Chapter 7

Production Loss From Reduced Drilling

All oil wells experience a declining production rate as reservoir pressures decline and as the oil closest to the wellbore is produced. Although different geologic conditions, production strategies, and oil characteristics yield different decline rates, **in all cases production** in a field can only be maintained by proceeding with secondary and tertiary recovery and by drilling additional producing wells. And as production rates in some fields inevitably decline, discovery wells must find new fields to exploit if national production is to be maintained.

As noted above, one source of lost domestic oil production resulting from low oil prices is the early abandonment of stripper wells and other marginal wells. Additional production will be lost as existing wells continue their natural declines and too few additional wells are drilled to compensate for these declines. As discussed earlier, declines may be expected in all aspects of drilling, from shallow, low-cost development wells to the most expensive offshore and arctic wells on the frontier. The reduced level of development drilling will affect production the soonest, because some of these wells can often be producing weeks or a few months after they are "spudded" (drilling has begun). At the opposite end of the spectrum, exploration wells in frontier areas may precede production by a decade or more as infrastructure is built and, in some deep offshore cases, as new production technology is designed and tested.

In order to evaluate accurately the effect of low oil prices on drilling and, eventually, on production, it is necessary to understand how the oil price change and other factors associated with it will change the level of drilling activity, the distribution of drilling (geographically, by the nature of the target, etc.), and the likely success of the drilling in adding to reserves and production. In OTA's view, there are strong uncertainties with all of these factors.

The Level of Drilling Activity

From 1981 to 1985, oil drilling rates remained very high despite declining prices and a decline in the number of operating drilling rigs (from *3,970* rotary rigs in 1981 to 1,980 in 1985[1]); during these years, the number of oil well completions ranged between 37,000 and 43,000 wells per year, with 1984 being the peak year.[2] Apportioning dry **holes between** oil and gas according to the ratio of oil to gas completions, the total wells drilled "for oil, " successful and dry, ranged between 55,000 and 60,000 thousand wells per year.

The rig count hovered around *700* for much of 1986, and, around mid-year, analysts expected the industry to drill somewhat over 30,000 "oil wells" (successful and dry)[3] during that year. Assuming that prices remain low, it is by no means clear whether drilling activity in 1987 and after will rise, fall, or remain at the same general level. Some of the 1986 activity is a short-term continuation of activity planned and begun before the price drop, with much of the capital investment sunk. For some of these projects, there will be no replacement upon their conclusion. Some additional projects will be continued because they are necessary to hold leases or fulfill contractual obligations, and these too may have no replacements. Finally, some industry analysts argue that the list of viable drilling prospects at 1986 oil prices is a very limited one, so that a continuation of those low prices for any length of time would exhaust the industry's inventory of drillable prospects and force down the drilling rate.

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[1] Independent Petroleum Association of America, "U n itedStates Petroleum Statistics, 1986. "

[2] Ibid.

[3] In industry usage, an oil well is a **successfully co** mpletedoil-producing *well. In this section,* 07A *added* a proportional number of dry holes–unsuccessful wells that are abandoned–to the number of completed **wells, and thus** our terminology will not correspond to the standard usage.

On the other hand, there are many independent drillers who claim that they have access to drilling prospects that are economic, but cannot drill because of a lack of capital. Although capital availability has seemingly evaporated from the oil market, it seems unlikely that this will continue for long if there are reasonable prospects for profitable investments. As discussed in chapter s, there are substantial disagreements about the number of economic prospects still available to the industry.

The Distribution of Drilling Targets, and the Likely Success at Adding Reserves and Production

As discussed in chapter 6, "The Efficiency of E&D Activities," reductions in exploration and development activity because of the price drop will not be uniform, since changing economics affects different regions, geologic targets, and activity types differently. For example, most of OTA's industry contacts expect drilling activity to focus on low risk prospects, with shallow development activity to sustain only a moderate decline and high-risk exploratory and deep drilling activity to suffer a substantial decline. A sign that this is beginning to happen is the downward shift in average depth of new wells; for the first 8 months of 1986, the average well depth was 4,153 v. 4,440 feet for 1985.[4] This shift in activity probably would tend to increase well success rates but decrease the reserves found per well drilled. On the other hand, some geographic shifts will tend to favor those areas that traditionally have paid off more handsomely in terms of reserves added per well. Table 44, which shows the 1980-1984 average reserves per oil well drilled for the nine regions in the United States, amply illustrates why a regional shift in drilling can greatly affect overall drilling results in terms of reserve additions.

Projections of regional drilling rates for 1986 made in July of that year by the Oil and Gas Journal,[5] a respected industry publication, indicate

Table 44.-Reserve Additions Per Oil Well Drilled, 1980-1984 Average (barrels par well)

Region	Reserves **added** per oil well (including dry holes)
Alaska	2,524,000
California	177,000
Rocky Mountains and northern Great Plains	**78,000**
West Texas and eastern New Mexico	**49,000**
Gulf Coast	**71,000**
Midcontinent	14,000
Eastern interior	5,000
Michigan basin	62,000
Appalachian	6,000
National average	50.000

SOURCE: J.P. Riva, Jr., "Domestic Oil Production and Reserves Projected to 2000 on the Basis of Regional Drilling and Per Well Reserve Additions, " Congressional Research Service, 1986.

that drilling will tend to favor regions with high historic rates of reserve additions per well, though not uniformly. For example, 1986 drilling in Alaska is expected to be higher than normal, about 265 wells drilled compared to an average of 150 wells drilled per year during 1980-84. California drilling also is expected to be high, about 2,460 wells, only slightly lower than recent levels. (However, in both these States, much of this drilling requires lengthy planning and considerable advance capital investment, and thus the 1986 drilling level may not reflect the price drop as much as activity levels in other areas.) The Gulf Coast, another "high reserves per well" area, also holds up well at about 6,700 wells, one-third under recent average levels. On the other hand, activity in the Rocky Mountains and Northern Great Plains (2,1 50 wells) and Michigan Basin (380 wells), the two other "high reserves per well" areas, is projected to decline at about the national rate.

The implication of this nonuniformity in the reduction of drilling activity is that 1986 oil reserve additions are not likely to be as low as might be expected from the percentage fall in the national drilling rate. Had the reduction been uniform and had the overall rate of reserve additions per well remained at recent levels, the expected 1986 reserve additions would have been 1.6 billion barrels. Applying the historic per well reserve rates to the regional drilling breakdown gives expected 1986 reserve additions of about 2.2 billion barrels, a value only slightly below the average for

[4] Energy Information Administration, *Short-Term Energy Outlook Quarter/y Projections, Oct. 1986,* DOE/EIA-0202(86/4Q),Nov.1986.
[5] J.C. McCaslin, "U.S. Drilling to Fall 47 percent This Year, " *Oil and Gas Journal,* July 28, 1986.

the 1980s. Note, however, that the latter value is not the "correct" value either, because:

- wide year-to-year swings **in regional finding rates virtually guarantee that any individual year's average will vary considerably from the historic rate;**
- **the changes in drilling patterns caused by the lower oil prices occur within regions as well as across them, and applying the regional finding rates does not take intraregional shifts into account;**
- **in some key States—California, in particular –past increases in reserves depend significantly on enhanced oil recovery** (EOR) in addition to exploratory and development drilling, and using such simple measures as ''reserves per well" cannot capture the effects of drastic changes in the attractiveness of EOR investments; [b] and/or
- the drilling mix is said to be shifting towards development drilling and away from exploratory drilling; such a change in the drilling mix would tend to lower overall finding rates.

Projecting Oil Reserve Additions and Production Based on Extrapolating Regional Drilling Patterns and Per Well Reserve Additions

Joseph Riva of the Science Policy Research Division, Congressional Research Service has projected regional and U.S. **oil reserve additions and production to the year 2000[7] by using the average reserve additions achieved per oil well drilled** for each of nine regions during the 5-year period 1980-84, as discussed above, and assuming that projected low rates of drilling for 19868 will continue indefinitely. As noted previously, an "equilibrium" in drilling has by no means been reached, and thus an assumption of constant drilling in each region is clearly a risky one . . . as is the assumption that per well reserve additions will remain steady at the 1980 to 1984 average. Nevertheless, this is a useful "What if. . ." analysis that can act as a counterpoint to similar analyses that postulate a considerably lower rate of reserve additions based on alternative assumptions that OTA considers overly pessimistic.

Tables 45 through 53 present the past and projected production, proved reserves, and reserves to production (R/P) ratios for the nine regions. Table 54 presents similar projections for the United States.

The regional tables show extremely interesting variations in the projected year *2000* production rates as compared to current rates. By the year *2000,* Alaska and California production rates are projected to increase by 2 and 25 percent respectively. This is contrary to current expectations. According to virtually all industry sources, Alaskan production, although it is actually somewhat higher this year than last, is expected to begin a long decline beginning around 1989. The source of the decline will be the supergiant Prudhoe Bay field, which is expected to fall from its present production rate of 0.55 billion barrels per year (1.5 million barrels per day) by more than one-half by 1995 and more than three-quarters by year 2000.[9] In this case, extrapolation of historic reserve additions and current drilling rates does not appear to work. Although recent development of new reservoirs at Prudhoe has been quite successful, there are few such opportunities left, and the recent exploratory drilling record has been disappointing: it may be that the primary possibility for a substantial recovery, after production has begun its decline, lies with the Arctic National Wildlife Refuge, discussed in chapter 5. And were the Arctic National Wildlife Refuge to be successfully explored and developed, production is unlikely to begin before the year 2000.

In California's case, maintaining or increasing production depends on offshore development and exploration and on enhanced oil recovery. Between 1980 and 1985, almost half of California's oil reserve additions came from enhanced

[6] Although most EOR projects require drilling for injection and often for production.

[7] J. P. Riva, Jr., "Domestic Oil Production and Reserves Projected to 2000 on the Basis of Regional Drilling and Per Well Reserve Additions," Congressional Research Service, Library of Congress, Dec. 9, 1986.

[8] *Oil and Gas Journal,* July 28, 1986, op. cit.

[9] J.P. Riva, Jr., op. cit.

Table 45.-Past and Projected Alaska Oil Status

Year	Product ion 10⁹ bbls/yr	Proved reserves 10⁹ bbls	R/P[a]	Total oil wells	Average oil rig count	Wells per rig	Reserve additions 10⁹ bbls/well per oil well
1970	0.083	10.149	122/1	72	13	5.5	0.136111
1975	**0.070**	10.037	143/1	61	13	4.7	0.000213
1980	**0.591**	8.751	15/1	122	14	8.7	0.003828
1981	**0.592**	8.283	14/1	159	22	7.2	0.000780
1982	**0.627**	7.406	12/1	201	21	9.6	–0.001244[b]
1983	**0.665**	7.307	11/1	159	14	11.4	0.003560
1984.	**0.638**	7.563	12/1	157	14	11.2	0.005694
1985.	**0.667**	7.056	11/1	20	20	1.0	0.008000
1986.	**0.67**	7.060	11/1	245 est.			
1990.	**0.67**	7.060	11/1				
1995.	**0.68**	7.050	10/1				
2000.	**0.68**	7.050	10/1				

[a]proved reserves/annual production.
[b]Negative values for reserve additions per welloccur whenlarge negative revisions are recorded for the region during the reference year

SOURCE: J.P. Riva, Jr., "Domestic Oil Production and Reserves Projected to 2000 on the Basis of Regional Drilling and Per Well Reserve Additions, " Congressional Research Service, 1986.

Table 46.— Past and Projected California Oil Status

Year	Production 10⁹ bbls/yr	Proved reserves 10⁹ bbls	R/P[a]	Total oil wells	Average oil rig count	Wells per rig	Reserve additions 10⁹ bbls/well per oil well
1970	0.372	3.984	11/1	1,970	50	39.4	0.000057
1975	0.322	3.648	11/1	2,184	78	28.0	0.000189
1980	0.360	5.470	1 5/1	2,416	116	20.8	0.000234
1981	0,383	5.441	14/1	3,011	152	19.8	0.000118
1982	0.394	5.405	14/1	2,464	125	19.7	0.000145
1983	0,400	5.348	1 3/1	2,242	103	21.7	0.000153
1984	0.415	5.707	1 4/1	3,259	104	31.3	0.000237
1985	0.417	5.801	14/1	2,959	81	36.5	0.000173
1986	0.42	5.820	14/1	2,460 est.			
1990	0.44	5.830	13/1				
1995	0.48	5.700	1 2/1				
2000	0.52	5.360	10/1				

[a]Proved reserves/annual production.

SOURCE: J.P. Riva, Jr., "Domestic Oil Production and Reserves Projected to 2000 on the Basis of Regional Drilling and Per Well Reserve Additions," Congressional Research Service, 1986.

Table 47.—Past and Projected Rocky Mountains and Northern Great Plains Oil Status

Year	Production 10⁹ bbls/yr	Proved reserves 10⁹ bbls	RIP[a]	Total oil wells	Average oil rig count	Wells per rig	Reserve additions 10⁹ bbls/well per oil well
1970	0.281	2.086	7/1	2,645	125	21.2	0.000070
1975	0.259	1.849	7/1	2,835	177	16.0	0.000046
1980	0.258	1.777	7/1	3,478	283	12.3	0.000122
1981	0.257	1.660	6/1	5,501	432	12.7	0.000025
1982	0.249	1.709	7/1	4,135	355	11.6	0.000072
1983	0.252	1.900	8/1	3,693	209	17.7	0.000120
1984	0.254	1.889	7/1	4,555	267	17.1	0.000053
1985	0.255	2.014	8/1	3,211	212	15.1	0.000116
1986	0.25	1.930	8/1	2,154 est.			
1990	0.23	1.640	7/1				
1995	0.20	1.430	7/1				
2000	0.18	1.320	7/1				

[a]Proved reserves/annual production.

SOURCE: J.P Riva, Jr., "Domestic Oil Production and Reserves Projected to 2000 on the Basis of Regional Drilling and Per Well Reserve Additions," Congressional Research Service, 1986.

Table 48.—Past and Projected West Texas and Eastern New Mexico Oil Status

Year	Product ion 10^9 bbls/yr	Proved reserves 10^9 bbls	R/P[a]	Total oil wells	Average oil rig count	Wells per rig	Reserve additions 10^9 bbls/well per oil well
1970	0.792	7.876	10/1	**4,542**	**187**	**24.3**	**0.000245**
1975	0.809	6.496	8/1	6,933	276	25.1	0.000035
1980	0.670	6.240	9/1	9,948	379	26.2	0.000070
1981	0.645	6.272	10/1	13,112	520	25.2	0.000052
1982	0.625	5.977	10/1	12,768	337	37.9	0.000026
1983.	0.620	5.923	10/1	12,563	357	35.2	0.000045
1984.	0.608	6.052	10/1	14,490	394	36.8	0.000051
1985.	0.620	6.454	10/1	12,946	457	28.3	0.000079
1986.	0.62	6.21	1o11	7,703 est.			
1990.	0.59	5.32	9/1				
1995.	0.53	4.45	8/1				
2000.	0.48	3.85	8/1				

[a]Proved reserves/annual production

SOURCE J.P. Riva, Jr, "Domestic Oil Production and Reserves Projected to 2000 on the Basis of Regional Drilling and Per Well Reserve Additins," **Congressional** Research Service. 198

Table 49.— Past ad Projected Gulf Coast Oil Status

Year	Production 10^9 bbls/yr	Proved reserves 10^9 bbls	R/P[a]	Total oil wells	Average oil rig count	Wells per rig	Reserve additions 10^9 bbls/well per oil well
1970.	1.381	12.174	9/1	4,923	296	16.6	0.000231
1975.	1.118	8.470	8/1	4,613	303	15.2	0.000055
1980.	0.812	5.643	7/1	7,370	584	12.6	0.000100
1981	0.774	5.707	7/1	10,036	831	12.1	0.000083
1982.	0.755	5.273	7/1	8,891	514	17.3	0.000036
1983.	0.773	5,214	7/1	9,989	509	19.6	0.000072
1984.	0.803	5.148	6/1	11,957	561	21.3	0.000062
1985.	0.786	5,012	6/1	9,987	410	24.4	0.000065
1986.	0.78	4.71	6/1	6,727 est.			
1990.	0.65	3.75	6/1				
1995.	0.55	3.24	6/1				
2000.	0.51	3.03	6/1				

[a]Proved reserves/annual Production

SOURCE: J.P. Riva, Jr. "Domestic Oil Production and Reserves Projected to 2000 on the Basis of Regional Drilling and Per Well Reserve Additions," Congressional Research Service, 1986.

Table 50.—Past and Projected Midcontinent Oil Status

Year	Production 10^9 bbls/yr	Proved reserves 10^9 bbls	R/P[a]	Total oil wells	Average oil rig count	Wells per rig	Reserve additions 10^9 bbls/well per oil well
1970.	0.324	2.108	7/1	4,560	118	38.6	0.000053
1975.	0,231	1.759	8/1	5,512	197	28.0	0.000035
1980.	0.200	1.329	7/1	12,852	418	30.7	0.000003
1981	0.218	1.428	7/1	17,695	748	23.7	0.000018
1982.	0.224	1.493	7/1	15,617	626	24.9	0.000016
1983.	0.221	1.380	6/1	14,195	396	35.8	0.000010
1984.	0.233	1.425	6/1	13,331	388	34.4	0.000021
1985.	0.223	1.503	7/1	9,616	290	33.2	0.000031
1986.	0.22	1.37	6/1	6,637 est.			
1990.	0.16	.98	7/1				
1995.	0.12	.79	7/1				
2000.	0.10	.71	7/1				

[a]Proved reserves/annual production

SOURCE: J.P Riva, Jr. "Domestic Oil Production and Reserves Projected to 2000 on the Basis of Regional Drilling and Per Well Reserve Additions," Congressional Research Service, 1986

Table 51.—Past and Projected Eastern Interior Oil Status

Year	Production 10^9 bbls/yr	Proved reserves 10^9 bbls	R/P[a]	Total oil wells	Average oil rig count	Wells per rig	Reserve additions 10^9 bbls/well per oil well
1970	0.063	0.327	5/1	1,617	15	108	0.000003
1975	0.038	0.224	6/1	2,159	18	120	0.000019
1980	0.027	0.171	6/1	4,859	27	180	–0.000001 [b]
1981	0.027	0.181	7/1	6,802	45	151	0.000005
1982	0.030	0.214	7/1	7,321	84	87	0.000009
1983	0.030	0.204	7/1	7,591	67	113	0.000003
1984	0.032	0.227	7/1	6,458	49	131	0.000009
1985	0.034	0.218	6/1	4,263	33	129	0.000006
1986	0.03	0.21	7/1	3,423 est.			
1990	0.03	0.17	6/1				
1995	0.02	0.14	7/1				
2000	0.02	0.14	7/1				

[a]Proved reserves/annual production.
[b]Negative values for reserve additions per well occur when large negative revisions are recorded for the region during the reference year

SOURCE: J.P Riva, Jr., "Domestic Oil Production and Reserves Projected to 2000 on the Basis of Regional Drilling and Per Well Reserve Additions," Congressional Research Service, 1986

Table 52.—Past and Projected Michigan Basin Oil Status

Year	Production 10^9 bbls/yr	Proved reserves 10^9 bbls	R/P[a]	Total oil wells	Average oil rig count	Wells per rig	Reserve additions 10^9 bbls/well per oil well
1970	0.012	0.046	4/1	201	8	25	0.000030
1975	0.024	0.093	4/1	439	23	19	0.000080
1980	0.037	0.205	6/1	530	25	21	0.000157
1981	0.034	0.240	7/1	650	31	21	0.000106
1982	0.029	0.184	6/1	773	27	29	– 0.000035[b]
1983	0.031	0.209	7/1	671	26	26	0.000083
1984	0.027	0.180	7/1	902	28	32	–0.000002[b]
1985	0.030	0.191	6/1	638	28	23	0.000064
1986	0.03	0.18	6/1	382 est.			
1990	0.03	0.14	5/1				
1995	0.02	0.14	7/1				
2000	0.02	0.14	7/1				

[a]Proved reserves/annual production.
[b]Negative values for reserve additions per well occur when large negative revisions are recorded for the region during the reference Year

SOURCE: J.P Riva, Jr., "Domestic Oil Production and Reserves Projected to 2000 on the Basis of Regional Drilling and Per Well Reserve Additions," Congressional Research Service, 19S6

Table 53.—Past and Projected Appalachians Region Oil Status

Year	Production 10^9 bbls/yr	Proved reserves 10^9 bbls	R/P[a]	Total oil wells	Average oil rig count	Wells per rig	Reserve additions 10^9 bbls/well per oil well
1970	0.018	0.243	14/1	1,323	20	66	0.000010
1975	0.017	0.210	12/1	1,550	17	91	0.000006
1980	0.016	0.181	11/1	4,336	55	79	0.000008
1981	0.015	0.174	12/1	4,928	71	69	0.000002
1982	0.019	0.196	10/1	3,490	45	78	0.000012
1983	0.024	0.228	10/1	2,926	31	94	0.000016
1984	0.025	0.232	9/1	3,217	38	85	0.000012
1985	0.020	0.167	8/1	3,052	43	71	–0.000015 [b]
1986	0.02	0.16	8/1	2,483 est.			
1990	0.02	0.12	6/1				
1995	0.01	0.08	8/1				
2000	0.01	0.08	8/1				

[a]Proved reserves/annual Production.
[b]Negative values for reserve additions per well occur when large negative revisions are recorded for the region during the reference Year

SOURCE' J.P. Riva, Jr., "Domestic Oil Production and Reserves Projected to 2000 on the Basis of Regional Drilling and Per Well Reserve Additions," Congressional Research Service, 1986.

recovery operations in the large heavy oilfields of the San Joaquin basin, and an additional third came from large oilfields discovered offshore.[10] Further activity in the offshore may be restricted by California's environmental aversion to offshore drilling. Further development of EOR operations may require higher prices than today's, and there are air quality restrictions as well; however, the rather basic techniques used in many of the California fields are not at the high end of the cost spectrum for EOR,[11] and price might not be as much of a constraint here as it would be elsewhere. An important source of uncertainty is the potential for technological improvements that could reduce production costs. In conclusion, fulfilling the projection for California production will require success in two difficult areas—not impossible, but surely requiring considerable good fortune.

Year 2000 production rates in all other regions are projected to decline from 1985 rates, as follows:

Rocky Mountains and northern Great Plains	–29%
West Texas and eastern New Mexico	–23%
Gulf Coast	–35%
Midcontinent	–55%
Eastern interior	–41%
Michigan basin	–33%
Appalachian region	– 50%

[10] Ibid.
[11] Personal communication, Joseph Riva, Congressional Research Service.

These very substantial projected declines demonstrate the fragility of domestic oil production, especially given the uncertainty associated with our ability to maintain production levels in Alaska and California.

Table 54 shows that the projected decline in total U.S. production associated with the drop in drilling activity is 17 percent by the year 2000. This is a modest decline when compared to the projected declines discussed in chapter 2. However, this projection does not account for the possibility that large numbers of existing wells may be abandoned as uneconomic, as discussed in the previous section. Although there appear to be problems with the analysis of stripper well abandonments conducted by the interstate oil Compact Commission (IOCC), it is worthwhile to incorporate their projections into the drilling projections above. Table 55 illustrates how future production might change if the IOCC's projected production losses at oil prices of $15/bbl were to occur. The primary effect would be to increase the expected year 2000 production loss from 17 to 22 percent.

Furthermore, a less optimistic–and many would say more realistic—projection of Alaskan and Californian production would substantially affect the national estimate. For example, assuming that only about half the Prudhoe decline can be replaced with production **from other fields (as**

Table 54.—Past and Projected United States Oil Status

Year	Production 10^9 bbls/yr	Proved reserves 10^9 bbls	R/P[a]	Total oil wells	Average oil rig count	Wells per rig	Reserve additions 10^9 bbls/well per oil well
1970	3.328	39.001	12/1	21,522	832	26	0.000590
1975	2.901	32.682	11/1	26,253	1,102	24	0.000051
1980	2.975	29.805	10/1	45,316	1,901	24	0.000066
1981	2.949	29.426	10/1	60,940	2,852	21	0.000042
1982	2.950	27.858	9/1	55,600	2,134	26	0.000025
1983	3.020	27.735	9/1	52,577	1,712	31	0.000055
1984	3.037	28.446	9/1	61,399	1,843	33	0.000061
1985	3.052	28.416	9/1	48,489	1,574	31	0.000062
1986	3.04	27.65	9/1	32,234 est.			
1990	2.82	25.01	9/1				
1995	2.61	23.02	9/1				
2000	**2.52**	**21.68**	**9/1**				

[a] proved reserves/annual production

SOURCE: J.P. Riva, Jr., "Domestic Oil Production and Reserves Projected to 2000 on the Basis of Regional Drilling and Per Well Reserve Additions." Congressional Research Service, 1986.

Table 55.—impact of Increased Stripper Well Abandonment on Low Drilling Scenario Production and Reserves Projections

Year	Production (billion bbl/yr)			Proved reserves (billion bbls)		
1985	3.052			28.416		
1986	3.04	– .10	= 2.94[a]	27.65	–.73	= 26.92[b]
1990	2.76			24.33		
1995	2.52			22.35		
2000	2.38			21.26		

[a]That is, stripper production of .10 billion bbl/yr is lost.
[b]Stripper reserves of .73 billion bbls are lost.

SOURCE: J.P. Riva, Jr., "Domestic Oil Production and Reserves Projected to 2000 on the Basis of Regional Drilling and Per Well Reserve Additions," Congressional Research Service, 1986.

noted, a three-quarter decline in current Prudhoe Bay production is expected by 2000), the year 2000 production rate would be about 2.17 billion barrels per year, a 29 percent decline from 1985 production. An important-and sobering–note about this computation is that much of Alaska's expected production decline is not price but geology dependent. Although lower prices will stifle some development and exploration, and some production also will be dependent on technology development, much of the production decline was expected at higher prices.

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