Largest U.S. Oil and Gas Fields

August 1993

Energy Information Administration
Office of Oil and Gas
U.S. Department of Energy
Washington, DC 20585

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Preface

The *Largest U.S. Oil and Gas Fields* is a technical report and part of an Energy Information Administration (EIA) series presenting distributions of U.S. crude oil and natural gas resources, developed using field-level data collected by EIA's annual survey of oil and gas proved reserves. The series' objective is to provide useful information beyond that routinely presented in the EIA annual report on crude oil and natural gas reserves. These special reports also will provide oil and gas resource analysts with a fuller understanding of the nature of U.S. crude oil and natural gas occurrence, both at the macro level and with respect to the specific subjects addressed. The series' approach is to integrate EIA's crude oil and natural gas survey data with related data obtained from other authoritative sources, and then to present illustrations and analyses of interest to a broad spectrum of energy information users ranging from the general public to oil and gas industry personnel. Previous reports in this series were *U.S. Oil and Gas Reserves by Year of Field Discovery* (August 1990) and *Geologic Distributions of U.S. Oil and Gas* (July 1992).

For several years prior to 1980, the American Petroleum Institute published a list of the 100 U.S. fields with the largest crude oil reserves. *The Oil and Gas Journal* produces its own list of "giant" U.S. oil fields each January. In November 1992, the EIA published the first (1990 rankings) of what will become an ongoing listing of the top 100 crude oil and natural gas fields relative to proved reserves in the *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves 1991 Annual Report*. The present technical report provides the top 100 proved reserves field listings (1991 rankings) in advance of the 1992 EIA reserves report, and additionally identifies the top 100 fields in three other categories: 1991 annual production, cumulative production, and estimated ultimate recovery. Also presented are similar listings based on the fields' total hydrocarbons, plus comparisons of the contribution of crude oil versus natural gas, and large fields versus small fields.

EIA's ability to publish detailed statistics based on its surveys is constrained by an obligation to avoid release of company-proprietary information. Such a restriction is evident in this report, which identifies over 300 oil and gas fields and their approximate U.S. rankings within the several field size categories, but omits the field-by-field volumetrics that some analysts might prefer to see. The volumetric data that are shown consist of concentration statistics for top 10, top 20, top 50, and top 100 field groups. The report clearly portrays the Nation's heavy reliance on this relatively small number of fields.

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Highlights

At the end of 1991 more than 45,000 oil and gas fields had been discovered in the United States. A relatively small number of these fields are of special interest due to their importance in delivering substantial volumes of crude oil and natural gas to market. This report identifies the largest one percent of U.S. oil and gas fields and their general location, year of discovery, and approximate national rankings in several size categories including proved (remaining and economically recoverable) reserves and annual production. The report also presents the proportions of the national crude oil and natural gas proved reserves and production that are attributable to the largest fields.

Energy resource analysts typically define large fields in terms of their ultimate recovery of crude oil and/or natural gas. Ultimate recovery is the sum of historical production and proved reserves. It is estimated that the largest 100 oil fields and the 100 largest gas fields accounted for 44 percent and 35 percent, respectively, of the total U.S. ultimate recovery as of December 31, 1991.

Almost three-fourths of what are now known to be the largest 100 oil fields were discovered before 1940. Discovery of the largest gas fields in similar numbers has lagged behind that of oil fields by approximately two decades. The last discoveries of top 100 oil and gas fields occurred in 1978.

Nearly two-thirds of the remaining domestic crude oil proved reserves are found in the largest 100 oil reserves fields. Three of the largest 10 are giant oil fields located on the Alaskan North Slope that feed into the trans-Alaskan oil pipeline. U.S. natural gas proved reserves are not nearly so concentrated, as 45 percent are contained in the top 100 gas reserves fields.

While in 1991 the top 100 oil producing fields yielded 56 percent of the U.S. crude oil production, the top 100 gas producing fields were responsible for only 32 percent of domestically produced natural gas. Since 1980, the proportional contribution to crude oil production from the large fields has not varied, but there is a noticeable change in natural gas production away from large fields and toward smaller fields.

This report serves as a reference that shows at a glance which fields are currently important based on their proved reserves and annual production, and which have been important historically based on their cumulative production. An appendix shows the approximate standing of each of 334 fields in four categories relative to crude oil, natural gas, and total (combined) hydrocarbons.

1. Introduction

Background

Oil and Gas Fields

Less than 1 percent of the more than 45,000 crude oil and natural gas fields that have been found in the United States account for nearly one-half of all estimated recoverable domestic oil and gas. This report identifies the major fields as of December 31, 1991, their general location, their year of discovery, and their approximate national rankings relative to 1991 estimates of their ultimate recovery, proved reserves, cumulative production, and annual production of crude oil, natural gas, and combined oil and gas hydrocarbons.

An oil or gas *field* is defined as:

An area consisting of a single reservoir or multiple reservoirs all grouped on, or related to, the same individual geological structural feature and/or stratigraphic condition. There may be two or more reservoirs in a field that are separated vertically by intervening impervious strata, or laterally by local geologic barriers, or by both.

A *reservoir* is a porous and permeable underground formation containing an individual and separate natural accumulation of producible hydrocarbons (oil and/or gas) which is confined by impermeable rock or water barriers and is characterized by a single natural pressure system.

In this report, a given field is listed as an oil field, as a gas field, or as both an oil field and a gas field purely on the basis of its oil and gas volumes. In other words, a field with any economically recoverable crude oil counts as an "oil field," and a field with any economically recoverable natural gas counts as a "gas field." It is recognized that other kinds of analyses would necessarily treat many oil and gas combination fields as either an oil field *or* as a gas field, usually in relation to which product has the maximum economic potential.

Volumetric Categories

Resource analysts, interested primarily in the characterization of oil and gas occurrence, customarily select the estimate of **ultimate recovery** as the measure of field size. It represents the volumes expected to be economically extracted from the field over its entire productive lifespan. It is the sum of cumulative production (of oil, gas, or total hydrocarbons) from the field and the estimate of proved reserves, as of a particular estimation date. A separate study of the **cumulative production** component provides a straightforward historical perspective. Because many of the oldest major fields now produce very little oil and gas, those analysts who focus primarily on the present and future are especially interested in benchmarks of crude oil and natural gas supply capability such as **proved reserves** or **annual production**. The estimate of proved reserves represents the not-as-yet-produced component of ultimate recovery, while annual production measures the resource consumption rate.

Domestic Oil and Gas Status Through December 31, 1991

Table 1 presents the status of domestic reserves and production for crude oil, natural gas, and the total of oil and gas hydrocarbons as of December 31, 1991. The estimated U.S. crude oil ultimate recovery was 188.3 billion barrels, 13.8 percent of which remained in-the-ground as proved oil reserves. Estimated natural gas ultimate recovery was 988.0 trillion cubic feet, 17.7 percent of which remained as proved gas reserves. The total hydrocarbon ultimate recovery was measured at 374.7 billion barrels of oil equivalent. Annual domestic production in 1991 totaled 2.7 billion barrels of oil and 18.7 trillion cubic feet of gas. The combined oil-equivalent production was 6.2 billion barrels.

Table 1. U.S. Crude Oil and Natural Gas Discovery Status Summary

Hydrocarbon Classification	As of December 31, 1991				1991 Production
	Ultimate Recovery	Proved Reserves	% Remaining ^a	Cumulative Production	
Crude Oil ^b					
(billion barrels)	188.3	25.9	13.8%	162.4	2.7
Natural Gas ^c					
(trillion cubic feet)	988.0	175.3	17.7%	812.7	18.7
Total Hydrocarbons ^d					
(billion barrels oil-equivalent) . .	374.7	59.0	15.7%	315.7	6.2

^aProved reserves as a percentage of ultimate recovery.

^bIncludes lease condensate.

^cWet, after lease separation.

^d1 barrel oil-equivalent equals 5.3 Mcf of natural gas, wet after lease separation.

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

Largest Oil and Gas Field Discovery Trends

Figure 1 presents a decade-by-decade look at the initial discovery years of the 100 largest U.S. oil field and gas field accumulations, as measured by ultimate recovery. The discovery of big oil fields began prior to 1900 and peaked in the 1930's. Only 14 of the top 100 oil fields were found after the 1940's. In contrast, discovery of significant numbers of the top 100 gas fields did not begin until the 1910's, but continued steadily through the 1960's. The latest top 100 oil and top 100 gas field discoveries were Alaska's Endicott Field and Wyoming's Whitney Canyon-Carter Creek Field, respectively, both found in 1978.

Ranking Codes and Field Sequence

Many tables in this report use "ranking codes" to denote field size in lieu of volumetrics. The coding scheme was designed to convey the approximate national rank of each field within each size category while minimizing clutter in the tables. Use of the system of codes avoids disclosing the Energy Information Administration's (EIA) proprietary oil and gas proved reserves data. The tables do, however, present volumetric subtotals for the top 10, top 20, top 50, and top 100 fields in each displayed category.

Figure 1. Top 100^a U.S. Oil and Gas Field Discovery Distributions, 1859-1991

^aBased on estimated ultimate recovery.

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

The national ranking codes and their interpretation are as follows:

Ranking Code	National Ranking	Interpretation
1 --	1-10	Field ranks in top 10
2 --	11-20	Field ranks in top 20
5 --	21-50	Field ranks in top 50
10 --	51-100	Field ranks in top 100
20 --	101-200	Field ranks in top 200
50 --	201-500	Field ranks in top 500
100 --	501-1000	Field ranks in top 1,000
200 --	1001-2000	Field ranks in top 2,000
500 --	2001-5000	Field ranks in top 5,000
1000 --	5001-10000	Field ranks in top 10,000
* --	>10000	Field is not in top 10,000
--	--	Zero volume in category

Note that the lowest ranking codes are associated with the largest fields, and vice versa. Also, the numeric value of the ranking code multiplied by 10 produces the rank of the smallest field within the national ranking group range.

For the U.S. oil and gas fields identified in this report, ranking codes were computed for each of the 12 combinations of volumetric categories and hydrocarbon types:

Volumetric Categories	Hydrocarbon Types
Ultimate recovery on December 31, 1991	Crude oil
Proved reserves on December 31, 1991	Natural gas
Cumulative production on December 31, 1991	Total hydrocarbons
Annual production during 1991	

In Tables 2 through 13, which present separate lists of the top 100 fields by category, fields are listed alphabetically within location (State postal abbreviation or Federal offshore area mnemonic¹) after grouping by the ranking code for the category identified in the title. Each of the 334 oil, gas, or combined oil and gas fields identified in this report ranked in the top 100 nationally with respect to at least one of these grouping criteria. The complete set of 12 ranking codes for each field is presented in Appendix A.

Standards Followed

All crude oil volumetric data in this report include lease condensate. All natural gas volumes are stated on a wet, after lease separation basis. Fields are defined and named as listed in the EIA publication *Oil and Gas Field Code Master List 1992* (December 1992). For fields that cross jurisdictional boundaries, the field name shown in Tables 2 through 13 is that associated with the first jurisdiction listed, which is that component having the largest total hydrocarbon ultimate recovery estimate. The field names recognized by the other jurisdictions can be found in Appendix A.

¹GF and PF represent the Gulf of Mexico and Pacific offshore Federal domains, respectively.

Sources

The statistics developed for this report were derived from a proprietary EIA data base entitled the Oil and Gas Integrated Field File (OGIFF). It contains annual estimates of crude oil and natural gas proved reserves, annual production, cumulative production, and ultimate recovery for most domestic oil and gas fields for the period 1977 through 1991. Chief sources for the OGIFF data base are reports submitted to the EIA by large oil and gas well operators on Form EIA-23, "Annual Survey of Domestic Oil and Gas Reserves," and oil and gas production data bases obtained from Dwight's Energydata, Inc., of Richardson, Texas. Appendix B describes the data sources and processing techniques used in building the OGIFF data base.

The national estimates of crude oil (including lease condensate) and natural gas proved reserves were obtained from the EIA publication *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves 1991 Annual Report* (November 1992). The national estimates of crude oil and natural gas production were obtained from the EIA publications *Petroleum Supply Annual 1991* (June 1992) and *Natural Gas Annual 1991* (October 1992). The national estimates of cumulative oil and gas production were obtained from the OGIFF data base.

2. Top 100 Oil Fields

Summary

Almost 40,000 fields with commercially producible crude oil have been discovered in the United States since the initial discovery well flowed oil in 1859. Figure 2 summarizes U.S. crude oil concentration statistics for the top 10, top 20, top 50, and top 100 oil fields relative to four volumetric categories: ultimate recovery, proved reserves, and cumulative production, all at the end of 1991, and crude oil production during 1991. Tables 2 through 5, respectively, identify the fields that fall within the various ranking groups in each category and present the volumetric total for each group. For each field listed, the tables also present ranking codes that indicate the approximate true ranks in terms of all U.S. fields for the four categories.

U.S. proved crude oil reserves showed a greater degree of concentration in large fields than any other category in this report. Only crude oil annual production also showed a concentration of more than 50 percent within the top 100 fields. The concentration patterns of cumulative oil production and ultimate oil recovery were nearly identical, an expected result since more than 86 percent of the ultimate oil recovery was the cumulative production component (see Chapter 1). The largest field in all oil categories was Alaska's Prudhoe Bay Field. California's Kern River and Midway-Sunset fields, discovered near the turn of the century, fell within the top 10 oil fields in every category.

Ultimate Crude Oil Recovery

Table 2 presents the 100 largest U.S. oil fields based on estimates of ultimate crude oil recovery on December 31, 1991. These fields, together, accounted for 44 percent of the total U.S. estimated ultimate recovery. The top 10 fields alone accounted for 18 percent. The second 10 largest fields accounted for an additional 6 percent. The top 20 fields were located in California (9), Texas (7), Alaska (2), Colorado (1), and Oklahoma (1). Texas led the top 100 ultimate oil recovery list with 37 fields. Seven of the top 100 were located in Federal offshore areas. Two of the top 20 fields, Texas' Panhandle and California's Long Beach, are examples of major fields that were relatively well past their prime, which is evident from their low rankings in proved reserves and annual production.

Proved Crude Oil Reserves

Table 3 ranks U.S. oil fields into top 10, top 20, top 50, and top 100 groups based on their estimated proved oil reserves on December 31, 1991. The concentration was relatively high, as 66 percent of U.S. proved oil reserves were accounted for by the top 100 fields. The top 10 oil reserves fields contained 38 percent of the 1991 U.S. total. The top 20 and top 50 held 46 percent and 58 percent, respectively. The largest 20 oil reserves fields were located in California (8, including the Pacific Federal offshore), Texas (7), Alaska (4), and Colorado (1). Two of the top 20 oil reserves fields, and six of the top 100, had not produced commercially as of the end of 1991. Alaska's Endicott Field appeared as a top 10 oil reserves field having large annual production, but low cumulative production, reflecting its very recent production startup.

Figure 2. Concentration in Top 10, 20, 50, and 100 U.S. Crude Oil Fields, 1991

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

Cumulative and Annual Crude Oil Production

Of the fields in the top 100, based on cumulative oil production (Table 4), 94 were also in the top 100 list based on ultimate oil recovery. However, only 48 also ranked in the top 100 for 1991 annual oil production, reflecting the Nation's changing reliance on specific large fields over time.

The largest 100 oil producing fields (Table 5), yielded 56 percent of total U.S. oil production in 1991, with 49 percent coming from the top 50 producing fields. The top 10 produced 33 percent and the next 10 produced an additional 7 percent. California (5), the Alaskan North Slope (3), and Texas (2) provided the top 10 oil producing fields; Texas supplied 8 of the next 10 largest. For fields ranking 21 through 100 in oil production, the Gulf of Mexico Federal offshore (25), Texas (20), and California including the Pacific Federal offshore (13), supplied 58 of the remaining 80 fields. Texas' Pearsall and Giddings fields, both in the national top 20 producing list, show low cumulative production, because their large annual production is a result of recently developed, highly effective horizontal drilling and completion techniques.

Table 2. Top 100 U.S. Oil Fields Group-Ranked According to Ultimate Recovery, 1991

Rank	Location	Field Name	Discovery Year	Field Size Ranking Codes			
				Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production
1 through 10	AK	Kuparuk River	1969	1	1	2	1
	AK	Prudhoe Bay	1967	1	1	1	1
	CA	Kern River	1899	1	1	1	1
	CA	Midway-Sunset	1901	1	1	1	1
	CA	Wilmington	1932	1	2	1	1
	OK	Sho-Vel-Tum	1905	1	5	1	2
	TX	East Texas	1930	1	2	1	1
	TX	Panhandle	1910	1	10	1	5
	TX	Wasson	1937	1	1	1	2
	TX	Yates	1926	1	1	1	2
Top 10	Volume Subtotal (billion bbls)			33.8	8.8	25.0	0.8
Top 10	Percentage of U.S. Total			18.0%	33.9%	15.4%	30.4%
11 through 20	CA	Belridge South	1911	2	1	2	1
	CA	Coalinga	1887	2	5	2	5
	CA	Elk Hills	1919	2	1	2	1
	CA	Huntington Beach	1920	2	5	2	10
	CA	Long Beach	1921	2	20	2	20
	CA	Ventura	1916	2	5	2	5
	CO	Rangely	1902	2	2	5	5
	TX	Kelly-Snyder	1948	2	10	1	5
	TX	Slaughter	1937	2	1	2	2
	TX	Spraberry Trend Area	1950	2	2	5	2
Top 20	Volume Subtotal (billion bbls)			45.4	11.0	34.4	1.0
Top 20	Percentage of U.S. Total			24.1%	42.5%	21.2%	36.5%
21 through 50	AK	McArthur River	1965	5	10	5	5
	AR	Smackover	1922	5	20	5	20
	CA	Buena Vista	1909	5	20	2	50
	CA	Coalinga East Extension	1938	5	100	5	50
	CA	San Ardo	1947	5	5	10	10
	CA	Santa Fe Springs	1919	5	50	5	50
	GF & LA	Bay Marchand Blk 2	1949	5	5	5	2
	GF	West Delta Blk 30	1949	5	10	5	5
	LA	Caillou Island	1930	5	20	5	20
	LA	South Pass Blk 24	1950	5	20	5	10
	NM	Vacuum	1929	5	5	5	5
	OK	Burbank	1920	5	50	5	50
	OK	Cushing	1912	5	50	5	50
	OK	Golden Trend	1945	5	20	5	10
	OK	Oklahoma City	1928	5	50	5	50
	PA & NY	Bradford	1864	5	200	5	100
	TX	Conroe	1931	5	50	5	20
	TX	Cowden North	1930	5	2	5	2
	TX	Goldsmith	1935	5	10	5	10
	TX	Hastings West	1958	5	50	5	50
	TX	Hawkins	1940	5	10	2	5
	TX	Levelland	1945	5	2	5	2
	TX	McElroy	1926	5	5	5	5
	TX	Seminole	1936	5	5	5	2
	TX	Tom OConnor	1934	5	10	5	10
	TX	Van	1929	5	20	5	20
	TX	Webster	1936	5	50	5	20
	TX	Wichita County Regular	1911	5	20	5	20
	WY & MT	Elk Basin	1915	5	5	5	20
	WY	Salt Creek	1889	5	10	5	10
Top 50	Volume Subtotal (billion bbls)			64.9	12.6	52.3	1.1
Top 50	Percentage of U.S. Total			34.5%	48.5%	32.2%	42.0%

See footnotes at end of table.

Table 2. Top 100 U.S. Oil Fields Group-Ranked According to Ultimate Recovery, 1991
(Continued)

Rank	Location	Field Name	Discovery Year	Ultimate Recovery	Field Size Ranking Codes		
					Proved Reserves	Cumulative Production	Annual Production
	AK	Endicott	1978	10	1	20	1
	CA	Brea-Olinda	1897	10	10	10	20
	CA	Cat Canyon	1909	10	10	10	50
	CA	Cymric	1916	10	5	20	5
	CA	Dominguez	1923	10	100	10	100
	CA	Inglewood	1924	10	20	10	20
	CA	Kettleman Dome North	1928	10	200	5	200
	CA	Lost Hills	1910	10	5	20	5
	CA	McKittrick	1887	10	10	10	50
	CA	Mount Poso	1923	10	20	10	10
	FL & AL	Jay	1970	10	10	10	10
	GF	Eugene Island SA Blk 330	1971	10	10	10	5
	GF & LA	Grand Isle Blk 16	1948	10	50	10	20
	GF	Grand Isle Blk 43	1956	10	20	10	10
	GF & LA	South Pass Blk 27	1954	10	10	10	10
	IL	Clay City Consol	1937	10	20	10	20
	IL & IN	Lawrence County Division	1900	10	20	10	20
	IL	Louden	1937	10	100	10	50
	IL	Salem Consol	1938	10	50	10	50
	KS	Chase-Silica	1929	10	50	10	50
	KS	El Dorado	1915	10	50	10	50
51	LA & TX	Caddo Pine Island	1901	10	20	10	20
	LA	Lake Washington	1931	10	50	10	20
	LA	Timbalier Bay	1938	10	50	10	50
through	NM	Eunice Monument	1929	10	5	10	20
	NM	Hobbs	1928	10	10	10	10
	OK	Glennpool	1905	10	100	10	50
100	OK	Healdton	1913	10	20	10	20
	OK	Sooner Trend	1938	10	20	10	10
	PF	Hondo	1969	10	2	50	5
	TX	Anahuac	1935	10	100	10	100
	TX	Archer County Regular	1911	10	50	10	50
	TX	Diamond -M-	1940	10	20	10	50
	TX & NM	Dollarhide	1945	10	10	20	10
	TX	Foster	1932	10	10	10	20
	TX	Fullerton	1942	10	5	10	5
	TX	Giddings	1960	10	10	20	2
	TX	Hastings East	1934	10	200	10	200
	TX	Howard-Glasscock	1925	10	5	10	5
	TX	Keystone	1935	10	20	10	50
	TX	Salt Creek	1942	10	5	10	5
	TX	Seeligson	1938	10	200	10	200
	TX	Stephens County Regular	1915	10	10	10	10
	TX	T X L	1944	10	10	10	50
	TX	Talco	1936	10	20	10	20
	TX	Thompson	1921	10	20	10	20
	TX	Ward-Estes North	1927	10	20	10	10
	TX	West Ranch	1938	10	50	10	50
	UT	Greater Aneth	1956	10	5	10	10
	WY	Oregon Basin	1912	10	10	10	5
Top 100	Volume Subtotal (billion bbls)			82.8	14.7	68.2	1.3
Top 100	Percentage of U.S. Total			44.0%	56.5%	42.0%	49.7%

Ranking Codes: 1=Field nationally ranked in top 10 in category ; 2=top 20 ; 5=top 50 ; 10=top 100 ; 20=top 200 ; 50=top 500 ; 100=top 1,000 ; 200=top 2,000 ; 500=top 5,000 ; 1000=top 10,000 ; *=lower than top 10,000 ; - = zero volume.

Notes: •Field groups are listed in descending volumetric order with respect to the subject category (data italicized). Fields within each group are sorted alphabetically by State abbreviation and then by field name. •GF=Gulf of Mexico offshore Federal domain; PF=Pacific offshore Federal domain. •Crude oil statistics include lease condensate. •Natural gas statistics are defined on a wet, after lease separation basis.

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

Table 3. Top 100 U.S. Oil Fields Group-Ranked According to Proved Reserves, 1991

Rank	Location	Field Name	Discovery Year	Field Size Ranking Codes			
				Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production
1 through 10	AK	Endicott	1978	10	1	20	1
	AK	Kuparuk River	1969	1	1	2	1
	AK	Prudhoe Bay	1967	1	1	1	1
	CA	Belridge South	1911	2	1	2	1
	CA	Elk Hills	1919	2	1	2	1
	CA	Kern River	1899	1	1	1	1
	CA	Midway-Sunset	1901	1	1	1	1
	TX	Slaughter	1937	2	1	2	2
	TX	Wasson	1937	1	1	1	2
	TX	Yates	1926	1	1	1	2
Top 10	Volume Subtotal (billion bbls)			27.6	9.8	17.8	0.9
Top 10	Percentage of U.S. Total			14.6%	37.7%	11.0%	32.6%
11 through 20	AK	Point McIntyre	1988	20	2	-	-
	CA	Wilmington	1932	1	2	1	1
	CO	Rangely	1902	2	2	5	5
	PF	Hondo	1969	10	2	50	5
	PF	Pescado	1970	20	2	-	-
	PF	Point Arguello	1981	20	2	500	10
	TX	Cowden North	1930	5	2	5	2
	TX	East Texas	1930	1	2	1	1
	TX	Levelland	1945	5	2	5	2
	TX	Spraberry Trend Area	1950	2	2	5	2
Top 20	Volume Subtotal (billion bbls)			40.0	12.0	28.0	1.0
Top 20	Percentage of U.S. Total			21.2%	46.2%	17.2%	37.6%
21 through 50	AK	Milne Point	1982	50	5	100	5
	CA	Arroyo Grande	1906	50	5	200	100
	CA	Coalinga	1887	2	5	2	5
	CA	Cymric	1916	10	5	20	5
	CA	Huntington Beach	1920	2	5	2	10
	CA	Lost Hills	1910	10	5	20	5
	CA	San Ardo	1947	5	5	10	10
	CA	Ventura	1916	2	5	2	5
	GF & LA	Bay Marchand Blk 2	1949	5	5	5	2
	GF	Garden Banks Blk 426	1987	50	5	-	-
	GF	Green Canyon Blk 65	1983	50	5	200	5
	GF	Main Pass SA Blk 299	1967	50	5	50	20
	GF	Mississippi Canyon Blk 194	1975	20	5	50	5
	GF	South Pass SA Blk 89	1969	20	5	50	5
	through	GF	Viosca Knoll Blk 990	1981	50	-	-
	NM	Eunice Monument	1929	10	5	10	20
	50	NM	Vacuum	1929	5	5	5
	OK	Sho-Vel-Tum	1905	1	5	1	2
	PF	Beta	1976	20	5	50	10
	TX	Fullerton	1942	10	5	10	5
	TX	Howard-Glasscock	1925	10	5	10	5
	TX	McElroy	1926	5	5	5	5
	TX	Pearsall	1924	20	5	50	1
	TX	Prentice	1950	20	5	20	10
	TX	Robertson North	1956	20	5	50	5
	TX	Salt Creek	1942	10	5	10	5
	TX	Seminole	1936	5	5	5	2
	TX	Wasson 72	1940	20	5	50	10
	UT	Greater Aneth	1956	10	5	10	10
	WY & MT	Elk Basin	1915	5	5	5	20
Top 50	Volume Subtotal (billion bbls)			53.4	14.9	38.5	1.2
Top 50	Percentage of U.S. Total			28.4%	57.6%	23.7%	45.7%

See footnotes at end of table.

Table 3. Top 100 U.S. Oil Fields Group-Ranked According to Proved Reserves, 1991 (Continued)

Rank	Location	Field Name	Discovery Year	Field Size Ranking Codes			
				Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production
	AK	Granite Point	1965	50	10	50	20
	AK	McArthur River	1965	5	10	5	5
	AK	Middle Ground Shoal	1963	20	10	20	20
	AK	Niakuk	1984	100	10	-	-
	AL	Churchula	1974	50	10	100	20
	CA	Belridge North	1912	50	10	50	20
	CA	Brea-Olinda	1897	10	10	10	20
	CA	Cat Canyon	1909	10	10	10	50
	CA	Kern Front	1925	20	10	20	20
	CA	McKittrick	1887	10	10	10	50
	CA	Placerita	1920	50	10	100	50
	CO	Wattenberg	1970	50	10	100	10
	FL & AL	Jay	1970	10	10	10	10
	GF	Eugene Island SA Blk 330	1971	10	10	10	5
	GF	Ewing Bank Blk 873	1991	100	10	-	-
	GF	High Island SA Blk A573	1973	50	10	50	5
	GF	Mississippi Canyon Blk 109	1984	100	10	*	500
	GF	South Marsh Is SA Blk 130	1973	20	10	20	10
	GF & LA	South Pass Blk 27	1954	10	10	10	10
	GF & LA	South Pass Blk 61	1955	20	10	20	5
	GF	West Delta Blk 30	1949	5	10	5	5
51	LA	Port Hudson	1977	50	10	100	10
	MT	Pennel	1955	50	10	50	20
	NM	Drinkard	1944	50	10	50	100
through	NM	Hobbs	1928	10	10	10	10
	NM	Maljamar	1926	20	10	20	50
	NM	Monument	1935	20	10	20	200
100	PF	Dos Cuadras	1968	20	10	20	10
	PF	Point Pedernales	1983	50	10	100	10
	TX	Anton-Irish	1944	20	10	20	20
	TX	Cedar Lake	1939	50	10	50	20
	TX & NM	Dollarhide	1945	10	10	20	10
	TX	Foster	1932	10	10	10	20
	TX	Giddings	1960	10	10	20	2
	TX	Goldsmith	1935	5	10	5	10
	TX	Hawkins	1940	5	10	2	5
	TX	Kelly-Snyder	1948	2	10	1	5
	TX	Mabee	1944	50	10	50	20
	TX	Means	1934	20	10	20	5
	TX	Panhandle	1910	1	10	1	5
	TX	Pegasus	1949	20	10	20	50
	TX	Stephens County Regular	1915	10	10	10	10
	TX	T X L	1944	10	10	10	50
	TX	Tom OConnor	1934	5	10	5	10
	TX	Welch	1942	20	10	20	20
	UT & WY	Anschutz Ranch East	1979	50	10	50	5
	UT	Bluebell	1949	20	10	50	10
	WY	Hartzog Draw	1976	50	10	50	10
	WY	Oregon Basin	1912	10	10	10	5
	WY	Salt Creek	1889	5	10	5	10
Top 100	Volume Subtotal (billion bbls)			69.4	17.1	52.3	1.4
Top 100	Percentage of U.S. Total			36.9%	65.8%	32.2%	53.0%

Ranking Codes: 1=Field nationally ranked in top 10 in category ; 2=top 20 ; 5=top 50 ; 10=top 100 ; 20=top 200 ; 50=top 500 ; 100=top 1,000 ; 200=top 2,000 ; 500=top 5,000 ; 1000=top 10,000 ; *=lower than top 10,000 ; - = zero volume.

Notes: •Field groups are listed in descending volumetric order with respect to the subject category (data italicized). Fields within each group are sorted alphabetically by State abbreviation and then by field name. •GF=Gulf of Mexico offshore Federal domain; PF=Pacific offshore Federal domain. •Crude oil statistics include lease condensate. •Natural gas statistics are defined on a wet, after lease separation basis.

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

Table 4. Top 100 U.S. Oil Fields Group-Ranked According to Cumulative Production, 1991

Rank	Location	Field Name	Discovery Year	Field Size Ranking Codes			
				Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production
1 through 10	AK	Prudhoe Bay	1967	1	1	1	1
	CA	Kern River	1899	1	1	1	1
	CA	Midway-Sunset	1901	1	1	1	1
	CA	Wilmington	1932	1	2	1	1
	OK	Sho-Vel-Tum	1905	1	5	1	2
	TX	East Texas	1930	1	2	1	1
	TX	Kelly-Snyder	1948	2	10	1	5
	TX	Panhandle	1910	1	10	1	5
	TX	Wasson	1937	1	1	1	2
	TX	Yates	1926	1	1	1	2
Top 10	Volume Subtotal (billion bbls)			33.2	7.8	25.4	0.7
Top 10	Percentage of U.S. Total			17.7%	30.2%	15.7%	26.5%
11 through 20	AK	Kuparuk River	1969	1	1	2	1
	CA	Belridge South	1911	2	1	2	1
	CA	Buena Vista	1909	5	20	2	50
	CA	Coalinga	1887	2	5	2	5
	CA	Elk Hills	1919	2	1	2	1
	CA	Huntington Beach	1920	2	5	2	10
	CA	Long Beach	1921	2	20	2	20
	CA	Ventura	1916	2	5	2	5
	TX	Hawkins	1940	5	10	2	5
	TX	Slaughter	1937	2	1	2	2
Top 20	Volume Subtotal (billion bbls)			45.3	10.7	34.6	1.0
Top 20	Percentage of U.S. Total			24.0%	41.1%	21.3%	35.5%
21 through 50	AK	McArthur River	1965	5	10	5	5
	AR	Smackover	1922	5	20	5	20
	CA	Coalinga East Extension	1938	5	100	5	50
	CA	Kettleman Dome North	1928	10	200	5	200
	CA	Santa Fe Springs	1919	5	50	5	50
	CO	Rangely	1902	2	?	5	5
	GF & LA	Bay Marchand Blk 2	1949	5	5	5	2
	GF	West Delta Blk 30	1949	5	10	5	5
	LA	Caillou Island	1930	5	20	5	20
	LA	South Pass Blk 24	1950	5	20	5	10
	NM	Vacuum	1929	5	5	5	5
	OK	Burbank	1920	5	50	5	50
	OK	Cushing	1912	5	50	5	50
	OK	Golden Trend	1945	5	20	5	10
	OK	Oklahoma City	1928	5	50	5	50
	PA & NY	Bradford	1864	5	200	5	100
	TX	Conroe	1931	5	50	5	20
	TX	Cowden North	1930	5	2	5	2
	TX	Goldsmith	1935	5	10	5	10
	TX	Hastings West	1958	5	50	5	50
	TX	Levelland	1945	5	2	5	2
	TX	McElroy	1926	5	5	5	5
	TX	Seminole	1936	5	5	5	2
	TX	Spraberry Trend Area	1950	2	2	5	2
	TX	Tom O'Connor	1934	5	10	5	10
	TX	Van	1929	5	20	5	20
	TX	Webster	1936	5	50	5	20
	TX	Wichita County Regular	1911	5	20	5	20
	WY & MT	Elk Basin	1915	5	5	5	20
	WY	Salt Creek	1889	5	10	5	10
Top 50	Volume Subtotal (billion bbls)			64.8	12.4	52.4	1.1
Top 50	Percentage of U.S. Total			34.4%	47.8%	32.3%	41.8%

See footnotes at end of table.

Table 4. Top 100 U.S. Oil Fields Group-Ranked According to Cumulative Production, 1991
(Continued)

Rank	Location	Field Name	Discovery Year	Ultimate Recovery	Field Size Ranking Codes		
					Proved Reserves	Cumulative Production	Annual Production
	CA	Brea-Olinda	1897	10	10	10	20
	CA	Cat Canyon	1909	10	10	10	50
	CA	Coyote West	1909	20	200	10	100
	CA	Dominguez	1923	10	100	10	100
	CA	Inglowood	1924	10	20	10	20
	CA	McKittrick	1887	10	10	10	50
	CA	Mount Poso	1923	10	20	10	10
	CA	San Ardo	1947	5	5	10	10
	FL & AL	Jay	1970	10	10	10	10
	GF	Eugene Island SA Blk 330	1971	10	10	10	5
	GF & LA	Grand Isle Blk 16	1948	10	50	10	20
	GF	Grand Isle Blk 43	1956	10	20	10	10
	GF & LA	South Pass Blk 27	1954	10	10	10	10
	IL	Clay City Consol	1937	10	20	10	20
	IL & IN	Lawrence County Division	1900	10	20	10	20
	IL	Louden	1937	10	100	10	50
	IL	Main Consol	1906	20	50	10	50
	IL & IN	Now Harmony Consol	1930	20	50	10	50
	IL	Salem Consol	1938	10	50	10	50
	KS	Chase-Silica	1929	10	50	10	50
	KS	El Dorado	1915	10	50	10	50
51	LA & TX	Caddo Pine Island	1901	10	20	10	20
	LA	Lafitte	1935	20	50	10	50
	LA	Lake Washington	1931	10	50	10	20
through	LA	Timbalier Bay	1938	10	50	10	50
	NM	Eunice Monument	1929	10	5	10	20
	NM	Hobbs	1928	10	10	10	10
100	OK	Glennpool	1905	10	100	10	50
	OK	Healdton	1913	10	20	10	20
	OK	Sooner Trend	1938	10	20	10	10
	TX	Anahuac	1935	10	100	10	100
	TX	Archer County Regular	1911	10	50	10	50
	TX	Cogdell	1949	20	50	10	50
	TX	Diamond -M-	1940	10	20	10	50
	TX	Foster	1932	10	10	10	20
	TX	Fullerton	1942	10	5	10	5
	TX	Hastings East	1934	10	200	10	200
	TX	Hendrick	1926	20	50	10	100
	TX	Howard Glasscock	1925	10	5	10	5
	TX	Keystone	1935	10	20	10	50
	TX	Salt Creek	1942	10	5	10	5
	TX	Seeligson	1938	10	200	10	200
	TX	Stephens County Regular	1915	10	10	10	10
	TX	T X L	1944	10	10	10	50
	TX	Talco	1936	10	20	10	20
	TX	Thompson	1921	10	20	10	20
	TX	Ward-Estes North	1927	10	20	10	10
	TX	West Ranch	1938	10	50	10	50
	UT	Greater Aneth	1956	10	5	10	10
	WY	Oregon Basin	1912	10	10	10	5
Top 100	Volume Subtotal (billion bbls)			82.4	13.9	68.5	1.3
Top 100	Percentage of U.S. Total			43.8%	53.4%	42.2%	46.5%

Ranking Codes: 1=Field nationally ranked in top 10 in category ; 2=top 20 ; 5=top 50 ; 10=top 100 ; 20=top 200 ; 50=top 500 ; 100=top 1,000 ; 200=top 2,000 ; 500=top 5,000 ; 1000=top 10,000 ; * =lower than top 10,000 ; - = zero volume.

Notes: •Field groups are listed in descending volumetric order with respect to the subject category (data italicized). Fields within each group are sorted alphabetically by State abbreviation and then by field name. •GF=Gulf of Mexico offshore Federal domain; PF=Pacific offshore Federal domain. •Crude oil statistics include lease condensate. •Natural gas statistics are defined on a wet, after lease separation basis.

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

Table 5. Top 100 U.S. Oil Fields Group-Ranked According to Annual Production, 1991

Rank	Location	Field Name	Discovery Year	Field Size Ranking Codes			
				Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production
1 through 10	AK	Endicott	1978	10	1	20	1
	AK	Kuparuk River	1969	1	1	2	1
	AK	Prudhoe Bay	1967	1	1	1	1
	CA	Belridge South	1911	2	1	2	1
	CA	Elk Hills	1919	2	1	2	1
	CA	Kern River	1899	1	1	1	1
	CA	Midway-Sunset	1901	1	1	1	1
	CA	Wilmington	1932	1	2	1	1
	TX	East Texas	1930	1	2	1	1
	TX	Pearsall	1924	20	5	50	1
Top 10	Volume Subtotal (billion bbls)			30.2	8.7	21.5	0.9
Top 10	Percentage of U.S. Total			16.1%	33.7%	13.2%	33.4%
11 through 20	GF & LA	Bay Marchand Blk 2	1949	5	5	5	2
	OK	Sho-Vel-Tum	1905	1	5	1	2
	TX	Cowden North	1930	5	2	5	2
	TX	Giddings	1960	10	10	20	2
	TX	Levelland	1945	5	2	5	2
	TX	Seminole	1936	5	5	5	2
	TX	Slaughter	1937	2	1	2	2
	TX	Spraberry Trend Area	1950	2	2	5	2
	TX	Wasson	1937	1	1	1	2
	TX	Yates	1926	1	1	1	2
Top 20	Volume Subtotal (billion bbls)			41.7	11.6	30.1	1.1
Top 20	Percentage of U.S. Total			22.1%	44.7%	18.5%	40.1%
21 through 50	AK	McArthur River	1965	5	10	5	5
	AK	Milne Point	1982	50	5	100	5
	CA	Coalinga	1887	2	5	2	5
	CA	Cymric	1916	10	5	20	5
	CA	Lost Hills	1910	10	5	20	5
	CA	Ventura	1916	2	5	2	5
	CO	Rangely	1902	2	2	5	5
	GF	Eugene Island SA Blk 330	1971	10	10	10	5
	GF	Green Canyon Blk 19	1980	100	20	100	5
	GF	Green Canyon Blk 65	1983	50	5	200	5
	GF	High Island SA Blk A573	1973	50	10	50	5
	GF	Mississippi Canyon Blk 194	1975	20	5	50	5
	GF & LA	South Pass Blk 61	1955	20	10	20	5
	GF	South Pass SA Blk 89	1969	20	5	50	5
	GF	West Delta Blk 30	1949	5	10	5	5
	GF	West Delta Blk 73	1962	20	20	20	5
	NM	Vacuum	1929	5	5	5	5
	PF	Hondo	1969	10	2	50	5
	TX	Anne Tandy	1972	50	20	100	5
	TX	Fullerton	1942	10	5	10	5
	TX	Hawkins	1940	5	10	2	5
	TX	Howard-Glasscock	1925	10	5	10	5
	TX	Kelly-Snyder	1948	2	10	1	5
	TX	McElroy	1926	5	5	5	5
	TX	Means	1934	20	10	20	5
	TX	Panhandle	1910	1	10	1	5
	TX	Robertson North	1956	20	5	50	5
	TX	Salt Creek	1942	10	5	10	5
	UT & WY	Anschutz Ranch East	1979	50	10	50	5
	WY	Oregon Basin	1912	10	10	10	5
Top 50	Volume Subtotal (billion bbls)			55.5	13.8	41.7	1.3
Top 50	Percentage of U.S. Total			29.5%	53.4%	25.7%	48.5%

See footnotes at end of table.

Table 5. Top 100 U.S. Oil Fields Group-Ranked According to Annual Production, 1991
(Continued)

Rank	Location	Field Name	Discovery Year	Field Size Ranking Codes			
				Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production
	AL	Hatters Pond	1974	50	20	100	10
	CA	Huntington Beach	1920	2	5	2	10
	CA	Mount Poso	1923	10	20	10	10
	CA	San Ardo	1947	5	5	10	10
	CA	Yowlumne	1974	50	50	50	10
	CO	Wattenberg	1970	50	10	100	10
	FL & AL	Jay	1970	10	10	10	10
	GF	East Cameron SA Blk 321	1971	50	20	100	10
	GF	Eugene Island SA Blk 361	1973	100	20	100	10
	GF	Grand Isle Blk 43	1956	10	20	10	10
	GF	Green Canyon Blk 184	1981	100	20	500	10
	GF & LA	Main Pass Blk 73	1975	50	20	50	10
	GF	Main Pass SA Blk 311	1977	50	20	50	10
	GF	Mississippi Canyon Blk 281	1976	100	50	100	10
	GF	South Marsh Is SA Blk 128	1976	50	50	50	10
	GF	South Marsh Is SA Blk 130	1973	20	10	20	10
	GF & LA	South Pass Blk 27	1954	10	10	10	10
	GF	South Pass Blk 49	1974	50	20	50	10
	GF	South Pass EA Blk 62	1965	50	20	50	10
	GF & LA	South Pass SA Blk 78	1973	100	20	100	10
	GF	South Timbalier Blk 52	1950	50	20	100	10
51	GF	West Delta Blk 109	1975	50	20	100	10
	GF	West Delta Blk 79	1962	20	20	20	10
	LA	Port Hudson	1977	50	10	100	10
through	LA	South Pass Blk 24	1950	5	20	5	10
	NM	Dagger Draw North	1964	100	20	200	10
	NM	Hobbs	1928	10	10	10	10
100	OK	Golden Trend	1945	5	20	5	10
	OK	Hewitt	1919	20	20	20	10
	OK	Sooner Trend	1938	10	20	10	10
	PF	Bela	1976	20	5	50	10
	PF	Dos Cuadras	1968	20	10	20	10
	PF	Point Arguello	1981	20	2	500	10
	PF	Point Pedemales	1983	50	10	100	10
	TX	Alabama Ferry	1983	100	50	200	10
	TX	Cowden South	1930	20	20	20	10
	TX & NM	Dollarhide	1945	10	10	20	10
	TX	Goldsmith	1935	5	10	5	10
	TX	Katz	1951	50	50	50	10
	TX	Prentice	1950	20	5	20	10
	TX	Stephens County Regular	1915	10	10	10	10
	TX	Tom OConnor	1934	5	10	5	10
	TX	Ward-Estes North	1927	10	20	10	10
	TX	Wasson 72	1940	20	5	50	10
	UT	Altamont	1960	50	20	50	10
	UT	Bluebell	1949	20	10	50	10
	UT	Greater Aneth	1956	10	5	10	10
	WY	Hartzog Draw	1976	50	10	50	10
	WY	Lost Soldier	1916	20	20	20	10
	WY	Salt Creek	1889	5	10	5	10
Top 100	Volume Subtotal (billion bbls)			68.0	15.8	52.2	1.5
Top 100	Percentage of U.S. Total			36.1%	61.0%	32.1%	56.0%

Ranking Codes: 1=Field nationally ranked in top 10 in category; 2=top 20; 5=top 50; 10=top 100; 20=top 200; 50=top 500; 100=top 1,000; 200=top 2,000; 500=top 5,000; 1000=top 10,000; *=lower than top 10,000; - = zero volume.

Notes: *Field groups are listed in descending volumetric order with respect to the subject category (data italicized). Fields within each group are sorted alphabetically by State abbreviation and then by field name. *GF=Gulf of Mexico offshore Federal domain; PF=Pacific offshore Federal domain. *Crude oil statistics include lease condensate. *Natural gas statistics are defined on a wet, after lease separation basis.

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

3. Top 100 Gas Fields

Summary

By the end of 1991, over 34,000 distinct fields with commercially producible natural gas had been discovered in the United States. Figure 3 summarizes U.S. natural gas concentration statistics for the top 10, top 20, top 50, and top 100 gas fields relative to the four volumetric categories addressed in this report: ultimate recovery, proved reserves, and cumulative production, all as of December 31, 1991, and 1991 natural gas production. Tables 6 through 9, respectively, identify the fields summarized in Figure 3 for each natural gas category and present the volumetric total within each grouping. For each field listed, the tables also present ranking codes that translate to the approximate ranks in terms of all U.S. fields with natural gas.

The degree of natural gas concentration in large fields was noticeably smaller than for crude oil, particularly with respect to annual production. Approximately one-half of this difference is due to the giant oil fields of the Alaskan North Slope.² As with crude oil, natural gas concentration in large fields was greatest in the proved reserves category. There is a sharp difference, however, with respect to 1991 natural gas production, which shows the least concentration of any of the categories listed in this report. The largest gas field in all categories was Kansas' Hugoton Field (with parts in Oklahoma and Texas). Five others, Basin and Blanco fields in Northwest New Mexico (partly in Colorado), Mocane-Laverne Gas Area Field in Oklahoma (partly in Kansas and Texas), and Carthage and Panhandle West fields in Texas, also fell within the top 10 in each category for natural gas.

Ultimate Natural Gas Recovery

Table 6 presents the 100 largest U.S. fields based on their natural gas estimated ultimate recovery at the end of 1991, accounting for 35 percent of total U.S. estimated natural gas ultimate recovery. The fields in the top 10, as was the case for oil, dominated the top 100 with 15 percent of the total. The primary locations of the top 20 fields were Texas (6), Oklahoma (5), Gulf of Mexico Federal offshore (3), New Mexico (2), Alaska (1), California (1), Kansas (1), and Louisiana (1). Two all-time top 10 natural gas fields, North Louisiana's Monroe Field and Texas' Katy Field, ranked much lower in 1991 proved reserves and annual production, examples of fields well past their prime.

Proved Natural Gas Reserves

Table 7 lists the top 100 field groupings according to natural gas proved reserves on December 31, 1991. The top 100 proved gas reserves fields held 45 percent of the U.S. total. The top 10, top 20, and top 50 fields accounted for 23 percent, 28 percent and 37 percent, respectively. Of the top 100 gas reserves fields, five had not begun producing as of 1991. The large gas fields in terms of proved reserves were geographically more diverse as compared to oil fields. Alaska, Alabama, Louisiana, New Mexico, Oklahoma, Texas, Wyoming, and the Gulf of Mexico Federal offshore each had at least four fields. Only two fields in California and the adjacent Pacific offshore area contained sufficient remaining natural gas reserves to be in the top 100 group.

²Concentration percentages for 1991 relative to the largest 100 Lower 48 States' fields in the following four categories were: 1991 oil reserves, 56.7 percent; 1991 oil production, 43.2 percent; 1991 gas reserves, 43.3 percent; 1991 gas production, 31.8 percent.

Figure 3. Concentration in Top 10, 20, 50, and 100 U.S. Natural Gas Fields, 1991

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

Cumulative and Annual Natural Gas Production

Of the 100 largest fields based on cumulative gas production (Table 8), most had a ranking code identical to that in the top 100 ultimate gas recovery list. Thus the concentration of the top 10, 20, 50, and 100 fields was basically no different from that shown in Table 6. However, only 42 fields from the cumulative gas production top 100 list were also in the top 100 list for annual gas production.

Annual gas production concentration was 11 percent in the top 10 fields, 16 percent in the top 20 fields, 24 percent in the top 50 fields, and 32 percent in the top 100 fields (Table 9). As the top 10 included Alaska's Prudhoe Bay Field, wherein the net gas production is used entirely in support of oil recovery operations, the concentration of gas production is even less with respect to markets in the lower 48 States. The Gulf of Mexico supplied 32 of the fields in the top 100 gas production list, although only one, Tiger Shoal Field, made the top 20. Texas accounted for an additional 25 fields, with all or parts of 8 Texas fields within the top 20.

Table 6. Top 100 U.S. Gas Fields Group-Ranked According to Ultimate Recovery, 1991

Rank	Location	Field Name	Discovery Year	Field Size Ranking Codes			
				Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production
1 through 10	AK	Prudhoe Bay	1967	1	1	10	1
	KS & OK & TX	Hugoton Gas Area	1922	1	1	1	1
	LA	Monroe	1916	1	20	1	20
	NM	Basin	1947	1	1	1	1
	NM & CO	Blanco	1927	1	1	1	1
	OK	Golden Trend	1945	1	10	1	2
	OK & KS & TX	Mocene-Laverne Gas Area	1946	1	1	1	1
	TX	Carthage	1936	1	1	1	1
Top 10	TX	Katy	1936	1	100	1	10
	TX	Panhandle West	1918	1	1	1	1
Top 10 Volume Subtotal (trillion cf)				146.2	36.6	111.7	1.9
Top 10 Percentage of U.S. Total				15.0%	20.9%	13.7%	10.0%
11 through 20	CA	Rio Vista	1936	2	20	2	50
	GF	Ship Shoal Blk 208	1961	2	20	2	100
	GF	Tiger Shoal	1958	2	10	5	2
	GF & LA	Vermilion Blk 14	1956	2	5	2	5
	OK	Edmond West	1930	2	100	2	100
	OK	Sooner Trend	1936	2	10	1	5
	OK	Watonga-Chickasha Trend	1948	2	2	2	1
	TX	Gomez	1963	2	2	2	2
	TX	Old Ocean	1934	2	50	2	10
	TX	Puckett	1952	2	10	2	5
Top 20 Volume Subtotal (trillion cf)				186.3	40.0	148.9	2.4
Top 20 Percentage of U.S. Total				19.1%	22.8%	18.3%	12.7%
21 through 50	AK	Kenai	1959	5	50	5	10
	CA	Kettleman Dome North	1928	5	200	2	200
	GF	Vermilion Blk 39	1949	5	20	5	20
	GF	West Cameron Blk 180	1960	5	50	5	50
	KS	Panoma Gas Area	1956	5	1	10	1
	LA	Bastian Bay	1951	5	100	5	50
	LA	Bateman Lake	1937	5	100	5	200
	LA	Bayou Sale	1940	5	50	5	10
	LA	Caillou Island	1930	5	50	5	50
	LA	Lake Arthur	1937	5	100	5	50
	LA	Mound Point	1958	5	100	5	50
	LA	Sligo	1922	5	50	5	50
	LA & GF	West Delta Blk 27	1949	5	100	5	50
	NM	Eumont	1929	5	10	5	10
	NM & TX	Jalmar	1927	5	50	5	20
	OK	Kinta	1914	5	5	5	2
	OK	Oklahoma City	1928	5	50	5	50
	OK	Red Oak-Norris	1910	5	1	10	5
	OK	Ringwood	1945	5	20	5	10
	TX	Agua Dulce	1928	5	50	5	50
	TX	Boonsville	1945	5	5	5	5
	TX	Borregos	1945	5	100	5	50
	TX	Coyanosa	1959	5	5	5	2
	TX	Headlee	1953	5	5	10	5
	TX	La Gloria	1924	5	200	5	100
	TX	Panhandle	1910	5	10	5	10
	TX	Panhandle East	1935	5	50	5	50
	TX	Seeligson	1938	5	50	5	50
	TX	Stratton	1937	5	50	2	10
	TX	Zone 21-B Trend	1974	5	500	5	100
Top 50 Volume Subtotal (trillion cf)				265.6	46.8	216.8	3.2
Top 50 Percentage of U.S. Total				26.9%	26.7%	26.9%	17.4%

See footnotes at end of table.

Table 6. Top 100 U.S. Gas Fields Group-Ranked According to Ultimate Recovery, 1991
(Continued)

Rank	Location	Field Name	Discovery Year	Field Size Ranking Codes			
				Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production
	AK	Beluga River	1962	10	2	50	5
	AK	Cook Inlet North	1962	10	2	20	5
	CA	Elk Hills	1919	10	2	20	5
	CA	Ventura	1916	10	100	5	200
	CO	Wattenberg	1970	10	1	20	2
	GF	East Cameron Blk 64	1957	10	20	10	100
	GF	Eugene Island SA Blk 292	1964	10	20	10	10
	GF	Eugene Island SA Blk 330	1971	10	10	10	10
	GF	Grand Isle Blk 43	1956	10	20	10	50
	GF	Ship Shoal Blk 176	1956	10	10	10	10
	GF	South Marsh Island Blk 48	1961	10	20	10	20
	GF	South Timbalier Blk 172	1965	10	10	10	5
	KS & CO & OK	Greenwood Gas Area	1952	10	20	10	50
	KY	Big Sandy	1881	10	5	10	5
	LA	Black Lake	1964	10	20	10	5
	LA	Cotton Valley	1922	10	20	10	20
	LA	Duck Lake	1947	10	200	10	500
	LA	Garden City	1956	10	100	10	20
	LA	Lake Eagle	1958	10	10	10	50
	LA	Lirette	1937	10	500	10	500
	LA	Paradis	1939	10	200	10	500
51	LA	Pecan Island	1943	10	50	10	20
	MS	Gwinville	1944	10	200	10	100
	NM	Blanco South	1951	10	5	20	50
through	NM	Blinebry	1945	10	50	10	20
	NM	Indian Basin	1963	10	10	10	10
	OK	Elk City	1947	10	5	20	5
100	OK	Putnam	1957	10	20	10	10
	OK	Wilburton	1941	10	5	10	1
	TX	Alazan North	1958	10	500	10	100
	TX & LA	Bethany	1916	10	50	10	20
	TX	Block 16	1969	10	20	10	20
	TX	Brown-Bassett	1953	10	5	10	5
	TX	Chocolate Bayou	1940	10	50	10	100
	TX	Emperor	1936	10	50	10	50
	TX	Giddings	1960	10	10	10	2
	TX	Hansford	1953	10	50	10	20
	TX	McAllen Ranch	1960	10	5	20	2
	TX	Opelika	1937	10	10	10	20
	TX	Pledger	1925	10	200	5	200
	TX	Sand Hills	1930	10	20	10	10
	TX	Sawyer	1960	10	5	20	5
	TX	Sheridan	1940	10	100	5	100
	TX	Spraberry Trend Area	1950	10	5	10	5
	TX	Tom O'Connor	1934	10	50	10	50
	TX	Viboras	1949	10	100	5	50
	TX & LA	Waskom	1916	10	10	10	10
	TX	Wasson	1937	10	5	10	20
	WY	Big Piney-Labarge	1924	10	10	10	100
	WY	Whitney Canyon-Carter Crk	1978	10	5	20	2
Top 100	Volume Subtotal (trillion cf)			349.0	61.5	287.4	4.7
Top 100	Percentage of U.S. Total			35.3%	35.7%	35.4%	25.3%

Ranking Codes: 1=Field nationally ranked in top 10 in category; 2=top 20; 5=top 50; 10=top 100; 20=top 200; 50=top 500; 100=top 1,000; 200=top 2,000; 500=top 5,000; 1000=top 10,000; *=lower than top 10,000; - = zero volume.

Notes: •Field groups are listed in descending volumetric order with respect to the subject category (data italicized). Fields within each group are sorted alphabetically by State abbreviation and then by field name. •GF=Gulf of Mexico offshore Federal domain; PF=Pacific offshore Federal domain. •Crude oil statistics include lease condensate. •Natural gas statistics are defined on a wet, after lease separation basis.

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

Table 7. Top 100 U.S. Gas Fields Group-Ranked According to Proved Reserves, 1991

Rank	Location	Field Name	Discovery Year	Field Size Ranking Codes			
				Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production
1 through 10	AK	Prudhoe Bay	1967	1	1	10	1
	CO	Wattenberg	1970	10	1	20	2
	KS & OK & TX	Hugoton Gas Area	1922	1	1	1	1
	KS	Panoma Gas Area	1956	5	1	10	1
	NM	Basin	1947	1	1	1	1
	NM & CO	Blanco	1927	1	1	1	1
	OK & KS & TX	Mocane-Laverne Gas Area	1946	1	1	1	1
	OK	Red Oak-Norris	1910	5	1	10	5
	TX	Carthage	1936	1	1	1	1
	TX	Panhandle West	1918	1	1	1	1
Top 10	Volume Subtotal (trillion cf)			132.7	39.8	92.9	2.0
Top 10	Percentage of U.S. Total			13.4%	22.7%	11.4%	10.8%
11 through 20	AK	Beluga River	1962	10	2	50	5
	AK	Cook Inlet North	1962	10	2	20	5
	AK	McArthur River	1965	20	2	50	5
	AL & GF	North Central Gulf	1985	50	2	—	—
	AL & GF	Northwest Gulf	1983	20	2	1000	200
	CA	Elk Hills	1919	10	2	20	5
	OK	Watonga-Chickasha Trend	1948	2	2	2	1
	TX	Gomez	1963	2	2	2	2
	WY	Fogarty Creek	1975	20	2	100	10
	WY	Lake Ridge	1981	20	2	500	50
Top 20	Volume Subtotal (trillion cf)			153.0	48.5	104.5	2.5
Top 20	Percentage of U.S. Total			15.5%	27.7%	12.9%	13.2%
21 through 50	AL	Bon Secour Bay	1983	50	5	—	—
	AL	Fairway	1986	50	5	1000	200
	AL	Gumee Coal Degas	1990	50	5	—	500
	AL	Lower Mobile Bay-Mary Ann	1979	50	5	200	10
	GF	Garden Banks Blk 426	1987	50	5	—	—
	GF	Green Canyon Blk 116	1983	50	5	—	—
	GF	Mississippi Canyon Blk 194	1975	50	5	50	50
	GF & LA	Vermilion Blk 14	1956	2	5	2	5
	KY	Big Sandy	1881	10	5	10	5
	LA	Lake Arthur South	1955	20	5	50	2
	NM	Blanco South	1951	10	5	20	50
	OK	Elk City	1947	10	5	20	5
	OK	Kinta	1914	5	5	5	2
	OK	Wilburton	1941	10	5	10	1
	PF	Hondo	1969	50	5	200	20
	TX	Boonsville	1945	5	5	5	5
	TX	Brown-Bassett	1953	10	5	10	5
	TX	Coyanosa	1959	5	5	5	2
	TX	Headlee	1953	5	5	10	5
	TX	McAllen Ranch	1960	10	5	20	2
	TX	Oak Hill	1958	20	5	50	5
	TX	Sawyer	1960	10	5	20	5
	TX	Spraberry Trend Area	1950	10	5	10	5
	TX	Wasson	1937	10	5	10	20
	UT & WY	Anschutz Ranch East	1979	50	5	200	50
	UT	Lisbon	1960	20	5	50	20
	UT	Natural Buttes	1940	50	5	50	20
	WY	Labarge	1924	50	5	50	10
	WY	Madden	1968	20	5	50	20
	WY	Whitney Canyon-Carter Crk	1978	10	5	20	2
Top 50	Volume Subtotal (trillion cf)			195.9	64.8	131.0	3.7
Top 50	Percentage of U.S. Total			19.8%	37.0%	16.1%	19.7%

See footnotes at end of table.

Table 7. Top 100 U.S. Gas Fields Group-Ranked According to Proved Reserves, 1991
(Continued)

Rank	Location	Field Name	Discovery Year	Field Size Ranking Codes			
				Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production
	AK	Kuparuk River	1969	50	10	100	10
	AL	Cedar Cove Coal Degas	1983	100	10	500	50
	AL	Oak Grove Coal Degas	1980	100	10	500	50
	AL	Robinsons Bend Coal Degas	1985	100	10	1000	500
	GF	Eugene Island SA Blk 330	1971	10	10	10	10
	GF	Garden Banks Blk 236	1977	50	10	200	10
	GF	High Island SA Blk A571	1974	50	10	50	10
	GF	High Island SA Blk A573	1973	50	10	50	5
	GF	Main Pass Blk 41	1956	20	10	20	20
	GF	Matagorda Island Blk 623	1980	50	10	100	5
	GF	Matagorda Island Blk 668	1981	20	10	50	5
	GF	Mississippi Canyon Blk 397	1984	100	10	-	-
	GF	Ship Shoal Blk 176	1956	10	10	10	10
	GF	South Pass SA Blk 89	1969	50	10	100	10
	GF	South Timbalier Blk 172	1965	10	10	10	5
	GF	Tiger Shoal	1958	2	10	5	2
	LA	Chalkley	1938	20	10	50	10
	LA	Fresh Water Bayou North	1958	50	10	50	20
	LA	Lake Pagie	1958	10	10	10	50
	LA	Port Hudson	1977	50	10	50	10
51	MT	Bowdoin	1917	50	10	200	100
	NM	Eumont	1929	5	10	5	10
	NM	Indian Basin	1963	10	10	10	10
	OK	Carpenter	1951	50	10	50	10
through	OK	Cheyenne West	1971	50	10	50	10
	OK	Golden Trend	1945	1	10	1	2
	OK	Panola South	1990	50	10	500	10
	OK	Reydon	1962	20	10	50	10
100	OK	Sho-Vel-Tum	1905	20	10	20	5
	OK	Sooner Trend	1938	2	10	1	5
	OK	Strong City District	1966	50	10	50	5
	TX	Anahuac	1935	20	10	20	50
	TX	Bryans Mill	1960	50	10	50	20
	TX	Conger	1973	50	10	50	10
	TX	Giddings	1960	10	10	10	2
	TX	La Perla Ranch	1976	50	10	50	5
	TX	Laredo	1973	20	10	50	20
	TX	Opelika	1937	10	10	10	20
	TX	Ozona	1953	20	10	20	10
	TX	Panhandle	1910	5	10	5	10
	TX	Pegasus	1949	50	10	50	100
	TX	Puckett	1952	2	10	2	5
	TX	Rosita NW	1976	50	10	100	20
	TX	Tri-Cities	1941	50	10	50	50
	TX & LA	Waskom	1916	10	10	10	10
	TX	Whelan	1937	50	10	50	100
	TX	Willow Springs	1938	20	10	20	50
	WY	Big Piney-Labarge	1924	10	10	10	100
	WY	Bruff	1974	50	10	100	10
	WY	Painter Reservoir	1977	50	10	100	20
Top 100		Volume Subtotal (trillion cf)		255.2	79.3	175.8	5.2
Top 100		Percentage of U.S. Total		25.8%	45.3%	21.6%	28.0%

Ranking Codes: 1=Field nationally ranked in top 10 in category ; 2=top 20 ; 5=top 50 ; 10=top 100 ; 20=top 200 ; 50=top 500 ; 100=top 1,000 ; 200=top 2,000 ; 500=top 5,000 ; 1000=top 10,000 ; *=lower than top 10,000 ; - = zero volume.

Notes: •Field groups are listed in descending volumetric order with respect to the subject category (data italicized). Fields within each group are sorted alphabetically by State abbreviation and then by field name. •GF=Gulf of Mexico offshore Federal domain; PF=Pacific offshore Federal domain. •Crude oil statistics include lease condensate. •Natural gas statistics are defined on a wet, after lease separation basis.

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

Table 8. Top 100 U.S. Gas Fields Group-Ranked According to Cumulative Production, 1991

Rank	Location	Field Name	Discovery Year	Field Size Ranking Codes			
				Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production
1 through 10	KS & OK & TX	Hugoton Gas Area	1922	1	1	1	1
	LA	Monroe	1916	1	20	1	20
	NM	Basin	1947	1	1	1	1
	NM & CO	Blanco	1927	1	1	1	1
	OK	Golden Trend	1945	1	10	1	2
	OK & KS & TX	Mocene-Laveme Gas Area	1946	1	1	1	1
	OK	Sooner Trend	1938	2	10	1	5
	TX	Carthage	1936	1	1	1	1
	TX	Katy	1938	1	100	1	10
	TX	Panhandle West	1918	1	1	1	1
Top 10	Volume Subtotal (trillion cf)			146.1	31.1	115.0	1.7
Top 10	Percentage of U.S. Total			14.8%	17.8%	14.1%	9.2%
11 through 20	CA	Kettleman Dome North	1928	5	200	2	200
	CA	Rio Vista	1936	2	20	2	50
	GF	Ship Shoal Blk 208	1961	2	20	2	100
	GF & LA	Vermilion Blk 14	1956	2	5	2	5
	OK	Edmond West	1930	2	100	2	100
	OK	Watonga-Chickasha Trend	1948	2	2	2	1
	TX	Gomez	1963	2	2	2	2
	TX	Old Ocean	1934	2	50	2	10
	TX	Puckett	1952	2	10	2	5
	TX	Stratton	1937	5	50	2	10
Top 20	Volume Subtotal (trillion cf)			184.5	34.0	150.6	2.1
Top 20	Percentage of U.S. Total			18.7%	19.4%	18.5%	11.4%
21 through 50	AK	Kenai	1959	5	50	5	10
	CA	Ventura	1916	10	100	5	200
	GF	Tiger Shoal	1958	2	10	5	2
	GF	Vermilion Blk 39	1949	5	20	5	20
	GF	West Cameron Blk 180	1960	5	50	5	50
	LA	Bastian Bay	1951	5	100	5	50
	LA	Bateman Lake	1937	5	100	5	200
	LA	Bayou Sale	1940	5	50	5	10
	LA	Caillou Island	1930	5	50	5	50
	LA	Lake Arthur	1937	5	100	5	50
	LA	Mound Point	1958	5	100	5	50
	LA	Sligo	1922	5	50	5	50
	LA & GF	West Delta Blk 27	1949	5	100	5	50
	NM	Eumont	1929	5	10	5	10
	NM & TX	Jalmat	1927	5	50	5	20
	OK	Kinta	1914	5	5	5	2
	OK	Oklahoma City	1928	5	50	5	50
	OK	Ringwood	1945	5	20	5	10
	TX	Agua Dulce	1928	5	50	5	50
	TX	Boonsville	1945	5	5	5	5
	TX	Borregos	1945	5	100	5	50
	TX	Coyanosa	1959	5	5	5	2
	TX	La Gloria	1924	5	200	5	100
	TX	Panhandle	1910	5	10	5	10
	TX	Panhandle East	1935	5	50	5	50
	TX	Pledger	1925	10	200	5	200
	TX	Seeligson	1938	5	50	5	50
	TX	Sheridan	1940	10	100	5	100
	TX	Viboras	1949	10	100	5	50
	TX	Zone 21-B Trend	1974	5	500	5	100
Top 50	Volume Subtotal (trillion cf)			258.5	38.0	220.6	2.8
Top 50	Percentage of U.S. Total			26.2%	21.6%	27.1%	15.0%

See footnotes at end of table.

Table 8. Top 100 U.S. Gas Fields Group-Ranked According to Cumulative Production, 1991
(Continued)

Rank	Location	Field Name	Discovery Year	Field Size Ranking Codes			
				Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production
	AK	Prudhoe Bay	1967	1	1	10	1
	CA	Wilmington	1932	20	100	10	100
	GF	East Cameron Blk 64	1957	10	20	10	100
	GF	Eugene Island SA Blk 292	1964	10	20	10	10
	GF	Eugene Island SA Blk 296	1971	20	200	10	50
	GF	Eugene Island SA Blk 330	1971	10	10	10	10
	GF	Grand Isle Blk 43	1956	10	20	10	50
	GF	Ship Shoal Blk 176	1956	10	10	10	10
	GF	South Marsh Island Blk 48	1961	10	20	10	20
	GF	South Timbalier Blk 172	1965	10	10	10	5
	KS & CO & OK	Greenwood Gas Area	1952	10	20	10	50
	KS	Panoma Gas Area	1956	5	1	10	1
	KY	Big Sandy	1881	10	5	10	5
	LA	Black Lake	1964	10	20	10	5
	LA	Cotton Valley	1922	10	20	10	20
	LA	Duck Lake	1947	10	200	10	500
	LA	Erath	1940	20	500	10	200
	LA	Garden City	1956	10	100	10	20
	LA	Hollywood	1953	20	200	10	200
	LA	Krotz Springs	1942	20	500	10	500
	LA	Lake Pagle	1958	10	10	10	50
51	LA	Lirette	1937	10	500	10	500
	LA	Paradis	1939	10	200	10	500
	LA	Pecan Island	1943	10	50	10	20
through	LA	Rabbit Island	1942	20	200	10	100
	MS	Gwinnville	1944	10	200	10	100
	NM	Blinbry	1945	10	50	10	20
100	NM	Indian Basin	1963	10	10	10	10
	OK	Camrick Gas Area	1954	20	50	10	50
	OK	Putnam	1957	10	20	10	10
	OK	Red Oak-Norris	1910	5	1	10	5
	OK	Wilburton	1941	10	5	10	1
	TX	Alazan North	1958	10	500	10	100
	TX & LA	Bethany	1916	10	50	10	20
	TX	Block 16	1969	10	20	10	20
	TX	Brown-Bassett	1953	10	5	10	5
	TX	Chocolate Bayou	1940	10	50	10	100
	TX	Emperor	1936	10	50	10	50
	TX	Giddings	1960	10	10	10	2
	TX	Greta	1933	20	200	10	200
	TX	Hansford	1953	10	50	10	20
	TX	Headlee	1953	5	5	10	5
	TX	Magnet Withers	1936	20	200	10	200
	TX	Opelika	1937	10	10	10	20
	TX	Sand Hills	1930	10	20	10	10
	TX	Spraberry Trend Area	1950	10	5	10	5
	TX	Tom OConnor	1934	10	50	10	50
	TX & LA	Waskom	1916	10	10	10	10
	TX	Wasson	1937	10	5	10	20
	WY	Big Piney-Labarge	1924	10	10	10	100
Top 100	Volume Subtotal (trillion cf)			345.3	55.0	290.3	4.3
Top 100	Percentage of U.S. Total			35.0%	31.4%	35.7%	22.8%

Ranking Codes: 1=Field nationally ranked in top 10 in category ; 2=top 20 ; 5=top 50 ; 10=top 100 ; 20=top 200 ; 50=top 500 ; 100=top 1,000 ; 200=top 2,000 ; 500=top 5,000 ; 1000=top 10,000 ; *=lower than top 10,000 ; - = zero volume.

Notes: •Field groups are listed in descending volumetric order with respect to the subject category (data italicized). Fields within each group are sorted alphabetically by State abbreviation and then by field name. •GF=Gulf of Mexico offshore Federal domain; PF=Pacific offshore Federal domain. •Crude oil statistics include lease condensate. •Natural gas statistics are defined on a wet, after lease separation basis.

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

Table 9. Top 100 U.S. Gas Fields Group-Ranked According to Annual Production, 1991

Rank	Location	Field Name	Discovery Year	Field Size Ranking Codes			
				Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production
1 through 10	AK	Prudhoe Bay	1967	1	1	10	1
	KS & OK & TX	Hugoton Gas Area	1922	1	1	1	1
	KS	Panoma Gas Area	1956	5	1	10	1
	NM	Basin	1947	1	1	1	1
	NM & CO	Blanco	1927	1	1	1	1
	OK & KS & TX	Mocane-Laverne Gas Area	1946	1	1	1	1
	OK	Watonga-Chickasha Trend	1948	2	2	2	1
	OK	Wilburton	1941	10	5	10	1
	TX	Carthage	1936	1	1	1	1
	TX	Panhandle West	1918	1	1	1	1
Top 10	Volume Subtotal (trillion cf)			134.6	38.5	96.1	2.1
Top 10	Percentage of U.S. Total			13.6%	21.9%	11.8%	11.2%
11 through 20	CO	Wattenberg	1970	10	1	20	2
	GF	Tiger Shoal	1958	2	10	5	2
	LA	Lake Arthur South	1955	20	5	50	2
	OK	Golden Trend	1945	1	10	1	2
	OK	Kinta	1914	5	5	5	2
	TX	Coyanosa	1959	5	5	5	2
	TX	Giddings	1960	10	10	10	2
	TX	Gomez	1963	2	2	2	2
	TX	McAllen Ranch	1960	10	5	20	2
	WY	Whitney Canyon-Carter Crk	1978	10	5	20	2
Top 20	Volume Subtotal (trillion cf)			161.4	44.3	117.1	2.9
Top 20	Percentage of U.S. Total			16.3%	25.3%	14.4%	15.7%
21 through 50	AK	Beluga River	1962	10	2	50	5
	AK	Cook Inlet North	1962	10	2	20	5
	AK	McArthur River	1965	20	2	50	5
	CA	Elk Hills	1919	10	2	20	5
	GF	Brazos SA Blk A133	1975	50	20	100	5
	GF	Eugene Island Blk 57	1950	50	50	50	5
	GF	High Island SA Blk A563	1975	50	50	50	5
	GF	High Island SA Blk A573	1973	50	10	50	5
	GF	Matagorda Island Blk 604	1984	100	50	200	5
	GF	Matagorda Island Blk 623	1980	50	10	100	5
	GF	Matagorda Island Blk 668	1981	20	10	50	5
	GF	South Timbalier Blk 172	1965	10	10	10	5
	GF & LA	Vermilion Blk 14	1956	2	5	2	5
	GF	Vermilion Blk 218	1965	50	50	50	5
	KY	Big Sandy	1881	10	5	10	5
	LA	Black Lake	1964	10	20	10	5
	OK	Eakly-Weatherford Trend	1953	20	20	20	5
	OK	Elk City	1947	10	5	20	5
	OK	Red Oak-Norris	1910	5	1	10	5
	OK	Sho-Vel-Tum	1905	20	10	20	5
	OK	Sooner Trend	1938	2	10	1	5
	OK	Strong City District	1966	50	10	50	5
	TX	Boonsville	1945	5	5	5	5
	TX	Brown-Bassett	1953	10	5	10	5
	TX	Headlee	1953	5	5	10	5
	TX	La Perla Ranch	1976	50	10	50	5
	TX	Oak Hill	1958	20	5	50	5
	TX	Puckett	1952	2	10	2	5
	TX	Sawyer	1960	10	5	20	5
	TX	Spraberry Trend Area	1950	10	5	10	5
Top 50	Volume Subtotal (trillion cf)			210.2	57.9	152.3	4.4
Top 50	Percentage of U.S. Total			21.3%	33.0%	18.7%	23.7%

See footnotes at end of table.

Table 9. Top 100 U.S. Gas Fields Group-Ranked According to Annual Production, 1991
(Continued)

Rank	Location	Field Name	Discovery Year	Field Size Ranking Codes			
				Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production
	AK	Konai	1959	5	50	5	10
	AK	Kuparuk River	1969	50	10	100	10
	AL	Lower Mobile Bay-Mary Ann	1979	50	5	200	10
	GF	East Cameron SA Blk 265	1963	50	20	100	10
	GF	East Cameron SA Blk 299	1984	50	20	100	10
	GF	Eugene Island Blk 238	1964	20	20	20	10
	GF	Eugene Island Blk 266	1964	20	50	20	10
	GF	Eugene Island SA Blk 292	1964	10	20	10	10
	GF	Eugene Island SA Blk 330	1971	10	10	10	10
	GF	Eugene Island SA Blk 385	1975	100	50	100	10
	GF	Garden Banks Blk 236	1977	50	10	200	10
	GF	High Island SA Blk A571	1974	50	10	50	10
	GF	Ship Shoal Blk 176	1956	10	10	10	10
	GF	South Marsh Is NA Blk 269	1973	50	20	50	10
	GF	South Marsh Is SA Blk 205	1985	200	100	200	10
	GF	South Marsh Is SA Blk 79	1963	100	20	200	10
	GF	South Pass SA Blk 75	1984	100	50	100	10
	GF & LA	South Pass SA Blk 78	1973	20	20	20	10
	GF	South Pass SA Blk 89	1969	50	10	100	10
	GF	South Timbalier Blk 176	1963	20	20	20	10
	GF	South Timbalier Blk 206	1984	100	50	200	10
51	GF	Vermilion Blk 24	1977	100	100	100	10
	GF & LA	West Cameron Blk 45	1949	20	200	20	10
	GF	West Cameron SA Blk 565	1972	50	20	50	10
through	LA	Ada	1944	20	50	50	10
	LA	Bayou Sale	1940	5	50	5	10
	LA	Chalkley	1938	20	10	50	10
100	LA	Port Hudson	1977	50	10	50	10
	NM	Eumont	1929	5	10	5	10
	NM	Indian Basin	1963	10	10	10	10
	OK	Carpenter	1951	50	10	50	10
	OK	Cheyenne West	1971	50	10	50	10
	OK	Choctaw Thrust	1990	200	50	200	10
	OK	Moorewood NE	1979	50	20	50	10
	OK	Panola South	1990	50	10	500	10
	OK	Putnam	1957	10	20	10	10
	OK	Reydon	1962	20	10	50	10
	OK	Ringwood	1945	5	20	5	10
	TX	Bashara-Herford	1979	100	50	200	10
	TX	Conger	1973	50	10	50	10
	TX	Katy	1938	1	100	1	10
	TX	Old Ocean	1934	2	50	2	10
	TX	Ozona	1953	20	10	20	10
	TX	Panhandle	1910	5	10	5	10
	TX	Sand Hills	1930	10	20	10	10
	TX	Stratton	1937	5	50	2	10
	TX & LA	Waskom	1916	10	10	10	10
	WY	Bruff	1974	50	10	100	10
	WY	Fogarty Creek	1975	20	2	100	10
	WY	Labarge	1924	50	5	50	10
Top 100	Volume Subtotal (trillion cf)			271.8	69.1	202.8	6.0
Top 100	Percentage of U.S. Total			27.5%	39.4%	24.9%	32.3%

Ranking Codes: 1=Field nationally ranked in top 10 in category; 2=top 20; 5=top 50; 10=top 100; 20=top 200; 50=top 500; 100=top 1,000; 200=top 2,000; 500=top 5,000; 1000=top 10,000; *=lower than top 10,000; - = zero volume.

Notes: •Field groups are listed in descending volumetric order with respect to the subject category (data italicized). Fields within each group are sorted alphabetically by State abbreviation and then by field name. •GF=Gulf of Mexico offshore Federal domain; PF=Pacific offshore Federal domain. •Crude oil statistics include lease condensate. •Natural gas statistics are defined on a wet, after lease separation basis.

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

4. Top 100 Fields Based on Total Hydrocarbons

Summary

Over 45,000 fields with commercially producible crude oil and/or natural gas had been discovered prior to the end of 1991. Figure 4 summarizes the concentration statistics for U.S. combined hydrocarbons within the top 10, top 20, top 50, and top 100 fields. Prior to the ranking, the natural gas volumetric data were converted to barrels-of-oil-equivalent using the following formula:

1 barrel of crude oil equivalent = 5.3 thousand cubic feet of natural gas, wet after lease separation.

Tables 10 through 13, respectively, present ordered lists of the oil and gas fields for each size group within four volumetric categories: ultimate recovery, proved reserves, and cumulative production, all as of December 31, 1991, and 1991 natural gas production. Total hydrocarbons concentration in the top 100 fields is greatest for proved reserves. Alaska's Prudhoe Bay Field was easily the largest single field in terms of total hydrocarbon ultimate recovery. Second place was taken by Hugoton (Kansas-Oklahoma-Texas) Field. Midway-Sunset (California) and Blanco (New Mexico) fields also were in the top 10 in all four total hydrocarbon categories.

Total Hydrocarbon Ultimate Recovery

The top 100 fields based on total hydrocarbon ultimate recovery were responsible for 34 percent of the U.S. total hydrocarbons proved or produced through 1991 (Table 10). The top 10 fields, which accounted for 13 percent of the total, represented seven States: Alaska, California, Colorado, Kansas, New Mexico, Oklahoma, and Texas. Only two Federal offshore fields, Bay Marchand Blk 2 and Ship Shoal Blk 208, appeared in the top 50. Texas dominated the 1991 top 100 list with 39 fields, while California was in second place with 16 fields.

Proved Total Hydrocarbon Reserves

The 100 largest combined oil-equivalent proved reserves fields at the end of 1991 accounted for 49 percent of U.S. proved reserves of total hydrocarbons (Table 11). The top 10 contained 26 percent and consisted of two Alaskan North Slope giant fields, four very old California giant fields, Kansas' Hugoton Field, two of New Mexico's San Juan Basin fields, and one oil field in West Texas. Seven Texas fields account for the next 10 largest combined reserves fields. The remaining fields in the top 100 reserves field list appeared to be equally split among all major producing States and the Pacific and Gulf of Mexico Federal offshore areas, although Texas had a plurality of large reserves fields. Seven of the top 100 reserves fields were nonproducing in 1991.

Figure 4. Total Hydrocarbons Concentration in Top 10, 20, 50, and 100 U.S. Fields, 1991

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

Cumulative and Annual Total Hydrocarbons Production

The top 100 U.S. oil and gas fields accounted for 34 percent of the total hydrocarbons produced between 1859 and 1991 (Table 12). The top 10, 20, and 50 fields accounted for 12 percent, 16 percent, and 25 percent, respectively. All but nine of the top 100 cumulative production fields also ranked in the top 100 with respect to ultimate recovery. However, only 41 also ranked in the top 100 in proved total hydrocarbon reserves.

In 1991, annual production of total hydrocarbons resulted in concentration levels of 17 percent in the top 10 fields, 22 percent in the top 20 fields, 30 percent in the top 50 fields, and 37 percent in the top 100 fields (Table 13). The top 20 hydrocarbon producing fields were located, primarily, in Texas (7), California (5), Alaska (3), New Mexico (2), Oklahoma (2), and Kansas (1). Of the top 100 producing fields, Texas (33 fields) and the Gulf of Mexico Federal offshore (27 fields) accounted for the most fields.

Table 10. Top 100 U.S. Total-Hydrocarbon Fields Group-Ranked According to Ultimate Recovery, 1991

Rank	Location	Field Name	Discovery Year	Field Size Ranking Codes			
				Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production
1 through 10	AK	Kuparuk River	1969	1	1	5	1
	AK	Prudhoe Bay	1967	1	1	1	1
	CA	Midway-Sunset	1901	1	1	1	1
	CA	Wilmington	1932	1	5	1	2
	KS & OK & TX	Hugoton Gas Area	1922	1	1	1	1
	NM	Basin	1947	1	1	5	1
	NM & CO	Blanco	1927	1	1	1	1
	TX	East Texas	1930	1	2	1	2
	TX	Panhandle West	1918	1	2	1	2
	TX	Wasson	1937	1	1	1	2
Top 10	Volume Subtotal (billion bbls oil-equiv)			48.8	14.1	34.7	1.0
Top 10	Percentage of U.S. Total			13.0%	23.9%	11.0%	16.4%
11 through 20	CA	Belridge South	1911	2	1	5	1
	CA	Elk Hills	1919	2	1	2	2
	CA	Kern River	1899	2	1	2	1
	OK	Golden Trend	1945	2	10	2	5
	OK	Sho-Vel-Tum	1905	2	5	2	5
	TX	Carthage	1936	2	2	2	2
	TX	Katy	1938	2	100	1	20
	TX	Panhandle	1910	2	10	1	5
	TX	Slaughter	1937	2	2	5	5
	TX	Yates	1926	2	2	2	5
Top 20	Volume Subtotal (billion bbls oil-equiv)			66.4	17.5	48.8	1.3
Top 20	Percentage of U.S. Total			17.7%	29.7%	15.5%	20.7%
21 through 50	AK	McArthur River	1965	5	5	10	5
	CA	Buena Vista	1909	5	50	5	50
	CA	Coalinga	1887	5	5	5	5
	CA	Huntington Beach	1920	5	10	2	50
	CA	Kettleman Dome North	1928	5	200	5	200
	CA	Long Beach	1921	5	50	5	100
	CA	Santa Fe Springs	1919	5	100	5	200
	CA	Ventura	1916	5	10	2	20
	CO	Rangely	1902	5	5	5	5
	GF & LA	Bay Marchand Blk 2	1949	5	5	5	5
	GF	Ship Shoal Blk 208	1961	5	20	5	50
	LA	Caillou Island	1930	5	20	5	20
	LA	Monroe	1918	5	50	2	50
	OK	Edmond West	1930	5	200	5	100
	OK & KS & TX	Mocene-Laverne Gas Area	1946	5	5	5	2
	OK	Oklahoma City	1928	5	50	5	50
	OK	Sooner Trend	1938	5	10	5	5
	OK	Watonga-Chickasha Trend	1948	5	5	5	2
	TX	Conroe	1931	5	50	5	50
	TX	Cowden North	1930	5	5	10	5
	TX	Goldsmith	1935	5	20	5	10
	TX	Gomez	1963	5	5	5	5
	TX	Hawkins	1940	5	10	5	10
	TX	Kelly-Snyder	1948	5	20	2	10
	TX	Levelland	1945	5	2	10	5
	TX	Old Ocean	1934	5	50	5	20
	TX	Seeligson	1938	5	100	5	50
	TX	Spraberry Trend Area	1950	5	2	5	2
	TX	Tom O'Connor	1934	5	20	5	10
	WY	Salt Creek	1889	5	50	5	50
Top 50	Volume Subtotal (billion bbls oil-equiv)			98.3	20.4	77.8	1.6
Top 50	Percentage of U.S. Total			26.2%	34.6%	24.7%	25.5%

See footnotes at end of table.

Table 10. Top 100 U.S. Total-Hydrocarbon Fields Group-Ranked According to Ultimate Recovery, 1991 (Continued)

Rank	Location	Field Name	Discovery Year	Field Size Ranking Codes			
				Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production
	AK	Endicott	1978	10	2	50	1
	AP	Smackover	1922	10	50	10	100
	CA	Brea-Olinda	1897	10	20	10	100
	CA	Coalinga East Extension	1938	10	50	10	20
	CA	Rio Vista	1936	10	50	10	50
	CA	San Ardo	1947	10	5	20	50
	FL & AL	Jay	1970	10	50	10	20
	GF	Eugene Island SA Blk 300	1971	10	10	10	5
	GF & LA	Grand Isle Blk 16	1948	10	50	10	20
	GF	Grand Isle Blk 43	1956	10	20	10	20
	GF & LA	South Pass Blk 27	1954	10	20	10	50
	GF	Tiger Shoal	1956	10	20	10	5
	GF & LA	Vermilion Blk 14	1956	10	10	5	10
	GF	West Delta Blk 30	1949	10	20	10	10
	IL	Salem Consol	1938	10	100	10	100
	KS	Panoma Gas Area	1956	10	5	20	5
	LA	Bastian Bay	1951	10	100	10	50
	LA	Bateman Lake	1937	10	200	10	200
	LA	Bayou Sale	1940	10	50	10	20
	LA	Sligo	1922	10	50	10	50
	LA	South Pass Blk 24	1950	10	20	10	20
51	LA & GF	West Delta Blk 27	1949	10	100	10	100
	NM	Eunice Monument	1929	10	10	10	50
	NM & TX	Jalmal	1927	10	50	10	50
through	NM	Vacuum	1929	10	10	10	10
	OK	Burbank	1920	10	200	10	200
	OK	Cushing	1912	10	100	10	100
100	OK	Kinta	1914	10	10	20	5
	OK	Ringwood	1945	10	50	10	20
	PA & NY	Bradford	1864	10	500	10	200
	TX	Boonsville	1945	10	10	10	10
	TX	Borregos	1945	10	200	10	100
	TX	Fullerton	1942	10	10	20	10
	TX	Giddings	1960	10	10	10	1
	TX	Hastings West	1958	10	200	10	100
	TX	Headlee	1953	10	10	20	5
	TX	Keystone	1935	10	20	10	50
	TX	La Gloria	1924	10	200	10	200
	TX	McElroy	1926	10	10	10	10
	TX	Puckett	1952	10	20	5	10
	TX	Sand Hills	1930	10	50	10	20
	TX	Seminole	1936	10	5	10	5
	TX	Stratton	1937	10	100	5	20
	TX	Van	1929	10	50	10	50
	TX	Webster	1936	10	50	10	50
	TX	West Ranch	1936	10	50	10	50
	TX	Wichita County Regular	1911	10	100	10	50
	UT	Greater Aneth	1956	10	10	20	20
	WY & MT	Elk Basin	1915	10	20	10	50
	WY	Oregon Basin	1912	10	20	20	10
Top 100	Volume Subtotal (billion bbls oil-equiv)			128.6	23.5	105.1	2.0
Top 100	Percentage of U.S. Total			34.3%	39.9%	33.5%	31.4%

Ranking Codes: 1=Field nationally ranked in top 10 in category; 2=top 20; 5=top 50; 10=top 100; 20=top 200; 50=top 500; 100=top 1,000; 200=top 2,000; 500=top 5,000; 1000=top 10,000; *=lower than top 10,000; -- = zero volume.

Notes: *Field groups are listed in descending volumetric order with respect to the subject category (data italicized). Fields within each group are sorted alphabetically by State abbreviation and then by field name. *GF=Gulf of Mexico offshore Federal domain; PF=Pacific offshore Federal domain. *Crude oil statistics include lease condensate. *Natural gas statistics are defined on a wet, after lease separation basis.

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

Table 11. Top 100 U.S. Total-Hydrocarbon Fields Group-Ranked According to Proved Reserves, 1991

Rank	Location	Field Name	Discovery Year	Field Size Ranking Codes			
				Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production
1 through 10	AK	Kuparuk River	1969	1	1	5	1
	AK	Prudhoe Bay	1967	1	1	1	1
	CA	Belridge South	1911	2	1	5	1
	CA	Elk Hills	1919	2	1	2	2
	CA	Kern River	1899	2	1	2	1
	CA	Midway-Sunset	1901	1	1	1	1
	KS & OK & TX	Hugoton Gas Area	1922	1	1	1	1
	NM	Basin	1947	1	1	5	1
	NM & CO	Blanco	1927	1	1	1	1
	TX	Wasson	1937	1	1	1	2
Top 10	Volume Subtotal (billion bbls oil-equiv)			39.9	15.1	24.9	1.1
Top 10	Percentage of U.S. Total			10.7%	25.5%	7.9%	17.1%
11 through 20	AK	Endicott	1978	10	2	50	1
	CO	Wattenberg	1970	20	2	50	5
	PF	Hondo	1969	20	2	50	10
	TX	Carthage	1936	2	2	2	2
	TX	East Texas	1930	1	2	1	2
	TX	Levelland	1945	5	2	10	5
	TX	Panhandle West	1918	1	2	1	2
	TX	Slaughter	1937	2	2	5	5
	TX	Spraberry Trend Area	1950	5	2	5	2
	TX	Yates	1926	2	2	2	5
Top 20	Volume Subtotal (billion bbls oil-equiv)			60.1	18.5	41.6	1.3
Top 20	Percentage of U.S. Total			16.0%	31.4%	13.2%	21.3%
21 through 50	AK	Beluga River	1962	50	5	100	20
	AK	Cook Inlet North	1962	20	5	50	10
	AK	McArthur River	1965	5	5	10	5
	AK	Point McIntyre	1988	50	5	-	-
	AL & GF	North Central Gulf	1985	50	5	-	-
	AL & GF	Northwest Gulf	1983	50	5	-	200
	CA	Coalinga	1887	5	5	5	5
	CA	Cymric	1916	20	5	50	10
	CA	San Ardo	1947	10	5	20	50
	CA	Wilmington	1932	1	5	1	2
	CO	Rangely	1902	5	5	5	5
	GF & LA	Bay Marchand Blk 2	1949	5	5	5	5
	GF	Garden Banks Blk 426	1987	50	5	-	-
	GF	Mississippi Canyon Blk 194	1975	20	5	50	10
	GF	South Pass SA Blk 89	1969	50	5	50	5
	KS	Panoma Gas Area	1956	10	5	20	5
	KY	Big Sandy	1881	20	5	20	10
	OK & KS & TX	Mocane-Laveme Gas Area	1946	5	5	5	2
	OK	Red Oak-Norris	1910	20	5	50	5
	OK	Sho-Vel-Tum	1905	2	5	2	5
	OK	Walonga-Chickasha Trend	1948	5	5	5	2
	PF	Pescado	1970	50	5	-	-
	PF	Point Arguello	1981	50	5	500	20
	TX	Cowden North	1930	5	5	10	5
	TX	Gomez	1963	5	5	5	5
	TX	Pearsall	1924	50	5	50	2
	TX	Seminole	1936	10	5	10	5
	UT & WY	Anschutz Ranch East	1979	50	5	50	20
	WY	Fogarty Creek	1975	50	5	200	20
	WY	Lake Ridge	1981	50	5	500	50
Top 50	Volume Subtotal (billion bbls oil-equiv)			78.5	23.9	55.6	1.7
Top 50	Percentage of U.S. Total			21.2%	40.6%	17.6%	27.1%

See footnotes at end of table.

Table 11. Top 100 U.S. Total-Hydrocarbon Fields Group-Ranked According to Proved Reserves, 1991 (Continued)

Rank	Location	Field Name	Discovery Year	Field Size Ranking Codes			
				Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production
	AK	Milne Point	1982	100	10	200	10
	AL	Bon Secour Bay	1983	100	10	-	-
	AL	Fairway	1986	100	10	-	200
	AL	Gurnee Coal Degas	1990	100	10	-	500
	AL	Lower Mobile Bay-Mary Ann	1979	50	10	500	20
	CA	Huntington Beach	1920	5	10	2	50
	CA	Lost Hills	1910	20	10	20	5
	CA	Ventura	1916	5	10	2	20
	GF	Eugene Island SA Blk 330	1971	10	10	10	5
	GF	Green Canyon Blk 116	1983	100	10	-	-
	GF	Green Canyon Blk 65	1983	100	10	500	10
	GF	High Island SA Blk A573	1973	50	10	50	5
	GF	Main Pass SA Blk 299	1967	50	10	100	50
	GF & LA	Vermilion Blk 14	1956	10	10	5	10
	GF	Viosca Knoll Blk 990	1981	100	10	-	-
	LA	Chalkley	1938	50	10	100	10
	LA	Lake Arthur South	1955	50	10	100	5
	NM	Blanco South	1951	50	10	50	50
	NM	Eunice Monument	1929	10	10	10	50
	NM	Indian Basin	1963	20	10	50	20
	NM	Vacuum	1929	10	10	10	10
51	OK	Elk City	1947	20	10	20	10
	OK	Golden Trend	1945	2	10	2	5
	OK	Kinta	1914	10	10	20	5
through	OK	Sooner Trend	1938	5	10	5	5
	OK	Wilburton	1941	20	10	50	5
	PF	Beta	1976	50	10	100	50
100	TX	Boonsville	1945	10	10	10	10
	TX	Brown-Bassett	1953	20	10	20	10
	TX	Coyanosa	1959	20	10	20	5
	TX	Fullerton	1942	10	10	20	10
	TX	Giddings	1960	10	10	10	1
	TX	Hawkins	1940	5	10	5	10
	TX	Headlee	1953	10	10	20	5
	TX	McAllen Ranch	1960	20	10	50	5
	TX	McElroy	1926	10	10	10	10
	TX	Oak Hill	1958	50	10	100	10
	TX	Ozona	1953	50	10	50	20
	TX	Panhandle	1910	2	10	1	5
	TX	Pegasus	1949	20	10	50	100
	TX	Robertson North	1956	50	10	100	20
	TX	Salt Creek	1942	20	10	20	10
	TX	Sawyer	1960	50	10	50	10
	TX	Wasson 72	1940	50	10	50	50
	UT	Greater Aneth	1956	10	10	20	20
	UT	Lisbon	1960	50	10	50	50
	UT	Natural Buttes	1940	50	10	100	20
	WY	Labarge	1924	50	10	100	10
	WY	Madden	1968	50	10	100	50
	WY	Whitney Canyon-Carter Crk	1978	50	10	50	5
Top 100	Volume Subtotal (billion bbls oil-equiv)			102.4	29.0	73.4	2.1
Top 100	Percentage of U.S. Total			27.3%	49.2%	23.2%	34.4%

Ranking Codes: 1=Field nationally ranked in top 10 in category; 2=top 20; 5=top 50; 10=top 100; 20=top 200; 50=top 500; 100=top 1,000; 200=top 2,000; 500=top 5,000; 1000=top 10,000; *=lower than top 10,000; - = zero volume.

Notes: *Field groups are listed in descending volumetric order with respect to the subject category (data italicized). Fields within each group are sorted alphabetically by State abbreviation and then by field name. *GF=Gulf of Mexico offshore Federal domain; PF=Pacific offshore Federal domain. *Crude oil statistics include lease condensate. *Natural gas statistics are defined on a wet, after lease separation basis.

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

Table 12. Top 100 U.S. Total Hydrocarbon Fields Group-Ranked According to Cumulative Production, 1991

Rank	Location	Field Name	Discovery Year	Field Size Ranking Codes			
				Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production
1 through 10	AK	Prudhoe Bay	1967	1	1	1	1
	CA	Midway-Sunset	1901	1	1	1	1
	CA	Wilmington	1932	1	5	1	2
	KS & OK & TX	Hugoton Gas Area	1922	1	1	1	1
	NM & CO	Blanco	1927	1	1	1	1
	TX	East Texas	1930	1	2	1	2
	TX	Katy	1938	2	100	1	20
	TX	Panhandle	1910	2	10	1	5
	TX	Panhandle West	1918	1	2	1	2
	TX	Wasson	1937	1	1	1	2
Top 10	Volume Subtotal (billion bbls oil-equiv)			48.1	11.5	36.6	0.9
Top 10	Percentage of U.S. Total			12.8%	19.5%	11.6%	13.8%
11 through 20	CA	Elk Hills	1919	2	1	2	2
	CA	Huntington Beach	1920	5	10	2	50
	CA	Kern River	1899	2	1	2	1
	CA	Ventura	1916	5	10	2	20
	LA	Monroe	1916	5	50	2	50
	OK	Golden Trend	1945	2	10	2	5
	OK	Sho-Vel-Tum	1905	2	5	2	5
	TX	Carthage	1936	2	2	2	2
	TX	Kelly-Snyder	1948	5	20	2	10
	TX	Yates	1926	2	2	2	5
Top 20	Volume Subtotal (billion bbls oil-equiv)			64.4	14.1	50.3	1.1
Top 20	Percentage of U.S. Total			17.2%	23.9%	15.9%	17.0%
21 through 50	AK	Kuparuk River	1969	1	1	5	1
	CA	Belridge South	1911	2	1	5	1
	CA	Buena Vista	1909	5	50	5	50
	CA	Coalinga	1887	5	5	5	5
	CA	Kettleman Dome North	1928	5	200	5	200
	CA	Long Beach	1921	5	50	5	100
	CA	Santa Fe Springs	1919	5	100	5	200
	CO	Rangely	1902	5	5	5	5
	GF & LA	Bay Marchand Blk 2	1949	5	5	5	5
	GF	Ship Shoal Blk 208	1961	5	20	5	50
	GF & LA	Vermilion Blk 14	1956	10	10	5	10
	LA	Caillou Island	1930	5	20	5	20
	NM	Easin	1947	1	1	5	1
	OK	Edmond West	1930	5	200	5	100
	OK & KS & TX	Mocane-Laverne Gas Area	1946	5	5	5	2
	OK	Oklahoma City	1928	5	50	5	50
	OK	Sooner Trend	1938	5	10	5	5
	OK	Watonga-Chickasha Trend	1948	5	5	5	2
	TX	Conroe	1931	5	50	5	50
	TX	Goldsmith	1935	5	20	5	10
	TX	Gomez	1963	5	5	5	5
	TX	Hawkins	1940	5	10	5	10
	TX	Old Ocean	1934	5	50	5	20
	TX	Puckett	1952	10	20	5	10
	TX	Seeligson	1938	5	100	5	50
	TX	Slaughter	1937	2	2	5	5
	TX	Spraberry Trend Area	1950	5	2	5	2
	TX	Stratton	1937	10	100	5	20
	TX	Tom O'Connor	1934	5	20	5	10
	WY	Salt Creek	1889	5	50	5	50
Top 50	Volume Subtotal (billion bbls oil-equiv)			97.9	19.9	78.0	1.6
Top 50	Percentage of U.S. Total			26.1%	33.8%	24.7%	25.0%

See footnotes at end of table.

Table 12. Top 100 U.S. Total Hydrocarbon Fields Group-Ranked According to Cumulative Production, 1991 (Continued)

Rank	Location	Field Name	Discovery Year	Field Size Ranking Codes			
				Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production
	AK	McArthur River	1965	5	5	<i>10</i>	5
	AR	Smackover	1922	10	50	<i>10</i>	100
	CA	Brea-Olinda	1897	10	20	<i>10</i>	100
	CA	Coalinga East Extension	1938	10	50	<i>10</i>	20
	CA	Rio Vista	1936	10	50	<i>10</i>	50
	FL & AL	Jay	1970	10	50	<i>10</i>	20
	GF	Eugene Island SA Blk 330	1971	10	10	<i>10</i>	5
	GF & LA	Grand Isle Blk 16	1948	10	50	<i>10</i>	20
	GF	Grand Isle Blk 43	1956	10	20	<i>10</i>	20
	GF & LA	South Pass Blk 27	1954	10	20	<i>10</i>	50
	GF	Tiger Shoal	1958	10	20	<i>10</i>	5
	GF	Vermilion Blk 39	1949	20	20	<i>10</i>	20
	GF	West Delta Blk 30	1948	10	20	<i>10</i>	10
	IL	Salem Consol	1938	10	100	<i>10</i>	100
	LA	Bastian Bay	1951	10	100	<i>10</i>	50
	LA	Bateman Lake	1937	10	200	<i>10</i>	200
	LA	Bayou Sale	1940	10	50	<i>10</i>	20
	LA	Cotton Valley	1922	20	50	<i>10</i>	50
	LA	Lake Arthur	1937	20	100	<i>10</i>	50
	LA	Mound Point	1958	20	100	<i>10</i>	50
	LA	Sligo	1922	10	50	<i>10</i>	50
51	LA	South Pass Blk 24	1950	10	20	<i>10</i>	20
	LA	Timbalier Bay	1938	20	100	<i>10</i>	50
through	LA & GF	West Delta Blk 27	1949	10	100	<i>10</i>	100
	NM	Eumont	1929	20	20	<i>10</i>	20
	NM	Eunice Monument	1929	10	10	<i>10</i>	50
	NM & TX	Jalmat	1927	10	50	<i>10</i>	50
100	NM	Vacuum	1929	10	10	<i>10</i>	10
	OK	Burbank	1920	10	200	<i>10</i>	200
	OK	Cushing	1912	10	100	<i>10</i>	100
	OK	Ringwood	1945	10	50	<i>10</i>	20
	PA & NY	Bradford	1864	10	500	<i>10</i>	200
	TX	Agua Dulce	1928	20	100	<i>10</i>	50
	TX	Boonsville	1945	10	10	<i>10</i>	10
	TX	Borregos	1945	10	200	<i>10</i>	100
	TX	Cowden North	1930	5	5	<i>10</i>	5
	TX	Giddings	1960	10	10	<i>10</i>	1
	TX	Hastings West	1958	10	200	<i>10</i>	100
	TX	Keystone	1935	10	20	<i>10</i>	50
	TX	La Gloria	1924	10	200	<i>10</i>	200
	TX	Levelland	1945	5	2	<i>10</i>	5
	TX	McElroy	1926	10	10	<i>10</i>	10
	TX	Sand Hills	1930	10	50	<i>10</i>	20
	TX	Seminole	1936	10	5	<i>10</i>	5
	TX	Van	1929	10	50	<i>10</i>	50
	TX	Webster	1936	10	50	<i>10</i>	50
	TX	West Ranch	1938	10	50	<i>10</i>	50
	TX	Wichita County Regular	1911	10	100	<i>10</i>	50
	TX	Zone 21-B Trend	1974	20	500	<i>10</i>	100
	WY & MT	Elk Basin	1915	10	20	<i>10</i>	50
Top 100	Volume Subtotal (billion bbls oil-equiv)			128.2	22.4	<i>105.8</i>	1.9
Top 100	Percentage of U.S. Total			34.2%	38.0%	<i>33.5%</i>	29.9%

Ranking Codes: 1=Field nationally ranked in top 10 in category ; 2=top 20 ; 5=top 50 ; 10=top 100 ; 20=top 200 ; 50=top 500 ; 100=top 1,000 ; 200=top 2,000 ; 500=top 5,000 ; 1000=top 10,000 ; * = lower than top 10,000 ; - = zero volume.

Notes: •Field groups are listed in descending volumetric order with respect to the subject category (data italicized). Fields within each group are sorted alphabetically by State abbreviation and then by field name. •GF=Gulf of Mexico offshore Federal domain; PF=Pacific offshore Federal domain. •Crude oil statistics include lease condensate. •Natural gas statistics are defined on a wet, after lease separation basis.

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

Table 13. Top 100 U.S. Total Hydrocarbon Fields Group-Ranked According to Annual Production, 1991

Rank	Location	Field Name	Discovery Year	Field Size Ranking Codes			
				Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production
1 through 10	AK	Endicott	1978	10	2	50	1
	AK	Kuparuk River	1969	1	1	5	1
	AK	Prudhoe Bay	1967	1	1	1	1
	CA	Belridge South	1911	2	1	5	1
	CA	Kern River	1899	2	1	2	1
	CA	Midway-Sunset	1901	1	1	1	1
	KS & OK & TX	Hugoton Gas Area	1922	1	1	1	1
	NM	Basin	1947	1	1	5	1
Top 10	NM & CO	Blanco	1927	1	1	1	1
	TX	Giddings	1960	10	10	10	1
Volume Subtotal (billion bbls oil-equiv)				36.3	13.9	22.4	1.1
Percentage of U.S. Total				9.7%	23.5%	7.1%	17.4%
11 through 20	CA	Elk Hills	1919	2	1	2	2
	CA	Wilmington	1932	1	5	1	2
	OK & KS & TX	Mocane-Laverne Gas Area	1946	5	5	5	2
	OK	Watonga-Chickasha Trend	1948	5	5	5	2
	TX	Carthage	1936	2	2	2	2
	TX	East Texas	1930	1	2	1	2
	TX	Panhandle West	1918	1	2	1	2
	TX	Pearsall	1924	50	5	50	2
	TX	Spraberry Trend Area	1950	5	2	5	2
	TX	Wasson	1937	1	1	1	2
Volume Subtotal (billion bbls oil-equiv)				61.1	17.6	43.5	1.4
Percentage of U.S. Total				16.3%	29.9%	13.8%	22.3%
21 through 50	AK	McArthur River	1965	5	5	10	5
	CA	Coalinga	1887	5	5	5	5
	CA	Lost Hills	1910	20	10	20	5
	CO	Rangely	1902	5	5	5	5
	CO	Wattenberg	1970	20	2	50	5
	GF & LA	Bay Marchand Blk 2	1949	5	5	5	5
	GF	Eugene Island SA Blk 330	1971	10	10	10	5
	GF	High Island SA Blk A573	1973	50	10	50	5
	GF	South Pass SA Blk 89	1969	50	5	50	5
	GF	Tiger Shoal	1958	10	20	10	5
	KS	Panoma Gas Area	1956	10	5	20	5
	LA	Lake Arthur South	1955	50	10	100	5
	OK	Golden Trend	1945	2	10	2	5
	OK	Kinta	1914	10	10	20	5
	OK	Red Oak-Norris	1910	20	5	50	5
	OK	Sho-Vel-Tum	1905	2	5	2	5
	OK	Sooner Trend	1938	5	10	5	5
	OK	Wilburton	1941	20	10	50	5
	TX	Cowden North	1930	5	5	10	5
	TX	Coyanosa	1959	20	10	20	5
	TX	Gomez	1963	5	5	5	5
	TX	Headlee	1953	10	10	20	5
	TX	La Perla Ranch	1976	100	20	100	5
	TX	Levelland	1945	5	2	10	5
	TX	McAllen Ranch	1960	20	10	50	5
	TX	Panhandle	1910	2	10	1	5
	TX	Seminole	1936	10	5	10	5
	TX	Slaughter	1937	2	2	5	5
	TX	Yates	1926	2	2	2	5
	WY	Whitney Canyon-Carter Crk	1978	50	10	50	5
Volume Subtotal (billion bbls oil-equiv)				84.8	22.6	62.3	1.9
Percentage of U.S. Total				22.6%	38.2%	19.7%	30.2%

See footnotes at end of table.

Table 13. Top 100 U.S. Total Hydrocarbon Fields Group-Ranked According to Annual Production, 1991 (Continued)

Rank	Location	Field Name	Discovery Year	Field Size Ranking Codes			
				Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production
	AK	Cook Inlet North	1962	20	5	50	10
	AK	Milne Point	1982	100	10	200	10
	CA	Cymric	1916	20	5	50	10
	GF	Brazos SA Blk A133	1975	100	50	200	10
	GF	Eugene Island Blk 57	1950	100	50	100	10
	GF	Eugene Island Blk 238	1964	50	20	50	10
	GF	Green Canyon Blk 184	1981	200	50	500	10
	GF	Green Canyon Blk 19	1980	100	50	200	10
	GF	Green Canyon Blk 65	1983	100	10	500	10
	GF	High Island SA Blk A563	1975	100	50	100	10
	GF	High Island SA Blk A571	1974	50	20	50	10
	GF & LA	Main Pass Blk 73	1975	50	20	50	10
	GF	Matagorda Island Blk 604	1984	200	50	200	10
	GF	Matagorda Island Blk 623	1980	100	20	200	10
	GF	Matagorda Island Blk 668	1981	50	20	100	10
	GF	Mississippi Canyon Blk 194	1975	20	5	50	10
	GF	Ship Shoal Blk 176	1956	20	20	20	10
	GF & LA	South Pass Blk 61	1955	50	20	50	10
	GF & LA	South Pass SA Blk 78	1973	50	20	50	10
	GF	South Timbalier Blk 172	1965	20	20	20	10
	GF	South Timbalier Blk 176	1963	50	20	50	10
51	GF & LA	Vermillion Blk 14	1956	10	10	5	10
	GF	Vermillion Blk 218	1965	100	50	100	10
	GF	West Delta Blk 30	1949	10	20	10	10
through	GF	West Delta Blk 73	1962	20	20	20	10
	KY	Big Sandy	1881	20	5	20	10
	LA	Black Lake	1964	20	50	20	10
100	LA	Chalkley	1938	50	10	100	10
	LA	Port Hudson	1977	50	20	100	10
	NM	Vacuum	1929	10	10	10	10
	OK	Eakly-Weatherford Trend	1953	50	20	50	10
	OK	Elk City	1947	20	10	20	10
	OK	Putnam	1957	20	50	20	10
	OK	Strong City District	1966	50	20	100	10
	PF	Hondo	1969	20	2	50	10
	TX	Anne Tandy	1972	100	50	200	10
	TX	Boonsville	1945	10	10	10	10
	TX	Brown-Bassett	1953	20	10	20	10
	TX	Fullerton	1942	10	10	20	10
	TX	Goldsmith	1935	5	20	5	10
	TX	Hawkins	1940	5	10	5	10
	TX	Kelly-Snyder	1948	5	20	2	10
	TX	McElroy	1926	10	10	10	10
	TX	Oak Hill	1958	50	10	100	10
	TX	Puckett	1952	10	20	5	10
	TX	Salt Creek	1942	20	10	20	10
	TX	Sawyer	1960	50	10	50	10
	TX	Tom OConnor	1934	5	20	5	10
	WY	Labarge	1924	50	10	100	10
	WY	Oregon Basin	1912	10	20	20	10
Top 100	Volume Subtotal (billion bbls oil-equiv)			103.3	26.3	77.0	2.3
Top 100	Percentage of U.S. Total			27.6%	44.5%	24.4%	37.4%

Ranking Codes: 1=Field nationally ranked in top 10 in category ; 2=top 20 ; 5=top 50 ; 10=top 100 ; 20=top 200 ; 50=top 500 ; 100=top 1,000 ; 200=top 2,000 ; 500=top 5,000 ; 1000=top 10,000 ; *=lower than top 10,000 ; - = zero volume.

Notes: •Field groups are listed in descending volumetric order with respect to the subject category (data italicized). Fields within each group are sorted alphabetically by State abbreviation and then by field name. •GF=Gulf of Mexico offshore Federal domain; PF=Pacific offshore Federal domain. •Crude oil statistics include lease condensate. •Natural gas statistics are defined on a wet, after lease separation basis.

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

5. Oil Versus Gas in Large and Small Fields

Oil and Gas Energy Equivalent Comparative Summary

This chapter examines and contrasts the percentage contributions of crude oil and natural gas located in large and small fields, relative to the four categories examined in this report: ultimate recovery, proved reserves, cumulative production, and annual production. The percentage contribution breakdowns are presented both for the current data year, 1991, and for a selected historical year, 1980. To produce the appropriate statistics, the oil and gas field-level source data were converted to a common basis according to the following energy equivalent formula:

1 barrel of crude oil equivalent = 5.3 thousand cubic feet of natural gas, wet after lease separation.

For purposes of the large field-small field comparisons presented in this chapter, a field was considered to be "large" if it was a "top 100" field in *any one* of the four categories for *any one* of the three hydrocarbon groupings (*i.e.*, crude oil, natural gas, or total hydrocarbons). Appendix A presents the complete list of 334 large fields that qualified under this definition for 1991. Each field was also identified in the earlier chapters in the appropriate top 100 list(s) in Tables 2 through 13. The 1980 list of large fields, calculated on the same basis, numbered 331.

Figure 5 charts the 1991 national-level crude oil and natural gas data, by volumetric category, using equivalent energy scales. The estimates of ultimate oil recovery and ultimate gas recovery are nearly equal, with the oil estimates being slightly larger. Cumulative oil production exceeds cumulative gas production, reflective of the advance start of the oil industry as compared to the gas industry; this was previously depicted for the large fields alone in Figure 1 (Chapter 1). Domestic natural gas proved reserves and annual production in 1991 exceeded crude oil reserves and production by 28% and 30%, respectively.

Figures 6 through 9 illustrate the contributions³ to 1980 and 1991 total hydrocarbons, by volumetric category, from the following four components:

- Crude oil in large fields (upper left quadrant);
- Crude oil in small fields (lower left quadrant);
- Natural gas in small fields (lower right quadrant);
- Natural gas in large fields (upper right quadrant).

The relative contributions of *all* crude oil (left pie slices), *all* natural gas (right pie slices), *all* large fields (top pie slices), and *all* small fields (bottom pie slices), may be easily determined visually using these charts.

³Note that the percentage contributions attributable to large fields, as shown in this chapter, consider the occurrence of any and all crude oil and natural gas in these fields. For example, a relatively small amount of natural gas occurring in a large oil field counts as coming from a large field. In the previous chapters, however, the contributions from large fields were limited to the top 100 largest fields in a particular category.

Figure 5. Energy Equivalent Comparison of U.S. Crude Oil and Natural Gas Ultimate Recovery, Proved Reserves, Cumulative Production, and Annual Production, 1991

Notes: • Crude oil includes lease condensate. • Natural gas is wet, after lease separation. • Oil and gas scales are identical in terms of energy equivalents: 1 barrel of crude oil = 5,300 cubic feet of natural gas.

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

Ultimate Recovery, 1980 and 1991

By chance, the 1991 energy contributions to U.S. estimated total hydrocarbon ultimate recovery were almost identical with respect to large fields with crude oil, large fields with natural gas, small fields with crude oil, and small fields with natural gas (Figure 6). A derivative result is that approximately one-half (49.4 percent) was accounted for by large oil and gas fields as defined herein. Comparatively, the breakdown for 1980 showed a somewhat greater contribution (53.1 percent) from large fields. This changeover in supply from large fields to small fields over the 11-year period occurred much more noticeably for natural gas than for crude oil.

Figure 6. Ultimate Recovery Energy Equivalent Comparison in Large and Small Fields

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

Proved Reserves, 1980 and 1991

Large fields accounted for 61.7 percent of the national hydrocarbon proved reserves as of December 31, 1991, with slightly more than half of this amount being in the form of crude oil (Figure 7). Small fields with crude oil accounted for only 12.3 percent of the total reserves, while small fields with natural gas contributed 26.0 percent. The large fields contribution of 61.7 percent was down from 65.3 percent in 1980. Although the calculated decline occurred in both large oil fields and large gas fields, the 1988 removal of Alaskan North Slope gas reserves from the proved reserves category accounted for an approximate 3% decrease in the large gas field contribution⁴. The total oil and gas reserves contribution from small fields increased from 34.7 percent in 1980 to 38.3 percent in 1991. A slightly greater percentage of the crude oil reserves was in small fields in 1991 as compared to 1980.

Figure 7. Proved Reserves Energy Equivalent Comparison in Large and Small Fields

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

⁴This would result in small percentage increases in each of the other three components.

Cumulative Production, 1980 and 1991

The 1991 cumulative production contribution from all large fields was 47.2 percent as compared to the 1980 level of 49.6 percent (Figure 8). The largest apparent change was for natural gas, with 27.0 percent of the 1991 cumulative production having come from small gas fields as compared with 23.7 percent in 1980. As will be seen in the next section, this shift is even more apparent in annual production. In terms of all fields, domestic natural gas production has exceeded crude oil production for several years, resulting in growing contributions from gas fields to the total hydrocarbon cumulative production.

Figure 8. Cumulative Production Energy Equivalent Comparison in Large and Small Fields

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

Annual Production, 1980 and 1991

Domestic crude oil production, as a percentage of total hydrocarbon production, declined from 45.1 percent in 1980 to 43.5 percent in 1991, as more of U.S.-supplied hydrocarbons were in the form of natural gas (Figure 9). The portions from large oil and gas fields declined 2.0 percent and 3.9 percent, respectively, over the 11-year period. Correspondingly, while crude oil from small fields went up only slightly, the contribution to total hydrocarbon annual production from small gas fields increased from 28.0 percent in 1980 to 33.5 percent in 1991. This was the largest calculated change in all categories examined.

Figure 9. Annual Production Energy Equivalent Comparison In Large and Small Fields

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

Appendix A

Large Oil and Gas Field Catalog and National Size Rankings, 1991

Table A1 lists by name each of the 334 U.S. oil and gas fields identified as a 1991 large field. A given field appears on the list if its volume in any one of 12 categories causes it to rank in the U.S. top 100 fields. The categories are:

- Crude oil ultimate recovery on December 31, 1991,
- Crude oil proved reserves on December 31, 1991,
- Crude oil cumulative production on December 31, 1991,
- Crude oil 1991 (annual) production.
- Natural gas ultimate recovery on December 31, 1991,
- Natural gas proved reserves on December 31, 1991,
- Natural gas cumulative production on December 31, 1991,
- Natural gas 1991 (annual) production.
- Total hydrocarbon ultimate recovery on December 31, 1991,
- Total hydrocarbon proved reserves on December 31, 1991,
- Total hydrocarbon cumulative production on December 31, 1991,
- Total hydrocarbon 1991 (annual) production.

Also presented are the field's location (state postal abbreviation or Federal offshore area mnemonic), discovery year, and group ranking code for each of the 12 categories. For fields that cross jurisdictional boundaries, additional entries in the table following the primary entry present the location and the field name recognized by the field naming authority in the additional jurisdiction(s). This sometimes resulted in two distinct fields in one State being joined to the same field of an adjoining State. The jurisdiction and field name combination listed first is the jurisdictional field component containing the largest estimated total hydrocarbon ultimate recovery.

In Table A1 the fields are listed in alphabetical order by location and field name. The fields also appear earlier in this report in one or more of Tables 2 through 13 under their primary jurisdiction and name. The Appendix A listing facilitates locating a particular field, all the important fields within a State, or the categories for a particular hydrocarbon in which the field is significant.

The number of fields shown for each primary jurisdiction are as follows:

Location	#	Location	#
Texas	96	Pacific Federal Offshore	6
Gulf of Mexico Federal Offshore	69	Utah	6
Louisiana	31	Kansas	5
Oklahoma	27	Colorado	2
California	29	Montana	2
New Mexico	14	Arkansas	1
Wyoming	13	Florida	1
Alaska	12	Kentucky	1
Alabama	11	Mississippi	1
Illinois	6	Pennsylvania	1

"New" Large Fields

The list immediately below identifies "new" large fields, which are fields that appear on the 1991 large fields catalog (Table A1) but would not have appeared on such a list prior to 1990. The following 22 fields satisfied this criterion:

Location	Field Name	Disc. Year	Location	Field Name	Disc. Year
AL	Cedar Cove Coal Degas	1983	GF	South Marsh Is SA Blk 205	1985
AL	Gurnee Coal Degas	1990	GF	South Marsh Is SA Blk 79	1983
AL	North Central Gulf	1985	GF	South Timballer Blk 206	1984
AL	Oak Grove Coal Degas	1980	GF	Viosca Knoll Blk 990	1981
AL	Robinsons Bend Coal Degas	1985	LA	Chalkley	1938
GF	East Cameron SA Blk 265	1983	NM	Dagger Draw North	1984
GF	Ewing Bank Blk 873	1991	OK	Choctaw Thrust	1990
GF	Green Canyon Blk 116	1983	OK	Panola South	1990
GF	Matagorda Island Blk 804	1984	TX	Anne Tandy	1972
GF	Mississippi Canyon Blk 109	1984	TX	Bashara-Herford	1979
GF	Mississippi Canyon Blk 397	1984	TX	Katz	1951

Table A1. Large Oil and Gas Field Catalog and National Size Rankings, 1991

Field Size Ranking Codes																
State	Field Name	Discovery Year	Crude Oil					Natural Gas					Total Hydrocarbons			
			Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production	Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production	Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production		
AK	Beluga River	1982	-	-	-	-	10	2	50	5	50	5	50	5	100	20
AK	Cook Inlet North	1982	-	-	-	-	10	2	20	5	20	5	20	5	50	10
AK	Endicott	1978	10	1	20	1	100	20	500	50	10	2	50	2	50	1
AK	Ganite Point	1985	50	10	50	20	200	200	200	200	50	50	50	50	50	50
AK	Kenai	1959	-	-	-	-	5	50	5	10	20	50	20	50	20	20
AK	Kupukuk River	1989	1	1	2	1	50	10	100	10	1	1	5	1	5	1
AK	McArthur River	1985	5	10	5	5	20	2	50	5	5	5	10	5	10	5
AK	Middle Ground Shoal	1983	20	10	20	20	200	100	200	200	50	20	50	20	50	50
AK	Milne Point	1982	50	5	100	5	200	50	1000	200	100	10	200	10	200	10
AK	Niiskuk	1994	100	10	-	-	1000	200	-	-	200	20	-	-	-	-
AK	Point McIntyre	1988	20	2	-	-	200	20	-	-	50	5	-	-	-	-
AK	Prudhoe Bay	1967	1	1	1	1	1	1	10	1	1	1	1	1	1	1
AL	Bon Secour Bay	1983	-	-	-	-	50	5	-	-	100	10	-	-	-	-
AL	Cedar Cove Coal Degas	1983	-	-	-	-	100	10	500	50	200	20	1000	20	1000	50
AL	Churchdale	1974	50	10	100	20	100	20	200	100	50	20	50	20	100	50
AL	Fairway	1986	-	-	-	-	50	5	1000	200	100	10	-	-	-	200
AL	Gumies Coal Degas	1990	-	-	-	-	50	5	-	500	100	10	-	-	-	500
AL	Hallers Pond	1974	50	20	100	10	100	50	200	50	100	50	100	50	100	20
AL	Lower Mobile Bay-Mary Ann	1979	-	-	-	-	50	5	200	10	50	10	50	10	500	20
AL	North Central Gulf	1985	-	-	-	-	50	2	-	-	50	5	-	-	-	-
+ GF Mobile Blk 827																
AL	Northwest Gulf	1983	-	-	-	-	20	2	1000	200	50	5	-	-	-	200
+ GF Mobile Blk 823																
+ GF Mobile Blk 868																
AL	Oak Grove Coal Degas	1980	-	-	-	-	100	10	500	50	200	20	200	20	500	50
AL	Robinsons Bend Coal Degas	1985	-	-	-	-	100	10	1000	500	200	20	-	-	-	500
AR	Snacktower	1922	5	20	5	20	500	-	500	-	10	50	10	50	100	100
CA	Anoyo Grande	1906	50	5	200	100	-	-	-	-	100	20	20	500	200	200
CA	Belridge North	1912	50	10	50	20	50	100	50	50	50	20	50	20	50	20
CA	Belridge South	1911	2	1	2	1	50	20	50	20	2	1	5	5	1	1
CA	Brea-Olinda	1897	10	10	10	20	50	200	50	200	10	20	10	20	10	100
CA	Buena Vista	1909	5	20	2	50	20	50	20	100	5	50	5	50	5	50
CA	Cal Canyon	1909	10	10	10	50	100	500	100	200	20	20	20	20	20	100
CA	Coalinda	1887	2	5	2	5	100	-	100	-	5	5	5	5	5	5
CA	Coalinda East Extension	1908	5	100	5	50	50	20	50	20	10	50	10	50	10	20
CA	Coyote West	1909	20	200	10	100	100	1000	100	1000	20	500	20	500	20	200
CA	Cymric	1916	10	5	20	5	200	500	200	500	20	5	50	5	50	10
CA	Dominguez	1923	10	100	10	100	50	500	50	500	20	200	20	200	200	200
CA	Elk Hills	1919	2	1	2	1	10	2	20	5	2	1	2	2	2	2
CA	Huntington Beach	1920	2	5	2	10	20	100	20	200	5	10	5	10	2	50

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Table A1. Large Oil and Gas Field Catalog and National Size Rankings, 1991 (Continued)

State	Field Name	Discovery Year	Crude Oil				Natural Gas				Total Hydrocarbons			
			Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production	Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production	Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production
CA	Inglewood	1924	10	20	10	20	100	500	100	500	20	50	20	50
CA	Kern Front	1925	20	10	20	20	500	500	500	1000	50	50	50	50
CA	Kern River	1899	1	1	1	1	1000	1000	1000	200	2	1	2	1
CA	Kettleman Dome North	1928	10	200	5	200	5	200	2	200	5	200	5	200
CA	Long Beach	1921	2	20	2	20	20	500	20	500	5	50	5	100
CA	Lost Hills	1910	10	5	20	5	50	20	50	20	20	10	20	5
CA	McKittrick	1887	10	10	10	50	100	500	100	500	20	20	20	100
CA	Midway-Sunset	1901	1	1	1	1	50	200	1	200	1	1	1	1
CA	Mount Poso	1923	10	20	10	10	1000	1000	1000	1000	20	50	20	20
CA	Placerita	1920	50	10	100	50	1000	-	1000	-	100	50	200	200
CA	Rio Vista	1936	1000	1000	1000	1000	2	20	2	50	10	50	10	50
CA	San Ando	1947	5	5	10	10	200	-	200	-	10	5	20	50
CA	Santa Fe Springs	1919	5	50	5	50	20	1000	20	1000	5	100	5	200
CA	Ventura	1916	2	5	2	5	10	100	5	200	5	10	2	20
CA	Wilmington	1932	1	2	1	1	20	100	10	100	1	5	1	2
CA	Yontubene	1974	50	50	50	10	200	500	200	200	100	100	100	50
CO	Rangely	1902	2	2	5	5	50	-	20	-	5	5	5	5
CO	Wattenberg	1970	50	10	100	10	10	1	20	2	20	2	50	5
FL	Jay	1970	10	10	10	10	50	100	50	100	10	50	10	30
+ AL Fanny Church														
+ AL Little Escambia Creek														
GF	Bay Marchand Bk 2	1949	5	5	5	2	20	20	20	50	5	5	5	5
+ LA Bay Marchand Bk 2														
GF	Brazos SA Bk A133	1975	1000	1000	1000	500	50	20	100	5	100	50	200	10
GF	East Cameron Bk 64	1957	200	100	200	200	10	20	10	100	20	50	20	100
GF	East Cameron SA Bk 265	1963	1000	500	1000	200	50	20	100	10	100	50	200	20
GF	East Cameron SA Bk 299	1984	500	100	500	100	50	20	100	10	100	50	100	20
GF	East Cameron SA Bk 321	1971	50	20	100	10	200	100	200	100	100	50	100	20
GF	Eugene Island Bk 57	1950	500	500	500	200	50	50	50	5	100	50	100	10
GF	Eugene Island Bk 238	1964	100	50	100	20	20	20	20	10	50	20	50	10
GF	Eugene Island Bk 266	1964	1000	200	1000	200	20	50	20	10	50	50	50	20
GF	Eugene Island SA Bk 292	1964	100	100	100	50	10	20	10	10	20	50	20	20
GF	Eugene Island SA Bk 296	1971	200	500	200	200	20	200	10	50	200	200	20	50
GF	Eugene Island SA Bk 300	1971	10	10	10	5	10	10	10	10	10	10	10	5
GF	Eugene Island SA Bk 361	1973	100	20	100	10	200	100	500	100	100	50	200	20
GF	Eugene Island SA Bk 385	1975	500	100	1000	200	100	50	100	10	100	50	200	20
GF	Ewing Bank Bk 873	1991	100	10	-	-	500	100	-	-	100	20	-	-
GF	Garden Banks Bk 236	1977	-	1000	-	-	50	10	200	10	100	20	500	20
GF	Garden Banks Bk 426	1987	50	5	-	-	50	5	-	-	50	5	-	-
GF	Grand Isle Bk 16	1948	10	50	10	20	50	50	50	50	10	50	10	20

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Table A1. Large Oil and Gas Field Catalog and National Size Rankings, 1991 (Continued)

State	Field Name	Field Size Ranking Codes															
		Crude Oil					Natural Gas					Total Hydrocarbons					
		Discovery Year	Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production	Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production	Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production			
+ LA Grand Isle Blk 16																	
GF	Grand Isle Blk 43	1956	10	20	10	10	10	20	10	20	50	10	20	10	20	10	20
GF	Green Canyon Blk 19	1980	100	20	100	5	200	50	200	50	500	50	100	50	200	10	10
GF	Green Canyon Blk 65	1983	50	5	200	5	200	50	200	50	500	100	100	50	500	10	10
GF	Green Canyon Blk 116	1983	500	100	-	-	-	50	50	-	-	100	10	-	-	-	-
GF	Green Canyon Blk 184	1981	100	20	500	10	200	200	50	500	20	200	50	500	10	10	10
GF	High Island SA Blk A563	1975	200	100	200	100	50	50	50	5	100	50	100	50	100	10	10
GF	Hutchinson Island SA Blk A571	1974	100	50	100	50	50	10	50	10	50	50	50	20	50	10	10
GF	High Island SA Blk A573	1973	50	10	50	5	50	10	50	5	50	10	50	10	50	5	5
GF	Main Pass Blk 41	1956	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
GF	Main Pass Blk 73	1975	50	20	50	10	50	50	50	50	20	50	20	50	20	50	10
+ GF Main Pass Blk 151																	
+ LA Main Pass Blk 74																	
GF	Main Pass SA Blk 299	1967	50	5	50	20	200	200	50	500	200	50	10	100	50	100	50
GF	Main Pass SA Blk 311	1977	50	20	50	10	200	100	200	200	500	100	100	50	100	100	20
GF	Matagorda Island Blk 604	1984	1000	500	-	200	100	50	200	5	200	200	200	50	200	10	10
GF	Matagorda Island Blk 623	1980	500	100	500	100	50	10	100	5	100	20	100	20	200	10	10
GF	Matagorda Island Blk 668	1981	1000	500	1000	200	20	10	50	5	50	20	50	20	100	10	10
GF	Mississippi Canyon Blk 109	1984	100	10	-	500	500	200	-	-	200	50	200	50	-	1000	-
GF	Mississippi Canyon Blk 194	1975	20	5	50	5	50	5	50	50	20	5	20	5	50	10	10
GF	Mississippi Canyon Blk 231	1976	100	50	100	10	200	100	200	50	100	100	100	100	100	20	20
GF	Mississippi Canyon Blk 397	1984	500	50	-	-	100	10	-	-	200	20	20	-	-	-	-
GF	Ship Shoal Blk 176	1956	50	20	50	20	10	10	10	10	20	20	20	20	20	10	10
GF	Ship Shoal Blk 208	1961	20	20	20	20	2	20	2	100	5	20	5	20	5	50	50
GF	South Marsh Island Blk 48	1961	100	50	200	50	10	20	10	20	20	20	20	20	50	50	50
GF	South Marsh Is SA Blk 79	1963	500	100	1000	100	100	20	200	10	200	200	200	50	200	20	20
GF	South Marsh Is SA Blk 128	1976	50	50	50	10	100	50	100	50	100	50	50	50	50	20	20
GF	South Marsh Is SA Blk 130	1973	20	10	20	10	100	50	100	50	100	50	50	20	50	20	20
GF	South Marsh Is SA Blk 205	1985	-	-	-	-	200	100	200	10	500	100	500	100	500	20	20
GF	South Marsh Is NA Blk 269	1973	100	50	100	50	50	20	50	10	50	50	20	20	50	20	20
GF	South Pass Blk 27	1954	10	10	10	10	20	20	20	100	10	20	10	20	10	50	50
+ LA South Pass Blk 27																	
GF	South Pass Blk 49	1974	50	20	50	10	200	50	200	100	100	50	50	100	100	50	50
GF	South Pass Blk 61	1955	20	10	20	5	100	50	100	50	100	20	20	50	50	10	10
+ LA South Pass Blk 6																	
GF	South Pass EA Blk 62	1965	50	20	50	10	100	100	100	100	100	50	50	50	50	50	50
GF	South Pass SA Blk 75	1984	500	200	500	50	100	50	100	10	200	100	200	100	200	20	20
GF	South Pass SA Blk 78	1973	100	20	100	10	20	20	20	10	50	20	50	20	50	10	10
+ LA South Pass SA Blk 78																	
GF	South Pass SA Blk 89	1963	20	5	50	5	50	10	100	10	50	10	50	5	50	50	5

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Table A1. Large Oil and Gas Field Catalog and National Size Rankings, 1991 (Continued)

State	Field Name	Discovery Year	Crude Oil						Natural Gas						Total Hydrocarbons			
			Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production	Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production	Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production	Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production
GF	South Timbalier Blk 52	1950	50	20	100	10	100	50	100	50	100	50	100	50	100	50	100	20
GF	South Timbalier Blk 172	1965	500	200	500	200	10	10	10	5	20	20	20	20	20	20	20	10
GF	South Timbalier Blk 176	1963	50	50	50	20	20	20	20	10	50	50	50	50	50	50	50	10
GF	South Timbalier Blk 206	1984	*	500	*	200	100	100	50	200	200	50	200	50	200	50	500	20
GF	Tiger Shoal	1958	100	100	100	100	2	10	5	2	10	20	10	20	10	20	10	5
GF	Vermilion Blk 14	1956	100	50	100	50	2	5	2	5	10	10	10	5	10	10	5	10
	+ LA Vermilion Blk 14																	
	+ LA Vermilion Blk 28																	
GF	Vermilion Blk 24	1977	200	200	200	50	100	100	100	10	100	100	100	100	100	100	100	20
GF	Vermilion Blk 39	1949	100	50	100	50	5	20	5	20	20	20	20	20	20	20	10	20
GF	Vermilion Blk 218	1965	500	200	500	200	50	50	50	5	100	50	100	50	100	50	100	10
GF	Viosca Knoll Blk 990	1981	50	5	-	-	200	50	-	-	100	50	10	50	10	50	10	-
GF	West Cameron Blk 45	1949	200	200	200	100	20	200	20	10	50	200	50	200	50	200	50	20
	+ LA West Cameron Blk 45																	
GF	West Cameron Blk 180	1960	200	500	200	500	5	50	5	50	20	20	20	20	20	50	20	50
GF	West Cameron SA Blk 565	1972	1000	500	1000	500	50	20	50	10	100	50	100	50	100	50	100	20
GF	West Delta Blk 30	1949	5	10	5	5	20	50	20	50	20	50	20	50	20	50	20	10
GF	West Delta Blk 73	1962	20	20	20	5	50	50	50	20	20	50	20	20	20	20	20	10
GF	West Delta Blk 79	1966	20	20	20	10	50	50	50	50	50	50	50	50	50	50	50	20
GF	West Delta Blk 109	1975	50	20	100	10	100	100	50	200	50	50	100	20	100	20	100	20
IL	Clay City Consol	1937	10	20	10	20	1000	500	1000	500	20	50	20	50	20	50	20	50
IL	Lawrence County Division	1900	10	20	10	20	*	-	*	-	20	50	20	50	20	50	20	100
	+ IL St Francisville East																	
	+ IN St Francisville Consol																	
IL	Louden	1937	10	100	10	50	1000	*	1000	*	20	200	20	200	20	200	20	200
IL	Main Consol	1906	20	50	10	50	*	-	*	-	50	200	50	200	50	200	50	200
IL	New Harmony Consol	1930	20	50	10	50	1000	-	1000	-	50	100	50	100	50	100	50	100
	+ IL Keensburg South																	
	+ IN Griffin Consol																	
IL	Salem Consol	1938	10	50	10	50	20	-	20	-	10	100	10	100	10	100	10	100
KS	Chase-Silica	1929	10	50	10	50	1000	500	1000	500	50	200	50	200	50	200	50	100
KS	El Dorado	1915	10	50	10	50	*	-	*	-	20	200	20	200	20	200	20	200
KS	Greenwood Gas Area	1952	100	100	100	100	10	20	10	50	50	50	50	50	50	50	50	100
	+ CO Greenwood																	
	+ OK Carthage Gas Area																	
KS	Hugoton Gas Area	1922	100	100	100	100	1	1	1	1	1	1	1	1	1	1	1	1
	+ OK Guymon-Hugoton Gas Area																	
	+ TX Texas Hugoton																	
KS	Panoma Gas Area	1956	100	50	100	50	5	1	10	1	10	5	10	5	10	5	20	5
KY	Big Sandy	1881	100	50	200	50	10	5	10	5	20	20	20	20	20	20	20	10

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Table A1. Large Oil and Gas Field Catalog and National Size Rankings, 1991 (Continued)

State	Field Name	Field Size Ranking Codes											
		Crude Oil						Natural Gas					
		Discovery Year	Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production	Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production	Ultimate Recovery	Proved Reserves	Cumulative Production
LA	Ada	1944	200	200	200	200	20	50	50	10	50	50	50
LA	Bastian Bay	1951	50	200	50	200	5	100	5	50	10	100	10
LA	Bateman Lake	1937	50	500	50	500	5	100	5	200	10	200	10
LA	Bayou Sale	1940	20	100	20	50	5	50	5	10	10	50	10
LA	Black Lake	1964	50	500	50	200	10	20	10	5	20	50	20
LA	Caddo Pine Island	1901	10	20	10	20	100	500	50	500	20	50	20
LA	+ TX Marion County												
LA	Caillou Island	1930	5	20	5	20	5	50	5	50	5	20	5
LA	Chalkley	1938	200	100	200	100	20	10	50	10	50	10	100
LA	Cotton Valley	1922	50	100	50	200	10	20	10	20	20	50	10
LA	Duck Lake	1947	50	200	50	100	10	200	10	500	20	200	20
LA	Erath	1940	50	200	50	200	20	500	10	200	20	500	20
LA	Fresh Water Bayou North	1958	200	50	200	100	50	10	50	20	50	20	100
LA	Garden City	1956	200	500	100	200	10	100	10	20	20	200	20
LA	Hollywood	1953	200	500	200	500	20	200	10	200	50	200	50
LA	Krotz Springs	1942	100	1000	100	500	20	500	10	500	50	500	20
LA	Lafitte	1935	20	50	10	50	100	500	50	500	20	200	20
LA	Lake Arthur	1937	100	200	100	200	5	100	5	50	20	100	10
LA	Lake Arthur South	1955	500	100	500	200	20	5	50	2	50	10	100
LA	Lake Pagie	1958	100	50	100	100	10	10	10	50	20	20	50
LA	Lake Washington	1931	10	50	10	20	20	100	20	100	20	50	20
LA	Lirette	1937	200	1000	200	500	10	500	10	500	50	500	20
LA	Monroe	1916	*	-	*	-	1	20	1	20	5	50	2
LA	Mound Point	1958	200	500	200	200	5	100	5	50	20	100	10
LA	Paradis	1939	50	100	20	50	10	200	10	500	20	200	20
LA	Pecan Island	1943	200	200	200	200	10	50	10	20	20	100	20
LA	Port Hudson	1977	50	10	100	10	50	10	50	10	50	20	100
LA	Rabbit Island	1942	100	500	100	500	20	200	10	100	50	500	20
LA	Sligo	1922	100	200	100	500	5	50	5	50	10	50	10
LA	South Pass Blk 24	1950	5	20	5	10	50	50	50	100	10	20	10
LA	Timbalier Bay	1938	10	50	10	50	50	100	50	50	20	100	10
LA	West Delta Blk 27	1949	50	200	50	200	5	100	5	50	10	100	10
LA	+ GF West Delta Blk 27												
MS	Gwinville	1944	500	1000	500	1000	10	200	10	100	50	500	20
MT	Bowdoin	1917	*	-	*	-	50	10	200	100	100	20	500
MT	Pennel	1955	50	10	50	20	500	500	500	500	100	20	100
NM	Basin	1947	50	20	100	100	1	1	1	1	1	1	5
NM	Blanco	1927	100	20	100	50	1	1	1	1	1	1	1
NM	+ CO Ignacio-Blanco												
NM	Blanco South	1951	500	200	500	1000	10	5	20	50	50	10	50

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Table A1. Large Oil and Gas Field Catalog and National Size Rankings, 1991 (Continued)

State	Field Name	Discovery Year	Crude Oil						Natural Gas						Total Hydrocarbons			
			Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production	Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production	Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production	Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production
NM	Blinberry	1945	50	100	50	50	10	50	10	20	20	50	20	50	20	50	20	50
NM	Dagger Draw North	1964	100	20	200	10	200	50	500	50	200	50	200	50	200	50	500	20
NM	Drinkard	1944	50	10	50	100	20	50	20	50	20	50	20	20	20	20	20	100
NM	Eumont	1929	50	100	50	100	5	10	5	10	20	20	20	20	20	20	10	20
NM	Eunice Monument	1929	10	5	10	20	20	50	20	100	10	10	10	10	10	10	10	50
NM	Hobbs	1928	10	10	10	10	50	100	50	100	20	20	20	20	20	20	20	20
NM	Indian Basin	1963	200	200	200	500	10	10	10	10	20	10	20	10	20	10	50	20
NM	Jalmat	1927	50	50	50	50	5	50	5	20	10	50	10	50	10	50	10	50
+ NM Scarborough																		
+ TX Scarborough																		
NM	Maljamar	1926	20	10	20	50	200	200	200	500	20	20	20	20	20	20	50	100
NM	Monument	1935	20	10	20	200	50	50	50	200	50	50	50	20	50	20	20	200
NM	Vacuum	1929	5	5	5	5	50	100	50	100	10	10	10	10	10	10	10	10
OK	Burbank	1920	5	50	5	50	1000	-	1000	-	10	200	10	200	10	200	10	200
OK	Camrick Gas Area	1954	200	500	200	200	20	50	10	50	50	100	50	100	50	100	50	50
OK	Carpenter	1951	1000	500	1000	500	50	10	50	10	100	20	20	20	100	20	100	20
OK	Cheyenne West	1971	*	1000	*	1000	50	10	50	10	50	20	50	20	50	20	100	20
OK	Choctaw Thrust	1990	-	-	-	-	200	50	200	10	200	100	100	500	200	100	500	20
OK	Cushing	1912	5	50	5	50	50	500	50	500	10	100	10	100	10	100	10	100
OK	Eaky-Weatherford Trend	1953	200	50	500	100	20	20	20	5	50	20	20	50	50	20	50	10
OK	Edmond West	1930	20	100	20	200	2	100	2	100	5	200	5	200	5	200	5	100
OK	Elk City	1947	50	100	50	100	10	5	20	5	20	10	10	20	10	10	20	100
OK	Glenpool	1905	10	100	10	50	500	1000	500	1000	20	500	20	500	20	500	20	200
OK	Golden Trend	1945	5	20	5	10	1	10	1	2	2	10	2	10	2	10	2	5
OK	Healdton	1913	10	20	10	20	200	1000	200	1000	20	50	20	50	20	50	20	100
OK	Hewitt	1919	20	20	20	10	500	200	500	200	50	50	50	50	50	50	50	50
OK	Kinta	1914	*	-	*	-	5	5	5	2	10	10	10	20	10	10	20	5
OK	Mocene-Laveme Gas Area	1946	100	50	100	50	1	1	1	1	5	5	5	5	5	5	5	2
+ KS Fincham																		
+ KS Liberal-Light																		
+ KS McKinney																		
+ OK Ivanhoe																		
+ OK Logan South																		
+ TX Follett																		
OK	Moorewood NE	1979	200	100	500	100	50	20	50	10	100	50	50	50	100	50	100	20
OK	Oklahoma City	1928	5	50	5	50	5	50	5	50	5	50	5	50	5	50	5	50
OK	Panola South	1990	-	-	-	-	50	10	500	10	100	20	100	20	100	20	500	20
OK	Putham	1957	100	100	100	100	10	20	10	10	20	50	50	50	20	50	20	10
OK	Red Oak-Norris	1910	-	-	-	-	5	1	10	5	20	5	20	5	20	5	50	5
OK	Reydon	1962	1000	500	1000	500	20	10	50	10	50	20	50	20	50	20	50	20

Ranking Codes: 1=Field nationally ranked in top 10 in category; 2=top 20; 5=top 50; 10=top 100; 20=top 200; 50=top 500; 100=top 1,000; 200=top 2,000; 500=top 5,000; 1000=top 10,000; * = lower than top 10,000; - = zero volume.

See additional footnotes at end of table.

Table A1. Large Oil and Gas Field Catalog and National Size Rankings, 1991 (Continued)

State	Field Name	Discovery Year	Crude Oil						Natural Gas						Total Hydrocarbons		
			Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production	Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production	Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production	Ultimate Recovery	Proved Reserves	Cumulative Production
OK	Ringwood	1945	50	50	50	50	5	20	5	10	10	50	10	20	10	50	10
OK	Sho-Vel-Tum	1905	1	5	1	2	20	10	20	5	2	5	2	5	2	5	5
OK	Sooner Trend	1938	10	20	10	10	2	10	1	5	5	10	5	5	5	10	5
OK	Strong City District	1966	500	100	500	100	50	10	50	5	50	20	100	10	50	20	100
OK	Watonga-Chickasha Trend	1948	50	20	50	20	2	2	2	1	5	5	5	2	5	5	2
OK	Wilburton	1941	-	-	-	-	10	5	10	1	20	10	50	5	20	10	50
PA	Bradford	1864	5	200	5	100	500	500	500	200	10	500	10	200	10	500	10
	+ NY Bradford																
PF	Beta	1976	20	5	50	10	500	200	500	200	50	10	100	50	50	10	100
PF	Dos Cuadras	1968	20	10	20	10	200	200	200	200	50	50	50	50	50	50	50
PF	Hondo	1969	10	2	50	5	50	5	200	20	20	2	50	10	20	2	50
PF	Pescado	1370	20	2	-	-	100	20	-	-	50	5	-	-	50	5	-
PF	Point Arguello	1981	20	2	500	10	200	20	1000	200	50	5	500	20	50	5	500
PF	Point Pedernales	1983	50	10	100	10	500	200	1000	500	100	20	200	20	100	20	200
TX	Agua Dulce	1928	100	500	50	200	5	50	5	50	20	100	10	50	20	100	10
TX	Alabama Ferry	1983	100	50	200	10	200	100	200	50	200	50	200	20	200	50	200
TX	Alazan North	1958	100	500	100	500	10	500	10	100	20	500	20	200	20	500	200
TX	Anahuac	1935	10	100	10	100	20	10	20	50	20	20	20	20	20	20	100
TX	Anne Tandy	1972	50	20	100	5	1000	500	1000	500	100	50	200	10	100	50	200
TX	Anton-Irish	1944	20	10	20	20	500	500	500	500	50	20	50	50	20	50	50
TX	Archer County Regular	1911	10	50	10	50	1000	1000	1000	500	50	100	20	100	20	100	100
TX	Bashara-Herford	1979	1000	500	1000	200	100	50	200	10	200	100	200	20	200	100	200
TX	Bethany	1916	100	100	100	200	10	50	10	20	20	50	20	50	20	50	50
	+ LA Bethany-Longstreet																
TX	Block 16	1969	200	200	200	200	10	20	10	20	50	50	50	20	50	50	20
TX	Boonsville	1945	200	200	200	200	5	5	5	5	10	10	10	10	10	10	10
TX	Borregos	1945	50	500	50	200	5	100	5	50	10	200	10	100	10	200	100
TX	Brown-Bassett	1953	*	5000	*	-	10	5	10	5	20	10	20	10	20	10	100
TX	Bryans Mill	1960	100	100	100	*	50	10	50	20	50	20	50	50	20	50	50
TX	Carthage	1936	50	50	50	50	1	1	1	1	2	2	2	2	2	2	2
TX	Cedar Lake	1939	50	10	50	20	500	200	500	500	50	20	100	50	20	100	50
TX	Chocolate Bayou	1940	50	100	50	100	10	50	10	100	20	100	20	100	20	100	100
TX	Cogdell	1949	20	50	10	50	100	500	100	500	20	100	20	100	20	100	100
TX	Conger	1973	200	100	200	50	50	10	50	10	50	20	100	20	50	20	20
TX	Conroe	1931	5	50	5	20	50	50	50	50	5	50	5	50	5	50	50
TX	Cowden North	1930	5	2	5	2	50	50	50	100	5	5	10	5	5	10	5
TX	Cowden South	1930	20	20	20	10	200	200	200	200	50	50	50	50	50	50	50
TX	Coyanosa	1959	100	100	100	50	5	5	5	2	20	10	20	5	20	10	20
TX	Diamond-M-	1940	10	20	10	50	200	200	200	200	50	50	50	50	50	50	100
TX	Dollarhide	1945	10	10	20	10	100	100	100	200	20	20	20	20	20	20	50

Ranking Codes: 1=Field nationally ranked in top 10 in category ; 2=top 20 ; 5=top 50 ; 10=top 100 ; 20=top 200 ; 50=top 500 ; 100=top 1,000 ; 200=top 2,000 ; 500=top 5,000 ; 1000=top 10,000 ; *lower than top 10,000 ; - = zero volume.

See additional footnotes at end of table.

Table A1. Large Oil and Gas Field Catalog and National Size Rankings, 1991 (Continued)

State	Field Name	Discovery Year	Field Size Ranking Codes																	
			Crude Oil					Natural Gas					Total Hydrocarbons							
			Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production	Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production	Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production						
+ NM Dollarhide																				
TX	East Texas	1930	1	2	1	1	20	50	20	50	1	2	1	2	1	2	1	2	1	2
TX	Emperor	1936	100	200	100	200	10	50	10	50	20	100	20	100	20	20	20	50	50	
TX	Foster	1932	10	10	10	20	500	500	500	500	20	500	20	500	20	20	20	50	50	
TX	Fullerton	1942	10	5	10	5	100	100	100	100	10	100	10	100	10	20	20	10	10	
TX	Giddings	1960	10	10	20	2	10	10	10	2	10	10	10	10	10	10	1	1	1	
TX	Goldsmith	1935	5	10	5	10	20	50	20	50	5	20	5	20	5	5	10	10	10	
TX	Gomez	1963	500	1000	500	500	2	2	2	2	5	5	5	5	5	5	5	5	5	
TX	Greta	1933	50	200	50	100	20	200	10	200	20	200	20	200	20	200	20	200	200	
TX	Hansford	1953	200	200	200	200	10	50	10	20	50	50	50	50	50	50	50	50	50	
TX	Hastings East	1934	10	200	10	200	200	1000	200	500	20	500	20	500	20	20	20	500	500	
TX	Hastings West	1958	5	50	5	50	100	-	100	500	10	200	10	200	10	100	10	100	100	
TX	Hawkins	1940	5	10	2	5	50	20	50	20	5	10	5	10	5	10	5	10	10	
TX	Headlee	1953	100	500	50	200	5	5	10	5	10	10	10	10	10	20	20	5	5	
TX	Hendrick	1926	20	50	10	100	500	500	500	500	50	200	50	200	20	20	20	200	200	
TX	Howard-Glasscock	1925	10	5	10	5	500	200	500	200	20	20	20	20	20	20	20	20	20	
TX	Katy	1938	200	*	200	1000	1	100	1	10	2	100	2	100	1	100	1	20	20	
TX	Katz	1951	50	50	50	10	500	*	500	1000	100	100	100	100	100	100	50	50	50	
TX	Kelly-Snyder	1948	2	10	1	5	20	100	20	50	5	20	5	20	2	20	2	10	10	
TX	Keystone	1935	10	20	10	50	20	20	20	50	10	20	10	20	10	20	10	50	50	
TX	La Gloria	1924	100	500	100	500	5	200	5	100	10	200	10	200	10	200	10	200	200	
TX	La Perla Ranch	1976	*	2000	*	1000	50	10	50	5	100	20	100	20	100	20	100	5	5	
TX	Laredo	1973	500	200	500	500	20	10	50	20	50	50	50	50	50	50	50	50	50	
TX	Levelland	1945	5	2	5	2	50	20	50	50	5	20	5	2	10	10	5	5	5	
TX	Mabee	1944	50	10	50	20	500	500	500	500	50	50	50	50	100	50	50	50	50	
TX	Magnet Withers	1936	50	50	50	50	20	200	10	200	20	100	20	100	20	20	20	100	100	
TX	McAllen Ranch	1960	100	50	200	20	10	5	20	2	20	10	20	10	50	5	50	5	5	
TX	McElroy	1926	5	5	5	5	50	200	50	200	10	10	10	10	10	10	10	10	10	
TX	Mears	1934	20	10	20	5	200	200	200	500	50	20	20	50	50	50	20	20	20	
TX	Oak Hill	1958	500	100	500	200	20	5	50	5	50	10	100	10	100	10	10	10	10	
TX	Old Ocean	1934	20	200	20	200	2	50	2	10	5	50	5	50	5	50	20	20	20	
TX	Opelika	1937	200	100	200	1000	10	10	10	20	20	20	20	20	50	50	50	50	50	
TX	Ozona	1953	500	100	500	200	20	10	20	10	50	10	50	10	50	10	20	20	20	
TX	Panhandle	1910	1	10	1	5	5	10	5	10	2	10	2	10	1	5	5	5	5	
TX	Panhandle East	1935	*	1000	*	2000	5	50	5	50	20	50	20	50	20	50	20	100	100	
TX	Panhandle West	1918	500	1000	500	*	1	1	1	1	1	2	1	2	1	2	1	2	2	
TX	Pearsall	1924	20	5	50	1	100	20	200	50	50	5	50	5	50	5	50	50	50	
TX	Pegasus	1949	20	10	20	50	50	10	50	100	20	100	20	100	20	100	20	100	100	
TX	Piedger	1925	1000	1000	1000	500	10	200	5	200	20	500	20	500	20	500	20	500	500	
TX	Prentice	1950	20	5	20	10	500	200	500	500	50	500	50	500	50	50	50	50	50	

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See additional footnotes at end of table.

Table A1. Large Oil and Gas Field Catalog and National Size Rankings, 1991 (Continued)

State	Field Name	Discovery Year	Crude Oil						Natural Gas						Total Hydrocarbons		
			Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production	Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production	Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production	Ultimate Recovery	Proved Reserves	Cumulative Production
TX	Puckett	1952	1000	500	1000	500	2	10	2	5	10	20	5	10	20	5	10
TX	Robertson North	1956	20	5	50	5	200	100	200	200	50	10	100	20	20	100	20
TX	Rosita NW	1976	-	-	-	-	50	10	100	100	100	20	200	20	20	200	50
TX	Salt Creek	1942	10	5	10	5	50	50	100	100	20	10	200	10	20	200	10
TX	Sand Hills	1930	20	50	20	20	10	20	10	10	10	50	50	10	50	10	20
TX	Sawyer	1960	500	200	500	500	10	5	20	5	50	10	50	10	10	50	10
TX	Seeligson	1938	10	200	10	200	5	50	5	50	5	100	5	5	100	5	50
TX	Seminola	1936	5	5	5	2	50	50	50	50	10	5	10	5	10	5	5
TX	Sheridan	1940	500	*	500	*	10	100	5	100	20	200	20	200	20	200	200
TX	Slaughter	1937	2	1	2	2	50	50	50	50	2	2	5	5	2	5	5
TX	Spraberry Trend Area	1950	2	2	5	2	10	5	10	5	5	2	5	5	2	5	2
TX	Stephens County Regular	1915	10	10	10	10	200	500	100	500	20	20	20	20	20	20	20
TX	Stratton	1937	50	500	50	200	5	50	2	10	10	100	5	10	100	5	20
TX	T X L	1944	10	10	10	50	50	100	50	100	20	20	20	20	20	20	50
TX	Talco	1936	10	20	10	20	*	2000	*	2000	20	50	20	20	50	20	100
TX	Thompson	1921	10	20	10	20	100	100	100	200	20	50	20	20	50	20	100
TX	Tom O'Connor	1934	5	10	5	10	10	50	10	50	5	20	5	20	20	5	10
TX	Tri-Cities	1941	500	500	500	1000	50	10	50	50	100	20	100	20	100	100	100
TX	Van	1929	5	20	5	20	100	500	100	200	10	50	10	50	10	50	50
TX	Viboras	1949	200	500	200	200	10	100	5	50	20	100	20	100	20	100	100
TX	Ward-Estes North	1927	10	20	10	10	100	200	100	200	20	50	20	20	50	20	20
TX	Waskom	1916	50	50	50	50	10	10	10	10	20	20	20	20	20	20	20
TX	+ LA Greenwood-Waskom																
TX	Wasson	1937	1	1	1	2	10	5	10	20	1	1	1	1	1	1	2
TX	Wasson 72	1940	20	5	50	10	200	200	200	200	50	10	50	10	50	50	50
TX	Webster	1936	5	50	5	20	50	20	100	100	10	50	10	50	10	50	50
TX	Welch	1942	20	10	20	20	500	500	500	500	50	20	20	50	20	50	50
TX	West Ranch	1938	10	50	10	50	20	100	20	100	10	50	10	50	10	50	50
TX	Whelan	1937	200	50	500	500	50	10	50	100	100	20	100	100	20	100	100
TX	Wichita County Regular	1911	5	20	5	20	500	1000	500	1000	10	100	10	100	10	100	50
TX	Willow Springs	1938	500	200	500	200	20	10	20	50	50	20	50	50	20	50	50
TX	Yates	1926	1	1	1	2	100	50	100	200	2	2	2	2	2	2	5
TX	Zone 21-B Trend	1974	200	1000	200	1000	5	500	5	100	20	500	10	100	500	10	100
UT	Allamont	1960	50	20	50	10	100	100	100	50	50	50	50	50	50	50	20
UT	Anschutz Ranch East	1979	50	10	50	5	50	5	200	50	50	5	50	50	5	50	20
UT	+ WY Anschutz Ranch East																
UT	Bluebell	1949	20	10	50	10	100	50	100	100	50	20	50	20	50	50	20
UT	Greater Aneth	1956	10	5	10	10	50	50	50	200	10	10	10	10	10	10	20
UT	Lisbon	1960	100	200	100	200	20	5	50	20	50	10	50	10	50	10	50
UT	Natural Buttes	1940	500	200	500	500	50	5	50	20	50	10	100	10	100	100	20

Ranking Codes: 1=Field nationally ranked in top 10 in category ; 2=top 20 ; 5=top 50 ; 10=top 100 ; 20=top 200 ; 50=top 500 ; 100=top 1,000 ; 200=top 2,000 ; 500=top 5,000 ; 1000=top 10,000 ; * = lower than top 10,000 ; - = zero volume.

See additional footnotes at end of table.

Table A1. Large Oil and Gas Field Catalog and National Size Rankings, 1991 (Continued)

State	Field Name	Discovery Year	Crude Oil						Natural Gas						Total Hydrocarbons		
			Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production	Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production	Ultimate Recovery	Proved Reserves	Cumulative Production	Annual Production	Ultimate Recovery	Proved Reserves	Cumulative Production
WY	Big Piney-Labarge	1924	100	200	100	200	10	10	10	100	20	20	20	20	20	20	200
WY	Bruff	1974	500	100	1000	200	50	10	100	10	100	20	20	20	100	20	200
WY	Elk Basin	1915	5	5	5	20	50	200	50	200	10	20	10	20	10	20	50
WY	+ MT Elk Basin																
WY	Fogarty Creek	1975	•	•	•	•	20	2	100	10	50	5	200	20	50	5	200
WY	Hartzog Draw	1976	50	10	50	10	500	500	500	500	50	20	100	20	50	20	100
WY	Labarge	1924	100	100	100	100	50	5	50	10	50	10	100	10	50	10	50
WY	Lake Ridge	1981	•	•	•	•	20	2	500	50	50	5	500	50	50	5	500
WY	Lost Soldier	1916	20	20	20	10	200	•	200	1000	50	50	50	50	50	50	50
WY	Madden	1968	1000	500	•	1000	20	5	50	20	50	10	100	100	50	10	50
WY	Oregon Basin	1912	10	10	10	5	100	100	100	100	10	20	20	20	10	20	10
WY	Painter Reservoir	1977	100	50	100	50	50	10	100	20	100	20	100	20	100	20	20
WY	Salt Creek	1889	5	10	5	10	50	500	20	500	5	50	5	50	5	50	5
WY	Whitney Canyon-Carter Crk	1978	100	20	200	50	10	5	20	2	50	10	10	50	10	50	5

Ranking Codes: 1=Field nationally ranked in top 10 in category ; 2=top 20 ; 5=top 50 ; 10=top 100 ; 20=top 200 ; 50=top 500 ; 100=top 1,000 ; 200=top 2,000 ; 500=top 5,000 ; 1000=top 10,000 ; •=lower than top 10,000 ; - = zero volume.

Notes: •Fields are listed alphabetically by State abbreviation and then by field name within State. •GF=Gulf of Mexico offshore Federal domain; PF=Pacific offshore Federal domain. •Indented entry (+) indicates that a portion of the previously listed field also lies in the specified State or Federal jurisdiction and presents the field name recognized by the field naming authority of that jurisdiction.

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

Appendix B

The Oil and Gas Integrated Field File (OGIFF)

Overview

Description of OGIFF

The Energy Information Administration (EIA) data base known as the Oil and Gas Integrated Field File, or OGIFF, was created to provide EIA analysts with basic volumetric statistics for the oil and gas fields in the United States. As of March 1993, it contained estimates from 1977 through 1991 of crude oil and natural gas annual production, cumulative production, and proved reserves for most U.S. fields. Additional items carried for each field include the officially recognized field name, location data consisting of the State, State subdivision, and county or counties, the year of field discovery, and the estimate of ultimate recovery. Additional years of data are added to the OGIFF as they become available.

Field characteristic data such as number of wells, average and maximum reservoir depths, geologic province, geologic age of reservoirs, and other data will not, at this time, be incorporated in the OGIFF file itself, but will be confined to working copies of the file or extracts from it. These OGIFF-related files will be used to support EIA publications presenting information of interest to the general public and to energy resource analysts in government, industry, and academia.

The OGIFF itself is not publicly available as it contains, in part, company-proprietary information collected on Form EIA-23, "Annual Survey of Domestic Oil and Gas Reserves," that may not be disclosed.

Merging of Files

The OGIFF was formed by merging the reserves and production data from the Form EIA-23 with commercially available production statistics purchased by EIA from Dwight's Energydata, Inc. The annual Form EIA-23 is filed by the 600 largest operators of oil and gas wells in the United States, plus a sample of the remaining (smaller) operators. Approximately 90 percent of the national crude oil and natural gas proved reserves are identified by field on the submissions of the larger respondents, making the Form EIA-23 the most comprehensive source of proved oil and gas reserves data available. However, because the smaller respondents are not required to report field-level detail, the aggregates of reported volumes for a specific field frequently do not encompass the total field.

Consequently, the files obtained from Dwight's, a recognized source of reliable production data for the oil and gas industry, were examined to determine the scope of Form EIA-23 coverage in each field. Where necessary, an estimate for the missing reserves was computed and added to the Form EIA-23 reserves data to generate the total-field estimate of proved oil and gas reserves. This estimate of the unreported or unsampled reserves was calculated by applying the reserves-to-production ratio for the reported portion of the field to the difference between the Dwight's and the EIA-23 production estimates for the field. When a field appearing in Dwight's files did not appear in the Form EIA-23 submissions, the proved reserves were estimated by applying an area-wide reserves-to-production ratio to the Dwight's production data.

For the Appalachian States, the initially computed OGIFF totals of proved reserves and annual production, being based on the data from the largest respondents to the Form EIA-23 and available Dwight's data, were generally well short of the estimated State totals published in the EIA reserves reports. Also, initial OGIFF estimates of cumulative production for these States were low in comparison to statistics from the 1979 American Petroleum Institute/American Gas Association joint report of U.S. oil and gas reserves. In these States, no field-level imputation of missing volumes was attempted. The calculated undercoverage volumes in each State were placed in "dummy field" records in the OGIFF data base.

In Oklahoma, the undercoverage was only in natural gas cumulative production data. Analysis showed that the undercoverage was due entirely to the unavailability of dissolved natural gas production data prior to 1982 in Dwight's statistics. The missing gas volumes were imputed field-by-field by applying the ratio of dissolved gas to crude oil production in the later years (since 1982) to Dwight's estimate of crude oil cumulative production covering the earlier years.

Field Name Inconsistencies

A number of additional difficulties had to be overcome in constructing the OGIFF. The first of these was inconsistency of field name spelling. Although EIA maintains a list of the locations and current names of all known fields, published annually in the *Oil and Gas Field Code Master List*, a majority of the more than 1.5 million field name entries in the OGIFF source files do not use the currently accepted spellings.⁴ Even though the unique EIA field codes from the *Master List* have been inserted into several of the source files, many field name entries remain uncoded while some erroneous codes have been inserted. Field codes that were correct at one point in time but are no longer correct, perhaps because of a name change by the relevant State or Federal regulatory agency, could not be relied upon solely.

A subsystem called the *Oil and Gas Field Respeller* was developed to solve these ongoing field identification problems. The Respeller "memorizes" the linkage between alternate spellings of a field name and the official spelling recorded in the current *Field Code Master List*. This "memory" facilitates rapid grouping and comparison of field-level statistics across sources. After the Respeller master file is updated, the subsystem can be used to insert current field names into the source files.

Oil and Gas Definitional Considerations

Another difficulty concerned oil and gas definitions. Available statistics for hydrocarbon liquids are categorized as crude oil, lease condensate, plant liquids, natural gas liquids, or various combinations of these. Natural gas is recorded variously as wet, wet after lease separation, dry, or marketed. The decision that required the fewest imputation steps in constructing the OGIFF, and that also permitted the inclusion of the total hydrocarbons present, was to use the following terms and definitions:

- "Crude oil," defined as crude oil plus lease condensate.
- "Natural gas," defined as natural gas, wet after lease separation.

Adjustments were built into the procedure at various stages to treat specific instances in which a data source did not precisely follow the desired definitions. The terms "crude oil" and "natural gas" as used in OGIFF are consistent with the definitions of crude oil and natural gas used in the EIA publications series *Petroleum Supply Annual* and *Natural Gas Annual*, which contain the production statistics considered official by EIA.

⁴Frequently this is only because a reservoir name is included in the field name datum.

Matching Previously Published Reserves

The last difficulty was the fact that the initial OGIFF-based State totals of proved reserves and annual production differed from the statistics previously published by EIA. This was not surprising, since OGIFF was created using multiple sources involving statistical imputations to provide the best possible estimates by field. The data published in the EIA oil and gas reserves reports were based on the Form EIA-23 sample survey that was designed to provide accurate estimates by State and State subdivision. The latter estimates have sampling errors associated with them.

A guideline in constructing the OGIFF data base was to match the OGIFF proved reserves totals to those previously published rather than showing what would be, in effect, a new data series. Following a comparison of the initial OGIFF estimates with the reserves report estimates, for each State and State subdivision, analyses resulted in three methods of altering the OGIFF proved reserves data at the field level so that their sum matched the published State data, as follows:

- By allocating the entire difference to one or more specific large fields. This method was applied either when one field dominated the area, or when definitional differences across data sources were found to affect only a few fields. For example, Form EIA-23 did not collect lease condensate data by field until 1982. In States and State subdivisions where lease condensate comprises a sizable portion of total liquid hydrocarbon production (Alabama, northwest New Mexico, and Texas Railroad Commission District #4), the initial OGIFF reserves estimate for total liquids was too low prior to 1982. The amount of the shortfall was allocated to the specific fields in those areas with known lease condensate production, as identified in the 1982 Form EIA-23 survey.
- By placing the entire discrepancy in a dummy field. In addition to handling the undercoverage in the Appalachian States, this method was applied in a few instances where the differences were due to the fact that reporting errors in the Form EIA-23 data, detected after the reserves report was published, resulted in the incorrect classification as to State or State subdivision.
- By adjusting the reserves estimates for each field slightly upward or downward. This was the method most commonly applied. The adjustment was performed only until the fields summed to within one-half of 1 percent of the published reserves. Any remaining volumes needed to form an exact match, in the units maintained in the OGIFF, were considered rounding errors and placed in the dummy field.

Data Sources

Form EIA-23, "Annual Survey of Domestic Oil and Gas Reserves"

Since 1977, the Form EIA-23 has been filed annually by approximately 4,500 U.S. oil and gas well operators. Each year's survey is a statistical sample from a population of about 25,000 well operators, who are grouped into three size categories based on annual crude oil and natural gas production. The roughly 600 respondents in the two largest size categories report data for each field in which they operated wells on December 31 of the report year. Portions of fields lying in two or more States or State subdivisions are reported separately. The 150 respondents in the largest size category reported reserves data both by field and by reservoir in report years 1977 and 1978. Since that time they submit data only at the field level. Respondents in the smallest category submit data at the State or State subdivision level.

Data reported by field were the county, year of discovery, and volumetric data for four types of hydrocarbons: crude oil, lease condensate (first reported by field in 1982), nonassociated (NA) natural gas, and associated-dissolved natural gas. The natural gas data were reported as "dry" in 1977 and 1978, and as "wet, after lease separation" thereafter. The volumetric data consist of beginning-of-year proved reserves, end-of-year proved reserves, annual production, several categories of reserve additions, and revisions to prior estimates. Cumulative production data were also reported in 1977 and 1978 by those respondents that reported data by reservoir.

Respondents in the middle size category are required to submit a reserves estimate only for those fields for which they maintain reserves data. When reserves data are not available, such respondents report annual production under the subheading "reserves not estimated." This flags the item as requiring an imputed reserves estimate. The imputation method employed for this purpose used the ratio of reserves to production for other respondents reporting for the same field if coverage, based on production, was more than 50 percent. Otherwise, an area-level reserves-to-production ratio was applied.

The data base covering the respondent-level Form EIA-23 field information for report years 1977 through 1991 consists of 575,427 records, and was based on master file tapes available through August 1992. The files normally remain open for changes through the second December following the survey.

The Form EIA-23 is the primary source of proved reserves data for the OGIPF. These data are designated by EIA as "Proprietary" and are therefore not publicly available. Because these data are present in the OGIPF, the proved reserves estimates and certain other data that reside in the data base bear the same designation, and are not publicly available in field-by-field form.

Dwight's Production Files

EIA purchased computer tapes from Dwight's Energydata, Inc., that contain detailed oil and gas production statistics through December 1991. These files include monthly oil and gas production data for 840,548 individual "properties," either leases or wells, within specific named fields. The monthly production statistics for the oldest properties usually begin in the mid-1960s. Production prior to the start date is shown as cumulative production as of the start date.

Dwight's production files are available for 22 States and the Federal offshore areas. Data for a given State are provided on two tapes, one presenting liquids and gas production associated with oil properties, and the other presenting liquids and gas production associated with gas properties, as defined by the pertinent State or Federal regulatory agency. OGIPF uses the total of all liquids production and all gas production for fields having the same name after standardization through application of the Respeller subsystem.

In most instances, the Dwight's liquids and gas production data were the primary source of field-level oil and gas annual and cumulative production in the areas covered. However, there were several States in which Dwight's production data were not completely suitable for OGIPF purposes because:

- Dwight's reports gas production on a gross withdrawals basis. For States in which significant volumes of produced gas are reinjected into the producing formation, some gas volumes are included in the Dwight's statistics multiple times. The desired definition of natural gas production excludes reinjected volumes. Starting with the March 1993 version of OGIPF, estimates of the gas repressuring volumes included in Dwight's files were calculated for fields with sizable production of both oil and gas. For the affected fields, the annual and cumulative gas production volumes in Dwight's were adjusted accordingly. This reduced the 1991 national estimate of cumulative natural gas production by approximately 4 trillion cubic feet, or one-half of 1 percent.

- Dwight's gas production data include nonhydrocarbon gases, which are excluded from the usual definition of natural gas where it renders the gas unmarketable. For States in which Dwight's identifies substantial volumes of nonhydrocarbon gas production (Colorado and New Mexico), the pertinent data records were omitted from the OGIFF.
- Dwight's cumulative production data are incomplete for some States.

Dwight's Petroleum Data System TOTL File

The Dwight's Petroleum Data System TOTL file, also purchased by EIA, is a field and reservoir data base that is updated three times yearly. Information for the 1991 OGIFF was extracted from the June 1992 release. The TOTL file contains approximately 160,190 records, each record having several hundred data elements including cumulative production and up to 26 years of annual oil and gas production.

The TOTL file offers total-field production data for some States not found in the Dwight's production files. The general quality of these data are similar to the other Dwight's files, but the TOTL file is clearly superior in some instances. For example, approximately 1.7 trillion cubic feet of natural gas was reinjected into Alaska North Slope fields in 1991, a factor accounted for in the annual and cumulative production data shown in the TOTL file but not in the Dwight's production files.

EIA Field Code Master List

The *EIA Field Code Master List* as updated through November 1992 was the standard reference for field identification in construction of the 1991 OGIFF. The *Master List* contains field names recognized in the past and the present. Names recognized in the past, but not in the present, are designated "alias" names and contain a pointer to the current field name. All source file records that used the former names, or alternate spellings of them, were automatically directed to the current field name by the Respeller subsystem.

Individual entries in the *Master List* are shown by State and county. Although a given field may span subdivisions within a State and may also cross State lines, possibly switching to a different name when it does so, the "fields" in OGIFF were defined as residing in a single subdivision. An OGIFF identifier mapped OGIFF "field" records to true, unique, oil and gas fields. This identifier enabled the separate OGIFF components of "true" oil and gas fields to be combined, resulting in the determination of realistic field counts as well as the capability of computing accurate statistics dependent upon field size.

The *Master List* was also used to identify additional oil and gas fields for which no data appeared in the source files. Included in the 1991 OGIFF were approximately 2,000 distinct fields, which were marked in the *Master List* as containing either oil or gas, or both, and also had a recorded discovery date of 1991 or earlier. These entries served only to improve the field counts in OGIFF. They may represent fields that are too new for a reserves estimate to have been booked by the operator, or that are operated by a small firm in the Appalachian region in which data coverage is known to be sparse, or they may consist of very old or small fields for which detailed production records may not have been maintained by a State regulatory agency.

Numerous field names encountered in the source files did not translate into *Master List* fields. These were handled on a case-by-case basis using the Respeller subsystem. Those thought to represent the combination of two or more fields, or in which the field name was clearly not identified, were assigned the field name "Unknown" by the Respeller subsystem and were not included in the OGIFF. Others were thought to be real fields and were assigned a temporary field code. While treated as a distinct field in the OGIFF, they were flagged for examination during the periodic audit phase of Respeller processing. At some point in the future, they will be added to the *Master List*, linked to an existing field name or linked to the "Unknown" field name.

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