

4. Natural Gas Statistics

Dry Natural Gas

Proved Reserves

The United States had 192,513 billion cubic feet of dry natural gas reserves as of December 31, 2004, a 2 percent increase over the 2003 level (**Table 8**). All natural gas proved reserves data shown in this report exclude natural gas held in underground storage.

U.S. natural gas reserves increased for the sixth year in a row in 2004. The U.S. total went up even though Gulf of Mexico natural gas proved reserves dropped an unusually large 15 percent primarily due to low new discoveries. Discoveries of new gas fields nationwide were the lowest in 12 years. Nevertheless, because onshore lower 48 States total discoveries were almost 18 trillion cubic feet, total U.S. reserves additions replaced 118 percent of 2004 dry gas production (**Figure 18**).

U.S. dry gas production declined 1 percent in 2004. Twenty percent of U.S. dry natural gas production comes from the Gulf of Mexico Federal Offshore which

reported a 10 percent drop in production in 2004. Hurricane Ivan caused infrastructure damage that impacted oil and gas production in the Gulf in the last quarter of 2004 and will also reduce 2005 Gulf production from what it could have been.

The proved reserves by State are shown on the map in **Figure 19**. Six areas account for 74 percent of the Nation's dry natural gas proved reserves:

Area	Percent of U.S. Gas Reserves
Texas	26
Wyoming	12
Gulf of Mexico Federal Offshore	10
New Mexico	10
Colorado	8
Oklahoma	8
Area Total	74

Figure 18. Replacement of U.S. Dry Natural Gas Production by Reserves Additions, 1994-2004.



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

Table 8. Dry Natural Gas Proved Reserves, Reserves Changes, and Production, 2004
(Billion Cubic Feet at 14.73 psia and 60° Fahrenheit)

State and Subdivision	Published Proved Reserves 12/31/03	Changes in Reserves During 2004									Proved Reserves 12/31/04
		Adjustments (+,-)	Revision Increases (+)	Revision Decreases (-)	Sales (-)	Acquisitions (+)	Extensions (+)	New Field Discoveries (+)	New Reservoir Discoveries in Old Fields (+)	Estimated Production (-)	
Alaska	8,285	-1	632	207	0	0	141	0	35	478	8,407
Lower 48 States	180,759	-113	26,261	25,942	11,106	12,950	18,057	759	1,171	18,690	184,106
Alabama	4,301	34	162	155	29	0	131	3	0	327	4,120
Arkansas	1,663	13	200	91	24	52	170	4	18	170	1,835
California	2,450	19	440	152	128	147	100	0	5	247	2,634
Coastal Region Onshore	167	-3	32	9	3	7	8	0	0	10	189
Los Angeles Basin Onshore	187	1	4	48	0	0	40	0	0	10	174
San Joaquin Basin Onshore	2,013	26	389	94	123	138	51	0	5	220	2,185
State Offshore	83	-5	15	1	2	2	1	0	0	7	86
Colorado	15,436	-55	1,505	2,167	2,528	2,397	1,017	171	17	1,050	14,743
Florida	79	3	0	1	0	0	0	0	0	3	78
Kansas	4,819	24	750	647	140	174	47	1	0	376	4,652
Kentucky	1,889	-40	176	153	5	0	96	0	0	83	1,880
Louisiana	9,325	-11	1,089	1,229	935	592	1,940	18	121	1,322	9,588
North	5,074	-12	348	417	588	281	1,521	5	11	453	5,770
South Onshore	3,745	60	629	681	281	250	392	9	83	770	3,436
State Offshore	506	-59	112	131	66	61	27	4	27	99	382
Michigan	3,428	-97	205	360	13	14	90	0	31	207	3,091
Mississippi	746	20	48	55	18	9	27	0	7	93	691
Montana	1,059	-56	73	124	3	3	131	1	6	95	995
New Mexico	17,020	126	2,757	1,771	682	1,323	1,243	20	3	1,527	18,512
East	3,301	80	646	467	263	434	383	20	3	516	3,621
West	13,719	46	2,111	1,304	419	889	860	0	0	1,011	14,891
New York	365	-93	81	75	12	15	87	0	0	44	^a 324
North Dakota	448	-29	86	57	11	22	7	0	2	51	417
Ohio	1,126	-138	103	64	0	0	29	0	0	82	974
Oklahoma	15,401	-113	2,173	1,912	511	763	1,983	8	9	1,563	16,238
Pennsylvania	2,487	-188	657	567	28	29	123	0	3	155	2,361
Texas	45,730	674	7,442	6,397	2,780	4,137	5,891	264	312	5,318	49,955
RRC District 1	1,062	57	111	128	82	91	92	100	1	120	1,184
RRC District 2 Onshore	1,770	3	272	343	154	283	262	13	34	296	1,844
RRC District 3 Onshore	3,349	175	704	901	201	176	344	58	63	582	3,185
RRC District 4 Onshore	8,763	43	1,248	1,531	547	774	1,157	7	80	1,295	8,699
RRC District 5	5,407	68	1,068	421	295	622	509	7	48	490	6,523
RRC District 6	6,685	92	891	663	207	481	946	18	78	683	7,638
RRC District 7B	340	52	23	64	19	22	7	0	0	51	310
RRC District 7C	4,327	-21	829	458	271	293	316	0	1	348	4,668
RRC District 8	5,142	7	697	730	269	372	527	44	4	493	5,301
RRC District 8A	1,056	-4	234	37	17	46	14	4	0	108	1,188
RRC District 9	3,309	14	423	210	517	552	1,062	0	0	412	4,221
RRC District 10	4,064	184	777	705	74	345	654	3	0	375	4,873
State Offshore	456	4	165	206	127	80	1	10	3	65	321
Utah	3,516	113	475	278	946	953	299	5	11	282	3,866
Virginia	1,717	-19	39	69	0	0	146	0	0	72	1,742
West Virginia	3,306	-287	664	256	71	25	185	0	1	170	3,397
Wyoming	21,744	50	2,853	3,586	865	811	3,105	8	36	1,524	22,632
Federal Offshore ^b	22,570	-61	4,276	5,734	1,375	1,482	1,193	252	589	3,921	19,271
Pacific (California)	511	0	22	17	113	103	0	0	0	47	459
Gulf of Mexico (Louisiana) ^b	16,728	-85	2,034	3,201	998	1,177	1,110	208	514	2,802	14,685
Gulf of Mexico (Texas)	5,331	24	2,220	2,516	264	202	83	44	75	1,072	4,127
Miscellaneous ^c	134	-2	7	42	2	2	17	4	0	8	110
U.S. Total	189,044	-114	26,893	26,149	11,106	12,950	18,198	759	1,206	19,168	192,513

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

^bIncludes Federal offshore Alabama.

^cIncludes 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," 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 2004 contained in the *Natural Gas Annual 2004*, DOE/EIA-0131(04).

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

Figure 19. Dry Natural Gas Proved Reserves by Area, 2004

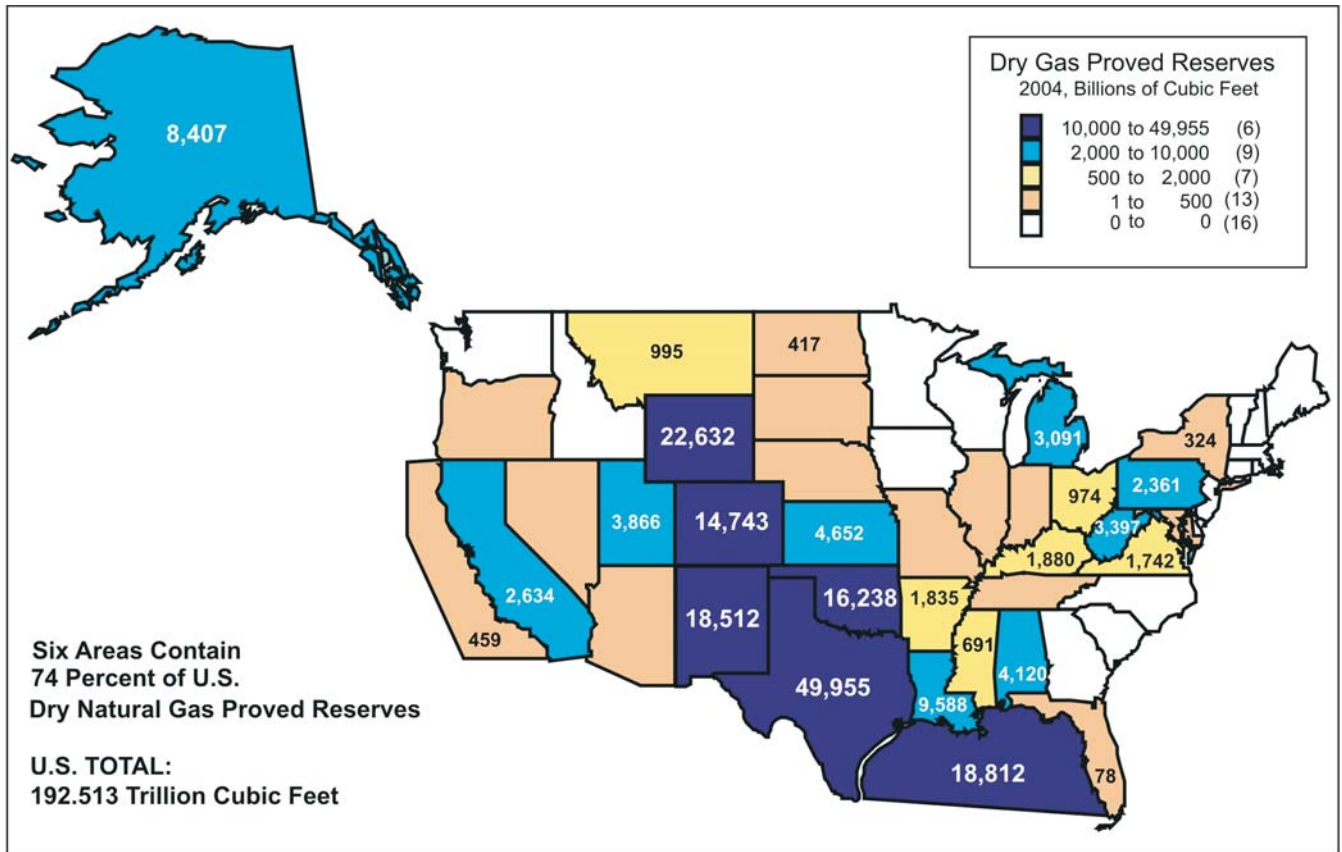
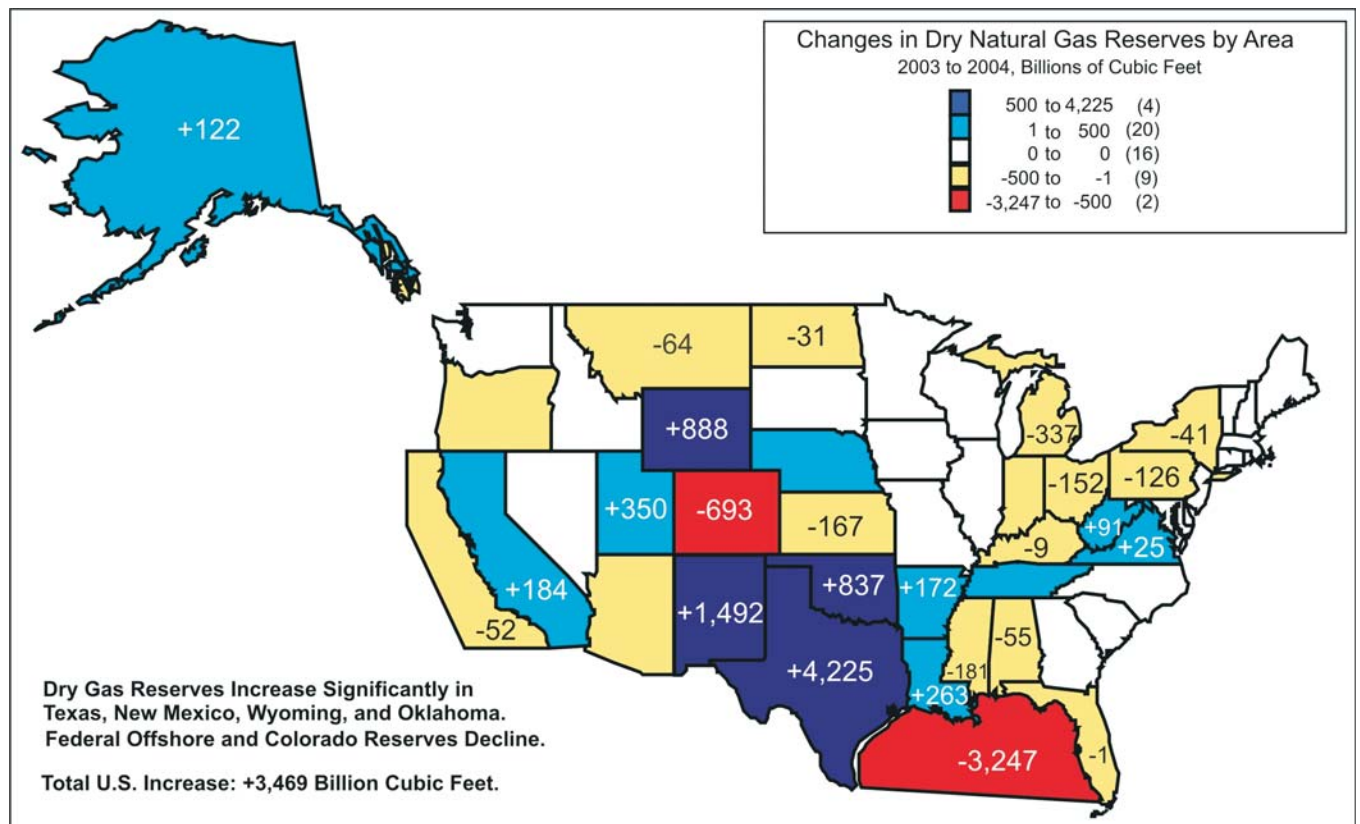


Figure 20. Changes in Dry Natural Gas Proved Reserves by Area, 2003 to 2004



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

Discussion of Reserves Changes

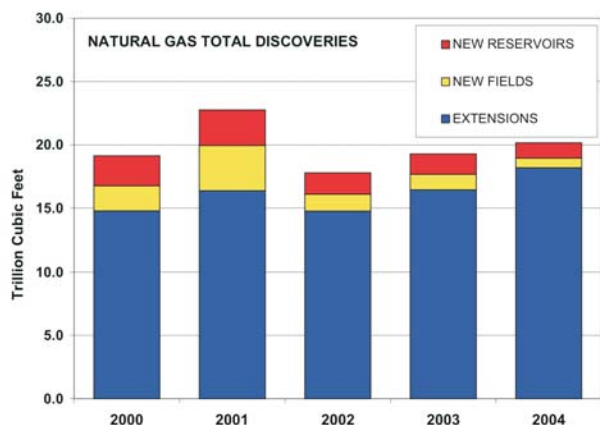
Figure 20 maps the change in dry gas proved reserves from 2003 to 2004 by area. Here's how the top six areas fared, compared to the total United States:

Area	Change in U.S. Gas Reserves (billion cubic feet)
Texas	+4,225
Wyoming	+888
Gulf of Mexico Federal Offshore	-3,247
New Mexico	+1,492
Oklahoma	+837
Colorado	-693
Area Total	+3,502
U.S. Total	+3,469

Figure 4 in Chapter 2 shows the components of change in dry natural gas proved reserves for 2004 and the preceding 10 years.

Total 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 20,163 billion cubic feet in 2004, a 5 percent increase from the level reported in 2003. About 32 percent of the total discoveries were in Texas, 16 percent were in Wyoming, 10 percent were in the Gulf of Mexico Federal Offshore, 10 percent were in Louisiana, 10 percent were in Oklahoma, and 6 percent were in New Mexico.



Extensions

The largest component of total discoveries in 2004 was extensions of existing gas fields. Extensions were 18,198 billion cubic feet, 11 percent more than 2003 and 66 percent more than the prior 10-year average (10,976 billion cubic feet). Areas with the largest extensions and their percentage of total extensions were:

- Texas had 5,891 billion cubic feet of extensions (32 percent of the total)
- Wyoming had 3,105 billion cubic feet (17 percent)
- Oklahoma had 1,983 billion cubic feet (11 percent)
- Louisiana had 1,940 billion cubic feet (11 percent)
- New Mexico had 1,243 billion cubic feet (7 percent)
- Gulf of Mexico Federal Offshore had 1,193 billion cubic feet (7 percent)
- Colorado had 1,017 billion cubic feet (6 percent).

New Field Discoveries

New field discoveries were 759 billion cubic feet in 2004—38 percent less than in 2003. The areas with the largest new field discoveries were Texas (with 264 billion cubic feet of new field discoveries; 35 percent of the total), the Gulf of Mexico Federal Offshore (252 billion cubic feet; 33 percent of the total), and Colorado (171 billion cubic feet; 23 percent of the total). In the prior 10 years, U.S. operators had reported an annual average of 1,845 billion cubic feet of reserves from new field discoveries. Reserves from new field discoveries in 2004 were the lowest since 1992 and 59 percent less than the prior 10 year average.

New Reservoir Discoveries in Old Fields

New reservoir discoveries in old fields were 1,206 billion cubic feet, 25 percent less than 2003. The areas with the largest new reservoir discoveries in old fields and their percentage of the total were:

- Gulf of Mexico Federal Offshore (589 billion cubic feet; 49 percent of the total)
- Texas (312 billion cubic feet; 26 percent of the total)
- Louisiana (121 billion cubic feet; 10 percent of the total).

Table 9. Natural Gas Proved Reserves, Reserves Changes, and Production, Wet After Lease Separation, 2004 (Billion Cubic Feet at 14.73 psia and 60° Fahrenheit)

State and Subdivision	Published Proved Reserves 12/31/03	Changes in Reserves During 2004									Proved Reserves 12/31/04
		Adjustments (+,-)	Revision Increases (+)	Revision Decreases (-)	Sales (-)	Acquisitions (+)	Extensions (+)	New Field Discoveries (+)	New Reservoir Discoveries in Old Fields (+)	Estimated Production (-)	
Alaska	8,348	0	638	208	0	0	141	0	35	481	8,473
Lower 48 States	188,797	170	27,478	27,083	11,583	13,558	18,927	790	1,209	19,536	192,727
Alabama	4,345	31	164	157	30	0	133	3	0	330	4,159
Arkansas	1,666	12	200	91	24	52	170	4	18	170	1,837
California	2,569	30	462	160	135	154	107	0	5	259	2,773
Coastal Region Onshore	174	-4	33	10	3	7	9	0	0	10	196
Los Angeles Basin Onshore	196	2	4	50	0	0	42	0	0	10	184
San Joaquin Basin Onshore	2,116	36	410	99	130	145	55	0	5	232	2,306
State Offshore	83	-4	15	1	2	2	1	0	0	7	87
Colorado	15,893	14	1,556	2,241	2,615	2,480	1,053	177	18	1,086	15,249
Florida	92	0	0	1	0	0	0	0	0	3	88
Kansas	5,143	66	806	695	151	187	50	1	0	404	5,003
Kentucky	1,971	-21	185	162	5	0	101	0	0	87	1,982
Louisiana	9,538	-13	1,119	1,263	954	606	1,973	18	126	1,358	9,792
North	5,137	-9	352	423	596	284	1,539	5	11	459	5,841
South Onshore	3,874	63	652	705	290	259	406	9	86	797	3,557
State Offshore	527	-67	115	135	68	63	28	4	29	102	394
Michigan	3,488	-87	209	367	14	15	91	0	31	212	3,154
Mississippi	748	19	49	55	18	8	27	0	7	93	692
Montana	1,068	-59	73	125	2	3	132	1	6	95	1,002
New Mexico	18,226	8	2,936	1,888	731	1,414	1,328	22	4	1,632	19,687
East	3,661	40	707	512	288	476	420	22	4	565	3,965
West	14,565	-32	2,229	1,376	443	938	908	0	0	1,067	15,722
New York	365	-93	81	75	12	15	87	0	0	44	^a 324
North Dakota	497	-30	96	64	12	25	8	0	2	57	465
Ohio	1,127	-138	103	64	0	0	29	0	0	82	975
Oklahoma	16,231	-37	2,302	2,026	541	808	2,100	9	10	1,656	17,200
Pennsylvania	2,497	-188	660	569	28	29	123	0	3	156	2,371
Texas	48,717	797	7,930	6,830	2,958	4,393	6,284	280	324	5,662	53,275
RRC District 1	1,095	66	115	133	85	95	95	104	1	124	1,229
RRC District 2 Onshore	1,849	13	286	360	162	296	275	13	35	311	1,934
RRC District 3 Onshore	3,548	214	751	962	214	188	367	62	67	621	3,400
RRC District 4 Onshore	9,055	126	1,301	1,595	571	806	1,205	7	83	1,350	9,067
RRC District 5	5,460	67	1,077	425	298	628	514	7	48	495	6,583
RRC District 6	6,959	110	929	692	216	502	987	19	81	713	7,966
RRC District 7B	383	79	27	76	22	25	8	0	0	60	364
RRC District 7C	4,791	-3	922	509	301	325	351	0	1	387	5,190
RRC District 8	5,835	-6	789	826	304	421	597	50	5	559	6,002
RRC District 8A	1,137	-2	252	40	18	49	16	4	0	117	1,281
RRC District 9	3,639	-53	457	226	559	596	1,146	0	0	445	4,555
RRC District 10	4,510	183	859	780	82	381	722	4	0	414	5,383
State Offshore	456	3	165	206	126	81	1	10	3	66	321
Utah	3,617	93	485	284	966	974	305	5	11	289	3,951
Virginia	1,717	-19	39	69	0	0	146	0	0	72	1,742
West Virginia	3,399	-281	686	265	73	26	191	0	1	175	3,509
Wyoming	22,716	47	2,980	3,745	904	847	3,244	8	38	1,591	23,640
Federal Offshore ^b	23,033	20	4,349	5,844	1,408	1,520	1,228	258	605	4,014	19,747
Pacific (California)	511	1	22	17	114	103	0	0	0	47	459
Gulf of Mexico (Louisiana) ^b	17,168	-5	2,098	3,301	1,029	1,214	1,145	214	530	2,890	15,144
Gulf of Mexico (Texas)	5,354	24	2,229	2,526	265	203	83	44	75	1,077	4,144
Miscellaneous ^c	134	-1	8	43	2	2	17	4	0	9	110
U.S. Total	197,145	170	28,116	27,291	11,583	13,558	19,068	790	1,244	20,017	201,200

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

^bIncludes Federal offshore Alabama.

^cIncludes 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 2004 contained in the *Natural Gas Annual 2004*, DOE/EIA-0131(04).

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

Table 10. Nonassociated Natural Gas Proved Reserves, Reserves Changes, and Production, Wet After Lease Separation, 2004 (Billion Cubic Feet at 14.73 psia and 60° Fahrenheit)

State and Subdivision	Published Proved Reserves 12/31/03	Changes in Reserves During 2004									Proved Reserves 12/31/04
		Adjustments (+,-)	Revision Increases (+)	Revision Decreases (-)	Sales (-)	Acquisitions (+)	Extensions (+)	New Field Discoveries (+)	New Reservoir Discoveries in Old Fields (+)	Estimated Production (-)	
Alaska	2,081	-1	49	53	0	0	108	0	26	206	2,004
Lower 48 States	166,512	192	24,058	24,068	10,579	12,571	18,053	756	1,121	17,069	171,547
Alabama	4,313	28	163	157	30	0	132	3	0	325	4,127
Arkansas	1,629	13	193	91	24	52	170	3	18	166	1,797
California	759	41	84	62	115	109	23	0	5	77	767
Coastal Region Onshore	1	0	1	0	0	0	6	0	0	0	8
Los Angeles Basin Onshore	0	0	0	0	0	0	0	0	0	0	0
San Joaquin Basin Onshore	751	45	83	62	115	109	17	0	5	76	757
State Offshore	7	-4	0	0	0	0	0	0	0	1	2
Colorado	14,707	19	1,455	2,233	2,596	2,461	943	177	18	995	13,956
Florida	0	0	0	0	0	0	0	0	0	0	0
Kansas	5,058	67	795	683	147	180	48	1	0	396	4,923
Kentucky	1,946	-21	184	155	5	0	101	0	0	87	1,963
Louisiana	8,952	-12	974	1,110	912	572	1,922	13	119	1,283	9,235
North	4,998	-19	328	373	588	284	1,533	5	11	445	5,734
South Onshore	3,506	73	543	623	260	230	365	4	80	750	3,168
State Offshore	448	-66	103	114	64	58	24	4	28	88	333
Michigan	3,219	-90	204	298	14	15	88	0	31	194	2,961
Mississippi	721	21	46	53	10	3	27	0	7	90	672
Montana	956	-55	47	113	1	1	116	1	6	86	872
New Mexico	16,681	-23	2,620	1,691	609	1,309	1,202	14	3	1,397	18,109
East	2,205	9	407	322	166	371	294	14	3	338	2,477
West	14,476	-32	2,213	1,369	443	938	908	0	0	1,059	15,632
New York	365	-93	81	75	12	15	87	0	0	44	324
North Dakota	181	-4	9	29	0	0	3	0	0	15	145
Ohio	823	-60	93	55	0	0	29	0	0	63	767
Oklahoma	15,176	-76	2,103	1,711	496	756	2,052	9	8	1,520	16,301
Pennsylvania	2,333	-183	656	530	28	29	113	0	3	147	2,246
Texas	42,280	738	6,711	6,016	2,658	4,029	6,037	277	322	4,992	46,728
RRC District 1	1,047	64	106	126	84	95	94	104	0	116	1,184
RRC District 2 Onshore	1,768	8	270	355	156	295	263	13	35	283	1,858
RRC District 3 Onshore	3,044	187	542	747	177	170	355	61	67	543	2,959
RRC District 4 Onshore	8,919	127	1,232	1,572	570	805	1,203	7	82	1,331	8,902
RRC District 5	5,398	66	1,071	419	298	628	512	7	48	488	6,525
RRC District 6	6,572	111	887	662	215	470	968	19	81	667	7,564
RRC District 7B	314	66	16	72	16	21	5	0	0	46	288
RRC District 7C	3,864	-2	811	463	272	274	293	0	1	310	4,196
RRC District 8	3,032	-11	366	472	114	238	492	48	5	318	3,266
RRC District 8A	100	-4	18	10	0	1	2	4	0	16	95
RRC District 9	3,514	-72	441	191	551	587	1,142	0	0	425	4,445
RRC District 10	4,258	194	793	721	79	365	707	4	0	387	5,134
State Offshore	450	4	158	206	126	80	1	10	3	62	312
Utah	3,318	90	454	243	937	947	284	5	11	268	3,661
Virginia	1,717	-19	39	69	0	0	146	0	0	72	1,742
West Virginia	3,376	-280	685	263	73	26	191	0	1	174	3,489
Wyoming	22,266	73	2,949	3,699	889	827	3,242	8	38	1,537	23,278
Federal Offshore ^a	15,616	18	3,508	4,692	1,021	1,238	1,080	241	531	3,133	13,386
Pacific (California)	55	0	0	0	15	8	0	0	0	1	47
Gulf of Mexico (Louisiana) ^a	11,326	-7	1,483	2,376	794	1,032	999	197	456	2,235	10,081
Gulf of Mexico (Texas)	4,235	25	2,025	2,316	212	198	81	44	75	897	3,258
Miscellaneous ^b	120	0	5	40	2	2	17	4	0	8	98
U.S. Total	168,593	191	24,107	24,121	10,579	12,571	18,161	756	1,147	17,275	173,551

^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 2004 contained in the *Natural Gas Annual 2004*, DOE/EIA-0131(04).

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, 2004 (Billion Cubic Feet at 14.73 psia and 60° Fahrenheit)

State and Subdivision	Published Proved Reserves 12/31/03	Changes in Reserves During 2004									Proved Reserves 12/31/04
		Adjustments (+,-)	Revision Increases (+)	Revision Decreases (-)	Sales (-)	Acquisitions (+)	Extensions (+)	New Field Discoveries (+)	New Reservoir Discoveries in Old Fields (+)	Estimated Production (-)	
Alaska	6,267	1	589	155	0	0	33	0	9	275	6,469
Lower 48 States	22,285	-22	3,420	3,015	1,004	987	874	34	88	2,467	21,180
Alabama	32	3	1	0	0	0	1	0	0	5	32
Arkansas	37	-1	7	0	0	0	0	1	0	4	40
California	1,810	-11	378	98	20	45	84	0	0	182	2,006
Coastal Region Onshore	173	-4	32	10	3	7	3	0	0	10	188
Los Angeles Basin Onshore	196	2	4	50	0	0	42	0	0	10	184
San Joaquin Basin Onshore	1,365	-9	327	37	15	36	38	0	0	156	1,549
State Offshore	76	0	15	1	2	2	1	0	0	6	85
Colorado	1,186	-5	101	8	19	19	110	0	0	91	1,293
Florida	92	0	0	1	0	0	0	0	0	3	88
Kansas	85	-1	11	12	4	7	2	0	0	8	80
Kentucky	25	0	1	7	0	0	0	0	0	0	19
Louisiana	586	-1	145	153	42	34	51	5	7	75	557
North	139	10	24	50	8	0	6	0	0	14	107
South Onshore	368	-10	109	82	30	29	41	5	6	47	389
State Offshore	79	-1	12	21	4	5	4	0	1	14	61
Michigan	269	3	5	69	0	0	3	0	0	18	193
Mississippi	27	-2	3	2	8	5	0	0	0	3	20
Montana	112	-4	26	12	1	2	16	0	0	9	130
New Mexico	1,545	31	316	197	122	105	126	8	1	235	1,578
East	1,456	31	300	190	122	105	126	8	1	227	1,488
West	89	0	16	7	0	0	0	0	0	8	90
New York	0	0	0	0	0	0	0	0	0	0	0
North Dakota	316	-26	87	35	12	25	5	0	2	42	320
Ohio	304	-78	10	9	0	0	0	0	0	19	208
Oklahoma	1,055	39	199	315	45	52	48	0	2	136	899
Pennsylvania	164	-5	4	39	0	0	10	0	0	9	125
Texas	6,437	59	1,219	814	300	364	247	3	2	670	6,547
RRC District 1	48	2	9	7	1	0	1	0	1	8	45
RRC District 2 Onshore	81	5	16	5	6	1	12	0	0	28	76
RRC District 3 Onshore	504	27	209	215	37	18	12	1	0	78	441
RRC District 4 Onshore	136	-1	69	23	1	1	2	0	1	19	165
RRC District 5	62	1	6	6	0	0	2	0	0	7	58
RRC District 6	387	-1	42	30	1	32	19	0	0	46	402
RRC District 7B	69	13	11	4	6	4	3	0	0	14	76
RRC District 7C	927	-1	111	46	29	51	58	0	0	77	994
RRC District 8	2,803	5	423	354	190	183	105	2	0	241	2,736
RRC District 8A	1,037	2	234	30	18	48	14	0	0	101	1,186
RRC District 9	125	19	16	35	8	9	4	0	0	20	110
RRC District 10	252	-11	66	59	3	16	15	0	0	27	249
State Offshore	6	-1	7	0	0	1	0	0	0	4	9
Utah	299	3	31	41	29	27	21	0	0	21	290
Virginia	0	0	0	0	0	0	0	0	0	0	0
West Virginia	23	-1	1	2	0	0	0	0	0	1	20
Wyoming	450	-26	31	46	15	20	2	0	0	54	362
Federal Offshore ^a	7,417	2	841	1,152	387	282	148	17	74	881	6,361
Pacific (California)	456	1	22	17	99	95	0	0	0	46	412
Gulf of Mexico (Louisiana) ^a	5,842	2	615	925	235	182	146	17	74	655	5,063
Gulf of Mexico (Texas)	1,119	-1	204	210	53	5	2	0	0	180	886
Miscellaneous ^b	14	-1	3	3	0	0	0	0	0	1	12
U.S. Total	28,552	-21	4,009	3,170	1,004	987	907	34	97	2,742	27,649

^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 2004 contained in the *Natural Gas Annual 2004*, DOE/EIA-0131(04).

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

In the prior 10 years, U.S. operators had reported an annual average of 2,425 billion cubic feet of reserves from new reservoirs discovered in old fields. Reserves from new reservoirs discovered in old fields in 2004 were 50 percent of that average.

Revisions and Adjustments

There were 26,893 billion cubic feet of revision increases, 26,149 billion cubic feet of revision decreases, and -114 billion cubic feet of adjustments in 2004. Combined, there were 630 billion cubic feet of net revisions and adjustments in 2004, excluding reserves additions from net sales and acquisitions. This is 89 percent less than the average volume of net revisions and adjustments of the prior 10 years (5,588 billion cubic feet).

Sales and Acquisitions

Sales represents that volume of dry natural gas proved reserves deducted from an operator's total reserves through sale or transfer of operations of an existing gas field or properties to another operator (not a volume of production "sold" at the wellhead). Similarly, acquisitions are that volume of proved reserves added to an operator's total reserves by purchase or operations transfer of an existing gas field or properties.

There are several reasons why sales and acquisitions volumes are not equal. Since operators have different engineering staffs and resources, or different development plans or schedules, the estimate of proved reserves for a field can change with a change in operatorship. Timing of the transfer of operations can also impact these values.

In 2004, there were 11,106 billion cubic feet of sales transactions between operators, and 12,950 billion cubic feet of acquisitions. The net difference of 1,844 billion cubic feet was added to the National total of dry natural gas reserves in 2004.

Production

The estimated 2004 U.S. dry natural gas production was 19,168 billion cubic feet (**Table 8**), a decrease of 1 percent from 2003. Areas with the largest production and their percentage of total production were:

- Texas produced 5,318 billion cubic feet (BCF) of dry natural gas (28 percent of the total)

- Gulf of Mexico Federal Offshore produced 3,874 BCF (20 percent)
- Oklahoma produced 1,563 BCF (8 percent)
- New Mexico produced 1,527 BCF (8 percent)
- Wyoming produced 1,524 BCF (8 percent)
- Louisiana produced 1,322 BCF (7 percent)
- Colorado produced 1,050 BCF (5 percent of the National total).

Wet Natural Gas

U. S. proved reserves of wet natural gas as of December 31, 2004 were 201,200 billion cubic feet, a 2 percent increase from the volume reported in 2003 (**Table 9**). At year-end 2004, proved wet natural gas reserves for the lower 48 States had increased by 2 percent compared to 2003, while those of Alaska had increased by 1 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 appears in Appendix F.

Nonassociated Natural Gas

Proved Reserves

Proved reserves of nonassociated (NA) natural gas, wet after lease separation, in the United States increased by 3 percent (4,958 billion cubic feet) in 2004 to 173,551 billion cubic feet (**Table 10**). The lower 48 States' NA wet natural gas proved reserves increased 3 percent to a level of 171,547 billion cubic feet, while Alaska had a 4 percent decline to a level of 2,004 billion cubic feet. Those States with the largest increases in NA wet natural gas reserves were Texas, New Mexico, Oklahoma, and Wyoming.

Total Discoveries

NA wet natural gas *total discoveries* of 20,064 billion cubic feet in 2004 were 7 percent more than the 2003 total of 18,712 billion cubic feet. Areas with the most *total discoveries* in 2004 were Texas (6,636 billion cubic feet), Wyoming (3,288 billion cubic feet), Oklahoma (2,069 billion cubic feet), Louisiana (2,054 billion cubic feet), the Gulf of Mexico Federal Offshore (1,852 billion cubic feet), and New Mexico (1,219 billion cubic feet).

Production

U.S. production of NA wet natural gas decreased less than 1 percent from an estimated 17,376 billion cubic feet in 2003 to 17,275 billion cubic feet in 2004. The five leading producing areas were: Texas (29 percent), the Gulf of Mexico Federal Offshore (18 percent), Wyoming (9 percent), Oklahoma (9 percent), and New Mexico (8 percent).

Associated-Dissolved Natural Gas

Proved Reserves

Proved reserves of associated-dissolved (AD) natural gas, wet after lease separation, in the United States declined 3 percent to 27,649 billion cubic feet in 2004 (Table 11). Proved reserves of AD wet natural gas in the lower 48 States decreased by 5 percent to 21,180 billion cubic feet, and in Alaska increased 3 percent (202 billion cubic feet) to 6,469 billion cubic feet. The areas of the country with the largest AD wet natural gas reserves and their percentage of the total were:

- Texas (24 percent)
- Alaska (23 percent)
- Gulf of Mexico Federal Offshore (22 percent)
- California (7 percent)

- New Mexico (6 percent).

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

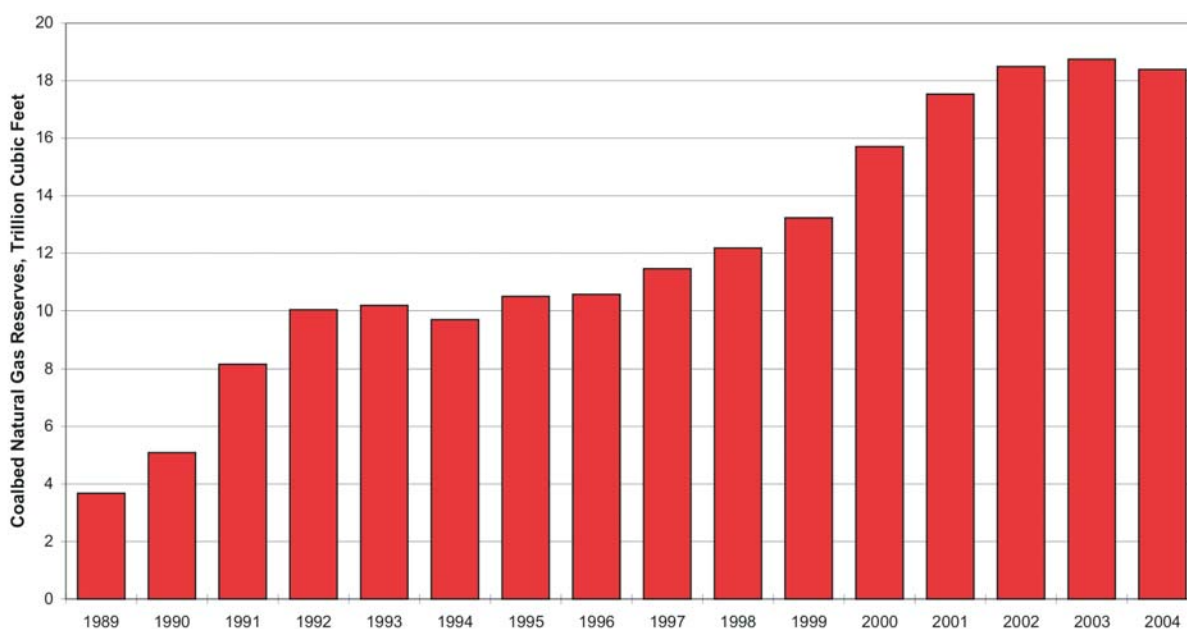
Production

U.S. production of AD wet natural gas decreased 4 percent from an estimated 2,855 billion cubic feet in 2003 to 2,742 billion cubic feet in 2004 (Table 11). Production of AD wet natural gas in the lower 48 States decreased from 2,579 billion cubic feet to 2,467 billion cubic feet in 2004, a decline of 4 percent. The areas of the country with the largest AD wet natural gas production and their percentage of the total were:

- Gulf of Mexico Federal Offshore (30 percent)
- Texas (24 percent)
- Alaska (10 percent)
- New Mexico (9 percent)
- California (7 percent).

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

Figure 21. Coalbed Natural Gas Proved Reserves, 1989-2004



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

Table 12. Coalbed Natural Gas Proved Reserves and Production, 1989–2004
(Billion Cubic Feet at 14.73 psia and 60° Fahrenheit)

Year	Alabama	Colorado	New Mexico	Utah	Wyoming	Eastern States ^a	Western States ^b	Others ^c	United States
Reserves									
1989	537	1,117	2,022	NA	NA	NA	NA	0	3,676
1990	1,224	1,320	2,510	NA	NA	NA	NA	33	5,087
1991	1,714	2,076	4,206	NA	NA	NA	NA	167	8,163
1992	1,968	2,716	4,724	NA	NA	NA	NA	626	10,034
1993	1,237	3,107	4,775	NA	NA	NA	NA	1,065	10,184
1994	976	2,913	4,137	NA	NA	NA	NA	1,686	9,712
1995	972	3,461	4,299	NA	NA	NA	NA	1,767	10,499
1996	823	3,711	4,180	NA	NA	NA	NA	1,852	10,566
1997	1,077	3,890	4,351	NA	NA	NA	NA	2,144	11,462
1998	1,029	4,211	4,232	NA	NA	NA	NA	2,707	12,179
1999	1,060	4,826	4,080	NA	NA	NA	NA	3,263	13,229
2000	1,241	5,617	4,278	1,592	1,540	1,399	41	--	15,708
2001	1,162	6,252	4,324	1,685	2,297	1,453	358	--	17,531
2002	1,283	6,691	4,380	1,725	2,371	1,488	553	--	18,491
2003	1,665	6,473	4,396	1,224	2,759	1,528	698	--	18,743
2004	1,900	5,787	5,166	934	2,085	1,620	898	--	18,390
Production									
1989	23	12	56	NA	NA	NA	NA	0	91
1990	36	26	133	NA	NA	NA	NA	1	196
1991	68	48	229	NA	NA	NA	NA	3	348
1992	89	82	358	NA	NA	NA	NA	10	539
1993	103	125	486	NA	NA	NA	NA	18	752
1994	108	179	530	NA	NA	NA	NA	34	851
1995	109	226	574	NA	NA	NA	NA	47	956
1996	98	274	575	NA	NA	NA	NA	56	1,003
1997	111	312	597	NA	NA	NA	NA	70	1,090
1998	123	401	571	NA	NA	NA	NA	99	1,194
1999	108	432	582	NA	NA	NA	NA	130	1,252
2000	109	451	550	74	133	58	4	--	1,379
2001	111	490	517	83	278	69	14	--	1,562
2002	117	520	471	103	302	68	33	--	1,614
2003	98	488	451	97	344	71	51	--	1,600
2004	121	520	528	82	320	72	77	--	1,720

^aIncludes Indiana, Ohio, Pennsylvania, Virginia, and West Virginia.

^bIncludes Arkansas, Kansas, Montana, and Oklahoma.

^cIncludes Oklahoma, Pennsylvania, Utah, Virginia, West Virginia, and Wyoming; these states are individually listed or grouped in Eastern States and Western States for 2000-2003.

NA = Not applicable.

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

Coalbed Natural Gas

Proved Reserves

Proved reserves of coalbed natural gas decreased to 18,390 billion cubic feet in 2004, 2 percent lower than the 2003 level (18,743 billion cubic feet). Coalbed natural gas accounted for 10 percent of all 2004 dry natural gas reserves (Table 12). The last time reserves of coalbed natural gas had declined was in 1994 (Figure 21). Five States (Colorado, New Mexico, Wyoming, Alabama and Utah) currently have the vast majority

(86 percent) of U.S. coalbed natural gas proved reserves. Three of them (Colorado, Wyoming, and Utah) reported declines in their proved coalbed natural gas reserves in 2004.

Production

U.S. coalbed natural gas production increased 8 percent in 2004 to 1,720 billion cubic feet. It accounted for 9 percent of U.S. dry gas production.

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

Texas had a 9 percent increase in dry natural gas proved reserves in 2004 (4,225 billion cubic feet), the largest of any State. Production also increased 3 percent (128 billion cubic feet). This resulted from exploration in South Texas and extensions of existing gas fields in the Permian Basin and the Newark East Field in north central Texas.

- **Newark East Field:** On August 6, 2004 Devon Energy Corporation (Devon) announced it had drilled its 100th horizontal well in the Barnett Shale, a vast underground natural gas bearing formation that meanders underneath 10 Texas counties. The new well is northwest of Fort Worth.

Devon, the predominant driller in the "core area" of the northwest part of the formation, has also leased almost 400,000 acres south of Fort Worth and is beginning to drill in Johnson County. One Johnson County well is producing nearly 4 million cubic feet of natural gas a day, more than double the formation's average, company officers say. Devon plans to continue drilling in the Barnett Shale at the rate of 60 new wells a year for several years.

The company estimates its natural gas reserves in the Barnett Shale are in excess of 1 trillion cubic feet. Experts estimate that every every 7 square miles of the formation contain that much natural gas. Devon soon will begin refracturing 19 of its old Barnett Shale wells, north and west of Fort Worth in Wise and Denton counties, hoping to get a little more production from them. Devon plans 50 more refracturings next year and 250 more the year after that. {41}

New Mexico

New Mexico's dry natural gas reserves increased by 9 percent (1,492 billion cubic feet) in 2004. This was the result of development in the San Juan Basin.

- **San Juan Basin Gas Area:** Measuring 7,500 square miles, the San Juan Basin Gas Area is the one of the largest natural gas producing areas and currently ranks as the leading U.S. field in both production and remaining resources. Burlington Resources (Burlington) operates 7,500 well completions, holds interests in 4,700 partner-operated completions, and has interests in 1.1 million acres. Its ongoing initiatives include applying advanced stimulation techniques to existing wells; upgrading compressors, pipelines and other infrastructure; and reducing operating costs. During 2004 Burlington participated in 361 new wells and 172 mechanical workovers of existing wells. {42}

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.

Gulf of Mexico Federal Offshore

Proved dry natural gas reserves in the Gulf of Mexico Federal Offshore decreased by 15 percent (-3,247 billion cubic feet) in 2004. Production also decreased by 10 percent from 4,306 billion cubic feet in 2003 to 3,874 billion cubic feet in 2004.

The large proved natural gas reserves drop experienced in the Gulf of Mexico was primarily due to low new field discoveries and relatively large negative revisions to proved reserves. As previously mentioned, Hurricane Ivan caused pipeline damage that shut in significant gas production in the Gulf in the last quarter of 2004. Ivan's damage will reduce 2005 Gulf production from what it could have been, and it remains to be seen what impact the damage from 2005 hurricanes will have on reserves and production in the Gulf.

For the latest estimates of 2005 hurricane damage effects, readers should visit our website at <http://www.eia.doe.gov> and select the link, "Report on the impact of recent hurricanes on energy in the US".

Colorado

Colorado's proved dry natural gas reserves decreased by 4 percent (-693 billion cubic feet) in 2004. Production in Colorado decreased 8 percent (-92 billion cubic feet) in 2004.

Michigan

Michigan's proved dry natural gas reserves decreased by 10 percent (-337 billion cubic feet) in 2004. Production in Michigan decreased 6 percent (-13 billion cubic feet) in 2004.

Reserves in Nonproducing Status

Nonproducing proved natural gas reserves (wet after lease separation) of 45,996 billion cubic feet were reported in 2004, 6 percent less than the 49,068 billion cubic feet reported in 2003 (**Appendix D, Table D10**). About 28 percent of the reserves in nonproducing status are located in Texas. Another 15 percent are in the Gulf of Mexico Federal Offshore, as most new deepwater reserves are in the nonproducing category. Wells or reservoirs are nonproducing due to any of several operational reasons. These include awaiting well workovers, the drilling of extensions or additional development wells, installation of production or pipeline facilities, and depletion of other zones or reservoirs before recompletion in reservoirs not currently open to production (called "behind pipe" reserves).