

4. Natural Gas Statistics

Dry Natural Gas

Proved Reserves

As of December 31, 1999, U.S. operators had 167,406 billion cubic feet of dry natural gas proved reserves, 2 percent more than in 1998 (Table 8).

Additions to dry gas reserves in 1999 were 22,293 billion cubic feet, up 43 percent compared to 1998. Operators replaced 118 percent of dry gas production (Figure 18). U.S. total discoveries of dry natural gas reserves were 10,807 billion cubic feet in 1998, down 5 percent from 1998 (11,433 billion cubic feet).

Proved reserves by State are shown on the map in Figure 19. Seven areas account for 75 percent of the Nation's dry natural gas proved reserves:

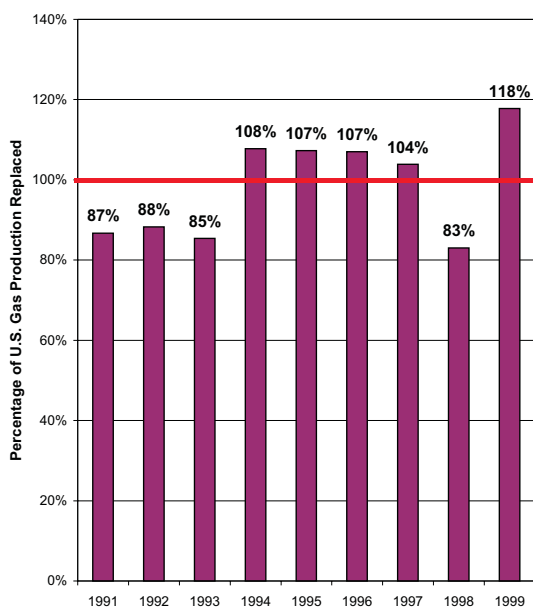
Area	Percent of U.S. Gas Reserves
Texas	24
Gulf of Mexico Federal Offshore	15
New Mexico	9
Wyoming	8
Oklahoma	7
Alaska	6
Louisiana	6
Area Total	75

Of these seven areas, Texas, New Mexico, Wyoming, and Louisiana had increased reserves in 1999, while Alaska, the Gulf of Mexico Federal Offshore, and Oklahoma had decreases in dry natural gas proved reserves.

Discussion of Reserves Changes

Figure 20 maps the change in dry gas proved reserves from 1998 to 1999 by area. Here's how the top seven areas fared, compared to the total United States:

Figure 18. Reserve Additions Replace 118% of 1999 U.S. Dry Natural Gas Production.



Source: Energy Information Administration, Office of Oil and Gas.

Area	Change in U.S. Gas Reserves (billion cubic feet)
Texas	+2,573
Gulf of Mexico Federal Offshore	-971
New Mexico	+462
Wyoming	+576
Oklahoma	-1,102
Alaska	-193
Louisiana	+95
Area Total	+1,440
U.S. Total	+3,365

Figure 4 in Chapter 2 shows the components of the changes in dry natural gas proved reserves for 1999 and the preceding 10 years.

Revisions and Adjustments

Net revisions and adjustments increased to 11,486 billion cubic feet in 1999, almost triple 1998's level (4,105 billion cubic feet). Texas had the largest increase in *net revisions and adjustments* (4,456 billion cubic feet). New Mexico had the second largest with 1,412 billion cubic feet of *net revisions and adjustments*.

Table 8. Dry Natural Gas Proved Reserves, Reserves Changes, and Production, 1999
(Billion Cubic Feet at 14.73 psia and 60° Fahrenheit)

State and Subdivision	Published Proved Reserves 12/31/98	Changes in Reserves During 1999						Estimated Production (-)	Proved Reserves 12/31/99
		Adjustments (+,-)	Revision Increases (+)	Revision Decreases (-)	Extensions (+)	New Field Discoveries (+)	New Reservoir Discoveries in Old Fields (+)		
Alaska	9,927	133	3,577	3,525	2	56	23	459	9,734
Lower 48 States	154,114	849	38,590	28,138	7,041	1,512	2,173	18,469	157,672
Alabama	4,604	-17	215	140	1	0	0	376	4,287
Arkansas	1,328	-48	761	376	27	1	12	163	1,542
California	2,244	111	553	316	58	0	3	266	2,387
Coastal Region Onshore	106	-11	69	10	46	0	0	8	192
Los Angeles Basin Onshore	149	-1	40	15	4	0	0	9	168
San Joaquin Basin Onshore	1,945	125	398	291	8	0	3	237	1,951
State Offshore	44	-2	46	0	0	0	0	12	76
Colorado	7,881	82	2,788	1,607	430	123	9	719	8,987
Florida	88	1	0	0	0	0	0	5	84
Kansas	6,402	-152	437	479	24	6	1	486	5,753
Kentucky	1,222	34	230	41	30	0	19	59	1,435
Louisiana	9,147	509	2,571	2,297	316	44	373	1,421	9,242
North	2,898	222	1,024	842	149	0	5	377	3,079
South Offshore	5,698	104	1,412	1,238	144	23	319	927	5,535
State Offshore	551	183	135	217	23	21	49	117	628
Michigan	2,328	12	624	478	2	0	1	234	2,255
Mississippi	658	34	165	120	11	0	8	79	677
Montana	782	42	98	55	15	0	0	41	841
New Mexico	14,987	394	1,882	864	560	2	27	1,539	15,449
East	2,693	187	938	411	113	2	6	491	3,037
West	12,294	207	944	453	447	0	21	1,048	12,412
New York	218	-78	89	44	0	42	10	16	221
North Dakota	447	-13	50	31	1	0	1	39	416
Ohio	890	-75	401	113	8	0	162	94	1,179
Oklahoma	13,645	-1,233	3,029	2,251	624	0	37	1,308	12,543
Pennsylvania	1,840	-9	642	595	23	0	1	130	1,772
Texas	37,584	1,379	11,392	8,315	2,690	92	232	4,897	40,157
RRC District 1	1,104	-163	287	137	19	1	4	107	1,008
RRC District 2 Onshore	1,614	203	556	339	108	20	25	306	1,881
RRC District 3 Onshore	3,961	220	932	890	429	39	35	813	3,913
RRC District 4 Onshore	8,429	94	3,442	2,777	803	10	150	1,236	8,915
RRC District 5	1,953	52	334	203	398	3	1	219	2,319
RRC District 6	5,949	163	1,557	1,581	353	5	2	591	5,857
RRC District 7B	442	55	153	171	0	0	1	64	416
RRC District 7C	3,113	192	659	542	64	11	8	327	3,178
RRC District 8	4,857	145	1,281	514	218	2	4	559	5,434
RRC District 8A	807	121	479	96	45	1	0	100	1,257
RRC District 9	734	-16	584	64	3	0	0	104	1,137
RRC District 10	4,273	279	958	888	208	0	2	408	4,424
State Offshore	348	34	170	113	42	0	0	63	418
Utah	2,388	-56	801	322	618	4	0	220	3,213
Virginia	1,973	-12	198	81	2	0	3	66	2,017
West Virginia	2,868	28	360	260	60	0	53	173	2,936
Wyoming	13,650	171	3,857	2,910	603	18	50	1,213	14,226
Federal Offshore ^a	26,902	-283	7,406	6,405	938	1,180	1,171	4,922	25,987
Pacific (California)	480	9	107	23	0	0	0	37	536
Gulf of Mexico (Louisiana) ^a	20,774	-202	5,752	5,480	493	1,077	905	3,721	19,598
Gulf of Mexico (Texas)	5,648	-90	1,547	902	445	103	266	1,164	5,853
Miscellaneous ^b	38	28	41	38	0	0	0	3 ^c	66
U.S. Total	164,041	982	42,167	31,663	7,043	1,568	2,196	18,928	167,406

^aIncludes Federal offshore Alabama.

^bIncludes Arizona, Illinois, Indiana, Maryland, Missouri, Nebraska, Nevada, Oregon, South Dakota, and Tennessee.

^cIndicates the estimate is associated with a sampling error (95 percent confidence interval) that exceeds 20 percent of the estimated value.

Note: The production estimates in this table are based on data reported on Form EIA-23, "Annual Survey of Domestic Oil and Gas Reserves," and Form EIA-64A, "Annual Report of the Origin of Natural Gas Liquids Production." They may differ from the official Energy Information Administration production data for natural gas for 1999 contained in the *Natural Gas Annual 1999*, DOE/EIA-0131(99).

Figure 19. 1999 Dry Natural Gas Proved Reserves by Area

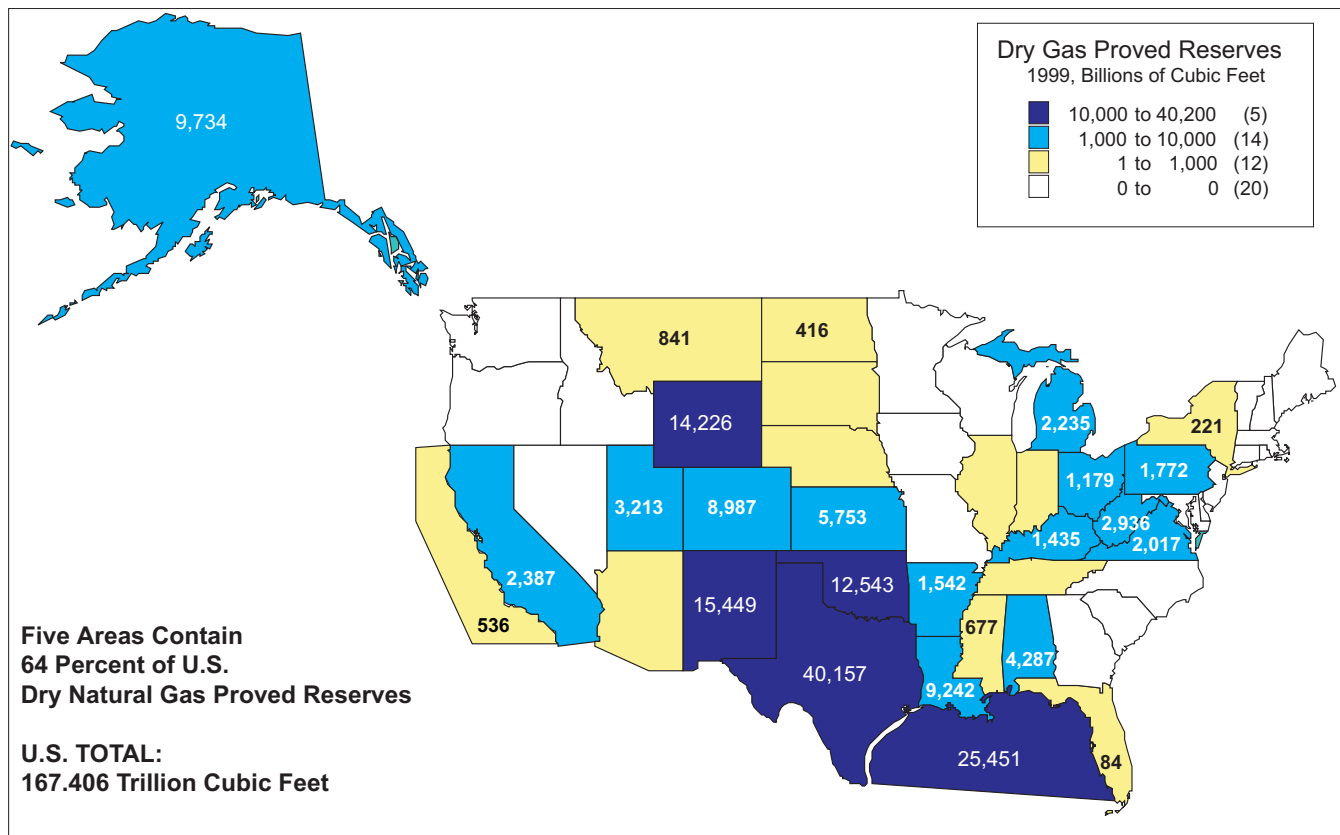
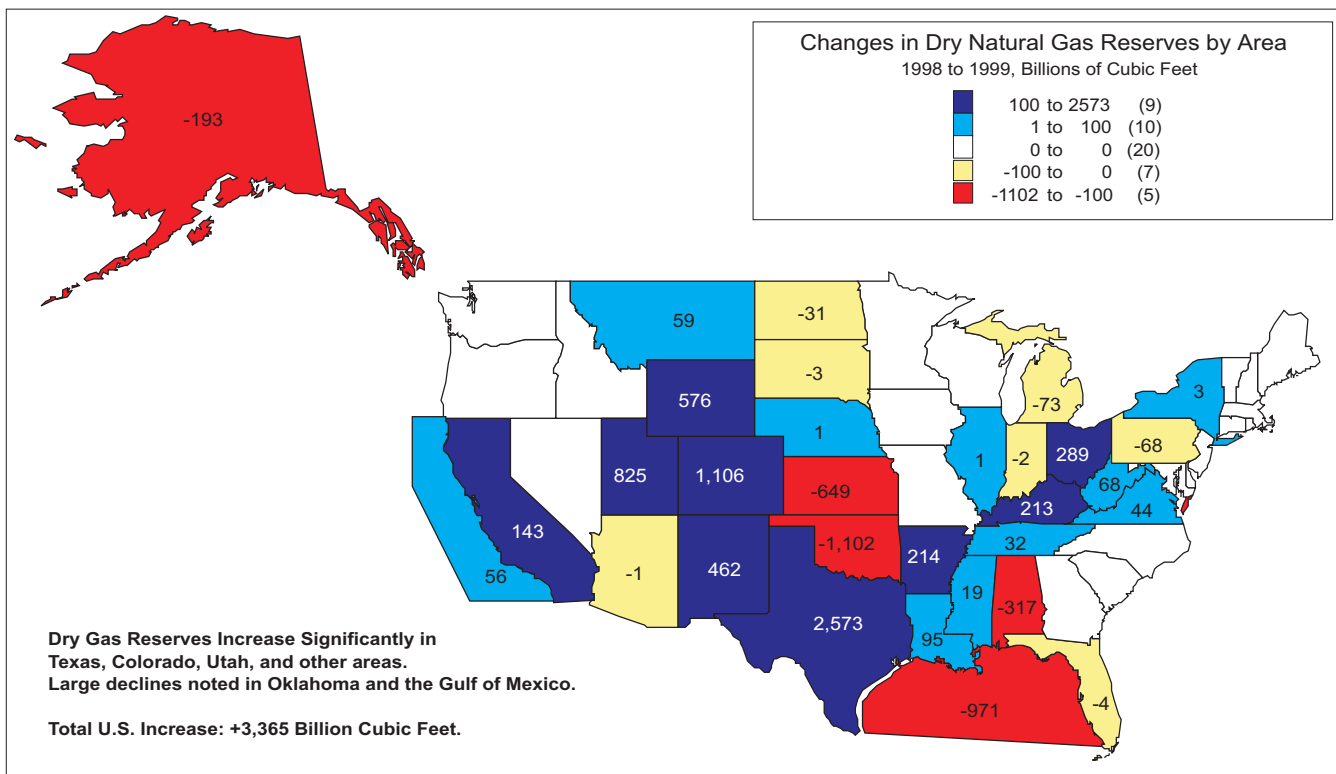


Figure 20. Changes in Dry Natural Gas Proved Reserves by Area, 1998 to 1999



Source: Energy Information Administration, Office of Oil and Gas.

Discoveries

Total discoveries are those reserves attributable to field extensions, new field discoveries, and new reservoir discoveries in old fields; they result from drilling exploratory wells. *Total discoveries* of dry natural gas reserves were 10,807 billion cubic feet in 1999, a 5 percent decrease from the level reported in 1998 and equivalent to 57 percent of 1999 dry gas production. About 30 percent of the *total discoveries* were in the Gulf of Mexico Federal Offshore, and 28 percent were in Texas.

Extensions were 7,043 billion cubic feet, 14 percent lower than in 1998. Areas with the largest *extensions* and their percentage of total *extensions* were:

- Texas (38 percent)
- Gulf of Mexico Federal Offshore (13 percent)
- Oklahoma (9 percent)
- Utah (9 percent)
- Wyoming (9 percent)
- New Mexico (8 percent).

In the prior 10 years, U.S. operators reported an average of 7,048 billion cubic feet of dry gas reserves from *extensions* per year. Reserves from *extensions* in 1999 were almost an exact match of this average volume.

New field discoveries were 1,568 billion cubic feet in 1999—46 percent more than in 1998. Those areas with the largest *new field discoveries* were the Gulf of Mexico Federal Offshore (with 75 percent of the total), Colorado (8 percent), and Texas (6 percent). In the prior 10 years, U.S. operators reported an average of 1,462 billion cubic feet of reserves from *new field discoveries* per year. Reserves from *new field discoveries* in 1999 were 7 percent higher than that average.

New reservoir discoveries in old fields were 2,196 billion cubic feet, 2 percent higher than 1998. Among the areas with the largest *new reservoir discoveries in old fields* and their percentage of the total were:

- Gulf of Mexico Federal Offshore (53 percent)
- Louisiana (17 percent)
- Texas (11 percent).

In the prior 10 years, U.S. operators reported an average of 2,344 billion cubic feet of reserves from *new reservoirs discovered in old fields* per year. Reserves from *new reservoirs discovered in old fields* in 1999 were 6 percent lower than that average volume.

Production

The estimated 1999 U.S. dry natural gas production was 18,928 billion cubic feet, an increase of 1 percent from 1998 (**Table 8**). As in 1998, the Gulf of Mexico Federal Offshore and the State of Texas were the leading producers of dry natural gas in 1999, each with over one-fourth of the U.S. total. The next three States combined, New Mexico (8 percent), Louisiana (8 percent), and Oklahoma (7 percent) added almost another one-fourth of the 1999 dry gas production.

Wet Natural Gas

U. S. proved reserves of wet natural gas as of December 31, 1999 were 176,159 billion cubic feet, a 2 percent increase from the volume reported in 1998 (**Table 9**). At year-end 1999, proved wet natural gas reserves for the lower 48 States had increased by 2 percent compared to 1998, while those of Alaska had decreased by 2 percent.

The volumetric differences between the estimates reported in **Table 8** (dry) and **Table 9** (wet) result from the removal of natural gas liquids at natural gas processing plants. A discussion of the methodology used to generate wet and dry natural gas reserves tables in this report is found in Appendix F. All natural gas proved reserves data shown in this report exclude natural gas held in underground storage.

Nonassociated Natural Gas

Proved Reserves

Proved reserves of nonassociated (NA) natural gas, wet after lease separation, in the United States increased by 2 percent (2,961 billion cubic feet) in 1999 to 144,744 billion cubic feet (**Table 10**). The lower 48 States' NA wet natural gas proved reserves increased 2 percent to a level of 142,098 billion cubic feet, while Alaska declined 4 percent to a level of 2,646 billion cubic feet of NA wet natural gas proved reserves in 1999. Those States with the largest increases in NA wet natural gas reserves were Texas, Colorado, Utah, Wyoming, and New Mexico. There were large decreases in NA wet natural gas reserves in Oklahoma, Kansas, and the Gulf of Mexico Federal Offshore.

Discoveries

NA wet natural gas *total discoveries* of 9,884 billion cubic feet in 1999 decreased 10 percent (1,050 billion cubic

Table 9. Natural Gas Proved Reserves, Reserves Changes, and Production, Wet After Lease Separation, 1999 (Billion Cubic Feet at 14.73 psia and 60° Fahrenheit)

State and Subdivision	Published Proved Reserves 12/31/98	Changes in Reserves During 1999							Proved Reserves 12/31/99		
		Adjustments (+,-)	Revision Increases (+)	Revision Decreases (-)	Extensions (+)	New Field Discoveries (+)	New Reservoir Discoveries in Old Fields (+)	Estimated Production (-)	Total Gas	Non-associated Gas	Associated Dissolved Gas
Alaska	10,043	144	3,627	3,575	2	56	23	465	9,855	2,646	7,209
Lower 48 States	162,400	958	40,606	29,476	7,399	1,566	2,242	19,391	166,304	142,098	24,206
Alabama	4,643	31	219	142	1	0	0	387	4,365	4,338	27
Arkansas	1,332	-48	763	377	27	1	12	164	1,546	1,505	41
California	2,332	125	583	329	68	0	3	277	2,505	355	2,150
Coastal Region Onshore	118	-3	84	12	56	0	0	10	233	0	233
Los Angeles Basin Onshore	154	0	41	16	4	0	0	9	174	0	174
San Joaquin Basin Onshore	2,016	129	412	301	8	0	3	246	2,021	336	1,685
State Offshore	44	-1	46	0	0	0	0	12	77	19	58
Colorado	8,208	105	2,875	1,660	443	135	10	744	9,372	8,591	781
Florida	106	0	0	0	0	0	0	6	100	0	100
Kansas	6,862	-73	475	521	26	6	1	528	6,248	6,196	52
Kentucky	1,295	44	245	43	31	0	20	62	1,530	1,501	29
Louisiana	9,480	597	2,678	2,393	329	47	394	1,486	9,646	8,667	979
North	2,943	224	1,041	855	152	0	5	383	3,127	2,867	260
South Onshore	5,966	173	1,495	1,310	152	25	337	980	5,858	5,259	599
State Offshore	571	200	142	228	25	22	52	123	661	541	120
Michigan	2,386	16	639	491	2	0	1	240	2,313	2,086	227
Mississippi	662	34	166	120	11	0	8	80	681	650	31
Montana	789	46	98	56	15	0	0	41	851	784	67
New Mexico	16,259	392	2,044	942	611	2	30	1,646	16,750	15,172	1,578
East	3,039	153	1,040	456	125	2	7	544	3,366	1,880	1,486
West	13,220	239	1,004	486	486	0	23	1,102	13,384	13,292	92
New York	218	-78	89	44	0	42	10	16	221	212	9
North Dakota	501	-4	57	36	1	0	1	45	475	225	250
Ohio	890	-75	401	113	8	0	162	94	1,179	777	402
Oklahoma	14,517	-1,169	3,258	2,422	672	0	39	1,405	13,490	12,252	1,238
Pennsylvania	1,848	-9	645	598	23	0	1	130	1,780	1,684	96
Texas	40,793	1,165	12,327	8,858	2,841	97	245	5,260	43,350	35,470	7,880
RRC District 1	1,152	-2	351	167	23	1	5	131	1,232	1,165	67
RRC District 2 Onshore	1,720	188	583	355	113	20	26	321	1,974	1,772	202
RRC District 3 Onshore	4,205	210	984	940	453	40	38	858	4,132	3,218	914
RRC District 4 Onshore	8,824	115	3,611	2,912	842	11	157	1,297	9,351	9,169	182
RRC District 5	1,995	35	339	205	404	3	1	222	2,350	2,301	49
RRC District 6	6,271	102	1,623	1,648	368	5	2	616	6,107	5,562	545
RRC District 7B	510	44	170	190	0	0	1	70	465	275	190
RRC District 7C	3,496	241	746	613	72	13	9	371	3,593	2,977	616
RRC District 8	5,547	89	1,443	579	245	3	4	630	6,122	2,947	3,175
RRC District 8A	1,115	35	592	118	56	1	0	124	1,557	44	1,513
RRC District 9	864	-5	699	76	3	0	0	125	1,360	1,180	180
RRC District 10	4,744	81	1,015	942	220	0	2	432	4,688	4,447	241
State Offshore	350	32	171	113	42	0	0	63	419	413	6
Utah	2,502	-52	838	343	653	5	0	232	3,371	3,050	321
Virginia	1,973	-12	198	81	2	0	3	66	2,017	2,017	0
West Virginia	2,968	32	372	270	62	0	55	179	3,040	2,952	88
Wyoming	14,371	26	4,014	3,027	618	19	51	1,263	14,809	14,096	713
Federal Offshore ^a	27,426	-163	7,581	6,572	955	1,212	1,196	5,037	26,598	19,505	7,093
Pacific (California)	489	0	107	23	0	0	0	37	536	48	488
Gulf of Mexico (Louisiana) ^a	21,261	-79	5,917	5,642	507	1,108	929	3,829	20,172	14,950	5,222
Gulf of Mexico (Texas)	5,676	-84	1,557	907	448	104	267	1,171	5,890	4,507	1,383
Miscellaneous ^b	39	28	41	38	0	0	0	3 ^c	67	13	54
U.S. Total	172,443	1,102	44,233	33,051	7,401	1,622	2,265	19,856	176,159	144,744	31,415

^aIncludes Federal offshore Alabama.

^bIncludes Arizona, Illinois, Indiana, Maryland, Missouri, Nebraska, Nevada, Oregon, South Dakota, and Tennessee.

^cIndicates the estimate is associated with a sampling error (95 percent confidence interval) that exceeds 20 percent of the estimated value.

Note: The production estimates in this table are based on data reported on Form EIA-23. They may differ from the official Energy Information Administration production data for natural gas for 1999 contained in the *Natural Gas Annual 1999*, DOE/EIA-0131(99).

Source: Energy Information Administration, Office of Oil and Gas.

Table 10. Nonassociated Natural Gas Proved Reserves, Reserves Changes, and Production, Wet After Lease Separation, 1999
(Billion Cubic Feet at 14.73 psia and 60° Fahrenheit)

State and Subdivision	Published Proved Reserves 12/31/98	Changes in Reserves During 1999						Estimated Production (-)	Proved Reserves 12/31/99
		Adjustments (+,-)	Revision Increases (+)	Revision Decreases (-)	Extensions (+)	New Field Discoveries (+)	New Reservoir Discoveries in Old Fields (+)		
Alaska	2,768	-1	50	45	0	53	23	202	2,646
Lower 48 States	139,015	960	32,957	24,301	6,815	1,175	1,818	16,341	142,098
Alabama	4,615	31	210	139	1	0	0	380	4,338
Arkansas	1,294	-47	734	357	27	1	12	159	1,505
California	453	27	92	176	3	0	3	47	355
Coastal Region Onshore	2	0	0	2	0	0	0	0	0
Los Angeles Basin Onshore	1	-1	0	0	0	0	0	0	0
San Joaquin Basin Onshore	445	28	72	174	3	0	3	41	336
State Offshore	5	0	20	0	0	0	0	6	19
Colorado	7,436	92	2,727	1,565	443	135	10	687	8,591
Florida	0	0	0	0	0	0	0	0	0
Kansas	6,802	-66	453	503	24	6	0	520	6,196
Kentucky	1,275	43	231	39	31	0	20	60	1,501
Louisiana	8,569	556	2,298	2,108	264	46	365	1,323	8,667
North	2,760	184	930	793	109	0	5	328	2,867
South Onshore	5,336	191	1,271	1,108	130	24	309	894	5,259
State Offshore	473	181	97	207	25	22	51	101	541
Michigan	2,158	44	532	441	1	0	0	208	2,086
Mississippi	615	40	156	106	11	0	8	74	650
Montana	737	42	56	28	12	0	0	35	784
New Mexico	14,816	357	1,544	734	580	2	28	1,421	15,172
East	1,694	104	558	251	94	2	6	327	1,880
West	13,122	253	986	483	486	0	22	1,094	13,292
New York	217	-84	86	44	0	42	10	15	212
North Dakota	240	-3	7	6	0	0	1	14	225
Ohio	548	-36	343	88	8	0	54	52	777
Oklahoma	13,321	-1,064	2,703	2,103	634	0	39	1,278	12,252
Pennsylvania	1,769	-5	616	589	15	0	0	122	1,684
Texas	33,429	1,179	9,927	7,525	2,582	81	235	4,438	35,470
RRC District 1	1,101	0	318	159	23	1	5	124	1,165
RRC District 2 Onshore	1,516	181	561	337	113	12	26	300	1,772
RRC District 3 Onshore	3,275	185	679	684	321	34	35	627	3,218
RRC District 4 Onshore	8,430	129	3,555	2,673	838	11	156	1,277	9,169
RRC District 5	1,906	34	336	172	404	2	1	210	2,301
RRC District 6	5,691	126	1,338	1,374	360	5	2	586	5,562
RRC District 7B	306	35	154	165	0	0	0	55	275
RRC District 7C	2,939	243	563	542	60	13	7	306	2,977
RRC District 8	2,727	103	632	344	200	3	1	375	2,947
RRC District 8A	18	35	8	9	0	0	0	8	44
RRC District 9	665	0	676	63	3	0	0	101	1,180
RRC District 10	4,510	76	946	895	218	0	2	410	4,447
State Offshore	345	32	161	108	42	0	0	59	413
Utah	2,293	-52	623	264	653	5	0	208	3,050
Virginia	1,973	-12	198	81	2	0	3	66	2,017
West Virginia	2,925	32	311	259	61	0	55	173	2,952
Wyoming	13,577	27	3,883	2,879	598	19	44	1,173	14,096
Federal Offshore ^a	19,931	-164	5,227	4,236	865	838	931	3,887	19,505
Pacific (California)	52	0	0	4	0	0	0	0	48
Gulf of Mexico (Louisiana) ^a	15,427	-80	4,054	3,434	443	734	729	2,923	14,950
Gulf of Mexico (Texas)	4,452	-84	1,173	798	422	104	202	964	4,507
Miscellaneous ^b	22	23	0	31	0	0	0	1	13
U.S. Total	141,783	959	33,007	24,346	6,815	1,228	1,841	16,543	144,744

^aIncludes Federal offshore Alabama.

^bIncludes Arizona, Illinois, Indiana, Maryland, Missouri, Nebraska, Nevada, Oregon, South Dakota, and Tennessee.

Note: The production estimates in this table are based on data reported on Form EIA-23, "Annual Survey of Domestic Oil and Gas Reserves." They may differ from the official Energy Information Administration production data for natural gas for 1999 contained in the *Natural Gas Annual 1999*, DOE/EIA-0131(99).

Source: Energy Information Administration, Office of Oil and Gas.

Table 11. Associated-Dissolved Natural Gas Proved Reserves, Reserves Changes, and Production, Wet After Lease Separation, 1999
(Billion Cubic Feet at 14.73 psia and 60° Fahrenheit)

State and Subdivision	Published Proved Reserves 12/31/98	Changes in Reserves During 1999							Proved Reserves 12/31/99
		Adjustments (+,-)	Revision Increases (+)	Revision Decreases (-)	Extensions (+)	New Field Discoveries (+)	New Reservoir Discoveries in Old Fields (+)	Estimated Production (-)	
Alaska.....	7,275	145	3,577	3,530	2	3	0	263	7,209
Lower 48 States	23,385	-2	7,649	5,175	584	391	424	3,050	24,206
Alabama.....	28	0	9	3	0	0	0	7	27
Arkansas.....	38	-1	29	20	0	0	0	5	41
California.....	1,879	98	491	153	65	0	0	230	2,150
Coastal Region Onshore.....	116	-3	84	10	56	0	0	10	233
Los Angeles Basin Onshore ...	153	1	41	16	4	0	0	9	174
San Joaquin Basin Onshore ...	1,571	101	340	127	5	0	0	205	1,685
State Offshore.....	39	-1	26	0	0	0	0	6	58
Colorado.....	772	13	148	95	0	0	0	57	781
Florida.....	106	0	0	0	0	0	0	6	100
Kansas.....	60	-7	22	18	2	0	1	8	52
Kentucky.....	20	1	14	4	0	0	0	2	29
Louisiana.....	911	41	380	285	65	1	29	163	979
North.....	183	40	111	62	43	0	0	55	260
South Onshore.....	630	-18	224	202	22	1	28	86	599
State Offshore.....	98	19	45	21	0	0	1	22	120
Michigan.....	228	-28	107	50	1	0	1	32	227
Mississippi.....	47	-6	10	14	0	0	0	6	31
Montana.....	52	4	42	28	3	0	0	6	67
New Mexico.....	1,443	35	500	208	31	0	2	225	1,578
East.....	1,345	49	482	205	31	0	1	217	1,486
West.....	98	-14	18	3	0	0	1	8	92
New York.....	1	6	3	0	0	0	0	1	9
North Dakota.....	261	-1	50	30	1	0	0	31	250
Ohio.....	342	-39	58	25	0	0	108	42	402
Oklahoma.....	1,196	-105	555	319	38	0	0	127	1,238
Pennsylvania.....	79	-4	29	9	8	0	1	8	96
Texas.....	7,364	-14	2,400	1,333	259	16	10	822	7,880
RRC District 1.....	51	-2	33	8	0	0	0	7	67
RRC District 2 Onshore.....	204	7	22	18	0	8	0	21	202
RRC District 3 Onshore.....	930	25	305	256	132	6	3	231	914
RRC District 4 Onshore.....	394	-14	56	239	4	0	1	20	182
RRC District 5.....	89	1	3	33	0	1	0	12	49
RRC District 6.....	580	-24	285	274	8	0	0	30	545
RRC District 7B.....	204	9	16	25	0	0	1	15	190
RRC District 7C.....	557	-2	183	71	12	0	2	65	616
RRC District 8.....	2,820	-14	811	235	45	0	3	255	3,175
RRC District 8A.....	1,097	0	584	109	56	1	0	116	1,513
RRC District 9.....	199	-5	23	13	0	0	0	24	180
RRC District 10.....	234	5	69	47	2	0	0	22	241
State Offshore.....	5	0	10	5	0	0	0	4	6
Utah.....	209	0	215	79	0	0	0	24	321
Virginia.....	0	0	0	0	0	0	0	0	0
West Virginia.....	43	0	61	11	1	0	0	6	88
Wyoming.....	794	-1	131	148	20	0	7	90	713
Federal Offshore ^a	7,495	1	2,354	2,336	90	374	265	1,150	7,093
Pacific (California).....	437	0	107	19	0	0	0	37	488
Gulf of Mexico (Louisiana) ^a	5,834	1	1,863	2,208	64	374	200	906	5,222
Gulf of Mexico (Texas).....	1,224	0	384	109	26	0	65	207	1,383
Miscellaneous ^b	17	5	41	7	0	0	0	2	54
U.S. Total.....	30,660	143	11,226	8,705	586	394	424	3,313	31,415

^aIncludes Federal offshore Alabama.

^bIncludes Arizona, Illinois, Indiana, Maryland, Missouri, Nebraska, Nevada, Oregon, South Dakota, and Tennessee.

Note: The production estimates in this table are based on data reported on Form EIA-23, "Annual Survey of Domestic Oil and Gas Reserves." They may differ from the official Energy Information Administration production data for natural gas for 1999 contained in the *Natural Gas Annual 1999*, DOE/EIA-0131(99).

Source: Energy Information Administration, Office of Oil and Gas.

feet) compared to 1998. Areas with the most *total discoveries* in 1999 were Texas, the Gulf of Mexico Federal Offshore, Louisiana, Oklahoma, and Wyoming.

Production

U.S. production of NA wet natural gas increased by 57 billion cubic feet from 1998 to 1999 (Table 10). The five leading producing areas were: Texas (27 percent), the Gulf of Mexico Federal Offshore (23 percent), New Mexico (9 percent), Louisiana (8 percent) and Oklahoma (8 percent).

Associated-Dissolved Natural Gas

Proved Reserves

Proved reserves of associated-dissolved (AD) natural gas, wet after lease separation, in the United States increased 2 percent (755 billion cubic feet) to 31,415 billion cubic feet in 1999 (Table 11). Proved reserves of AD wet natural gas in the lower 48 States increased by 4 percent (821 billion cubic feet) to 24,206 billion cubic feet, and Alaska declined 1 percent to 7,209 billion cubic feet in 1999. Those areas of the country with the largest AD wet natural gas reserves and their percentage of the total were:

- Texas (25 percent)
- Alaska (23 percent)
- Gulf of Mexico Federal Offshore (21 percent)
- California (7 percent)
- New Mexico (5 percent).

These areas logically correspond to the areas of the country with the largest volumes of crude oil reserves.

Production

U.S. production of AD wet natural gas increased by 6 percent in 1999 (Table 11), and production of AD wet natural gas in the lower 48 States increased by 8 percent (228 billion cubic feet). Those areas of the country with the largest AD wet natural gas production and their percentage of the total were:

- Gulf of Mexico Federal Offshore (34 percent)
- Texas (25 percent)
- Alaska (8 percent)
- California (7 percent)

- New Mexico (7 percent).

Again, these areas logically correspond to the areas of the country with the largest volumes of crude oil production.

Coalbed Methane

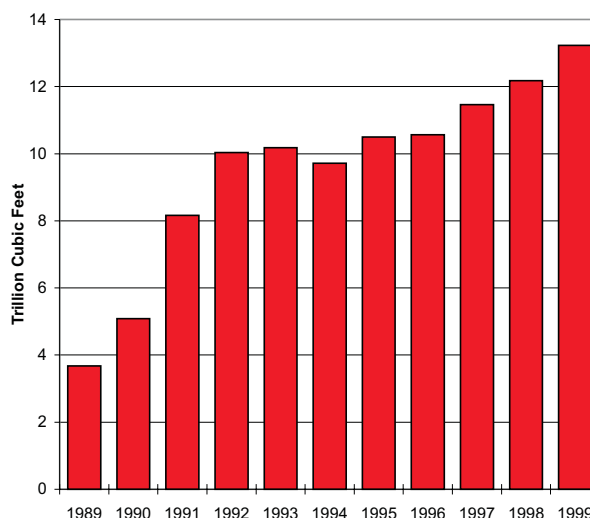
Proved Reserves

In 1999, reserves of coalbed methane increased 9 percent to 13,229 billion cubic feet from 1998's level (12,179 billion cubic feet), and now account for 8 percent of all 1999 dry natural gas reserves (Table 12). EIA estimates that the 1999 proved gas reserves of fields identified as having coalbed methane are now more than triple the volume reported in 1989 (Figure 21). Three States (New Mexico, Colorado, and Alabama) currently have the majority (75 percent) of U.S. Coalbed methane proved reserves. Estimates of proved coalbed methane reserves increased in Colorado and Alabama, but decreased slightly in New Mexico in 1999.

Production

Coalbed methane production grew by about 5 percent in 1999 to 1,252 billion cubic feet—about 7 percent of U.S. dry gas production.

Figure 21. Coalbed Methane Proved Reserves 1989-1999



Source: Energy Information Administration, Office of Oil and Gas.

Table 12. U.S. Coalbed Methane Proved Reserves and Production, 1989-1999
(Billion Cubic Feet at 14.73 psia and 60° Fahrenheit)

Year	Alabama		Colorado		New Mexico		Others ^a		Total	
	Reserves	Production	Reserves	Production	Reserves	Production	Reserves	Production	Reserves	Production
1989	537	23	1,117	12	2,022	56	0	0	3,676	91
1990	1,224	36	1,320	26	2,510	133	33	1	5,087	196
1991	1,714	68	2,076	48	4,206	229	167	3	8,163	348
1992	1,968	89	2,716	82	4,724	358	626	10	10,034	539
1993	1,237	103	3,107	125	4,775	486	1,065	18	10,184	752
1994	976	108	2,913	179	4,137	530	1,686	34	9,712	851
1995	972	109	3,461	226	4,299	574	1,767	47	10,499	956
1996	823	98	3,711	274	4,180	575	1,852	56	10,566	1,003
1997	1,077	111	3,890	312	4,351	597	2,144	70	11,462	1,090
1998	1,029	123	4,211	401	4,232	571	2,707	99	12,179	1,194
1999	1,060	108	4,826	432	4,080	582	3,263	130	13,229	1,252

^aIncludes Oklahoma, Pennsylvania, Utah, Virginia, West Virginia, and Wyoming.
Source: Energy Information Administration, Office of Oil and Gas.

Areas of Note: Large Discoveries and Reserves Additions

The following State or area discussions summarize notable activities during the year concerning expected new field reserves, development plans, and possible production rates as extracted from various trade publications and company reports. The citations do not necessarily reflect EIA's concurrence, but are considered important enough to be brought to the reader's attention.

Texas

The State of Texas had the largest increase in dry natural gas proved reserves of any State in 1999. Texas' dry natural gas reserves increased by 2,573 billion cubic feet.

South Texas: As in 1998, operators remain active in the Lobo Trend in the lower Rio Grande Valley of south Texas (RRC District 4). The trend occurs primarily in Webb and Zapata counties and contains four producing horizons: Wilcox, Expanded Wilcox, Frio, and Lobo. Unlike some other parts of the country, one or two fields do not dominate the area. RRC District 4 increased its dry natural gas reserves by 486 billion cubic feet in 1999. This district accounts for 22 percent

of all of the reserves of dry natural gas in the State and leads the State in gas production (26 percent of the State total). RRC District 4's dry gas production decreased 7 percent from 1998 to 1999.

West Texas: In 1999, operators in the Permian Basin in west Texas (RRC District 8, 8A) reported an increase in dry gas reserves of 1,027 billion cubic feet.

Colorado

Colorado had a net increase of 1,106 billion cubic feet of dry natural gas proved reserves in 1999. Development of coalbed methane fields in the San Juan Basin and other existing conventional gas fields boosted the reserves additions for this State.

Utah

Utah had a net increase of 825 billion cubic feet of dry natural gas proved reserves in 1999. This was the result of development of large existing coalbed methane fields and gas fields within the Uinta Basin.

Areas of Note: Large Reserves Declines

The following areas had large declines in dry natural gas proved reserves due to downward revisions or unreplaced production.

Oklahoma

This State's proved dry natural gas reserves decreased by 8 percent (1,102 billion cubic feet) in 1999. Dry gas production in Oklahoma declined by 15 percent (236 billion cubic feet) from 1998 to 1999.

Gulf of Mexico Federal Offshore

This area's proved dry natural gas reserves decreased by 4 percent (971 billion cubic feet) in 1999. Production from this area in 1999 remained essentially the same as in 1998 (a decline of only 13 billion cubic feet).

Kansas

This State's proved dry natural gas reserves decreased by 10 percent (649 billion cubic feet) in 1999. Production in Kansas in 1999 decreased 11 percent (62 billion cubic feet) from 1998.

Reserves in Nonproducing Reservoirs

Nonproducing proved natural gas reserves (wet after lease separation) of 36,873 billion cubic feet were reported in 1999 (**Appendix D, Table D10**). This was 2 percent more gas than in 1998 (36,047 billion cubic feet). About 30 percent of the reserves in nonproducing reservoirs are located in the Gulf of Mexico Federal Offshore area. Much of the new deepwater reserves are in the nonproducing category. Wells or reservoirs are nonproducing due to any of several operational reasons. These include:

- waiting for well workovers
- waiting for additional development or replacement wells to be drilled
- production or pipeline facilities not yet installed
- awaiting depletion of other zones or reservoirs before recompletion in reservoirs not currently open to production (called "behind pipe" reserves).