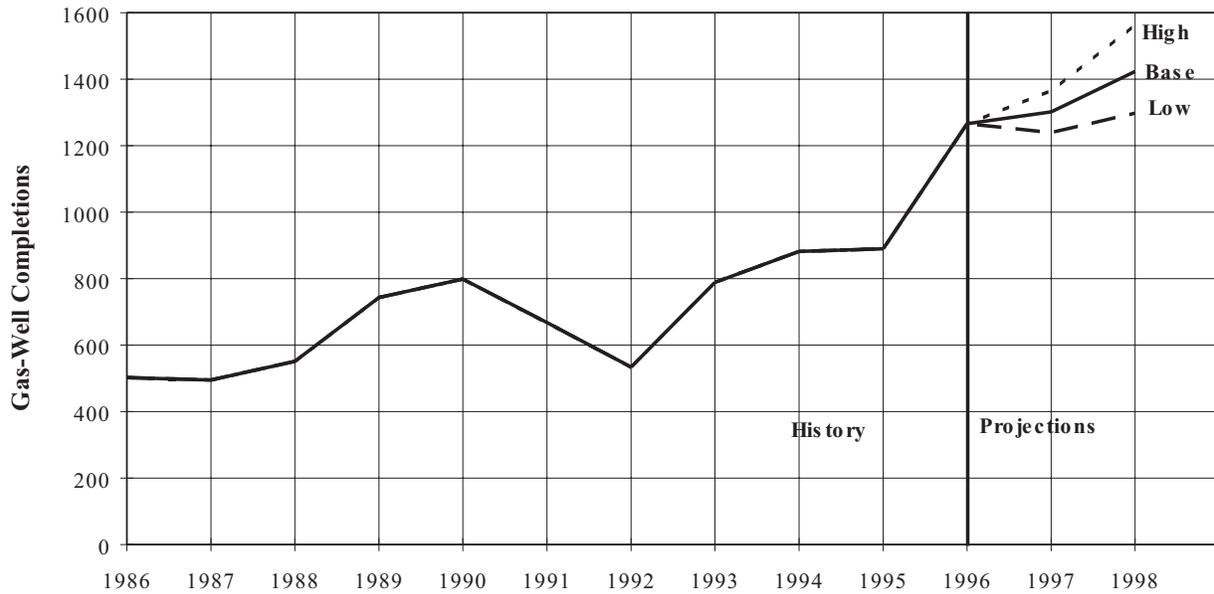
^aThe 1996 estimated history is based on Model GASCAP94 C102997 projections and Baker Hughes rig counts. Sources: Production History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc.; and Model GASCAP94 C102997. Productive Capacity: Model GASCAP94 C102997.

Table 4. Gulf of Mexico OCS Dry Gas Production and Wellhead Productive Capacity Projections, 1997-1998 (Billion Cubic Feet Per Day)

| Month-Year | Dry Gas Productive Capacity | | | Total Gas | Total Surplus | Utilization (percent) |
|------------------------------|-----------------------------|--------------|--------------|-----------|---------------|-----------------------|
| | Dry Production | Gas-Well Gas | Oil-Well Gas | | | |
| Low Case Projections | | | | | | |
| Jan-97 | 13,874 | 18,889 | 1,916 | 20,805 | 6,931 | 66.7 |
| Jun-97 | 13,848 | 20,135 | 1,902 | 22,037 | 8,189 | 62.8 |
| Dec-97 | 13,806 | 22,045 | 1,889 | 23,934 | 10,128 | 57.7 |
| Jan-98 | 14,176 | 22,210 | 1,889 | 24,099 | 9,923 | 58.8 |
| Jun-98 | 14,177 | 23,315 | 1,907 | 25,222 | 11,045 | 56.2 |
| Dec-98 | 14,032 | 25,553 | 1,874 | 27,427 | 13,395 | 51.2 |
| Base Case Projections | | | | | | |
| Jan-97 | 13,874 | 18,889 | 1,916 | 20,805 | 6,931 | 66.7 |
| Jun-97 | 13,848 | 20,135 | 1,902 | 22,037 | 8,189 | 62.8 |
| Dec-97 | 13,773 | 22,510 | 1,939 | 24,449 | 10,676 | 56.3 |
| Jan-98 | 14,169 | 22,738 | 1,943 | 24,681 | 10,512 | 57.4 |
| Jun-98 | 14,174 | 24,251 | 1,965 | 26,216 | 12,042 | 54.1 |
| Dec-98 | 13,983 | 27,021 | 1,955 | 28,976 | 14,993 | 48.3 |
| High Case Projections | | | | | | |
| Jan-97 | 13,874 | 18,889 | 1,916 | 20,805 | 6,931 | 66.7 |
| Jun-97 | 13,848 | 20,135 | 1,902 | 22,037 | 8,189 | 62.8 |
| Dec-97 | 13,753 | 22,969 | 1,992 | 24,961 | 11,208 | 55.1 |
| Jan-98 | 14,162 | 23,274 | 2,001 | 25,275 | 11,113 | 56.0 |
| Jun-98 | 14,174 | 25,189 | 2,025 | 27,214 | 13,040 | 52.1 |
| Dec-98 | 13,969 | 28,619 | 2,040 | 30,659 | 16,690 | 45.6 |

Sources: Production Projections: Energy Information Administration, Short-Term Integrated Forecasting System, August 1997 and Model GASCAP C102997. Productive Capacity Projections: Model GASCAP94 C102997.

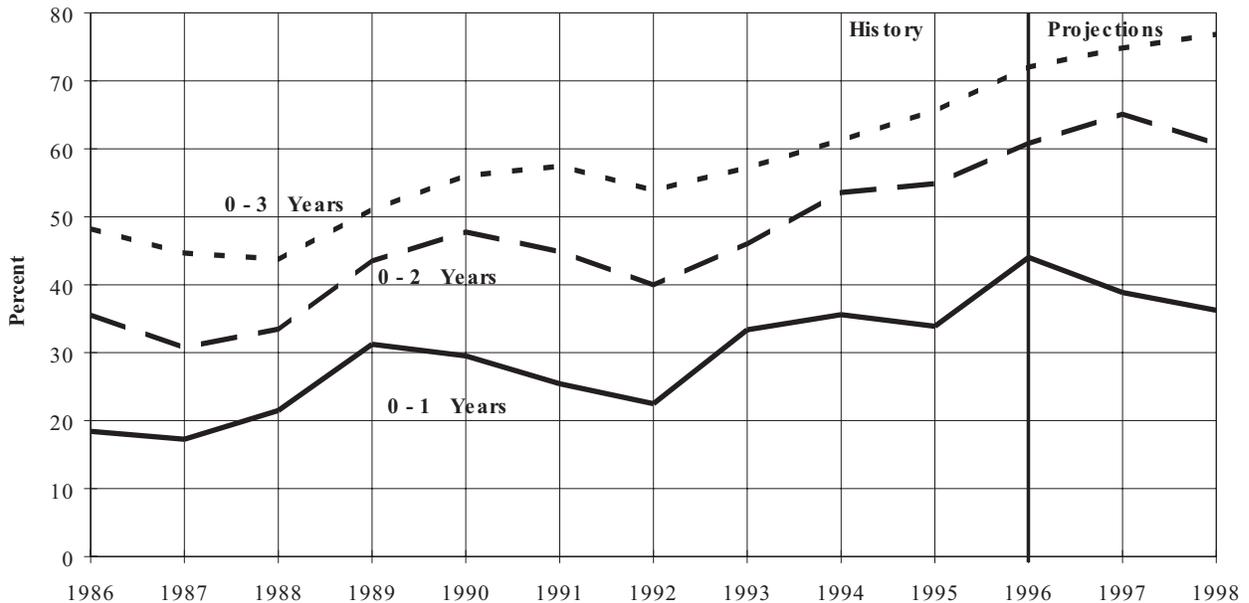
Figure 12. Gulf of Mexico OCS Gas-Well Completions Added During Year, 1986-1998



Note: The 1996 estimated history is based on Drilling Rig Model projections and Baker Hughes rig counts. Completions include recompletions in new producing zones.

Sources: History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc. Projections: Model GASCAP94 C102997.

Figure 13. Percent of Total Wellhead Productive Capacity of Gulf of Mexico OCS Gas Wells by Well Age, 1986-1998 (Base Case)



Sources: History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc. Projections: Model GASCAP94 C102997.

Texas (Excluding Gulf of Mexico OCS)

Texas gas production amounted to over a quarter of the lower 48 States dry gas production in 1995. Gas-producing zones range from high permeability, water-drive formations to low permeability "Tight Gas" reservoirs. The three largest gas-producing areas in 1995 in the State were the Giddings (234 Bcf) the Carthage (189 Bcf), and the Panhandle West (154 Bcf) fields.

Figure 14 shows the dry gas production rate and wellhead productive capacity from 1986 through 1996, with projections through 1998. The January, June, and December production rates and capacities are presented in Tables 5 and 6. Productive capacity began a very pronounced downturn beginning in 1986. After 1986, surplus capacity began to diminish (Figure 14). Consequently, capacity utilization began to increase after 1986 (Table 5). The surplus capacity is projected to increase in 1997 and 1998. Compared with the OCS, surplus capacities have not shown large increases in June. This reflects the fact that production requirements for Texas gas are less seasonal than for the Gulf of Mexico OCS.

Figure 15 shows the number of producing gas-well completions added during each year from 1986 through 1998. The number of gas-well completions are projected to increase through 1998.

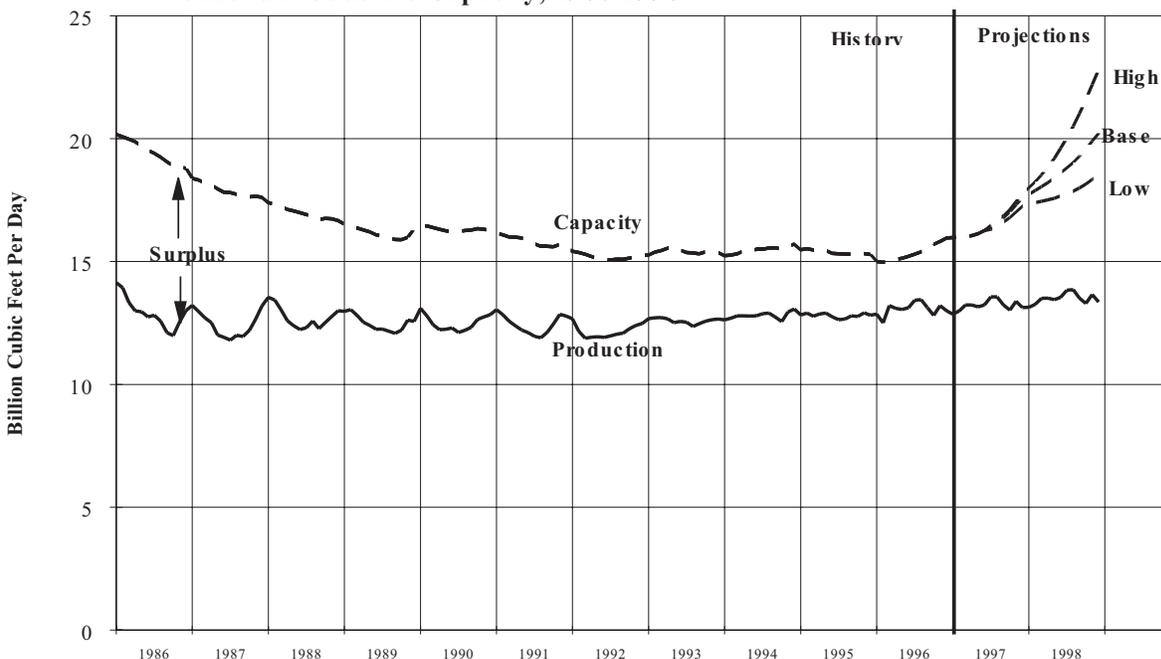
Initial flow rates for Texas wells range from high to relatively low. The average initial flow rate per well in Texas has been about one million cubic feet per day for the last few years (Table C1).

Figure 16 shows the percent of the Texas gas-well gas productive capacity for each year by age of well. Well completions that have been producing gas for less than one year contributed 30 percent of the gas-well gas productive capacity in 1996.

Figure 17 shows a comparison of the maximum daily rate monthly determined by the Texas Railroad Commission (TRC) and the gross gas-well gas productive capacity estimated in this study. The magnitude of the maximum daily rate as determined by TRC from the G-10 tests is higher than the productive capacity estimated in this report.

Operators of Texas gas wells are required to make a production test of each gas well semi-annually and report the test on Form G-10 unless the well is exempt from testing.

Figure 14. Texas (Excluding Gulf of Mexico OCS) Dry Gas Monthly Production Rate and Wellhead Productive Capacity, 1986-1998



Note: Production projection plotted for base case only. The 1996 estimated history is based on Model GASCAP94 C102997 projections.

Sources: Production History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc.; and Model GASCAP94 C102997. Productive Capacity: Model GASCAP94 C102997. Production Projections: Energy Information Administration, Short-Term Integrated Forecasting System, August 1997, and Model GASCAP94 C102997.

Table 5. Texas (Excluding Gulf of Mexico OCS) Dry Gas Production and Wellhead Productive Capacity, 1986-1996 (Million Cubic Feet Per Day)

| Month-Year | Dry Gas Productive Capacity | | | | | |
|------------|-----------------------------|--------------|--------------|-----------|---------------|-----------------------|
| | Dry Production | Gas-Well Gas | Oil-Well Gas | Total Gas | Total Surplus | Utilization (percent) |
| Jan-86 | 14,148 | 16,666 | 3,509 | 20,175 | 6,027 | 70.1 |
| Jun-86 | 12,749 | 16,258 | 3,267 | 19,525 | 6,776 | 65.3 |
| Dec-86 | 13,007 | 15,640 | 3,146 | 18,786 | 5,779 | 69.2 |
| Jan-87 | 13,217 | 15,247 | 3,140 | 18,387 | 5,170 | 71.9 |
| Jun-87 | 11,918 | 14,795 | 3,033 | 17,828 | 5,910 | 66.8 |
| Dec-87 | 13,196 | 14,588 | 3,025 | 17,613 | 4,417 | 74.9 |
| Jan-88 | 13,542 | 14,248 | 3,150 | 17,398 | 3,856 | 77.8 |
| Jun-88 | 12,234 | 13,913 | 3,074 | 16,987 | 4,753 | 72.0 |
| Dec-88 | 13,000 | 13,679 | 2,993 | 16,672 | 3,672 | 78.0 |
| Jan-89 | 12,969 | 13,459 | 3,080 | 16,539 | 3,570 | 78.4 |
| Jun-89 | 12,247 | 13,131 | 2,954 | 16,085 | 3,838 | 76.1 |
| Dec-89 | 12,564 | 13,502 | 2,833 | 16,335 | 3,771 | 76.9 |
| Jan-90 | 13,095 | 13,459 | 2,963 | 16,422 | 3,327 | 79.7 |
| Jun-90 | 12,292 | 13,324 | 2,888 | 16,212 | 3,920 | 75.8 |
| Dec-90 | 12,836 | 13,290 | 2,982 | 16,272 | 3,436 | 78.9 |
| Jan-91 | 13,040 | 13,207 | 2,951 | 16,158 | 3,118 | 80.7 |
| Jun-91 | 12,105 | 13,021 | 2,839 | 15,860 | 3,755 | 76.3 |
| Dec-91 | 12,778 | 12,787 | 2,809 | 15,596 | 2,818 | 81.9 |
| Jan-92 | 12,668 | 12,492 | 2,926 | 15,418 | 2,750 | 82.2 |
| Jun-92 | 11,913 | 12,255 | 2,826 | 15,081 | 3,168 | 79.0 |
| Dec-92 | 12,476 | 12,440 | 2,811 | 15,251 | 2,775 | 81.8 |
| Jan-93 | 12,675 | 12,227 | 3,038 | 15,265 | 2,590 | 83.0 |
| Jun-93 | 12,562 | 12,521 | 2,945 | 15,466 | 2,904 | 81.2 |
| Dec-93 | 12,657 | 12,458 | 2,900 | 15,358 | 2,701 | 82.4 |
| Jan-94 | 12,627 | 12,389 | 2,851 | 15,240 | 2,613 | 82.9 |
| Jun-94 | 12,794 | 12,751 | 2,751 | 15,502 | 2,708 | 82.5 |
| Dec-94 | 13,067 | 12,997 | 2,712 | 15,709 | 2,642 | 83.2 |
| Jan-95 | 12,824 | 12,817 | 2,664 | 15,481 | 2,657 | 82.8 |
| Jun-95 | 12,749 | 12,773 | 2,559 | 15,332 | 2,583 | 83.2 |
| Dec-95 | 12,814 | 12,744 | 2,544 | 15,288 | 2,474 | 83.8 |
| Jan-96 | 12,859 | 12,463 | 2,537 | 15,000 | 2,141 | 85.7 |
| Jun-96 | 13,121 | 12,718 | 2,491 | 15,209 | 2,088 | 86.3 |
| Dec-96 | 13,002 | 13,484 | 2,475 | 15,959 | 2,957 | 81.5 |

^aThe 1996 estimated history is based on Model GASCAP94 C102997 projections and Baker Hughes rig counts.

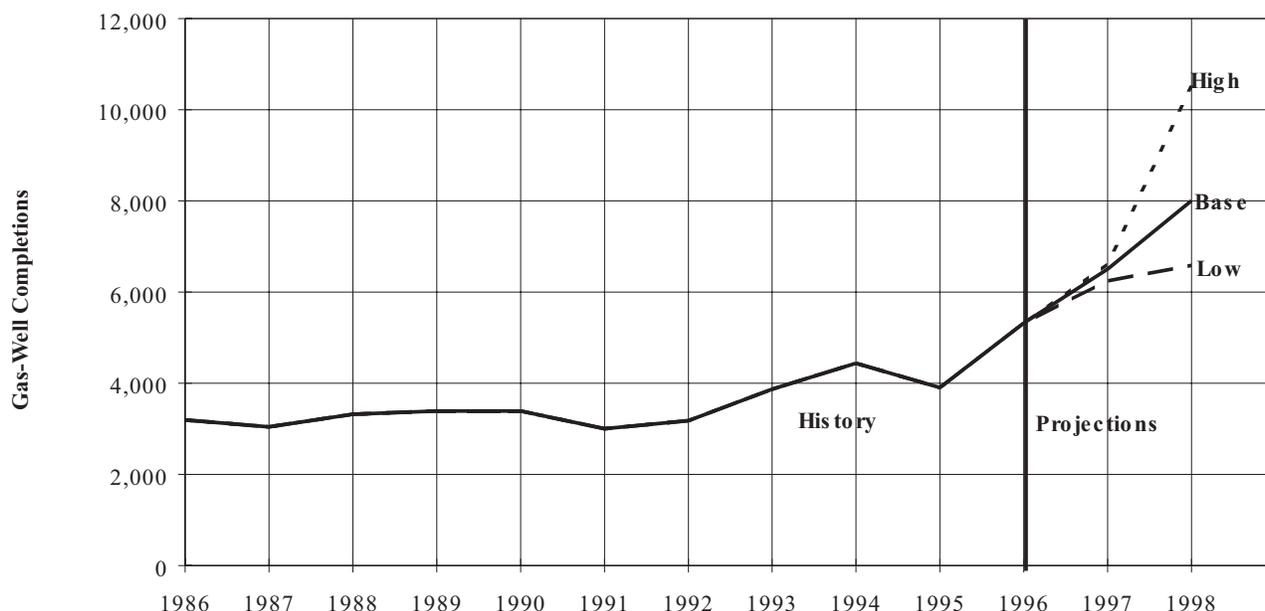
Sources: Production History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc.; and Model GASCAP94 C102997. Productive Capacity: Model GASCAP94 C102997.

Table 6. Texas (Excluding Gulf of Mexico OCS) Dry Gas Production and Wellhead Productive Capacity Projections, 1997-1998 (Million Cubic Feet Per Day)

| Month-Year | Dry Gas Productive Capacity | | | | | Utilization (percent) |
|------------------------------|-----------------------------|--------------|--------------|-----------|---------------|-----------------------|
| | Dry Production | Gas-Well Gas | Oil-Well Gas | Total Gas | Total Surplus | |
| Low Case Projection | | | | | | |
| Jan-97 | 12,859 | 13,508 | 2,464 | 15,972 | 3,113 | 80.5 |
| Jun-97 | 13,232 | 13,839 | 2,423 | 16,262 | 3,030 | 81.4 |
| Dec-97 | 13,160 | 15,004 | 2,245 | 17,249 | 4,089 | 76.3 |
| Jan-98 | 13,146 | 15,101 | 2,232 | 17,333 | 4,187 | 75.8 |
| Jun-98 | 13,542 | 15,502 | 2,168 | 17,670 | 4,128 | 76.6 |
| Dec-98 | 13,405 | 16,417 | 2,100 | 18,517 | 5,112 | 72.4 |
| Base Case Projections | | | | | | |
| Jan-97 | 12,859 | 13,508 | 2,464 | 15,972 | 3,113 | 80.5 |
| Jun-97 | 13,232 | 13,839 | 2,423 | 16,262 | 3,030 | 81.4 |
| Dec-97 | 13,129 | 15,231 | 2,361 | 17,592 | 4,463 | 74.6 |
| Jan-98 | 13,139 | 15,387 | 2,353 | 17,740 | 4,601 | 74.1 |
| Jun-98 | 13,539 | 16,287 | 2,315 | 18,602 | 5,063 | 72.8 |
| Dec-98 | 13,358 | 17,945 | 2,277 | 20,222 | 6,864 | 66.1 |
| High Case Projections | | | | | | |
| Jan-97 | 12,859 | 13,508 | 2,464 | 15,972 | 3,113 | 80.5 |
| Jun-97 | 13,232 | 13,839 | 2,423 | 16,262 | 3,030 | 81.4 |
| Dec-97 | 13,110 | 15,322 | 2,465 | 17,787 | 4,677 | 73.7 |
| Jan-98 | 13,133 | 15,542 | 2,461 | 18,003 | 4,870 | 72.9 |
| Jun-98 | 13,539 | 17,149 | 2,451 | 19,600 | 6,061 | 69.1 |
| Dec-98 | 13,345 | 20,359 | 2,449 | 22,808 | 9,463 | 58.5 |

Sources: Production Projections: Energy Information Administration, Short-Term Integrated Forecasting System, August 1997 and Model GASCAP C102997. Productive Capacity Projections: Model GASCAP94 C102997.

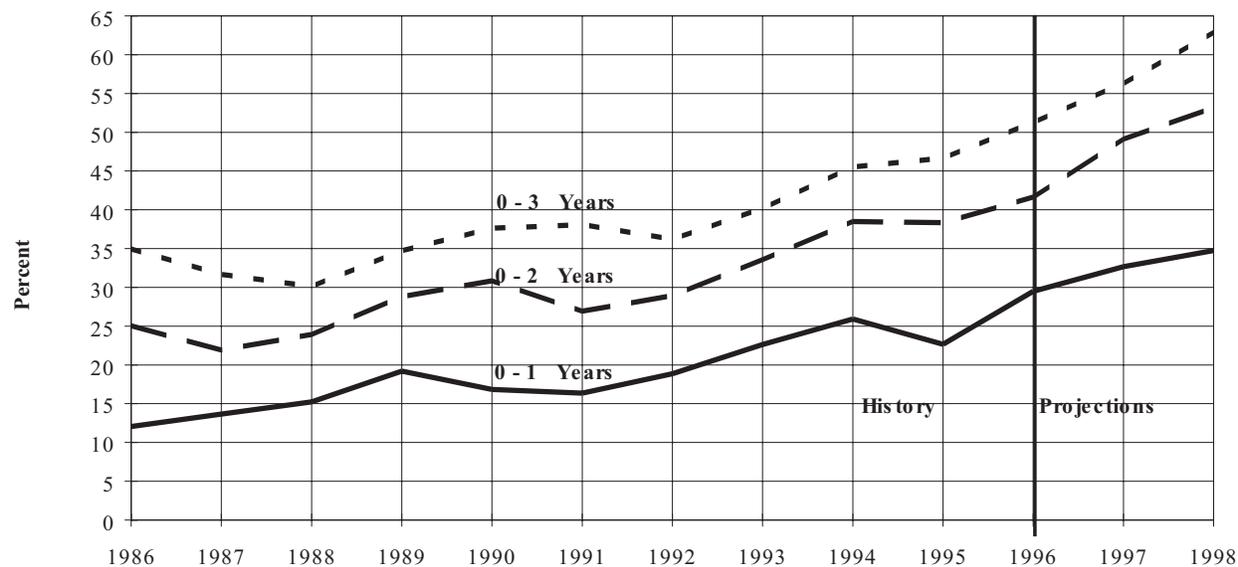
Figure 15. Texas (Excluding Gulf of Mexico OCS) Gas-Well Completions Added During Year, 1986-1998



Note: The 1996 estimated history is based on Drilling Rig Model projections and Baker Hughes rig counts. Completions include recompletions in new producing zones.

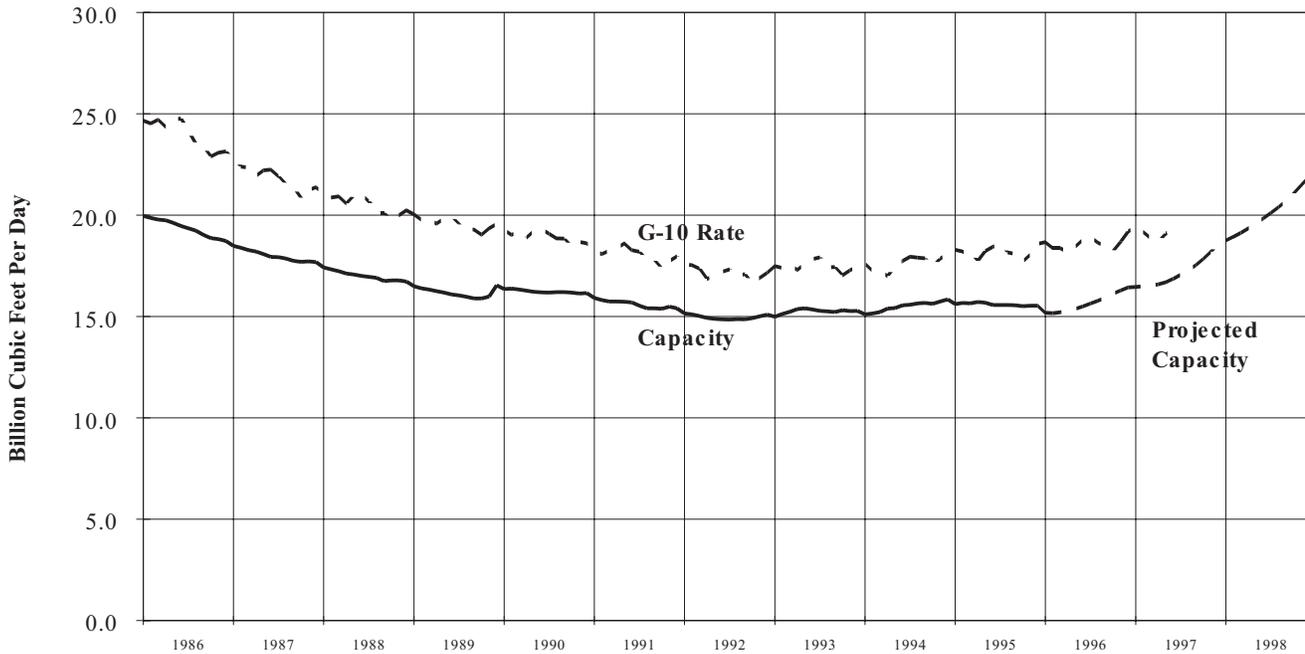
Sources: History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc. Projections: Model GASCAP94 C102997.

Figure 16. Percent of Total Wellhead Productive Capacity of Texas (Excluding Gulf of Mexico OCS) Gas Wells by Well Age, 1986-1998 (Base Case)



Sources: History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc. Projections: Model GASCAP94 C102997.

Figure 17. Texas (Excluding Gulf of Mexico OCS) Monthly Gross Gas-Well Gas Productive Capacity and G-10 Rate, 1986-1998



Note: Capacity projection plotted for base case only.

Sources: History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc.; and Railroad Commission of Texas. Projections: Model GASCAP94 C102997.

All gas wells producing less than 100 thousand cubic feet per day are automatically exempt. Each month, the TRC determines statewide gas well deliverability by summing the latest available G-10 test rates. However, the TRC does not necessarily expect that this deliverability (sum of G-10 test rates) can be achieved. This is true for the following reasons:

The daily rate reported on a Form G-10 is of 72 hours duration, and that rate cannot be sustained for a month by most gas-well completions.

If all gas-well completions were produced at the daily rate shown on a G-10, increased back-pressures would result, prohibiting gas from many wells from getting into the pipeline system.

The daily rates reported on the form G-10 reflects the ability of gas-well completions to produce at the time they are tested. However, each TRC deliverability estimate (sum of latest G-10 tests) contains well test data that may be as much as five or more months old.

Capacity estimated in this report is the daily rate that can be sustained for a month. Rates reported on the G-10 tests are required to be sustainable for only 72 hours.

Both, however, exhibit a similar downward trend. Capacity is projected to increase during 1997 and 1998. Data from the G-10 tests are plotted through June 1997.

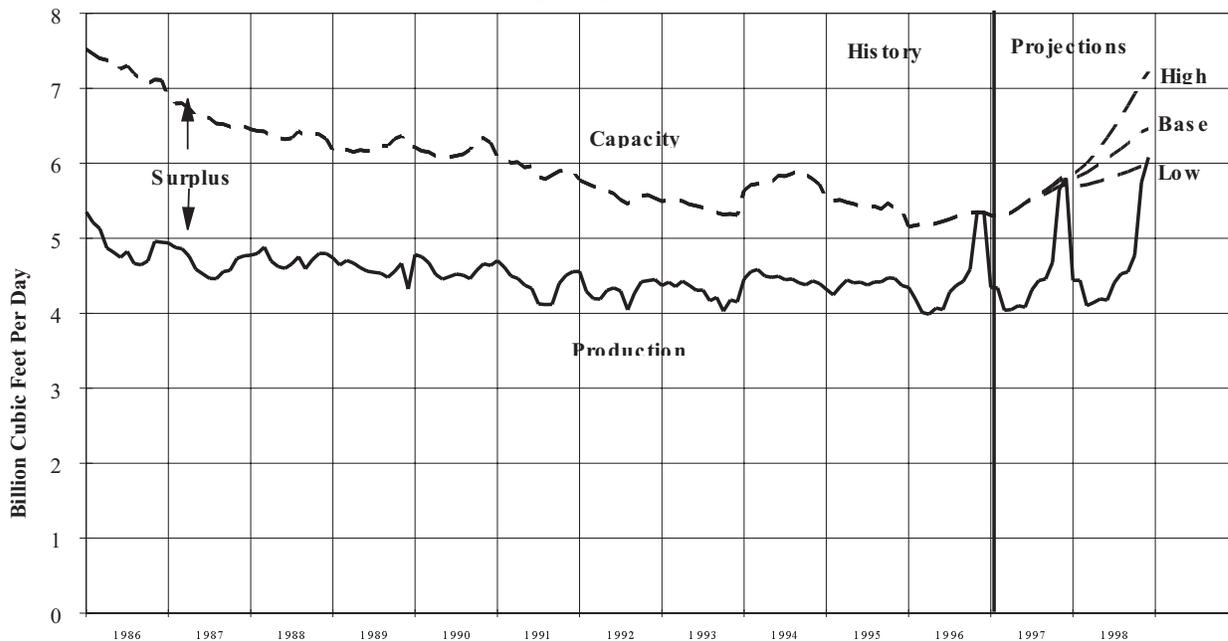
Louisiana (Excluding Gulf of Mexico OCS)

Louisiana has been a large producer of natural gas for many years. Gas produced comes from high permeability, water-drive, deep and sometimes over-pressured formations on the Gulf Coast as well as from low permeability and relatively shallow reservoirs in North Louisiana. In 1995, the three fields producing the largest volume of natural gas in the State were the Fresh Water Bayou (70 Bcf), Chalkey (51 Bcf), and Lake Arthur South (51 Bcf) fields, according to Dwight's data. In 1995, almost 9 percent of the total dry gas produced in the lower 48 States came from Louisiana. {14}

The following pages include Tables 7 and 8 and Figures 18 through 20, which provide historical and projected production and productive capacity, gas-well completions added, and percent of capacity by well age. These data exclude the OCS.

Production and productive capacity are equal with no surplus in November and December 1996. There is no surplus in December 1997 for any of the three cases. In December 1998, there is no surplus for the low case. The production is plotted for the base case only in Figure 18.

Figure 18. Louisiana (Excluding Gulf of Mexico OCS) Dry Gas Monthly Production Rate and Wellhead Productive Capacity, 1986-1998



Note: Production projection plotted for base case only. The 1996 estimated history is based on Model GASCAP94 C102997 projections.

Sources: Production History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc.; and Model GASCAP94 C102997. Productive Capacity: Model GASCAP94 C102997. Production Projections: Energy Information Administration, Short-Term Integrated Forecasting System, August 1997, and Model GASCAP94 C102997.

Table 7. Louisiana (Excluding Gulf of Mexico OCS) Dry Gas Production and Wellhead Productive Capacity, 1986-1996 (Million Cubic Feet Per Day)

| Month-Year | Dry Gas Productive Capacity | | | | | Utilization (percent) |
|------------|-----------------------------|--------------|--------------|-----------|---------------|-----------------------|
| | Dry Production | Gas-Well Gas | Oil-Well Gas | Total Gas | Total Surplus | |
| Jan-86 | 5,350 | 6,939 | 585 | 7,524 | 2,174 | 71.1 |
| Jun-86 | 4,746 | 6,722 | 538 | 7,260 | 2,514 | 65.4 |
| Dec-86 | 4,946 | 6,530 | 579 | 7,109 | 2,163 | 69.6 |
| Jan-87 | 4,939 | 6,297 | 583 | 6,880 | 1,941 | 71.8 |
| Jun-87 | 4,524 | 6,056 | 570 | 6,626 | 2,102 | 68.3 |
| Dec-87 | 4,764 | 5,920 | 573 | 6,493 | 1,729 | 73.4 |
| Jan-88 | 4,773 | 5,886 | 569 | 6,455 | 1,682 | 73.9 |
| Jun-88 | 4,598 | 5,773 | 546 | 6,319 | 1,721 | 72.8 |
| Dec-88 | 4,798 | 5,789 | 540 | 6,329 | 1,531 | 75.8 |
| Jan-89 | 4,738 | 5,667 | 502 | 6,169 | 1,431 | 76.8 |
| Jun-89 | 4,562 | 5,680 | 483 | 6,163 | 1,601 | 74.0 |
| Dec-89 | 4,322 | 5,810 | 420 | 6,230 | 1,908 | 69.4 |
| Jan-90 | 4,782 | 5,774 | 440 | 6,214 | 1,432 | 77.0 |
| Jun-90 | 4,488 | 5,650 | 432 | 6,082 | 1,594 | 73.8 |
| Dec-90 | 4,637 | 5,832 | 443 | 6,275 | 1,638 | 73.9 |
| Jan-91 | 4,701 | 5,660 | 419 | 6,079 | 1,378 | 77.3 |
| Jun-91 | 4,333 | 5,549 | 415 | 5,964 | 1,631 | 72.7 |
| Dec-91 | 4,554 | 5,473 | 422 | 5,895 | 1,341 | 77.3 |
| Jan-92 | 4,559 | 5,263 | 512 | 5,775 | 1,216 | 78.9 |
| Jun-92 | 4,339 | 5,093 | 504 | 5,597 | 1,258 | 77.5 |
| Dec-92 | 4,450 | 5,037 | 497 | 5,534 | 1,084 | 80.4 |
| Jan-93 | 4,369 | 5,097 | 398 | 5,495 | 1,126 | 79.5 |
| Jun-93 | 4,306 | 5,032 | 402 | 5,434 | 1,128 | 79.2 |
| Dec-93 | 4,151 | 4,935 | 376 | 5,311 | 1,160 | 78.2 |
| Jan-94 | 4,459 | 5,160 | 479 | 5,639 | 1,180 | 79.1 |
| Jun-94 | 4,493 | 5,364 | 470 | 5,834 | 1,341 | 77.0 |
| Dec-94 | 4,397 | 5,246 | 473 | 5,719 | 1,322 | 76.9 |
| Jan-95 | 4,320 | 5,128 | 391 | 5,519 | 1,199 | 78.3 |
| Jun-95 | 4,414 | 5,010 | 417 | 5,427 | 1,013 | 81.3 |
| Dec-95 | 4,371 | 4,955 | 431 | 5,386 | 1,015 | 81.2 |
| Jan-96 | 4,343 | 4,771 | 381 | 5,152 | 809 | 84.3 |
| Jun-96 | 4,049 | 4,811 | 415 | 5,226 | 1,177 | 77.5 |
| Dec-96 | 5,346 | 4,930 | 416 | 5,346 | 0 | 100.0 |

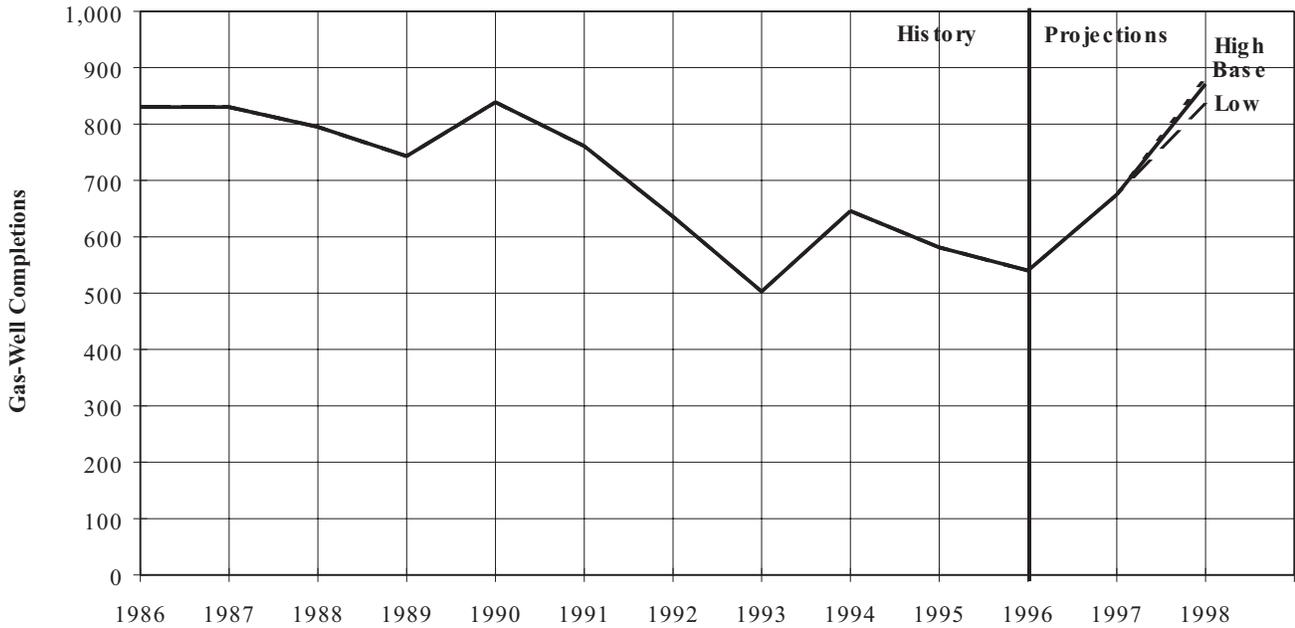
^aThe 1996 estimated history is based on Model GASCAP94 C102997 projections and Baker Hughes rig counts.
Sources: Production History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc.; and Model GASCAP94 C102997. Productive Capacity: Model GASCAP94 C102997.

Table 8. Louisiana (Excluding Gulf of Mexico OCS) Dry Gas Production and Wellhead Productive Capacity Projections, 1997-1998 (Million Cubic Feet Per Day)

| Month-Year | Dry Gas Productive Capacity | | | | | |
|-----------------------------|-----------------------------|--------------|--------------|-----------|---------------|-----------------------|
| | Dry Production | Gas-Well Gas | Oil-Well Gas | Total Gas | Total Surplus | Utilization (percent) |
| Low Case Projection | | | | | | |
| Jan-97 | 4,343 | 4,894 | 414 | 5,308 | 965 | 81.8 |
| Jun-97 | 4,080 | 5,061 | 410 | 5,471 | 1,391 | 74.6 |
| Dec-97 | 5,714 | 5,331 | 383 | 5,714 | 0 | 100.0 |
| Jan-98 | 4,440 | 5,306 | 381 | 5,687 | 1,247 | 78.1 |
| Jun-98 | 4,175 | 5,423 | 373 | 5,796 | 1,621 | 72.0 |
| Dec-98 | 5,964 | 5,600 | 364 | 5,964 | 0 | 100.0 |
| Base Case Projection | | | | | | |
| Jan-97 | 4,343 | 4,894 | 414 | 5,308 | 965 | 81.8 |
| Jun-97 | 4,080 | 5,061 | 410 | 5,471 | 1,391 | 74.6 |
| Dec-97 | 5,802 | 5,399 | 403 | 5,802 | 0 | 100.0 |
| Jan-98 | 4,438 | 5,392 | 402 | 5,794 | 1,356 | 76.6 |
| Jun-98 | 4,174 | 5,668 | 398 | 6,066 | 1,892 | 68.8 |
| Dec-98 | 6,081 | 6,066 | 395 | 6,461 | 380 | 94.1 |
| High Case Projection | | | | | | |
| Jan-97 | 4,343 | 4,894 | 414 | 5,308 | 965 | 81.8 |
| Jun-97 | 4,080 | 5,061 | 410 | 5,471 | 1,391 | 74.6 |
| Dec-97 | 5,844 | 5,423 | 421 | 5,844 | 0 | 100.0 |
| Jan-98 | 4,436 | 5,433 | 420 | 5,853 | 1,417 | 75.8 |
| Jun-98 | 4,174 | 5,922 | 422 | 6,344 | 2,170 | 65.8 |
| Dec-98 | 6,075 | 6,795 | 425 | 7,220 | 1,145 | 84.1 |

Sources: Production Projections: Energy Information Administration, Short-Term Integrated Forecasting System, August 1997 and Model GASCAP C102997. Productive Capacity Projections: Model GASCAP94 C102997.

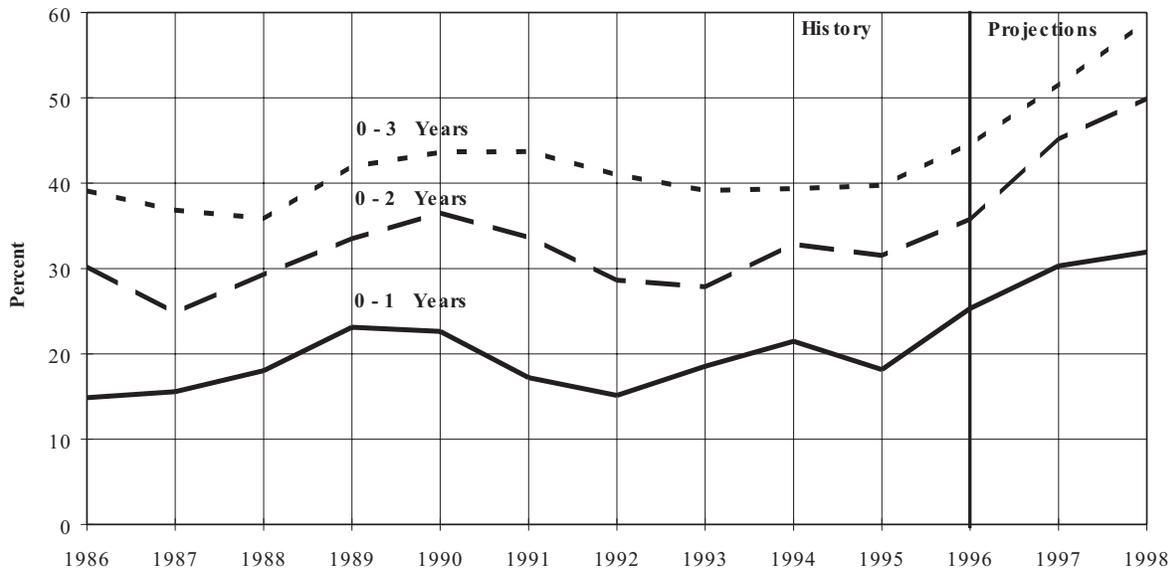
Figure 19. Louisiana (Excluding Gulf of Mexico OCS) Gas-Well Completions Added During Year, 1986-1998



Note: The 1996 estimated history is based on Drilling Rig Model projections and Baker Hughes rig counts. Completions include recompletions in new producing zones.

Sources: History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc. Projections: Model GASCAP94 C102297.

Figure 20. Percent of Total Wellhead Productive Capacity of Louisiana (Excluding Gulf Mexico OCS) Gas Wells by Well Age, 1986-1998 (Base Case)



Sources: History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc. Projections: Model GASCAP94 C102997.

California (Including Pacific OCS)

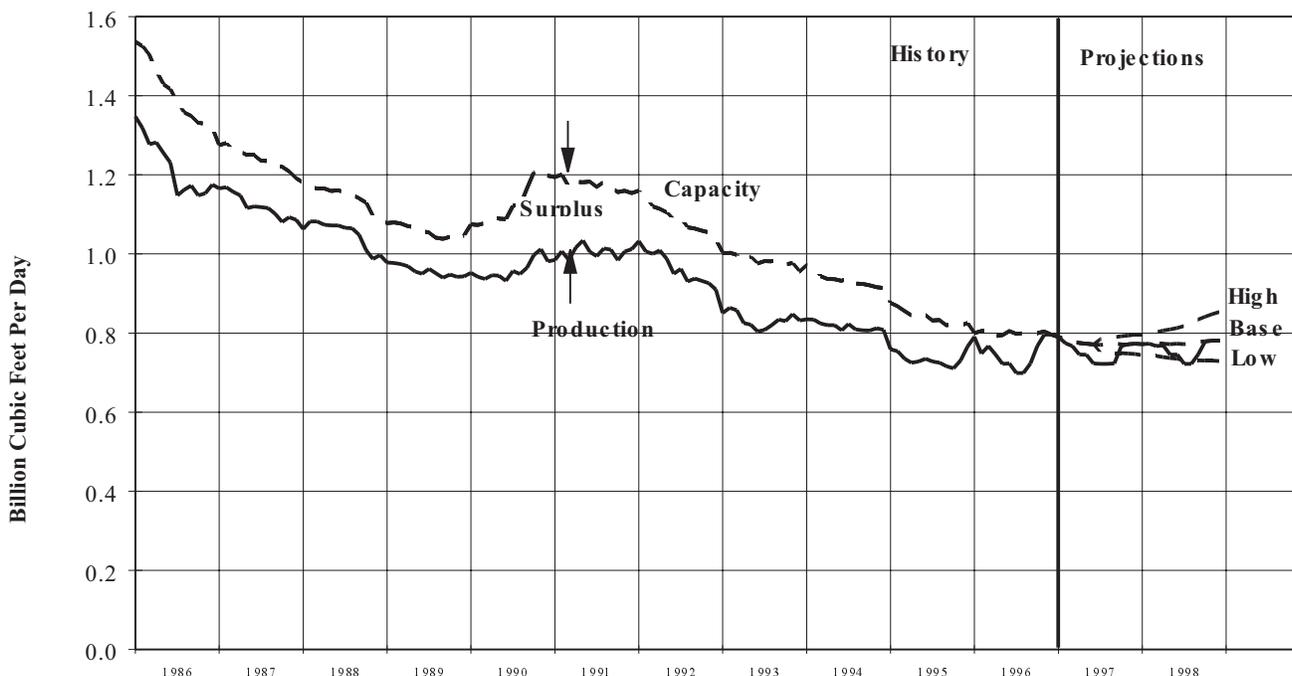
California is a net importer of natural gas. All California gas produced is used within the State. In 1995, two-thirds of the total gas produced in California and the Pacific OCS was oil-well gas. {14}

In 1994, Elk Hills and Coalingas East Extension oil fields were the two largest producers of natural gas. The two largest gas fields were Rio Vista and Pitas Point; the latter is in the Pacific OCS. This information was obtained from the California Department of Conservation.

The following pages include Tables 9 and 10 and Figures 21 through 23, which provide historical and projected

production and productive capacity, gas-well completions added, and percent of capacity by well age. These data include the OCS. Production and productive capacity are equal, with no surplus for December 1996. There is no surplus for January 1997, October 1997 through June 1998, and September 1998 through December 1998 for the low case. For the base case, there is no surplus for January 1997, October 1997 through February 1998, and October 1998 through December 1998. For the high case, there is no surplus for January 1997, and November 1997 through January 1998.

Figure 21. California (Including Pacific OCS) Dry Gas Monthly Production Rate and Wellhead Productive Capacity, 1986-1998



Note: Production projection plotted for base case only. The 1996 estimated history is based on Model GASCAP94 C102997 projections.

Sources: Production History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc.; and Model GASCAP94 C102997. Productive Capacity: Model GASCAP94 C102997. Production Projections: Energy Information Administration, Short-Term Integrated Forecasting System, August 1997, and Model GASCAP94 C102997.

Table 9. California (Including Pacific OCS) Dry Gas Production and Wellhead Productive Capacity, 1986-1996 (Million Cubic Feet Per Day)

| Month-Year | Dry Gas Productive Capacity | | | | | |
|------------|-----------------------------|--------------|--------------|-----------|---------------|-----------------------|
| | Dry Production | Gas-Well Gas | Oil-Well Gas | Total Gas | Total Surplus | Utilization (percent) |
| Jan-86 | 1,347 | 762 | 775 | 1,537 | 190 | 87.6 |
| Jun-86 | 1,231 | 683 | 734 | 1,417 | 186 | 86.9 |
| Dec-86 | 1,175 | 616 | 703 | 1,319 | 144 | 89.1 |
| Jan-87 | 1,166 | 579 | 696 | 1,275 | 109 | 91.5 |
| Jun-87 | 1,120 | 536 | 714 | 1,250 | 130 | 89.6 |
| Dec-87 | 1,086 | 485 | 707 | 1,192 | 106 | 91.1 |
| Jan-88 | 1,063 | 485 | 695 | 1,180 | 117 | 90.1 |
| Jun-88 | 1,072 | 469 | 692 | 1,161 | 89 | 92.3 |
| Dec-88 | 997 | 431 | 655 | 1,086 | 89 | 91.8 |
| Jan-89 | 978 | 419 | 659 | 1,078 | 100 | 90.7 |
| Jun-89 | 950 | 399 | 658 | 1,057 | 107 | 89.9 |
| Dec-89 | 943 | 399 | 648 | 1,047 | 104 | 90.1 |
| Jan-90 | 952 | 423 | 652 | 1,075 | 123 | 88.6 |
| Jun-90 | 932 | 450 | 638 | 1,088 | 156 | 85.7 |
| Dec-90 | 981 | 561 | 637 | 1,198 | 217 | 81.9 |
| Jan-91 | 985 | 569 | 625 | 1,194 | 209 | 82.5 |
| Jun-91 | 1,005 | 555 | 628 | 1,183 | 178 | 85.0 |
| Dec-91 | 1,012 | 519 | 635 | 1,154 | 142 | 87.7 |
| Jan-92 | 1,032 | 528 | 632 | 1,160 | 128 | 89.0 |
| Jun-92 | 950 | 457 | 630 | 1,087 | 137 | 87.4 |
| Dec-92 | 910 | 408 | 628 | 1,036 | 126 | 87.8 |
| Jan-93 | 851 | 428 | 575 | 1,003 | 152 | 84.8 |
| Jun-93 | 804 | 397 | 579 | 976 | 172 | 82.4 |
| Dec-93 | 832 | 368 | 588 | 956 | 124 | 87.0 |
| Jan-94 | 835 | 398 | 574 | 972 | 137 | 85.9 |
| Jun-94 | 807 | 356 | 576 | 932 | 125 | 86.6 |
| Dec-94 | 808 | 313 | 601 | 914 | 106 | 88.4 |
| Jan-95 | 759 | 326 | 550 | 876 | 117 | 86.6 |
| Jun-95 | 735 | 288 | 558 | 846 | 111 | 86.9 |
| Dec-95 | 766 | 264 | 561 | 825 | 59 | 92.8 |
| Jan-96 | 790 | 251 | 549 | 800 | 10 | 98.8 |
| Jun-96 | 723 | 251 | 554 | 805 | 82 | 89.8 |
| Dec-96 | 796 | 259 | 537 | 796 | 0 | 100.0 |

^aThe 1996 estimated history is based on Model GASCAP94 C102997 projections and Baker Hughes rig counts.

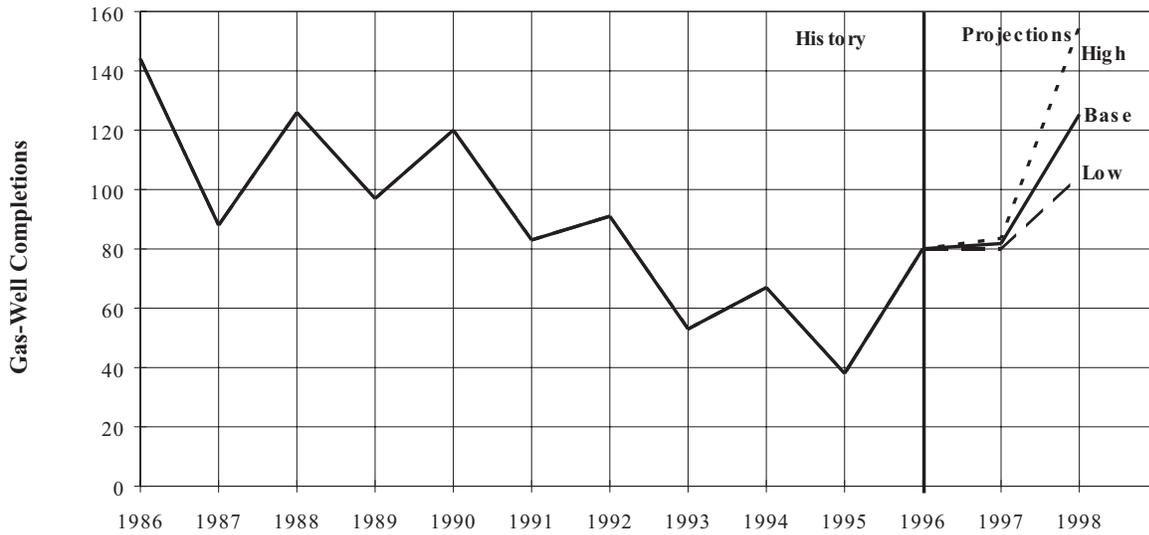
Sources: Production History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc.; and Model GASCAP94 C102997. Productive Capacity: Model GASCAP94 C102997.

Table 10. California (Including Pacific OCS) Dry Gas Production and Wellhead Productive Capacity Projections, 1997-1998 (Million Cubic Feet Per Day)

| Month-Year | Dry Gas Productive Capacity | | | | | |
|-----------------------------|-----------------------------|--------------|--------------|-----------|---------------|-----------------------|
| | Dry Production | Gas-Well Gas | Oil-Well Gas | Total Gas | Total Surplus | Utilization (percent) |
| Low Case Projection | | | | | | |
| Jan-97 | 790 | 255 | 535 | 790 | 0 | 100.0 |
| Jun-97 | 723 | 241 | 530 | 771 | 48 | 93.8 |
| Dec-97 | 747 | 249 | 498 | 747 | 0 | 100.0 |
| Jan-98 | 744 | 249 | 495 | 744 | 0 | 100.0 |
| Jun-98 | 735 | 250 | 485 | 735 | 0 | 100.0 |
| Dec-98 | 729 | 255 | 474 | 729 | 0 | 100.0 |
| Base Case Projection | | | | | | |
| Jan-97 | 790 | 255 | 535 | 790 | 0 | 100.0 |
| Jun-97 | 723 | 241 | 530 | 771 | 48 | 93.8 |
| Dec-97 | 773 | 253 | 520 | 773 | 0 | 100.0 |
| Jan-98 | 772 | 253 | 519 | 772 | 0 | 100.0 |
| Jun-98 | 746 | 259 | 514 | 773 | 27 | 96.5 |
| Dec-98 | 781 | 272 | 509 | 781 | 0 | 100.0 |
| High Case Projection | | | | | | |
| Jan-97 | 790 | 255 | 535 | 790 | 0 | 100.0 |
| Jun-97 | 723 | 241 | 530 | 771 | 48 | 93.8 |
| Dec-97 | 796 | 255 | 541 | 796 | 0 | 100.0 |
| Jan-98 | 796 | 256 | 540 | 796 | 0 | 100.0 |
| Jun-98 | 746 | 273 | 540 | 813 | 67 | 91.8 |
| Dec-98 | 835 | 310 | 543 | 853 | 18 | 97.9 |

Sources: Production Projections: Energy Information Administration, Short-Term Integrated Forecasting System, August 1997 and Model GASCAP C102997. Productive Capacity Projections: Model GASCAP94 C102997.

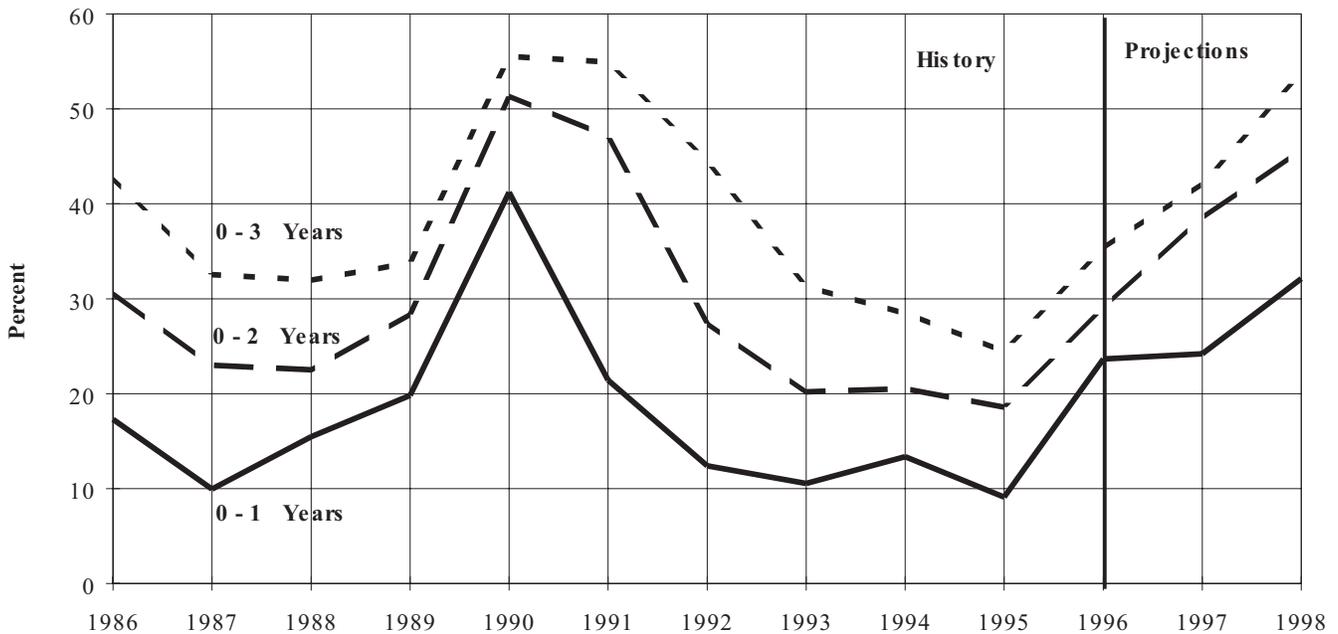
Figure 22. California (Including Pacific OCS) Gas-Well Completions Added During Year, 1986-1998



Note: The 1996 estimated history is based on Drilling Rig Model projections and Baker Hughes rig counts. Completions include recompletions in new producing zones.

Sources: History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc. Projections: Model GASCAP94 C102997.

Figure 23. Percent of Total Wellhead Productive Capacity of California (Including Pacific OCS) Gas Wells by Well Age, 1986-1998 (Base Case)



Sources: History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc. Projections: Model GASCAP94 C102997.

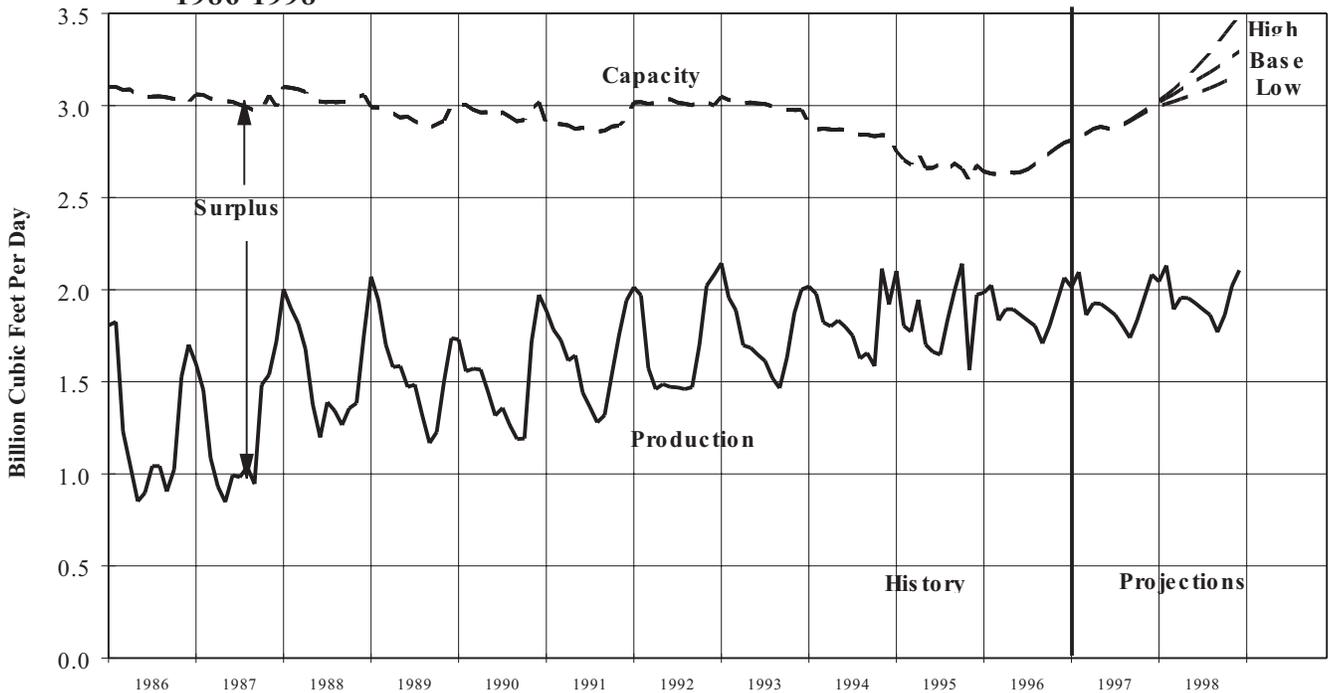
Kansas

In 1995 over half the gas produced in the State of Kansas came from the giant Hugoton field. Hugoton field 1995 production of 517 billion cubic feet of gas was almost 23 percent more than in 1994. This information was obtained from Dwight's. Hugoton field occupies almost all of the western half of Kansas and extends south into Oklahoma and the northern part of the Texas Panhandle. Production from

this field generally comes from low permeability sandy carbonate reservoir rocks.

The following pages include Tables 11, 12, and Figures 24 through 26. These data provide historical and projected production and productive capacity, gas-well completions added, and percent of capacity by well age.

Figure 24. Kansas Dry Gas Monthly Production Rate and Wellhead Productive Capacity, 1986-1998



Note: Production projection plotted for base case only. The 1996 estimated history is based on Model GASCAP94 C102997 projections.

Sources: Production History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc.; and Model GASCAP94 C102997. Productive Capacity: Model GASCAP94 C102997. Production Projections: Energy Information Administration, Short-Term Integrated Forecasting System, August 1997, and Model GASCAP94 C102997.

Table 11. Kansas Dry Gas Production and Wellhead Productive Capacity Projections, 1986-1996
(Million Cubic Feet Per Day)

| Month-Year | Dry Gas Productive Capacity | | | | | Utilization (percent) |
|------------|-----------------------------|-----------------|-----------------|--------------|------------------|--------------------------|
| | Dry Production | Gas-Well Gas | Oil-Well Gas | Total Gas | Total Surplus | |
| Jan-86 | 1,806 | 2,813 | 287 | 3,100 | 1,294 | 58.3 |
| Jun-86 | 897 | 2,803 | 245 | 3,048 | 2,151 | 29.4 |
| Dec-86 | 1,702 | 2,791 | 226 | 3,017 | 1,315 | 56.4 |
| Jan-87 | 1,597 | 2,809 | 251 | 3,060 | 1,463 | 52.2 |
| Jun-87 | 994 | 2,768 | 252 | 3,020 | 2,026 | 32.9 |
| Dec-87 | 1,720 | 2,745 | 248 | 2,993 | 1,273 | 57.5 |
| Jan-88 | 2,002 | 2,820 | 281 | 3,101 | 1,099 | 64.6 |
| Jun-88 | 1,198 | 2,720 | 302 | 3,022 | 1,824 | 39.6 |
| Dec-88 | 1,753 | 2,778 | 279 | 3,057 | 1,304 | 57.3 |
| Jan-89 | 2,071 | 2,742 | 248 | 2,990 | 919 | 69.3 |
| Jun-89 | 1,472 | 2,696 | 244 | 2,940 | 1,468 | 50.1 |
| Dec-89 | 1,736 | 2,784 | 218 | 3,002 | 1,266 | 57.8 |
| Jan-90 | 1,730 | 2,727 | 279 | 3,006 | 1,276 | 57.6 |
| Jun-90 | 1,317 | 2,665 | 275 | 2,940 | 1,623 | 44.8 |
| Dec-90 | 1,972 | 2,750 | 268 | 3,018 | 1,046 | 65.3 |
| Jan-91 | 1,888 | 2,698 | 200 | 2,898 | 1,010 | 65.1 |
| Jun-91 | 1,441 | 2,678 | 202 | 2,880 | 1,439 | 50.0 |
| Dec-91 | 1,941 | 2,740 | 193 | 2,933 | 992 | 66.2 |
| Jan-92 | 2,014 | 2,801 | 215 | 3,016 | 1,002 | 66.8 |
| Jun-92 | 1,472 | 2,829 | 205 | 3,034 | 1,562 | 48.5 |
| Dec-92 | 2,080 | 2,801 | 200 | 3,001 | 921 | 69.3 |
| Jan-93 | 2,144 | 2,841 | 207 | 3,048 | 904 | 70.3 |
| Jun-93 | 1,647 | 2,791 | 220 | 3,011 | 1,364 | 54.7 |
| Dec-93 | 2,001 | 2,774 | 204 | 2,978 | 977 | 67.2 |
| Jan-94 | 2,018 | 2,681 | 216 | 2,897 | 879 | 69.7 |
| Jun-94 | 1,798 | 2,647 | 222 | 2,869 | 1,071 | 62.7 |
| Dec-94 | 1,920 | 2,619 | 216 | 2,835 | 915 | 67.7 |
| Jan-95 | 2,102 | 2,521 | 229 | 2,750 | 648 | 76.4 |
| Jun-95 | 1,663 | 2,437 | 225 | 2,662 | 999 | 62.5 |
| Dec-95 | 1,973 | 2,469 | 206 | 2,675 | 702 | 73.8 |
| Jan-96 | 1,984 | 2,435 | 207 | 2,642 | 658 | 75.1 |
| Jun-96 | 1,863 | 2,427 | 211 | 2,638 | 775 | 70.6 |
| Dec-96 | 2,066 | 2,581 | 217 | 2,798 | 732 | 73.8 |

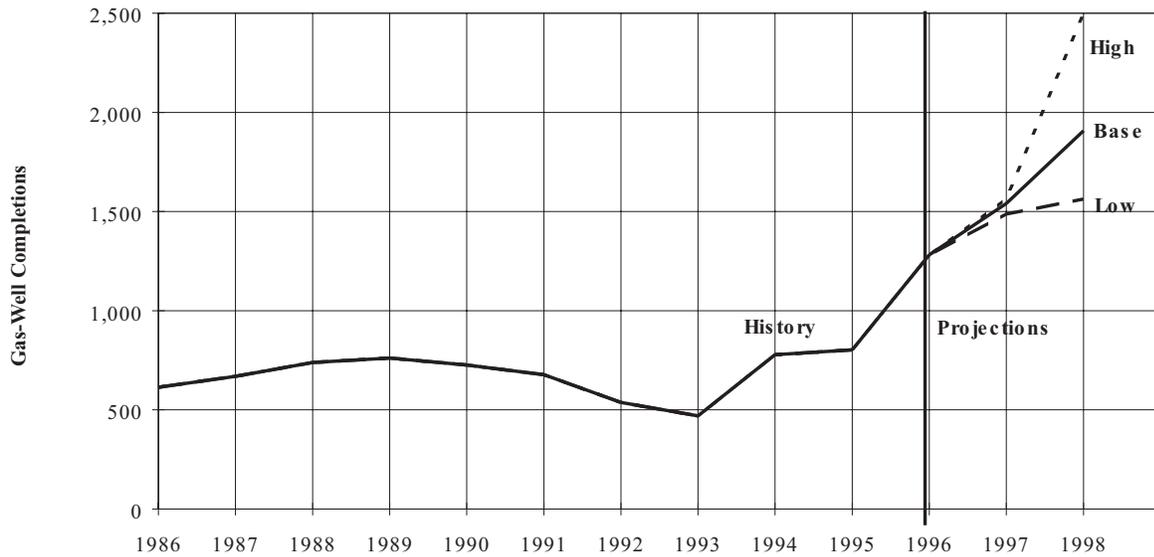
^aThe 1996 estimated history is based on Model GASCAP94 C102997 projections and Baker Hughes rig counts.
Sources: Production History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc.;

Table 12. Kansas Dry Gas Production and Wellhead Productive Capacity Projections, 1997-1998
(Million Cubic Feet Per Day)

| Month-Year | Dry Gas Productive Capacity | | | | | Utilization (percent) |
|-----------------------------|-----------------------------|-----------------|-----------------|--------------|------------------|--------------------------|
| | Dry Production | Gas-Well Gas | Oil-Well Gas | Total Gas | Total Surplus | |
| Low Case Projection | | | | | | |
| Jan-97 | 2,014 | 2,595 | 216 | 2,811 | 797 | 71.6 |
| Jun-97 | 1,894 | 2,663 | 212 | 2,875 | 981 | 65.9 |
| Dec-97 | 2,087 | 2,787 | 196 | 2,983 | 896 | 70.0 |
| Jan-98 | 2,046 | 2,801 | 195 | 2,996 | 950 | 68.3 |
| Jun-98 | 1,926 | 2,875 | 189 | 3,064 | 1,138 | 62.9 |
| Dec-98 | 2,113 | 2,982 | 183 | 3,165 | 1,052 | 66.8 |
| Base Case Projection | | | | | | |
| Jan-97 | 2,014 | 2,595 | 216 | 2,811 | 797 | 71.6 |
| Jun-97 | 1,894 | 2,663 | 212 | 2,875 | 981 | 65.9 |
| Dec-97 | 2,082 | 2,793 | 206 | 2,999 | 917 | 69.4 |
| Jan-98 | 2,045 | 2,811 | 206 | 3,017 | 972 | 67.8 |
| Jun-98 | 1,926 | 2,933 | 202 | 3,135 | 1,209 | 61.4 |
| Dec-98 | 2,106 | 3,094 | 199 | 3,293 | 1,187 | 64.0 |
| High Case Projection | | | | | | |
| Jan-97 | 2,014 | 2,595 | 216 | 2,811 | 797 | 71.6 |
| Jun-97 | 1,894 | 2,663 | 212 | 2,875 | 981 | 65.9 |
| Dec-97 | 2,079 | 2,787 | 216 | 3,003 | 924 | 69.2 |
| Jan-98 | 2,044 | 2,813 | 215 | 3,028 | 984 | 67.5 |
| Jun-98 | 1,926 | 2,988 | 214 | 3,202 | 1,276 | 60.1 |
| Dec-98 | 2,104 | 3,274 | 214 | 3,488 | 1,384 | 60.3 |

Sources: Production Projections: Energy Information Administration, Short-Term Integrated Forecasting System, August 1997 and Model GASCAP C102997. Productive Capacity Projections: Model GASCAP94 C102997.

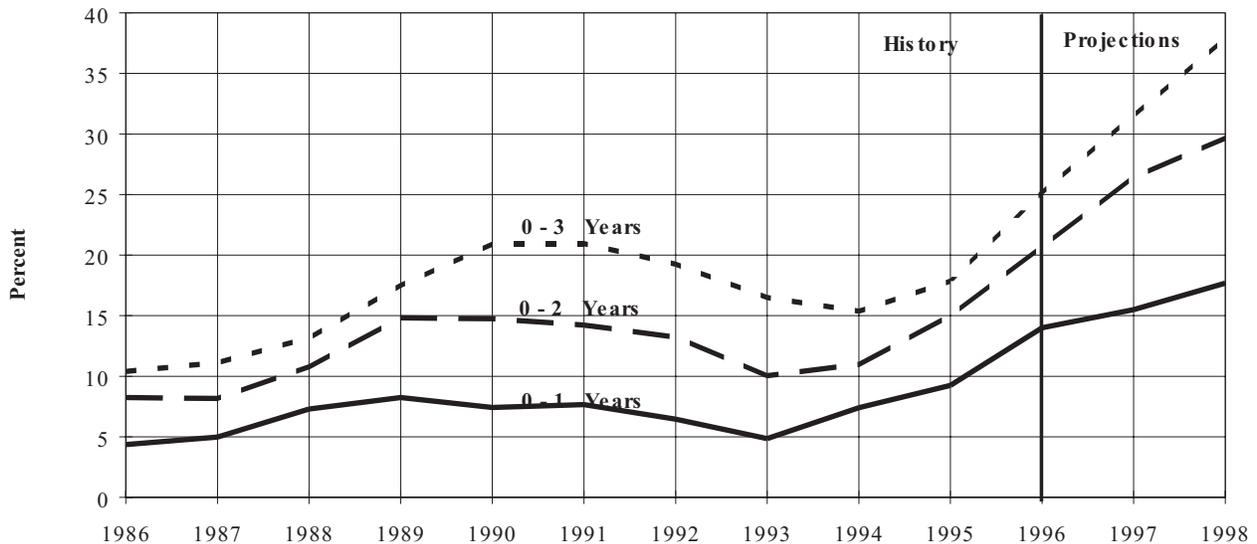
Figure 25. Kansas Gas-Well Completions Added During Year, 1986-1998



Note: The 1996 estimated history is based on Drilling Rig Model projections and Baker Hughes rig counts. Completions include recompletions in new producing zones.

Sources: History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc. Projections: Model GASCAP94 C102997.

Figure 26. Percent of Total Wellhead Productive Capacity of Kansas Gas Wells by Well Age, 1986-1998 (Base Case)



Sources: History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc. Projections: Model GASCAP94 C102997.

New Mexico

Most of this State's natural gas is produced from fields in northwestern New Mexico from the San Juan Basin. Practically all of the oil-well gas produced comes from the Permian Basin of southeast New Mexico.

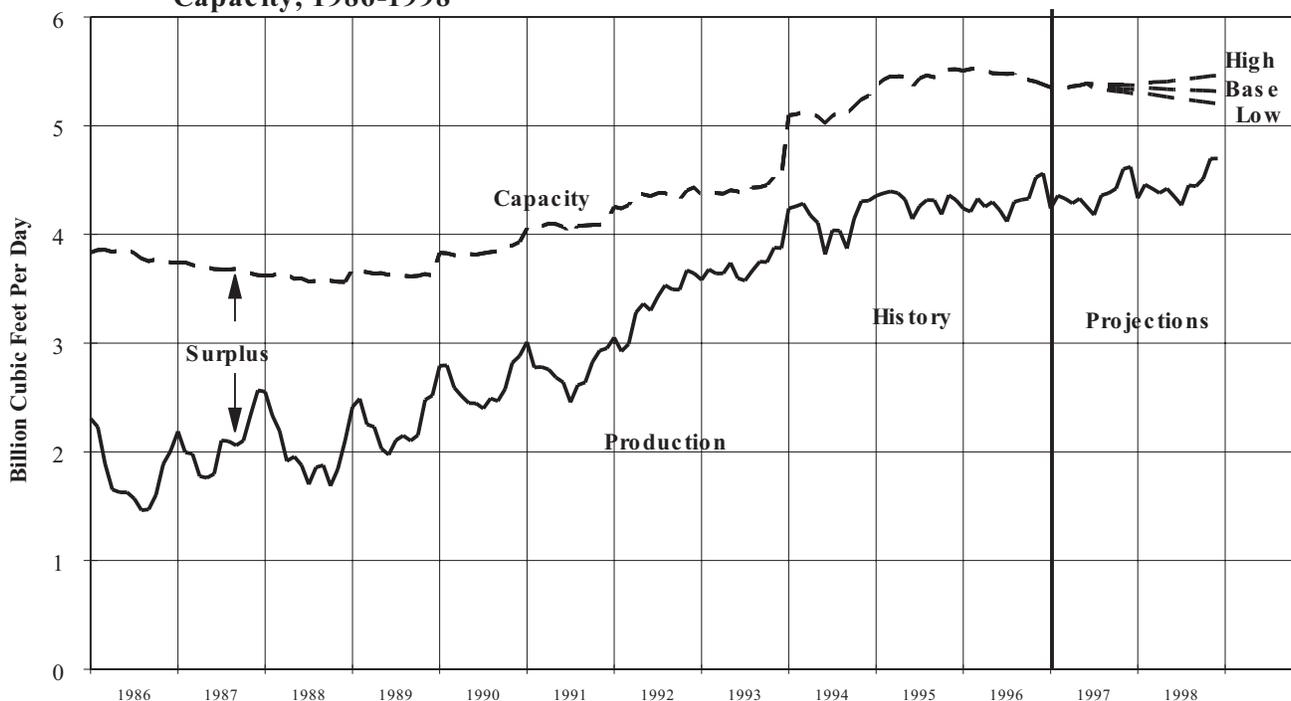
Basin field of the San Juan Basin, the largest gas field in the State, produced 667 billion cubic feet of mixed gas-well conventional and coalbed gas during 1995. This was a decrease of 36 billion cubic feet over the amount produced in 1994. New Mexico has been an area of intense drilling for coalbed gas since 1989. Coalbed gas production from this field increased 217 percent from 1990 through 1994.

Coalbed gas produced in New Mexico was about 15 percent of the State's total dry gas produced in 1990, 23 percent in

1991, 31 percent in 1992, 36 percent in 1993, 39 percent in 1994, and 41 percent in 1995.^{13} Coalbed gas-well completions were treated separately from the conventional gas-well completions in this report. Coalbed gas wells have an increasing rate of production the first few years of their lives. After reaching their peak production rates, coalbed gas wells are predicted to have very low decline rates and therefore very long lives. Coalbed gas capacity has shown an increase in the last few years. (Figure 28).

The following pages include Tables 13, 14, and Figures 27 through 30, which provide historical and projected production and productive capacity, gas-well completions added, and percent of capacity by well age.

Figure 27. New Mexico Dry Gas Monthly Production Rate and Wellhead Productive Capacity, 1986-1998



Note: Production projection plotted for base case only. The 1996 estimated history is based on Model GASCAP94 C102997 projections.

Sources: Production History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc.; and Model GASCAP94 C102997. Productive Capacity: Model GASCAP94 C102997. Production Projections: Energy Information Administration, Short-Term Integrated Forecasting System, August 1997, and Model GASCAP94 C102997.

Table 13. New Mexico Dry Gas Production and Wellhead Productive Capacity, 1986-1996
(Million Cubic Feet Per Day)

| Month-Year | Dry Gas Productive Capacity | | | | | Utilization (percent) |
|------------|-----------------------------|-----------------|-----------------|--------------|------------------|--------------------------|
| | Dry Production | Gas-Well Gas | Oil-Well Gas | Total Gas | Total Surplus | |
| Jan-86 | 2,307 | 3,259 | 574 | 3,833 | 1,526 | 60.2 |
| Jun-86 | 1,627 | 3,310 | 551 | 3,861 | 2,234 | 42.1 |
| Dec-86 | 2,005 | 3,222 | 521 | 3,743 | 1,738 | 53.6 |
| Jan-87 | 2,189 | 3,208 | 536 | 3,744 | 1,555 | 58.5 |
| Jun-87 | 1,798 | 3,155 | 525 | 3,680 | 1,882 | 48.9 |
| Dec-87 | 2,567 | 3,085 | 539 | 3,624 | 1,057 | 70.8 |
| Jan-88 | 2,553 | 3,098 | 524 | 3,622 | 1,069 | 70.5 |
| Jun-88 | 1,876 | 3,083 | 512 | 3,595 | 1,719 | 52.2 |
| Dec-88 | 2,100 | 3,059 | 503 | 3,562 | 1,462 | 59.0 |
| Jan-89 | 2,414 | 3,179 | 501 | 3,680 | 1,266 | 65.6 |
| Jun-89 | 1,974 | 3,155 | 472 | 3,627 | 1,653 | 54.4 |
| Dec-89 | 2,519 | 3,165 | 458 | 3,623 | 1,104 | 69.5 |
| Jan-90 | 2,791 | 3,322 | 508 | 3,830 | 1,039 | 72.9 |
| Jun-90 | 2,445 | 3,322 | 491 | 3,813 | 1,368 | 64.1 |
| Dec-90 | 2,881 | 3,426 | 504 | 3,930 | 1,049 | 73.3 |
| Jan-91 | 3,010 | 3,506 | 551 | 4,057 | 1,047 | 74.2 |
| Jun-91 | 2,640 | 3,531 | 539 | 4,070 | 1,430 | 64.9 |
| Dec-91 | 2,952 | 3,581 | 547 | 4,128 | 1,176 | 71.5 |
| Jan-92 | 3,051 | 3,692 | 563 | 4,255 | 1,204 | 71.7 |
| Jun-92 | 3,301 | 3,789 | 564 | 4,353 | 1,052 | 75.8 |
| Dec-92 | 3,642 | 3,880 | 553 | 4,433 | 791 | 82.2 |
| Jan-93 | 3,583 | 3,801 | 565 | 4,366 | 783 | 82.1 |
| Jun-93 | 3,596 | 3,839 | 556 | 4,395 | 799 | 81.8 |
| Dec-93 | 3,875 | 3,959 | 571 | 4,530 | 655 | 85.5 |
| Jan-94 | 4,239 | 4,556 | 539 | 5,095 | 856 | 83.2 |
| Jun-94 | 3,815 | 4,540 | 487 | 5,027 | 1,212 | 75.9 |
| Dec-94 | 4,310 | 4,761 | 515 | 5,276 | 966 | 81.7 |
| Jan-95 | 4,354 | 4,758 | 611 | 5,369 | 1,015 | 81.1 |
| Jun-95 | 4,143 | 4,737 | 620 | 5,357 | 1,214 | 77.3 |
| Dec-95 | 4,316 | 4,904 | 615 | 5,519 | 1,203 | 78.2 |
| Jan-96 | 4,239 | 4,891 | 615 | 5,506 | 1,267 | 77.0 |
| Jun-96 | 4,224 | 4,875 | 605 | 5,480 | 1,256 | 77.1 |
| Dec-96 | 4,561 | 4,774 | 606 | 5,380 | 819 | 84.8 |

^aThe 1996 estimated history is based on Model GASCAP94 C102997 projections and Baker Hughes rig counts.

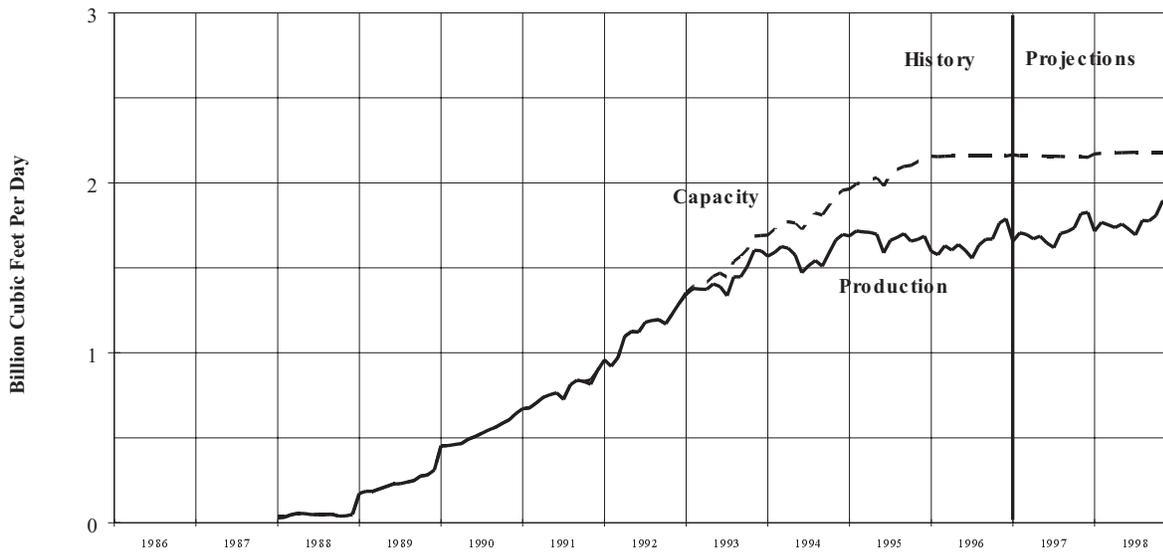
Sources: Production History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc.; and Model GASCAP94 C102997. Productive Capacity: Model GASCAP94 C102997.

Table 14. New Mexico Dry Gas Production and Wellhead Productive Capacity Projections, 1997-1998 (Million Cubic Feet Per Day)

| Month-Year | Dry Gas Productive Capacity | | | Total Gas | Total Surplus | Utilization (percent) |
|-----------------------------|-----------------------------|--------------|--------------|-----------|---------------|-----------------------|
| | Dry Production | Gas-Well Gas | Oil-Well Gas | | | |
| Low Case Projection | | | | | | |
| Jan-97 | 4,239 | 4,750 | 604 | 5,354 | 1,115 | 79.2 |
| Jun-97 | 4,255 | 4,792 | 597 | 5,389 | 1,134 | 79.0 |
| Dec-97 | 4,632 | 4,745 | 556 | 5,301 | 669 | 87.4 |
| Jan-98 | 4,335 | 4,733 | 553 | 5,286 | 951 | 82.0 |
| Jun-98 | 4,350 | 4,715 | 540 | 5,255 | 905 | 82.8 |
| Dec-98 | 4,714 | 4,676 | 526 | 5,202 | 488 | 90.6 |
| Base Case Projection | | | | | | |
| Jan-97 | 4,239 | 4,750 | 604 | 5,354 | 1,115 | 79.2 |
| Jun-97 | 4,255 | 4,792 | 597 | 5,389 | 1,134 | 79.0 |
| Dec-97 | 4,621 | 4,752 | 585 | 5,337 | 716 | 86.6 |
| Jan-98 | 4,333 | 4,744 | 583 | 5,327 | 994 | 81.3 |
| Jun-98 | 4,349 | 4,756 | 577 | 5,333 | 984 | 81.5 |
| Dec-98 | 4,698 | 4,746 | 571 | 5,317 | 619 | 88.4 |
| High Case Projection | | | | | | |
| Jan-97 | 4,239 | 4,750 | 604 | 5,354 | 1,115 | 79.2 |
| Jun-97 | 4,255 | 4,792 | 597 | 5,389 | 1,134 | 79.0 |
| Dec-97 | 4,615 | 4,762 | 611 | 5,373 | 758 | 85.9 |
| Jan-98 | 4,331 | 4,759 | 610 | 5,369 | 1,038 | 80.7 |
| Jun-98 | 4,349 | 4,804 | 611 | 5,415 | 1,066 | 80.3 |
| Dec-98 | 4,693 | 4,850 | 614 | 5,464 | 771 | 85.9 |

Sources: Production Projections: Energy Information Administration, Short-Term Integrated Forecasting System, August 1997 and Model GASCAP C102997. Productive Capacity Projections: Model GASCAP94 C102997.

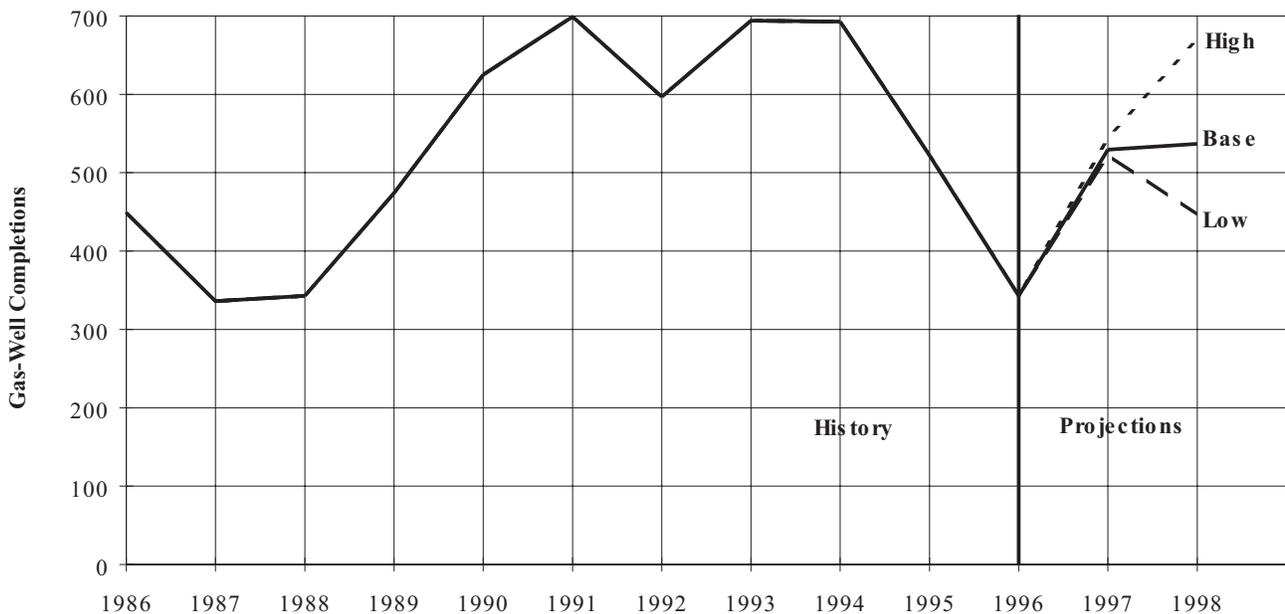
Figure 28. New Mexico Dry Coalbed Gas Monthly Production Rate and Wellhead Productive Capacity, 1986-1998



Note: Production projection plotted for base case only.

Sources: Production History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc.; and Model GASCAP94 C102997. Productive Capacity: Model GASCAP94 C102997. Production Projections: Energy Information Administration, Short-Term Integrated Forecasting System, August 1997, and Model GASCAP94 C102997.

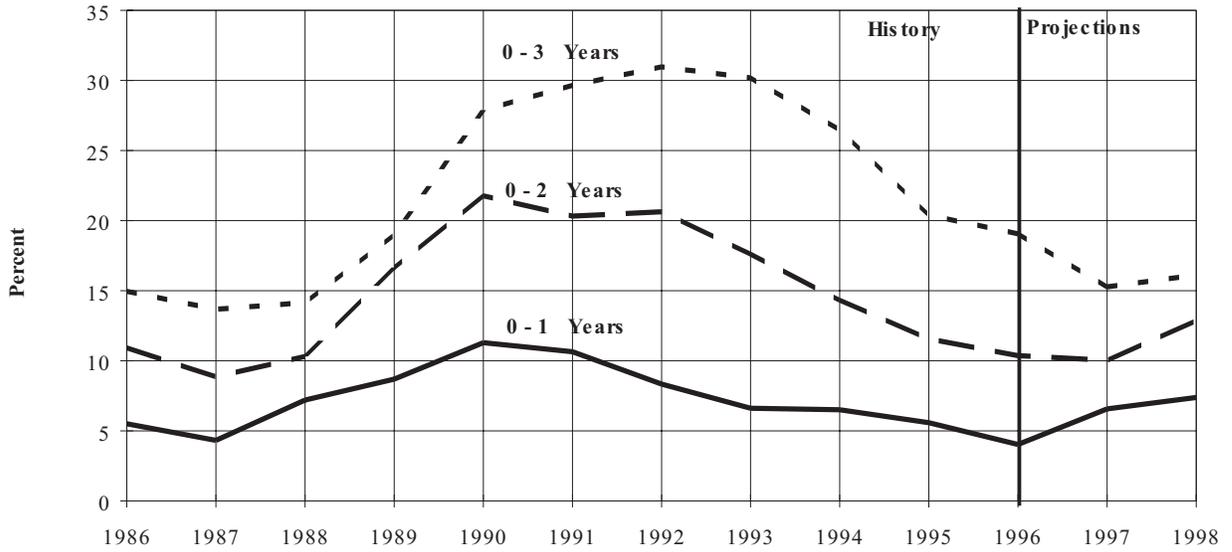
Figure 29. New Mexico Gas-Well Completions Added During Year, 1986-1998



Note: The 1996 estimated history is based on Drilling Rig Model projections and Baker Hughes rig counts. Completions include recompletions in new producing zones.

Sources: History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc. Projections: Model GASCAP94 C102997.

Figure 30. Percent of Total Wellhead Productive Capacity of New Mexico Gas Wells by Well Age, 1986-1998 (Base Case)



Sources: History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc. Projections: Model GASCAP94 C102997.

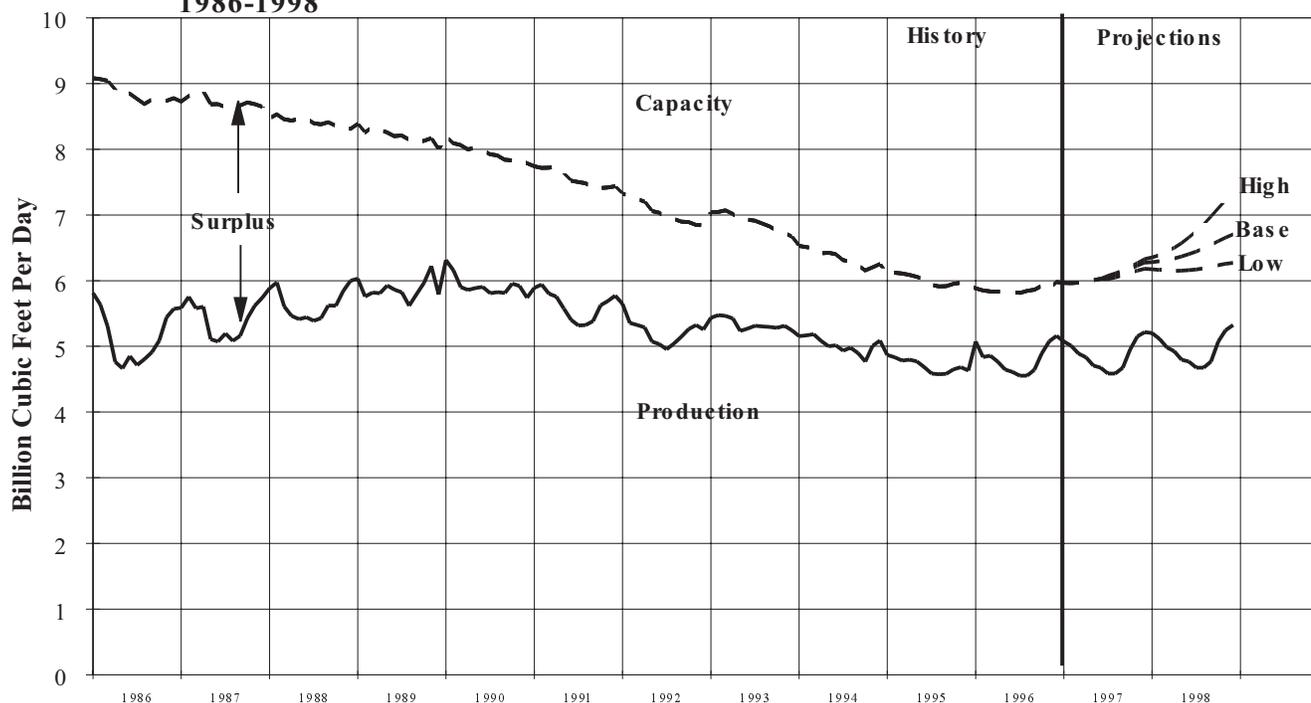
Oklahoma

Oklahoma is among the top three gas-producing States. There are numerous large and small gas fields scattered throughout western Oklahoma. Oil fields with large volumes of associated-dissolved gas are located generally in central Oklahoma. Dwight's EnergyData, Inc., indicates that, in 1995, the top two gas-producing areas were the Mocane-Laverne (94 Bcf) area and the Watonga-Chickasha Trend (82 Bcf). The Mocane-Laverne area, located in

Northwest Oklahoma, consists of over 50 fields, and the Watonga-Chickasha Trend consists of more than 70 fields.

The following pages include Tables 15 and 16 and Figures 31 through 33, which provide historical and projected production and productive capacity, gas-well completions added, and percent of capacity by well age.

Figure 31. Oklahoma Dry Gas Monthly Production Rate and Wellhead Productive Capacity, 1986-1998



Note: Production projection plotted for base case only. The 1996 estimated history is based on Model GASCAP94 C102997 projections.

Sources: Production History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc.; and Model GASCAP94 C102997. Productive Capacity: Model GASCAP94 C102997. Production Projections: Energy Information Administration, Short-Term Integrated Forecasting System, August 1997, and Model GASCAP94 C102997.

Table 15. Oklahoma Dry Gas Production and Wellhead Productive Capacity, 1986-1996
(Million Cubic Feet Per Day)

| Month-Year | Dry Gas Productive Capacity | | | | | |
|------------|-----------------------------|--------------|--------------|-----------|---------------|-----------------------|
| | Dry Production | Gas-Well Gas | Oil-Well Gas | Total Gas | Total Surplus | Utilization (percent) |
| Jan-86 | 5,812 | 7,575 | 1,507 | 9,082 | 3,270 | 64.0 |
| Jun-86 | 4,852 | 7,555 | 1,295 | 8,850 | 3,998 | 54.8 |
| Dec-86 | 5,572 | 7,513 | 1,264 | 8,777 | 3,205 | 63.5 |
| Jan-87 | 5,588 | 7,498 | 1,228 | 8,726 | 3,138 | 64.0 |
| Jun-87 | 5,073 | 7,392 | 1,296 | 8,688 | 3,615 | 58.4 |
| Dec-87 | 5,742 | 7,439 | 1,211 | 8,650 | 2,908 | 66.4 |
| Jan-88 | 5,885 | 7,271 | 1,202 | 8,473 | 2,588 | 69.5 |
| Jun-88 | 5,444 | 7,256 | 1,222 | 8,478 | 3,034 | 64.2 |
| Dec-88 | 5,999 | 7,128 | 1,183 | 8,311 | 2,312 | 72.2 |
| Jan-89 | 6,032 | 7,164 | 1,222 | 8,386 | 2,354 | 71.9 |
| Jun-89 | 5,863 | 7,059 | 1,141 | 8,200 | 2,337 | 71.5 |
| Dec-89 | 5,789 | 6,966 | 1,033 | 7,999 | 2,210 | 72.4 |
| Jan-90 | 6,313 | 6,981 | 1,224 | 8,205 | 1,892 | 76.9 |
| Jun-90 | 5,907 | 6,892 | 1,094 | 7,986 | 2,079 | 74.0 |
| Dec-90 | 5,740 | 6,778 | 1,010 | 7,788 | 2,048 | 73.7 |
| Jan-91 | 5,890 | 6,800 | 940 | 7,740 | 1,850 | 76.1 |
| Jun-91 | 5,405 | 6,583 | 941 | 7,524 | 2,119 | 71.8 |
| Dec-91 | 5,772 | 6,545 | 892 | 7,437 | 1,665 | 77.6 |
| Jan-92 | 5,646 | 6,424 | 902 | 7,326 | 1,680 | 77.1 |
| Jun-92 | 5,035 | 6,141 | 893 | 7,034 | 1,999 | 71.6 |
| Dec-92 | 5,257 | 5,958 | 887 | 6,845 | 1,588 | 76.8 |
| Jan-93 | 5,436 | 6,219 | 824 | 7,043 | 1,607 | 77.2 |
| Jun-93 | 5,271 | 6,083 | 846 | 6,929 | 1,658 | 76.1 |
| Dec-93 | 5,244 | 5,886 | 788 | 6,674 | 1,430 | 78.6 |
| Jan-94 | 5,155 | 5,709 | 820 | 6,529 | 1,374 | 79.0 |
| Jun-94 | 5,017 | 5,587 | 817 | 6,404 | 1,387 | 78.3 |
| Dec-94 | 5,088 | 5,450 | 804 | 6,254 | 1,166 | 81.4 |
| Jan-95 | 4,869 | 5,335 | 750 | 6,085 | 1,216 | 80.0 |
| Jun-95 | 4,687 | 5,261 | 759 | 6,020 | 1,333 | 77.9 |
| Dec-95 | 4,632 | 5,214 | 735 | 5,949 | 1,317 | 77.9 |
| Jan-96 | 5,074 | 5,132 | 751 | 5,883 | 809 | 86.2 |
| Jun-96 | 4,612 | 5,082 | 729 | 5,811 | 1,199 | 79.4 |
| Dec-96 | 5,161 | 5,240 | 741 | 5,981 | 820 | 86.3 |

^aThe 1996 estimated history is based on Model GASCAP94 C102997 projections and Baker Hughes rig counts.

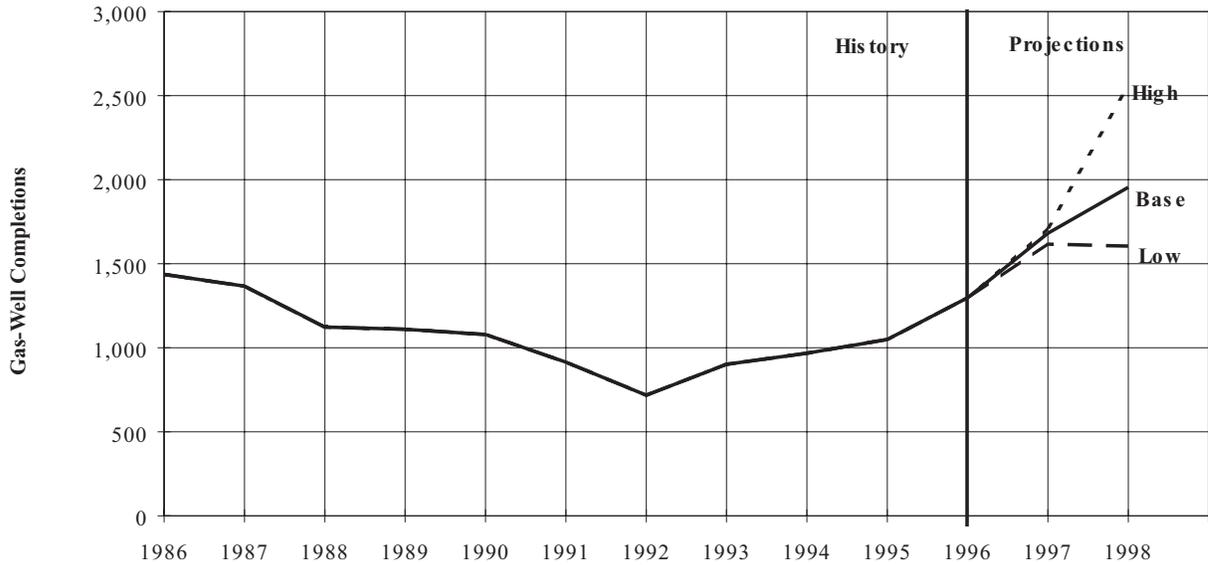
Sources: Production History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc.; and Model GASCAP94 C102997. Productive Capacity: Model GASCAP94 C102997.

Table 16. Oklahoma Dry Gas Production and Wellhead Productive Capacity Projections, 1997-1998 (Million Cubic Feet Per Day)

| Month-Year | Dry Gas Productive Capacity | | | Total Gas | Total Surplus | Utilization (percent) |
|-----------------------------|-----------------------------|--------------|--------------|-----------|---------------|-----------------------|
| | Dry Production | Gas-Well Gas | Oil-Well Gas | | | |
| Low Case Projection | | | | | | |
| Jan-97 | 5,074 | 5,228 | 737 | 5,965 | 891 | 85.1 |
| Jun-97 | 4,675 | 5,303 | 724 | 6,027 | 1,352 | 77.6 |
| Dec-97 | 5,230 | 5,513 | 670 | 6,183 | 953 | 84.6 |
| Jan-98 | 5,203 | 5,508 | 666 | 6,174 | 971 | 84.3 |
| Jun-98 | 4,771 | 5,514 | 646 | 6,160 | 1,389 | 77.5 |
| Dec-98 | 5,343 | 5,647 | 625 | 6,272 | 929 | 85.2 |
| Base Case Projection | | | | | | |
| Jan-97 | 5,074 | 5,228 | 737 | 5,965 | 891 | 85.1 |
| Jun-97 | 4,675 | 5,303 | 724 | 6,027 | 1,352 | 77.6 |
| Dec-97 | 5,218 | 5,571 | 705 | 6,276 | 1,058 | 83.1 |
| Jan-98 | 5,201 | 5,581 | 702 | 6,283 | 1,082 | 82.8 |
| Jun-98 | 4,770 | 5,714 | 690 | 6,404 | 1,634 | 74.5 |
| Dec-98 | 5,324 | 6,026 | 678 | 6,704 | 1,380 | 79.4 |
| High Case Projection | | | | | | |
| Jan-97 | 5,074 | 5,228 | 737 | 5,965 | 891 | 85.1 |
| Jun-97 | 4,675 | 5,303 | 724 | 6,027 | 1,352 | 77.6 |
| Dec-97 | 5,210 | 5,593 | 736 | 6,329 | 1,119 | 82.3 |
| Jan-98 | 5,198 | 5,619 | 735 | 6,354 | 1,156 | 81.8 |
| Jun-98 | 4,770 | 5,928 | 731 | 6,659 | 1,889 | 71.6 |
| Dec-98 | 5,319 | 6,614 | 729 | 7,343 | 2,024 | 72.4 |

Sources: Production Projections: Energy Information Administration, Short-Term Integrated Forecasting System, August 1997 and Model GASCAP C102997. Productive Capacity Projections: Model GASCAP94 C102997.

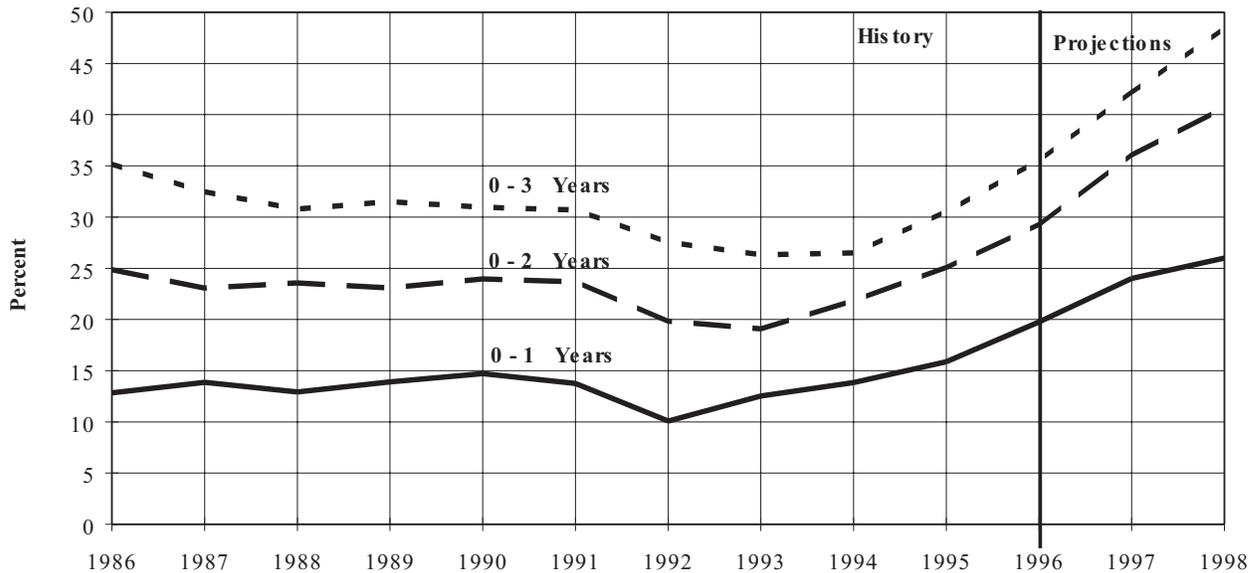
Figure 32. Oklahoma Gas-Well Completions Added During Year, 1986-1998



Note: The 1996 estimated history is based on Drilling Rig Model projections and Baker Hughes rig counts. Completions include recompletions in new producing zones.

Sources: History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc. Projections: Model GASCAP94 C102997.

Figure 33. Percent of Total Wellhead Productive Capacity of Oklahoma Gas Wells by Well Age, 1986-1998 (Base Case)



Sources: History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc. Projections: Model GASCAP94 C102997.

Southeast (Excluding Gulf of Mexico OCS)

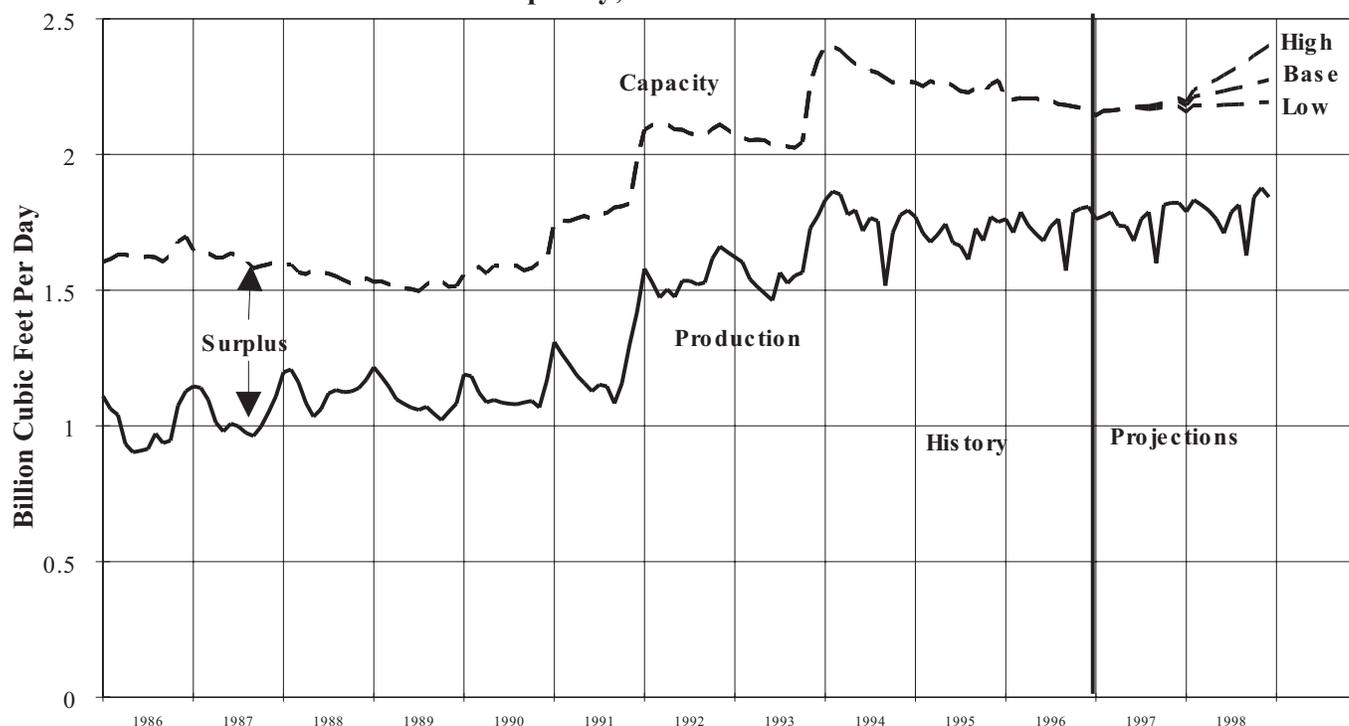
The Southeast area includes the States of Arkansas, Mississippi, and Alabama (excluding Gulf of Mexico OCS). Production is from highly permeable deep formations on the Gulf Coast, as well as from low permeability and relatively shallow formations in Arkansas, northern Mississippi, and northern Alabama.

and 30 percent in 1995. {13} Coalbed gas-well completions in Alabama were treated separately from conventional gas-well completions in this report. Coalbed gas capacity continues to increase through 1998, (Figure 35).

Coalbed gas production in Alabama was 35 percent of the State's total dry gas production in 1990, 47 percent in 1991, 35 percent in 1992, 37 percent in 1993, 28 percent in 1994,

The following pages include Tables 17 and 18 and Figures 34 through 37, which provide historical and projected production and productive capacity, gas-well completions added, and percent of capacity by well age.

Figure 34. Southeast (Excluding Gulf of Mexico OCS) Dry Gas Monthly Production Rate and Wellhead Productive Capacity, 1986-1998



Note: Production projection plotted for base case only. The 1996 estimated history is based on Model GASCAP94 C102997 projections.

Sources: Production History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc.; and Model GASCAP94 C102997. Productive Capacity: Model GASCAP94 C102997. Production Projections: Energy Information Administration, Short-Term Integrated Forecasting System, August 1997, and Model GASCAP94 C102997.

Table 17. Southeast (Excluding Gulf of Mexico OCS) Dry Gas Production and Wellhead Productive Capacity, 1986-1996 (Million Cubic Feet Per Day)

| Month-Year | Dry Gas Productive Capacity | | | | | Utilization (percent) |
|------------|-----------------------------|--------------|--------------|-----------|---------------|-----------------------|
| | Dry Production | Gas-Well Gas | Oil-Well Gas | Total Gas | Total Surplus | |
| Jan-86 | 1,110 | 1,458 | 146 | 1,604 | 494 | 69.2 |
| Jun-86 | 908 | 1,483 | 137 | 1,620 | 712 | 56.0 |
| Dec-86 | 1,128 | 1,567 | 131 | 1,698 | 570 | 66.4 |
| Jan-87 | 1,146 | 1,519 | 128 | 1,647 | 501 | 69.6 |
| Jun-87 | 1,008 | 1,505 | 130 | 1,635 | 627 | 61.7 |
| Dec-87 | 1,109 | 1,477 | 127 | 1,604 | 495 | 69.1 |
| Jan-88 | 1,197 | 1,470 | 124 | 1,594 | 397 | 75.1 |
| Jun-88 | 1,062 | 1,444 | 121 | 1,565 | 503 | 67.9 |
| Dec-88 | 1,171 | 1,425 | 119 | 1,544 | 373 | 75.8 |
| Jan-89 | 1,216 | 1,405 | 126 | 1,531 | 315 | 79.4 |
| Jun-89 | 1,067 | 1,377 | 127 | 1,504 | 437 | 70.9 |
| Dec-89 | 1,082 | 1,400 | 115 | 1,515 | 433 | 71.4 |
| Jan-90 | 1,189 | 1,450 | 109 | 1,559 | 370 | 76.3 |
| Jun-90 | 1,086 | 1,479 | 110 | 1,589 | 503 | 68.3 |
| Dec-90 | 1,167 | 1,496 | 112 | 1,608 | 441 | 72.6 |
| Jan-91 | 1,309 | 1,661 | 94 | 1,755 | 446 | 74.6 |
| Jun-91 | 1,128 | 1,671 | 92 | 1,763 | 635 | 64.0 |
| Dec-91 | 1,419 | 1,882 | 93 | 1,975 | 556 | 71.8 |
| Jan-92 | 1,579 | 1,935 | 156 | 2,091 | 512 | 75.5 |
| Jun-92 | 1,535 | 1,939 | 152 | 2,091 | 556 | 73.4 |
| Dec-92 | 1,641 | 1,944 | 149 | 2,093 | 452 | 78.4 |
| Jan-93 | 1,622 | 1,921 | 150 | 2,071 | 449 | 78.3 |
| Jun-93 | 1,462 | 1,894 | 141 | 2,035 | 573 | 71.8 |
| Dec-93 | 1,773 | 2,207 | 141 | 2,348 | 575 | 75.5 |
| Jan-94 | 1,833 | 2,278 | 124 | 2,402 | 569 | 76.3 |
| Jun-94 | 1,718 | 2,208 | 120 | 2,328 | 610 | 73.8 |
| Dec-94 | 1,794 | 2,151 | 118 | 2,269 | 475 | 79.1 |
| Jan-95 | 1,770 | 2,149 | 116 | 2,265 | 495 | 78.1 |
| Jun-95 | 1,675 | 2,141 | 113 | 2,254 | 579 | 74.3 |
| Dec-95 | 1,751 | 2,155 | 118 | 2,273 | 522 | 77.0 |
| Jan-96 | 1,762 | 2,084 | 115 | 2,199 | 437 | 80.1 |
| Jun-96 | 1,682 | 2,086 | 110 | 2,196 | 514 | 76.6 |
| Dec-96 | 1,808 | 2,062 | 105 | 2,167 | 359 | 83.4 |

^aThe 1996 estimated history is based on Model GASCAP94 C102997 projections and Baker Hughes rig counts.

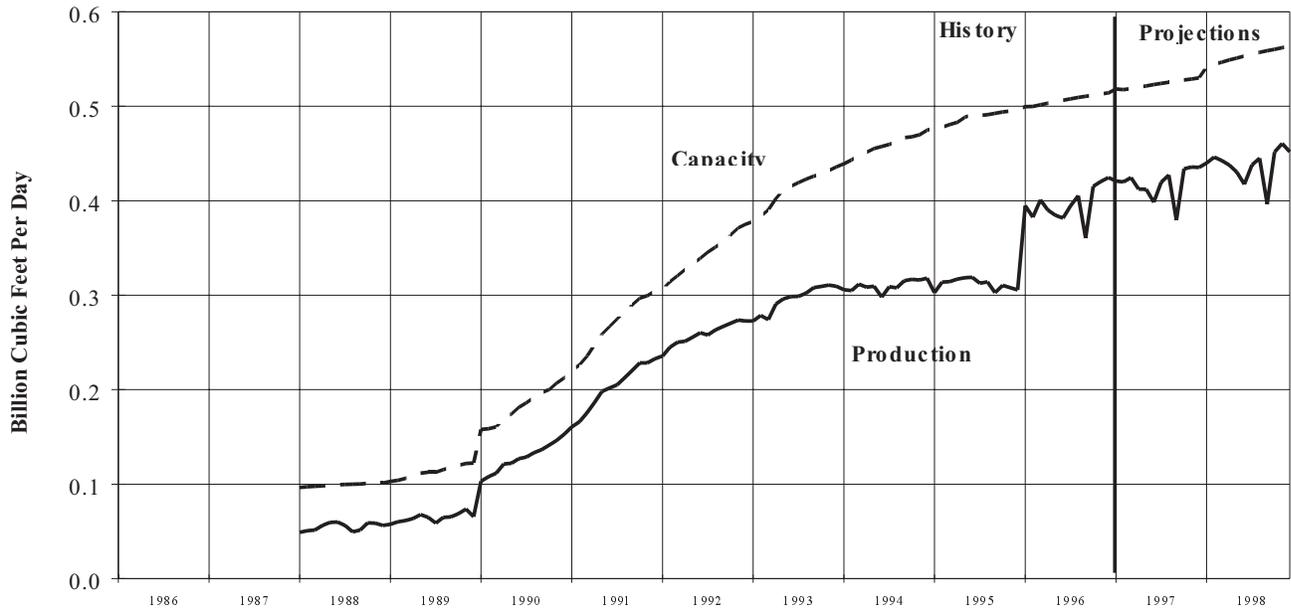
Sources: Production History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc.; and Model GASCAP94 C102997. Productive Capacity: Model GASCAP94 C102997.

Table 18. Southeast (Excluding Gulf of Mexico OCS) Dry Gas Production and Wellhead Productive Capacity Projections, 1997-1998 (Million Cubic Feet Per Day)

| Month-Year | Dry Gas Productive Capacity | | | Total Gas | Total Surplus | Utilization (percent) |
|-----------------------------|-----------------------------|--------------|--------------|-----------|---------------|-----------------------|
| | Dry Production | Gas-Well Gas | Oil-Well Gas | | | |
| Low Case Projection | | | | | | |
| Jan-97 | 1,762 | 2,040 | 105 | 2,145 | 383 | 82.1 |
| Jun-97 | 1,682 | 2,072 | 103 | 2,175 | 493 | 77.3 |
| Dec-97 | 1,827 | 2,082 | 95 | 2,177 | 350 | 83.9 |
| Jan-98 | 1,791 | 2,064 | 94 | 2,158 | 367 | 83.0 |
| Jun-98 | 1,710 | 2,091 | 92 | 2,183 | 473 | 78.3 |
| Dec-98 | 1,850 | 2,105 | 88 | 2,193 | 343 | 84.4 |
| Base Case Projection | | | | | | |
| Jan-97 | 1,762 | 2,040 | 105 | 2,145 | 383 | 82.1 |
| Jun-97 | 1,682 | 2,072 | 103 | 2,175 | 493 | 77.3 |
| Dec-97 | 1,822 | 2,097 | 100 | 2,197 | 375 | 82.9 |
| Jan-98 | 1,790 | 2,081 | 100 | 2,181 | 391 | 82.1 |
| Jun-98 | 1,710 | 2,136 | 98 | 2,234 | 524 | 76.5 |
| Dec-98 | 1,843 | 2,179 | 96 | 2,275 | 432 | 81.0 |
| High Case Projection | | | | | | |
| Jan-97 | 1,762 | 2,040 | 105 | 2,145 | 383 | 82.1 |
| Jun-97 | 1,682 | 2,072 | 103 | 2,175 | 493 | 77.3 |
| Dec-97 | 1,820 | 2,104 | 104 | 2,208 | 388 | 82.4 |
| Jan-98 | 1,789 | 2,091 | 104 | 2,195 | 406 | 81.5 |
| Jun-98 | 1,710 | 2,190 | 103 | 2,293 | 583 | 74.6 |
| Dec-98 | 1,842 | 2,299 | 103 | 2,402 | 560 | 76.7 |

Sources: Production Projections: Energy Information Administration, Short-Term Integrated Forecasting System, August 1997 and Model GASCAP C102997. Productive Capacity Projections: Model GASCAP94 C102997.

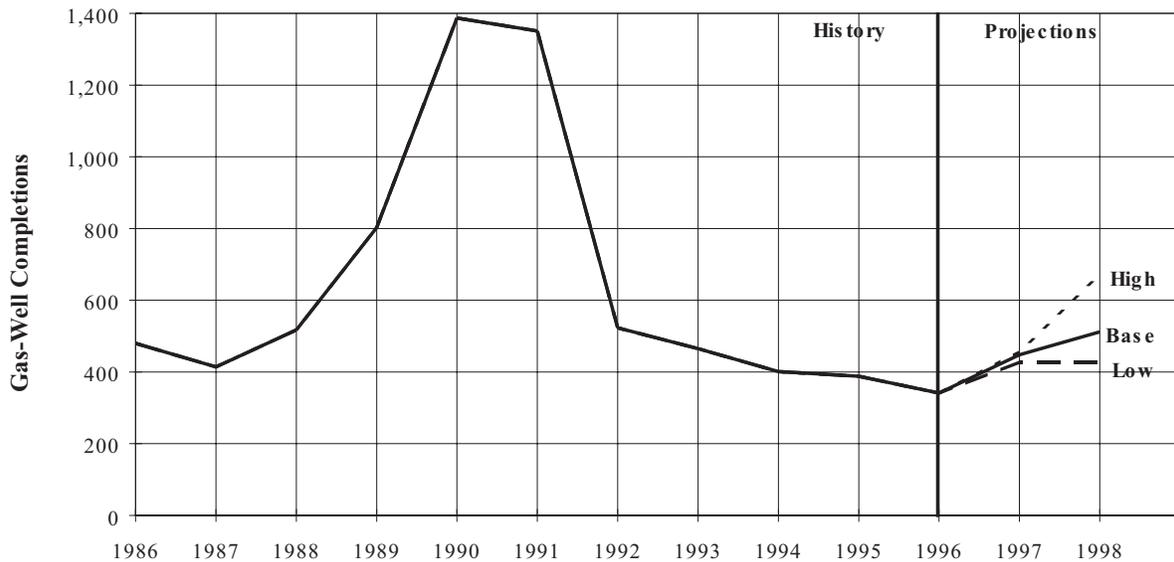
Figure 35. Southeast (Excluding Gulf of Mexico OCS) Dry Coalbed Gas Monthly Production Rate and Wellhead Productive Capacity, 1986-1998



Note: Production projection plotted for base case only.

Sources: Production History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc.; and Model GASCAP94 C102997. Productive Capacity: Model GASCAP94 C102997. Production Projections: Energy Information Administration, Short-Term Integrated Forecasting System, August 1997, and Model GASCAP94 C102997.

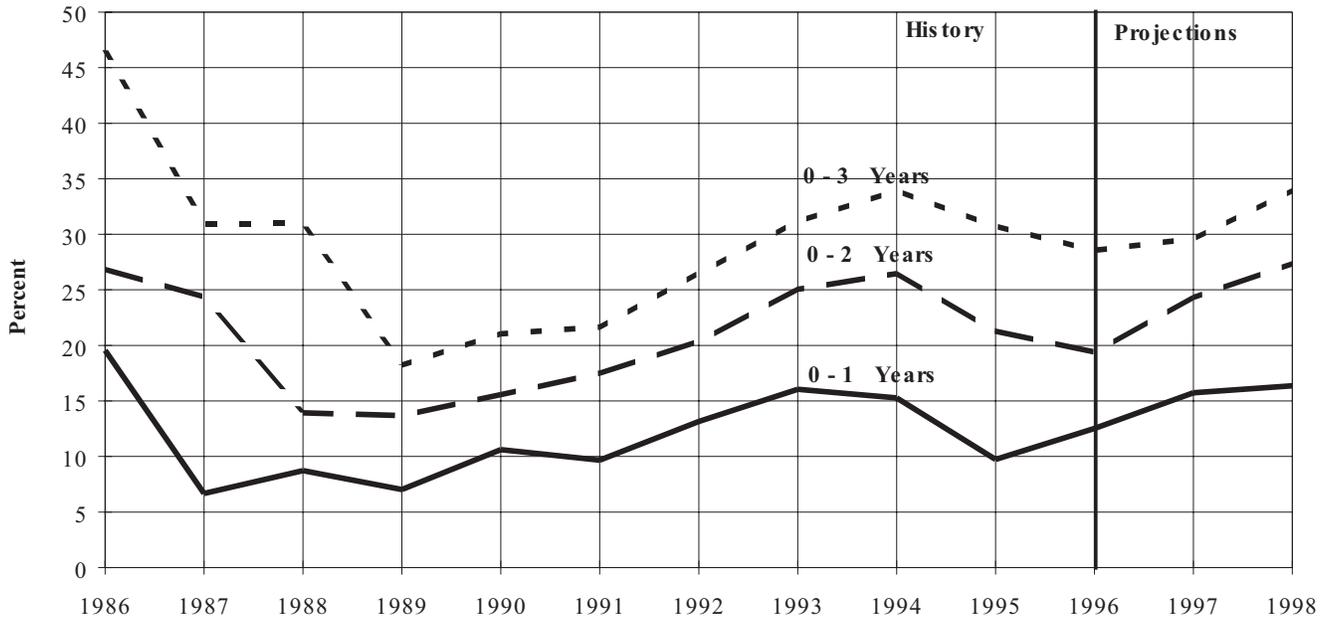
Figure 36. Southeast (Excluding Gulf of Mexico OCS) Gas-Well Completions Added During Year, 1986-1998



Note: The 1996 estimated history is based on Drilling Rig Model projections and Baker Hughes rig counts. Completions include recompletions in new producing zones.

Sources: History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc. Projections: Model GASCAP94 C102997.

Figure 37. Percent of Total Wellhead Productive Capacity of Southeast (Excluding Gulf of Mexico) Gas Wells by Well Age, 1986-1998 (Base Case)



Sources: History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc. Projections: Model GASCAP94 C102997.

Rocky Mountains

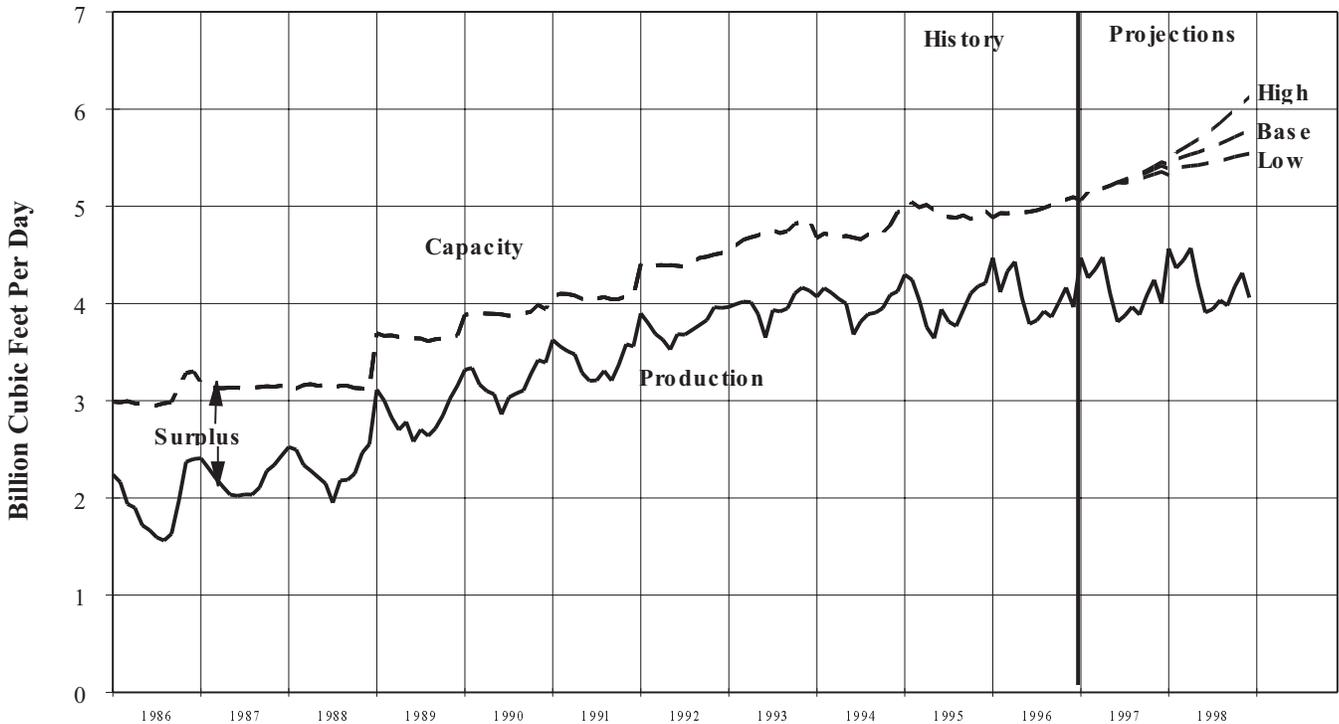
The Rocky Mountains area includes Colorado, Montana, North Dakota, Utah, and Wyoming. The area is diverse and geologically complex, with many low permeability formations.

completions in Colorado and Wyoming were treated separately from conventional gas-well completions in this report. Coalbed gas capacity has shown an increase in the last few years (Figure 39).

Coalbed gas produced in Colorado was about 11 percent of the State's total dry gas produced in 1990, 17 percent in 1991, 26 percent in 1992, 32 percent in 1993, and 40 percent in 1994, and 44 percent in 1995. {13} Coalbed gas-well

The following pages include Tables 19 and 20 and Figures 38 through 41, which provide historical and projected production and productive capacity, gas-well completions added, and percent of capacity by well age

Figure 38. Rocky Mountains Dry Gas Monthly Production Rate and Wellhead Productive Capacity, 1986-1998



Note: Production projection plotted for base case only. The 1996 estimated history is based on Model GASCAP94 C102997 projections.

Sources: Production History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc.; and Model GASCAP94 C102997.

Productive Capacity: Model GASCAP94 C102997. Production Projections: Energy Information Administration, Short-Term Integrated Forecasting System, August 1997, and Model GASCAP94 C102997.

Table 19. Rocky Mountains Dry Gas Production and Wellhead Productive Capacity, 1986-1996
(Million Cubic Feet Per Day)

| Month-Year | Dry Gas Productive Capacity | | | | | |
|------------|-----------------------------|--------------|--------------|-----------|---------------|-----------------------|
| | Dry Production | Gas-Well Gas | Oil-Well Gas | Total Gas | Total Surplus | Utilization (percent) |
| Jan-86 | 2,241 | 2,342 | 650 | 2,992 | 751 | 74.9 |
| Jun-86 | 1,671 | 2,354 | 600 | 2,954 | 1,283 | 56.6 |
| Dec-86 | 2,400 | 2,738 | 562 | 3,300 | 900 | 72.7 |
| Jan-87 | 2,408 | 2,395 | 785 | 3,180 | 772 | 75.7 |
| Jun-87 | 2,022 | 2,374 | 761 | 3,135 | 1,113 | 64.5 |
| Dec-87 | 2,436 | 2,393 | 763 | 3,156 | 720 | 77.2 |
| Jan-88 | 2,524 | 2,303 | 802 | 3,105 | 581 | 81.3 |
| Jun-88 | 2,147 | 2,357 | 804 | 3,161 | 1,014 | 67.9 |
| Dec-88 | 2,553 | 2,372 | 754 | 3,126 | 573 | 81.7 |
| Jan-89 | 3,115 | 2,786 | 909 | 3,695 | 580 | 84.3 |
| Jun-89 | 2,579 | 2,769 | 873 | 3,642 | 1,063 | 70.8 |
| Dec-89 | 3,155 | 2,810 | 861 | 3,671 | 516 | 85.9 |
| Jan-90 | 3,319 | 2,823 | 1,061 | 3,884 | 565 | 85.5 |
| Jun-90 | 2,861 | 2,843 | 1,045 | 3,888 | 1,027 | 73.6 |
| Dec-90 | 3,391 | 2,929 | 1,015 | 3,944 | 553 | 86.0 |
| Jan-91 | 3,625 | 2,969 | 1,102 | 4,071 | 446 | 89.0 |
| Jun-91 | 3,206 | 2,951 | 1,077 | 4,028 | 822 | 79.6 |
| Dec-91 | 3,559 | 3,030 | 1,048 | 4,078 | 519 | 87.3 |
| Jan-92 | 3,899 | 3,326 | 1,080 | 4,406 | 507 | 88.5 |
| Jun-92 | 3,685 | 3,337 | 1,051 | 4,388 | 703 | 84.0 |
| Dec-92 | 3,955 | 3,510 | 1,009 | 4,519 | 564 | 87.5 |
| Jan-93 | 3,965 | 3,790 | 765 | 4,555 | 590 | 87.0 |
| Jun-93 | 3,649 | 3,973 | 770 | 4,743 | 1,094 | 76.9 |
| Dec-93 | 4,131 | 4,119 | 736 | 4,855 | 724 | 85.1 |
| Jan-94 | 4,071 | 4,029 | 646 | 4,675 | 604 | 87.1 |
| Jun-94 | 3,682 | 4,044 | 634 | 4,678 | 996 | 78.7 |
| Dec-94 | 4,124 | 4,327 | 617 | 4,944 | 820 | 83.4 |
| Jan-95 | 4,298 | 4,337 | 598 | 4,935 | 637 | 87.1 |
| Jun-95 | 3,940 | 4,330 | 583 | 4,913 | 973 | 80.2 |
| Dec-95 | 4,209 | 4,382 | 571 | 4,953 | 744 | 85.0 |
| Jan-96 | 4,470 | 4,329 | 559 | 4,888 | 418 | 91.4 |
| Jun-96 | 3,790 | 4,389 | 554 | 4,943 | 1,153 | 76.7 |
| Dec-96 | 3,963 | 4,539 | 556 | 5,095 | 1,132 | 77.8 |

^aThe 1996 estimated history is based on Model GASCAP94 C102997 projections and Baker Hughes rig counts.

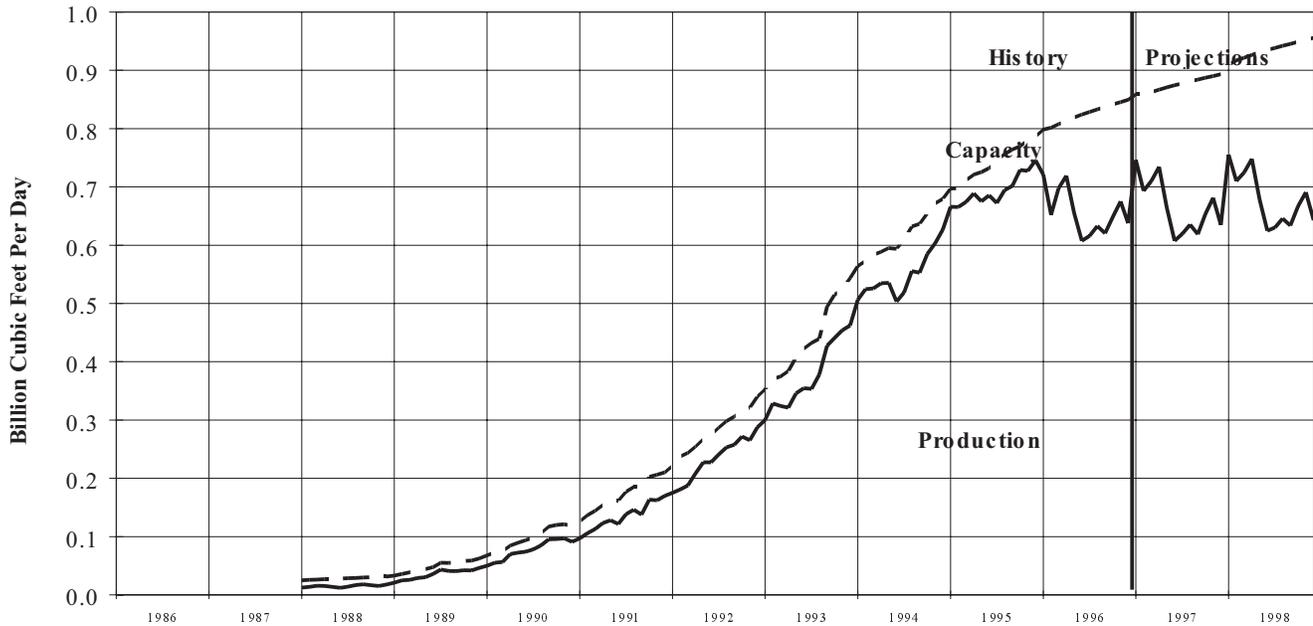
Sources: Production History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc.; and Model GASCAP94 C102997. Productive Capacity: Model GASCAP94 C102997.

Table 20. Rocky Mountains Dry Gas Production and Wellhead Productive Capacity Projections, 1997-1998 (Million Cubic Feet Per Day)

| Month-Year | Dry Gas Productive Capacity | | | Total Gas | Total Surplus | Utilization (percent) |
|-----------------------------|-----------------------------|--------------|--------------|-----------|---------------|-----------------------|
| | Dry Production | Gas-Well Gas | Oil-Well Gas | | | |
| Low Case Projection | | | | | | |
| Jan-97 | 4,470 | 4,508 | 554 | 5,062 | 592 | 88.3 |
| Jun-97 | 3,813 | 4,699 | 548 | 5,247 | 1,434 | 72.7 |
| Dec-97 | 4,014 | 4,845 | 510 | 5,355 | 1,341 | 75.0 |
| Jan-98 | 4,567 | 4,814 | 508 | 5,322 | 755 | 85.8 |
| Jun-98 | 3,909 | 4,943 | 495 | 5,438 | 1,529 | 71.9 |
| Dec-98 | 4,076 | 5,060 | 482 | 5,542 | 1,466 | 73.5 |
| Base Case Projection | | | | | | |
| Jan-97 | 4,470 | 4,508 | 554 | 5,062 | 592 | 88.3 |
| Jun-97 | 3,813 | 4,699 | 548 | 5,247 | 1,434 | 72.7 |
| Dec-97 | 4,005 | 4,881 | 536 | 5,417 | 1,412 | 73.9 |
| Jan-98 | 4,565 | 4,853 | 535 | 5,388 | 823 | 84.7 |
| Jun-98 | 3,908 | 5,054 | 529 | 5,583 | 1,675 | 70.0 |
| Dec-98 | 4,061 | 5,258 | 523 | 5,781 | 1,720 | 70.2 |
| High Case Projection | | | | | | |
| Jan-97 | 4,470 | 4,508 | 554 | 5,062 | 592 | 88.3 |
| Jun-97 | 3,813 | 4,699 | 548 | 5,247 | 1,434 | 72.7 |
| Dec-97 | 3,999 | 4,895 | 560 | 5,455 | 1,456 | 73.3 |
| Jan-98 | 4,563 | 4,873 | 559 | 5,432 | 869 | 84.0 |
| Jun-98 | 3,908 | 5,181 | 560 | 5,741 | 1,833 | 68.1 |
| Dec-98 | 4,057 | 5,562 | 562 | 6,124 | 2,067 | 66.2 |

Sources: Production Projections: Energy Information Administration, Short-Term Integrated Forecasting System, August 1997 and Model GASCAP C102997. Productive Capacity Projections: Model GASCAP94 C102997.

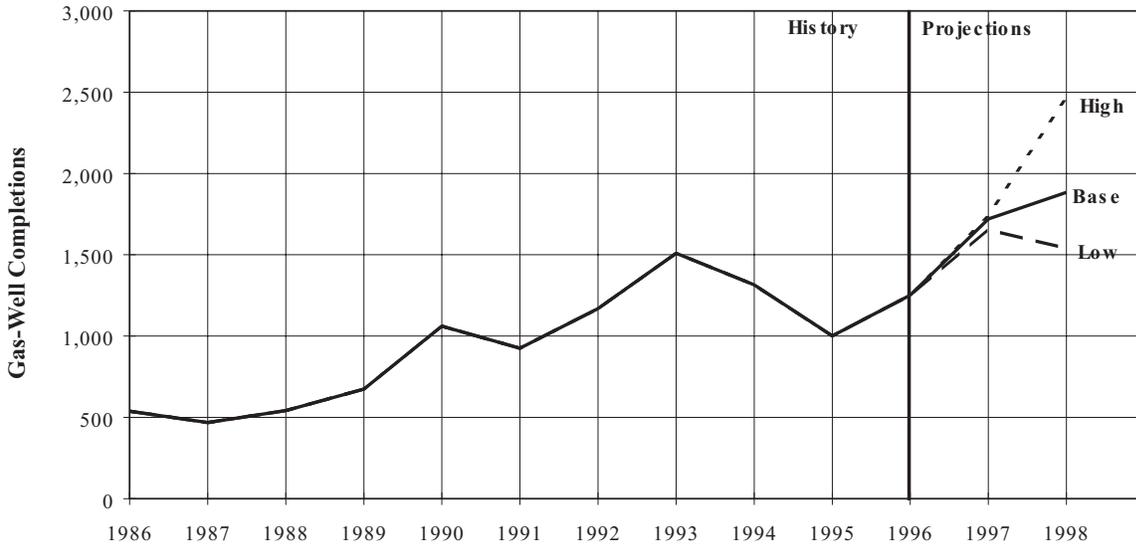
Figure 39. Rocky Mountains Dry Coalbed Gas Monthly Production Rate and Wellhead Productive Capacity, 1986-1998



Note: Production projection plotted for base case only.

Sources: Production History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc.; and Model GASCAP94 C102997. Productive Capacity: Model GASCAP94 C102997. Production Projections: Energy Information Administration, Short-Term Integrated Forecasting System, August 1997, and Model GASCAP94 C102997.

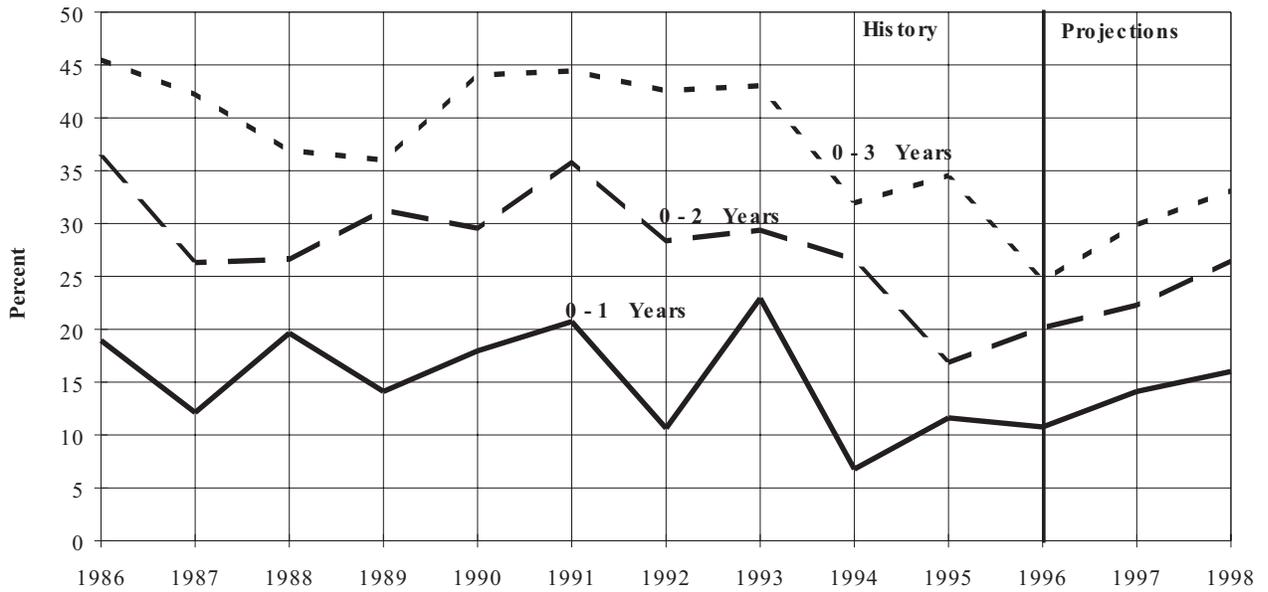
Figure 40. Rocky Mountains Gas-Well Completions Added During Year, 1986-1998



Note: The 1996 estimated history is based on Drilling Rig Model projections and Baker Hughes rig counts. Completions include recompletions in new producing zones.

Sources: History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc. Projections: Model GASCAP94 C102997.

Figure 41. Percent of Total Wellhead Productive Capacity of Rocky Mountains Gas Wells by Well Age, 1986-1998 (Base Case)



Sources: History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc. Projections: Model GASCAP94 C102997.

Eighteen States

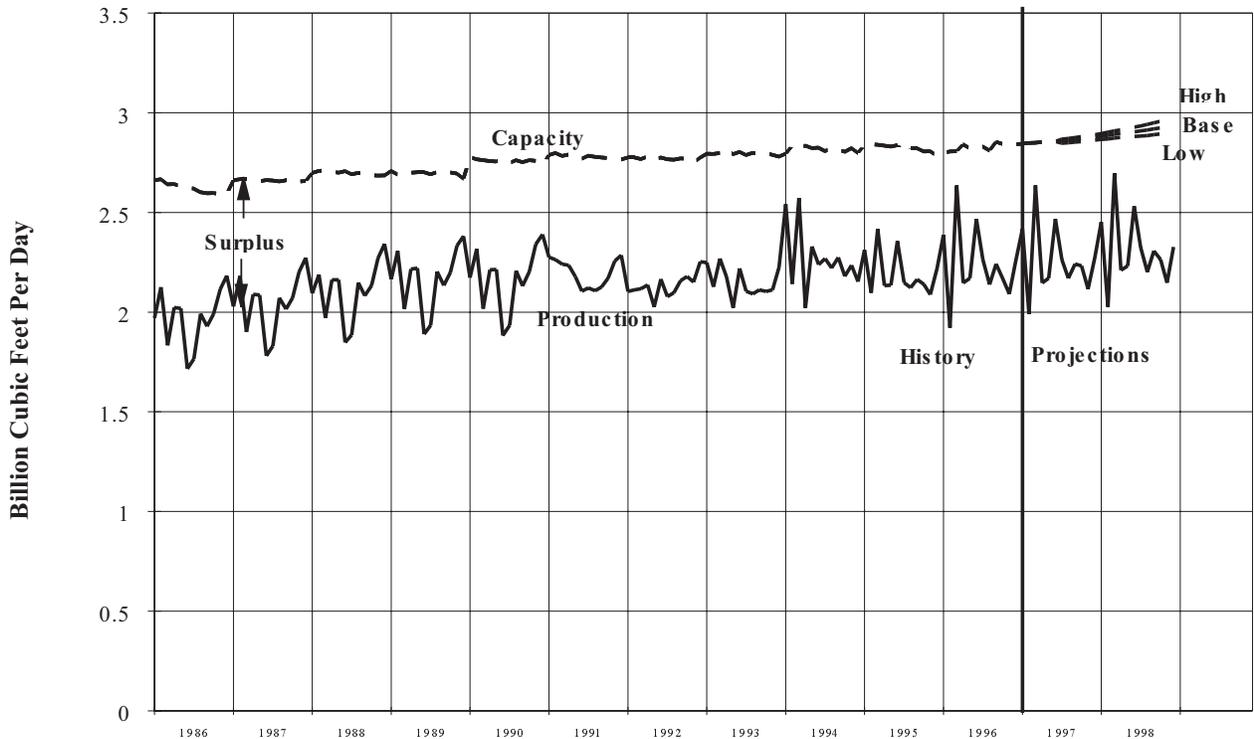
The remaining producing 18 States were considered as one group. The 18 States are:

- Arizona
- Florida
- Illinois
- Indiana
- Kentucky
- Maryland
- Michigan
- Missouri
- Nebraska
- Nevada
- New York
- Ohio
- Oregon
- Pennsylvania
- South Dakota
- Tennessee
- Virginia
- West Virginia.

Data are limited for this group of States, and only 3 of the 18 States are included in Dwight's: Nebraska, Oregon, and South Dakota. Production data are available from EIA for each of the 18 States but not by well completion.

The following pages include Tables 21 and 22 and Figures 42 and 43, which provide historical and projected production, productive capacity, and gas-well completions added.

Figure 42. Eighteen States Dry Gas Monthly Production Rate and Wellhead Productive Capacity, 1986-1998



Note: Production projection plotted for base case only. The 1996 estimated history based on Model GASCAP94 C102997 projections.

Sources: Production History: Energy Information Administration, Office of Oil and Gas and Model GASCAP94 C102997. Productive Capacity: Model GASCAP94 C102997. Production Projections: Energy Information Administration, Short-Term Integrated Forecasting System, August 1997, and Model GASCAP94 C102997.

Table 21. Eighteen States Dry Gas Production and Wellhead Productive Capacity Projections, 1986-1996 (Million Cubic Feet Per Day)

| Month-Year | Dry Gas Productive Capacity | | | | | Utilization (percent) |
|------------|-----------------------------|--------------|--------------|-----------|---------------|-----------------------|
| | Dry Production | Gas-Well Gas | Oil-Well Gas | Total Gas | Total Surplus | |
| Jan-86 | 1,970 | 2,448 | 213 | 2,661 | 691 | 74.0 |
| Jun-86 | 1,716 | 2,423 | 201 | 2,624 | 908 | 65.4 |
| Dec-86 | 2,182 | 2,402 | 189 | 2,591 | 409 | 84.2 |
| Jan-87 | 2,029 | 2,443 | 218 | 2,661 | 632 | 76.2 |
| Jun-87 | 1,781 | 2,441 | 221 | 2,662 | 881 | 66.9 |
| Dec-87 | 2,272 | 2,439 | 219 | 2,658 | 386 | 85.5 |
| Jan-88 | 2,095 | 2,484 | 214 | 2,698 | 603 | 77.7 |
| Jun-88 | 1,848 | 2,480 | 227 | 2,707 | 859 | 68.3 |
| Dec-88 | 2,341 | 2,479 | 207 | 2,686 | 345 | 87.2 |
| Jan-89 | 2,166 | 2,471 | 237 | 2,708 | 542 | 80.0 |
| Jun-89 | 1,890 | 2,474 | 228 | 2,702 | 812 | 69.9 |
| Dec-89 | 2,381 | 2,476 | 194 | 2,670 | 289 | 89.2 |
| Jan-90 | 2,173 | 2,514 | 264 | 2,778 | 605 | 78.2 |
| Jun-90 | 1,883 | 2,513 | 239 | 2,752 | 869 | 68.4 |
| Dec-90 | 2,390 | 2,513 | 226 | 2,739 | 349 | 87.3 |
| Jan-91 | 2,275 | 2,535 | 253 | 2,788 | 513 | 81.6 |
| Jun-91 | 2,105 | 2,531 | 239 | 2,770 | 665 | 76.0 |
| Dec-91 | 2,285 | 2,521 | 244 | 2,765 | 480 | 82.6 |
| Jan-92 | 2,104 | 2,521 | 255 | 2,776 | 672 | 75.8 |
| Jun-92 | 2,166 | 2,515 | 260 | 2,775 | 609 | 78.1 |
| Dec-92 | 2,253 | 2,518 | 257 | 2,775 | 522 | 81.2 |
| Jan-93 | 2,248 | 2,529 | 266 | 2,795 | 547 | 80.4 |
| Jun-93 | 2,219 | 2,535 | 269 | 2,804 | 585 | 79.1 |
| Dec-93 | 2,225 | 2,528 | 252 | 2,780 | 555 | 80.0 |
| Jan-94 | 2,541 | 2,533 | 262 | 2,795 | 254 | 90.9 |
| Jun-94 | 2,238 | 2,524 | 301 | 2,825 | 587 | 79.2 |
| Dec-94 | 2,153 | 2,523 | 276 | 2,799 | 646 | 76.9 |
| Jan-95 | 2,311 | 2,523 | 317 | 2,840 | 529 | 81.4 |
| Jun-95 | 2,356 | 2,519 | 318 | 2,837 | 481 | 83.0 |
| Dec-95 | 2,218 | 2,511 | 273 | 2,784 | 566 | 79.7 |
| Jan-96 | 2,387 | 2,514 | 283 | 2,797 | 410 | 85.3 |
| Jun-96 | 2,467 | 2,528 | 292 | 2,820 | 353 | 87.5 |
| Dec-96 | 2,257 | 2,552 | 289 | 2,841 | 584 | 79.4 |

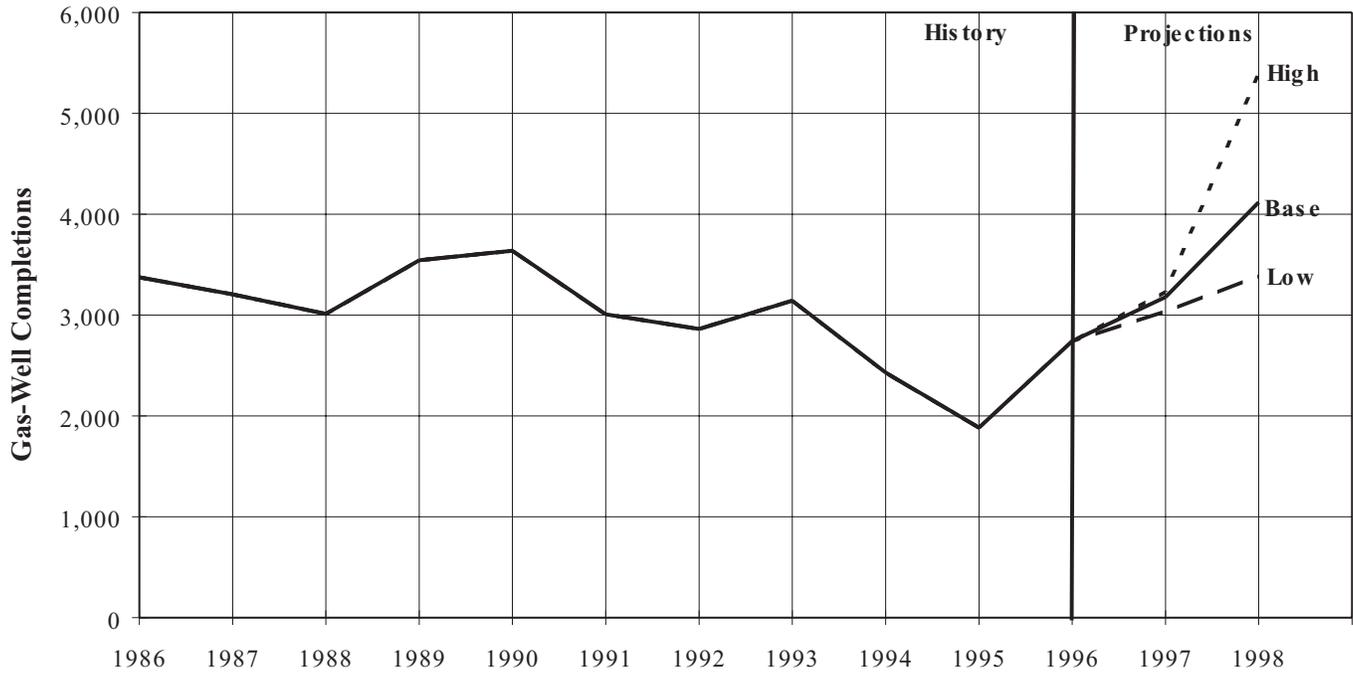
^aThe 1996 estimated history is based on Model GASCAP94 C102997 projections and Baker Hughes rig counts.
 Sources: Production History: Energy Information Administration, Office of Oil and Gas; Dwight's Energydata, Inc.; and Model GASCAP94 C102997. Productive Capacity: Model GASCAP94 C102997.

Table 22. Eighteen States Dry Gas Production and Wellhead Productive Capacity Projections, 1997-1998 (Million Cubic Feet Per Day)

| Month-Year | Dry Gas Productive Capacity | | | | | |
|-----------------------------|-----------------------------|--------------|--------------|-----------|---------------|-----------------------|
| | Dry Production | Gas-Well Gas | Oil-Well Gas | Total Gas | Total Surplus | Utilization (percent) |
| Low Case Projection | | | | | | |
| Jan-97 | 2,418 | 2,558 | 287 | 2,845 | 427 | 85.0 |
| Jun-97 | 2,467 | 2,573 | 283 | 2,856 | 389 | 86.4 |
| Dec-97 | 2,278 | 2,601 | 262 | 2,863 | 585 | 79.6 |
| Jan-98 | 2,452 | 2,606 | 260 | 2,866 | 414 | 85.6 |
| Jun-98 | 2,531 | 2,628 | 253 | 2,881 | 350 | 87.9 |
| Dec-98 | 2,336 | 2,655 | 245 | 2,900 | 564 | 80.6 |
| Base Case Projection | | | | | | |
| Jan-97 | 2,418 | 2,558 | 287 | 2,845 | 427 | 85.0 |
| Jun-97 | 2,467 | 2,573 | 283 | 2,856 | 389 | 86.4 |
| Dec-97 | 2,272 | 2,603 | 275 | 2,878 | 606 | 78.9 |
| Jan-98 | 2,451 | 2,608 | 274 | 2,882 | 431 | 85.0 |
| Jun-98 | 2,531 | 2,635 | 270 | 2,905 | 374 | 87.1 |
| Dec-98 | 2,327 | 2,668 | 266 | 2,934 | 607 | 79.3 |
| High Case Projection | | | | | | |
| Jan-97 | 2,418 | 2,558 | 287 | 2,845 | 427 | 85.0 |
| Jun-97 | 2,467 | 2,573 | 283 | 2,856 | 389 | 86.4 |
| Dec-97 | 2,269 | 2,602 | 288 | 2,890 | 621 | 78.5 |
| Jan-98 | 2,450 | 2,609 | 287 | 2,896 | 446 | 84.6 |
| Jun-98 | 2,531 | 2,642 | 286 | 2,928 | 397 | 86.4 |
| Dec-98 | 2,325 | 2,688 | 286 | 2,974 | 649 | 78.2 |

Sources: Production Projections: Energy Information Administration, Short-Term Integrated Forecasting System, August 1997 and Model GASCAP C102997. Productive Capacity Projections: Model GASCAP94 C102997.

Figure 43. Eighteen States Gas-Well Completions Added During Year, 1986-1998



Note: The 1996 estimated history is based on Drilling Rig Model projections and Baker Hughes rig counts. Completions include recompletions in new producing zones.

Sources: History: Energy Information Administration, Office of Oil and Gas. Estimates of gas-well completions based on API well completion data. Projections: Model GASCAP94 C102997.