JAN 10 1991

Natural Gas Monthly

October 1990

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

MASTER

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

Energy Information Administration
Electronic Publication System (EPUB)
User Instructions

Selected *Weekly Petroleum Status Report* (WPSR), *Petroleum Supply Monthly* (PSM), *Weekly Coal Production* (WCP), *Electric Power Monthly* (EPM), and *Natural Gas Monthly* (NGMR) statistics are now available electronically on the Energy Information Administration (EIA) Computer Facility. Public access to these machine-readable statistics is possible by dialing (202)586-8658 for 300 baud or 1200 baud line speeds. Communications are Asynchronous and require a standard ASCII-type terminal. There is no charge for this service. Although no password is required, you will be requested to use your telephone number as a user identifier. This service is available 7 days per week (8:00 a.m. - 11:00 p.m., Monday through Friday, and 10:00 a.m.-6:00 p.m., weekends and holidays). Weekly petroleum and coal statistics are updated on Wednesday (Thursday in the event of a holiday) after 5:00 p.m. Monthly petroleum supply data for the current month are also provided and are updated by 5:00 p.m. on the 24th of each month. Monthly statistics from the *Electric Power Monthly* are available on or about the first working day of each month. Monthly statistics from the *Natural Gas Monthly* are available on or about the 20th of each month. Questions or comments on petroleum data should be directed to Dale Bodzer at (202)586-1257. Questions or comments on coal data should be directed to Noel Balthasar at (202)586-5252. Questions or comments on electricity data should be directed to Deborah Bolden at (202)586-6872. Questions or comments on natural gas data should be directed to Jim Todaro at (202) 586-6305.

Access Instructions:

- 1) DIAL (202)586-8658.
- 2) HIT RETURN (CARRIAGE RETURN) TWO OR THREE TIMES UNTIL THE EPUB BANNER APPEARS.

```
***                               ***
***           WELCOME TO THE      ***
***  ENERGY INFORMATION ADMINISTRATION  ***
***  ELECTRONIC PUBLICATION SYSTEM  ***
***                               ***
```

- 3) SELECT THE STATISTICS YOU WISH FROM THE MENU.

THE FOLLOWING REPORTS ARE AVAILABLE:

WPSR -	WEEKLY PETROLEUM STATUS REPORT	QMCR -	QCR METRIC TABLE
PSMR -	PETROLEUM SUPPLY MONTHLY	QSCR -	QCR SHORT TONS TABLE
STKS -	PSM STATE STOCKS TABLE	CWWR -	WEEKLY COAL WORK TABLE
WCPR -	WEEKLY COAL PRODUCTION REPORT	MQWR -	QCR METRIC WORK TABLE
EPMS -	U.S. ELECTRIC POWER STATISTICS	SQWR -	QCR SHORT TONS WORK TABLE
NGMR -	NATURAL GAS MONTHLY		

PLEASE ENTER THE DESIRED REPORT ID... PSMR

- 4) ENTER YOUR 10 DIGIT PHONE NUMBER.

SWP1081 LOGON IN PROGRESS AT 13:23:22 ON MAY 9, 1989
PLEASE ENTER YOUR PHONE NUMBER...

- 5) YOU WILL THEN SEE A BANNER WHICH SHOWS THE REPORT YOU HAVE SELECTED AND PAUSES TO ALLOW AMPLE TIME TO GET READY TO RECEIVE OUTPUT.

YOU HAVE SELECTED MONTHLY STATISTICS FROM PETROLEUM SUPPLY MONTHLY (PSM) SYSTEM. THIS SYSTEM WILL DISPLAY THE MOST RECENT PSM DATA FOR TABLES 4, 16, 25, 41, AND 42. PLEASE TURN ON YOUR PRINTER NOW IF YOU WISH TO OBTAIN HARD COPY OUTPUT.

(PRINTING WILL BEGIN IN 20 SECONDS)

Note: Users who experience problems when first attempting to logon should check their terminal switch settings for the following:

- 7 Data Bits
- 1 Stop Bit
- Even Parity

Preface

The *Natural Gas Monthly* (NGM) is prepared in the Data Operations Branch of the Reserves and Natural Gas Division, Office of Oil and Gas, Energy Information Administration (EIA), U.S. Department of Energy (DOE).

General questions and comments regarding the *NGM* may be referred to Kendrick E. Brown, Jr. (202) 586-6077, James M. Todaro, (202) 586-6305, or Eva M. Fleming, (202) 586-6113. Specific technical questions may be referred to the appropriate persons listed in Appendix E.

The *NGM* highlights activities, events, and analyses of interest to public and private sector organizations associated with the natural gas industry. Volume and price data are presented each month for natural gas production, distribution, consumption, and interstate pipeline activities. Producer-related activities and underground storage data are also reported. From time to time, the *NGM* features articles designed to assist

readers in using and interpreting natural gas information.

The data in this publication are collected on surveys conducted by the EIA to fulfill its responsibilities for gathering and reporting energy data. Some of the data are collected under the authority of the Federal Energy Regulatory Commission (FERC), an independent commission within the DOE, which has jurisdiction primarily in the regulation of electric utilities and the interstate natural gas industry.

Explanatory Notes supplement the information found in tables of the report. A description of the data collection surveys that support the *NGM* is provided in the Data Sources section. A glossary of the terms used in this report is also provided to assist readers in understanding the data presented in this publication.

All natural gas volumes are reported at a pressure base of 14.73 pounds per square inch absolute (psia) and at 60 degrees Fahrenheit.

Common Acronyms Used in the Natural Gas Monthly

AGA	American Gas Association	IOCC	Interstate Oil Compact Commission
Bbl	Barrels	LNG	Liquefied Natural Gas
BLS	Bureau of Labor Statistics, U.S. Department of Labor	Mcf	Thousand Cubic Feet
Bcf	Billion Cubic Feet	MMBtu	Million British Thermal Units
BOM	Bureau of Mines, U.S. Department of the Interior	MMcf	Million Cubic Feet
Btu	British Thermal Unit	MMS	United States Minerals Management Service, U.S. Department of the Interior
DOE	U.S. Department of Energy	NGL	Natural Gas Liquids
DOI	U.S. Department of the Interior	NGPA	Natural Gas Policy Act of 1978
EIA	Energy Information Administration, U.S. Department of Energy	OCS	Outer Continental Shelf
FERC	Federal Energy Regulatory Commission	PGA	Purchased Gas Adjustment
		Tcf	Trillion Cubic Feet

Contents

	Page
Update on U.S. Coalbed Methane Production	1
Overview	17
Appendices	
A. Explanatory Notes	103
B. Data Sources	111
C. Statistical Considerations	141
D. Natural Gas Reports and Feature Articles	149
E. Technical Contacts	155
Glossary	157

Tables

	Page
FE1. 1989 U.S. Coalbed Methane Production of Selected Basins	1
FE2. Coalbed Methane Production in the San Juan Basin of Colorado and New Mexico through 1989	8
FE3. Coalbed Methane Production in the Black Warrior Basin of Alabama through 1989, by Field	11
FE4. Coalbed Methane Production in the Piceance Basin of Colorado, through 1989	12
1. Summary of Natural Gas Production	19
2. Supply and Disposition of Dry Natural Gas	20
3. Natural Gas Consumption	22
4. Selected National Average Natural Gas Prices	24
5. Projected Volumes and Prices of Wellhead Purchases by NGPA Category	26
6. Summary of Natural Gas Imports and Exports	30
7. Marketed Production of Natural Gas by State	31
8. Well Determination Filings	34
9. Well Determination Filings by State, October 1990	36
10. Well Determination Filings by Category, October 1990	37
11. Natural Gas Ceiling Prices by Category of Gas, Type of Sale, or Contract	38
12. Revenues, Expenses, and Income of Major Interstate Natural Gas Pipeline Companies	39
13. Volumes and Prices of Natural Gas Sold by Major Interstate Natural Gas Pipeline Companies	40
14. Volumes and Prices of Natural Gas Sold by Major Interstate Natural Gas Pipeline Companies, by Company, September 1990	41
15. Natural and Other Gases Produced and Purchased by Major Interstate Natural Gas Pipeline Companies	42
16. Natural and Other Gases Produced and Purchased by Major Interstate Natural Gas Pipeline Companies, September 1990	43
17. Underground Natural Gas Storage - All Operators	44
18. Underground Natural Gas Storage - Interstate Operators of Storage Fields	46
19. Underground Natural Gas Storage - Intrastate Operators and Independent Producers	47
20. Activities of Multi-State Underground Natural Gas Storage Operators, October 1990	48
21. Activities of Single-State Underground Natural Gas Storage Operators, by State, October 1990	49

22.	Natural Gas Deliveries to Residential Consumers by State	50
23.	Natural Gas Deliveries to Commercial Consumers by State	54
24.	Natural Gas Deliveries to Industrial Consumers by State	58
25.	Natural Gas Deliveries to Electric Utility Consumers by State	62
26.	Natural Gas Deliveries to All Consumers by State	66
27.	Average City Gate Price by State	70
28.	Average Price of Natural Gas Delivered to Residential Consumers by State	73
29.	Average Price of Natural Gas Sold to Commercial Consumers by State	76
30.	Average Price of Natural Gas Sold to Industrial Consumers by State	79
31.	Average Price of Natural Gas Delivered to Electric Utility Consumers by State	82
32.	Average Price of Natural Gas Delivered to All Consumers by State	85
33.	Percentage of Total Deliveries Represented by Onsystem Sales	88
34.	Gas Home Customer-Weighted Heating Degree-Days	95
C1.	Standard Error for Natural Gas Deliveries and Price to Consumers by State, September 1990	145

Illustrations

	Page
FE1. Principal U.S. Coal Basins and Estimated In-Place Coalbed Methane Resources	2
FE2. Gas Production Rate: Conventional and Coalbed	5
FE3. Coalbed Methane Production in the San Juan Basin of Colorado and New Mexico, 1980-1989	7
FE4. Number of Wells Producing Coalbed Methane in the San Juan Basin of Colorado and New Mexico, 1980-1989	7
FE5. Coalbed Methane Production in the Black Warrior Basin of Alabama, 1980-1989	10
FE6. Number of Wells Producing Coalbed Methane in the Black Warrior Basin of Alabama, 1980-1989	10
1. Production and Consumption of Natural Gas in the United States	21
2. Natural Gas Deliveries to Consumers	23
3. Average Price of Natural Gas Delivered to Consumers	25
4. Average Price of Natural Gas	25
5. Purchased Gas Wellhead Prices	29
6. Underground Natural Gas Storage in the United States	45
7. Percentage of Total Deliveries Represented by Onsystem Sales	94

Update on U.S. Coalbed Methane Production

by Herbert T. Black

Interest in the commercial recovery of methane from coalbeds has increased dramatically in the past few years. In 1988 and 1989, the number of producing wells doubled and annual production almost quadrupled. Total U.S. coalbed methane production in 1987 was about 26 billion cubic feet.¹ In 1988, production increased to 41 billion cubic feet from 730 wells, and in 1989 to more than 90 billion cubic feet from 1,445 wells (Table FE1). This was about 0.5 percent of total U.S. gas production in 1989.

The two major areas of coalbed methane production are the San Juan Basin of Colorado and New Mexico and the Black Warrior Basin of Alabama, with estimated resources of 84 and 20 trillion cubic feet, respectively (Figure FE1). Two other basins are in the initial stages of development--the Piceance of Colorado and the Powder River of Wyoming. The Piceance Basin just started to be productive in 1989. It has produced only about 1.9 billion cubic feet from four fields (a preliminary figure), but its total estimated resource is one of the largest of any basin in the contiguous United States at 84 trillion cubic feet. Other areas with exploration activities in 1989 were the Raton, Green River, Western Washington, Illinois, and Appalachian Basins (Figure FE1).

The purpose of this article is to present estimates of annual coalbed methane production through 1989 by basin and field. Estimates are for methane production from coalbeds only and exclude production from adjacent sandstone reservoirs. This delineation is not entirely rigorous, however, because of the difficulty in determining quantities of gas that come only from coalbeds.

The level of coalbed methane exploration and development activity has increased so rapidly that geologists and engineers are unable to keep up with the information. Thus production data in this article are estimates based on the present level of knowledge. Alabama production data are from the Alabama Oil and Gas Board, and State production figures for Colorado are from the Colorado Oil and Gas Commission. Production data for the Powder River Basin are from the Wyoming Oil and Gas Commission. Annualized production data for Colorado and New Mexico by field and basin are from Dwight's Energydata, Inc. Reserves data are from a coalbed methane workshop held in Denver, Colorado in March 1990, sponsored by the Gas Research Institute.²

Table FE1. 1989 U.S. Coalbed Methane Production of Selected Basins

Basin	Number of Fields	Number of Producing Wells	Production (million cubic feet)	Cumulative Production (million cubic feet)	Estimated Resources (trillion cubic feet)
Black Warrior (Alabama)	10	904	23,350	93,416	20
Piceance (Colorado)	4	21	807	1,907	84
San Juan (Colorado and New Mexico)	4	520	67,332	110,046	84
Total	18	1,445	91,489	205,369	188

Note: Production numbers may differ from those published in the Energy Information Administration's *Natural Gas Annual 1989*, Table 3, which are based on State data.

Sources: **Alabama:** Alabama Oil and Gas Board; **Colorado:** Dwight's Energydata, Inc. and Colorado Oil and Gas Commission; **New Mexico:** Dwight's Energydata, Inc.

¹Energy Information Administration, "Status of Coalbed Methane Recovery in the United States," *Natural Gas Monthly*, September 1988, DOE/EIA-0130(88/09) (Washington, DC, December 1988).

²V. Kuuskraa, "Overview of Coalbed Methane Technology and Economics," Proceedings of the Coalbed Methane Workshop, Gas Research Institute (Denver, CO, March 1990).

Figure FE1. Principal U.S. Coal Basins and Estimated In-Place Coalbed Methane Resources

Figure 1. Principal United States coal basins and latest accepted estimates of in-place coalbed methane resources .

Source: Gas Research Institute, *Methane from Coal Seams Technology* (March 1990).

Factors Unique to Coalbed Methane Development

Tax Credit

An important factor in the development of coalbed methane has been the special tax credit for nonconventional fuel sources (such as coalbed meth-

ane) under Section 29 of the Crude Oil Windfall Profits Tax Act of 1980. The credit originally was applicable to wells drilled (spudded) after December 31, 1979, and before January 1, 1990.¹ This qualification period has been extended twice, the first time for 1 year by the Technical and Miscellaneous Revenue Act of 1988 and most recently for 2 years by the Omnibus Budget Reconciliation Act of 1990. As the credit stands now, wells must be drilled by the end of 1992 to receive the credit through the end of 2002.² Many companies were

¹Philip C. Crouse, "Coal Seam Methane is One of the Hotter Current Plays" *World Oil* (Washington, DC, November 1989), pp. 47-50.

²Dennis Eshuman, American Gas Association, Personal Communication, December 12, 1990.

trying to drill coalbed methane wells before the former tax credit deadline of December 31, 1990.⁵ The well-head price of natural gas in 1989 averaged \$1.71 per thousand cubic feet, while the 1989 tax credit for coalbed methane was almost half that price at 80 cents per thousand cubic feet—a very significant incentive.⁶

The tax credit is calculated from a formula that takes into account the price of oil and an inflation factor.⁷ The credit was intended to make nonconventional gas competitive at times of low oil prices. Since the price of oil was very high in 1980, the credit was not economically important then. The sharp decline of oil prices in the mid-1980's, however, increased the value of the credit.⁸ This credit helped fuel the boom in coalbed methane drilling; without it, fewer companies would have explored in unknown areas.⁹

Coalbed methane development has been characterized as mostly a technological effort in that the locations of many geologically favorable exploration targets are known. The problem is in trying to produce gas economically with presently available technology. The tax credit has helped to encourage the development of this technology.

Ownership Issues

Another issue that has a major role in the development of coalbed methane is the question of ownership of the gas. Most oil and gas leases do not specify who owns the gas found in coal seams—the owner of the coal, the oil and gas owner, the surface owner, or some combination of these parties.¹⁰ The owner of the coal may argue that the oil and gas owner has no right to the gas or that production activities could damage the coal.¹¹

At the Federal level, the Solicitor's Office of the United States Department of the Interior in 1981 issued an opinion concerning this ownership issue, saying that a Federal oil and gas lease covers coal seam gas. However, this opinion is not binding on courts and can be revised by a later Solicitor's opinion.¹²

At the State level, judicial precedent and legislation are limited. As of January 1990, Pennsylvania is the only State whose supreme court had addressed this issue. In *United States Steel v. Hoge*, 503 Pa. 140, 468 A.2d 1380 (1983), the Supreme Court of Pennsylvania concluded that coalbed methane belongs to the owner of the coal. However, a more in-depth analysis of this case shows that it is arguable even in Pennsylvania whether a coal owner is always entitled to the methane from that coal.¹³ In a similar ruling by a Federal district court in Alabama (*Rayburn, et al., v. USX Corp.*), the court found that the coal owner also owned the gas. Another case is pending in Alabama.¹⁴ In Virginia, the State attempted to resolve ownership issues by enacting legislation (Va. Code Ann. 55-154.1 (1986)), known as the Virginia Migratory Gas statute, which supposedly grants ownership of coalbed methane and other "migratory" gases to the surface owner on or after January 1, 1978.¹⁵ A new bill passed by the Virginia legislature and signed by the Governor in March 1990 apparently paves the way for a surge of new coalbed drilling activity in that State.¹⁶ In Colorado, the oil and gas owner has the right to the coal seam gas instead of the coal owner. It is presumed that New Mexico will follow suit.¹⁷ It appears that many ownership questions will ultimately be decided by the courts on a case-by-case basis rather than by legislation.¹⁸ In the meantime, the best solution seems to be cooperative agreements between all parties involved to allow the orderly development of both the coal and the methane. Experience has shown, especially in Alabama, that degassing of the coal seams in advance of mining allows for safer, faster, and more economic mining later.

Producing Coalbed Methane

Methane, the main constituent of natural gas, is a normal product of the coalification process that converts natural accumulations of plant matter into peat, lignite, bituminous coal, and finally anthracite coal. The higher the rank and the higher the fluid pressure, the more methane can be stored in a given amount of coal. Dur-

⁵ "San Juan coal wells race to year-end finish," *Western Oil World* (November 1990).

⁶ Energy Information Administration, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves: 1989 Annual Report*, DOE/EIA-0216(89) (Washington, DC, October 1990).

⁷ Peet M. Soot, "Non-Conventional Fuel Tax Credit," *Geology and Coal-Bed Methane Resources of the Northern San Juan Basin, Colorado and New Mexico*, Rocky Mountain Association of Geologists Guidebook (1988), pp. 253-255.

⁸ J. Ray Jones, "Tax Incentives for Producing from Nonconventional Sources," *Petroleum Independent* (November 1989), pp. 23-24.

⁹ Kristine Stremel, "Western Coalbeds," *Oil and Gas Investor* (January 1990) and Sandra Johnson, "Coalbeds Breathe New Life into San Juan," *Western Oil World* (November 1989).

¹⁰ Richard A. Counts, "Ownership Questions Can Stymie Development," *Oil and Gas Journal* (January 1, 1990).

¹¹ Kurt M. Petersen, "Coal Gas Spawns Title Disputes," *Western Oil World* (April 1990), pp. 39-40.

¹² Kurt M. Petersen, *Western Oil World* (April 1990).

¹³ Richard Counts, *Oil and Gas Journal* (January 1, 1990).

¹⁴ Kurt M. Petersen, *Western Oil World* (April 1990).

¹⁵ Richard Counts, *Oil and Gas Journal* (January 1, 1990).

¹⁶ Lippman, *The Washington Post* (April 12, 1990), p. A20.

¹⁷ Kurt M. Petersen, *Western Oil World* (April 1990).

¹⁸ Richard Counts, *Oil and Gas Journal* (January 1, 1990) and Kurt M. Petersen, *Western Oil World* (April 1990).

ing coal mining, the pressure is reduced and the stored methane is slowly released from the coal. In underground mines, this release of methane is a considerable hazard, and the gas must be diluted with enough air to prevent flammable mixtures of methane and air. Efforts to flush the gas out of the mines often are quite expensive and waste large quantities of natural gas. In the total United States, it is estimated that 250 million cubic feet of gas per day are lost to the atmosphere from underground coal mining.¹⁹ This represents approximately 0.5 percent of U.S. gas production from all sources.

The first efforts to vent methane from coalbeds were intended to improve mining safety and efficiency. Degasification techniques were developed to extract methane before the coal was mined, which allowed higher rates of mining because of the reduced need for ventilation.²⁰

Two types of degasification wells are used, vertical and horizontal. Vertical degasification wells are drilled into the coal seam in advance of mining and cased with fiberglass minable casing. The mine is then extended to the area that has been degassed. In these operations, the holes may be drilled from the surface, or from inside the mines themselves. In a horizontal well, drilling is done through the face of the mine. The gas drained from the coal can be sold or used locally to fuel mine operations.

In addition to the vertical and horizontal degasification methods, many operators recover coalbed methane through "gob" wells. In these wells, shallow, large diameter holes are drilled before mining to a position above the coal seam. After mining, the mine roof collapses, causing methane to be ventilated through the well. Most of the coalbed methane production from the Black Warrior Basin of Alabama is from gob wells.

The Brookwood Field in the Black Warrior Basin is an example of a degasification field. The Brookwood mines are the deepest coal mines in the United States, ranging from 1,700 to 2,200 feet deep. Degasification was found to be necessary for economic coal production because of the expense of ventilation at those depths and the reduced rate of mining necessary for safety. In 1987, Jim Walter Resources, Inc. produced over 12 billion cubic feet of coalbed methane from degasification wells, and they were still venting approximately 27 to 36 billion cubic feet per year.²¹

Producing methane from coal seams differs from conventional gas production because the gas is adsorbed on the coal internal surface area (which is extensive) or absorbed in a coal's micropores. To be produced, the pressure must be decreased to desorb gas. Coal is therefore a reservoir that can hold vast amounts of gas, but very little of it is permeable. Gas is adsorbed in a molecular monolayer on the internal surfaces of the coal on the order of 1 million square feet per pound of coal.²² The natural permeability of coal is dependent upon fractures, or "cleats," in the coal. These cleats are thought to be formed during coalification, and the presence and extent of cleat development differ from basin to basin. Fractures produced by other means are also important in providing permeability in coals. These fractures may be developed as a result of tectonic stresses after coalification in a basin, or they may be the result of differential compaction of coals over or under adjacent sandstone bodies.²³ Increased fracture density can also be correlated with areas of good coalbed methane production in the Black Warrior Basin.²⁴

In conventional gas reservoirs, once the hole is drilled the gas production capacity is generally at a maximum level initially and declines over time. This is because the gas is free gas in the pore spaces of the reservoir and is under a certain pressure. After the well starts to produce, the pressure begins to decline and gas production decreases with time. With coalbed methane wells, however, a producer's fondest dream may be realized: the well actually increases gas production with time, which is referred to as a negative decline or incline curve (see Figure FE2). This increase is because of the large water production at first in many coal methane wells. There is little free gas in a coal seam, and the only way for gas to be liberated from the coal is by desorption caused by the pressure release due to dewatering.²⁵

Dewatering pumps may be necessary to speed up the dewatering of the coal, allowing increased gas production. The reservoir pressure in general needs to be lowered to about atmospheric for maximum efficiency of methane production. It has been found that artificial fracturing of the individual coal reservoirs is often necessary to produce enough permeability for the desorbed methane to flow through to the well bore. Additional production considerations are disposal of produced water (which can be substantial), gas treatment, and gas compression.

¹⁹Petroleum Information, "Coalbed Methane: An Old Hazard Becomes a New Resource," *Petroleum Frontiers*, Vol. 3, No. 4 (1986).

²⁰Lerry L. Logan, "Drilling, Completing, and Producing Coalbed Methane Wells," Coalbed Methane Workshop (Denver, CO, March 1990).

²¹Charles A. Dixon, "Coalbed Methane--A Miner's Viewpoint," Proceedings of the 1987 Coalbed Methane Symposium (Tuscaloosa, AL, April 1987).

²²John F. McElhiney, "Coalbed Reservoir Engineering and Well Testing," Proceedings of the Coalbed Methane Workshop, Gas Research Institute (Denver, CO, March 7, 1990).

²³Walter B. Ayers, "Geologic Controls on Coalbed Methane Occurrence and Producibility," Coalbed Methane Workshop (March 1990).

²⁴M. E. Fahy, "Warrior Basin Coalbed Fractured Reservoir Characterization," 1987 Coalbed Methane Symposium (Tuscaloosa, AL, April 1987).

²⁵John F. McElhiney, Coalbed Methane Workshop (March 1990).

Figure FE2. Gas Production Rate: Conventional and Coalbed

Source: Modified from J.W. McEhliney, Coalbed Methane Workshop, Gas Research Institute, Denver, CO, March 1990.

The assumption has been made in the past that one should not drill too deeply for coalbed methane because of the effect that increased depth has on reducing pore volume and thus permeability, due to coal's compressible nature. However, recent research by the Gas Research Institute has shown that at depth, the coal shrinks, which apparently enlarges the cleat (fracture) and increases permeability.²⁶

Completion methods for wells drilled solely for the extraction of coalbed methane are basically of three types: open-hole, open-hole cavity, and cased-hole. The open-hole technique simply involves drilling a conventional hole and leaving it open, that is, without any casing to protect it from collapsing. Sometimes gravel is packed into the hole for stability but there are still problems with holes caving in and with fine particles of coal clogging the gravel.²⁷ This technique was originally used but has largely been replaced by the open-hole cavity and cased-hole techniques because of hole instability and coal fines production. The open-hole cavity technique produces increased permeability horizontally, thus allowing faster release of the gas from the coal. A cavity in the coal is created by "surging" the well repeatedly, whereby pressure is

built up by shutting-in the well and then rapidly depressuring it, causing coal fragments to fall into the well. These coal fragments and water are removed from the coal cavity by using high circulation air and/or foam.²⁸ A perforated liner is then placed in the hole to maintain stability. The cased-hole method is a conventional technique involving the use of fracture stimulation of selected coal seams, by sending water or other materials down the hole to fracture the coal. The increased fracture density increases the productive capability of the coal. The cased-hole method is more expensive in general, but is more stable and predictable as far as costs and production rates are concerned. Multiple coal seams can be completed with this technique, improving profitability of the well.

Some operators are trying horizontal drilling to exploit the idea of intersecting coal fractures at right angles to improve production rates. The more cleats (fractures) encountered during drilling the better the production. Since most cleats run predominantly vertically, more would be penetrated by a horizontal well than a vertical well, resulting in greater gas production. In the San Juan Basin, however, this drilling method has not yet proved to be any more effective in increas-

²⁶V. Kuuskraa, Coalbed Methane Workshop (Denver, CO, March 1990).

²⁷Terry L. Logan, "Western Basins Dictate Varied Operations," *Oil and Gas Journal*, (December 4, 1989), p. 37.

²⁸Terry L. Logan, "Drilling, Completing, and Producing Coalbed Methane Wells," Coalbed Methane Workshop (Denver, CO, March 1990).

ing production rates than standard drilling coupled with fracture stimulation.²⁹

Experience to date has shown that there is no best completion technique, and that each area must be evaluated separately. However, current drilling technology appears adequate to complete and produce coalbed methane wells economically.³⁰

Research on Methane in Coalbeds

In the mid-1970's, the Department of Energy (DOE) established its Unconventional Gas Recovery Program to investigate the size of the gas reserves occurring in coalbeds, tight gas sands, and certain Devonian shales. The Methane Recovery from Coalbeds Project (MRCP), which was a part of this program, funded a series of 16 basin studies to help delineate the coalbed methane resource. TRW, Inc. was responsible for 13 of the 16 basin studies sponsored by DOE.³¹

The Gas Research Institute (GRI) independently initiated two long-range research projects: the Deep Seam Coal Project for deep Western coals in the Piceance Basin of Colorado, and the Multiple Coal Seam Project for shallow, multiple seams in the Black Warrior Basin. (See Figure FE1 for locations of basins containing coalbed methane.) In 1982, GRI established the Eastern and Western Coalbed Methane Forums at the University of Alabama and the Colorado School of Mines, respectively, and in 1985 set up a methane resource center at each location. GRI publishes the *Quarterly Review of Methane from Coal Seams Technology*. DOE published a summary report entitled *Methane Recovery from Coalbeds: A Potential Energy Source* in 1983.

Production Estimates and Current Development Activities

The coal reserves of the United States are distributed in a number of basins. These basins were formed over millions of years during which the Earth has warped downward and allowed thick accumulations of sedi-

mentary rocks to form. This section describes current activity and production estimates through the end of 1989, where available, for all coalbed methane basins in the United States. The only basins with significant annualized production are the Black Warrior and the San Juan. The Piceance, Powder River, and Raton all have relatively minor, new production. The rest of the basins in the United States have virtually no coalbed methane production and are mentioned only where appropriate under the "Other Basins" heading. As in other industries, proximity to a market is important in developing coalbed methane at a profit. A small deposit near major markets may be more valuable than larger deposits in more remote areas.

San Juan Basin

The San Juan Basin is the second largest gas-producing basin in the United States.³² According to the Gas Research Institute, estimated coalbed methane reserves in the San Juan Basin increased from 67 billion cubic feet in 1987 to 882 billion cubic feet in 1988, and to approximately 2 trillion cubic feet in 1989.³³ Coalbed methane production in the basin was 67.3 billion cubic feet from 520 wells through the end of 1989, an increase from 20 billion cubic feet from 240 wells in 1988 (Figures FE3 and FE4).

The fields in the San Juan Basin are the Ignacio Blanco and Red Mesa Fields in Colorado and the Basin Fruitland Coal and Cedar Hill Basal Fruitland Coal Fields in New Mexico. The New Mexico Oil Conservation Commission in November 1988 designated all of the Fruitland Formation Coal reservoir outside of the Cedar Hill Field as the Basin Fruitland Coal Field. The center of the Basin Fruitland Coal Field was formerly referred to as the Meridian 400 Field. This field contains some of the most prolific coalbed methane wells in the United States, one producing up to 15 million cubic feet per day. The number of producing coalbed methane wells more than doubled from 1988 to 1989, increasing from 240 to 520 (Table FE2). The New Mexico Oil Conservation Commission issued 444 permits to drill mostly Fruitland coal seams through August 1989, compared to 279 in the same period in 1988. For all of 1989, 636 wells were permitted, 565 drilled, and about 450 completed.³⁴ Completions through August 1989 totaled 352, compared to 160 in 1988.³⁵ The number of producing wells in the Colorado portion of the San Juan Basin was 212 through the end of 1989.

²⁹Terry L. Logan, Coalbed Methane Workshop (March 1990).

³⁰Terry L. Logan, Coalbed Methane Workshop (March 1990).

³¹Petroleum Information, *Petroleum Frontiers*, Vol. 3, No. 4 (1986).

³²J.E. Fassett, "Coalbed Methane--A Contumacious, Free Spirited Bride; The Geologic Handmaiden of Coal Beds," *Energy Frontiers of the Rockies* (Albuquerque, NM, 1989), pp. 131-146.

³³V. Kuuskraa, Coalbed Methane Workshop (March 1990).

³⁴Ernie Busch, New Mexico Oil Conservation Commission, Personal Communication, April 4, 1990.

³⁵Sandra Johnson, "Coalbeds Breathe New Life into San Juan," *Western Oil World* (November 1989), pp. 20-25.

Figure FE3. Coalbed Methane Production in the San Juan Basin of Colorado and New Mexico, 1980-1989

Sources: Dwight's Energydata and Colorado Oil and Gas Commission.

Figure FE4. Number of Wells Producing Coalbed Methane in the San Juan Basin of Colorado and New Mexico, 1980-1989

Sources: Dwight's Energydata and Colorado Oil and Gas Commission.

Table FE2. Coalbed Methane Production and Producing Wells in the San Juan Basin of Colorado and New Mexico through 1989, by Field
(Million Cubic Feet)

Field/Year	Producing Wells	Production	Cumulative Production
Basin Fruitland Coal			
1970	2	30	30
1971	2	28	58
1972	3	43	101
1973	4	75	176
1974	4	55	231
1975	4	50	281
1976	5	57	338
1977	7	141	479
1978	10	231	710
1979	13	307	1,017
1980	15	363	1,380
1981	15	291	1,671
1982	20	322	1,993
1983	23	277	2,270
1984	26	263	2,533
1985	30	277	2,810
1986	39	1,911	4,721
1987	53	3,313	8,034
1988	67	12,652	20,686
1989	288	50,520	71,206
Cedar Hill Basal Fruitland Coal			
1973	1	56	56
1974	1	47	103
1975	1	31	134
1976	1	25	159
1977	1	21	180
1978	2	20	200
1979	2	93	293
1980	2	112	405
1981	4	321	726
1982	4	801	1,527
1983	6	961	2,488
1984	8	1,417	3,905
1985	9	1,781	5,686
1986	12	1,744	7,430
1987	13	2,103	9,533
1988	17	2,668	12,201
1989	20	5,110	17,311
Ignacio Blanco			
1970	1	43	43
1971	1	35	78
1972	1	20	98
1973	1	64	162
1974	1	36	198
1975	1	37	235
1976	1	37	272
1977	1	37	309
1978	1	37	346
1979	1	35	381
1980	1	37	418
1981	1	41	459
1982	2	30	489
1983	31	130	619
1984	45	1,026	1,645
1985	46	463	2,108
1986	52	389	2,497
1987	90	2,192	4,689
1988	145	5,126	9,815
1989	210	11,687	21,502
Red Mesa			
1987	1	0.6	0.6
1988	11	11	12
1989	2	15	27
Total 1989	520	67,332	110,046

Sources: Dwight's Energydata, Inc., and Colorado Oil and Gas Commission.

The Fruitland Formation has produced gas in 18 other gas fields in the basin, but mostly from sandstone reservoirs with a probably small and indeterminable amount from coal seams. Also, seven other fields have produced gas jointly from the Fruitland and adjacent Pictured Cliffs sandstone.³⁶ Cumulative coalbed methane production from the San Juan Basin is approximately 110 billion cubic feet from the four fields mentioned above (Table FE2). This represents approximately 0.7 percent of the total cumulative production of 16 trillion cubic feet in the basin as a whole.

It has been estimated that of the total resource of 50 trillion cubic feet of coalbed methane in the Fruitland Formation, approximately 25 trillion cubic feet may be recoverable. This would make Fruitland coalbed methane gas production total to more than all the other gas sources of the San Juan Basin.³⁷ It is interesting to note that in 1988 and 1989, about 8 thousand barrels of oil were produced from the Fruitland Coal in the New Mexico portion of the San Juan Basin. New Mexico geologists are investigating the origins of this oil at the present time.³⁸

The Cretaceous Fruitland Formation is the main reservoir with secondary interest in the deeper Menefee Formation. All production estimates from the San Juan Basin are from the Fruitland Coal except for a small amount from the Menefee coals in the Red Mesa Field. Estimates (made by ICF Resources for the Gas Research Institute) of total resources in place are 50 trillion cubic feet for the Fruitland and 22 to 34 trillion cubic feet for the deeper Menefee Formation. The Fruitland Formation covers 7,500 square miles and the Menefee 12,000 square miles. The average thickness of the Fruitland coals is 8 to 15 feet and ranges up to 35 feet in the northern part of the basin at depths to 4,000 feet. The Menefee Formation coals average 4 feet thick and range up to 15 feet thick at depths to 6,500 feet. Coal ranks are from lower rank high volatile bituminous to higher rank low volatile bituminous.³⁹ There is currently no stand-alone production from the deeper Menefee coals.

The wells initially produce more water than gas, with gas production peaking after 1 to 4 years, with subsequent gradual decline. The wells are expected to produce for 30 to 40 years and to recover about 50 percent of the resource in place. Drilling and completion costs average \$400,000 per well with another \$250,000 for gas gathering and water disposal facilities. But with

the initial production tests of 10 to 15 million cubic feet per day, and ultimate recoverable reserves of 4 billion cubic feet per well, the wells are very economic, having 15 to 25 percent annual rates of return on investment.⁴⁰

Additional gas pipeline capacity will likely be necessary for this increased production from coal. El Paso Natural Gas Company of El Paso, Texas has the largest system in the area, designed to carry up to 1.5 billion cubic feet per day of gas mostly to California. The company is waiting for approval from the Federal Energy Regulatory Commission to increase its capacity by another 500 million cubic feet per day. Two other pipeline companies have proposed a 500-million-cubic-foot-per-day pipeline in New Mexico, one of which is proposing a further 320-million cubic-foot-per-day expansion to carry gas to California. Many producers are planning to market their gas in California for use in cogeneration facilities.

Water disposal may have an economic impact on coalbed methane development in the San Juan Basin because surface disposal is not as environmentally feasible as in the Black Warrior Basin. Several methods have been tried, such as evaporation pits, chemical treatment of the brines, and underground injection. Underground injection will probably be the preferred method and is already being used in the Ignacio Blanco and Basin Fields.⁴¹ Combined water production in 1988 and 1989 from the Fruitland Coal in New Mexico was about 5.5 million barrels.⁴² It can be seen that the San Juan Basin is an extremely active area for coalbed methane development and will continue to be so into the foreseeable future.

Black Warrior Basin

The Black Warrior Basin of northwestern Alabama is the other major coalbed methane producing area. Its production of coalbed methane in 1989 was about 23 billion cubic feet from 904 wells, an increase from approximately 20 billion cubic feet in 1988 from 501 wells (Figures FE5 and FE6). The basin as a whole has a cumulative coalbed methane production of over 93 billion cubic feet from 10 degasification fields (Table FE3). Reserves increased from 71 billion cubic feet in 1987 to 111 billion cubic feet in 1988, according to the Gas Research Institute.⁴³

³⁶J.E. Fassett, *Energy Frontiers of the Rockies* (Albuquerque, NM, 1989).

³⁷J.E. Fassett, *Energy Frontiers of the Rockies* (Albuquerque, NM, 1989).

³⁸Ernie Busch, New Mexico Oil Conservation Commission, Personal Communication.

³⁹Bruce S. Kelso, "Coalbed Methane Resource of the United States," (Denver, CO, March 1990).

⁴⁰Kristine Stremel, *Oil and Gas Investor* (January 1990), pp. 26-38.

⁴¹J.E. Fassett, *Energy Frontiers of the Rockies* (Albuquerque, NM, 1989).

⁴²Ernie Busch, New Mexico Oil Conservation Commission, Personal Communication.

⁴³V. Kuuskraa, Coalbed Methane Workshop (Denver, CO, March 1990).

Figure FE5. Coalbed Methane Production in the Black Warrior Basin of Alabama, 1980-1989

Note: The 1980 production of 5 million cubic feet is too small to appear at the scale used in this graph.

Source: Alabama Oil and Gas Board.

Figure FE6. Number of Wells Producing Coalbed Methane in the Black Warrior Basin of Alabama, 1980-1989

Source: Alabama Oil and Gas Board.

Table FE3. Coalbed Methane Production and Producing Wells in the Black Warrior Basin of Alabama through 1989, by Field
(Million Cubic Feet)

Field/Year	Producing Wells	Production	Cumulative Production
Blue Creek			
1989	81	598	598
Brookwood			
1982	31	1,101	1,101
1983	57	2,579	3,680
1984	95	5,421	9,101
1985	128	6,909	16,010
1986	167	10,262	26,272
1987	192	11,938	38,210
1988	214	12,735	50,945
1989	233	12,252	63,197
Cedar Cove			
1984	8	74	74
1985	15	475	549
1986	15	755	1,304
1987	17	725	2,029
1988	18	824	2,853
1989	24	890	3,743
Deerlick Creek			
1984	20	64	64
1985	20	431	495
1986	30	743	1,238
1987	30	832	2,070
1988	38	878	2,948
1989	138	1,541	4,489
Holt			
1982	1	9	9
1983	2	28	37
1984	4	47	84
1985	5	41	125
1986	5	32	157
1987	5	33	190
1988	0	0	190
1989	5	0.2	190
Little Sandy Creek			
1989	16	19	19
Oak Grove			
1981	23	32	32
1982	38	493	525
1983	38	777	1,302
1984	38	748	2,050
1985	48	694	2,744
1986	79	1,235	3,979
1987	141	3,421	7,400
1988	227	5,408	12,808
1989	396	7,966	20,774
Peterson			
1984	16	52	52
1985	22	78	130
1986	22	21	151
Pleasant Grove			
1980	3	5	5
1981	3	16	21
1982	3	20	41
1983	3	22	63
1984	3	23	86
1985	3	20	106
1986	4	18	124
1987	4	24	148
1988	4	23	171
1989	4	15	186
White Oak Creek			
1989	7	69	69
Total 1989	904	23,350	93,416

Source: Alabama Oil and Gas Board.

Table FE4. Coalbed Methane Production and Producing Wells in the Piceance Basin of Colorado through 1989, by Field
(Million Cubic Feet)

Field/Year	Producing Wells	Production	Cumulative Production
Divide Creek			
1984	1	2	2
1985	1	39	41
1986	1	92	133
1987	1	65	199
1988	1	48	246
1989	2	16	262
Grand Valley			
1986	2	11	11
1987	5	143	154
1988	7	700	854
1989	11	773	1,627
Rulison			
1989	2	6	6
Skinner Ridge			
1989	6	12	12
Total 1989	21	807	1,907

Sources: Dwight's Energydata, Inc., and Colorado Oil and Gas Commission.

Production has been from coal seams in the Lower Pennsylvanian Pottsville Formation: Mary Lee, Blue Creek, Pratt, and Black Creek coals. Total coal thickness for these coals ranges from 20 to 30 feet. Depths range from 0 to more than 4,000 feet for the deepest coal, the Black Creek, in the southern part of the basin.

Total coalbed methane resources in place are estimated by ICF Resources to be 20 trillion cubic feet.⁴⁴ Recovery of the resource may range from 50 to 80 percent.⁴⁵ The rank of the coals ranges from high volatile bituminous to low volatile bituminous. Most of the development of the basin to date has been in the more shallow eastern side, but companies are starting to move westward to the deeper portions of the basin. As mentioned earlier, most of the methane production from the Black Warrior Basin is from "gob" wells associated with coal mining activity. This trend may change as coals too deep to mine are exploited in the western portion of the basin.⁴⁶ Development of coalbed methane in neighboring Alabama caused the Mississippi Geologic Survey to conduct and release a geologic assessment of the coalbed methane resources of Clay County, Mississippi.⁴⁷

The oldest degasification field in the United States is the Oak Grove Field of the Black Warrior Basin. It was originally started as an experimental project in 1977 as a 23-well grid to degas the Blue Creek seam of the Mary Lee Group at a depth of 1,000 feet in advance of coal mining. Gas was initially vented, but starting in 1981 it was sold. The field now has over 390 wells, has produced over 20 billion cubic feet, and is the second largest coalbed methane field in Alabama.

The largest field in the Black Warrior Basin is the Brookwood Degasification Field, which began producing coalbed methane in 1982 to degas the Blue Creek coalbed in advance of mining. Thus far, it has produced 63 billion cubic feet, almost 70 percent of the coalbed methane produced in the basin. Most gas is produced from gob wells from seams in the Blue Creek and Pratt coals at a depth of 1,500 to 2,000 feet. Brookwood produced over 12 billion cubic feet of gas from 233 wells in 1989 (Table FE3).

Environmental issues are coming more to the attention of the public, thus there is concern about the water production associated with coalbed methane development.⁴⁸ Up to this point, however, surface disposal of produced waters has been the normal procedure in Alabama.

⁴⁴Bruce S. Kelso, Coalbed Methane Workshop (March 1990).

⁴⁵J.E. Fassett, "Coalbed Methane-- A Contumacious, Free Spirited Bride; The Geologic Handmaiden of Coal Beds," *Energy Frontiers of the Rockies* (Albuquerque, NM, 1989), pp. 131-146.

⁴⁶*Oil and Gas Journal* (August 28, 1989), p. 61.

⁴⁷"Interest Aroused Over Coal, Coalbed Gas Resource Potential of Mississippi Region," *Oil and Gas Journal* (August 28, 1989), p. 61.

⁴⁸Gas Research Institute, "Basin Activities: Black Warrior Basin, Alabama," *Quarterly Review of Methane from Coal Seams Technology* (October 1989), p. 9.

Piceance Basin

The Cameo and Coal Ridge Groups of the Williams Fork Formation of the Mesa Verde Group of Late Cretaceous age contain coals that are the target of coalbed methane development activity in the Piceance Basin of northwestern Colorado. The coals range from 10 to 60 feet thick at depths from 0 to 12,000 feet. Coal rank varies from lower rank high volatile bituminous to higher rank semi-anthracite. The Gas Research Institute estimates that the basin has 84 trillion cubic feet of coalbed methane in place.⁴⁹

Resource Enterprises and the Gas Research Institute are co-sponsoring the Deep Seam Coal Project, initiated in 1983. This is a long-term research project to determine the basin's coalbed reservoirs' characteristics. Studies between 1983 and 1986 concluded that the coal seams were too impermeable to be effective reservoirs. However, there have been reports of production rates of over 1 million cubic feet per day.⁵⁰

As discussed earlier, the lion's share of coalbed methane production in Colorado is from the Ignacio Blanco Field in the San Juan Basin, which produced over 5 billion cubic feet from 145 wells in 1988 and 11.7 billion cubic feet from 210 wells in 1989. Cumulatively, Ignacio Blanco has produced about 21.5 billion cubic feet of gas from the Fruitland coals (Table FE2). The rest of the coalbed methane production reported through 1989 from Colorado was from the Piceance Basin, specifically from the Divide Creek, Grand Valley, Rulison, and Skinner Ridge Fields. Cumulative coalbed methane production from the Piceance Basin is approximately 1.9 billion cubic feet coming from four fields: Divide Creek, Grand Valley, Rulison, and Skinner Ridge (Table FE4). These figures are very preliminary and do not include some production from the last few months of 1989. Grand Valley has the greatest cumulative production with 1.6 billion cubic feet. There were approximately 21 producing wells from all these fields at the end of 1989.

One concern with the Piceance Basin has been the lack of a continuous market for the gas, but two pipeline companies are now planning to expand gas transportation into the area.⁵¹

Powder River Basin

The Powder River Basin has one of the largest coal reserves of any basin in the United States but coalbed methane development has been slow because of the coal's low rank (lignite to subbituminous), low methane content, and the lack of significant gas pipeline development.⁵² However, the 16-trillion-cubic-foot resource, the availability of land, the shallow, thick coals (up to 75 feet thick) of the Paleocene age Fort Union Formation and Eocene age Wasatch Formation, and the presence of methane historically in artesian wells have spurred renewed interest in the Campbell County, Wyoming portion of the basin. In 1988, 50 methane wells were drilled into shallow sandstones, which are interbedded with Fort Union coals, and production was established from these thin sandstones. However, in April 1989, Betop, Inc., of Carrollton, Texas established the first actual coalbed methane production in Wyoming by hooking up four wells to a pipeline at its Vandekoppel Prospect. These wells produce 1 million cubic feet of gas per day from 140 feet of subbituminous coal in the Fort Union Formation at a depth of 400 feet. Production is expected to rise to 2.5 million cubic feet per day when three more wells are completed.⁵³ Betop's 3,000-acre lease is adjacent to the Rawhide Village, a subdivision north of Gillette which was evacuated last year because of the methane gas coming up into the streets. Production of water so far is minimal and is of a fresh enough quality to be surface disposable.⁵⁴

Thus far it appears that initial skepticism about the potential of producing coalbed methane at commercial rates from low rank, shallow coals such as those of the Fort Union in the Powder River Basin is proving unwarranted. Due to the recent nature of the production in the Powder River Basin, there are no production figures to report other than those mentioned above.

Raton Basin

The Raton Basin of southeastern Colorado and northeastern New Mexico, which had an announced discovery in early 1989, is currently being explored by several companies. Coals occur in the Upper Cretaceous Vermejo Formation and the Upper Cretaceous to Paleocene Raton Formation. These coals range from 2 to 8 feet thick at depths of 0 to 4,000 feet. They range in rank from high volatile bituminous to medium volatile bituminous. DOE estimates a resource of 8 to 18.4 trillion cubic feet of coalbed methane in the basin.⁵⁵

⁴⁹Bruce S. Kelso, Coalbed Methane Workshop (March 1990).

⁵⁰Petroleum Information, *Petroleum Frontiers*, Vol. 3, No. 4 (1986).

⁵¹Kristine Stremel, *Oil and Gas Investor* (January 1990) and Sandra Johnson, *Western Oil World* (November 1989).

⁵²Gas Research Institute, Very E. Larsen, "Preliminary Evaluation of Coalbed Methane Geology and Activity in the Recluse Area, Powder River Basin, Wyoming," *Quarterly Review of Methane from Coal Seams Technology* (June 1989), pp. 2-10.

⁵³*Oil and Gas Journal* (May 22, 1989), p. 26.

⁵⁴Kristine Stremel, *Oil and Gas Investor* (January 1990).

⁵⁵Bruce S. Kelso, Coalbed Methane Workshop (March 1990).

Pennzoil's discovery well, the #301J Van Bremmer, in Colfax County, New Mexico, had initial production of 20 thousand cubic feet of gas and 274 barrels of water per day from the Vermejo Coal at a depth of 2,037 feet.⁵⁶ It is currently pumping 48 thousand cubic feet of gas and 47 barrels of water per day. Pennzoil has drilled 16 wells around the discovery as a pilot program to test production. Pennzoil has also initiated a 19-well \$7 million pilot drilling program to test multiple coal seams from 600 to 2,000 feet deep in an area 30 miles north of Cimarron on the Vermejo Park Ranch. Prior to this activity, about 50 coalbed methane tests had been conducted over the years. Most operators thought there were too many water disposal problems for commercial development.⁵⁷

Other Basins

Although the remainder of the coalbed methane basins in the United States are currently undergoing varying degrees of exploration, they have not had significant commercial production as yet.

The Greater Green River Basin of southwestern Wyoming and northwestern Colorado was the site of early coal testing by the U.S. Geological Survey and by TRW and the Colorado Geological Survey for DOE. From late 1987 through the present, there have been isolated wells drilled, some land sales, and ventures announced. This has increased interest in the Greater Green River Basin, specifically in the Sand Wash Basin and Washakie Basin portions. A joint venture agreement has been made to evaluate this basin.⁵⁸ DOE estimates a resource in place of 1 to 30 trillion cubic feet of coalbed methane.⁵⁹

The Western Washington Basin had 25 coalbed methane wells drilled from 1979 to 1989 with no commercial production established. Activity has been rather slow recently with the exception of a joint partnership which acquired five wells in the Wilkeson-Carbonado Field. Development of this prospect may continue later, according to the Gas Research Institute.⁶⁰

With a DOE-estimated coalbed methane resource of 5 to 21 trillion cubic feet, the Illinois Basin has had only minor activity, probably because of low gas con-

tent.⁶¹ Two coal mine degassing projects in Saline County have been producing small amounts of coalbed methane from the Pennsylvanian Herrin Coal since 1972. In 1989, 47 billion cubic feet of methane were produced from these projects.⁶² A coalbed methane drilling project in Illinois was announced recently by Hite Operating Company of Evansville, Indiana. Company officials plan an 8-well drilling program at the abandoned Old Ben Coal Mine in Franklin County, Illinois. The first test will drill 650 feet to the Herrin Coal. If this is successful, there are plans for 20 more wells on the 26,000-acre lease.⁶³

In the Central Appalachian Basin, with estimated resources of 5 trillion cubic feet (Gas Research Institute), U.S. Steel Mining Company of Pittsburgh, Pennsylvania plans to drill a well in Wyoming County, West Virginia to a depth of 863 feet to test the coalbed methane potential of the area. This is the first well in the State in 20 years to aim specifically for coalbed methane. The well is located 1 mile east of Welch Field, where gas was produced from shallow sandstone reservoirs.⁶⁴

In the Northern Appalachian Basin, which has estimated resources of 61 trillion cubic feet, the Big Run Field of Wetzel County, West Virginia has been producing coalbed methane continuously since the 1940's. Cumulative production is about 2 billion cubic feet. This is considered "accidental" production because the original target was in deeper formations and these wells were plugged back and recompleted later to gather the coalbed methane from the shallower coals.⁶⁵ According to the Gas Research Institute, the industry is becoming increasingly interested in the basin, but there are major roadblocks in the form of the legal issue of ownership of coalbed methane and water disposal issues.⁶⁶

Summary

As mentioned in the article on coalbed methane in the September 1988 issue of the *Natural Gas Monthly*, DOE/EIA-0130(88/09), it appeared in 1988 that the future was bright for the development of the United

⁵⁶Gas Research Institute, "Basin Activities: Raton Basin, Colorado and New Mexico," *Quarterly Review of Methane from Coal Seams Technology* (October 1989), p. 7.

⁵⁷Gas Research Institute, *Quarterly Review of Methane from Coal Seams Technology* (October 1989), p. 7.

⁵⁸Gas Research Institute, "Basin Activities: Greater Green River Basin, Wyoming and Colorado," *Quarterly Review of Methane from Coal Seams Technology* (October 1989), pp. 2-3.

⁵⁹Bruce Kelso, Coalbed Methane Workshop (March 1990).

⁶⁰Gas Research Institute, "Basin Activities: Western Washington," *Quarterly Review of Methane from Coal Seams Technology* (October 1989), p. 2.

⁶¹Bruce S. Kelso, Coalbed Methane Workshop (March 1990).

⁶²Bryan Huff, Illinois Geological Survey, Personal Communication, October 1990.

⁶³"Exploration Highlights," *Oil and Gas Investor* (January 1990), p. 65.

⁶⁴*Oil and Gas Investor* (January 1990).

⁶⁵Gas Research Institute, *Quarterly Review of Methane from Coal Seams Technology* (October 1989), p. 2.

⁶⁶Bruce Kelso, Coalbed Methane Workshop (March 1990).

States' large resource of coalbed methane gas. The past 2 years have proved this to be the case. There are now companies experienced in the complex technical and legal problems connected with the development of coal seam gas. In the past 2 years, the number of producing wells has doubled and annual production has almost quadrupled. Commercial production has been established in the Piceance and Powder River Basins. New drilling activity has started in the Appalachian and Illinois basins. The San Juan and Black Warrior Basins are living up to optimistic expectations. Research by the Gas Research Institute and others is

continuing to aid the technological efficiency of this development. The literature on coalbed methane technology is expanding rapidly, providing a valuable data base of experience for those who will follow. There are also many new areas to explore and develop—a conservative estimate of the recoverable resource is 90 trillion cubic feet. With many companies decreasing their expenditures for domestic oil exploration while increasing their gas exploration budgets, coalbed methane is considered a welcome and attractive target now and well into the future.

A welding crew completes work on the installation of a 16 inch "T" joint on a 30 inch natural gas pipeline.

Overview

Introduction

The natural gas market remained relatively stable during October, dominated more by seasonal patterns and the nation's weakening economy than by the conflict in the Mideast. Warmer than normal weather, as well as the sluggish economic conditions, kept demand and prices lower than might otherwise have been expected. The Mideast conflict and the resulting surge in oil prices has had markedly little effect, if any, on natural gas consumption and prices. Typical for October, large amounts of gas were placed in storage; in fact, as discussed further in the section on storage below, the amount of gas in storage reached a new record this year.

Supply and Disposition

As shown in Table 1, EIA estimates that marketed production (gross withdrawals less gas used for repressuring, quantities vented and flared, and nonhydrocarbon gases removed in treating or processing operations) totaled 1,477 billion cubic feet, up a little more than 5 percent from September's 1,403 billion cubic feet. Marketed production is generally at its lowest in September and normally begins climbing in October. A year-to-date comparison shows that marketed production in 1990 so far is running slightly more than 1 percent higher than in 1989, slightly more than 2 percent higher than in 1988. Observers believe that demand and prices will have to increase to stimulate any notable growth in production.

Table 2 shows that the total gas supply available for disposition in October was an estimated 1,600 billion cubic feet, more than 6 percent higher than the 1,504 billion cubic feet reported in September, but almost 2 percent lower than October 1989's 1,631 billion cubic feet. This total includes 11 billion cubic feet of supplemental gas supplies, 120 billion cubic feet of imported gas, and 61 billion cubic feet withdrawn from storage. That withdrawal was unusually low for this time of year.

On the disposition side, also Table 2, consumption increased to 1,463 billion cubic feet, up 14 percent from 1,283 billion cubic feet in September. Again, this in-

crease is typical for this time of year. For the year-to-date, consumption is just 1 percent higher than for the same period in 1989, almost 4 percent higher than in 1988. Of October's total disposition, 214 billion cubic feet were injected into underground storage reservoirs and 8 billion cubic feet were exported. This leaves 85 billion cubic feet unaccounted for.

Consumption

Data for the four major end-use sectors, Table 3, show that total amount of gas delivered to all consumers dropped to 1,143 billion cubic feet in September (the last month for which data are available) from 1,175 billion cubic feet in August. This 3-percent decline is typical for September, when consumption is usually lowest for the year: the heating season has not yet begun for much of the residential and commercial sectors; the electric utility sector has ended its summer peak.

Only in the industrial sector has consumption shown any significant growth. Although virtually the same in September as in August (584 billion cubic feet compared with 586 billion cubic feet), for the year-to-date, total consumption in this sector is running 5 percent higher than for year-to-date 1989 (5,260 billion cubic feet compared with 5,002 billion cubic feet). This rate of growth, while stronger than in the other consuming sectors, is somewhat weaker than the approximately 7-percent annual growth witnessed from 1986 to 1989: the slowdown in the economy is taking its toll on this sector as well as the others. Still the relatively low price of natural gas probably kept demand from declining further than would be expected in a slow economy.

The electric utility sector typically consumes less natural gas during September than in the peak summer months of July and August. This year, consumption dropped to 300 billion cubic feet, down from 325 billion cubic feet in July and 346 billion cubic feet in August. These consumption totals are higher than those seen during the same three months in 1989, much the same as in 1988. For the year to date, consumption is basically unchanged.

In both the residential and commercial sectors, demand for natural gas is predominantly driven by space heat-

ing requirements. With the warmer than normal weather, especially during the first quarter, it is not at all surprising that, for the year to date, residential consumption is more than 5 percent lower than during the same period of 1989 (3,170 billion cubic feet compared with 3,353 billion cubic feet). In September, although the winter heating season had not yet begun, deliveries to residential consumers did increase by almost 9 percent.

In the commercial sector, consumption for the year is at just the same level as for year-to-date 1989. In September, consumption increased by slightly more than 4 percent.

Prices

As noted above, Iraq's invasion of Kuwait and the dramatic increase in oil prices has not caused any substantial increase in natural gas prices: natural gas prices were already relatively low in 1990, a function of the spot market and gas to gas competition; indeed, some observers would argue that prices have been severely depressed in 1990 and for much of the past few years. Obviously, these low prices have kept natural gas competitive with other fuels throughout the year; it will be some time, if at all, before the surge in oil prices has any effect on natural gas prices.

As shown in Table 4,

- According to EIA's estimates, in August (the last month for which data are available) wellhead prices averaged \$1.54 per thousand cubic feet, up almost 3 percent from \$1.50 per thousand cubic feet in August; wellhead prices averaged \$1.61 per thousand cubic feet in August 1989 and \$1.62 in August 1988 (4-5 percent more).
- In September 1990, major interstate pipeline companies paid an average of \$1.93 per thousand cubic feet for gas purchased from domestic producers, up slightly from the \$1.86 paid in August, but far below (more than 9 percent) the \$2.13 paid in September 1989. In September, these pipeline companies paid, on average, \$1.93 for imported gas, almost all of it Canadian. For the year as a whole, prices for imports have been running about 3 percent below domestic prices.
- Distributors paid an average \$2.92 per thousand cubic feet at the city gate in September, virtually the same as they paid in August, but more than 2 percent less than the \$2.99 paid in September 1989.
- Industrial consumers paid an average of \$2.59 per thousand cubic feet. This is a nearly 3-percent increase from the \$2.52 that these consumers paid

in August. It is 3 percent less than they paid in September 1989. For the year-to-date, industrial consumers are paying almost 2 percent less than they did for year-to-date 1989 but virtually the same as for year-to-date 1988.

- Commercial consumers paid \$4.57 per thousand cubic feet in September, up slightly from the \$4.55 paid in August, down 2 percent from the \$4.67 they paid in September 1989. For the year as a whole, prices are running almost 2 percent higher than year-to-date 1989.
- Residential consumers paid \$6.81 per thousand cubic feet, down more than 3 percent from the \$7.04 paid in August. September 1989's bill was virtually the same as September 1990's. Because of the way the residential market is regulated, prices will start coming down for this sector as demand increases. For the year-to-date, residential consumer prices are running almost 2 percent above year-to-date 1989 prices, and almost 7 percent above year-to-date 1988 prices.
- Electric utilities paid an average of \$2.23 per thousand cubic feet in August. This is a slight increase from the \$2.22 paid in July, drop of more than 4 percent from the 2.33 paid in August 1989. So far in 1990, electric utility prices are running almost 5 percent below 1989 prices, but almost 3 percent above 1988 prices.

Underground Storage

The warm weather notwithstanding, as the winter months draw near, attention is focused on storage. Storage hit a record level in October 1989: 7,061 billion cubic feet. However, December's record-breaking cold (and subsequent demand for all heating fuels) taxed the system to its limits. This year, following seasonal patterns, a majority of the available natural gas (gas not needed to meet consumer demand) was placed in underground storage facilities to prepare for winter heating demand.

As shown in Table 17, in October 1990, 214 billion cubic feet were injected into storage and 61 billion cubic feet withdrawn, netting 153 billion cubic feet. This brings the total gas in storage to 7,277 billion cubic feet, a new record, which is about 3 percent higher than the record set last October. As noted earlier, withdrawals were abnormally low for this time of year: by comparison 96 billion cubic feet were withdrawn in October 1989, 92 billion cubic feet in October 1988. Of course, the warm weather helps explain why producers were able to place so much gas in storage, as does the low demand.

Table 1. Summary of Natural Gas Production
(Billion Cubic Feet)

Year and Month	Gross Withdrawals	Repressuring	Nonhydrocarbon Gases Removed ^a	Vented and Flared	Marketed Production (Wet)	Extraction Loss	Total Dry Gas Production ^b
1984 Total	20,192	1,630	224	108	18,230	838	17,392
1985 Total	19,534	1,915	326	95	17,198	816	16,382
1986 Total	19,083	1,898	337	98	16,791	800	15,991
1987 Total	20,056	2,208	376	124	17,349	812	16,536
1988							
January	1,925	216	40	12	1,657	76	1,581
February	1,752	196	36	12	1,508	69	1,439
March	1,826	201	40	12	1,573	72	1,501
April	1,684	193	39	12	1,440	66	1,374
May	1,724	204	33	12	1,475	68	1,407
June	1,055	202	39	12	1,402	64	1,338
July	1,674	204	37	13	1,420	65	1,355
August	1,691	203	36	12	1,440	66	1,374
September	1,609	200	38	12	1,359	62	1,297
October	1,747	217	42	12	1,476	67	1,409
November	1,772	217	38	12	1,505	69	1,436
December	1,864	225	42	11	1,586	73	1,513
Total	20,922	2,478	460	143	17,841	817	17,02 ^c
1989							
January	R 1,866	R 219	34	11	R 1,602	70	R 1,532
February	R 1,712	R 193	29	11	R 1,479	64	R 1,415
March	R 1,809	R 197	31	13	R 1,568	68	R 1,500
April	R 1,797	R 203	29	12	R 1,493	65	R 1,428
May	R 1,770	R 214	31	12	R 1,513	66	R 1,447
June	R 1,683	R 192	28	12	R 1,451	63	R 1,388
July	R 1,720	R 199	30	12	R 1,479	64	R 1,415
August	R 1,715	R 207	28	12	R 1,468	63	R 1,404
September	R 1,644	R 207	28	12	R 1,397	60	R 1,337
October	R 1,719	R 211	29	12	R 1,467	64	R 1,403
November	R 1,784	R 214	31	12	R 1,527	66	R 1,461
December	R 1,850	R 219	33	12	R 1,586	72	R 1,514
Total	R 21,009	R 2,475	362	R 142	R 18,029	785	R 17,245
1990							
January	R 1,936	205	32	15	R 1,684	R 79	R 1,605
February	R 1,712	180	27	9	R 1,496	70	R 1,426
March	R 1,834	207	30	10	R 1,587	R 74	R 1,513
April	R 1,742	201	29	10	R 1,502	70	R 1,432
May	1,772	203	35	11	R 1,523	71	1,452
June	R 1,695	191	29	10	R 1,465	69	R 1,396
July	R 1,700	194	30	10	R 1,466	69	R 1,397
August	R 1,716	R 196	R 31	R 10	R 1,479	69	R 1,410
September	E 1,627	E 185	E 29	E 10	E 1,403	E 66	E 1,337
October	E 1,713	E 195	E 31	E 10	E 1,477	E 69	E 1,408
1990 YTD	17,447	1,957	303	105	15,082	706	14,376
1989 YTD	17,375	2,042	297	119	14,916	647	14,269
1988 YTD	17,287	2,036	380	121	14,751	675	14,075

^a See Appendix A, Explanatory Note 1 for a discussion of data on Nonhydrocarbon Gases Removed.

^b Equal to marketed production (wet) minus extraction loss.

^c Estimated Data.

^R Revised Data.

Notes and Sources: See the last page of this section.

Table 2. Supply and Disposition of Dry Natural Gas
(Billion Cubic Feet)

Year and Month	Supply				Total Supply/Disposition ^b	Additions to Storage ^a	Disposition		
	Total Dry Gas Production	Withdrawals from Storage ^a	Supplemental Gaseous Fuels	Imports			Exports	Consumption ^c	Unaccounted For ^d
1984 Total	17,392	2,098	110	843	20,443	2,295	55	17,951	143
1985 Total	16,382	2,397	126	950	19,855	2,163	55	17,281	356
1986 Total	15,991	1,837	113	750	18,692	1,984	61	16,221	427
1987 Total	16,536	1,905	101	993	19,534	1,911	54	17,211	359
1988									
January	1,581	586	12	139	2,318	47	5	2,187	79
February	1,439	462	11	117	2,029	50	5	2,038	-64
March	1,501	259	10	113	1,883	99	6	1,867	-89
April	1,374	92	8	96	1,570	165	6	1,464	-65
May	1,407	46	7	94	1,554	288	4	1,302	-40
June	1,338	36	7	93	1,474	280	8	1,170	16
July	1,355	42	7	100	1,504	300	5	1,177	22
August	1,374	52	7	94	1,527	288	6	1,222	11
September	1,297	46	6	95	1,444	314	7	1,099	24
October	1,409	92	8	106	1,615	202	6	1,232	175
November	1,436	159	9	121	1,725	117	7	1,453	148
December	1,513	397	11	127	2,048	62	9	1,820	157
Total	17,026	2,270	101	1,294	20,691	2,211	74	18,030	376
1989									
January	R 1,532	426	11	119	R 2,088	53	7	R 2,034	R -6
February	R 1,415	614	10	110	R 2,149	32	7	R 2,018	R 92
March	R 1,500	369	10	113	R 1,992	106	11	R 1,956	R -81
April	R 1,428	138	8	110	R 1,684	184	11	R 1,591	R -102
May	R 1,447	44	8	108	R 1,607	326	8	R 1,359	R -86
June	R 1,388	20	7	104	R 1,519	381	9	R 1,210	R -81
July	R 1,415	29	8	101	R 1,553	377	9	R 1,230	R -63
August	R 1,404	29	8	108	R 1,549	362	9	R 1,226	R -48
September	R 1,337	39	7	117	R 1,500	325	9	R 1,191	R -25
October	R 1,403	96	9	123	R 1,631	225	10	R 1,347	R 49
November	R 1,461	227	9	123	R 1,820	105	8	R 1,578	R 129
December	R 1,514	821	12	145	R 2,492	52	8	R 2,164	R 260
Total	R 17,245	2,852	107	1,382	R 21,586	2,529	107	R 18,904	R 46
1990									
January	R 1,605	339	16	149	R 2,109	91	8	2,107	R -97
February	R 1,426	324	14	118	R 1,882	70	8	1,805	R -1
March	R 1,513	256	14	115	R 1,898	124	10	R 1,777	R -13
April	R 1,432	140	13	122	R 1,707	183	8	1,584	R -68
May	R 1,452	45	11	108	R 1,616	289	8	1,397	R -78
June	R 1,396	42	11	114	R 1,563	327	9	1,298	R -71
July	R 1,397	27	12	119	R 1,555	325	8	1,292	R -70
August	R 1,410	37	11	118	R 1,576	321	8	R 1,322	R -75
September	E 1,337	36	11	120	1,504	284	8	R 1,283	R -71
October	E 1,408	61	11	120	1,600	214	8	1,463	-85
1990 YTD	14,376	1,307	124	1,203	17,010	2,228	83	15,328	-629
1989 YTD	14,269	1,804	86	1,113	17,272	2,371	90	15,162	-351
1988 YTD	14,075	1,713	83	1,047	16,918	2,033	58	14,758	69

^a Monthly and annual data for 1984 through 1989 include underground storage and liquefied natural gas storage. Data for January 1990 forward include underground storage only. See Appendix A, Explanatory Note 7 for discussion of computation procedures.

^b "Total" data for 1984 through 1989 do not equal equivalent data in Table 1 of the 1989 *Natural Gas Annual* due to the exclusion of intransit receipts and deliveries in the NGM.

^c Consists of pipeline fuel use, lease and plant fuel use, and deliveries to consuming sectors as shown in Table 3.

^d Represents quantities lost and imbalances in data due to differences among data sources. See Appendix A, Explanatory Note 11 for full discussion.

^e Estimated Data.

^r Revised Data.

Notes and Sources: See the last page of this section.

Figure 1. Production and Consumption of Natural Gas in the United States

Source: *Natural Gas Annual* and the *Short Term Energy Outlook*.

Table 3. Natural Gas Consumption
(Billion Cubic Feet)

Year and Month	Lease and Plant Fuel	Pipeline Fuel	Delivered to Consumers				Total	Total Consumption
			Residential	Commercial	Industrial	Electric Utilities		
1984 Total	1,077	529	4,555	2,524	6,154	3,111	16,345	17,951
1985 Total	966	504	4,433	2,432	5,901	3,044	15,811	17,281
1986 Total	923	485	4,314	2,318	5,579	2,602	14,814	16,221
1987 Total	1,149	519	4,315	2,430	5,953	2,844	15,542	17,211
1988								
January	102	63	852	424	578	168	2,022	2,187
February	93	55	755	392	574	170	1,890	2,038
March	97	53	597	320	596	204	1,717	1,867
April	88	46	400	223	507	199	1,330	1,464
May	91	49	258	153	507	240	1,162	1,302
June	86	47	152	118	487	280	1,037	1,170
July	87	49	123	109	480	328	1,041	1,177
August	88	49	114	113	514	344	1,085	1,222
September	83	47	125	113	499	233	969	1,099
October	91	49	232	156	522	182	1,092	1,232
November	92	51	391	225	543	150	1,310	1,453
December	98	56	631	320	577	137	1,666	1,820
Total	1,096	614	4,630	2,670	6,383	2,636	16,320	18,030
1989								
January	R 106	57	751	376	598	146	1,871	R 2,034
February	R 98	57	742	380	570	171	1,863	R 2,018
March	R 104	54	645	342	602	209	1,798	R 1,956
April	R 99	49	414	233	563	233	1,443	R 1,591
May	R 100	51	256	159	544	249	1,208	R 1,359
June	R 96	50	155	121	529	258	1,064	R 1,210
July	R 98	50	129	110	525	318	1,082	R 1,230
August	R 97	50	121	110	539	308	1,079	R 1,226
September	R 92	48	139	113	532	266	1,051	R 1,191
October	R 97	49	228	152	568	252	1,201	R 1,347
November	R 101	50	405	231	603	187	1,427	R 1,578
December	R 105	65	790	391	643	170	1,994	R 2,164
Total	R 1,194	630	4,777	2,719	6,816	2,768	17,080	R 18,904
1990								
January	111	53	789	404	606	144	1,943	2,107
February	99	48	634	338	554	131	1,658	1,805
March	R 105	48	550	305	586	182	1,624	R 1,777
April	99	44	398	239	606	197	1,441	1,584
May	101	47	247	160	602	239	1,249	1,397
June	97	44	162	128	571	295	1,157	1,298
July	97	49	129	128	564	325	1,146	1,292
August	R 98	49	124	119	586	346	1,175	R 1,322
September	93	47	136	124	584	300	1,143	1,283
1990 YTD	900	429	3,170	1,945	5,260	2,160	12,535	13,865
1989 YTD	890	466	3,353	1,944	5,002	2,158	12,458	13,815
1988 YTD	815	458	3,376	1,970	4,741	2,166	12,252	13,526

R = Revised Data.

Notes and Sources: See the last page of this section.

Figure 2. Natural Gas Deliveries to Consumers

Source: *Natural Gas Annual*, Form EIA-857, and Form EIA-759.

Table 4. Selected National Average Natural Gas Prices
(Dollars per Thousand Cubic Feet)

Year and Month	Wellhead Price ^a	Major Interstate Pipeline Companies		City Gate	Delivered to Consumers				Overall Average ^c
		Imports ^b	Purchased from Producers ^b		Residential	Commercial ^c	Industrial ^c	Electric Utilities ^d	
1984 Annual Average	2.66	4.08	2.91	3.95	6.12	5.55	4.22	3.70	4.85
1985 Annual Average	2.51	3.19	2.85	3.75	6.12	5.50	3.95	3.55	4.72
1986 Annual Average	1.94	2.53	2.39	3.22	5.83	5.08	3.23	2.43	4.13
1987 Annual Average	1.67	2.17	2.10	2.87	5.54	4.77	2.94	2.32	4.05
1988									
January	1.96	1.64	2.04	2.91	5.08	4.60	3.18	2.60	4.41
February	1.84	2.03	2.22	2.95	5.09	4.69	3.22	2.56	4.39
March	1.70	2.09	2.03	2.87	5.18	4.69	3.13	2.32	4.25
April	1.59	2.01	2.12	2.79	5.35	4.71	2.97	2.20	4.10
May	1.52	2.02	2.17	2.75	5.87	4.61	2.76	2.10	3.84
June	1.53	1.98	2.05	2.87	6.50	4.53	2.67	2.16	3.54
July	1.56	2.34	1.94	2.87	6.74	4.48	2.54	2.23	3.36
August	1.62	1.86	2.09	2.92	6.92	4.37	2.66	2.36	3.39
September	1.53	2.00	2.13	3.05	6.79	4.41	2.70	2.36	3.61
October	1.68	1.94	2.31	2.92	5.95	4.53	2.80	2.40	3.95
November	1.76	1.98	2.19	2.98	5.56	4.69	3.00	2.58	4.31
December	1.89	2.14	2.25	3.08	5.39	4.78	3.31	2.57	4.56
Annual Average	1.69	2.00	2.13	2.92	5.47	4.63	2.95	2.33	4.09
1989									
January	1.99	1.77	2.35	3.17	5.41	4.81	3.39	2.64	4.67
February	1.81	2.21	2.16	3.10	5.38	4.80	3.33	2.44	4.60
March	1.69	1.99	2.17	2.89	5.45	4.79	3.12	2.33	4.46
April	1.56	2.01	2.22	2.83	5.54	4.77	2.91	2.31	4.18
May	1.61	2.02	2.11	2.94	5.93	4.64	2.80	2.39	3.94
June	1.65	2.04	2.04	2.98	6.58	4.57	2.69	2.40	3.72
July	1.65	1.88	1.99	3.08	6.92	4.65	2.70	2.40	3.59
August	1.61	2.24	2.05	3.04	7.07	4.61	2.71	2.38	3.57
September	1.55	2.02	2.07	2.99	6.80	4.67	2.67	2.33	3.67
October	1.58	2.17	2.04	2.84	6.06	4.61	2.75	2.39	3.86
November	1.66	2.13	2.23	2.98	5.56	4.71	2.98	2.55	4.30
December	1.92	2.08	2.39	3.10	5.30	4.81	3.32	2.85	4.61
Annual Average	1.69	2.04	2.17	3.01	5.64	4.74	2.97	2.43	4.22
1990									
January	2.23	2.04	2.42	3.25	5.42	4.99	3.52	3.01	4.77
February	1.87	2.25	2.18	3.10	5.63	5.05	3.40	2.76	4.82
March	1.58	1.99	1.94	2.95	5.58	4.93	3.08	2.37	4.50
April	1.56	2.00	2.17	2.84	5.62	4.82	2.84	2.29	4.23
May	1.53	2.08	1.98	2.81	5.97	4.62	2.67	2.19	3.84
June	1.53	1.91	2.18	3.00	6.55	4.59	2.55	2.16	3.53
July	1.50	1.88	2.00	3.03	6.99	4.46	2.47	2.22	3.39
August	1.54	1.93	1.86	2.91	7.04	4.55	2.52	2.23	3.36
September	NA	1.89	1.93	2.92	6.81	4.57	2.59	NA	NA
1990 YTD	NA	2.00	2.07	3.01	5.80	4.83	2.90	2.33	4.21
1989 YTD	NA	2.02	2.13	3.01	5.70	4.74	2.95	2.40	4.22
1988 YTD	NA	2.00	2.09	2.89	5.44	4.61	2.91	2.29	4.04

^a See Appendix A, Explanatory Note 8 for discussion of wellhead price.

^b See Appendix A, Explanatory Note 9 for discussion of major interstate pipeline company data.

^c See Table Notes and Sources for explanation of break in series for consumer prices in 1987.

^d Includes all steam electric utility generating plants with a combined capacity of 50 megawatts or greater.

NA = Not Available.

Notes and Sources: See the last page of this section.

Figure 3. Average Price of Natural Gas Delivered to Consumers

Source: *Natural Gas Annual*, Form FERC-11, and Form EIA-857.

Figure 4. Average Price of Natural Gas

Source: *Natural Gas Annual*, Form EIA-857, and Form FERC-423.

Table 5. Projected Volumes and Prices of Wellhead Purchases by NGPA Category
(Volumes in Billion Cubic Feet, Prices in Dollars per Thousand Cubic Feet)

Year and Month	Section 104 ^a		Section 105 ^b		Section 106 ^c		Old Gas ^d	
	Volume	Price ^m	Volume	Price ^m	Volume	Price ^m	Volume	Price ^m
1984 Total	3,961	1.46	53	2.60	283	1.15	4,301	1.45
1985 Total	3,549	1.48	57	2.54	358	1.18	3,964	1.47
1986 Total	2,675	1.41	58	2.26	320	1.13	3,053	1.39
1987 Total	2,035	1.34	33	2.08	260	1.15	2,327	1.33
1988								
January	160	1.36	2	2.37	22	1.22	185	1.35
February	160	1.36	2	2.37	22	1.22	184	1.36
March	155	1.41	2	2.33	21	1.23	179	1.40
April	128	1.50	2	2.28	14	1.30	145	1.49
May	129	1.46	2	2.28	14	1.32	146	1.46
June	123	1.46	2	2.22	14	1.42	139	1.47
July	110	1.40	2	2.33	12	1.42	125	1.42
August	104	1.40	2	2.35	12	1.43	118	1.42
September	108	1.44	2	2.26	12	1.37	122	1.45
October	134	1.69	2	2.16	13	1.55	149	1.68
November	133	1.70	3	2.22	14	1.51	150	1.69
December	135	1.82	2	2.12	14	1.56	152	1.80
Total	1,579	1.49	25	2.27	184	1.35	1,794	1.49
1989								
January	134	1.94	2	1.83	13	1.61	149	1.91
February	135	1.96	2	1.79	12	1.67	149	1.94
March	128	1.89	2	1.79	12	1.63	141	1.86
April	85	1.55	2	2.01	9	1.43	96	1.54
May	76	1.51	1	2.09	8	1.49	85	1.52
June	71	1.41	1	2.09	8	1.46	80	1.43
July	68	1.42	1	1.80	7	1.51	75	1.43
August	67	1.39	*	1.76	7	1.49	74	1.41
September	65	1.43	1	1.83	7	1.52	73	1.44
October	79	1.51	1	1.97	8	1.51	88	1.51
November	76	1.80	1	1.97	8	1.56	86	1.78
December	77	1.81	1	1.97	8	1.52	86	1.79
Total	1,060	1.69	15	1.90	108	1.55	1,183	1.68
1990								
January	69	1.92	2	1.04	8	1.70	79	1.88
February	59	1.97	2	.96	8	1.71	68	1.92
March	57	1.97	2	1.04	7	1.73	66	1.92
April	53	1.81	2	1.30	7	1.61	62	1.77
May	55	1.80	1	1.24	7	1.70	63	1.78
June	52	1.75	2	2.17	7	1.70	61	1.76
July	49	1.79	2	2.08	5	1.73	56	1.80
August	44	1.68	2	2.08	5	1.59	51	1.69
September	39	1.65	1	.86	5	1.53	45	1.62
October	37	1.89	1	1.09	6	1.75	44	1.86
November	45	2.03	1	1.15	6	1.93	52	2.00

See footnotes at end of table.

Table 5. Projected Volumes and Prices of Wellhead Purchases by NGPA Category (Continued)
(Volumes in Billion Cubic Feet, Prices in Dollars per Thousand Cubic Feet)

Year and Month	Section 102 ^a		Section 103 ^f		Section 108 ^g		Section 109 ^h		New Gas ⁱ	
	Volume	Price ^m	Volume	Price ^m	Volume	Price ^m	Volume	Price ^m	Volume	Price ⁿ
1984 Total	2,587	3.84	913	3.26	189	4.17	191	2.58	3,879	3.65
1985 Total	2,780	3.73	945	3.39	207	4.27	257	2.80	4,189	3.62
1986 Total	1,907	3.13	723	3.03	173	3.92	204	2.51	3,007	3.11
1987 Total	1,494	2.64	500	2.61	175	3.30	191	2.29	2,360	2.65
1988										
January	120	2.39	35	2.46	14	3.35	13	2.29	182	2.47
February	119	2.40	35	2.45	14	3.36	12	2.31	180	2.47
March	119	2.40	35	2.46	14	3.34	12	2.34	179	2.48
April	114	2.32	36	2.39	11	3.35	12	2.17	174	2.39
May	114	2.31	37	2.41	12	3.38	12	2.19	176	2.40
June	102	2.30	37	2.40	15	2.64	12	2.11	165	2.34
July	95	2.29	31	2.31	14	2.61	11	2.10	152	2.31
August	84	2.34	30	2.30	14	2.51	11	2.02	139	2.33
September	84	2.39	31	2.39	12	2.80	12	2.02	139	2.40
October	97	2.46	33	2.47	13	2.88	12	2.10	155	2.47
November	122	2.38	33	2.49	10	3.20	11	2.18	176	2.43
December	124	2.44	33	2.45	10	3.15	12	2.13	179	2.47
Total	1,295	2.37	406	2.41	153	3.03	142	2.16	1,996	2.41
1989										
January	124	2.49	32	2.50	10	3.30	12	2.17	178	2.51
February	117	2.66	33	2.50	11	3.31	14	2.18	175	2.63
March	114	2.61	31	2.48	10	3.27	13	2.21	169	2.60
April	100	2.48	29	2.32	10	3.14	13	2.10	151	2.46
May	73	2.45	27	2.28	8	3.23	10	2.02	119	2.43
June	67	2.39	27	2.26	9	3.01	10	2.04	112	2.38
July	58	2.42	25	2.17	9	2.95	9	1.97	101	2.36
August	60	2.60	23	2.09	8	2.78	8	2.08	100	2.45
September	59	2.64	22	2.15	9	2.87	8	2.14	99	2.51
October	66	2.68	29	2.11	9	2.90	12	2.34	116	2.52
November	89	2.33	33	2.18	10	3.04	33	2.20	165	2.32
December	91	2.33	34	2.16	10	3.09	34	2.17	169	2.31
Total	1,018	2.51	346	2.28	113	3.08	176	2.15	1,653	2.46
1990										
January	85	2.41	32	2.29	10	3.19	31	2.17	157	2.39
February	75	2.53	31	2.27	9	3.13	24	2.28	139	2.47
March	76	2.52	30	2.28	9	3.07	23	2.29	138	2.47
April	79	2.43	25	2.17	8	3.11	25	2.20	137	2.38
May	59	2.39	24	2.15	8	3.27	16	2.00	107	2.34
June	56	2.36	23	2.08	7	3.11	16	1.99	102	2.29
July	47	2.34	23	1.97	7	2.99	15	1.93	92	2.23
August	46	2.15	21	1.86	7	2.66	15	1.87	89	2.08
September	43	2.16	20	1.91	8	2.84	13	1.83	85	2.11
October	53	2.29	19	2.20	7	2.97	14	1.98	94	2.28
November	73	2.34	23	2.32	7	3.41	41	2.24	143	2.36

See footnotes at end of table.

Table 5. Projected Volumes and Prices of Wellhead Purchases by NGPA Category (Continued)
(Volumes in Billion Cubic Feet, Prices in Dollars per Thousand Cubic Feet)

Year and Month	Section 107 ^l		Miscellaneous ^k		Total Gas ^l		Number of Companies ⁿ
	Volume	Price ^m	Volume	Price ^m	Volume	Price ^m	
1984 Total	856	5.35	10	2.77	9,061	2.78	46
1985 Total	738	4.71	*	--	8,890	2.75	48
1986 Total	426	3.48	*	--	6,487	2.32	46
1987 Total	417	2.72	*	--	5,104	2.05	46
1988							
January	38	2.75	*	--	405	1.99	40
February	37	2.76	*	--	401	1.99	40
March	37	2.86	*	--	395	2.03	40
April	37	2.63	*	--	356	2.05	40
May	39	2.66	*	--	360	2.04	41
June	40	2.48	*	--	345	2.00	43
July	38	2.55	*	--	315	1.99	46
August	35	2.49	*	--	292	1.98	45
September	36	2.49	*	--	297	2.02	43
October	38	2.55	*	--	342	2.14	42
November	30	2.61	*	--	356	2.14	41
December	31	2.57	*	--	362	2.19	41
Total	438	2.61	*	--	4,226	2.04	42
1989							
January	31	2.51	*	--	358	2.26	39
February	34	2.54	*	--	358	2.33	41
March	33	2.56	*	--	343	2.29	40
April	31	2.58	*	--	278	2.16	41
May	29	2.56	*	--	233	2.11	44
June	28	2.57	*	--	220	2.06	45
July	26	2.45	*	--	203	2.03	45
August	24	2.54	*	--	199	2.07	44
September	24	2.55	*	--	195	2.11	44
October	28	2.62	*	--	231	2.15	44
November	29	2.43	*	--	280	2.16	44
December	28	2.43	*	--	284	2.16	44
Total	347	2.53	--	--	3,182	2.18	38
1990							
January	25	2.38	*	--	261	2.23	41
February	22	2.61	*	--	230	2.32	42
March	23	2.59	*	--	227	2.32	42
April	24	2.72	*	--	223	2.25	41
May	24	2.60	*	--	195	2.19	41
June	24	2.61	*	--	188	2.16	42
July	22	2.36	*	--	170	2.10	40
August	20	2.02	*	--	160	1.95	42
September	19	2.01	*	--	149	1.95	42
October	21	2.36	*	--	159	2.17	43
November	23	2.73	*	--	218	2.31	40

* Dedicated to interstate commerce.

† Existing intrastate contracts.

‡ Rollover contracts.

§ Total of Sections 104, 105, and 106.

¶ New natural gas and certain natural gas produced from the Outer Continental Shelf.

|| New onshore production wells.

¶ Stripper well natural gas.

|| Other categories of natural gas.

|| Total of Sections 102, 103, 108, and 109.

|| High cost natural gas.

|| Natural gas not identified by category in Purchased Gas Adjustments (PGA) filing.

|| Total of old gas, new gas, high cost gas, and miscellaneous.

|| All prices are weighted averages.

|| Additional interstate pipeline companies have been included with the 20 major interstate pipelines starting with PGA filings effective July 1, 1984.

|| See Appendix A, Explanatory Note 12 for expanded pipeline company list.

-- Not Applicable.

* Volume is less than 500 million cubic feet.

Notes and Sources. See the last page of this section.

Figure 5. Purchased Gas Wellhead Prices

Source: Purchased Gas Adjustment filings for interstate pipeline companies.

Table 6. Summary of Natural Gas Imports and Exports
(Volumes in Million Cubic Feet, Prices in Dollars per Thousand Cubic Feet)

Year and Month	Imports				Exports	
	Longterm Contracts		Spot Markets		Volume	Average Price
	Volume	Average Price	Volume	Average Price		
1985 Total	949,715	3.21	NA	NA	55,268	4.77
1986 Total	715,960	2.43	34,489	1.57	61,271	2.81
1987 Total	804,496	1.95	188,036	1.30	54,020	3.07
1988						
January	109,709	2.05	28,156	1.63	4,765	3.11
February	85,449	1.99	30,774	1.63	4,650	3.14
March	78,548	1.97	33,268	1.49	6,218	2.84
April	66,170	1.96	28,552	1.29	6,354	2.75
May	68,642	1.89	24,728	1.21	3,777	2.30
June	67,847	1.86	25,318	1.20	8,469	2.53
July	76,951	1.84	22,893	1.24	4,892	2.94
August	77,121	1.91	18,313	1.27	6,008	2.70
September	75,942	1.92	19,919	1.35	7,187	2.59
October	77,011	1.86	29,873	1.43	5,497	2.78
November	82,395	1.88	38,290	1.40	6,771	2.61
December	86,735	2.09	41,208	1.57	9,050	2.70
Total	952,520	1.96	341,292	1.41	73,638	2.74
1989						
January	82,813	2.23	39,604	1.69	6,722	2.69
February	71,892	2.11	34,673	1.53	7,253	2.41
March	82,655	2.04	35,016	1.38	11,127	2.41
April	74,433	2.08	38,611	1.32	11,137	2.34
May	68,812	2.02	36,713	1.37	8,030	2.44
June	69,355	2.01	35,343	1.35	8,943	2.57
July	67,405	1.94	34,225	1.31	8,681	2.55
August	73,268	2.29	32,701	1.29	9,148	2.48
September	80,435	2.09	34,566	1.22	8,998	2.70
October	83,324	2.22	37,676	1.24	10,453	2.62
November	80,124	2.08	41,876	1.48	7,909	2.71
December	98,801	2.06	47,199	1.70	8,471	2.74
Total	933,317	2.11	448,203	1.41	106,871	2.51
1990						
January	113,386	2.05	35,675	2.01	8,207	2.92
February	86,212	2.28	30,872	1.76	7,933	2.71
March	88,372	2.24	27,854	1.68	9,846	2.49
April	76,113	2.22	36,281	1.50	8,124	2.48
May	69,224	2.19	33,692	1.48	7,833	2.51
June	68,667	2.21	31,504	1.41	8,617	2.58
July	77,743	2.09	32,691	1.44	8,343	2.56
August	78,234	2.16	29,598	1.45	8,411	2.54
September	83,246	2.11	35,742	1.43	8,781	2.71

NA = Not Available

Notes and Sources: See the last page of this section.

Table 7. Marketed Production of Natural Gas by State
(Million Cubic Feet)

Year and Month	Alabama	Alaska	Arkansas	California	Colorado	Florida	Kansas
1984 Total	101,821	289,129	135,161	476,333	173,257	12,585	466,979
1985 Total	107,342	321,346	155,099	491,283	178,233	10,545	512,872
1986 Total	107,184	304,841	131,075	462,218	163,684	8,833	465,695
1987 Total	117,241	359,837	141,151	424,621	164,557	8,281	457,050
1988							
January	11,392	32,910	19,390	34,672	19,577	652	72,587
February	10,929	29,964	15,308	30,938	18,155	597	50,858
March	11,255	36,393	14,968	35,114	18,025	643	55,095
April	10,471	29,666	12,473	32,892	15,972	614	46,812
May	9,236	28,656	12,473	34,562	16,515	607	43,514
June	10,523	29,466	11,793	33,765	12,769	790	45,892
July	10,953	29,263	11,566	33,339	13,028	677	36,847
August	10,753	29,530	13,040	35,317	14,001	644	33,789
September	10,368	30,159	12,246	34,343	14,099	602	28,996
October	11,100	34,017	12,587	33,193	15,057	538	46,615
November	10,663	34,088	13,607	30,674	15,588	528	51,178
December	11,880	34,525	17,122	30,855	18,759	593	64,090
Total	129,524	378,638	166,573	399,663	191,544	7,484	576,274
1989							
January	12,166	35,680	R 20,800	30,377	22,256	639	57,650
February	10,589	33,405	R 15,833	28,008	19,088	550	60,563
March	11,626	35,160	R 16,453	30,661	17,871	577	55,638
April	11,028	33,821	R 13,245	30,396	15,564	597	47,092
May	11,340	24,870	R 12,935	31,068	16,010	660	50,559
June	10,914	32,380	R 12,314	30,379	15,551	571	42,180
July	11,212	32,531	R 11,900	32,013	15,750	638	47,756
August	10,599	30,266	R 13,659	31,718	15,420	645	43,662
September	10,119	30,257	R 12,418	29,806	16,468	665	36,719
October	9,709	34,951	R 12,832	30,677	19,373	708	41,051
November	9,137	34,619	R 14,384	28,134	21,568	611	46,650
December	9,973	35,789	R 17,385	29,623	21,818	673	57,710
Total	128,411	393,729	R 174,158	362,860	216,737	7,534	587,230
1990							
January	10,650	35,514	E 20,800	28,313	21,484	699	57,345
February	10,097	34,268	E 15,600	25,362	17,390	649	48,176
March	11,223	34,845	E 16,400	30,292	17,567	553	R 50,256
April	11,165	32,533	E 13,700	29,010	18,070	629	R 46,660
May	11,736	29,666	E 13,400	R 29,171	18,034	660	45,477
June	10,988	30,091	E 12,700	R 27,467	16,976	557	R 39,280
July	11,670	31,215	E 12,400	R 30,200	17,071	537	R 38,405
August	E 11,400	31,307	E 13,900	29,123	17,085	479	E 39,711
1990 YTD	88,929	259,439	118,900	228,938	143,677	4,763	365,310
1989 YTD	89,473	258,113	117,139	244,620	137,510	4,877	405,100
1988 YTD	85,512	245,848	111,011	270,599	128,042	5,224	385,394

See footnotes at end of table.

Table 7. Marketed Production of Natural Gas by State (Continued)
(Million Cubic Feet)

Year and Month	Louisiana	Michigan	Mississippi	Montana	New Mexico	North Dakota	Oklahoma
1984 Total	5,825,055	144,537	157,911	51,474	957,366	70,496	1,985,869
1985 Total	5,013,702	131,855	144,170	52,494	905,272	72,633	1,936,341
1986 Total	4,895,394	127,287	140,833	46,592	702,614	55,098	1,917,493
1987 Total	5,122,509	146,996	139,727	46,456	823,773	62,258	2,004,797
1988							
January	469,503	12,922	10,167	5,159	85,471	4,992	185,737
February	445,057	11,869	10,842	4,746	72,987	4,671	172,119
March	454,289	12,317	12,267	4,131	74,098	4,980	176,902
April	417,561	11,160	11,025	3,246	61,034	4,773	166,081
May	437,323	12,993	13,653	3,215	66,043	5,131	179,902
June	404,480	12,943	7,585	3,276	61,239	5,008	167,219
July	416,209	12,550	7,964	2,997	57,384	5,046	172,969
August	423,979	12,225	10,363	3,713	62,752	4,973	173,393
September	375,326	11,944	10,001	3,898	61,629	4,140	174,621
October	425,295	11,490	10,149	5,463	59,083	4,520	176,689
November	443,353	12,170	10,027	5,918	60,000	4,862	177,191
December	467,897	11,561	10,032	5,893	70,097	4,651	183,810
Total	5,180,267	146,145	124,053	51,654	791,819	57,747	2,106,632
1989							
January	R 462,497	12,129	9,885	5,285	76,385	4,534	171,407
February	R 416,292	12,715	8,724	4,740	71,990	3,874	170,435
March	R 452,444	12,637	8,780	4,789	72,556	4,309	178,966
April	R 428,437	12,663	9,364	4,372	67,421	4,252	182,017
May	R 434,489	12,812	9,204	3,797	65,556	4,417	190,207
June	R 411,724	14,724	8,932	2,541	60,526	4,130	183,465
July	R 410,492	12,896	8,693	3,165	67,229	4,468	185,458
August	R 412,289	12,807	8,987	3,369	70,746	3,771	180,743
September	R 387,125	13,696	6,984	4,257	67,447	3,935	174,864
October	R 401,455	13,326	7,194	4,858	70,808	4,566	185,799
November	R 430,699	13,955	7,632	5,036	80,013	4,418	190,129
December	R 430,182	11,628	8,266	5,098	83,938	4,494	191,814
Total	5,078,125	155,988	102,645	51,307	854,615	51,174	2,185,204
1990							
January	b 484,445	14,451	8,360	R 4,504	86,860	4,681	R 195,131
February	b 424,394	12,737	7,677	R 4,113	79,375	4,221	R 173,221
March	b 450,096	13,702	8,359	4,229	81,171	4,700	R 186,337
April	b 426,415	14,745	7,886	R 4,133	75,759	4,562	E 179,017
May	b 435,138	12,988	7,885	R 3,585	76,645	4,413	E 184,349
June	b 412,576	14,773	8,090	3,438	74,052	4,254	E 181,950
July	b 413,139	13,049	8,354	R 4,040	75,771	4,217	E 182,829
August	b 418,559	13,572	8,041	3,708	79,845	4,443	E 179,786
1990 YTD	3,464,762	110,017	64,652	31,750	629,478	35,491	1,462,620
1989 YTD	3,428,664	103,383	72,569	32,058	552,409	33,761	1,442,598
1988 YTD	3,468,401	98,979	83,846	30,483	541,008	39,574	1,394,322

See footnotes at end of table.

Table 7. Marketed Production of Natural Gas by State (Continued)
(Million Cubic Feet)

Year and Month	Texas	Utah	West Virginia	Wyoming	Other ^a States	U.S. Total
1984 Total	6,185,021	74,898	143,730	516,883	462,533	18,229,838
1985 Total	6,052,663	83,405	144,883	416,565	467,294	17,197,999
1986 Total	6,151,775	90,013	135,431	403,266	481,584	16,790,910
1987 Total	6,128,315	87,158	160,000	497,980	457,830	17,348,537
1988						
January	575,425	10,268	17,005	48,751	40,008	1,856,588
February	529,339	9,369	16,449	34,516	39,504	1,508,217
March	549,365	9,602	15,227	50,106	39,605	1,573,382
April	507,830	8,280	14,671	48,261	37,589	1,440,411
May	514,825	9,197	14,226	35,440	37,589	1,475,100
June	493,090	7,475	14,116	43,307	36,884	1,401,600
July	513,708	7,287	14,004	37,103	37,388	1,420,282
August	521,584	8,275	13,670	29,618	38,698	1,440,317
September	484,953	8,562	13,560	42,143	37,186	1,358,776
October	526,788	8,032	11,892	43,810	39,705	1,476,023
November	525,427	10,031	15,005	45,919	38,295	1,504,524
December	544,695	4,993	15,116	50,085	39,605	1,586,259
Total	6,286,029	101,372	174,942	509,058	462,056	17,841,474
1989						
January	545,995	11,563	R 17,970	63,140	41,235	R 1,601,593
February	498,336	10,631	R 17,612	54,794	40,722	R 1,478,900
March	541,753	10,346	R 16,271	56,294	40,824	R 1,567,855
April	518,207	9,313	R 14,930	51,686	38,773	R 1,493,178
May	525,157	10,134	R 14,215	56,519	38,978	R 1,512,927
June	508,113	7,824	R 14,841	52,138	37,850	R 1,451,103
July	520,968	10,092	R 13,678	51,594	38,363	R 1,478,896
August	516,596	9,588	R 13,320	50,036	39,696	R 1,467,917
September	491,862	8,462	R 12,963	51,023	38,158	R 1,397,228
October	512,554	9,473	R 11,353	55,332	40,722	R 1,466,741
November	517,874	10,130	R 14,662	58,195	39,286	R 1,527,132
December	544,010	12,533	R 15,377	64,948	40,620	R 1,585,879
Total	6,241,425	120,089	R 177,192	665,699	475,227	R 18,029,349
1990						
January	570,208	14,705	E 23,000	61,622	E 41,100	R 1,683,872
February	506,557	12,782	E 22,600	56,233	E 40,600	R 1,496,052
March	541,062	12,822	E 20,100	62,938	E 40,700	R 1,587,352
April	513,659	9,829	E 19,700	56,500	E 38,700	R 1,502,472
May	527,747	11,992	E 17,600	54,733	E 37,400	R 1,522,819
June	513,071	12,060	E 18,100	48,413	E 36,400	R 1,465,236
July	502,333	11,396	E 17,100	55,332	E 36,900	R 1,465,958
August	503,221	11,004	E 16,800	58,667	E 38,200	1,478,851
1990 YTD	4,177,858	96,390	155,000	454,438	310,000	12,202,412
1989 YTD	4,175,125	79,491	122,837	436,201	316,441	12,052,369
1988 YTD	4,204,166	69,753	119,368	327,102	307,265	11,915,897

^a Includes Arizona, Illinois, Indiana, Kentucky, Maryland, Missouri, Nebraska, New York, Ohio, Oregon, Pennsylvania, South Dakota, Tennessee, and Virginia. The 1990 monthly values for these States are estimated.

^b Total marketed production for Louisiana in January - August 1990 were estimated on the basis of production reported in January - December 1989, seasonally adjusted.

^c Total marketed production for Texas in February and August 1990 represents reported data for State onshore and estimated data for Outer Continental Shelf (OCS) producing areas.

E .. Estimated Data.

R .. Revised Data.

Notes and Sources: See the last page of this section.

Table 8. Well Determination Filings
(Volume in Billion Cubic Feet)

Year and Month	Section 102 ^a			Section 103 ^b			Section 107 ^c		
	Number of Filings ^a			Number of Filings ^a			Number of Filings ^a		
	Total	With Volumes	Estimated Annual Volume ^d	Total	With Volumes	Estimated Annual Volume ^d	Total	With Volumes	Estimated Annual Volume ^d
1984 Total	10,167	8,071	2,432	16,048	12,751	1,217	9,656	7,846	757
1985 Total	9,052	7,028	1,905	15,896	12,531	1,455	10,940	8,766	741
1986 Total	4,631	3,620	1,010	11,348	8,956	959	6,709	4,874	367
1987 Total	2,387	1,787	471	5,717	4,548	532	6,655	4,242	248
1988									
January	118	86	18	444	352	32	327	233	13
February	186	132	31	540	415	44	605	386	21
March	204	135	38	670	495	82	582	341	14
April	101	80	18	686	477	59	454	232	14
May	170	127	30	680	571	66	620	426	18
June	425	360	55	794	698	40	444	252	13
July	121	71	22	269	193	21	478	304	19
August	190	135	217	585	458	51	575	377	25
September	111	83	23	435	349	54	535	246	17
October	193	104	27	356	288	25	465	288	10
November	145	90	26	345	271	30	269	144	7
December	183	105	21	555	432	60	389	265	16
Total	2,147	1,508	526	6,359	5,004	563	5,743	3,494	185
1989									
January	124	97	25	389	300	31	385	286	14
February	134	103	28	400	303	54	268	219	14
March	104	78	22	392	317	23	351	234	10
April	131	93	24	384	279	40	286	217	15
May	135	107	29	405	285	30	295	192	21
June	66	44	13	294	199	18	214	136	6
July	137	110	24	462	339	38	266	218	14
August	124	91	26	313	236	24	341	259	28
September	74	61	102	269	195	32	314	268	17
October	87	73	24	448	338	57	385	293	20
November	91	69	21	233	143	20	364	302	22
December	55	41	7	205	126	13	362	229	14
Total	1,262	967	344	4,194	3,060	379	3,831	2,853	195
1990									
January	85	67	17	289	173	24	388	298	21
February	67	54	20	248	155	18	389	262	16
March	122	86	17	291	181	17	714	468	29
April	93	82	18	204	137	11	425	231	22
May	82	71	17	367	213	26	553	378	32
June	45	39	10	297	224	22	468	349	42
July	34	28	7	202	144	20	362	254	21
August	52	29	13	205	139	24	359	221	13
September	58	43	19	208	138	21	493	388	27
October	61	47	11	258	199	22	381	236	22
1990 YTD	699	546	147	2,569	1,703	204	4,532	3,085	246
1989 YTD	1,116	857	316	3,756	2,791	346	3,105	2,322	159
1988 YTD	1,819	1,313	479	5,459	4,301	473	5,085	3,085	163

See footnotes at end of table.

Table 8. Well Determination Filings (Continued)
(Volume in Billion Cubic Feet)

Year and Month	Section 108 ^d			Total		
	Number of Filings ^a			Number of Filings ^a		
	Total	With Volumes	Estimated Annual Volume ^f	Total	With Volumes	Estimated Annual Volume ^f
1984 Total	12,653	7,633	124	48,524	36,301	4,531
1985 Total	9,740	5,304	74	45,628	33,629	4,174
1986 Total	7,215	4,115	50	29,903	21,566	2,383
1987 Total	5,061	3,179	58	19,820	13,756	1,309
1988						
January	686	542	5	1,575	1,213	68
February	420	242	3	1,751	1,175	99
March	554	475	4	2,010	1,446	137
April	372	233	3	1,613	1,022	94
May	572	448	8	2,042	1,572	123
June	179	102	3	1,842	1,412	111
July	139	80	1	1,007	653	63
August	259	154	2	1,609	1,124	294
September	346	50	1	1,427	728	95
October	162	89	2	1,176	769	64
November	160	106	1	919	611	64
December	171	81	1	1,298	883	98
Total	4,020	2,602	34	18,269	12,608	1,309
1989						
January	120	71	1	1,018	754	71
February	136	78	1	938	703	96
March	142	61	1	989	690	56
April	170	103	1	971	692	80
May	408	326	1	1,243	910	81
June	163	101	1	737	480	38
July	389	344	2	1,254	1,011	78
August	92	75	1	870	661	78
September	144	80	3	801	604	153
October	380	338	3	1,300	1,042	104
November	145	65	1	833	579	63
December	92	39	1	714	435	35
Total	2,381	1,681	16	11,668	8,561	934
1990						
January	344	311	7	1,106	849	69
February	89	54	1	793	525	55
March	50	30	0	1,177	765	63
April	330	308	3	1,052	758	54
May	66	26	0	1,068	688	75
June	76	32	0	886	644	74
July	116	63	3	714	489	51
August	40	24	0	656	413	50
September	33	22	0	792	591	66
October	36	19	1	736	501	56
1990 YTD	1,180	889	16	8,980	6,223	613
1989 YTD	2,144	1,577	14	10,121	7,547	835
1988 YTD	3,689	2,415	32	16,052	11,114	1,147

^a New natural gas and certain natural gas produced from the Outer Continental Shelf.

^b New onshore production wells

^c High cost natural gas.

^d Stripper well natural gas.

^e Not all filings report estimated volumes. The "With Volumes" columns show number reporting volumes.

^f Annual volumes are often estimated by producers prior to actual operations or based on short periods of operation. For this reason the accuracy of estimates may vary.

Notes and Sources See the last page of this section.

Table 9. Well Determination Filings by State, October 1990
(Volume in Million Cubic Feet)

State	Section 102 ^a			Section 103 ^b			Section 107 ^c		
	Number of Filings ^d			Number of Filings ^d			Number of Filings ^d		
	Total	With Volumes	Estimated Annual Volume ^f	Total	With Volumes	Estimated Annual Volume	Total	With Volumes	Estimated Annual Volume
Colorado	0	0	0	0	0	0	8	8	827
Kansas	0	0	0	13	13	530	0	0	0
Louisiana	11	7	2,884	0	0	0	0	0	0
Mississippi	2	2	373	3	3	311	1	1	55
Montana	4	4	84	1	1	32	0	0	0
New Mexico	0	0	0	49	33	3,680	92	36	7,972
North Dakota	2	0	0	0	0	0	0	0	0
Ohio	0	0	0	7	4	150	69	52	1,077
Oklahoma	15	11	5,213	60	55	9,919	3	0	0
Pennsylvania	15	13	879	9	7	151	77	75	2,402
Texas	12	10	1,890	46	28	6,286	61	24	8,970
West Virginia	0	0	0	70	55	1,090	68	38	793
Wyoming	0	0	0	0	0	0	2	2	139
Total	61	47	11,323	258	199	22,149	381	236	22,235

See footnotes at end of table.

Table 9. Well Determination Filings by State, October 1990 (Continued)
(Volume in Million Cubic Feet)

State	Section 108 ^d			Total		
	Number of Filings ^e			Number of Filings ^e		
	Total	With Volumes	Estimated Annual Volume ^f	Total	With Volumes	Estimated Annual Volume ^f
Colorado	0	0	0	8	8	827
Kansas	4	4	21	17	17	551
Louisiana	0	0	0	11	7	2,884
Mississippi	1	1	18	7	7	757
Montana	2	1	22	7	6	138
New Mexico	6	0	0	147	69	11,652
North Dakota	0	0	0	2	0	0
Ohio	3	3	102	79	59	1,329
Oklahoma	14	10	391	92	76	15,523
Pennsylvania	0	0	0	101	95	3,432
Texas	6	0	0	125	62	17,146
West Virginia	0	0	0	138	93	1,883
Wyoming	0	0	0	2	2	139
Total	36	19	554	736	501	56,261

^a New natural gas and certain natural gas produced from the Outer Continental Shelf.

^b New onshore production wells.

^c High cost natural gas.

^d Stripper well natural gas.

^e Not all filings report estimated volumes. The "With Volumes" columns show number reporting volumes.

^f Annual volumes are often estimated by producers prior to actual operations or based on short periods of operation. For this reason the accuracy of estimates may vary.

Notes and Sources: See the last page of this section.

Table 10. Well Determination Filings by Category, October 1990
(Volumes in Million Cubic Feet)

NGPA Category	Total Filings	Filings Reporting Volume	Estimated Annual Volume ^{a, b}
Section 102^c			
New OCS Lease	0	0	0
New Onshore Well (2.5 miles)	24	21	1,795
New Onshore Well (1,000 ft. deeper)	2	1	183
New Onshore Reservoir	23	17	6,061
New Reservoir on Old OCS Lease	12	8	3,284
Unspecified	0	0	0
Total	61	47	11,323
Section 103^d			
Less than 5,000 Feet Deep	107	71	5,459
5,000 Feet and Deeper	134	121	15,332
Depth Not Reported	17	7	1,358
Total	258	199	22,149
Section 107^e			
Deep	4	3	137
Geopressurized Brine	0	0	0
Coal Seam Gas	100	44	8,799
Devonian Shale	134	112	2,999
Production Enhancement	2	2	139
New Tight Formation	141	75	10,161
Recompletion Tight Formation	0	0	0
Unspecified	0	0	0
Total	381	236	22,235
Section 108^f			
Stripper Well	18	15	242
Seasonally Affected	0	0	0
Enhanced Recovery	10	2	275
Temporary Pressure Buildup	8	2	37
Unspecified	0	0	0
Total	36	19	554
Total All Sections	736	501	56,261

^a Includes all filings reporting volume.

^b Annual volumes are often estimated by producers prior to actual operations or based on short periods of operation. For this reason the accuracy of estimates may vary.

^c New natural gas and certain natural gas produced from the Outer Continental Shelf.

^d New onshore production wells.

^e High cost natural gas.

^f Stripper well natural gas.

Notes and Sources: See the last page of this section.

Table 11. Natural Gas Ceiling Prices by Category of Gas, Type of Sale, or Contract^a
(Dollars per Million Btu)

NGPA Category	Dec. 1990	Dec. 1989	Dec. 1988	Dec. 1987	Dec. 1986	Dec. 1985	Dec. 1984
Section 102							
New Natural Gas, Certain OCS Gas ^b	5.904	5.521	5.093	4.740	4.431	4.141	3.846
Section 103 (b)(1)							
New Onshore Production Wells ^b	3.634	3.506	3.358	3.245	3.151	3.056	2.951
Section 103 (b)(2)							
New Onshore Production Wells ^b	--	--	3.358	.000	3.791	--	--
Section 105 ^c							
Intrastate Existing Contracts	5.597	5.274	4.909	4.614	4.354	4.105	--
Section 106 (b)(1)(B)							
Alternate Maximum Lawful Price for Certain Intrastate Rollover Gas ^d	2.079	2.006	1.920	1.857	1.802	1.749	1.686
Section 107							
Gas Produced from Tight Formations	7.268	7.012	6.716	6.490	6.302	6.112	5.902
Section 108							
Stripper Gas	6.322	5.913	5.453	5.076	4.746	4.432	4.118
Section 109							
Not Otherwise Covered	3.007	2.902	2.781	2.689	2.609	2.532	2.444
Section 104 and 106 (a)							
Post-1974 Gas: All Producers	3.007	2.902	2.781	2.689	2.609	2.532	2.444
1973-1974 Biennium Gas:							
Small Producer	2.536	2.450	2.348	2.271	2.206	2.141	2.069
Large Producer	1.946	1.877	1.797	1.737	1.685	1.634	1.577
Interstate Rollover Gas: ^e							
Small Producer	1.115	1.078	1.032	.998	.970	.940	.907
Large Producer	1.115	1.078	1.032	.998	.970	.940	.907
Replacement Contract Gas or Recompletion Gas							
Small Producer	1.429	1.379	1.320	1.274	1.237	1.202	1.161
Large Producer	1.091	1.054	1.011	.979	.951	.921	.888
Flowing Gas:							
Small Producer	.720	.696	.666	.646	.627	.609	.588
Large Producer	.607	.585	.563	.546	.527	.513	.497
Certain Permian Basin Gas:							
Small Producer	.849	.821	.787	.756	.737	.716	.692
Large Producer	.752	.725	.694	.672	.653	.635	.611
Certain Rocky Mountain Gas:							
Small Producer	.849	.821	.787	.751	.737	.716	.692
Large Producer	.752	.696	.666	.646	.627	.609	.588
Certain Appalachian Basin Gas							
North Subarea Contracts dated after Oct. 7, 1969	.686	.662	.632	.615	.596	.578	.557
Other Contracts	.636	.613	.587	.570	.551	.533	.515
Minimum Rate Gas: All Producers (dollars per Mcf)	.373	.360	.348	.336	.327	.315	--

^a See Appendix A, Explanatory Note 10 for discussion of Title I of the Natural Gas Policy Act.

^b Commencing January 1, 1985 and July 1, 1987, the price of some natural gas finally determined to be natural gas produced from a new, onshore production well under Section 103 is deregulated. Thus, for all months succeeding June 1987 publication of a maximum lawful price per MMBtu under NGPA Section 103(b)(2) is discontinued.

^c New category as of January 1, 1985.

^d Section 106(b) of the NGPA provides that for certain gas sold under an intrastate rollover contract, the maximum lawful price is the higher of the price paid under the expired contract, adjusted for inflation or an alternative Maximum Lawful Price specified in this table. This alternative Maximum Lawful Price for each month appears in this row.

^e The price for interstate rollover gas is the higher of the price listed in this table or the just and reasonable price under the expired contract as adjusted for inflation.

-- Not Applicable

Notes and Sources: See the last page of this section.

Table 12. Revenues, Expenses, and Income of Major Interstate Natural Gas Pipeline Companies
(Million Dollars)

Year and Month	Total Sales Volume ^a (Bcf)	Gas Operating Revenues	Gas Operating Expenses			Total Gas Operating Expenses	Total Operating Income	Total Income Before Interest Charges and Extraordinary Expenses	Net Income ^c
			Operation and Maintenance	Depreciation, Depletion, and Amortization	Taxes ^b				
1984 Total	12,596	53,629	42,250	1,693	630	50,467	3,168	5,279	3,227
1985 Total	11,286	48,470	42,071	1,655	666	45,835	2,582	4,303	1,791
1986 Total	8,130	34,541	28,538	1,672	602	32,250	2,335	3,761	1,490
1987 Total	6,758	27,469	21,871	1,520	552	25,151	2,333	3,493	1,414
1988									
January	1,152	3,860	3,147	137	56	3,500	360	485	306
February	939	3,337	2,711	155	54	3,033	304	423	255
March	606	2,414	1,855	133	50	2,151	263	441	240
April	378	1,720	1,312	126	48	1,648	185	339	160
May	317	1,550	1,193	118	46	1,376	174	325	163
June	308	1,515	1,468	123	46	1,568	-53	93	20
July	315	1,483	1,124	126	43	1,215	260	-62	-159
August	347	1,681	1,324	131	45	1,680	4	226	73
September	321	1,595	1,628	129	47	1,531	64	-67	-253
October	435	1,949	1,591	141	51	1,775	172	158	-43
November	504	2,395	2,387	133	48	2,467	-83	50	-148
December	792	3,138	2,900	127	48	2,996	145	939	752
Total	6,414	26,637	22,640	1,579	582	24,940	1,803	3,350	1,366
1989									
January	711	2,902	2,278	132	56	2,589	313	454	280
February	721	2,922	2,306	137	56	2,619	303	447	267
March	520	2,436	2,077	130	53	2,293	144	329	130
April	357	1,885	1,461	120	54	1,678	207	304	122
May	305	1,945	1,547	130	44	1,769	169	351	168
June	252	1,471	1,141	129	51	1,331	138	331	162
July	271	1,520	1,192	129	51	1,382	138	222	43
August	300	1,565	1,214	131	51	1,406	158	293	110
September	303	1,695	1,279	154	40	1,513	172	368	190
October	388	1,827	1,754	103	50	1,781	46	212	57
November	518	2,443	1,965	119	48	2,230	213	396	228
December	1,006	4,092	3,550	79	42	3,675	418	713	397
Total	5,652	26,703	21,764	1,493	596	24,266	2,419	4,420	2,154
1990									
January	710	3,106	2,495	130	59	2,783	323	492	326
February	584	2,501	1,977	121	57	2,240	262	401	243
March	440	2,200	1,638	96	56	1,899	301	456	355
April	343	1,733	1,329	124	53	1,550	183	365	208
May	278	1,525	1,183	111	52	1,371	154	294	141
June	246	1,460	1,110	108	52	1,270	189	398	234
July	349	1,492	1,173	123	53	1,359	133	215	62
August	247	1,487	1,093	39	53	1,182	304	269	122
September	244	1,431	1,102	90	48	1,268	163	302	155

^a Includes sales for resale and sales to ultimate consumers.

^b Excludes income taxes.

^c Total Income before Interest Charges and Extraordinary Expenses and Investment Tax Credits minus Income Taxes, Interest Charges, and Extraordinary Items.

Notes and Sources: See the last page of this section.

Table 13. Volumes and Prices of Natural Gas Sold by Major Interstate Natural Gas Pipeline Companies
(Volumes in Million Cubic Feet, Prices in Dollars per Thousand Cubic Feet)

Year and Month	To Industrial Users		To Other Ultimate Consumers		Total Sales to Ultimate Consumers		Sales For Resale		Total Sales of Natural Gas		Number of Companies
	Volume	Price*	Volume	Price*	Volume	Price*	Volume	Price*	Volume	Price*	
1984 Total	702,540	4.13	388,780	5.34	1,091,320	4.56	9,020,704	3.99	10,112,024	4.05	44
1985 Total	885,254	3.91	557,602	5.30	1,442,856	4.45	8,074,803	3.90	9,517,659	3.98	45
1986 Total	549,956	3.23	433,058	5.08	983,014	4.04	6,023,893	3.69	7,006,907	3.74	48
1987 Total	442,041	3.07	301,567	5.06	743,608	3.91	5,213,629	3.37	5,957,237	3.44	47
1988											
January	31,555	2.94	81,597	4.61	113,152	4.14	899,736	2.99	1,012,888	3.11	46
February	20,698	2.96	68,547	4.76	89,245	4.34	729,882	3.11	819,127	3.25	46
March	23,154	2.83	50,926	4.88	74,080	4.24	469,116	3.27	543,196	3.40	46
April	24,440	2.67	17,334	5.41	41,774	3.81	304,224	3.57	345,998	3.60	46
May	25,651	2.36	19,724	4.95	45,375	3.49	238,526	3.85	283,901	3.79	46
June	28,916	2.52	17,336	5.94	46,252	3.80	224,768	3.85	271,020	3.85	46
July	28,489	2.45	18,472	5.82	46,961	3.78	222,087	3.73	269,048	3.74	46
August	30,159	2.51	19,904	5.66	50,063	3.76	252,794	3.95	302,857	3.92	46
September	26,001	2.40	15,716	6.19	43,965	3.80	230,466	4.01	274,431	3.98	46
October	17,982	2.63	28,309	5.42	46,467	4.30	329,151	3.75	375,442	3.84	46
November	18,263	2.85	38,695	5.10	54,539	4.44	364,104	4.22	421,062	4.25	46
December	19,513	2.82	64,123	4.42	83,636	4.05	601,339	3.34	684,975	3.42	46
Total	294,821	2.65	440,683	4.99	735,509	4.05	4,866,193	3.47	5,603,945	3.55	46
1989											
January	23,906	2.80	64,345	4.83	88,251	4.28	540,346	3.32	628,597	3.45	46
February	57,581	2.45	69,901	4.73	127,474	3.74	556,103	3.37	683,577	3.44	46
March	34,247	2.29	56,503	4.96	90,750	3.95	379,148	3.47	469,898	3.57	47
April	31,606	2.69	34,276	5.40	65,882	4.10	248,753	3.80	314,469	3.85	48
May	32,223	2.66	21,016	5.59	53,239	3.82	205,407	4.19	258,454	4.11	49
June	27,766	2.68	14,648	6.19	42,414	3.89	171,725	4.19	214,139	4.13	49
July	41,014	2.44	17,461	5.57	58,475	3.37	181,101	4.24	239,580	4.04	48
August	32,280	2.51	18,844	4.92	51,124	3.40	221,426	3.40	272,550	3.40	49
September	33,768	2.50	16,516	5.76	50,284	3.57	225,373	3.33	275,657	3.38	50
October	29,222	2.62	25,710	5.61	54,932	4.02	289,586	3.26	344,518	3.38	50
November	25,864	2.70	41,965	5.06	67,829	4.16	408,232	3.40	476,061	3.51	50
December	23,366	3.03	84,407	4.49	107,773	4.18	795,655	3.30	903,428	3.41	50
Total	392,843	2.58	465,592	5.02	858,427	3.91	4,222,855	3.49	5,080,928	3.56	50
1990											
January	23,281	3.52	61,566	4.90	84,847	4.52	488,521	3.43	573,368	3.59	51
February	53,729	2.58	54,123	5.00	107,852	3.80	428,176	2.59	536,028	2.83	51
March	25,138	2.64	45,531	5.05	70,669	4.20	333,858	3.09	404,527	3.29	51
April	23,943	2.51	31,740	5.20	55,683	4.04	261,293	2.76	316,976	2.98	51
May	24,714	2.40	21,818	5.63	46,532	3.91	205,735	3.01	252,267	3.17	51
June	24,376	2.30	15,459	4.98	39,835	3.34	183,781	2.86	223,616	2.95	51
July	26,454	2.41	18,235	5.04	44,689	3.48	282,032	1.97	326,711	2.18	51
August	9,908	2.69	17,356	5.25	27,264	4.32	189,863	2.85	217,127	3.04	51
September	8,001	2.90	16,719	5.84	24,720	4.89	191,281	3.00	215,999	3.22	51

* All prices are weighted averages.

Notes and Sources: See the last page of this section.

Table 14. Volumes and Prices of Natural Gas Sold by Major Interstate Natural Gas Pipeline Companies, by Company, September 1990
(Volumes in Million Cubic Feet, Prices in Dollars per Thousand Cubic Feet)

Pipeline Company	To Industrial Users		To Other Ultimate Consumers		Total Sales to Ultimate Consumers		Sales For Resale		Total Sales of Natural Gas	
	Volume	Price*	Volume	Price*	Volume	Price*	Volume	Price*	Volume	Price*
Algonquin Gas	0	0.00	0	0.00	0	0.00	2,052	3.54	2,052	3.54
ANR	0	.00	0	.00	0	.00	3,095	2.56	3,095	2.56
Arkla, Inc.	3,033	2.65	7,601	6.63	10,634	5.49	382	1.11	11,016	5.34
Bear Creek Storage	0	.00	0	.00	0	.00	0	.00	0	.00
Canyon Creek Transm Co	0	.00	0	.00	0	.00	0	.00	0	.00
Colorado Interstate	90	2.51	0	.00	90	2.51	4,276	2.26	4,366	2.27
Columbia Gas Transm	0	.00	0	.00	0	.00	4,748	3.05	4,748	3.05
Columbia Gulf	0	.00	2	3.50	2	3.50	0	.00	2	3.50
Consolidated Gas	37	2.16	0	.00	37	2.16	1,855	1.92	1,892	1.92
East Tennessee	1,491	2.56	1	4.00	1,492	2.56	3,378	2.43	4,870	2.47
El Paso	313	2.02	0	.00	313	2.02	3,404	2.27	3,717	2.25
Equitrans	0	.00	0	.00	0	.00	581	2.62	581	2.62
Florida Gas	1,945	3.58	0	.00	1,945	3.58	4,681	2.79	6,626	3.02
Great Lakes Gas	0	.00	0	.00	0	.00	4,049	2.22	4,049	2.22
High Island Offshore	0	.00	0	.00	0	.00	0	.00	0	.00
I N Energy Inc.	37	3.27	2,907	4.07	2,944	4.06	649	3.80	3,593	4.01
Michigan Consolidated	218	4.71	5,863	5.92	6,081	5.87	1	2.00	6,082	5.87
Michigan Gas Storage	0	.00	0	.00	0	.00	323	2.07	323	2.07
Midwestern	0	.00	0	.00	0	.00	3,578	2.81	3,578	2.81
Mississippi River	147	3.73	0	.00	147	3.73	2,280	5.17	2,427	5.09
Mountain Fuel Res	0	.00	0	.00	0	.00	1,994	4.65	1,994	4.65
National Fuel	0	.00	0	.00	0	.00	5,406	3.24	5,406	3.24
Natural Gas Pipeline	2	2.50	0	.00	2	2.50	23,742	3.44	23,744	3.44
Northern Border	0	.00	0	.00	0	.00	0	.00	0	.00
Northern Natural	60	4.73	0	.00	60	4.75	17,364	2.75	17,424	2.76
Northwest Alaskari	0	.00	0	.00	0	.00	29,931	1.44	29,931	1.44
Northwest Pipeline	1	1.00	0	.00	1	1.00	1,708	3.35	1,709	3.35
Overturist Pipeline	0	.00	0	.00	0	.00	0	.00	0	.00
Pacific Gas Transm	0	.00	0	.00	0	.00	25,948	2.37	25,948	2.37
Pacific Interstate	0	.00	0	.00	0	.00	6,555	3.76	6,555	3.76
Panhandle Eastern	24	4.42	308	1.94	332	2.12	4,010	3.99	4,342	3.85
Sabine Pipeline Co	0	.00	0	.00	0	.00	0	.00	0	.00
Sea Robin Pipeline	0	.00	0	.00	0	.00	0	.00	0	.00
Southern Natural	19	3.74	0	.00	19	3.74	3,192	2.54	3,211	2.54
Stingray Pipeline	0	.00	0	.00	0	.00	0	.00	0	.00
Tenneco, Inc.	90	2.66	0	.00	90	2.66	8,243	5.85	8,333	5.81
Texas Eastern	0	.00	0	.00	0	.00	14,251	4.35	14,251	4.35
Texas Gas Transm	0	.00	0	.00	0	.00	6,142	4.22	6,142	4.22
Trailblazer Pipeline	0	.00	0	.00	0	.00	0	.00	0	.00
Transco Gas	0	.00	0	.00	0	.00	0	.00	0	.00
Transcontinental	0	.00	0	.00	0	.00	19,553	2.67	19,553	2.67
Transwestern Pipeline	9	1.89	18	1.89	27	1.89	2,518	1.31	2,545	1.31
Trunkline Gas Co	0	.00	0	.00	0	.00	7,429	3.77	7,427	3.77
Trunkline LNG	0	.00	0	.00	0	.00	0	.00	0	.00
U-T Offshore	0	.00	0	.00	0	.00	0	.00	0	.00
United Gas Pipeline	370	1.78	16	2.69	386	1.81	527	5.02	913	3.67
Valero Interstate Transm	0	.00	0	.00	0	.00	0	.00	0	.00
Viking Gas Company	0	.00	0	.00	0	.00	80	1.30	80	1.30
Williams Natural	115	3.29	3	1.00	118	3.23	868	3.94	986	3.86
Williston Basin	0	.00	0	.00	0	.00	89	4.03	89	4.03
Wyoming Interstate	0	.00	0	.00	0	.00	0	.00	0	.00
Total/Average Price*	8,001	2.90	16,719	5.84	24,720	4.89	218,882	2.99	243,600	3.18
Sales to Other Major Companies	--	--	--	--	--	--	27,601	2.91	27,601	2.91
Sales Excluding Sales to Major Companies	--	--	--	--	--	--	191,281	3.00	215,999	3.22

* All prices are computed weighted averages based on dollar and volume amounts reported, which may include or reflect out-of-period dollar or volume adjustments, restatements or revisions, or account reclassifications or provisions for ending regulatory adjustments. See Appendix A, Explanatory Note 9 for discussion of apparent anomalies.

-- Not Applicable

Notes and Sources See the last page of this section

**Table 15. Natural and Other Gases Produced and Purchased by
Major Interstate Natural Gas Pipeline Companies
(Million Cubic Feet)**

Year and Month	Transported Gas ^a	Natural Gas ^b Production	Manufactured Gas, Liquefied Natural Gas, Gasified Coal, and Synthetic Gas Production	Purchased Natural Gas				Total
				From Producers	Intracompany Transfers	Imports	From Others	
1984 Total	7,652,245	365,796	2,121	9,190,510	NA	771,075	785,279	10,746,864
1985 Total	8,922,483	206,967	18,166	8,211,227	363,055	887,187	596,926	9,695,340
1986 Total	10,588,148	136,921	22,634	6,466,257	166,964	697,249	345,309	7,675,780
1987 Total	13,479,989	152,039	22,905	4,848,577	124,572	759,345	400,134	6,132,628
1988								
January	1,278,992	16,620	2,091	604,262	10,699	100,465	73,973	789,399
February	1,253,637	19,682	2,352	484,546	6,740	83,145	65,111	639,542
March	1,400,959	16,140	1,720	449,314	8,293	74,762	30,351	562,720
April	1,400,187	5,560	2,783	323,745	-283	75,279	8,917	407,658
May	1,291,115	7,126	2,288	324,784	4,750	67,846	13,869	411,249
June	1,230,313	9,760	2,071	308,585	7,046	68,915	8,376	392,922
July	1,222,281	11,270	993	314,460	4,886	79,748	13,860	412,954
August	1,245,290	10,678	1,635	307,875	5,057	86,241	21,116	420,289
September	1,178,750	9,996	1,854	285,403	4,054	80,533	17,737	389,579
October	1,378,349	10,478	1,814	325,497	4,363	71,791	11,894	411,011
November	1,406,500	11,449	1,789	341,016	6,544	89,842	34,112	471,514
December	1,664,134	10,862	2,570	446,633	4,730	83,816	75,667	610,846
Total	15,950,507	139,621	23,960	4,516,120	66,879	962,383	374,983	5,919,683
1989								
January	1,604,355	12,145	2,018	400,130	7,077	76,463	72,507	556,177
February	1,495,146	12,008	1,763	372,710	8,143	66,282	45,791	492,926
March	1,638,521	11,077	2,134	314,545	6,881	79,191	27,718	428,335
April	1,629,112	8,935	2,010	224,007	4,975	74,285	24,877	328,144
May	1,621,453	6,610	2,083	237,163	4,994	73,118	15,864	331,139
June	1,512,971	6,410	1,956	247,553	5,623	68,512	25,409	347,097
July	1,421,878	7,932	2,150	239,428	6,091	74,761	25,283	345,563
August	1,414,240	6,857	2,031	249,948	5,540	67,871	28,038	351,397
September	1,418,307	5,851	2,052	240,590	4,275	73,787	24,128	342,780
October	1,540,630	7,307	2,171	259,112	5,788	72,313	27,491	364,704
November	1,682,778	8,321	2,060	339,534	6,777	77,522	44,754	468,586
December	1,717,007	9,317	2,181	407,868	7,894	99,383	65,283	580,428
Total	18,696,398	102,770	24,609	3,532,588	74,058	903,488	427,143	4,937,276
1990								
January	1,843,090	9,249	2,064	487,025	7,656	102,640	73,255	670,576
February	1,653,276	7,301	1,948	356,499	5,752	77,018	27,028	466,297
March	1,777,624	8,806	2,295	297,445	6,243	79,441	23,978	407,107
April	1,660,666	6,844	2,095	221,754	4,621	81,523	24,224	332,122
May	1,666,594	6,608	2,141	248,608	5,278	79,549	19,329	352,764
June	1,500,305	6,476	1,971	237,229	4,376	78,303	20,390	340,298
July	1,530,684	7,192	2,118	231,879	7,479	80,772	25,705	345,835
August	1,598,638	6,743	1,956	225,496	6,175	84,595	23,209	339,475
September	1,544,694	7,194	1,902	227,631	6,033	79,456	19,209	332,329

^a Gas transported for other companies through the production, transmission, or distribution lines or compressor stations of the reporting pipelines.

^b Mixture of hydrocarbons existing in gaseous phase or in solution with crude oil in natural underground reservoirs.

^c Includes out-of-period adjustments to correct data in prior month.

NA = Not Available.

Notes and Sources: See the last page of this section.

**Table 16. Natural and Other Gases Produced and Purchased
by Major Interstate Natural Gas Pipeline Companies, September 1990
(Million Cubic Feet)**

Pipeline Company	Transported Gas	Natural Gas Production	Manufactured Gas, Liquefied Natural Gas, Gasified Coal and Synthetic Gas Production	Purchased Natural Gas				Total
				From Producers	Intracompany Transfers	Imports	From Others	
Algonquin Gas	13,301	0	0	0	0	0	2,052	2,052
ANR	94,386	0	1,055	10,233	0	0	* -15	10,218
Arkla, Inc	38,247	0	0	3,040	0	0	9,356	12,396
Bear Creek Storage	0	0	0	0	0	0	0	0
Canyon Creek Transm Co	3,275	0	0	0	0	0	0	0
Colorado Interstate	24,032	4,080	0	3,719	4,060	0	0	7,779
Columbia Gas Transm	53,867	0	70	16,344	0	0	2	16,346
Columbia Gulf	87,635	0	0	0	0	0	1,934	1,934
Consolidated Gas	24,847	1,096	0	5,473	42	0	1,612	7,127
East Tennessee	0	0	0	4,637	0	0	0	4,637
El Paso	101,645	61	0	7,565	0	0	312	7,877
Equitrans	3,611	0	0	1,557	0	0	0	1,557
Florida Gas	21,099	0	0	4,795	0	0	3,123	7,918
Great Lakes Gas	37,049	0	0	0	0	5,028	0	5,028
High Island Offshore	32,538	0	0	0	0	0	0	0
K N Energy Inc	5,158	0	0	3,243	0	0	1,315	4,558
Michigan Consolidated	9,141	222	0	9,377	0	0	1,393	10,770
Michigan Gas Storage	21,419	0	0	0	0	0	252	252
Midwestern	7,471	0	0	3,822	0	0	* -75	3,747
Mississippi River	6,822	0	0	11,656	0	0	0	11,656
Mountain Fuel Res	14,329	0	0	1,812	0	0	910	2,722
National Fuel	8,070	360	0	10,510	360	0	0	10,870
Natural Gas Pipeline	107,366	1,289	777	11,333	1,289	2,201	5,293	20,116
Northern Border	34,808	0	0	0	0	0	0	0
Northern Natural	95,245	0	0	15,386	0	13,078	0	28,464
Northwest Alaskan	0	0	0	0	0	29,931	0	29,931
Northwest Pipeline	52,977	6	0	1,277	6	1,002	0	2,285
Overthrust Pipeline	2,926	0	0	0	0	0	0	0
Pacific Gas Transm	8,514	0	0	164	0	26,690	0	26,854
Pacific Interstate	0	0	0	0	0	0	7,179	7,179
Panhandle Eastern	37,593	0	0	12,246	0	0	27	12,273
Sabine Pipeline Co	13,708	0	0	0	0	0	0	0
Sea Robin Pipeline	17,289	0	0	19	0	0	0	19
Southern Natural	29,777	0	0	8,077	0	0	0	8,077
Stingray Pipeline	24,244	0	0	0	0	0	0	0
Tenneco, Inc	122,540	41	0	17,554	0	380	3,439	21,373
Texas Eastern	51,709	59	0	18,458	0	1,110	5,121	24,689
Texas Gas Transm	44,476	0	0	6,621	0	0	3,692	10,313
Trailblazer Pipeline	6,078	0	0	0	0	0	0	0
Transco Gas	0	0	0	0	0	0	0	0
Transcontinental	107,304	0	0	15,779	0	0	1,037	19,816
Transwestern Pipeline	23,983	0	0	2,079	0	0	0	2,079
Trunkline Gas Co	38,489	0	0	7,120	0	0	0	7,120
Trunkline LNG	0	0	0	0	0	0	0	0
U-T Offshore	21,223	0	0	0	0	0	0	0
United Gas Pipeline	55,948	0	0	4,865	0	0	292	5,157
Valero Interstate Transm	4,395	0	0	0	0	0	0	0
Viking Gas Company	10,681	0	0	0	0	36	0	36
Williams Natural	16,506	0	0	4,245	0	0	299	4,544
Williston Basin	3,270	0	0	1,625	276	0	0	1,901
Wyoming Interstate	5,703	0	0	0	0	0	0	0
Total	1,544,694	7,194	1,902	227,631	6,033	79,456	48,550	361,670
Purchases from Other Major Companies	--	--	--	0	0	0	29,341	29,341
Purchases Excluding Purchases from Other Major Companies	--	--	--	227,631	6,033	79,456	19,209	332,329

* Includes out-of-period adjustments to correct data in prior month.

-- Not Applicable.

Notes and Sources: See the last page of this section.

**Table 17. Underground Natural Gas Storage
(All Operators)
(Volumes in Billion Cubic Feet)**

Year and Month	Natural Gas in Underground Storage at End of Period			Change In Working Gas from Same Period Previous Year		Storage Activity		
	Base Gas	Working Gas	Total ^b	Volume	Percent	Injections	Withdrawals	Net ^c
1984 Total^a	3,830	2,876	6,706	281	10.8	2,252	2,064	188
1985 Total^a	3,842	2,607	6,448	-270	-9.4	2,128	2,359	-231
1986 Total^a	3,819	2,749	6,567	142	5.5	1,952	1,812	140
1987 Total^a	3,792	2,756	6,548	7	.3	1,887	1,881	6
1988								
January	3,792	2,228	6,020	-52	-2.3	47	578	-531
February	3,791	1,827	5,618	-161	-8.1	50	456	-406
March	3,790	1,682	5,473	-197	-10.5	99	255	-156
April	3,790	1,769	5,559	-169	-8.7	162	92	71
May	3,790	2,027	5,818	-179	-8.1	282	46	236
June	3,792	2,293	6,085	-144	-5.9	274	36	238
July	3,793	2,567	6,359	-69	-2.6	294	42	252
August	3,791	2,835	6,626	-1	--	282	52	230
September	3,791	3,120	6,911	71	2.3	308	46	262
October	3,792	3,243	7,035	137	4.4	198	92	105
November	3,803	3,171	6,974	112	3.7	117	157	-40
December	3,800	2,850	6,650	94	3.4	62	391	-329
Total	--	--	--	--	--	2,174	2,244	-69
1989								
January	3,798	2,509	6,307	281	12.6	53	418	-365
February	3,801	1,994	5,796	168	9.2	32	602	-570
March	3,801	1,776	5,578	94	5.6	106	362	-256
April	3,801	1,823	5,624	54	3.0	181	138	43
May	3,802	2,062	5,863	34	1.7	321	44	277
June	3,802	2,374	6,176	82	3.6	375	20	355
July	3,802	2,644	6,446	77	3.0	371	29	341
August	3,802	2,938	6,740	103	3.6	356	29	328
September	3,802	3,187	6,990	67	2.2	320	39	281
October	3,792	3,268	7,061	25	.8	221	96	124
November	3,809	3,199	7,008	28	.9	105	223	-118
December	3,812	2,513	6,325	-337	-11.8	52	805	-752
Total	--	--	--	--	--	2,493	2,804	-311
1990								
January	3,818	2,265	6,083	-243	-9.7	91	339	-248
February	3,814	2,013	5,827	19	.9	70	324	-253
March	3,818	1,878	5,695	101	5.7	124	256	-131
April	3,839	1,932	5,771	109	6.0	183	140	43
May	3,823	2,159	5,982	97	4.7	289	45	245
June	3,844	2,454	6,297	79	3.3	327	42	285
July	3,850	2,747	6,597	103	3.9	325	27	298
August	3,851	2,995	6,846	57	1.9	321	37	283
September	3,852	3,267	7,119	80	2.5	284	36	248
October	3,852	3,426	7,277	158	4.8	214	61	153

^a Total as of December 31.

^b Total underground storage capacity at the end of each calendar Year (in billion cubic feet): 1984 - 8,043; 1985 - 8,087; 1986 - 8,145; 1987 and 1988 - 8,124; and 1989 - 8,124. Current total capacity is 8,125.

^c Positive numbers indicate the volume of injections in excess of withdrawals. Negative numbers indicate the volume of withdrawals in excess of injections.

-- -- Not Applicable.

Notes and Sources: See the last page of this section.

Figure 6. Underground Natural Gas Storage in the United States

Source: Form EIA-191, Form FERC-8, and Form EIA-176.

Table 18. Underground Natural Gas Storage
(Interstate Operators of Storage Fields)
(Volumes in Billion Cubic Feet)

Year and Month	Natural Gas In Underground Storage at End of Period			Change in Working Gas from Same Period Previous Year		Storage Activity		
	Base Gas	Working Gas	Total ^b	Volume	Percent	Injections	Withdrawals	Net ^c
1984 Total^a	2,511	2,094	4,605	257	14.0	1,696	1,522	174
1985 Total^a	2,517	1,905	4,422	-189	-9.0	1,590	1,758	-167
1986 Total^a	2,483	2,010	4,492	104	5.5	1,448	1,353	95
1987 Total^a	2,461	2,024	4,485	14	.7	1,364	1,347	17
1988								
January	2,461	1,620	4,081	-66	-3.9	27	430	-403
February	2,461	1,317	3,778	-158	-10.7	36	338	-303
March	2,460	1,226	3,686	-193	-13.6	78	173	-95
April	2,460	1,296	3,755	-167	-11.4	124	55	69
May	2,460	1,490	3,950	-171	-10.3	214	22	192
June	2,462	1,688	4,150	-138	-7.6	206	13	193
July	2,462	1,892	4,353	-69	-3.5	216	13	203
August	2,462	2,081	4,543	-26	-1.2	203	20	183
September	2,462	2,282	4,744	29	1.3	218	21	197
October	2,462	2,349	4,810	82	3.6	132	67	65
November	2,469	2,316	4,785	89	4.0	87	111	-24
December	2,469	2,092	4,561	68	3.3	47	269	-222
Total	--	--	--	--	--	1,587	1,532	55
1989								
January	2,469	1,881	4,350	261	16.1	41	271	-230
February	2,469	1,515	3,983	197	15.0	18	430	-413
March	2,469	1,343	3,812	117	9.5	71	278	-206
April	2,469	1,357	3,825	61	4.7	125	109	16
May	2,469	1,519	3,988	29	1.9	230	34	196
June	2,469	1,748	4,217	59	3.5	277	11	266
July	2,469	1,960	4,429	68	3.6	282	14	268
August	2,469	2,170	4,639	88	4.2	258	18	240
September	2,469	2,348	4,817	65	2.9	232	26	207
October	2,461	2,386	4,847	37	1.6	154	77	77
November	2,478	2,305	4,783	-11	-.5	73	175	-103
December	2,478	1,764	4,242	-328	-15.7	28	630	-602
Total	--	--	--	--	--	1,788	2,072	-285
1990								
January	2,479	1,597	4,076	-285	-15.1	72	240	-169
February	2,479	1,446	3,926	-68	-4.5	60	206	-146
March	2,479	1,371	3,850	28	2.1	101	176	-74
April	2,479	1,427	3,906	70	5.2	131	107	24
May	2,459	1,586	4,046	67	4.4	202	36	167
June	2,479	1,793	4,273	46	2.6	233	32	201
July	2,486	2,012	4,498	52	2.7	238	15	223
August	2,487	2,186	4,673	16	.7	227	18	210
September	2,488	2,386	4,874	38	1.6	198	22	176
October	2,488	2,483	4,971	97	4.1	139	50	89

^a Total as of December 31.

^b Total underground storage capacity at the end of each calendar year (in billion cubic feet): 1984 - 5,557; 1985 - 5,602; 1986 - 5,642; 1987 and 1988 - 5,622; and 1989 - 5,622. Current total capacity is 5,622.

^c Positive numbers indicate the volume of injections in excess of withdrawals. Negative numbers indicate the volume of withdrawals in excess of injections.

-- = Not Applicable.

Notes and Sources: See the last page of this section.

Table 19. Underground Natural Gas Storage
(Intrastate Operators and Independent Producers)
(Volumes in Billion Cubic Feet)

Year and Month	Natural Gas in Underground Storage at End of Period			Change in Working Gas from Same Period Previous Year		Storage Activity		
	Base Gas	Working Gas	Total ^b	Volume	Percent	Injections	Withdrawals	Net ^c
1984 Total^a	1,319	782	2,101	23	3.1	556	543	14
1985 Total^a	1,325	701	2,026	-81	-10.3	538	602	-64
1986 Total^a	1,336	739	2,075	38	5.4	504	459	45
1987 Total^a	1,331	732	2,063	-7	.1	522	533	-11
1988								
January	1,331	608	1,939	14	2.4	20	148	-128
February	1,331	509	1,840	-3	-.6	14	118	-104
March	1,331	456	1,787	-4	-.8	20	82	-62
April	1,330	474	1,804	-2	-.3	39	37	2
May	1,331	537	1,868	-8	-1.4	88	24	44
June	1,331	604	1,935	-6	-1.0	68	23	46
July	1,331	675	2,006	*	*	78	29	49
August	1,329	754	2,083	25	3.5	80	32	47
September	1,329	838	2,167	42	5.3	90	25	66
October	1,330	894	2,225	55	6.5	66	26	40
November	1,334	854	2,189	23	2.7	30	46	-16
December	1,331	758	2,089	26	3.6	14	122	-107
Total	--	--	--	--	--	587	711	-124
1989								
January	1,329	628	1,957	20	3.3	12	147	-135
February	1,332	480	1,812	-30	-5.8	14	172	-157
March	1,332	433	1,765	-23	-5.1	35	84	-50
April	1,332	466	1,799	-7	-1.5	56	29	27
May	1,332	543	1,875	6	1.0	91	10	81
June	1,332	627	1,959	23	3.7	98	9	89
July	1,331	684	2,017	9	1.3	89	15	74
August	1,331	768	2,101	14	1.9	99	10	88
September	1,331	840	2,173	2	.2	88	13	74
October	1,331	883	2,214	-12	-1.3	67	19	47
November	1,331	893	2,225	39	4.6	32	47	-15
December	1,335	749	2,083	-9	-1.2	25	175	-150
Total	--	--	--	--	--	705	732	-26
1990								
January	1,338	669	2,007	41	6.6	20	99	-79
February	1,335	567	1,901	87	18.2	11	118	-107
March	1,338	507	1,845	74	17.0	23	80	-57
April	1,360	505	1,865	39	8.3	52	33	19
May	1,364	573	1,937	30	5.5	87	9	78
June	1,365	660	2,025	34	5.4	94	10	84
July	1,364	735	2,099	51	7.5	86	12	75
August	1,364	809	2,173	41	5.3	93	20	73
September	1,364	881	2,245	41	4.9	86	14	72
October	1,364	943	2,307	60	6.8	75	11	64

^a Total as of December 31

^b Total underground storage capacity at the end of each calendar year (in billion cubic feet). 1984 - 2,467; 1985 - 2,485; 1986 - 2,503; 1987 and 1988 - 2,502; and 1989 - 2,502. Current total capacity is 2,503.

^c Positive numbers indicate the volume of injections in excess of withdrawals. Negative numbers indicate the volume of withdrawals in excess of injections.

-- Not Applicable.

* Volume is less than 500 million cubic feet.

Notes and Sources: See the last page of this section.

**Table 20. Activities of Multi-State Underground Natural Gas Storage Operators,
October 1990**
(Volume in Million Cubic Feet)

Pipeline Company	Storage Capacity		Natural Gas in Underground Storage at End of Period			Change in Working Gas from Same Period Previous Year		Net Injections or Withdrawals*	
	By Individual State	Total	Base Gas	Working Gas	Total	Volume	Percent	Current Period	Same Period Previous Year
Arkla, Inc.	KS 2,393 LA 15,000 OK 50,152	67,545	30,674	18,306	48,980	-4,540	-19.9	1,469	700
Colorado Interstate	CO 58,289 KS 24,800	81,089	46,302	27,875	74,177	2,758	11.0	1,460	1,226
Columbia Gas Transm.	NY 18,285 OH 434,895 PA 36,494 WV 283,885	773,159	429,041	257,021	686,062	2,534	1.0	5,157	-979
Consolidated Gas	NY 35,904 PA 497,077 WV 180,356	713,337	364,384	324,870	689,254	19,304	6.3	4,260	10,798
Equitrans Inc.	PA 23,286 WV 38,240	61,526	31,648	24,561	56,208	-3,411	-12.2	1,399	1,975
K N Energy Inc.	CO 5,892 KS 5,845 NE 88,438	99,975	33,159	62,893	95,852	-1,593	-2.5	308	275
Mississippi River	IL 4,100 LA 82,300	86,400	53,986	32,320	86,306	4,192	14.9	3,670	4,673
National Fuel	NY 56,400 PA 191,783	248,183	96,683	70,414	167,097	-5,155	-6.8	862	4,948
Natural Gas Pipeline	IL 220,400 IA 191,000 OK 86,000 TX 144,000	641,400	178,955	402,922	581,877	11,166	2.9	12,422	4,599
Northern Natural	IA 120,000 KS 107,000	227,000	130,500	56,846	187,346	-474	-8	11,329	10,592
Panhandle Eastern	IL 70,000 MI 32,000 OK 21,600	123,600	77,026	31,553	108,579	-1,057	-3.2	-48	1,372
Phillips Petroleum	OK 2,150 TX 2,085 UT 3,000	7,215	1,623	6,012	7,835	1,918	46.8	-5	504
Questar Pipeline Co.	UT 111,980 WY 10,000	121,980	57,732	27,977	85,709	6,325	29.2	2,760	1,671
Texas Gas Transm.	IN 11,272 KY 161,279	172,550	90,169	82,575	172,743	385	.5	799	1,635
Transcontinental	LA 143,500 MS 8,361	151,861	57,567	70,720	128,286	-4,106	-5.5	3,981	1,208
United Gas Pipeline	LA 141,000 MS 5,550	146,550	75,024	54,379	129,403	11,224	26.0	8,661	-3,791
Williams Natural	KS 112,983 OK 55,298	168,281	111,978	34,532	146,509	-980	-2.8	-557	2,198
Williston Basin	MT 287,200 WY 66,610	353,810	75,202	217,007	292,209	-5,074	-2.3	1,881	69
Total		4,245,461	1,941,651	1,802,581	3,744,233	33,415	1.9	59,806	43,673

* Positive numbers indicate the volume of injections in excess of withdrawals. Negative numbers indicate the volume of withdrawals in excess of injections.

-- Not Applicable

Notes and Sources See the last page of this section

Table 21. Activities of Single-State Underground Natural Gas Storage Operators, by State, October 1990
(Volumes in Million Cubic Feet)

State	Total Storage Capacity	Natural Gas In Underground Storage at End of Period			Change in Working Gas from Same Period Previous Year		Net Injections or Withdrawals*	
		Base Gas	Working Gas	Total	Volume	Percent	Current Period	Same Period Previous Year
Arkansas	31,447	19,202	10,108	29,310	112	1.1	11	-2
California	466,819	243,944	199,208	443,151	31,974	19.1	15,102	-3,148
Colorado	20,682	6,248	13,242	19,490	1,102	9.1	166	2,379
Illinois	657,780	418,544	230,581	649,125	7,534	3.4	16,952	19,237
Indiana	100,774	68,941	28,399	97,340	1,169	4.3	2,289	2,199
Kansas	81,905	37,390	27,897	65,287	166	.6	-167	497
Kentucky	45,325	21,351	19,991	41,342	-351	-1.7	2,534	2,112
Louisiana	177,219	79,751	56,863	136,613	4,747	9.1	2,309	-2,104
Maryland	61,978	46,677	14,256	60,934	-222	-1.5	1,078	934
Michigan	950,362	380,535	530,476	911,011	56,272	11.9	18,153	21,368
Minnesota	7,000	4,655	2,316	6,971	67	3.0	25	32
Mississippi	94,297	41,138	50,988	92,126	1,182	2.4	2,009	1,367
Missouri	29,791	21,600	8,118	29,718	55	.7	220	268
Montana	86,760	45,800	25,385	71,185	59	.2	410	757
New Mexico	94,600	20,204	24,981	45,184	6,478	35.0	3,164	-627
New York	45,670	19,995	23,047	43,042	972	4.4	1,984	1,733
Ohio	177,852	115,818	52,953	168,772	167	.3	8,466	8,386
Oklahoma	149,688	93,089	47,818	140,907	-6,399	-11.8	2,871	-1,144
Oregon	9,791	3,291	7,611	10,902	1,953	34.5	188	841
Pennsylvania	56,754	25,638	14,748	40,386	992	7.2	711	348
Texas	443,716	151,049	205,443	356,492	-8,288	-4.3	14,333	7,234
Washington	36,400	21,300	11,995	33,295	108	.9	157	89
West Virginia	20,851	9,793	9,836	19,629	-333	-3.3	452	272
Wyoming	27,221	13,990	6,997	20,987	493	7.6	83	-133
Total	3,874,681	1,909,943	1,923,258	3,533,201	99,009	6.5	93,498	62,894

* Positive numbers indicate the volume of injections in excess of withdrawals. Negative numbers indicate the volume of withdrawals in excess of injections.

Notes and Sources: See the last page of this section.

Table 22. Natural Gas Deliveries to Residential Consumers by State
(Million Cubic Feet)

State	YTD 1990	YTD 1989	YTD 1988	September 1990	August 1990	July 1990
Alabama	36,331	35,234	38,195	1,377	1,354	1,432
Alaska	8,803	9,564	8,587	527	407	409
Arizona	22,449	20,413	21,886	868	803	873
Arkansas	29,967	31,405	33,078	1,169	1,110	1,154
California	374,068	383,019	370,645	22,096	22,338	22,558
Colorado	71,262	69,775	71,300	2,330	2,357	2,478
Connecticut	27,150	28,489	28,238	1,124	934	1,104
Delaware	5,728	5,752	5,753	190	166	183
District of Columbia	12,124	13,042	13,078	448	445	505
Florida	11,128	9,651	11,804	619	605	661
Georgia	62,071	65,228	75,703	2,960	2,882	2,895
Hawaii	434	432	429	44	40	49
Idaho	5,244	6,445	5,594	186	160	173
Illinois	262,271	325,810	323,214	11,977	10,241	9,883
Indiana	96,707	102,862	105,104	3,682	3,113	3,040
Iowa	52,708	55,866	55,856	1,613	1,543	1,648
Kansas	55,247	56,040	58,013	1,776	1,684	1,825
Kentucky	37,089	42,800	45,047	1,376	1,287	1,375
Louisiana	47,435	41,313	46,448	2,356	2,287	2,350
Maine	436	462	419	22	19	20
Maryland	51,543	54,796	55,676	2,104	2,019	2,240
Massachusetts	81,457	83,103	81,758	2,994	2,639	3,166
Michigan	228,536	249,727	253,207	9,388	8,299	7,823
Minnesota	70,376	80,290	79,335	2,601	2,284	2,355
Mississippi	26,717	19,095	20,599	1,101	1,115	1,173
Missouri	85,978	93,068	94,916	2,874	2,711	2,944
Montana	11,164	12,865	11,738	453	395	392
Nebraska	29,151	31,748	32,452	1,033	947	1,056
Nevada	11,600	12,303	11,628	521	520	562
New Hampshire	4,332	4,643	4,389	161	128	145
New Jersey	121,820	137,547	134,272	5,415	4,582	5,092
New Mexico	22,957	19,973	21,403	829	771	812
New York	251,290	262,786	260,358	9,541	8,758	10,055
North Carolina	25,844	27,629	27,781	754	733	765
North Dakota	6,297	7,200	6,680	220	167	191
Ohio	208,307	231,129	241,681	8,398	7,023	7,744
Oklahoma	50,921	53,385	55,490	1,579	1,616	1,697
Oregon	16,001	16,980	15,776	533	561	706
Pennsylvania	178,602	190,129	194,705	7,756	5,759	6,037
Rhode Island	13,223	13,359	13,133	539	481	482
South Carolina	13,752	14,414	15,193	376	347	367
South Dakota	6,804	7,968	7,920	237	215	231
Tennessee	33,325	35,315	35,586	1,012	957	988
Texas	195,589	159,627	158,700	10,223	10,261	10,398
Utah	29,668	33,886	31,513	1,222	1,236	1,314
Vermont	1,421	1,511	1,348	51	40	43
Virginia	37,438	42,609	42,193	1,663	1,425	1,450
Washington	25,998	28,161	25,255	939	794	1,048
West Virginia	24,495	25,770	27,142	799	695	723
Wisconsin	78,206	89,713	86,709	3,381	2,556	2,380
Wyoming	8,427	8,877	8,747	256	288	335
Total	3,169,931	3,353,208	3,375,667	135,694	124,099	129,326

See footnote at end of table.

Table 22. Natural Gas Deliveries to Residential Consumers by State (Continued)
(Million Cubic Feet)

State	June 1990	May 1990	April 1990	March 1990	February 1990	January 1990
Alabama	1,683	2,751	4,290	5,441	6,724	11,279
Alaska	505	711	1,089	1,619	1,927	1,609
Arizona	1,119	1,394	2,146	3,940	5,452	5,854
Arkansas	1,384	2,188	3,858	4,686	5,627	8,791
California	25,181	31,077	37,733	60,612	73,834	78,639
Colorado	4,250	7,351	10,013	12,810	13,752	15,921
Connecticut	1,310	2,146	3,613	4,872	5,528	6,519
Delaware	260	448	796	1,006	1,068	1,611
District of Columbia	614	876	1,569	2,046	2,261	3,360
Florida	796	922	1,193	1,437	1,674	3,221
Georgia	3,268	3,919	6,631	10,462	12,224	16,830
Hawaii	49	46	50	55	52	49
Idaho	314	415	551	942	1,240	1,263
Illinois	10,913	20,716	33,056	45,917	56,789	62,779
Indiana	3,977	7,049	13,284	17,214	20,144	25,204
Iowa	2,432	4,139	7,278	9,528	10,579	14,008
Kansas	2,479	4,525	7,592	9,157	11,044	15,165
Kentucky	1,598	2,405	4,922	6,258	8,266	9,602
Louisiana	2,624	3,217	5,114	6,872	7,791	14,824
Maine	27	43	59	73	76	97
Maryland	2,696	3,607	6,956	8,918	9,095	13,908
Massachusetts	4,811	7,008	11,336	14,519	15,318	19,578
Michigan	10,750	18,679	30,628	42,094	46,674	54,201
Minnesota	3,309	5,208	8,961	12,805	15,065	17,788
Mississippi	1,299	1,784	3,108	3,936	4,661	8,540
Missouri	3,781	6,236	11,754	14,279	16,687	24,712
Montana	706	1,113	1,470	1,914	2,265	2,456
Nebraska	1,294	2,208	3,841	5,106	6,279	7,367
Nevada	706	785	1,027	2,013	2,743	2,723
New Hampshire	247	373	617	768	839	1,054
New Jersey	5,799	9,023	16,713	21,773	22,987	30,436
New Mexico	1,116	1,788	2,718	4,124	5,074	5,725
New York	13,590	20,396	34,874	46,809	51,009	56,258
North Carolina	953	1,596	3,281	4,381	4,886	8,495
North Dakota	314	541	883	1,094	1,341	1,546
Ohio	9,442	16,519	27,707	37,461	45,671	48,342
Oklahoma	2,234	4,076	6,727	8,370	10,346	14,276
Oregon	1,118	1,369	1,688	2,985	3,511	3,530
Pennsylvania	8,484	13,220	24,504	31,894	34,298	46,650
Rhode Island	762	1,179	1,806	2,375	2,449	3,150
South Carolina	447	750	1,565	2,292	2,636	4,972
South Dakota	326	565	904	1,218	1,441	1,667
Tennessee	1,258	2,044	4,252	5,379	6,285	11,150
Texas	11,617	14,692	20,745	31,268	33,445	52,940
Utah	1,880	2,409	3,074	5,330	6,499	6,704
Vermont	72	114	193	267	287	354
Virginia	1,712	2,373	4,539	6,679	7,086	10,511
Washington	1,770	2,344	3,018	4,859	5,811	5,415
West Virginia	1,054	1,772	3,451	4,233	4,757	7,011
Wisconsin	3,300	6,450	9,810	14,481	16,927	18,921
Wyoming	579	842	1,132	1,498	1,678	1,819
Total	162,298	247,401	398,119	550,067	634,104	788,823

See footnote at end of table.

Table 22. Natural Gas Deliveries to Residential Consumers by State (Continued)
(Million Cubic Feet)

State	Total 1989	December 1989	November 1989	October 1989	September 1989	August 1989
Alabama	47,932	7,212	3,632	1,854	1,399	1,377
Alaska	13,589	1,656	1,474	895	536	370
Arizona	27,084	3,945	1,768	959	833	777
Arkansas	42,312	6,356	2,987	1,562	1,239	1,137
California	514,276	63,104	40,070	28,083	24,184	22,977
Colorado	91,567	11,066	6,975	3,750	2,601	2,279
Connecticut	40,687	6,991	3,221	1,986	1,138	996
Delaware	7,595	1,085	485	275	207	189
District of Columbia	17,433	2,637	1,099	655	494	483
Florida	13,089	1,825	974	637	641	617
Georgia	103,657	22,132	11,108	5,189	3,465	2,791
Hawaii	565	46	46	43	45	42
Idaho	8,783	1,241	768	329	221	146
Illinois	496,487	93,702	51,130	25,845	13,532	9,889
Indiana	155,887	29,647	15,182	8,195	3,956	2,868
Iowa	77,403	12,401	5,912	3,225	1,790	1,527
Kansas	76,034	11,694	5,398	2,901	1,955	1,687
Kentucky	65,086	13,034	6,141	3,109	1,446	1,337
Louisiana	57,705	9,714	4,166	2,513	2,035	2,026
Maine	638	95	46	35	21	19
Maryland	75,138	12,076	5,131	3,134	2,177	2,070
Massachusetts	111,661	16,224	7,495	4,839	2,901	2,683
Michigan	361,667	60,266	31,679	19,994	9,726	7,957
Minnesota	116,909	20,120	11,067	5,430	2,682	2,269
Mississippi	26,312	4,241	1,933	1,043	894	829
Missouri	129,144	21,588	9,441	5,047	3,111	2,732
Montana	18,195	2,518	1,728	1,084	568	435
Nebraska	44,804	7,297	3,788	1,972	1,212	1,007
Nevada	16,765	2,359	1,400	703	555	478
New Hampshire	6,290	926	448	274	169	127
New Jersey	195,542	33,347	15,715	8,933	5,283	4,778
New Mexico	26,591	3,746	1,975	899	765	734
New York	364,713	57,291	28,576	16,060	9,514	9,189
North Carolina	38,658	6,866	2,823	1,338	745	695
North Dakota	9,825	1,411	816	398	240	166
Ohio	359,148	69,403	37,970	20,647	9,812	7,262
Oklahoma	71,793	11,039	4,798	2,571	1,886	1,654
Oregon	22,504	2,886	1,835	804	581	549
Pennsylvania	270,756	44,962	22,443	13,222	6,717	6,014
Rhode Island	18,283	2,744	1,325	855	497	464
South Carolina	20,472	3,911	1,526	620	346	327
South Dakota	11,342	1,764	1,076	535	298	221
Tennessee	49,136	8,590	3,551	1,681	1,043	960
Texas	230,100	43,770	16,927	9,777	7,869	7,211
Utah	45,168	5,923	3,640	1,718	1,322	1,235
Vermont	2,126	353	165	97	43	37
Virginia	61,712	11,473	4,799	2,831	1,374	1,340
Washington	38,359	5,091	3,484	1,622	969	801
West Virginia	37,128	6,382	3,240	1,738	824	695
Wisconsin	127,009	20,661	10,581	6,052	3,173	2,220
Wyoming	11,780	1,412	973	518	350	259
Total	4,776,838	790,223	404,930	228,478	139,383	120,932

See footnote at end of table.

Table 22. Natural Gas Deliveries to Residential Consumers by State (Continued)
(Million Cubic Feet)

State	July 1989	June 1989	May 1989	April 1989	March 1989	February 1989
Alabama	1,451	1,702	2,845	4,703	7,363	7,017
Alaska	432	638	858	1,223	1,566	2,148
Arizona	880	1,094	1,205	1,670	2,937	4,913
Arkansas	1,237	1,402	1,927	3,835	6,736	7,118
California	22,730	26,581	31,161	37,832	53,779	75,817
Colorado	2,778	3,947	5,694	8,580	13,652	15,278
Connecticut	1,114	1,296	2,231	3,694	5,717	5,891
Delaware	192	272	466	793	1,223	1,153
District of Columbia	507	649	1,025	1,663	2,762	2,556
Florida	674	707	817	1,207	1,834	1,445
Georgia	2,987	3,049	4,628	7,210	9,600	16,386
Hawaii	46	49	47	50	50	52
Idaho	160	306	368	747	1,206	1,672
Illinois	10,700	12,514	24,410	40,291	63,870	76,331
Indiana	2,893	3,831	7,658	12,797	20,943	23,932
Iowa	1,647	2,063	3,943	7,244	12,215	12,643
Kansas	1,845	2,203	3,436	6,518	11,948	13,762
Kentucky	1,332	1,809	3,161	5,319	8,293	10,403
Louisiana	2,189	2,321	2,816	4,724	8,377	8,546
Maine	12	27	49	66	92	84
Maryland	2,241	2,681	4,320	7,032	11,186	10,880
Massachusetts	3,006	4,053	7,552	11,858	16,940	16,517
Michigan	8,052	9,803	20,415	34,224	51,163	52,459
Minnesota	2,388	3,121	5,523	9,806	16,511	19,064
Mississippi	864	929	1,282	2,195	4,077	4,030
Missouri	3,008	3,615	5,793	11,192	19,809	22,300
Montana	426	680	965	1,666	2,544	2,778
Nebraska	1,078	1,137	1,968	3,687	6,742	7,911
Nevada	531	748	829	1,106	1,957	2,971
New Hampshire	155	210	422	686	926	904
New Jersey	5,231	6,101	10,547	17,680	27,754	29,095
New Mexico	829	910	1,111	1,960	3,345	4,696
New York	10,098	13,364	23,868	35,963	51,981	52,502
North Carolina	744	1,020	1,899	3,723	6,202	5,655
North Dakota	213	309	506	1,040	1,476	1,590
Ohio	7,332	7,759	18,482	31,700	42,862	56,594
Oklahoma	1,858	2,169	3,043	5,784	12,277	13,137
Oregon	696	950	1,141	2,054	3,351	4,026
Pennsylvania	6,401	8,128	15,826	26,312	37,888	40,318
Rhode Island	500	590	1,223	1,828	2,711	2,682
South Carolina	395	468	879	1,875	3,327	3,029
South Dakota	245	340	562	1,036	1,639	1,855
Tennessee	1,040	1,345	2,217	4,305	7,951	8,141
Texas	7,726	8,127	9,324	15,648	29,982	40,274
Utah	1,374	1,763	2,215	3,585	5,786	8,290
Vermont	40	61	122	227	314	314
Virginia	1,479	1,713	2,881	5,421	9,042	9,446
Washington	1,002	1,501	1,822	3,625	5,730	6,660
West Virginia	741	1,001	2,263	3,608	5,179	5,621
Wisconsin	2,736	3,777	7,875	12,003	18,950	19,607
Wyoming	344	517	743	1,180	1,597	1,964
Total	128,582	155,351	256,364	414,175	645,362	742,465

Notes and Sources. See the last page of this section.

Table 23. Natural Gas Deliveries to Commercial Consumers by State
(Million Cubic Feet)

State	YTD 1990	YTD 1989	YTD 1988	September 1990	August 1990	July 1990
Alabama	18,505	19,601	19,633	1,212	1,214	1,196
Alaska	14,655	15,589	14,815	1,148	1,077	1,061
Arizona	21,919	21,549	21,642	1,608	1,581	1,686
Arkansas	19,079	20,146	21,326	1,082	1,044	1,031
California	214,372	191,405	194,354	23,197	17,659	21,061
Colorado	50,947	50,702	51,996	2,065	2,123	2,162
Connecticut	19,954	22,881	19,740	1,345	1,309	1,352
Delaware	3,025	3,079	3,042	137	140	140
District of Columbia	10,361	11,824	11,325	742	589	528
Florida	28,241	26,174	28,885	2,492	2,481	2,564
Georgia	37,283	36,407	40,267	2,444	2,539	2,365
Hawaii	1,628	1,600	1,560	180	180	195
Idaho	5,517	6,607	5,997	292	279	293
Illinois	134,103	131,033	150,156	6,356	5,863	5,765
Indiana	45,811	48,577	49,267	1,992	1,861	1,659
Iowa	31,182	33,166	31,982	1,249	1,196	1,217
Kansas	46,655	44,621	47,670	4,048	4,752	5,111
Kentucky	21,408	24,199	25,278	1,022	1,073	1,033
Louisiana	21,985	19,633	21,376	1,453	1,411	1,551
Maine	1,094	1,166	1,053	62	47	52
Maryland	18,375	20,251	19,315	1,042	986	1,075
Massachusetts	36,914	38,276	36,465	1,916	2,051	2,020
Michigan	112,334	123,280	122,358	5,258	4,999	4,743
Minnesota	50,855	58,040	57,310	2,331	2,071	1,997
Mississippi	19,242	12,551	13,717	1,298	1,202	1,262
Missouri	43,562	45,624	47,339	2,030	1,918	1,980
Montana	8,037	9,319	8,435	349	350	325
Nebraska	28,390	28,444	31,138	2,332	2,595	4,829
Nevada	11,589	11,214	11,131	796	1,193	928
New Hampshire	3,631	3,914	3,681	170	153	153
New Jersey	76,353	85,597	75,329	5,293	4,901	4,912
New Mexico	18,222	20,998	23,571	944	863	825
New York	141,958	140,358	136,411	9,935	9,564	9,634
North Carolina	21,384	24,266	23,544	1,530	1,385	1,302
North Dakota	6,887	7,689	7,158	368	297	314
Ohio	99,839	106,479	110,913	4,209	4,138	3,948
Oklahoma	34,359	28,556	37,043	1,235	1,354	1,312
Oregon	13,751	15,290	13,890	819	765	817
Pennsylvania	88,786	92,718	92,124	5,118	4,524	4,441
Rhode Island	5,744	6,440	6,305	508	365	413
South Carolina	11,975	12,266	12,957	879	838	843
South Dakota	5,588	6,166	6,114	231	217	221
Tennessee	31,059	34,027	34,134	1,589	1,779	1,644
Texas	171,306	136,743	133,026	12,463	15,610	18,936
Utah	12,508	12,384	13,810	374	364	373
Vermont	1,381	1,455	1,378	84	62	46
Virginia	29,745	31,903	30,735	1,701	1,805	1,832
Washington	26,808	28,621	27,122	1,573	1,474	1,637
West Virginia	14,713	16,144	16,082	885	782	752
Wisconsin	45,605	49,085	48,353	2,017	1,707	1,757
Wyoming	6,325	6,409	6,614	242	237	265
Total	1,944,941	1,944,458	1,969,857	123,643	118,965	127,557

See footnote at end of table.

Table 23. Natural Gas Deliveries to Commercial Consumers by State (Continued)
(Million Cubic Feet)

State	June 1990	May 1990	April 1990	March 1990	February 1990	January 1990
Alabama	993	1,628	2,162	2,624	3,006	4,470
Alaska	1,087	1,396	1,734	2,329	2,477	2,346
Arizona	1,835	2,424	2,347	3,169	3,564	3,705
Arkansas	1,073	1,407	2,238	2,825	3,390	4,989
California	17,410	18,552	23,439	27,435	34,812	30,807
Colorado	3,162	5,181	6,989	8,743	9,668	10,854
Connecticut	1,314	1,564	2,673	3,146	3,426	3,825
Delaware	170	233	408	517	516	764
District of Columbia	686	933	1,358	1,755	1,822	1,948
Florida	2,857	3,058	3,272	3,509	3,573	4,435
Georgia	2,638	3,001	4,166	5,368	6,229	8,533
Hawaii	181	174	173	181	181	183
Idaho	357	439	559	917	1,177	1,204
Illinois	5,741	10,096	17,945	22,690	27,016	32,631
Indiana	1,965	3,193	6,091	7,966	9,387	11,697
Iowa	1,549	2,330	4,122	5,532	6,165	7,822
Kansas	3,185	3,456	5,228	5,548	6,715	8,612
Kentucky	1,146	1,575	2,690	3,464	4,229	5,176
Louisiana	1,708	1,855	2,511	2,928	3,243	5,325
Maine	62	95	154	186	200	236
Maryland	1,116	1,535	2,444	3,016	3,074	4,087
Massachusetts	2,504	3,227	4,997	6,077	6,250	7,872
Michigan	5,495	8,936	14,889	20,094	21,945	25,975
Minnesota	2,391	3,801	6,363	9,273	10,712	11,916
Mississippi	1,404	1,695	2,246	2,442	2,936	4,757
Missouri	2,260	3,250	5,617	6,848	7,987	11,672
Montana	490	771	1,005	1,411	1,573	1,763
Nebraska	1,326	1,561	2,959	3,535	4,234	5,019
Nevada	953	989	1,165	1,710	1,929	1,926
New Hampshire	207	288	485	579	753	843
New Jersey	4,685	6,298	10,120	12,388	12,426	15,330
New Mexico	1,082	1,508	2,173	3,068	3,694	4,065
New York	10,377	11,466	18,013	23,236	23,791	25,942
North Carolina	1,342	1,649	2,520	3,165	3,444	5,047
North Dakota	353	567	966	1,145	1,342	1,535
Ohio	4,721	7,256	13,011	19,785	19,091	23,680
Oklahoma	1,886	2,826	4,238	5,176	6,955	9,377
Oregon	1,046	1,147	1,402	2,317	2,740	2,698
Pennsylvania	5,195	6,637	12,117	14,718	15,928	20,108
Rhode Island	244	549	816	851	860	1,138
South Carolina	903	1,123	1,344	1,678	1,755	2,612
South Dakota	281	461	722	998	1,151	1,306
Tennessee	1,906	2,371	3,634	4,359	5,524	8,253
Texas	19,083	16,353	18,719	22,259	20,678	27,205
Utah	581	932	1,304	2,462	3,013	3,105
Vermont	63	108	183	250	269	316
Virginia	1,771	2,332	4,413	4,943	5,003	5,945
Washington	1,857	2,594	3,128	4,275	5,387	4,883
West Virginia	937	1,169	1,947	2,240	2,520	3,481
Wisconsin	1,918	3,620	5,305	8,524	9,180	11,577
Wyoming	420	643	843	1,110	1,228	1,337
Total	127,913	160,253	239,348	304,765	338,168	404,329

See footnote at end of table.

Table 23. Natural Gas Deliveries to Commercial Consumers by State (Continued)
(Million Cubic Feet)

State	Total 1989	December 1989	November 1989	October 1989	September 1989	August 1989
Alabama	26,438	3,503	1,953	1,381	1,187	1,115
Alaska	21,738	2,429	2,144	1,577	1,202	1,091
Arizona	28,580	3,106	2,294	1,633	1,596	1,578
Arkansas	27,284	3,943	1,949	1,246	1,097	1,008
California	259,118	26,192	21,665	19,856	19,452	17,351
Colorado	67,477	8,102	5,441	3,232	2,303	2,119
Connecticut	30,781	3,891	2,324	1,685	1,551	1,579
Delaware	4,184	630	294	182	144	133
District of Columbia	15,741	2,052	1,090	775	712	763
Florida	35,105	3,620	2,868	2,444	2,484	2,369
Georgia	53,114	8,393	4,836	3,477	2,590	2,361
Hawaii	2,129	177	172	179	175	173
Idaho	8,994	1,172	783	433	320	249
Illinois	196,133	33,840	20,169	11,091	6,176	4,862
Indiana	73,613	13,611	7,576	3,850	2,217	1,659
Iowa	46,142	7,110	3,738	2,129	1,247	1,234
Kansas	58,554	6,763	4,386	2,785	3,081	4,812
Kentucky	36,145	6,648	3,327	1,971	1,147	991
Louisiana	26,617	3,454	1,995	1,537	1,405	1,314
Maine	1,660	269	128	96	60	50
Maryland	26,920	3,647	1,801	1,220	978	941
Massachusetts	51,508	6,864	3,647	2,720	1,799	1,894
Michigan	176,181	28,269	15,776	8,855	5,047	4,467
Minnesota	85,183	13,661	8,764	4,718	2,475	2,011
Mississippi	17,568	2,727	1,350	939	754	701
Missouri	63,039	9,903	4,716	2,798	2,021	1,780
Montana	13,141	1,781	1,235	806	442	381
Nebraska	37,351	4,196	2,602	2,109	1,634	4,240
Nevada	15,116	1,690	1,257	954	811	805
New Hampshire	5,371	817	393	248	176	140
New Jersey	117,385	16,342	9,150	6,297	4,638	4,520
New Mexico	28,459	3,830	2,441	1,191	1,034	1,146
New York	196,380	27,650	16,631	11,741	8,812	8,305
North Carolina	33,145	4,396	2,639	1,843	1,534	1,454
North Dakota	10,609	1,506	951	464	340	238
Ohio	161,516	30,143	15,949	8,946	4,397	3,735
Oklahoma	38,493	5,871	2,541	1,527	1,241	1,097
Oregon	20,249	2,363	1,624	972	882	804
Pennsylvania	132,500	21,010	11,588	7,185	4,378	4,161
Rhode Island	8,767	1,014	654	657	560	518
South Carolina	16,525	1,964	1,324	970	866	808
South Dakota	8,826	1,374	851	434	255	197
Tennessee	47,573	7,414	3,774	2,358	1,845	1,661
Texas	184,179	24,013	12,961	10,462	9,509	11,439
Utah	16,522	2,304	1,313	522	390	346
Vermont	2,081	307	189	130	73	57
Virginia	44,181	6,474	3,612	2,192	1,985	1,485
Washington	38,502	4,433	3,366	2,083	1,357	1,548
West Virginia	23,257	3,704	2,036	1,373	859	853
Wisconsin	70,090	11,182	6,386	3,437	1,718	1,499
Wyoming	8,551	1,022	724	396	268	233
Total	2,718,716	390,776	231,374	152,108	113,222	110,276

See footnote at end of table.

Table 23. Natural Gas Deliveries to Commercial Consumers by State (Continued)
(Million Cubic Feet)

State	July 1989	June 1989	May 1989	April 1989	March 1989	February 1989
Alabama	1,872	1,213	1,717	2,366	3,391	3,510
Alaska	1,042	1,287	1,569	1,949	2,258	2,691
Arizona	1,804	1,950	1,992	2,274	2,843	3,570
Arkansas	1,020	1,357	1,261	2,181	3,963	4,338
California	15,319	21,469	19,249	18,656	21,880	29,564
Colorado	2,328	3,082	4,160	6,135	9,208	10,845
Connecticut	1,528	1,625	2,106	2,897	3,937	3,749
Delaware	128	166	249	398	624	605
District of Columbia	692	803	999	1,635	2,066	2,021
Florida	2,525	2,570	2,670	3,083	3,545	3,435
Georgia	2,412	2,341	2,983	3,922	5,166	7,502
Hawaii	182	175	181	175	174	178
Idaho	300	353	408	690	1,156	1,569
Illinois	5,444	5,974	9,306	15,896	25,958	29,585
Indiana	1,579	1,904	3,296	5,767	9,612	11,374
Iowa	1,190	1,380	2,216	4,133	6,928	7,466
Kansas	3,366	2,547	3,660	5,433	6,870	7,697
Kentucky	1,099	1,167	1,766	2,839	4,545	5,506
Louisiana	1,372	1,449	1,754	2,315	3,394	3,298
Maine	51	63	106	160	221	226
Maryland	968	1,154	1,701	2,586	4,247	3,700
Massachusetts	1,726	2,150	3,703	5,392	7,234	6,984
Michigan	4,570	5,954	10,150	16,375	24,717	25,448
Minnesota	2,112	2,416	3,980	6,916	11,411	13,607
Mississippi	718	739	947	1,407	2,411	2,502
Missouri	1,829	2,359	2,799	5,246	9,192	10,280
Montana	330	478	687	1,208	1,841	1,923
Nebraska	3,381	1,757	1,648	2,505	4,252	4,825
Nevada	790	890	1,004	1,100	1,533	2,125
New Hampshire	154	188	339	551	771	753
New Jersey	4,881	5,087	7,587	10,928	15,624	15,506
New Mexico	913	1,211	1,517	2,059	3,377	4,499
New York	8,382	8,747	12,079	18,494	25,344	24,630
North Carolina	1,475	1,568	2,022	3,046	4,367	4,016
North Dakota	269	335	508	1,027	1,514	1,669
Ohio	3,565	3,927	8,237	13,360	21,187	24,435
Oklahoma	1,180	1,278	1,600	2,867	6,195	7,031
Oregon	823	989	1,140	1,724	2,761	3,283
Pennsylvania	4,272	4,649	8,264	11,996	16,983	18,693
Rhode Island	471	457	565	855	1,003	979
South Carolina	908	891	1,094	1,489	2,098	1,936
South Dakota	203	276	413	776	1,253	1,454
Tennessee	1,804	1,918	2,532	4,059	6,390	6,849
Texas	12,862	10,829	11,404	15,884	20,327	23,084
Utah	357	472	653	1,227	2,280	3,376
Vermont	57	66	105	199	283	300
Virginia	1,866	2,129	2,446	4,051	5,721	6,056
Washington	1,671	1,851	2,194	3,672	5,424	5,561
West Virginia	785	881	1,476	2,041	2,807	3,265
Wisconsin	1,562	2,012	3,882	6,662	10,168	10,987
Wyoming	285	368	521	852	1,111	1,414
Total	110,221	120,901	158,845	233,458	341,563	379,899

Notes and Sources: See the last page of this section.

Table 24. Natural Gas Deliveries to Industrial Consumers by State
(Million Cubic Feet)

State	YTD 1990	YTD 1989	YTD 1988	September 1990	August 1990	July 1990
Alabama	104,050	109,389	105,557	10,349	10,928	10,939
Alaska	35,178	46,403	51,898	3,547	3,872	4,004
Arizona	14,729	15,333	17,675	1,395	1,536	1,680
Arkansas	87,099	94,306	76,593	8,085	8,969	9,021
California	401,363	368,349	328,882	50,831	40,670	48,296
Colorado	40,124	38,416	28,643	5,055	5,498	3,770
Connecticut	18,248	14,135	14,320	1,931	2,243	2,003
Delaware	12,719	11,345	11,236	1,489	1,365	1,208
District of Columbia	0	0	0	0	0	0
Florida	65,293	56,816	57,532	8,545	8,782	6,819
Georgia	117,719	114,233	112,123	13,388	12,642	10,682
Hawaii	0	0	0	0	0	0
Idaho	15,517	16,608	15,199	2,021	1,459	1,394
Illinois	197,812	198,072	198,033	18,617	17,384	18,877
Indiana	165,635	161,636	163,760	17,494	16,737	15,985
Iowa	70,448	67,427	77,028	6,909	6,513	6,300
Kansas	87,589	75,951	82,156	9,685	9,356	10,945
Kentucky	47,020	46,158	43,250	5,062	4,968	4,419
Louisiana	700,837	645,522	588,198	78,774	84,693	76,180
Maine	1,307	1,003	862	176	155	148
Maryland	44,628	50,436	47,743	4,787	4,348	3,971
Massachusetts	30,705	26,864	22,550	3,558	5,095	3,285
Michigan	138,254	143,884	142,059	12,422	13,458	11,671
Minnesota	62,567	59,230	56,236	6,783	6,844	6,383
Mississippi	78,268	72,845	69,696	9,767	9,520	9,198
Missouri	43,185	45,460	40,313	4,362	4,318	4,196
Montana	5,943	6,686	5,909	670	605	571
Nebraska	19,187	24,883	24,290	1,835	1,957	1,873
Nevada	5,470	5,770	5,336	617	592	587
New Hampshire	2,101	1,649	1,458	305	256	157
New Jersey	61,583	63,265	59,097	7,095	6,960	6,139
New Mexico	12,136	13,586	10,816	1,504	1,497	1,418
New York	70,706	70,097	67,989	7,079	7,668	6,426
North Carolina	60,596	62,168	54,546	7,308	7,162	6,086
North Dakota	2,795	3,119	2,718	286	280	239
Ohio	190,969	203,102	203,154	19,525	16,442	16,434
Oklahoma	130,350	131,606	121,082	15,107	15,646	15,483
Oregon	40,259	31,731	29,180	4,678	5,803	5,174
Pennsylvania	172,378	181,017	169,399	19,254	18,344	17,007
Rhode Island	3,122	3,636	3,488	397	331	189
South Carolina	64,538	56,087	52,594	9,076	9,787	8,846
South Dakota	3,746	3,544	3,417	427	431	417
Tennessee	78,889	79,254	77,131	7,322	8,988	8,705
Texas	1,492,761	1,317,660	1,252,341	167,958	172,507	168,467
Utah	24,327	24,418	22,142	2,333	2,467	2,372
Vermont	1,838	1,399	1,277	249	296	204
Virginia	47,138	45,062	39,842	6,499	6,739	6,434
Washington	56,425	53,390	52,230	5,998	5,906	6,028
West Virginia	33,835	36,771	29,740	3,845	3,998	4,099
Wisconsin	85,924	91,072	88,818	8,503	8,058	7,415
Wyoming	12,625	11,415	11,251	941	1,519	1,569
Total	5,259,936	5,002,213	4,740,786	583,844	585,594	563,713

See footnotes at end of table

Table 24. Natural Gas Deliveries to Industrial Consumers by State (Continued)
(Million Cubic Feet)

State	June 1990	May 1990	April 1990	March 1990	February 1990	January 1990
Alabama	10,524	10,734	12,064	12,713	12,148	13,651
Alaska	3,972	2,767	4,312	4,486	4,072	4,146
Arizona	1,585	1,423	1,632	2,010	1,747	1,721
Arkansas	8,293	8,796	11,135	11,088	10,503	11,209
California	46,303	42,565	51,243	33,844	39,757	47,854
Colorado	3,933	3,475	3,872	4,702	4,969	4,850
Connecticut	1,904	2,055	2,472	2,127	2,013	1,500
Delaware	1,362	1,396	1,376	1,546	1,285	1,692
District of Columbia	0	0	0	0	0	0
Florida	6,792	7,020	6,342	6,705	6,470	7,818
Georgia	11,577	13,260	13,108	14,383	13,758	14,921
Hawaii	0	0	0	0	0	0
Idaho	1,413	1,653	1,611	1,974	1,880	2,112
Illinois	18,674	20,229	23,645	26,850	25,092	28,444
Indiana	16,207	18,970	18,983	20,611	18,986	21,662
Iowa	7,842	8,252	8,308	8,537	8,444	9,343
Kansas	8,890	10,513	9,226	9,810	9,404	9,760
Kentucky	4,851	4,899	5,356	5,631	5,631	6,203
Louisiana	82,663	84,872	74,393	73,753	71,670	73,839
Maine	145	155	250	78	121	79
Maryland	4,347	4,053	5,108	5,767	6,336	5,911
Massachusetts	3,361	2,910	4,138	2,977	2,520	2,861
Michigan	12,599	14,202	16,743	18,242	18,260	20,657
Minnesota	6,042	6,624	7,242	7,741	7,358	7,550
Mississippi	8,810	8,917	7,586	7,740	8,045	8,685
Missouri	4,295	4,883	4,793	5,199	5,125	6,014
Montana	547	692	657	689	645	867
Nebraska	1,873	2,165	2,237	2,471	2,450	2,326
Nevada	567	592	615	636	597	667
New Hampshire	209	325	296	166	179	208
New Jersey	6,250	6,528	7,524	8,268	6,629	6,190
New Mexico	1,259	1,317	1,413	1,229	1,202	1,297
New York	6,680	7,612	7,751	9,033	8,984	9,473
North Carolina	5,909	6,814	6,909	7,341	6,533	6,534
North Dakota	250	312	329	357	362	380
Ohio	18,966	20,335	23,172	24,336	24,805	26,954
Oklahoma	12,979	13,349	13,986	13,596	14,213	15,991
Oregon	3,348	3,695	3,594	4,105	5,424	4,438
Pennsylvania	18,290	17,726	20,274	20,253	20,411	20,819
Rhode Island	326	400	460	361	295	363
South Carolina	6,542	6,299	6,312	6,474	5,442	5,760
South Dakota	434	530	531	422	452	396
Tennessee	8,273	9,041	8,900	9,201	8,973	9,486
Texas	174,702	192,326	179,213	158,118	130,931	148,539
Utah	2,722	2,566	2,687	2,990	3,070	3,120
Vermont	164	185	198	184	162	196
Virginia	5,238	4,761	4,121	4,319	4,311	4,716
Washington	6,502	6,182	5,753	6,492	6,390	7,174
West Virginia	4,039	3,724	3,568	3,747	3,444	3,371
Wisconsin	7,440	8,753	9,695	11,773	11,547	12,740
Wyoming	1,519	1,348	1,405	1,385	1,366	1,573
Total	571,412	602,005	606,437	586,459	554,410	606,062

See footnotes at end of table

Table 24. Natural Gas Deliveries to Industrial Consumers by State (Continued)
(Million Cubic Feet)

State	Total 1989	December 1989	November 1989	October 1989	September 1989	August 1989
Alabama	149,047	13,173	13,623	12,863	11,462	11,536
Alaska	59,341	4,501	3,996	4,442	4,738	4,954
Arizona	20,705	1,580	1,919	1,874	1,566	1,655
Arkansas	129,333	11,015	11,959	12,052	8,338	9,342
California	507,948	47,723	42,439	49,435	47,977	45,858
Colorado	51,348	4,589	4,180	4,163	3,891	5,291
Connecticut	19,724	1,644	2,103	1,841	1,396	1,272
Delaware	15,141	1,217	1,358	1,221	1,155	957
District of Columbia	0	0	0	0	0	0
Florida	75,485	6,625	6,068	5,978	5,530	5,554
Georgia	152,516	10,125	13,754	14,404	11,965	13,104
Hawaii	0	0	0	0	0	0
Idaho	22,903	2,228	2,093	1,974	1,723	1,385
Illinois	278,826	32,148	26,153	22,453	18,976	17,567
Indiana	219,952	21,374	19,190	17,752	15,434	15,502
Iowa	89,347	7,055	7,643	7,221	6,884	6,339
Kansas	100,623	8,892	8,446	7,334	6,188	7,328
Kentucky	64,003	6,970	5,767	5,108	4,052	4,043
Louisiana	897,754	89,418	87,933	74,882	68,000	69,899
Maine	1,374	125	131	114	120	111
Maryland	66,271	5,800	5,245	4,790	4,682	4,709
Massachusetts	35,588	2,620	2,919	3,184	2,832	2,782
Michigan	192,981	19,140	16,297	13,650	12,624	11,841
Minnesota	81,479	7,596	7,834	6,820	5,986	6,111
Mississippi	99,790	8,790	9,223	8,932	7,789	8,689
Missouri	62,680	6,612	5,379	5,230	4,282	4,203
Montana	9,903	1,070	1,061	1,084	843	685
Nebraska	30,545	2,175	2,058	1,428	2,680	2,208
Nevada	7,859	646	768	674	631	700
New Hampshire	2,241	179	157	256	200	153
New Jersey	84,771	6,897	6,758	7,853	7,499	6,774
New Mexico	18,710	1,943	1,690	1,491	1,397	1,589
New York	96,864	10,813	8,467	7,488	7,157	6,523
North Carolina	82,629	5,036	7,736	7,689	6,442	6,814
North Dakota	4,525	484	482	439	291	223
Ohio	278,205	28,523	24,562	22,017	18,720	18,830
Oklahoma	180,182	17,255	15,500	15,821	13,959	14,811
Oregon	43,752	4,090	4,015	3,914	3,657	3,588
Pennsylvania	242,526	21,766	20,721	19,022	17,914	18,196
Rhode Island	4,624	310	279	400	412	461
South Carolina	74,534	4,052	6,988	7,407	6,317	7,320
South Dakota	4,962	491	472	454	316	309
Tennessee	106,863	9,399	9,190	9,017	8,109	8,288
Texas	1,787,888	170,883	154,501	144,846	151,964	157,335
Utah	33,963	3,784	3,015	2,745	2,510	2,510
Vermont	1,901	119	203	179	115	101
Virginia	57,761	3,419	4,647	4,633	4,437	4,330
Washington	73,239	6,863	6,642	6,344	6,024	5,427
West Virginia	49,943	4,694	4,190	4,289	4,156	3,911
Wisconsin	127,439	15,030	11,861	9,475	7,388	7,328
Wyoming	16,217	1,713	1,593	1,497	1,255	1,044
Total	6,816,200	642,602	603,204	568,180	531,985	539,493

See footnotes at end of table

Table 24. Natural Gas Deliveries to Industrial Consumers by State (Continued)
(Million Cubic Feet)

State	July 1989	June 1989	May 1989	April 1989	March 1989	February 1989
Alabama	10,909	11,643	12,378	12,704	13,348	12,184
Alaska	5,297	5,573	5,123	5,517	5,618	4,671
Arizona	1,590	1,753	1,887	1,613	1,681	1,613
Arkansas	10,474	9,663	9,751	11,392	13,424	11,511
California	42,363	41,341	42,425	34,434	42,904	28,322
Colorado	3,308	3,456	3,932	4,517	4,657	4,784
Connecticut	1,223	1,480	1,610	1,927	1,029	1,641
Delaware	1,044	1,332	1,581	1,047	1,218	1,230
District of Columbia	0	0	0	0	0	0
Florida	5,734	6,021	6,725	6,379	7,003	6,746
Georgia	11,723	12,573	12,878	13,035	14,086	11,824
Hawaii	0	0	0	0	0	0
Idaho	1,437	1,779	2,024	1,995	2,127	1,973
Illinois	16,750	16,046	20,708	22,567	27,758	29,869
Indiana	15,883	16,315	18,391	18,725	21,073	20,547
Iowa	5,957	6,757	6,880	7,837	8,850	8,943
Kansas	8,167	7,904	8,458	8,929	10,005	8,978
Kentucky	3,903	4,596	4,929	5,309	6,273	6,485
Louisiana	68,123	70,236	72,135	70,526	75,115	73,998
Maine	102	110	130	130	101	104
Maryland	4,703	5,102	5,333	6,106	6,932	6,527
Massachusetts	2,544	2,933	3,714	3,350	3,429	2,598
Michigan	12,084	13,442	14,840	17,999	20,718	19,949
Minnesota	5,924	5,549	5,857	6,607	8,147	7,329
Mississippi	7,678	8,323	8,080	8,487	7,083	7,554
Missouri	4,096	4,321	4,759	5,393	6,140	6,328
Montana	594	658	678	756	766	756
Nebraska	2,662	2,574	2,754	2,721	3,201	3,001
Nevada	627	625	647	649	623	582
New Hampshire	157	198	239	259	144	141
New Jersey	6,174	6,996	7,213	7,499	8,045	6,167
New Mexico	1,294	1,313	1,765	1,527	1,303	1,487
New York	6,335	6,930	6,790	8,376	9,782	8,752
North Carolina	6,116	6,812	7,299	7,624	7,217	6,588
North Dakota	238	305	362	383	426	403
Ohio	17,728	19,118	21,669	25,018	27,485	27,034
Oklahoma	16,539	14,439	13,217	14,003	15,565	14,199
Oregon	3,280	3,102	3,501	3,490	4,052	3,268
Pennsylvania	17,642	18,101	20,570	20,953	23,120	22,363
Rhode Island	325	440	515	462	351	325
South Carolina	6,703	7,174	6,823	6,577	6,194	4,668
South Dakota	300	363	373	418	447	493
Tennessee	8,002	8,403	7,933	9,304	9,354	9,728
Texas	155,422	147,747	140,214	144,112	139,485	139,004
Utah	1,949	2,599	2,518	2,718	3,088	3,153
Vermont	96	122	140	187	211	193
Virginia	4,389	5,132	4,832	6,248	5,474	4,980
Washington	5,921	5,357	5,834	5,962	6,494	5,992
West Virginia	3,851	3,584	4,038	4,134	4,053	4,339
Wisconsin	6,674	7,528	8,609	10,971	13,630	14,915
Wyoming	1,012	1,107	1,254	1,238	1,374	1,448
Total	525,048	529,173	544,317	562,716	601,503	569,695

Notes and Sources. See the last page of this section.

Table 25. Natural Gas Deliveries to Electrical Utility^a Consumers by State
(Million Cubic Feet)

State	YTD 1990	YTD 1989	YTD 1988	September 1990	August 1990	July 1990
Alabama	3,184	1,359	2,308	591	473	520
Alaska	24,818	24,207	22,148	2,772	2,787	2,819
Arizona	22,599	39,344	21,989	1,958	1,908	3,813
Arkansas	25,337	22,554	19,105	4,284	4,976	6,019
California	358,880	384,823	457,684	49,434	57,965	59,280
Colorado	4,141	6,586	5,711	471	694	503
Connecticut	3,273	2,415	1,258	1,192	1,157	681
Delaware	8,398	6,331	2,599	871	1,867	1,279
District of Columbia	0	0	0	0	0	0
Florida	141,766	147,495	134,921	16,953	18,275	18,277
Georgia	1,689	577	1,468	531	572	222
Hawaii	0	0	2	0	0	0
Idaho	0	0	0	0	0	0
Illinois	6,913	5,533	4,726	1,024	1,127	1,077
Indiana	4,493	2,823	2,109	480	1,009	202
Iowa	2,581	1,807	5,019	554	407	373
Kansas	22,619	16,465	16,369	3,429	4,255	5,052
Kentucky	224	288	390	31	22	25
Louisiana	204,394	178,695	206,824	29,132	32,495	33,089
Maine	0	0	0	0	0	0
Maryland	12,734	15,478	4,947	3,069	4,259	2,055
Massachusetts	42,008	38,383	17,859	6,438	8,056	7,320
Michigan	17,304	15,650	11,588	2,455	1,967	1,772
Minnesota	4,481	3,339	4,219	1,152	720	658
Mississippi	47,791	36,276	29,403	7,720	10,479	10,831
Missouri	3,232	1,010	1,456	1,070	1,174	304
Montana	313	241	220	59	52	29
Nebraska	2,340	1,870	1,604	627	334	144
Nevada	20,786	18,260	8,883	3,026	3,087	3,731
New Hampshire	0	23	41	0	0	0
New Jersey	36,226	49,630	48,246	7,461	10,181	7,332
New Mexico	21,101	20,625	15,886	2,526	2,763	3,011
New York	160,777	150,375	132,872	25,809	26,558	23,069
North Carolina	1,964	1,361	917	299	351	404
North Dakota	0	0	0	0	0	0
Ohio	995	712	784	337	279	73
Oklahoma	135,395	137,181	139,260	18,056	20,117	19,293
Oregon	5,561	7,133	0	781	1,674	1,375
Pennsylvania	1,768	3,147	2,077	238	234	247
Rhode Island	4,351	1,672	186	1,015	1,184	602
South Carolina	6,192	2,221	2,292	1,898	2,020	1,798
South Dakota	165	116	221	69	59	9
Tennessee	537	7	225	78	113	223
Texas	791,406	798,172	833,136	100,312	119,334	106,069
Utah	498	464	182	2	2	7
Vermont	568	0	0	119	174	99
Virginia	3,790	3,709	1,059	1,092	1,019	980
Washington	107	8,034	1,739	2	12	69
West Virginia	104	82	61	7	4	9
Wisconsin	2,065	1,531	1,965	385	241	218
Wyoming	47	54	131	4	5	5
Total	2,159,890	2,158,053	2,166,059	299,595	346,438	324,965

See footnotes at end of table.

Table 25. Natural Gas Deliveries to Electrical Utility^a Consumers by State (Continued)
(Million Cubic Feet)

State	June 1990	May 1990	April 1990	March 1990	February 1990	January 1990
Alabama	542	319	288	213	130	109
Alaska	2,649	2,570	2,535	2,860	2,920	2,904
Arizona	4,130	2,583	2,092	2,219	1,974	1,922
Arkansas	4,491	2,612	745	617	973	640
California	40,590	31,820	34,310	31,463	24,795	29,203
Colorado	518	469	375	499	258	354
Connecticut	72	168	0	1	1	1
Delaware	1,081	680	523	927	819	351
District of Columbia	0	0	0	0	0	0
Florida	14,856	17,557	16,239	15,353	12,531	11,725
Georgia	204	74	34	29	12	11
Hawaii	0	0	0	0	0	0
Idaho	0	0	0	0	0	0
Illinois	1,125	681	508	547	407	417
Indiana	243	634	561	499	433	432
Iowa	440	301	176	138	101	91
Kansas	4,052	2,071	925	1,121	819	895
Kentucky	26	12	26	36	32	14
Louisiana	32,409	21,448	16,432	16,420	11,415	11,554
Maine	0	0	0	0	0	0
Maryland	1,147	556	692	592	163	201
Massachusetts	4,901	7,819	5,734	1,165	557	18
Michigan	2,211	1,718	1,185	2,118	1,650	2,228
Minnesota	467	376	311	348	206	243
Mississippi	4,612	3,585	3,331	3,071	2,016	2,146
Missouri	395	83	52	61	43	50
Montana	48	27	31	22	19	26
Nebraska	239	370	336	185	46	59
Nevada	2,754	2,458	2,117	1,599	828	1,186
New Hampshire	0	0	0	0	0	0
New Jersey	3,853	1,594	3,273	1,631	686	215
New Mexico	3,366	2,751	2,213	1,931	997	1,543
New York	20,603	18,466	17,054	17,193	6,973	5,252
North Carolina	390	163	109	102	76	70
North Dakota	0	0	0	0	0	0
Ohio	80	49	73	34	30	40
Oklahoma	17,968	13,624	12,146	11,907	10,589	11,695
Oregon	0	0	0	0	1,496	235
Pennsylvania	161	156	222	161	156	173
Rhode Island	403	629	408	85	0	25
South Carolina	404	28	13	12	11	8
South Dakota	24	1	1	1	0	1
Tennessee	113	0	0	10	0	0
Texas	122,624	100,463	71,271	66,922	46,978	57,433
Utah	81	122	130	153	0	1
Vermont	55	49	46	3	2	21
Virginia	660	25	13	0	0	1
Washington	1	9	0	2	9	3
West Virginia	7	10	16	2	18	31
Wisconsin	284	280	281	177	101	98
Wyoming	6	7	5	5	5	5
Total	295,305	239,415	196,830	182,435	131,273	143,634

See footnotes at end of table

Table 25. Natural Gas Deliveries to Electrical Utility^a Consumers by State (Continued)
(Million Cubic Feet)

State	Total 1989	December 1989	November 1989	October 1989	September 1989	August 1989
Alabama	1,707	152		113	119	130
Alaska	32,746	2,711	2,849	2,849	2,835	2,777
Arizona	50,807	3,252	4,774	3,436	5,313	5,758
Arkansas	29,462	1,864	2,656	2,388	1,792	4,877
California	517,700	26,365	44,914	61,601	57,614	53,074
Colorado	8,375	659	473	659	526	432
Connecticut	3,291	1	19	858	700	141
Delaware	7,999	359	369	940	1,034	1,355
District of Columbia	0	0	0	0	0	0
Florida	186,814	9,698	13,249	16,371	19,164	19,183
Georgia	684	37	18	52	24	33
Hawaii	0	0	0	0	0	0
Idaho	0	0	0	0	0	0
Illinois	6,967	648	450	336	452	646
Indiana	4,075	550	431	270	228	129
Iowa	2,402	117	116	363	239	201
Kansas	18,741	923	713	641	1,303	4,252
Kentucky	328	21	3	16	11	18
Louisiana	227,082	13,132	14,228	21,027	22,293	26,898
Maine	0	0	0	0	0	0
Maryland	19,184	250	377	3,079	1,480	2,406
Massachusetts	48,448	6	1,522	8,538	6,832	5,808
Michigan	18,782	1,187	1,063	881	1,503	1,316
Minnesota	4,321	221	396	366	357	641
Mississippi	44,927	2,485	2,099	4,068	4,529	6,883
Missouri	1,242	104	56	73	78	176
Montana	336	31	28	35	14	29
Nebraska	2,593	71	357	295	167	189
Nevada	23,210	1,291	1,610	2,048	2,545	3,484
New Hampshire	23	0	0	1	5	6
New Jersey	54,778	724	1,521	2,901	4,558	7,203
New Mexico	27,365	1,814	2,223	2,702	2,775	2,592
New York	182,000	3,242	10,283	18,102	19,425	21,814
North Carolina	1,673	105	118	88	246	237
North Dakota	1	0	0	0	0	0
Ohio	983	168	41	63	64	189
Oklahoma	178,021	14,601	12,468	13,771	15,095	18,485
Oregon	12,942	2,185	1,747	1,877	1,546	274
Pennsylvania	4,022	456	256	164	240	288
Rhode Island	2,147	0	68	407	242	436
South Carolina	2,705	107	179	198	377	371
South Dakota	132	3	14	1	1	6
Tennessee	18	0	11	0	2	5
Texas	1,023,793	79,807	65,143	80,672	89,939	114,347
Utah	636	93	77	2	0	0
Vermont	37	1	36	0	0	0
Virginia	3,796	19	35	32	51	252
Washington	8,320	241	39	6	221	289
West Virginia	124	20	6	16	7	5
Wisconsin	2,076	246	127	173	105	166
Wyoming	85	9	6	17	5	6
Total	2,767,903	169,975	187,381	252,494	266,052	307,804

See footnotes at end of table.

Table 25. Natural Gas Deliveries to Electrical Utility^a Consumers by State (Continued)
(Million Cubic Feet)

State	July 1989	June 1989	May 1989	April 1989	March 1989	February 1989
Alabama	202	249	205	93	100	157
Alaska	2,616	2,366	2,488	2,527	2,773	2,746
Arizona	7,551	4,713	4,387	6,183	2,632	1,129
Arkansas	3,422	2,153	1,300	3,384	3,853	1,450
California	61,693	42,285	28,043	36,696	37,880	36,214
Colorado	462	264	474	787	574	1,202
Connecticut	5	232	761	463	112	0
Delaware	1,185	560	145	809	737	389
District of Columbia	0	0	0	0	0	0
Florida	19,071	18,536	18,055	16,129	14,914	10,794
Georgia	156	160	42	70	46	15
Hawaii	0	0	0	0	0	0
Idaho	0	0	0	0	0	0
Illinois	794	1,081	673	404	486	532
Indiana	260	60	464	412	424	401
Iowa	244	183	199	181	246	132
Kansas	4,247	2,338	989	986	793	764
Kentucky	46	50	26	28	15	25
Louisiana	26,452	24,374	24,177	15,948	16,150	11,604
Maine	0	0	0	0	0	0
Maryland	1,876	2,454	2,518	3,410	1,134	69
Massachusetts	7,075	6,054	5,133	5,279	2,050	54
Michigan	1,921	1,727	1,844	2,015	1,535	1,911
Minnesota	694	326	195	314	285	263
Mississippi	6,241	5,083	5,984	3,022	2,482	1,076
Missouri	229	172	110	74	59	68
Montana	25	20	30	24	37	34
Nebraska	392	113	89	428	189	249
Nevada	3,328	2,012	1,890	2,147	1,359	692
New Hampshire	4	3	1	0	1	2
New Jersey	9,002	9,075	5,522	5,913	5,930	1,360
New Mexico	2,905	2,276	2,280	2,349	2,078	1,679
New York	22,458	21,761	22,442	20,996	14,860	4,189
North Carolina	286	344	82	36	42	35
North Dakota	0	0	0	0	0	0
Ohio	154	159	39	33	22	29
Oklahoma	17,523	14,333	18,549	15,212	12,633	12,840
Oregon	946	2,086	385	1,896	0	0
Pennsylvania	399	367	335	324	516	411
Rhode Island	398	276	235	85	0	0
South Carolina	550	653	87	86	66	27
South Dakota	39	0	11	8	49	1
Tennessee	0	0	0	0	0	0
Texas	110,323	87,945	97,663	82,601	78,761	76,466
Utah	1	2	107	136	134	80
Vermont	0	0	0	0	0	0
Virginia	779	1,189	770	601	20	16
Washington	1,669	134	0	916	3,162	1,640
West Virginia	9	11	13	5	9	19
Wisconsin	325	158	122	94	191	201
Wyoming	6	7	6	6	3	4
Total	318,005	258,343	248,869	233,116	209,343	170,969

^a Includes all steam electric utility generating plants with a combined capacity of 50 megawatts or greater.

Notes and Sources: See the last page of this section.

Table 26. Natural Gas Deliveries to All Consumers by State
(Million Cubic Feet)

State	YTD 1990	YTD 1989	YTD 1988	September 1990	August 1990	July 1990
Alabama	162,072	165,583	165,692	13,529	13,969	14,087
Alaska	83,450	95,763	97,449	7,994	8,143	8,293
Arizona	81,693	96,635	83,170	5,829	5,827	8,052
Arkansas	161,483	168,414	150,102	14,600	16,100	17,226
California	1,348,666	1,327,596	1,351,562	145,558	138,633	151,196
Colorado	166,469	165,477	157,652	9,920	10,672	8,912
Connecticut	68,629	67,919	63,556	5,593	5,643	5,141
Delaware	29,869	26,505	22,626	2,687	3,537	2,810
District of Columbia	22,488	24,865	24,403	1,190	1,034	1,033
Florida	246,427	240,138	233,141	28,608	30,142	28,321
Georgia	218,762	216,445	229,558	19,323	18,635	16,164
Hawaii	2,062	2,030	1,990	224	220	244
Idaho	26,278	29,658	26,790	2,499	1,898	1,860
Illinois	601,101	660,449	676,127	37,973	34,616	35,602
Indiana	312,647	315,896	320,239	23,648	22,720	20,886
Iowa	156,978	158,264	170,887	10,325	9,659	9,538
Kansas	212,109	193,075	204,207	18,938	20,047	22,933
Kentucky	105,740	113,447	113,961	7,491	7,349	6,853
Louisiana	974,649	885,161	862,846	111,714	120,885	113,170
Maine	2,836	2,634	2,332	260	222	219
Maryland	127,275	140,964	127,680	11,001	11,612	9,342
Massachusetts	191,082	186,627	158,633	14,306	17,841	15,791
Michigan	496,424	532,545	529,211	29,523	28,723	26,008
Minnesota	188,283	200,898	197,101	12,868	11,919	11,393
Mississippi	172,020	140,770	133,413	19,887	22,317	22,463
Missouri	175,960	185,158	184,023	10,336	10,121	9,425
Montana	25,459	29,112	26,301	1,531	1,403	1,317
Nebraska	79,045	86,944	89,482	5,827	5,832	7,901
Nevada	49,445	47,548	36,979	4,960	5,392	5,808
New Hampshire	10,064	10,225	9,568	636	537	454
New Jersey	295,980	336,039	316,946	25,264	26,623	23,475
New Mexico	74,416	75,182	71,673	5,802	5,894	6,065
New York	624,732	623,613	597,629	52,164	52,548	49,184
North Carolina	109,785	115,428	106,790	9,890	9,631	8,556
North Dakota	15,978	18,009	16,556	874	743	743
Ohio	500,112	541,421	556,532	32,470	27,883	28,199
Oklahoma	351,024	350,724	352,875	35,978	38,733	37,784
Oregon	75,572	71,136	58,844	6,811	8,803	8,072
Pennsylvania	441,532	467,008	458,305	32,366	28,860	27,732
Rhode Island	26,444	25,105	23,113	2,461	2,361	1,686
South Carolina	96,456	84,991	83,037	12,229	12,991	11,854
South Dakota	16,304	17,791	17,672	964	922	878
Tennessee	143,812	148,605	147,078	10,002	11,837	11,560
Texas	2,651,061	2,412,200	2,377,203	290,956	317,713	303,870
Utah	67,002	71,153	67,647	3,931	4,070	4,066
Vermont	5,210	4,365	4,001	503	573	393
Virginia	118,111	123,283	113,831	10,955	10,988	10,696
Washington	109,336	118,206	106,345	8,512	8,186	8,781
West Virginia	73,146	78,765	73,024	5,536	5,479	5,583
Wisconsin	211,800	231,400	225,243	14,287	12,562	11,770
Wyoming	27,424	26,755	26,739	1,444	2,049	2,173
Total	12,534,698	12,457,332	12,252,372	1,142,776	1,175,096	1,145,561

See footnotes at end of tables.

Table 26. Natural Gas Deliveries to All Consumers by State (Continued)
(Million Cubic Feet)

State	June 1990	May 1990	April 1990	March 1990	February 1990	January 1990
Alabama	13,742	15,431	18,804	20,992	22,008	29,510
Alaska	8,213	7,443	9,669	11,294	11,396	11,005
Arizona	8,669	7,823	8,217	11,338	12,737	13,201
Arkansas	15,240	15,004	17,976	19,217	20,492	25,628
California	129,484	124,015	146,725	153,355	173,197	186,503
Colorado	11,863	16,475	21,249	26,753	28,646	31,979
Connecticut	4,600	5,934	8,758	10,146	10,969	11,845
Delaware	2,873	2,757	3,103	3,996	3,688	4,418
District of Columbia	1,301	1,809	2,928	3,801	4,084	5,308
Florida	25,301	28,557	27,047	27,004	24,248	27,199
Georgia	17,686	20,254	23,939	30,243	32,224	40,294
Hawaii	230	220	223	236	233	232
Idaho	2,085	2,507	2,721	3,832	4,297	4,579
Illinois	36,454	51,721	75,155	96,004	109,304	124,272
Indiana	22,392	29,847	38,920	46,290	48,949	58,995
Iowa	12,264	15,022	19,884	23,734	25,289	31,263
Kansas	18,605	20,564	22,971	25,637	27,982	34,432
Kentucky	7,621	8,891	12,994	15,390	18,158	20,993
Louisiana	119,404	111,392	98,450	99,973	94,119	105,542
Maine	233	293	464	336	397	412
Maryland	9,305	9,751	15,199	18,292	18,667	24,106
Massachusetts	15,664	20,964	26,204	24,737	24,645	30,330
Michigan	31,054	43,535	63,445	82,547	88,529	103,060
Minnesota	12,209	16,009	22,877	30,168	33,342	37,498
Mississippi	16,125	15,981	16,271	17,189	17,658	24,129
Missouri	10,731	14,453	22,216	26,388	29,842	42,448
Montana	1,791	2,602	3,163	4,037	4,502	5,113
Nebraska	4,731	6,303	9,373	11,297	13,009	14,772
Nevada	4,980	4,824	4,924	5,958	6,097	6,502
New Hampshire	663	986	1,398	1,514	1,771	2,105
New Jersey	20,587	23,443	37,630	44,060	42,727	52,171
New Mexico	6,823	7,364	8,517	10,353	10,968	12,630
New York	51,251	57,940	77,692	96,271	90,758	96,924
North Carolina	8,593	10,222	12,819	14,989	14,939	20,146
North Dakota	917	1,420	2,178	2,597	3,045	3,461
Ohio	33,208	44,159	63,963	81,615	89,597	99,017
Oklahoma	35,066	33,875	37,097	39,049	42,102	51,340
Oregon	5,513	6,211	6,683	9,407	13,171	10,901
Pennsylvania	32,150	37,739	57,116	67,026	70,792	87,751
Rhode Island	1,736	2,757	3,491	3,671	3,605	4,676
South Carolina	8,296	8,199	9,234	10,456	9,845	13,352
South Dakota	1,065	1,363	2,058	2,639	3,045	3,370
Tennessee	11,551	13,456	16,786	18,949	20,782	28,889
Texas	328,025	323,834	289,948	278,566	232,032	286,117
Utah	5,263	6,030	7,194	10,936	12,582	12,930
Vermont	354	456	620	704	720	887
Virginia	9,381	9,492	13,085	15,940	16,400	21,174
Washington	10,130	11,129	11,900	15,628	17,596	17,474
West Virginia	6,036	6,674	8,981	10,223	10,739	13,895
Wisconsin	12,943	19,102	25,091	34,954	37,755	43,336
Wyoming	2,524	2,840	3,385	3,997	4,278	4,734
Total	1,156,928	1,249,073	1,440,735	1,623,726	1,657,955	1,942,848

See footnotes at end of tables.

Table 26. Natural Gas Deliveries to All Consumers by State (Continued)
(Million Cubic Feet)

State	Total 1989	December 1989	November 1989	October 1989	September 1989	August 1989
Alabama	225,124	24,040	19,291	16,211	14,167	14,159
Alaska	127,414	11,296	10,594	9,762	9,311	9,192
Arizona	127,177	11,883	10,755	7,901	9,308	9,768
Arkansas	228,392	23,178	19,551	17,248	12,466	16,364
California	1,799,042	163,384	149,088	158,974	149,227	139,259
Colorado	218,766	24,416	17,069	11,804	9,320	10,121
Connecticut	94,484	12,527	7,666	6,370	4,785	3,988
Delaware	34,919	3,290	2,506	2,618	2,539	2,634
District of Columbia	33,174	4,689	2,189	1,430	1,207	1,246
Florida	310,493	21,767	23,157	25,431	27,819	27,722
Georgia	309,970	40,687	29,715	23,123	18,044	18,289
Hawaii	2,694	224	217	222	220	215
Idaho	40,679	4,641	3,644	2,737	2,264	1,779
Illinois	978,413	160,338	97,901	59,725	39,136	32,963
Indiana	453,526	65,183	42,379	30,067	21,834	20,158
Iowa	215,294	26,682	17,409	12,939	10,160	9,300
Kansas	253,952	28,272	18,944	13,661	12,528	18,079
Kentucky	165,562	26,673	15,238	10,204	6,656	6,389
Louisiana	1,209,158	115,718	108,321	99,958	93,732	100,137
Maine	3,672	490	305	244	202	181
Maryland	187,512	21,772	12,553	12,223	9,318	10,127
Massachusetts	247,205	25,714	15,583	19,281	14,363	13,168
Michigan	749,612	108,871	64,815	43,380	28,901	25,582
Minnesota	287,891	41,598	28,061	17,333	11,500	11,030
Mississippi	188,597	18,242	14,605	14,981	13,966	17,102
Missouri	256,105	38,207	19,591	13,148	9,493	8,891
Montana	41,575	5,400	4,052	3,010	1,867	1,530
Nebraska	115,293	13,739	8,805	5,804	5,693	7,645
Nevada	62,950	5,986	5,035	4,380	4,542	5,467
New Hampshire	13,925	1,922	998	779	549	426
New Jersey	452,476	57,310	33,144	25,984	21,978	23,275
New Mexico	101,126	11,333	8,329	6,283	5,970	6,062
New York	839,957	98,996	63,958	53,391	44,908	45,831
North Carolina	156,105	16,403	13,316	10,958	8,968	9,200
North Dakota	24,959	3,401	2,249	1,302	871	626
Ohio	799,852	128,237	78,522	51,673	32,994	30,016
Oklahoma	468,488	48,765	35,307	33,690	32,180	36,047
Oregon	99,448	11,524	9,220	7,568	6,666	5,215
Pennsylvania	649,804	88,193	55,008	39,594	29,248	28,658
Rhode Island	33,821	4,068	2,327	2,320	1,711	1,879
South Carolina	114,237	10,035	10,016	9,195	7,906	8,827
South Dakota	25,263	3,633	2,413	1,424	870	733
Tennessee	203,588	25,403	16,526	13,056	11,000	10,914
Texas	3,225,961	318,473	249,532	245,758	259,280	290,332
Utah	96,288	12,103	8,045	4,987	4,222	4,091
Vermont	6,145	781	593	406	230	196
Virginia	167,450	21,385	13,093	9,689	7,847	7,407
Washington	158,420	16,628	13,531	10,055	8,572	8,064
West Virginia	110,452	14,800	9,471	7,416	5,845	5,463
Wisconsin	326,613	47,119	28,957	19,137	12,383	11,213
Wyoming	36,633	4,157	3,296	2,427	1,878	1,542
Total	17,079,657	1,993,577	1,426,889	1,201,260	1,050,642	1,078,505

See footnotes at end of tables.

Table 26. Natural Gas Deliveries to All Consumers by State (Continued)
(Million Cubic Feet)

State	July 1989	June 1989	May 1989	April 1989	March 1989	February 1989
Alabama	14,233	15,007	17,145	19,867	24,202	22,867
Alaska	9,388	9,864	10,037	11,215	12,215	12,257
Arizona	11,824	9,509	9,472	11,745	10,092	11,224
Arkansas	16,153	14,576	14,239	20,793	27,976	24,418
California	142,104	131,676	120,879	127,618	156,443	169,917
Colorado	8,876	10,749	14,259	20,019	28,091	32,118
Connecticut	3,870	4,633	6,708	8,981	11,694	11,282
Delaware	2,549	2,330	2,441	3,648	3,801	3,377
District of Columbia	1,199	1,452	2,024	3,298	4,827	4,576
Florida	28,004	27,835	28,267	26,799	27,296	22,420
Georgia	17,278	18,123	20,531	24,237	28,898	35,726
Hawaii	228	223	228	225	224	230
Idaho	1,897	2,439	2,800	3,431	4,489	5,214
Illinois	33,688	35,615	55,098	79,159	118,072	136,317
Indiana	20,615	22,109	29,809	37,702	52,051	56,255
Iowa	9,039	10,382	13,237	19,394	28,239	29,184
Kansas	17,624	14,992	16,543	21,865	29,617	31,200
Kentucky	6,420	7,622	9,882	13,496	19,127	22,420
Louisiana	98,136	98,380	100,883	93,512	103,035	97,447
Maine	165	199	285	357	414	415
Maryland	9,789	11,391	13,872	19,134	23,499	21,175
Massachusetts	14,351	15,191	20,103	25,879	29,653	26,152
Michigan	26,627	30,927	47,249	70,614	98,133	99,766
Minnesota	11,119	11,412	15,554	23,643	36,354	40,262
Mississippi	15,502	15,074	16,294	15,111	16,054	15,163
Missouri	9,162	10,466	13,461	21,904	35,199	38,975
Montana	1,375	1,836	2,361	3,653	5,188	5,492
Nebraska	7,513	5,581	6,459	9,341	14,384	15,985
Nevada	5,276	4,276	4,370	5,002	5,472	6,370
New Hampshire	471	599	1,000	1,495	1,842	1,799
New Jersey	25,289	27,259	30,869	42,019	57,353	52,128
New Mexico	5,941	5,710	6,674	7,895	10,102	12,361
New York	47,273	50,801	65,178	83,829	101,967	90,072
North Carolina	8,621	9,744	11,302	14,430	17,829	16,295
North Dakota	721	950	1,375	2,449	3,417	3,662
Ohio	28,779	30,962	48,427	70,110	91,556	108,092
Oklahoma	37,100	32,218	36,408	37,865	46,669	47,207
Oregon	5,745	7,128	6,168	9,164	10,164	10,577
Pennsylvania	28,714	31,244	44,995	59,585	78,507	81,785
Rhode Island	1,694	1,762	2,538	3,230	4,065	3,986
South Carolina	8,556	9,186	8,884	10,028	11,685	9,659
South Dakota	786	978	1,359	2,238	3,387	3,813
Tennessee	10,846	11,667	12,682	17,669	23,695	24,717
Texas	286,332	254,648	258,605	258,245	268,556	278,827
Utah	3,680	4,836	5,494	7,666	11,289	14,899
Vermont	193	248	367	613	809	807
Virginia	8,512	10,164	10,928	16,322	20,257	20,498
Washington	10,263	8,843	9,851	14,176	20,809	19,853
West Virginia	5,387	5,476	7,791	9,788	12,048	13,244
Wisconsin	11,298	13,476	20,487	29,730	42,939	45,710
Wyoming	1,647	1,998	2,524	3,276	4,086	4,830
Total	1,081,855	1,053,769	1,208,396	1,443,464	1,797,771	1,863,027

Notes and Sources: See the last page of this section.

Table 27. Average City Gate Price by State
(Dollars per Thousand Cubic Feet)

State	YTD 1990	YTD 1989	YTD 1988	September 1990	August 1990	July 1990	June 1990	May 1990
Alabama	3.13	2.97	3.21	2.99	3.92	2.95	3.09	2.96
Alaska	.34	.33	.33	.38	.35	.33	.33	.33
Arizona	2.70	2.65	2.49	2.60	2.66	2.70	2.67	2.39
Arkansas	2.41	2.46	2.43	2.31	2.04	2.29	2.34	2.34
California	2.69	2.75	2.56	2.84	2.87	3.23	2.90	2.83
Colorado	2.97	3.04	3.11	3.38	3.39	3.40	3.46	3.19
Connecticut	3.58	3.48	3.30	3.72	3.59	3.78	3.47	3.10
Delaware	2.63	2.83	2.80	2.49	2.30	2.42	2.44	2.97
District of Columbia	---	---	---	---	---	---	---	---
Florida	2.58	2.60	2.45	2.49	2.16	2.31	2.37	2.45
Georgia	3.42	3.60	3.73	3.08	3.05	3.16	3.24	2.74
Hawaii	6.88	6.47	6.33	7.54	6.28	5.85	6.24	7.29
Idaho	2.14	2.19	2.26	2.44	2.24	2.20	2.77	2.15
Illinois	3.03	2.99	2.68	2.80	2.64	2.57	2.75	2.48
Indiana	3.11	3.19	3.11	2.89	2.78	3.38	3.50	3.12
Iowa	2.92	2.86	2.96	2.87	2.85	2.98	3.06	2.79
Kansas	2.76	2.06	2.03	2.48	2.34	2.27	2.25	2.42
Kentucky	3.13	3.03	2.95	2.39	2.49	2.73	3.05	3.28
Louisiana	2.91	2.98	3.05	2.64	2.58	2.73	2.64	2.84
Maine	2.98	3.29	3.05	2.92	2.67	2.72	3.05	2.79
Maryland	3.08	3.28	3.13	3.57	3.85	3.99	3.99	3.45
Massachusetts	3.22	3.13	2.96	3.35	2.84	2.81	3.28	2.84
Michigan	3.12	3.29	3.41	2.96	2.95	3.14	3.04	2.52
Minnesota	2.87	2.78	2.86	2.91	2.87	3.09	3.22	2.66
Mississippi	2.88	3.12	3.35	2.65	2.65	2.65	2.77	2.64
Missouri	3.19	2.93	2.87	3.35	3.00	3.57	3.55	3.40
Montana	3.59	3.54	3.83	3.40	5.21	3.37	4.26	3.71
Nebraska	2.98	2.98	3.09	3.11	2.93	3.10	3.20	2.85
Nevada	2.92	3.43	2.84	2.50	2.67	3.00	2.68	2.38
New Hampshire	3.47	3.26	3.02	2.92	2.95	3.32	3.12	2.91
New Jersey	3.18	3.14	3.01	3.26	3.27	3.14	3.11	2.81
New Mexico	2.67	2.65	2.57	2.58	2.00	3.06	3.41	3.40
New York	2.98	3.00	2.81	2.79	2.74	2.77	2.76	2.63
North Carolina	2.86	3.08	2.81	2.86	2.74	2.86	2.93	2.92
North Dakota	3.38	3.23	3.54	3.05	4.23	3.17	4.01	3.75
Ohio	3.05	3.32	3.17	2.66	2.88	3.03	3.12	3.03
Oklahoma	1.99	2.03	2.22	1.69	1.74	1.73	1.86	1.83
Oregon	2.51	2.65	2.97	2.54	2.53	2.61	2.90	2.51
Pennsylvania	3.49	3.33	3.12	4.12	4.17	4.17	3.74	3.51
Rhode Island	3.69	3.77	3.44	3.59	3.84	4.21	4.07	3.79
South Carolina	3.06	3.49	3.38	2.46	2.64	2.65	3.15	3.24
South Dakota	3.25	3.16	3.25	3.48	4.04	3.47	3.89	3.31
Tennessee	2.82	2.77	2.72	2.71	2.60	2.89	2.79	2.65
Texas	3.09	3.30	2.98	2.88	3.14	2.88	2.86	2.93
Utah	3.96	3.60	3.09	5.26	4.87	5.27	5.23	4.75
Vermont	2.87	2.61	2.62	2.95	2.76	3.49	3.42	2.84
Virginia	3.02	3.14	2.79	2.74	2.60	3.35	3.68	2.97
Washington	1.96	2.25	2.34	1.89	1.84	1.87	1.83	1.71
West Virginia	3.72	3.95	3.40	5.52	6.19	5.29	4.89	3.95
Wisconsin	3.37	3.80	3.69	3.46	3.99	3.90	3.87	3.22
Wyoming	3.21	3.02	3.22	3.35	4.20	3.28	3.65	4.76
Total	3.01	3.01	2.89	2.92	2.91	3.03	3.00	2.81

See footnotes at end of table

Table 27. Average City Gate Price by State (Continued)
(Dollars per Thousand Cubic Feet)

State	April 1990	March 1990	February 1990	January 1990	Total 1989	December 1989	November 1989	October 1989
Alabama	2.93	3.03	3.22	3.15	3.00	3.09	3.14	2.95
Alaska	.33	.33	.33	.33	.33	.33	.33	.33
Arizona	2.54	2.51	2.60	3.13	2.67	2.72	2.74	2.64
Arkansas	2.36	2.50	2.50	2.55	2.47	2.50	2.45	2.44
California	2.79	2.70	2.87	3.02	2.75	2.85	2.83	2.59
Colorado	2.88	2.79	2.80	2.85	2.96	2.79	2.73	2.94
Connecticut	3.21	3.50	3.79	3.86	3.46	3.34	3.53	3.38
Delaware	2.41	2.91	3.16	2.84	2.82	3.29	2.98	2.09
District of Columbia	--	--	--	--	--	--	--	--
Florida	2.48	2.57	2.98	3.05	2.63	2.90	2.64	2.49
Georgia	3.19	3.62	3.84	3.73	3.54	3.56	3.36	3.08
Hawaii	6.96	7.24	7.27	7.18	6.49	6.65	6.55	6.32
Idaho	2.09	1.92	1.98	2.10	2.17	2.06	2.10	2.35
Illinois	2.85	3.28	3.72	3.91	2.99	3.24	2.92	2.64
Indiana	2.80	3.10	2.93	3.57	3.13	3.24	2.67	3.04
Iowa	2.48	2.62	2.77	3.55	2.80	3.00	2.49	2.32
Kansas	2.87	3.09	2.83	3.09	2.28	3.12	2.70	2.45
Kentucky	3.29	3.34	3.35	3.46	3.01	3.00	3.10	2.74
Louisiana	2.82	2.85	3.20	3.29	2.98	3.01	2.97	2.87
Maine	2.69	3.06	3.59	3.13	3.23	2.71	3.70	2.94
Maryland	2.80	2.60	3.04	2.90	3.20	3.18	3.00	2.78
Massachusetts	2.96	3.28	3.73	3.51	3.20	3.55	3.61	2.89
Michigan	3.11	3.48	3.43	3.36	3.24	2.98	3.11	3.31
Minnesota	2.35	2.60	2.72	3.40	2.72	2.85	2.39	2.41
Mississippi	2.67	2.81	3.11	3.30	3.08	2.96	2.98	3.13
Missouri	2.71	3.16	3.21	3.24	3.00	3.20	3.05	3.03
Montana	4.03	3.21	3.54	3.36	3.43	3.24	3.24	3.03
Nebraska	2.59	2.78	2.76	3.50	2.91	2.90	2.64	2.67
Nevada	2.64	3.14	3.05	3.23	3.33	3.22	3.31	2.71
New Hampshire	3.06	3.44	4.12	4.02	3.28	3.36	3.60	2.90
New Jersey	2.88	3.07	3.47	3.57	3.17	3.41	3.09	3.19
New Mexico	2.40	2.37	2.54	2.72	2.66	2.72	2.60	2.72
New York	2.92	2.98	3.23	3.37	3.07	3.41	3.23	2.80
North Carolina	2.64	2.60	2.94	3.09	3.01	2.98	2.71	2.77
North Dakota	3.54	3.22	3.19	3.27	3.12	3.03	2.83	2.61
Ohio	2.74	3.16	3.16	3.10	3.31	3.32	3.34	3.16
Oklahoma	2.01	2.03	2.14	2.19	2.07	2.29	2.02	1.87
Oregon	2.55	2.43	2.38	2.53	2.67	2.49	3.09	2.60
Pennsylvania	3.39	3.18	3.28	3.36	3.26	3.01	3.14	3.41
Rhode Island	3.32	3.61	3.71	3.68	3.68	3.49	3.51	3.55
South Carolina	3.12	3.20	3.45	3.54	3.46	3.53	3.35	3.22
South Dakota	2.84	2.91	3.02	3.52	3.04	3.00	2.62	2.61
Tennessee	2.54	2.71	2.71	3.19	2.81	3.00	2.81	2.76
Texas	3.01	3.12	3.26	3.33	3.33	3.49	3.58	2.96
Utah	4.55	3.75	3.33	3.37	3.59	3.41	3.53	3.89
Vermont	2.70	2.86	2.77	2.70	2.59	2.47	2.67	2.57
Virginia	2.61	2.67	3.16	3.40	3.13	3.22	3.00	3.06
Washington	1.82	1.84	2.05	2.32	2.20	2.15	1.92	2.20
West Virginia	3.52	3.03	3.54	3.32	3.75	3.27	3.53	3.95
Wisconsin	3.05	3.10	3.38	3.40	3.40	2.28	3.05	3.49
Wyoming	2.97	2.88	2.97	2.85	2.99	2.86	2.86	3.13
Total	2.84	2.95	3.10	3.25	3.01	3.10	2.98	2.84

See footnotes at end of table.

Table 27. Average City Gate Price by State (Continued)
(Dollars per Thousand Cubic Feet)

State	September 1989	August 1989	July 1989	June 1989	May 1989	April 1989	March 1989	February 1989
Alabama	2.95	3.00	3.09	2.99	2.83	2.83	2.93	3.05
Alaska	.33	.33	.33	.33	.33	.33	.33	.33
Arizona	2.82	2.73	2.74	2.69	2.52	2.47	2.52	2.77
Arkansas	2.40	2.45	2.39	2.54	2.43	2.43	2.47	2.49
California	2.82	2.84	2.77	2.68	2.87	2.49	2.53	2.95
Colorado	3.09	3.31	4.16	3.60	3.36	3.19	2.92	2.85
Connecticut	3.89	3.81	4.29	4.21	3.54	3.18	3.24	3.34
Delaware	2.29	2.66	3.53	2.14	2.90	2.38	3.14	3.17
District of Columbia	--	--	--	--	--	--	--	--
Florida	2.41	2.59	2.59	2.63	2.62	2.63	2.49	2.61
Georgia	3.20	3.32	3.93	3.67	3.35	3.10	3.52	3.76
Hawaii	6.34	6.56	6.66	7.15	7.00	6.52	6.83	5.92
Idaho	2.49	2.93	2.62	2.55	2.57	2.41	2.06	2.04
Illinois	2.67	2.71	2.80	2.79	2.60	2.60	2.96	3.34
Indiana	2.94	2.96	3.20	3.38	3.32	3.08	3.04	3.21
Iowa	2.84	3.03	3.06	3.16	2.29	2.74	2.66	2.80
Kansas	1.86	2.36	1.75	1.60	1.68	1.81	2.33	2.40
Kentucky	2.66	2.76	2.92	3.09	3.15	3.12	3.10	3.11
Louisiana	3.12	3.08	3.03	2.95	3.04	2.83	2.82	2.89
Maine	3.41	3.52	3.53	3.35	2.98	3.28	3.20	3.60
Maryland	3.55	3.59	4.53	3.77	3.56	2.85	3.02	3.21
Massachusetts	3.25	3.31	3.15	3.10	3.62	2.43	2.99	3.68
Michigan	3.09	3.01	3.20	3.21	3.19	3.44	3.47	3.59
Minnesota	2.98	3.21	3.35	3.14	2.66	2.40	2.57	2.66
Mississippi	3.20	3.23	3.37	3.22	3.13	3.43	2.90	2.92
Missouri	3.04	2.96	3.26	2.77	3.11	2.93	2.90	2.80
Montana	3.11	2.96	3.35	3.35	3.86	3.64	3.57	3.58
Nebraska	3.15	3.22	3.39	3.34	2.98	2.68	2.86	2.76
Nevada	3.03	3.26	3.51	3.50	4.02	3.12	4.18	2.94
New Hampshire	3.05	3.26	3.21	3.11	2.91	2.91	3.31	3.65
New Jersey	3.12	3.10	3.44	3.16	3.18	2.73	3.01	3.56
New Mexico	3.25	3.07	3.00	3.03	2.54	2.53	2.59	2.56
New York	2.94	3.03	3.07	2.96	2.84	2.87	2.87	3.09
North Carolina	2.91	3.06	3.50	3.04	2.94	2.88	3.07	3.17
North Dakota	2.75	2.92	3.13	3.10	3.11	3.28	3.20	3.33
Ohio	4.36	3.61	3.61	2.49	2.70	3.41	3.06	3.47
Oklahoma	1.79	1.84	1.72	1.89	1.94	2.10	1.99	2.17
Oregon	2.59	3.80	2.57	3.01	2.82	3.00	2.49	2.31
Pennsylvania	3.79	3.91	3.84	4.01	3.37	3.56	3.05	3.06
Rhode Island	4.63	4.91	5.42	4.85	3.91	3.22	3.36	3.47
South Carolina	3.02	3.15	3.29	3.17	3.23	3.23	3.31	3.91
South Dakota	3.11	3.53	3.91	3.47	3.05	2.92	3.09	2.99
Tennessee	2.88	2.92	2.97	3.05	2.86	2.64	2.40	2.70
Texas	3.17	3.43	3.35	3.19	3.22	3.07	3.37	3.41
Utah	4.58	5.02	5.17	4.95	4.09	3.64	3.27	3.23
Vermont	2.67	2.72	2.75	2.70	2.78	2.60	2.47	2.58
Virginia	3.19	3.25	2.95	3.01	2.87	2.59	3.14	3.44
Washington	2.19	2.19	2.32	2.33	2.49	2.13	2.10	2.33
West Virginia	6.88	7.30	7.17	4.88	4.93	3.67	3.30	3.19
Wisconsin	4.31	5.12	4.77	4.52	4.00	3.66	3.21	3.64
Wyoming	3.11	3.04	3.48	3.32	3.00	3.12	2.89	2.96
Total	2.99	3.04	3.08	2.98	2.94	2.83	2.89	3.10

-- Not Applicable.

Notes and Sources: See the last page of this section.

Table 28. Average Price of Natural Gas Delivered to Residential Consumers by State
(Dollars per Thousand Cubic Feet)

State	YTD 1990	YTD 1989	YTD 1988	September 1990	August 1990	July 1990	June 1990	May 1990
Alabama	6.38	6.22	6.53	8.58	8.60	8.49	8.15	7.11
Alaska	3.83	3.65	3.42	4.12	4.29	4.30	4.10	3.93
Arizona	6.86	6.99	6.95	9.12	9.37	9.10	8.37	7.77
Arkansas	4.99	4.84	4.80	6.56	6.83	6.64	6.24	5.39
California	5.75	5.63	5.59	6.04	5.90	6.07	6.22	5.95
Colorado	4.57	4.60	4.42	5.97	5.95	5.85	5.04	4.55
Connecticut	8.63	8.28	7.87	10.27	10.46	10.09	9.91	9.25
Delaware	6.44	6.40	5.91	8.08	8.35	8.09	7.74	6.84
District of Columbia	7.54	7.42	6.77	8.67	6.97	6.98	6.81	7.37
Florida	8.28	8.09	7.36	9.92	9.92	9.65	9.35	8.97
Georgia	6.95	6.35	6.36	7.90	8.23	8.15	7.78	7.40
Hawaii	15.74	15.56	15.78	15.41	15.11	14.96	15.68	16.32
Idaho	5.00	5.03	5.64	6.27	6.61	6.32	5.47	5.34
Illinois	5.13	5.07	4.62	5.66	6.14	6.15	5.79	5.17
Indiana	5.76	5.82	5.20	6.22	6.54	6.77	6.60	5.98
Iowa	5.04	4.69	4.84	6.75	6.88	6.66	5.61	4.89
Kansas	4.49	4.09	4.02	5.60	5.70	5.64	5.17	4.63
Kentucky	4.96	4.74	4.48	5.92	6.26	6.46	5.84	5.50
Louisiana	5.92	5.79	5.57	7.49	7.72	7.49	7.32	6.20
Maine	7.80	7.09	7.34	8.21	8.37	8.31	7.56	7.77
Maryland	6.42	6.35	5.85	8.06	8.16	7.93	7.40	6.78
Massachusetts	7.74	7.13	6.33	8.11	8.29	7.87	6.95	6.73
Michigan	5.02	5.32	5.28	6.25	6.56	6.65	5.88	5.26
Minnesota	4.56	4.59	4.63	4.55	4.63	5.07	4.77	4.40
Mississippi	5.20	5.15	5.91	5.60	5.52	5.43	5.37	5.57
Missouri	5.20	4.82	4.77	7.14	7.06	6.65	6.11	5.30
Montana	4.53	4.40	4.37	5.72	5.91	5.76	4.94	4.62
Nebraska	4.54	4.48	4.45	5.06	5.14	5.26	5.04	4.54
Nevada	5.66	5.58	5.82	7.15	7.35	7.08	6.48	6.35
New Hampshire	7.44	6.81	6.09	8.09	8.53	8.32	7.51	7.08
New Jersey	6.67	6.52	6.32	8.43	8.92	8.59	8.08	7.35
New Mexico	5.65	5.71	5.06	7.92	7.81	7.58	6.95	6.02
New York	7.39	7.23	6.35	9.32	9.80	8.95	8.20	7.58
North Carolina	6.12	6.64	6.21	8.38	8.40	8.33	7.90	6.79
North Dakota	4.70	4.72	5.25	6.19	6.82	6.48	5.45	4.85
Ohio	5.29	5.47	5.18	6.12	6.52	6.48	5.93	5.21
Oklahoma	4.74	4.41	4.55	6.58	6.73	6.66	6.20	5.21
Oregon	6.27	6.17	6.73	7.55	7.39	7.01	6.55	6.40
Pennsylvania	6.53	6.08	5.70	7.15	8.64	8.48	7.57	6.98
Rhode Island	7.15	7.17	6.53	8.18	8.35	8.34	7.74	7.34
South Carolina	7.11	6.72	6.78	8.68	8.88	8.74	8.29	7.32
South Dakota	5.06	4.87	4.91	6.20	6.47	6.81	5.93	5.12
Tennessee	5.07	4.80	4.59	6.50	6.56	6.29	5.90	5.34
Texas	5.80	5.63	5.32	7.21	7.30	7.13	6.86	6.49
Utah	5.25	5.07	5.08	5.95	5.93	5.81	5.30	5.28
Vermont	5.66	5.64	5.66	6.79	7.11	7.00	6.20	5.84
Virginia	6.65	6.67	5.65	8.74	8.78	8.70	7.49	7.14
Washington	5.18	5.54	5.51	6.70	7.06	6.49	5.61	5.28
West Virginia	6.46	5.58	5.54	8.38	8.72	8.30	7.37	6.83
Wisconsin	5.74	5.70	5.95	5.78	6.39	6.59	6.00	5.62
Wyoming	4.84	4.69	4.46	6.26	5.72	5.50	4.79	4.89
Total	5.80	5.70	5.44	6.81	7.04	6.99	6.55	5.97

See footnotes at end of table.

Table 28. Average Price of Natural Gas Delivered to Residential Consumers by State (Continued)
(Dollars per Thousand Cubic Feet)

State	April 1990	March 1990	February 1990	January 1990	Total 1989	December 1989	November 1989	October 1989
Alabama	6.38	6.12	5.92	5.53	6.27	5.88	6.72	7.87
Alaska	3.79	3.71	3.68	3.70	3.63	3.55	3.57	3.71
Arizona	7.02	6.38	6.20	6.17	6.94	6.08	7.25	8.68
Arkansas	4.84	4.81	4.66	4.41	4.85	4.44	5.09	6.15
California	5.07	5.63	5.77	5.72	5.59	5.38	5.12	6.11
Colorado	4.37	4.27	4.46	4.30	4.63	4.49	4.75	5.27
Connecticut	8.39	8.22	8.24	8.17	8.25	7.90	8.22	9.06
Delaware	6.35	6.18	6.15	5.95	6.42	6.16	6.76	7.38
District of Columbia	7.21	8.05	7.84	7.37	7.44	7.31	7.61	8.04
Florida	8.35	8.18	8.01	6.95	8.06	7.18	8.34	9.52
Georgia	6.38	6.75	6.89	6.45	6.24	5.62	6.40	7.28
Hawaii	16.28	16.12	15.79	15.81	15.66	15.89	15.99	15.99
Idaho	5.17	4.83	4.68	4.64	5.05	4.81	5.30	5.67
Illinois	4.88	4.98	5.25	4.75	4.92	4.54	4.56	5.00
Indiana	5.56	5.50	5.54	5.75	5.51	4.84	4.91	5.14
Iowa	4.51	4.62	4.95	5.05	4.70	4.60	4.74	5.12
Kansas	4.40	4.34	4.32	4.21	4.17	4.24	4.42	4.93
Kentucky	4.78	4.61	4.75	4.68	4.68	4.39	4.68	5.12
Louisiana	6.11	5.01	5.90	5.18	5.97	6.01	6.83	7.36
Maine	8.27	8.08	7.95	7.00	7.16	7.08	7.59	7.79
Maryland	6.11	6.17	6.29	5.81	6.30	5.74	6.45	7.29
Massachusetts	8.39	8.12	8.02	7.25	7.16	7.31	7.77	6.31
Michigan	4.86	4.76	4.72	4.66	5.19	4.68	4.94	5.51
Minnesota	4.13	4.20	4.57	4.98	4.57	4.56	4.45	4.69
Mississippi	5.01	5.30	5.25	4.97	5.10	4.73	5.28	5.35
Missouri	5.07	5.02	4.99	4.73	4.84	4.65	5.03	5.49
Montana	4.45	4.33	4.24	4.23	4.37	4.25	4.29	4.35
Nebraska	4.23	4.22	4.44	4.66	4.48	4.37	4.47	4.80
Nevada	6.03	5.46	5.05	5.07	5.55	5.18	5.53	6.39
New Hampshire	7.77	7.63	7.60	6.76	6.85	6.83	7.28	6.86
New Jersey	6.69	6.46	6.43	5.63	6.51	6.19	6.62	7.28
New Mexico	5.51	5.23	5.20	5.10	5.73	5.28	5.88	7.49
New York	7.08	7.05	7.26	6.72	7.22	6.77	7.58	7.98
North Carolina	5.83	5.81	5.77	5.69	6.55	5.99	6.61	7.44
North Dakota	4.54	4.50	4.39	4.38	4.68	4.34	4.65	5.22
Ohio	5.28	4.97	5.06	5.15	5.32	4.90	5.21	5.29
Oklahoma	4.62	4.47	4.38	4.18	4.50	4.35	5.09	5.97
Oregon	6.24	6.06	6.07	6.06	6.19	6.16	6.22	6.76
Pennsylvania	6.44	6.27	6.22	6.07	6.14	6.01	6.48	6.92
Rhode Island	7.07	6.88	6.93	6.83	7.13	6.84	7.10	7.49
South Carolina	6.98	6.92	6.86	6.86	6.73	6.68	6.79	7.02
South Dakota	4.72	4.67	4.82	4.98	4.85	4.83	4.67	5.00
Tennessee	4.98	4.98	4.99	4.70	4.83	4.77	5.09	5.54
Texas	5.98	5.62	5.36	4.96	5.55	5.03	5.65	6.46
Utah	5.44	5.15	5.05	5.08	5.14	5.17	5.39	5.85
Vermont	5.58	5.47	5.45	5.40	5.62	5.43	5.69	5.99
Virginia	6.19	6.02	6.53	6.22	6.59	6.19	6.48	7.09
Washington	5.09	4.91	4.86	4.92	5.49	5.09	5.45	6.25
West Virginia	6.31	6.25	6.19	5.99	5.73	6.17	5.96	5.91
Wisconsin	5.54	5.79	5.81	5.54	5.64	5.38	5.63	5.58
Wyoming	4.76	4.71	4.70	4.64	4.71	4.61	4.77	5.11
Total	5.62	5.58	5.63	5.42	5.64	5.30	5.56	6.06

See footnotes at end of table.

Table 28. Average Price of Natural Gas Delivered to Residential Consumers by State (Continued)
(Dollars per Thousand Cubic Feet)

State	September 1989	August 1989	July 1989	June 1989	May 1989	April 1989	March 1989	February 1989
Alabama	8.52	8.47	8.32	7.83	6.73	6.01	5.55	5.71
Alaska	3.94	4.19	4.07	3.84	3.72	3.61	3.56	3.51
Arizona	9.30	9.55	9.04	8.36	8.12	7.46	6.65	6.25
Arkansas	6.57	6.79	6.58	6.11	5.75	4.97	4.35	4.31
California	6.10	5.90	6.07	6.09	5.69	4.62	5.21	5.63
Colorado	5.81	6.07	5.70	5.20	4.82	4.54	4.33	4.30
Connecticut	10.09	10.48	10.01	9.94	8.76	8.27	7.78	7.80
Delaware	7.48	7.49	7.96	7.52	6.81	6.33	6.06	6.10
District of Columbia	8.60	6.70	7.11	5.91	7.13	7.50	7.72	7.43
Florida	9.39	9.67	9.41	9.31	8.91	7.92	7.12	7.55
Georgia	7.47	7.97	7.91	7.75	7.03	6.23	6.14	5.81
Hawaii	15.98	16.47	16.37	16.23	15.75	15.49	15.12	14.31
Idaho	5.95	6.50	6.38	5.66	5.56	5.30	4.92	4.71
Illinois	5.81	6.43	5.85	5.60	5.11	4.99	5.08	4.96
Indiana	6.16	6.87	6.88	6.76	6.19	5.86	5.62	5.48
Iowa	6.17	6.63	6.38	5.78	4.77	4.32	4.25	4.49
Kansas	5.35	5.67	5.52	5.26	4.84	4.05	3.80	3.77
Kentucky	5.98	6.12	5.98	5.50	5.03	4.71	4.46	4.49
Louisiana	7.63	7.65	7.23	7.11	6.43	5.78	4.90	5.23
Maine	8.59	8.47	8.06	7.96	7.21	7.01	6.72	6.77
Maryland	8.11	7.89	7.70	7.26	6.57	6.20	6.01	6.06
Massachusetts	7.99	8.20	7.88	7.44	6.69	7.12	7.02	7.06
Michigan	6.60	7.15	6.86	6.37	5.48	5.13	5.02	5.02
Minnesota	5.19	5.40	5.34	5.08	4.64	4.32	4.31	4.50
Mississippi	5.47	5.54	5.49	5.43	5.57	5.14	4.93	5.10
Missouri	6.35	6.73	6.56	6.23	5.35	4.75	4.48	4.47
Montana	4.58	4.67	4.72	4.57	4.52	4.41	4.35	4.33
Nebraska	5.22	5.46	5.34	5.65	4.70	4.30	4.15	4.31
Nevada	6.89	7.22	6.90	6.28	6.12	5.82	5.34	5.09
New Hampshire	7.43	7.94	7.50	7.00	6.32	6.91	6.75	6.75
New Jersey	8.28	8.54	8.27	7.86	6.96	6.44	6.15	6.14
New Mexico	7.93	7.99	7.82	7.42	7.08	5.86	5.21	5.01
New York	9.18	9.36	9.01	8.31	7.11	6.87	7.46	6.66
North Carolina	8.68	8.97	8.71	8.02	6.99	6.80	6.29	6.30
North Dakota	5.98	5.64	6.08	5.51	5.09	4.59	4.44	4.46
Ohio	6.28	6.54	6.55	6.26	5.31	5.42	5.25	5.33
Oklahoma	6.34	6.55	6.35	6.06	5.45	4.60	3.98	3.85
Oregon	7.13	7.21	6.80	6.56	6.36	6.03	5.85	5.85
Pennsylvania	7.84	8.06	7.91	6.77	6.26	5.94	5.78	5.75
Rhode Island	8.55	8.65	8.44	8.25	7.26	7.13	6.98	7.00
South Carolina	7.88	8.19	7.75	7.44	6.64	6.54	6.66	6.63
South Dakota	5.73	6.26	6.01	5.53	5.03	4.65	4.54	4.67
Tennessee	6.03	6.11	5.99	5.50	5.08	4.84	4.53	4.60
Texas	6.73	7.18	6.97	6.80	6.53	5.83	5.21	5.10
Utah	5.80	5.80	5.51	5.17	5.27	5.26	5.01	4.88
Vermont	6.88	7.08	6.96	6.43	5.83	5.54	5.44	5.44
Virginia	9.13	8.78	8.67	8.26	6.52	6.51	6.35	6.38
Washington	7.08	7.52	7.02	6.40	6.12	5.47	5.19	5.15
West Virginia	6.86	7.24	7.07	6.64	5.80	5.48	5.35	5.31
Wisconsin	6.21	6.76	6.43	6.04	5.59	5.57	5.55	5.70
Wyoming	5.49	5.84	5.53	5.04	4.85	4.62	4.52	4.49
Total	6.80	7.07	6.92	6.58	5.93	5.54	5.45	5.38

Notes and Sources: See the last page of this section.

Table 29. Average Price of Natural Gas Sold to Commercial Consumers by State
(Dollars per Thousand Cubic Feet)

State	YTD 1990	YTD 1989	YTD 1988	September 1990	August 1990	July 1990	June 1990	May 1990
Alabama	5.26	5.12	5.32	5.32	5.38	5.50	5.91	5.45
Alaska	2.61	2.61	2.56	2.49	2.41	2.44	2.52	2.55
Arizona	4.78	4.78	4.95	4.79	4.78	4.73	4.66	4.67
Arkansas	4.41	4.38	4.36	4.67	4.75	4.67	4.68	4.46
California	5.07	4.82	4.69	4.37	4.65	4.40	4.37	4.54
Colorado	3.97	4.04	3.88	4.27	4.28	4.24	4.09	3.95
Connecticut	6.29	5.94	5.64	5.52	5.02	5.05	5.15	5.88
Delaware	5.46	5.39	4.83	5.99	5.41	5.67	5.60	5.54
District of Columbia	5.63	5.27	5.00	4.56	4.80	5.12	5.21	5.09
Florida	4.84	4.83	4.52	4.72	4.60	4.64	4.66	4.68
Georgia	5.76	5.45	5.53	5.46	5.37	5.56	5.46	5.49
Hawaii	11.60	11.38	11.62	11.28	10.75	10.78	11.51	11.94
Idaho	4.10	4.19	4.62	4.61	4.66	4.53	4.32	4.34
Illinois	4.82	4.66	4.23	4.99	5.21	5.23	5.26	4.71
Indiana	4.96	5.01	4.63	4.71	4.69	4.85	5.00	5.01
Iowa	4.14	3.88	4.06	3.94	3.93	3.95	3.71	3.73
Kansas	3.41	3.04	3.01	2.66	2.76	2.85	3.04	3.41
Kentucky	4.54	4.37	4.21	4.75	4.68	4.96	4.73	4.68
Louisiana	5.22	5.10	4.54	5.53	5.71	5.42	5.45	5.02
Maine	6.94	6.23	6.33	6.39	6.47	6.43	6.25	6.57
Maryland	5.45	5.41	5.10	5.39	5.35	5.28	5.23	5.07
Massachusetts	6.25	5.88	6.08	5.14	5.29	4.78	4.89	5.27
Michigan	4.69	4.94	4.94	5.35	5.46	5.48	5.07	4.75
Minnesota	3.94	3.99	4.02	3.26	3.18	3.63	3.74	3.56
Mississippi	4.35	4.80	5.14	3.93	3.93	3.98	3.93	4.20
Missouri	4.61	4.31	4.20	4.68	4.60	4.54	4.49	4.45
Montana	4.32	1.40	4.35	4.76	4.73	4.62	4.59	4.36
Nebraska	3.77	3.75	3.73	3.54	3.55	3.53	3.67	3.93
Nevada	4.18	4.43	4.65	3.81	2.90	4.33	4.32	4.39
New Hampshire	6.81	6.18	5.50	6.37	6.39	6.50	6.41	6.23
New Jersey	5.44	5.24	5.28	5.04	5.00	5.05	5.14	5.10
New Mexico	4.42	3.72	3.22	4.57	4.49	4.44	4.71	4.40
New York	5.55	5.72	5.30	4.88	4.88	4.87	5.08	5.54
North Carolina	4.68	5.18	4.92	4.45	4.63	4.63	4.68	4.67
North Dakota	4.18	4.20	4.57	3.87	4.58	4.53	4.33	4.15
Ohio	4.64	4.98	4.68	4.66	4.69	4.32	4.69	4.46
Oklahoma	3.98	3.91	4.14	3.97	3.86	3.96	3.91	3.75
Oregon	4.90	4.82	5.32	5.06	5.11	5.06	4.86	4.83
Pennsylvania	6.00	5.26	5.02	6.33	6.35	6.28	6.39	6.09
Rhode Island	6.18	6.62	5.80	5.50	5.20	4.85	7.09	5.65
South Carolina	5.56	5.61	5.63	5.22	5.13	5.12	5.25	5.24
South Dakota	4.13	3.99	4.11	3.80	4.04	4.39	4.27	4.01
Tennessee	4.83	4.43	4.36	4.78	4.55	4.70	4.74	4.62
Texas	4.17	4.06	4.14	4.10	3.89	3.68	3.71	4.03
Utah	4.25	4.10	4.05	4.36	4.35	4.30	4.10	4.21
Vermont	4.95	4.72	4.71	4.90	4.95	5.41	5.39	4.86
Virginia	4.79	1.91	4.36	5.00	4.61	4.78	4.48	4.40
Washington	4.20	4.73	4.56	4.19	4.17	4.24	4.68	3.87
West Virginia	6.13	5.10	5.23	7.64	7.42	7.45	7.44	6.51
Wisconsin	4.58	4.53	4.66	4.16	4.61	4.59	4.45	4.30
Wyoming	4.45	4.33	4.06	4.63	4.99	4.87	4.72	4.37
Total	4.83	4.74	4.61	4.57	4.55	4.46	4.59	4.62

See footnotes at end of table

Table 29. Average Price of Natural Gas Sold to Commercial Consumers by State (Continued)
(Dollars per Thousand Cubic Feet)

State	April 1990	March 1990	February 1990	January 1990	Total 1989	December 1989	November 1989	October 1989
Alabama	5.20	5.14	5.20	5.10	5.17	5.23	5.45	5.26
Alaska	2.62	2.71	2.74	2.67	2.57	2.53	2.48	2.38
Arizona	4.79	4.78	4.89	4.83	4.76	4.75	4.60	4.85
Arkansas	4.34	4.39	4.34	4.25	4.38	4.21	4.45	4.78
California	5.29	5.64	5.64	5.56	4.88	5.49	5.13	4.35
Colorado	3.89	3.85	3.95	3.93	4.05	4.04	4.10	4.19
Connecticut	6.09	6.76	6.85	6.95	6.08	6.79	6.30	5.88
Delaware	5.43	5.51	5.36	5.32	5.39	5.35	5.45	5.56
District of Columbia	5.41	6.51	5.73	6.04	5.30	5.61	5.19	5.05
Florida	4.72	4.94	5.23	5.08	4.85	5.00	4.87	4.76
Georgia	5.38	6.10	6.26	5.78	5.46	5.29	5.72	5.78
Hawaii	12.36	12.17	11.94	11.73	11.44	11.52	11.84	11.54
Idaho	4.25	3.96	3.91	3.87	4.20	4.02	4.45	4.46
Illinois	4.55	4.88	5.00	4.58	4.55	4.38	4.20	4.39
Indiana	4.90	4.88	4.94	5.13	4.78	4.37	4.32	4.36
Iowa	3.72	3.97	4.32	4.63	3.91	4.14	3.83	3.84
Kansas	3.62	3.86	3.91	3.87	3.14	3.79	3.24	3.13
Kentucky	4.37	4.39	4.30	4.54	4.35	4.23	4.39	4.43
Louisiana	5.28	4.61	5.40	5.12	5.26	5.67	5.80	5.55
Maine	7.50	7.40	7.42	6.46	6.30	6.43	6.57	6.47
Maryland	5.11	5.68	5.43	5.78	5.43	5.36	5.48	5.78
Massachusetts	6.79	7.06	7.13	6.24	5.87	6.04	6.06	5.05
Michigan	4.56	4.57	4.61	4.55	4.85	4.54	4.66	5.04
Minnesota	3.57	3.69	4.06	4.66	4.00	4.19	3.83	3.74
Mississippi	4.14	4.49	4.62	4.67	4.73	4.55	4.67	4.49
Missouri	4.60	4.69	4.70	4.56	4.34	4.41	4.36	4.44
Montana	4.32	4.23	4.22	4.19	4.36	4.26	4.31	4.28
Nebraska	3.57	3.81	3.79	4.27	3.77	3.99	3.75	3.62
Nevada	4.42	4.43	4.34	4.32	4.44	4.57	4.40	4.44
New Hampshire	7.29	7.30	7.18	6.38	6.23	6.39	6.58	6.00
New Jersey	5.41	5.55	5.62	5.74	5.30	5.65	5.30	5.01
New Mexico	4.32	4.37	4.44	4.39	3.72	3.68	3.53	4.30
New York	5.72	5.70	6.11	5.61	5.62	5.48	5.32	5.16
North Carolina	4.48	4.63	4.67	4.89	5.14	5.16	4.92	4.96
North Dakota	4.06	4.19	4.17	4.18	4.19	4.05	4.12	4.61
Ohio	4.67	4.04	4.96	4.93	4.90	4.73	4.80	4.83
Oklahoma	3.99	4.13	3.99	3.99	3.94	3.96	4.20	4.12
Oregon	4.82	4.86	4.89	4.89	4.80	4.81	4.73	4.74
Pennsylvania	5.96	5.91	5.90	5.90	5.35	5.51	5.61	5.58
Rhode Island	5.75	6.81	6.74	6.63	6.41	6.42	5.83	5.15
South Carolina	5.67	5.65	5.78	5.94	5.65	6.11	5.52	5.32
South Dakota	3.90	3.97	4.15	4.40	3.99	4.14	3.81	3.80
Tennessee	4.76	5.09	4.91	4.84	4.49	4.72	4.52	4.50
Texas	4.10	4.52	4.54	4.56	4.11	4.32	4.25	4.09
Utah	4.43	4.26	4.21	4.23	4.16	4.30	4.43	4.54
Vermont	4.75	4.87	4.99	4.97	4.74	4.96	4.65	4.49
Virginia	4.30	4.89	5.10	4.99	4.93	5.26	4.58	4.67
Washington	4.16	4.24	4.06	4.34	4.68	4.45	4.63	4.45
West Virginia	6.16	6.02	5.93	5.62	5.25	5.59	5.59	5.45
Wisconsin	4.42	4.72	4.79	4.54	4.44	4.23	4.30	4.16
Wyoming	4.36	4.39	4.37	4.38	4.33	4.33	4.36	4.36
Total	4.82	4.93	5.05	4.99	4.74	4.81	4.7	4.61

See footnotes at end of table

Table 29. Average Price of Natural Gas Sold to Commercial Consumers by State (Continued)
(Dollars per Thousand Cubic Feet)

State	September 1989	August 1989	July 1989	June 1989	May 1989	April 1989	March 1989	February 1989
Alabama	5.37	5.34	5.40	5.28	5.12	5.01	4.94	5.09
Alaska	2.30	2.27	2.59	2.63	2.61	2.69	2.68	2.74
Arizona	4.74	5.03	4.77	4.77	4.99	4.82	4.75	4.81
Arkansas	4.92	4.99	4.98	4.45	4.71	4.59	4.22	4.13
California	4.39	4.57	4.63	4.07	4.28	5.16	5.27	5.25
Colorado	4.31	4.36	4.32	4.19	4.09	4.02	3.96	3.95
Connecticut	5.34	4.98	5.26	5.61	5.54	6.15	6.04	6.29
Delaware	5.48	5.46	5.65	5.61	5.50	5.43	5.33	5.27
Dist. of Columbia	5.08	4.58	4.95	4.64	4.95	5.11	5.74	5.47
District of Columbia	4.69	4.85	4.79	4.86	4.89	4.85	4.83	4.83
Florida	5.49	5.55	5.62	5.55	5.49	5.38	5.53	5.46
Hawaii	11.65	11.72	11.91	12.05	11.46	11.55	11.09	10.59
Idaho	4.46	4.57	4.50	4.49	4.49	4.45	4.11	4.02
Illinois	4.88	5.19	5.10	4.84	4.62	4.61	4.77	4.66
Indiana	4.70	4.73	4.83	4.98	5.30	5.13	5.03	4.89
Iowa	3.85	3.90	3.83	3.71	3.62	3.61	3.75	3.99
Kansas	2.64	2.62	2.83	2.69	2.84	2.96	3.32	3.34
Kentucky	4.66	4.76	4.53	4.48	4.48	4.30	4.32	4.28
Louisiana	5.64	5.61	5.26	5.47	4.87	5.01	4.72	4.96
Maine	6.68	6.43	6.56	6.46	6.28	6.25	6.12	6.11
Maryland	5.83	5.70	5.85	5.52	5.42	5.47	5.14	5.44
Massachusetts	5.28	4.68	5.28	5.26	5.37	6.04	6.16	6.23
Michigan	5.68	5.99	5.75	5.31	4.90	4.79	4.81	4.84
Minnesota	3.83	3.88	3.93	3.92	3.79	3.80	3.88	4.05
Mississippi	4.55	4.57	4.66	4.63	4.93	4.72	4.80	4.94
Missouri	4.52	4.74	4.79	4.64	4.47	4.22	4.22	4.25
Montana	4.36	4.36	4.43	4.45	4.43	4.41	4.37	4.40
Nebraska	3.58	3.59	3.49	3.78	3.73	3.67	3.74	3.95
Nevada	4.28	4.37	4.47	4.60	4.57	4.63	4.58	4.29
New Hampshire	6.07	6.18	6.16	5.92	5.70	6.31	6.25	6.28
New Jersey	4.94	4.97	4.97	5.08	5.05	5.23	5.40	5.43
New Mexico	4.02	3.81	4.20	3.78	3.50	3.83	3.52	3.64
New York	5.46	5.55	5.51	5.54	5.70	5.86	5.95	5.70
North Carolina	5.06	5.05	5.04	4.95	4.95	5.31	5.28	5.25
North Dakota	3.93	4.54	4.46	4.32	4.31	4.18	4.15	4.18
Ohio	4.92	5.25	5.15	4.98	4.70	5.01	4.86	5.05
Oklahoma	4.11	4.65	4.26	4.18	4.08	4.12	3.86	3.71
Oregon	4.81	4.85	4.79	4.76	4.70	4.72	4.71	4.73
Pennsylvania	5.72	5.64	5.67	5.37	5.26	5.21	5.20	5.20
Rhode Island	7.00	7.11	6.91	7.31	6.63	6.32	6.51	6.77
South Carolina	5.43	5.23	5.38	4.85	5.81	5.51	5.82	5.93
South Dakota	3.99	4.15	4.10	4.05	3.96	3.89	3.87	3.94
Tennessee	4.50	4.54	4.51	4.47	4.20	4.41	4.35	4.51
Texas	4.15	3.80	3.74	3.97	3.96	3.93	4.12	4.30
Utah	4.30	4.23	4.13	4.00	4.17	4.30	4.13	4.03
Vermont	4.71	4.92	5.01	5.13	4.99	4.73	4.70	4.88
Virginia	4.18	4.59	4.52	4.34	4.92	4.81	5.04	5.23
Washington	5.67	4.66	4.77	4.91	4.83	4.70	4.51	4.74
West Virginia	6.20	6.21	6.40	6.10	5.31	5.03	4.87	4.81
Wisconsin	4.54	4.74	4.54	4.40	4.23	4.46	4.50	4.64
Wyoming	4.45	4.45	4.40	4.31	4.35	4.31	4.30	4.31
Total	4.67	4.61	4.65	4.57	4.64	4.77	4.79	4.80

Notes and Sources: See the last page of this section.

Table 30. Average Price of Natural Gas Sold to Industrial Consumers by State
(Dollars per Thousand Cubic Feet)

State	YTD 1990	YTD 1989	YTD 1988	September 1990	August 1990	July 1990	June 1990	May 1990
Alabama	3.03	2.96	2.98	2.89	2.74	2.76	2.85	3.01
Alaska	1.09	1.10	1.04	1.25	1.08	1.03	.95	1.18
Arizona	3.85	3.78	3.76	4.20	4.30	4.30	4.23	4.11
Arkansas	2.99	3.08	3.06	2.90	2.75	2.81	2.81	2.84
California	3.93	3.83	3.67	4.19	4.07	3.65	3.64	3.67
Colorado	2.27	2.51	3.49	2.20	2.12	2.17	2.10	2.16
Connecticut	4.68	4.46	4.03	4.40	3.83	3.84	3.96	4.01
Delaware	3.43	3.46	3.18	3.40	3.16	3.32	3.08	3.29
District of Columbia	--	--	--	--	--	--	--	--
Florida	3.17	3.09	2.82	3.37	3.24	2.81	2.91	2.95
Georgia	3.47	3.66	3.64	3.16	2.99	3.09	3.40	3.33
Hawaii	--	--	--	--	--	--	--	--
Idaho	2.55	2.89	4.18	2.92	2.95	2.97	2.87	2.83
Illinois	4.15	3.82	3.39	4.07	3.44	3.85	4.33	4.16
Indiana	3.81	3.92	3.71	3.30	3.07	3.09	3.25	3.49
Iowa	2.72	2.49	3.14	2.39	2.28	2.31	2.29	2.44
Kansas	2.83	2.98	2.38	2.83	2.54	2.57	3.02	2.92
Kentucky	3.89	3.76	3.43	3.63	3.63	3.89	3.68	3.75
Louisiana	1.94	1.98	1.96	1.55	1.67	1.71	1.76	1.80
Maine	5.21	4.46	4.55	5.61	4.97	4.10	4.05	4.22
Maryland	4.58	4.77	4.24	4.45	4.51	4.44	4.55	4.40
Massachusetts	4.12	4.03	4.10	3.51	3.69	2.98	2.91	3.77
Michigan	4.20	4.32	4.28	4.32	4.22	4.48	4.04	4.17
Minnesota	2.98	2.82	2.76	2.72	2.58	2.72	2.66	2.66
Mississippi	2.46	2.50	2.48	2.24	2.23	2.32	2.24	2.34
Missouri	4.45	4.11	3.80	4.17	4.16	3.88	4.25	4.69
Montana	3.03	2.81	2.96	2.88	2.54	2.70	2.88	2.92
Nebraska	2.99	2.92	2.80	2.72	2.66	2.74	2.67	2.47
Nevada	4.40	5.12	3.86	5.03	5.58	4.36	4.12	5.05
New Hampshire	4.27	4.00	3.64	3.93	3.75	3.61	3.37	3.27
New Jersey	4.13	3.98	3.85	3.51	3.45	3.46	3.53	3.64
New Mexico	3.65	3.08	3.27	3.66	3.44	3.39	3.38	3.65
New York	4.76	4.85	4.47	4.65	3.86	4.16	4.36	4.24
North Carolina	3.36	3.58	3.57	3.37	3.07	2.94	3.12	3.19
North Dakota	3.34	3.37	3.30	2.94	2.97	3.00	2.97	2.99
Ohio	3.94	4.21	4.02	3.49	3.73	3.66	3.66	3.70
Oklahoma	1.69	1.93	1.84	1.66	1.75	1.62	1.71	1.71
Oregon	3.25	3.56	3.71	2.24	2.93	2.80	2.89	3.40
Pennsylvania	4.24	3.87	3.65	4.37	4.03	4.13	3.91	4.23
Rhode Island	4.89	5.10	4.69	1.92	4.54	5.03	4.49	4.43
South Carolina	3.01	3.41	3.41	2.76	2.53	2.43	2.86	3.02
South Dakota	3.26	3.08	3.16	3.08	3.12	3.03	2.92	2.97
Tennessee	3.27	3.34	3.21	2.94	2.95	2.91	3.06	3.01
Texas	2.18	2.23	2.16	1.84	1.83	1.92	1.98	1.99
Utah	3.60	3.27	3.04	3.27	3.26	3.28	3.24	3.28
Vermont	2.98	2.99	3.05	3.20	2.28	2.29	2.64	2.72
Virginia	3.71	3.90	3.14	3.48	3.49	3.66	3.42	3.34
Washington	2.68	2.93	2.96	2.54	2.52	2.58	2.47	2.43
West Virginia	3.31	2.82	2.84	3.01	3.01	3.07	3.07	3.17
Wisconsin	3.61	3.78	4.08	2.98	3.25	3.47	3.18	3.34
Wyoming	3.10	3.26	3.39	3.33	3.55	3.27	3.15	3.13
Total	2.90	2.95	2.91	2.59	2.52	2.47	2.55	2.67

See footnotes at end of table.

Table 30. Average Price of Natural Gas Sold to Industrial Consumers by State (Continued)
(Dollars per Thousand Cubic Feet)

State	April 1990	March 1990	February 1990	January 1990	Total 1989	December 1989	November 1989	October 1989
Alabama	3.12	3.05	3.24	3.45	3.02	3.55	3.00	2.98
Alaska	1.15	1.06	1.08	1.08	1.08	1.06	1.04	.97
Arizona	3.70	3.48	3.59	3.66	3.67	4.13	3.07	3.06
Arkansas	2.88	3.17	3.22	3.29	3.09	3.12	3.12	3.06
California	3.65	4.30	4.55	3.84	3.75	3.88	4.72	3.07
Colorado	2.28	2.40	2.41	2.41	2.53	2.65	2.56	2.59
Connecticut	4.70	5.27	5.59	6.00	4.51	5.55	4.41	3.90
Delaware	3.04	3.53	3.82	4.00	3.45	3.70	3.23	3.37
District of Columbia	--	--	--	--	--	--	--	--
Florida	2.97	3.06	3.48	3.65	3.13	3.40	3.22	3.06
Georgia	3.56	3.77	4.21	3.70	3.73	4.13	3.74	3.75
Hawaii	--	--	--	--	--	--	--	--
Idaho	2.84	2.83	2.83	2.43	2.92	2.73	2.76	4.12
Illinois	4.05	4.19	4.17	4.34	3.73	3.70	3.49	3.29
Indiana	3.95	4.19	4.08	4.48	3.89	4.04	3.69	3.59
Iowa	2.61	2.77	3.09	3.49	2.54	3.25	2.58	2.25
Kansas	2.49	2.85	3.00	3.26	3.06	3.27	3.07	3.44
Kentucky	3.93	3.95	3.93	4.01	3.69	3.47	3.56	3.41
Louisiana	1.82	2.20	2.56	2.51	1.97	2.12	1.90	1.81
Maine	5.64	6.35	6.89	5.58	4.57	5.68	4.78	4.11
Maryland	4.41	4.53	4.59	4.86	4.81	5.14	4.78	4.72
Massachusetts	4.12	5.39	5.99	5.42	4.07	5.33	4.18	3.31
Michigan	4.11	4.15	4.22	4.27	4.22	3.83	3.93	4.16
Minnesota	2.77	2.84	3.25	3.67	2.86	3.26	2.85	2.61
Mississippi	2.35	2.51	2.78	2.99	2.54	2.87	2.60	2.45
Missouri	4.41	4.67	4.42	4.62	4.13	4.33	4.07	4.11
Montana	2.93	3.11	3.45	3.63	2.98	3.76	3.84	2.68
Nebraska	2.88	3.03	3.20	3.60	2.92	3.19	2.84	2.73
Nevada	4.11	3.80	4.37	4.04	4.98	4.48	4.98	4.33
New Hampshire	4.11	5.92	6.09	5.54	4.20	6.04	5.14	3.64
New Jersey	4.03	4.42	4.89	5.03	3.98	4.40	3.89	3.45
New Mexico	3.87	4.18	4.27	4.34	3.12	3.20	3.33	3.15
New York	4.87	5.26	5.22	4.94	4.83	5.10	4.61	4.31
North Carolina	3.21	3.45	3.53	3.72	3.64	4.18	3.63	3.59
North Dakota	3.09	3.25	4.13	3.67	3.55	5.13	3.30	3.09
Ohio	3.91	3.88	4.28	4.22	4.19	4.21	4.17	3.97
Oklahoma	1.69	1.83	1.48	1.81	1.97	2.11	1.89	2.15
Oregon	3.31	3.45	3.71	3.66	3.52	3.67	3.41	3.16
Pennsylvania	4.22	4.18	4.39	4.41	3.90	4.17	3.82	3.82
Rhode Island	4.77	5.84	6.23	6.36	5.16	6.17	5.70	4.39
South Carolina	3.16	3.33	3.62	3.93	3.46	4.17	3.54	3.29
South Dakota	3.07	3.19	3.56	3.82	3.09	3.33	3.02	2.87
Tennessee	3.27	3.33	3.70	3.94	3.37	3.71	3.39	3.21
Texas	2.09	2.09	2.64	3.13	2.26	2.68	2.26	2.08
Utah	3.48	3.43	4.93	3.45	3.30	3.38	3.40	3.41
Vermont	2.95	3.43	4.02	3.63	3.01	3.35	3.09	2.87
Virginia	3.64	3.74	4.25	4.03	3.91	4.17	3.68	4.22
Washington	2.63	2.59	2.93	3.12	2.93	3.03	3.06	2.75
West Virginia	3.22	3.49	3.65	3.67	2.92	3.62	3.01	2.72
Wisconsin	3.39	3.81	3.97	3.34	3.73	3.53	3.84	3.58
Wyoming	3.18	2.50	3.24	3.15	3.23	3.07	3.17	3.11
Total	2.84	3.08	3.40	3.52	2.97	3.32	2.98	2.75

See footnotes at end of table.

Table 30. Average Price of Natural Gas Sold to Industrial Consumers by State (Continued)
(Dollars per Thousand Cubic Feet)

State	September 1989	August 1989	July 1989	June 1989	May 1989	April 1989	March 1989	February 1989
Alabama	2.94	3.04	3.06	2.93	2.88	2.81	2.83	2.98
Alaska	.99	.94	1.02	1.07	1.06	1.06	1.12	1.26
Arizona	3.35	3.62	3.49	3.41	3.64	3.73	4.49	4.41
Arkansas	3.02	3.09	3.10	2.99	3.05	3.11	3.10	3.14
California	3.35	3.53	3.44	3.31	3.46	4.07	4.36	4.46
Colorado	2.53	2.11	2.47	2.76	2.63	2.56	2.48	2.70
Connecticut	3.91	3.67	4.02	3.82	4.12	4.46	5.08	5.19
Delaware	3.39	3.66	3.26	3.34	3.27	3.26	3.56	3.74
District of Columbia	--	--	--	--	--	--	--	--
Florida	3.10	3.10	3.03	3.15	3.17	3.17	2.91	2.97
Georgia	3.55	3.60	3.71	3.59	3.61	3.48	3.68	3.90
Hawaii	--	--	--	--	--	--	--	--
Idaho	3.27	2.69	2.69	2.87	2.89	2.91	2.90	2.87
Illinois	3.41	3.31	3.50	3.49	3.66	3.81	4.23	4.23
Indiana	3.64	3.32	3.17	2.94	4.06	4.37	4.56	4.06
Iowa	2.19	2.27	2.22	2.25	2.32	2.37	2.45	2.82
Kansas	2.75	3.15	3.18	2.93	3.32	3.08	3.23	2.86
Kentucky	3.64	3.64	3.77	3.67	3.70	3.76	3.85	3.85
Louisiana	1.87	1.90	1.91	1.90	1.82	1.79	2.00	2.30
Maine	4.23	4.09	4.03	4.11	4.21	4.61	4.99	5.00
Maryland	4.66	4.57	4.61	4.60	4.61	4.74	4.87	4.94
Massachusetts	3.35	3.38	3.39	3.34	3.37	4.44	4.32	5.61
Michigan	4.49	4.56	4.72	4.34	4.18	4.19	4.24	4.31
Minnesota	2.69	2.68	2.72	2.59	2.55	2.74	2.79	3.04
Mississippi	2.33	2.38	2.34	2.48	2.41	2.42	2.37	2.83
Missouri	4.01	3.99	4.10	4.09	4.09	4.06	4.15	4.18
Montana	2.55	2.49	1.79	3.02	2.55	2.77	2.85	3.01
Nebraska	2.72	2.76	2.74	2.71	2.69	2.73	2.94	3.29
Nevada	6.15	6.52	6.15	6.70	5.93	4.70	4.65	4.31
New Hampshire	3.27	3.74	3.62	3.48	3.63	3.91	5.14	4.97
New Jersey	3.38	3.44	3.58	3.40	4.24	4.03	4.40	4.54
New Mexico	3.01	2.96	3.56	3.10	2.90	2.91	3.08	3.34
New York	3.99	4.53	3.97	4.55	4.59	5.01	5.37	5.23
North Carolina	3.51	3.53	3.42	3.47	3.50	3.38	3.61	3.78
North Dakota	3.18	3.19	3.16	3.12	3.17	3.19	3.46	3.62
Ohio	3.84	3.78	3.91	3.84	4.11	4.21	4.26	4.51
Oklahoma	2.04	2.02	2.10	1.92	1.69	1.76	1.85	2.10
Oregon	3.22	3.39	3.42	3.35	3.45	3.37	3.66	4.19
Pennsylvania	3.94	3.83	3.83	3.58	3.77	3.99	3.89	3.95
Rhode Island	4.35	4.29	4.25	4.47	4.62	5.09	5.94	6.29
South Carolina	3.22	3.24	3.13	3.30	3.39	3.22	3.38	4.03
South Dakota	2.96	2.97	2.98	2.91	2.86	2.90	3.10	3.32
Tennessee	3.23	3.20	3.25	3.26	3.24	3.19	3.30	3.58
Texas	2.02	2.12	2.18	2.20	2.28	2.18	2.19	2.38
Utah	3.18	3.98	2.99	2.96	2.98	3.17	3.15	3.11
Vermont	3.00	3.07	3.10	3.14	3.08	2.94	2.77	2.65
Virginia	3.48	4.15	3.88	3.20	3.74	3.28	4.23	4.38
Washington	2.70	2.65	2.70	2.74	2.85	2.93	3.15	3.38
West Virginia	2.82	2.84	2.81	2.82	2.79	2.65	2.88	2.84
Wisconsin	3.56	3.72	3.80	3.32	3.67	3.74	3.82	3.93
Wyoming	2.91	3.41	3.38	3.28	3.24	3.20	3.27	3.28
Total	2.67	2.71	2.70	2.69	2.80	2.91	3.12	3.33

-- : Not Applicable.

Notes and Sources: See the last page of this section.

**Table 31. Average Price of Natural Gas Delivered to Electric Utility^a
Consumers by State
(Dollars per Thousand Cubic Feet)**

State	August 1990	July 1990	June 1990	May 1990	April 1990	March 1990	February 1990	January 1990
Alabama	1.89	1.97	2.03	1.99	1.97	2.16	2.65	3.11
Alaska	NA	NA	NA	--	--	--	--	--
Arizona	2.31	2.28	2.30	2.30	2.34	2.25	2.84	3.30
Arkansas	1.45	1.52	1.45	1.51	1.37	1.33	1.94	1.93
California	2.86	2.82	2.93	3.10	3.06	3.02	3.66	3.82
Colorado	2.11	2.21	2.22	2.13	2.13	2.12	2.30	2.37
Connecticut	2.25	2.04	2.13	2.19	--	--	6.51	6.27
Delaware	2.32	2.29	2.13	2.17	3.15	2.95	3.51	3.48
District of Columbia	--	--	--	--	--	--	--	--
Florida	2.66	2.23	1.91	2.19	2.10	2.36	2.63	3.29
Georgia	2.94	2.89	3.29	3.34	3.52	3.73	3.80	3.75
Hawaii	--	--	--	--	--	--	--	--
Idaho	--	--	--	--	--	--	--	--
Illinois	2.45	2.77	2.47	2.77	2.99	3.39	3.90	3.48
Indiana	2.34	2.53	2.29	2.35	2.46	2.61	2.82	3.25
Iowa	3.15	2.96	2.60	2.09	3.00	3.46	3.71	4.36
Kansas	1.68	1.60	1.62	1.65	1.97	1.98	2.23	2.33
Kentucky	2.44	2.49	3.12	3.19	3.14	3.65	3.35	3.37
Louisiana	1.60	1.72	1.72	1.65	1.62	1.64	1.73	2.01
Maine	--	--	--	--	--	--	--	--
Maryland	2.29	2.27	2.34	2.53	2.75	3.00	3.38	2.84
Massachusetts	2.25	2.03	2.29	2.29	2.30	2.36	2.75	5.13
Michigan	.63	.65	.51	.50	.37	.34	.49	.31
Minnesota	1.74	1.75	1.95	1.81	1.90	1.92	2.46	3.12
Mississippi	1.61	1.69	1.76	1.76	1.74	1.82	2.14	2.52
Missouri	1.55	2.00	2.26	2.32	2.79	2.48	2.79	3.19
Montana	2.01	3.20	5.18	1.60	1.27	1.51	3.16	1.40
Nebraska	2.10	2.13	2.12	1.67	1.66	1.74	2.68	3.35
Nevada	1.95	2.09	2.05	1.80	1.72	1.73	2.76	3.18
New Hampshire	--	--	--	--	--	--	--	--
New Jersey	1.98	2.20	2.13	2.29	2.19	2.59	3.02	3.78
New Mexico	1.80	1.90	1.91	1.84	1.89	1.90	2.14	2.71
New York	2.01	2.05	2.11	2.21	2.31	2.50	2.95	3.47
North Carolina	NA	NA	NA	--	--	--	--	--
North Dakota	3.84	NA	--	--	--	--	--	--
Ohio	1.94	1.97	3.21	3.28	4.00	3.67	4.10	4.14
Oklahoma	2.74	3.01	3.11	3.06	3.61	3.52	3.62	3.34
Oregon	NA	NA	--	--	--	--	--	--
Pennsylvania	3.08	NA	3.02	2.95	2.92	2.86	3.47	3.34
Rhode Island	2.12	1.99	2.02	2.07	2.22	2.35	--	--
South Carolina	1.69	1.69	1.83	3.95	4.70	4.53	4.49	4.37
South Dakota	NA	NA	NA	--	--	--	--	--
Tennessee	NA	NA	NA	--	--	--	--	--
Texas	2.16	2.10	2.00	1.96	1.96	2.12	2.46	2.76
Utah	NA	NA	NA	--	5.04	--	--	--
Vermont	NA	NA	NA	--	--	--	--	--
Virginia	2.26	2.06	1.68	--	--	--	--	--
Washington	NA	NA	NA	--	--	--	--	--
West Virginia	6.63	3.31	6.58	6.45	6.63	5.99	4.82	4.76
Wisconsin	2.75	2.71	2.95	2.95	2.81	2.83	3.40	3.64
Wyoming	3.23	3.26	3.28	3.23	3.24	3.93	3.92	3.88
Total	2.23	2.22	2.16	2.19	2.29	2.37	2.76	3.01

See footnotes at end of table.

**Table 31. Average Price of Natural Gas Delivered to Electric Utility^a
Consumers by State (Continued)
(Dollars per Thousand Cubic Feet)**

State	Total 1989	December 1989	November 1989	October 1989	September 1989	August 1989	July 1989	June 1989
Alabama	2.27	2.68	2.29	2.31	2.05	2.14	2.25	2.23
Alaska	1.35	--	--	--	--	--	--	--
Arizona	2.32	2.95	2.49	2.26	2.26	2.27	2.31	2.26
Arkansas	1.69	2.21	1.82	1.75	1.62	1.88	1.64	1.54
California	3.04	4.00	3.28	2.87	3.05	3.00	2.86	2.95
Colorado	2.23	2.26	2.78	2.81	2.27	2.37	2.40	2.48
Connecticut	2.59	6.23	2.67	2.56	2.37	2.46	3.11	2.56
Delaware	2.73	3.50	3.01	2.53	2.43	2.72	2.88	3.91
District of Columbia	--	--	--	--	--	--	--	--
Florida	2.49	2.99	2.42	2.52	2.21	2.30	2.59	2.54
Georgia	3.23	3.78	3.67	3.50	3.51	3.49	3.33	2.84
Hawaii	--	--	--	--	--	--	--	--
Idaho	--	--	--	--	--	--	--	--
Illinois	3.32	3.32	2.85	2.92	3.33	3.26	2.88	3.61
Indiana	2.70	3.37	2.61	2.23	2.52	2.32	2.38	3.30
Iowa	2.69	3.79	3.30	2.02	2.21	2.85	2.72	2.59
Kansas	1.92	2.35	2.33	2.31	2.05	1.70	1.70	1.75
Kentucky	2.73	3.14	2.84	2.76	2.50	2.61	2.49	2.43
Louisiana	1.78	2.03	1.66	1.69	1.71	1.79	1.86	1.85
Maine	--	--	--	--	--	--	--	--
Maryland	2.72	3.56	3.20	2.61	2.59	2.63	3.02	2.68
Massachusetts	2.49	6.08	2.77	2.45	2.32	2.42	2.46	2.61
Michigan	.19	.22	.25	.19	.17	.20	.18	.15
Minnesota	2.16	2.73	2.22	2.11	2.10	2.01	1.94	2.09
Mississippi	1.88	2.45	2.04	1.80	1.77	1.89	1.91	1.93
Missouri	2.50	3.25	2.39	2.42	1.94	2.24	2.40	2.32
Montana	1.38	1.53	1.49	1.25	2.26	1.42	1.62	1.91
Nebraska	2.26	3.14	2.06	1.79	2.23	2.32	2.19	2.50
Nevada	2.17	2.73	2.43	2.24	2.13	2.16	2.10	2.28
New Hampshire	3.16	--	--	--	--	--	--	--
New Jersey	2.54	2.88	2.93	2.49	2.40	2.43	2.47	2.51
New Mexico	2.20	2.70	2.28	2.12	2.05	2.16	2.27	2.23
New York	2.42	3.17	2.67	2.37	2.20	2.31	2.39	2.45
North Carolina	3.57	--	--	--	--	--	--	--
North Dakota	4.61	--	4.08	--	--	--	--	4.84
Ohio	3.15	4.07	3.84	3.85	3.04	3.29	2.73	3.22
Oklahoma	3.05	3.20	3.15	3.32	2.86	2.81	3.08	3.11
Oregon	--	--	--	--	--	--	--	--
Pennsylvania	3.58	3.59	3.63	3.57	3.21	2.93	3.25	3.44
Rhode Island	2.49	--	2.61	2.48	2.34	2.39	2.41	2.56
South Carolina	2.27	2.97	2.44	2.23	2.19	2.19	2.23	2.22
South Dakota	2.62	--	--	--	--	--	--	--
Tennessee	2.83	--	--	--	--	--	--	--
Texas	2.23	2.56	2.24	2.10	2.07	2.28	2.25	2.19
Utah	3.38	--	--	--	--	--	--	--
Vermont	--	--	--	--	--	--	--	--
Virginia	2.57	.44	6.53	7.51	1.45	2.69	2.45	2.37
Washington	5.19	--	--	--	--	--	--	--
West Virginia	4.59	4.81	5.09	4.48	4.72	4.60	4.60	4.55
Wisconsin	3.11	3.02	3.24	2.78	2.44	3.16	3.14	2.96
Wyoming	3.61	3.61	3.63	3.63	3.42	3.42	3.42	3.41
Total	2.43	2.85	2.56	2.39	2.33	2.38	2.40	2.40

See footnotes at end of table.

**Table 31. Average Price of Natural Gas Delivered to Electric Utility^a
Consumers by State (Continued)
(Dollars per Thousand Cubic Feet)**

State	May 1989	April 1989	March 1989	February 1989	January 1989	Total 1988	December 1988	November 1988
Alabama	2.07	2.08	2.21	2.56	2.34	2.15	2.14	2.02
Alaska	--	--	--	--	--	1.34	--	--
Arizona	2.21	2.15	2.09	2.19	2.84	2.32	2.50	2.44
Arkansas	1.40	1.50	1.59	1.47	1.21	1.39	1.10	1.30
California	3.17	2.75	2.89	2.92	3.33	2.93	3.65	3.66
Colorado	2.47	2.18	2.14	2.10	2.07	2.25	2.08	2.77
Connecticut	2.66	2.81	2.87	3.13	3.19	2.24	3.43	2.72
Delaware	3.01	2.61	2.56	2.72	3.28	2.59	3.09	2.76
District of Columbia	--	--	--	--	--	--	--	--
Florida	2.79	2.63	2.28	2.34	2.37	2.12	2.26	2.18
Georgia	3.39	2.76	3.60	3.62	3.35	2.80	3.50	3.16
Hawaii	--	--	--	--	--	--	--	--
Idaho	--	--	--	--	--	--	--	--
Illinois	3.47	3.00	3.26	3.96	3.30	3.34	3.36	3.26
Indiana	2.89	2.58	2.41	2.54	2.97	2.60	2.82	2.53
Iowa	2.24	2.61	2.84	3.19	3.49	2.04	3.26	3.03
Kansas	2.25	2.27	2.07	2.27	2.37	2.05	2.09	2.10
Kentucky	3.10	2.98	2.76	2.81	3.07	2.52	3.25	2.83
Louisiana	1.82	1.66	1.59	1.81	1.80	1.70	1.63	1.82
Maine	--	--	--	--	--	--	--	--
Maryland	2.83	2.60	2.64	3.67	3.41	2.71	3.86	3.29
Massachusetts	2.76	2.39	2.55	3.17	5.22	2.29	4.31	2.67
Michigan	.18	.18	.20	.19	.20	.41	.28	1.13
Minnesota	2.05	1.78	2.08	2.53	2.87	1.99	2.59	2.07
Mississippi	1.84	1.68	1.67	1.96	2.23	1.90	2.28	1.97
Missouri	2.35	2.36	2.43	2.60	2.56	2.75	2.71	2.38
Montana	1.25	1.38	1.12	1.01	1.18	1.53	1.29	1.72
Nebraska	2.79	2.28	2.36	2.50	2.89	2.56	2.99	2.43
Nevada	2.19	1.72	2.09	2.00	2.15	2.79	2.07	2.61
New Hampshire	--	--	--	--	--	2.48	--	--
New Jersey	2.64	2.58	2.62	3.24	3.08	2.32	3.02	2.74
New Mexico	2.20	1.93	2.02	2.23	2.47	2.19	2.39	2.40
New York	2.44	2.37	2.51	2.78	2.98	2.30	2.99	2.56
North Carolina	--	--	--	--	--	3.48	--	--
North Dakota	--	4.20	--	--	--	4.56	--	4.42
Ohio	2.67	3.70	4.25	4.23	4.21	3.51	4.18	4.17
Oklahoma	3.06	2.96	2.98	3.13	3.03	2.92	2.54	3.15
Oregon	--	--	--	--	--	--	--	--
Pennsylvania	3.80	3.78	3.66	3.97	3.81	3.45	4.03	3.78
Rhode Island	2.76	2.73	--	--	--	2.15	--	--
South Carolina	3.96	2.31	2.26	4.30	3.94	1.86	3.90	3.33
South Dakota	--	--	--	--	--	2.33	--	--
Tennessee	--	--	--	--	--	2.46	--	--
Texas	2.13	2.13	2.14	2.25	2.48	2.16	2.39	2.32
Utah	--	--	--	--	--	3.05	--	--
Vermont	--	--	--	--	--	--	--	--
Virginia	2.81	2.74	1.33	2.34	2.04	2.16	5.06	1.38
Washington	--	--	--	--	--	3.15	--	--
West Virginia	4.52	4.76	4.45	4.31	4.76	3.89	4.76	4.52
Wisconsin	3.15	3.17	3.43	3.52	3.43	3.26	3.62	3.78
Wyoming	3.43	3.45	5.17	4.10	3.57	3.78	3.60	4.03
Total	2.39	2.31	2.33	2.44	2.64	2.33	2.57	2.58

^a Includes all steam electric utility generating plants with a combined capacity of 50 megawatts or greater.

^b Average prices calculated from data reported on Form EIA-176.

-- = Not Applicable.

Notes and Sources: See the last page of this section.

Table 32. Average Price of Natural Gas Delivered to All Consumers by State
(Dollars per Thousand Cubic Feet)

State	August 1990	July 1990	June 1990	May 1990	April 1990	March 1990	February 1990	January 1990
Alabama	4.12	4.35	4.38	4.76	4.81	4.77	4.94	4.92
Alaska	1.92	1.78	1.94	2.27	2.29	2.38	2.51	2.42
Arizona	4.48	3.84	3.82	4.29	4.59	4.69	5.02	5.11
Arkansas	2.73	2.63	2.84	3.36	3.98	4.15	4.09	4.10
California	3.88	3.80	4.13	4.36	4.25	4.86	5.25	5.04
Colorado	3.95	4.03	3.97	3.90	3.89	3.86	4.01	3.93
Connecticut	5.05	5.49	6.18	6.54	6.72	7.17	7.32	7.49
Delaware	3.04	3.27	3.33	3.88	4.40	4.41	4.73	4.98
District of Columbia	5.74	6.03	5.95	6.17	6.35	7.32	6.88	6.86
Florida	3.06	2.69	2.57	2.74	2.77	3.05	3.47	4.02
Georgia	4.86	5.10	5.36	5.39	5.35	5.95	6.26	5.55
Hawaii	11.54	11.60	12.38	12.83	13.22	13.07	12.78	12.57
Idaho	5.41	5.22	4.88	4.85	4.73	4.43	4.33	4.16
Illinois	5.43	5.40	5.34	4.93	4.73	4.88	5.09	4.67
Indiana	4.54	4.91	5.10	5.03	5.07	5.11	5.11	5.37
Iowa	4.06	4.09	3.89	3.90	3.93	4.12	4.44	4.70
Kansas	2.74	2.70	2.97	3.49	3.79	3.89	3.99	3.97
Kentucky	5.18	5.47	5.07	5.00	4.57	4.48	4.59	4.54
Louisiana	1.84	1.92	1.97	2.00	2.15	2.38	2.88	3.08
Maine	5.58	5.03	5.01	5.47	6.57	7.29	7.35	6.41
Maryland	4.34	5.13	5.56	5.66	5.44	5.67	5.69	5.62
Massachusetts	3.80	3.69	4.27	4.39	6.03	7.25	7.46	6.81
Michigan	5.30	5.41	4.92	4.78	4.63	4.53	4.57	4.49
Minnesota	3.32	3.70	3.79	3.73	3.71	3.80	4.21	4.70
Mississippi	2.03	2.10	2.40	2.69	2.88	3.20	3.66	3.99
Missouri	5.03	5.43	5.23	4.98	4.88	4.89	4.86	4.67
Montana	4.18	4.24	4.31	4.11	4.12	4.12	4.14	4.13
Nebraska	3.66	3.72	3.92	3.83	3.76	3.91	4.08	4.42
Nevada	3.13	3.02	3.31	3.33	3.54	4.06	4.48	4.45
New Hampshire	5.64	6.08	5.81	5.52	6.79	7.30	7.26	6.48
New Jersey	4.20	4.67	5.21	5.65	5.56	5.78	5.94	5.60
New Mexico	3.23	3.22	3.27	3.54	3.89	4.14	4.56	4.48
New York	3.81	4.00	4.35	4.83	5.34	5.61	6.41	6.10
North Carolina	4.20	4.14	4.36	4.41	4.28	4.40	4.52	4.83
North Dakota	5.37	5.27	4.78	4.43	4.25	4.30	4.28	4.26
Ohio	5.58	5.60	5.36	4.91	5.03	4.63	5.00	5.02
Oklahoma	2.75	2.88	3.10	3.10	3.37	3.40	3.33	3.34
Oregon	4.81	4.83	4.97	5.19	5.15	5.24	5.30	5.24
Pennsylvania	6.89	7.04	6.54	6.39	6.06	5.97	5.94	5.87
Rhode Island	4.19	4.84	5.74	5.42	5.92	6.67	6.83	6.75
South Carolina	2.73	2.71	3.43	3.86	4.35	4.67	4.96	5.54
South Dakota	4.76	4.98	4.66	4.39	4.23	4.26	4.44	4.65
Tennessee	3.78	3.75	3.94	3.92	4.25	4.40	4.54	4.55
Texas	2.40	2.40	2.33	2.39	2.63	2.88	3.36	3.63
Utah	5.03	5.01	4.71	4.78	4.97	4.79	4.82	4.73
Vermont	3.19	3.47	4.09	4.18	4.42	4.73	4.97	4.85
Virginia	5.10	5.23	5.04	5.50	5.20	5.42	5.84	5.67
Washington	3.69	3.81	3.89	3.74	3.99	4.00	4.07	4.18
West Virginia	6.85	6.63	6.48	6.19	6.03	6.00	5.92	5.76
Wisconsin	4.68	4.85	4.68	4.69	4.77	5.00	5.20	4.94
Wyoming	5.08	4.93	4.57	4.50	4.47	4.39	4.47	4.40
Total	3.36	3.39	3.53	3.84	4.23	4.50	4.82	4.77

See footnotes at end of table.

Table 32. Average Price of Natural Gas Delivered to All Consumers by State
(Continued)
(Dollars per Thousand Cubic Feet)

State	Total 1989	December 1989	November 1989	October 1989	September 1989	August 1989	July 1989	June 1989
Alabama	4.60	4.91	4.78	4.56	4.53	4.51	4.52	4.35
Alaska	1.84	2.26	2.16	1.98	1.77	1.63	1.79	1.82
Arizona	4.10	4.64	3.88	3.85	3.49	3.48	3.31	3.70
Arkansas	3.63	3.86	3.62	3.57	3.66	3.09	3.24	3.45
California	4.32	4.87	4.37	3.74	3.92	3.92	3.79	4.00
Colorado	4.07	4.11	4.22	4.23	4.29	3.92	4.31	4.36
Connecticut	6.62	7.25	6.61	5.93	5.73	5.93	6.51	6.26
Delaware	4.25	4.92	4.33	3.69	3.46	3.52	3.59	4.25
District of Columbia	6.42	6.57	6.40	6.42	6.52	5.40	5.86	5.21
Florida	3.15	3.83	3.18	3.04	2.75	2.83	3.04	3.05
Georgia	5.38	5.30	5.60	5.70	5.47	5.44	5.66	5.39
Hawaii	12.32	12.42	12.71	12.40	12.53	12.64	12.81	12.96
Idaho	4.64	4.45	4.89	5.04	5.11	5.33	5.19	5.05
Illinois	4.70	4.43	4.37	4.60	5.12	5.42	5.14	5.00
Indiana	5.01	4.59	4.52	4.59	5.03	5.02	4.85	4.69
Iowa	3.93	4.26	3.88	3.55	3.69	3.85	3.78	3.72
Kansas	3.46	3.92	3.71	3.81	3.27	2.80	2.90	3.15
Kentucky	4.42	4.23	4.46	4.60	5.04	5.05	4.78	4.64
Louisiana	2.34	2.90	2.33	2.10	2.10	2.11	2.14	2.14
Maine	5.81	6.37	5.96	5.56	5.42	5.21	5.10	5.37
Maryland	5.43	5.55	5.81	5.04	5.66	5.09	5.48	5.06
Massachusetts	5.54	6.77	6.22	3.93	4.04	4.13	4.10	4.41
Michigan	4.88	4.54	4.71	5.17	5.62	6.00	5.53	5.33
Minnesota	4.06	4.27	3.95	3.82	3.92	3.84	3.89	3.91
Mississippi	3.09	3.66	3.28	2.67	2.52	2.44	2.49	2.62
Missouri	4.59	4.56	4.70	4.89	5.19	5.32	5.34	5.21
Montana	4.08	4.17	4.19	3.88	3.81	3.68	3.44	3.99
Nebraska	3.94	4.12	3.87	3.77	3.85	3.74	3.66	4.07
Nevada	3.84	4.39	4.04	3.60	3.27	5.06	3.07	3.70
New Hampshire	6.18	6.57	6.67	5.53	5.47	5.82	5.75	5.49
New Jersey	5.34	5.81	5.63	5.30	4.94	4.65	4.54	4.54
New Mexico	3.84	4.12	3.81	3.62	3.43	3.47	3.61	3.69
New York	5.58	6.19	5.94	5.00	4.63	4.59	4.60	4.81
North Carolina	4.87	5.21	4.57	4.69	4.65	4.61	4.55	4.56
North Dakota	4.39	4.25	4.33	4.78	4.77	5.33	5.09	4.80
Ohio	5.12	4.81	5.03	5.03	5.56	5.73	5.68	5.53
Oklahoma	3.15	3.33	3.18	3.29	2.96	2.88	3.10	3.08
Oregon	4.14	5.28	5.10	4.87	4.96	5.04	5.12	5.04
Pennsylvania	5.58	5.65	5.80	5.99	6.23	6.20	6.26	5.62
Rhode Island	6.41	6.68	6.45	5.45	6.14	5.53	5.71	6.15
South Carolina	4.47	5.56	4.37	3.87	3.71	3.64	3.58	3.62
South Dakota	4.29	4.43	4.14	4.14	4.47	4.63	4.57	4.41
Tennessee	4.13	4.45	4.17	3.93	3.93	3.87	3.93	3.92
Texas	2.81	3.37	2.86	2.54	2.42	2.55	2.55	2.56
Utah	4.65	4.77	4.92	5.08	4.87	5.06	4.68	4.46
Vermont	4.48	4.93	4.39	4.13	4.26	4.37	4.47	4.47
Virginia	5.48	5.72	5.33	5.73	5.57	5.82	5.29	4.66
Washington	4.36	4.30	4.38	3.94	4.07	3.86	3.94	4.16
West Virginia	5.02	5.64	5.29	4.89	4.89	4.98	5.03	5.11
Wisconsin	4.92	4.65	4.87	4.77	5.09	5.29	5.16	4.89
Wyoming	4.39	4.34	4.45	4.48	4.59	4.79	4.71	4.46
Total	4.22	4.61	4.30	3.86	3.67	3.57	3.59	3.72

See footnotes at end of table

Table 32. Average Price of Natural Gas Delivered to All Consumers by State
(Continued)
(Dollars per Thousand Cubic Feet)

State	May 1989	April 1989	March 1989	February 1989	January 1989
Alabama	4.41	4.46	4.46	4.66	4.73
Alaska	1.91	2.11	2.12	2.42	2.23
Arizona	3.84	3.61	4.57	5.20	5.17
Arkansas	3.85	3.53	3.51	3.79	3.98
California	4.28	3.98	4.43	4.82	5.11
Colorado	4.17	4.03	4.01	3.96	3.90
Connecticut	6.05	6.56	6.73	6.92	6.89
Delaware	4.27	4.08	4.51	4.78	5.10
District of Columbia	6.05	6.32	6.87	6.56	6.67
Florida	3.26	3.26	3.11	3.26	3.35
Georgia	5.46	5.22	5.33	5.38	5.16
Hawaii	12.34	12.42	11.98	11.42	11.34
Idaho	5.02	4.90	4.53	4.39	4.36
Illinois	4.79	4.78	4.93	4.82	4.54
Indiana	5.47	5.40	5.30	5.09	5.40
Iowa	3.66	3.68	3.79	4.05	4.26
Kansas	3.59	3.42	3.53	3.52	3.41
Kentucky	4.56	4.43	4.33	4.35	4.31
Louisiana	2.09	2.20	2.42	2.79	2.82
Maine	5.50	5.79	5.98	5.97	6.01
Maryland	5.14	5.06	5.46	5.74	5.62
Massachusetts	4.83	5.58	6.19	6.70	6.65
Michigan	4.94	4.80	4.82	4.82	4.84
Minnesota	3.86	3.84	3.94	4.16	4.34
Mississippi	2.65	3.07	3.50	3.98	4.00
Missouri	4.85	4.51	4.37	4.38	4.36
Montana	3.94	4.09	4.13	4.17	4.25
Nebraska	3.89	3.75	3.85	4.06	4.17
Nevada	3.73	3.50	4.19	4.43	4.41
New Hampshire	5.47	6.17	6.41	6.41	6.34
New Jersey	5.19	5.24	5.39	5.70	5.52
New Mexico	3.64	3.72	3.82	4.02	4.19
New York	4.99	5.34	6.21	6.14	6.16
North Carolina	4.67	4.90	5.08	5.03	5.03
North Dakota	4.61	4.32	4.26	4.29	4.30
Ohio	5.04	5.22	5.07	5.21	5.19
Oklahoma	3.07	3.11	3.21	3.26	3.16
Oregon	5.05	5.08	5.10	5.20	5.49
Pennsylvania	5.55	5.50	5.38	5.34	5.32
Rhode Island	6.25	6.55	6.77	6.89	6.48
South Carolina	4.22	4.35	4.96	5.38	5.37
South Dakota	4.28	4.14	4.15	4.26	4.46
Tennessee	3.88	4.04	4.10	4.26	4.25
Texas	2.55	2.70	2.93	3.19	3.32
Utah	4.60	4.73	4.59	4.49	4.52
Vermont	4.54	4.48	4.48	4.56	4.49
Virginia	5.11	5.09	5.62	5.71	5.60
Washington	4.23	4.36	4.42	4.59	4.49
West Virginia	4.99	4.80	4.90	4.77	4.76
Wisconsin	4.85	4.92	4.96	5.08	5.02
Wyoming	4.36	4.38	4.32	4.32	4.32
Total	3.94	4.18	4.46	4.60	4.67

Notes and Sources See the last page of this section.

Table 33. Percentage of Total Deliveries Represented by Onsystem Sales

State	September 1990		August 1990		July 1990		June 1990	
	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial
Alabama	76.0	34.5	71.3	36.1	74.8	29.9	78.3	32.7
Alaska	100.0	51.1	100.0	46.3	100.0	57.4	100.0	53.1
Arizona	94.4	28.8	90.6	25.6	91.7	22.0	92.5	29.5
Arkansas	87.3	19.0	86.8	19.3	88.4	18.3	88.7	16.8
California	78.9	35.4	82.4	38.0	77.9	30.9	85.6	30.4
Colorado	95.4	43.2	94.4	39.7	94.6	56.0	97.4	39.4
Connecticut	87.1	76.5	86.8	65.9	87.4	67.2	89.9	78.6
Delaware	100.0	75.8	100.0	73.7	100.0	69.9	100.0	70.6
District of Columbia	100.0	---	100.0	---	100.0	---	100.0	---
Florida	97.5	39.8	97.2	38.9	97.4	59.7	97.2	61.0
Georgia	78.0	34.9	81.6	40.4	79.0	38.9	79.9	31.7
Hawaii	100.0	---	100.0	---	100.0	---	100.0	---
Idaho	85.1	2	85.2	3	86.2	5	88.1	6
Illinois	49.3	11.2	46.0	9.4	46.8	13.7	47.4	8.6
Indiana	88.5	14.4	89.8	15.6	92.2	16.7	90.7	16.0
Iowa	95.5	33.7	95.6	32.5	95.3	31.8	96.3	30.5
Kansas	93.6	16.5	94.3	17.3	94.5	19.5	93.6	16.3
Kentucky	88.9	10.8	89.2	10.8	89.3	11.5	89.6	12.5
Louisiana	100.0	46.2	100.0	44.8	100.0	49.7	100.0	44.3
Maine	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Maryland	92.8	19.0	93.3	19.9	93.8	19.2	94.7	20.3
Massachusetts	99.8	92.3	99.8	95.9	100.0	97.4	100.0	92.7
Michigan	50.2	8.8	49.5	8.3	47.7	9.4	56.2	9.9
Minnesota	87.5	26.0	89.4	28.8	89.6	27.0	91.0	32.0
Mississippi	89.9	42.5	94.0	44.4	89.8	42.5	90.4	44.1
Missouri	74.2	20.8	72.4	22.0	72.5	22.3	78.8	23.0
Montana	93.4	63.3	95.9	75.5	96.3	77.0	98.4	79.7
Nebraska	92.8	31.3	94.1	30.5	96.8	28.2	89.3	31.1
Nevada	95.6	14.8	96.7	8.6	90.5	8.6	96.7	9.9
New Hampshire	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
New Jersey	87.0	47.2	86.4	45.9	89.2	48.8	93.2	50.4
New Mexico	74.1	20.6	73.0	21.3	76.3	34.1	76.7	28.0
New York	79.9	24.7	83.4	29.5	82.1	31.9	81.9	28.0
North Carolina	83.2	38.2	83.1	45.8	83.4	53.2	84.8	48.3
North Dakota	57.4	17.7	53.4	17.1	54.3	19.2	69.7	20.3
Ohio	77.1	8.3	74.9	9.6	76.4	8.9	77.9	9.4
Oklahoma	87.5	53.6	88.5	45.8	88.1	49.8	89.8	38.9
Oregon	96.8	20.2	96.5	15.3	96.5	16.4	97.5	23.4
Pennsylvania	66.8	14.0	67.1	15.6	68.0	14.0	69.7	16.7
Rhode Island	75.5	75.5	100.0	81.4	100.0	82.2	100.0	85.4
South Carolina	97.4	71.4	97.0	79.1	97.1	81.2	97.1	77.6
South Dakota	84.8	36.1	84.9	32.5	85.5	38.5	86.2	42.4
Tennessee	94.2	66.3	95.1	51.4	94.2	53.0	94.5	52.1
Texas	93.3	23.1	94.4	24.7	94.1	24.8	95.4	23.6
Utah	100.0	20.6	100.0	19.7	100.0	19.1	100.0	18.7
Vermont	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Virginia	91.5	11.8	91.4	13.4	93.8	10.0	93.5	12.9
Washington	90.1	53.1	88.5	47.7	88.4	46.2	88.9	47.7
West Virginia	30.6	11.4	36.9	10.9	36.4	11.1	37.2	10.5
Wisconsin	81.3	33.5	80.1	30.2	79.7	30.6	83.5	29.8
Wyoming	99.5	9.2	99.6	6.2	99.6	6.2	99.7	7.7
Total	81.7	30.4	83.4	31.2	83.4	31.6	85.3	29.6

See footnotes at end of table.

**Table 33. Percentage of Total Deliveries Represented by Onsystem Sales
(Continued)**

State	May 1990		April 1990		March 1990		February 1990	
	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial
Alabama	72.7	29.2	74.8	27.4	78.1	29.9	80.4	28.9
Alaska	100.0	64.0	100.0	55.1	100.0	60.5	100.0	60.3
Arizona	84.7	45.4	93.3	42.7	94.9	47.2	96.5	58.8
Arkansas	90.6	16.7	93.2	13.6	93.7	14.5	94.7	16.7
California	90.1	41.8	90.3	40.6	94.4	46.8	81.0	37.0
Colorado	97.2	49.6	97.5	46.7	97.8	45.5	98.0	45.6
Connecticut	91.1	79.0	95.6	86.2	93.6	93.9	100.0	98.5
Delaware	100.0	67.5	100.0	69.9	100.0	74.0	100.0	72.2
District of Columbia	100.0	--	100.0	--	100.0	--	100.0	--
Florida	97.3	62.5	100.0	74.2	100.0	72.4	100.0	72.5
Georgia	81.0	27.6	86.2	27.4	87.9	27.2	89.8	25.3
Hawaii	100.0	--	100.0	--	100.0	--	100.0	--
Idaho	85.8	6	87.7	6	89.7	5	90.4	6
Illinois	59.5	14.9	57.9	16.8	62.5	22.3	67.6	31.4
Indiana	92.1	15.9	90.2	18.5	93.5	18.4	98.6	28.3
Iowa	97.2	29.6	97.8	34.2	98.1	39.0	98.2	46.2
Kansas	92.2	16.0	93.0	18.4	91.0	17.5	91.1	19.6
Kentucky	89.9	11.5	93.4	13.0	95.3	15.5	96.2	21.8
Louisiana	100.0	44.7	100.0	45.3	100.0	41.0	100.0	41.9
Maine	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Maryland	94.5	27.6	95.8	36.9	96.1	42.1	97.2	59.9
Massachusetts	100.0	94.6	100.0	93.4	100.0	90.2	100.0	91.8
Michigan	65.6	15.2	70.7	18.9	73.0	22.0	72.4	20.7
Minnesota	94.7	30.5	94.7	35.3	95.6	46.0	96.2	51.4
Mississippi	90.9	44.6	100.0	54.3	100.0	57.0	100.0	51.4
Missouri	83.7	27.7	89.0	32.7	89.9	37.7	91.4	46.3
Montana	96.9	82.1	98.6	75.0	97.7	68.8	97.8	73.3
Nebraska	92.1	34.4	92.7	39.9	93.9	43.8	95.2	56.5
Nevada	96.4	10.6	97.0	11.3	97.7	11.8	99.4	18.8
New Hampshire	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
New Jersey	94.3	51.6	94.4	59.8	96.6	61.4	99.3	73.2
New Mexico	78.2	18.1	82.4	13.3	85.1	8.7	83.4	9.1
New York	82.4	33.2	88.1	35.2	88.3	40.5	93.6	60.9
North Carolina	89.2	47.7	97.7	71.7	98.8	92.8	98.9	97.1
North Dakota	75.4	22.2	76.1	29.4	78.4	29.5	82.5	30.4
Ohio	81.8	9.3	86.0	11.4	89.5	12.6	88.9	12.8
Oklahoma	91.9	43.6	92.5	48.5	91.3	53.1	92.6	56.8
Oregon	97.4	18.2	97.3	20.2	98.4	20.7	98.5	18.2
Pennsylvania	73.6	15.3	79.6	21.0	80.5	23.5	83.3	28.4
Rhode Island	100.0	88.6	100.0	89.4	100.0	95.1	100.0	100.0
South Carolina	90.5	74.3	97.7	76.9	97.9	76.6	98.0	85.6
South Dakota	87.1	55.4	89.3	47.0	91.7	55.3	92.1	63.1
Tennessee	94.6	52.7	97.5	54.7	98.4	60.3	98.2	63.3
Texas	94.1	21.9	94.2	21.4	89.5	27.4	94.0	27.5
Utah	100.0	18.5	100.0	19.8	100.0	19.1	100.0	23.9
Vermont	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Virginia	93.8	16.0	95.8	19.9	90.1	24.0	95.6	20.9
Washington	91.0	50.1	92.2	50.9	93.2	61.0	95.9	63.9
West Virginia	49.2	10.8	55.9	10.1	60.1	10.8	63.6	15.0
Wisconsin	88.9	35.4	90.7	39.2	90.8	44.1	90.3	47.0
Wyoming	99.7	11.8	99.8	11.4	99.7	16.9	99.7	13.8
Total	86.4	30.2	87.4	31.6	88.6	34.7	89.0	36.7

See footnotes at end of table

**Table 33. Percentage of Total Deliveries Represented by Onsystem Sales
(Continued)**

State	January 1990		Total 1989		December 1989		November 1989	
	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial
Alabama	85.5	31.8	82.9	37.4	85.6	42.4	78.3	32.6
Alaska	100.0	57.8	100.0	55.1	100.0	51.7	100.0	61.4
Arizona	96.4	62.3	93.7	44.5	95.3	57.5	94.8	55.6
Arkansas	95.8	18.1	93.1	19.4	93.4	23.5	90.7	18.1
California	95.8	57.5	91.8	44.1	92.2	52.6	90.1	25.9
Colorado	98.1	50.6	97.3	43.3	97.2	35.4	96.9	34.6
Connecticut	100.0	99.7	91.2	91.4	99.5	100.0	90.8	96.5
Delaware	100.0	78.2	100.0	75.6	100.0	74.1	100.0	68.9
District of Columbia	100.0	--	100.0	--	100.0	--	100.0	--
Florida	100.0	72.4	100.0	74.7	100.0	74.7	100.0	68.7
Georgia	96.3	58.2	90.2	36.4	96.8	59.6	89.4	36.4
Hawaii	100.0	--	100.0	--	100.0	--	100.0	--
Idaho	91.5	8.8	87.5	.5	87.4	6	84.5	.6
Illinois	66.6	28.5	69.3	29.6	74.5	36.9	68.9	30.6
Indiana	99.2	29.3	95.1	21.7	98.9	32.0	97.7	22.5
Iowa	98.5	44.5	97.8	44.2	98.3	45.7	97.6	48.4
Kansas	92.9	21.8	93.1	22.1	92.9	26.7	88.2	19.7
Kentucky	96.3	40.1	94.9	30.9	97.0	41.0	94.4	21.8
Louisiana	100.0	41.1	99.9	47.4	99.9	40.5	99.9	42.4
Maine	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Maryland	98.3	58.7	96.2	32.5	96.8	45.7	94.6	31.5
Massachusetts	100.0	94.2	99.9	98.4	99.9	99.6	99.9	96.9
Michigan	71.5	22.0	70.4	17.6	73.5	22.5	69.5	15.5
Minnesota	97.5	53.5	95.8	47.2	97.0	56.2	94.9	45.4
Mississippi	100.0	52.0	100.0	50.7	100.0	56.4	100.0	49.7
Missouri	94.1	55.8	92.3	47.4	92.3	48.5	90.3	47.2
Montana	97.9	56.5	98.1	75.7	98.1	59.2	97.9	61.3
Nebraska	95.5	59.6	98.4	43.3	98.5	58.7	98.1	60.5
Nevada	99.1	27.3	96.1	11.3	98.8	13.0	97.2	7.4
New Hampshire	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
New Jersey	99.6	81.3	97.8	61.5	99.7	83.5	99.0	71.6
New Mexico	85.5	8.6	88.1	17.3	87.6	16.8	85.6	13.7
New York	92.5	58.2	85.5	39.7	89.7	51.7	82.4	39.4
North Carolina	99.1	99.4	93.5	70.1	98.1	98.0	97.1	92.1
North Dakota	83.9	27.7	80.3	26.2	81.6	27.3	74.8	21.2
Ohio	89.2	20.2	86.4	16.0	90.3	19.9	87.8	15.8
Oklahoma	94.3	57.6	89.6	50.0	91.2	61.1	89.1	55.5
Oregon	98.2	26.6	98.2	21.9	98.0	22.1	97.3	21.8
Pennsylvania	85.7	31.2	85.3	29.1	85.3	39.0	82.9	31.6
Rhode Island	100.0	100.0	83.9	82.3	100.0	100.0	100.0	88.9
South Carolina	98.3	79.5	98.1	78.5	97.3	91.3	98.0	82.9
South Dakota	92.5	76.0	92.1	60.6	92.0	63.9	91.1	57.8
Tennessee	98.7	65.5	98.1	62.4	99.1	66.3	97.4	62.7
Texas	94.6	30.2	89.9	25.5	92.7	24.6	86.9	24.5
Utah	100.0	24.9	100.0	28.4	100.0	23.4	100.0	23.3
Vermont	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Virginia	97.1	25.6	97.1	36.3	97.9	44.6	96.4	38.7
Washington	96.2	63.9	94.0	58.6	96.5	52.9	93.6	51.0
West Virginia	70.2	17.6	61.5	27.9	71.5	34.4	58.6	26.3
Wisconsin	90.5	55.6	92.6	36.9	95.0	58.0	91.1	36.6
Wyoming	99.7	19.1	99.9	16.7	99.7	16.2	99.7	11.9
Total	90.9	40.6	89.0	36.3	90.7	39.2	87.6	34.4

See footnotes at end of table

**Table 33. Percentage of Total Deliveries Represented by Onsystem Sales
(Continued)**

State	October 1989		September 1989		August 1989		July 1989	
	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial
Alabama	84.4	33.0	78.9	33.3	83.8	34.9	55.5	38.9
Alaska	100.0	48.0	100.0	48.6	100.0	47.7	100.0	44.4
Arizona	91.6	44.2	91.5	51.5	89.1	49.6	89.1	49.3
Arkansas	87.5	16.4	88.2	22.0	88.2	17.5	87.2	14.9
California	88.5	72.4	91.0	39.4	87.8	34.0	89.4	40.1
Colorado	95.6	41.7	95.8	42.8	91.8	53.2	95.0	49.5
Connecticut	85.5	86.4	74.8	85.4	80.4	98.4	74.5	80.6
Delaware	100.0	88.0	100.0	64.0	100.0	66.0	100.0	78.2
District of Columbia	100.0	--	100.0	--	100.0	--	100.0	--
Florida	100.0	72.4	100.0	71.3	100.0	74.4	100.0	71.1
Georgia	86.4	29.6	83.0	30.2	80.2	29.6	80.7	27.4
Hawaii	100.0	--	100.0	--	100.0	--	100.0	--
Idaho	79.3	.3	84.1	.3	83.0	.3	86.7	.2
Illinois	64.5	27.6	62.4	23.2	47.4	21.8	50.2	21.0
Indiana	91.9	17.2	89.1	15.3	96.8	17.1	96.7	19.3
Iowa	96.6	49.5	95.2	41.5	95.0	41.1	95.4	44.1
Kansas	88.9	22.6	91.8	22.1	94.7	27.4	93.7	20.4
Kentucky	90.7	20.8	89.8	16.3	88.2	20.2	89.5	32.2
Louisiana	99.9	45.4	99.9	47.9	99.9	47.0	99.9	51.6
Maine	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Maryland	94.2	24.3	94.1	20.7	94.7	18.4	94.3	16.9
Massachusetts	99.9	100.0	99.9	100.0	99.9	100.0	99.9	100.0
Michigan	64.4	12.3	57.5	10.8	50.8	8.8	51.7	9.5
Minnesota	91.9	46.1	92.7	34.5	89.9	34.3	89.4	31.8
Mississippi	100.0	50.6	100.0	52.9	100.0	48.0	100.0	52.1
Missouri	88.8	41.3	86.9	42.8	90.5	42.1	86.1	42.3
Montana	97.5	56.8	96.3	60.5	96.3	75.3	96.4	84.8
Nebraska	98.8	76.7	99.7	30.8	99.9	37.4	99.9	27.8
Nevada	96.2	11.2	91.2	6.9	91.7	7.1	92.7	9.2
New Hampshire	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
New Jersey	94.7	53.9	93.5	51.6	93.4	47.5	94.2	48.1
New Mexico	86.9	16.6	80.2	21.9	81.9	28.5	80.2	21.3
New York	74.8	35.0	73.6	29.1	78.2	34.6	78.6	27.5
North Carolina	86.3	48.7	84.4	48.1	84.2	48.6	80.1	53.6
North Dakota	70.9	15.5	71.4	18.5	64.9	19.7	69.2	20.4
Ohio	85.1	15.9	78.9	14.3	75.0	11.2	75.5	14.5
Oklahoma	86.5	46.2	86.8	47.3	85.0	49.8	86.7	42.3
Oregon	96.7	20.8	97.4	17.8	97.2	17.5	97.0	16.3
Pennsylvania	80.3	23.3	76.4	20.4	77.2	19.5	79.6	17.2
Rhode Island	82.7	67.5	44.6	67.8	40.4	71.2	48.9	69.8
South Carolina	97.8	70.5	97.7	75.7	97.7	74.4	98.1	83.7
South Dakota	89.6	56.4	90.0	55.2	89.4	53.4	90.2	55.1
Tennessee	97.1	61.0	96.9	55.9	95.8	57.8	96.7	58.0
Texas	86.3	24.7	81.8	25.1	90.4	23.2	92.7	25.0
Utah	100.0	22.9	100.0	23.6	100.0	22.8	100.0	28.5
Vermont	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Virginia	93.3	24.8	95.4	21.9	94.1	20.0	93.9	23.3
Washington	93.0	62.5	87.3	58.1	92.6	61.8	87.0	57.9
West Virginia	49.5	22.8	40.5	24.2	39.5	23.8	39.8	22.6
Wisconsin	84.3	25.0	84.2	22.1	84.2	19.4	86.1	21.7
Wyoming	99.6	12.9	99.8	12.6	100.0	12.7	100.0	13.6
Total	85.2	37.2	84.7	33.2	84.9	32.1	84.9	33.5

See footnotes at end of table

**Table 33. Percentage of Total Deliveries Represented by Onsystem Sales
(Continued)**

State	June 1989		May 1989		April 1989		March 1989	
	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial
Alabama	86.2	37.8	83.8	37.6	90.6	39.5	89.4	42.2
Alaska	100.0	55.2	100.0	60.4	100.0	50.9	100.0	61.8
Arizona	91.7	45.9	92.8	45.1	93.5	43.6	94.1	31.5
Arkansas	91.5	19.0	91.3	18.9	94.3	17.3	95.9	18.3
California	92.8	43.9	94.8	38.1	88.3	39.9	93.0	37.4
Colorado	97.3	41.5	97.3	42.0	97.8	43.6	98.3	39.5
Connecticut	76.5	85.4	81.6	82.6	90.0	87.2	98.4	91.7
Delaware	100.0	76.4	100.0	82.9	100.0	83.8	100.0	83.5
District of Columbia	100.0	--	100.0	--	100.0	--	100.0	--
Florida	100.0	73.1	100.0	75.9	100.0	74.0	100.0	78.0
Georgia	81.7	31.1	85.3	30.6	88.2	33.8	89.7	37.2
Hawaii	100.0	--	100.0	--	100.0	--	100.0	--
Idaho	85.8	.4	82.7	.4	89.0	.4	90.6	.5
Illinois	59.7	22.1	67.5	25.0	69.6	27.7	69.8	30.6
Indiana	97.2	29.2	92.6	14.4	92.6	17.1	94.3	20.0
Iowa	96.3	40.7	97.0	43.5	98.0	40.7	98.5	44.6
Kansas	89.2	19.0	92.9	18.1	94.6	21.3	94.1	22.7
Kentucky	89.2	28.4	91.0	31.2	94.9	31.0	96.4	32.9
Louisiana	99.9	52.9	99.9	53.1	99.9	51.2	99.9	47.4
Maine	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Maryland	95.1	22.0	95.9	28.1	96.7	36.3	97.1	40.6
Massachusetts	99.9	100.0	99.9	100.0	99.9	100.0	99.9	100.0
Michigan	47.6	9.5	64.9	16.2	71.7	18.9	76.0	23.6
Minnesota	92.4	41.7	95.0	48.4	95.8	52.4	97.0	53.5
Mississippi	100.0	46.6	100.0	50.7	100.0	47.5	100.0	55.4
Missouri	85.8	42.0	90.7	44.7	93.2	47.4	94.4	53.5
Montana	96.8	89.6	97.4	85.4	98.6	83.7	98.8	88.9
Nebraska	99.8	31.2	99.7	37.5	99.8	42.2	97.1	41.9
Nevada	94.3	9.0	94.2	8.9	95.0	11.2	96.9	15.4
New Hampshire	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
New Jersey	94.7	55.4	96.2	53.3	98.3	58.7	98.7	62.6
New Mexico	83.4	21.4	86.6	28.6	86.5	15.9	91.4	2.2
New York	81.3	29.8	85.4	35.5	85.0	36.3	89.3	45.7
North Carolina	87.7	54.2	89.6	57.6	92.4	71.3	94.9	78.1
North Dakota	74.8	18.5	80.6	22.0	83.9	34.9	84.0	33.4
Ohio	74.4	11.3	81.2	12.7	86.0	15.3	87.1	16.6
Oklahoma	86.6	48.9	89.1	47.1	87.9	46.7	91.7	48.1
Oregon	97.6	22.1	97.6	19.4	98.3	22.2	98.7	24.6
Pennsylvania	76.9	20.9	81.7	23.9	87.4	25.5	88.7	33.8
Rhode Island	47.7	67.7	83.9	71.3	87.1	82.1	100.0	100.0
South Carolina	98.2	85.0	98.1	67.7	98.3	75.8	98.6	74.5
South Dakota	91.6	53.6	92.5	56.3	92.1	65.5	92.8	68.1
Tennessee	95.9	56.8	96.8	67.4	97.5	61.9	98.9	66.1
Texas	88.8	28.8	89.9	25.6	91.9	26.4	93.2	28.1
Utah	100.0	26.1	100.0	28.8	100.0	31.3	100.0	30.3
Vermont	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Virginia	96.4	37.1	96.4	28.3	97.1	45.6	98.1	43.3
Washington	89.7	60.3	93.0	57.5	93.2	60.9	96.9	58.9
West Virginia	45.3	23.3	55.0	23.3	63.9	30.8	65.3	27.1
Wisconsin	87.7	26.7	92.6	32.8	94.0	35.7	94.5	40.9
Wyoming	100.0	18.5	100.0	24.5	100.0	15.5	100.0	21.5
Total	86.1	36.5	88.2	35.3	89.1	36.1	90.8	37.5

See footnotes at end of table.

**Table 33. Percentage of Total Deliveries Represented by Onsystem Sales
(Continued)**

State	February 1989		January 1989		Total 1988		December 1988	
	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial
Alabama	82.5	40.4	83.9	38.2	91.1	50.0	82.9	39.9
Alaska	100.0	59.2	100.0	72.3	100.0	54.5	100.0	67.4
Arizona	96.3	32.7	96.1	29.7	95.4	29.1	95.1	28.2
Arkansas	95.6	23.1	95.3	24.1	93.7	24.3	94.3	27.3
California	95.1	50.7	94.6	52.2	95.6	63.1	83.6	67.3
Colorado	98.1	46.2	98.0	47.6	97.7	39.0	97.8	34.9
Connecticut	100.0	100.0	100.0	100.0	98.1	97.7	100.0	100.0
Delaware	100.0	79.2	100.0	75.9	100.0	79.1	100.0	77.5
District of Columbia	100.0	--	100.0	--	100.0	--	100.0	--
Florida	100.0	80.0	100.0	79.7	100.0	76.1	100.0	76.8
Georgia	93.6	42.6	96.6	53.2	93.9	46.3	95.5	61.6
Hawaii	100.0	--	100.0	--	100.0	--	100.0	--
Idaho	90.2	7	88.8	7	85.9	3.6	86.4	3.7
Illinois	73.4	36.4	71.8	37.1	76.8	34.8	74.7	31.0
Indiana	93.9	28.3	94.1	24.7	95.2	23.3	94.2	28.8
Iowa	98.4	46.0	98.4	43.6	98.3	40.3	98.2	44.4
Kansas	94.4	22.5	94.8	23.0	96.4	37.1	93.2	23.5
Kentucky	96.6	35.6	97.1	46.2	95.8	37.7	96.0	42.3
Louisiana	99.9	45.3	99.9	48.0	99.9	57.4	99.9	52.7
Maine	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Maryland	96.6	42.5	97.1	47.9	96.9	37.9	96.8	40.7
Massachusetts	99.9	91.2	99.9	91.0	99.9	99.2	100.0	93.7
Michigan	74.5	23.7	75.8	25.1	71.6	19.9	74.5	23.2
Minnesota	97.4	56.6	97.3	56.2	96.8	55.9	98.5	55.0
Mississippi	100.0	54.6	100.0	46.3	100.0	56.0	100.0	49.5
Missouri	93.9	53.4	94.4	55.4	96.2	70.3	92.4	64.2
Montana	98.9	89.9	98.3	74.3	99.9	86.8	99.9	85.2
Nebraska	96.5	45.9	96.8	49.0	97.7	51.1	99.5	47.5
Nevada	98.1	21.3	98.0	16.8	95.1	31.2	91.0	13.3
New Hampshire	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
New Jersey	98.9	75.1	99.0	79.0	98.5	65.2	99.4	77.6
New Mexico	89.2	10.9	93.0	9.0	92.7	21.1	92.3	15.0
New York	90.1	47.3	90.4	50.0	89.4	48.0	89.7	54.0
North Carolina	98.9	96.8	98.7	97.4	95.6	82.3	98.4	96.2
North Dakota	84.8	36.5	81.7	36.5	92.7	43.5	93.3	39.6
Ohio	88.1	18.7	87.4	21.1	87.1	18.7	88.2	22.5
Oklahoma	90.2	54.7	89.7	51.3	74.5	40.0	80.3	57.6
Oregon	99.2	31.9	99.1	26.6	98.8	34.6	98.4	21.7
Pennsylvania	88.9	42.9	89.4	42.5	90.2	41.2	91.0	48.4
Rhode Island	100.0	100.0	100.0	100.0	87.1	85.2	100.0	100.0
South Carolina	98.5	76.5	98.5	95.2	99.1	80.2	97.3	87.0
South Dakota	93.1	68.6	92.8	64.0	96.2	69.5	94.5	71.7
Tennessee	98.9	65.9	99.1	66.4	97.4	67.8	99.0	65.3
Texas	91.8	25.4	86.2	24.8	87.5	29.8	79.1	33.4
Utah	100.0	38.8	100.0	38.7	100.0	47.0	100.0	38.6
Vermont	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Virginia	98.4	51.0	98.3	49.4	97.6	51.3	97.9	53.6
Washington	94.8	62.4	95.5	60.8	97.2	68.9	96.1	56.1
West Virginia	69.0	36.6	68.6	36.2	60.3	17.3	66.9	17.9
Wisconsin	94.2	43.5	94.1	44.5	93.4	35.5	93.7	44.9
Wyoming	100.0	21.7	100.0	18.5	100.0	22.1	100.0	17.5
Total	91.2	39.3	91.0	40.5	90.8	42.6	89.7	44.4

-- = Not Applicable

Notes and Sources: The percentages depict the portion of total commercial and industrial deliveries represented by onsystem sales. Total deliveries include volume transported to commercial and industrial consumers for the account of others.

Figure 7. Percentage of Total Deliveries Represented by Onsystem Sales

Source: Form EIA-857.

Table 34. Gas Home Customer-Weighted Heating Degree-Days

Census Divisions	October 1 through October 31					Cumulative July 1 through October 31				
	Normal ^a	1989	1990	Percent Change		Normal ^a	1989	1990	Percent Change	
				Normal to 1990	1989 to 1990				Normal to 1990	1989 to 1990
New England CT, ME, MA, NH, RI, VT	399	386	298	-25.3	-22.8	562	553	456	-18.9	-17.5
Middle Atlantic NJ, NY, PA	352	320	274	-22.2	-14.4	470	420	389	-17.2	-7.4
East North Central IL, IN, MI, OH, WI	373	379	407	9.1	7.4	486	555	554	14.0	-.2
West North Central IA, KS, MN, MO, ND, NE, SD	360	361	407	13.1	12.7	500	559	551	10.2	-1.4
South Atlantic DE, FL, GA, MD and DC, NC, SC, VA, WV	198	182	161	-18.7	-11.5	227	230	205	-9.7	-10.9
East South Central AL, KY, MS, TN	201	176	186	-7.5	5.7	227	209	208	-8.4	-.5
West South Central AR, LA, OK, TX	85	85	108	27.1	27.1	90	114	114	26.7	.0
Mountain AZ, CO, ID, MT, NV, NM, UT, WY	378	388	372	-1.6	-4.1	575	589	532	-7.5	-9.7
Pacific ^b CA, OR, WA	108	129	79	-26.9	-38.8	140	173	95	-32.1	-45.1
U.S. Average ^b	264	262	257	-2.7	-1.9	347	371	345	-.6	-7.0

^a Normal is based on calculations of data from 1951 through 1980.

^b Excludes Alaska and Hawaii.

Notes and Sources: See the last page of this section.

Table Notes and Sources

Table 1

Notes: Data for 1984 through 1989 are final. All other data are preliminary unless otherwise indicated. Geographic coverage is the 50 States and the District of Columbia. Totals may not equal sum of components because of independent rounding.

Sources:

- EIA, *Natural Gas Annual 1989*, Table 7 and EIA estimates, January 1990 through current month. See Explanatory Notes 1, 3, and 6 for discussion of computation, estimating procedures, and revision policy.

Table 2

Notes: Data for 1984 through 1989 are final. All other data are preliminary unless otherwise indicated. Geographic coverage is the 50 States and the District of Columbia. Totals may not equal sum of components because of independent rounding.

Sources:

- Total Dry Gas Production: EIA *Natural Gas Annual 1989*, 1984 through 1989; IOCC, MMS reporting, and EIA estimates, January 1990 through current month. See Explanatory Note 3 for estimation procedures and revision policy.
- Withdrawals from and Additions to Storage: EIA *Natural Gas Annual 1989*, 1984 through 1989; Form FERC-8 and Form EIA-191, January 1990 through current month.
- Supplemental Gaseous Fuels: EIA *Natural Gas Annual 1989*, 1984 through 1989; and EIA computations, January 1990 through current month. See Explanatory Note 2 for discussion of computation procedures and revision policy.
- Imports and Exports: Form FPC-14, 1984 through 1989; and EIA estimates, January 1990 through the current month. See Explanatory Note 4 for discussion of procedures and revision policy.
- Consumption and Unaccounted For: EIA *Natural Gas Annual 1989*, 1984 through 1989; and EIA computations, January 1990 through current month. See Explanatory Notes 5 and 11 for discussion of computation procedures and revision policy.

Table 3

Notes: Data for 1984 through 1989 are final. All other data are preliminary unless otherwise indicated. Geographic coverage is the 50 States and the District of Columbia. Totals may not equal sum of components because of independent rounding.

Sources:

- All data except electric utility: EIA *Natural Gas Annual 1989*, 1984 through 1989; and Form EIA-857 and computations January 1990 through the current month. See Explanatory Note 5 for computation procedures and revision policy. Electric utility data: Form EIA-759, "Monthly Power Plant Report" (formerly Form FPC-4).

Table 4

Notes: Data for 1984 through 1989 are final. All other data are preliminary unless otherwise indicated. Geographic coverage is the 50 States and the District of Columbia. Average prices for gas delivered to industrial consumers for 1984 through 1987 include imputed averages for volumes of gas delivered for the account of others. From 1988 on, average prices reflect on-system sales prices only. The change in series in 1987 affects the commercial, industrial, and all consumers averages.

Sources:

- Average wellhead price: EIA *Natural Gas Annual 1989*, 1984 through 1989; and EIA estimates, January 1990 through current month. See Explanatory Note 8 for estimation procedures and revision policy.
- Imports and Interstate Pipeline Company Purchases: Form FERC-11.
- Average City Gate, Residential, Commercial and Industrial average prices for 1984 through current month from Form EIA-857. See Explanatory Note 5 for discussion of revision policy.
- Earlier prices from EIA *Natural Gas Annual 1989*. Electric Utilities averages from Form FERC-423, "Monthly Report of Cost and Quality of Fuels for Electric Plants."

Table 5

Notes: See Explanatory Note 12 for discussion of purchased gas adjustment filings. Totals may not equal sum of components because of independent rounding.

Source:

- Purchased Gas Adjustment filings for interstate pipeline companies.

Table 6

Notes: Data for 1985 through 1989 are final. All other data are preliminary.

Sources:

- Form FPC-14, "Annual Report for Importers and Exporters of Natural Gas."
- "Quarterly Sales and Price Report" prepared by the Office of Fuels Programs, Office of Fossil Energy.

Table 7

Notes: Data for 1984 through 1989 are final. All other data are preliminary unless otherwise indicated. Totals may not equal sum of components because of independent rounding. See Explanatory Notes 1 and 3 for discussion of computation procedures and revision policy.

Sources:

- EIA *Natural Gas Annual 1989*, 1984 through 1989.
- IOCC, MMS reports, and EIA computations, January 1990 through current month.

Table 8

Notes: Data for the current month and the previous 2 months are preliminary. All other data are final. Dates shown indicate date received at the FERC. Data include affirmative determinations only. See Explanatory Note 10 for discussion of Title I of the Natural Gas Policy Act. Geographic coverage is the 50 States and the District of Columbia. Totals may not equal sum of components because of independent rounding.

Source:

- Form FERC-121.

Table 9

Notes: Dates shown indicate date received at FERC. Values include affirmative determinations only. See Explanatory Note 10 for discussion of Title I of the Natural Gas Policy Act. Geographic coverage is the 50 States and the District of Columbia. Totals may not equal sum of components because of independent rounding.

Source:

- Form FERC-121.

Table 10

Note: Data shown are based on filings received at FERC during the month indicated by the table heading. Data include affirmative determinations only. See Explanatory Note 10 for discussion of Title I of the Natural Gas Policy Act. Geographic coverage is the 50 States and the District of Columbia. Totals may not equal sum of components because of independent rounding.

Source:

- Form FERC-121.

Table 11

Notes: Geographic coverage is the 50 States and the District of Columbia. A "small producer" is one with annual sales subject to FERC jurisdiction not in excess of 10 billion cubic feet. On November 16, 1984, the Federal Energy Regulatory Commission issued Order No. 406 in Docket No. RM 84-14-000 providing for inclusion of maximum lawful prices under Sections 103(b)(2) and 105(b)(3) of the Natural Gas Policy Act. Order No. 406 became effective on January 1, 1985.

Source:

- *Federal Register*, "Rules and Regulations."

Table 12

Notes: Data up to 3 years prior to current month are final. All other data are preliminary unless otherwise indicated. See Explanatory Note 9 for discussion of major interstate pipeline companies. Totals may not equal sum of components because of independent rounding. This table shows selected items only and therefore does not balance mathematically.

Source:

- Form FERC-11

Table 13

Notes: The summaries presented in this table are exclusive of transactions between major pipeline companies in the computation of total pipeline activities to eliminate double-counting. Data up to 3 years prior to current month are final. All other data are preliminary unless otherwise indicated. See Explanatory Note 9 for discussion of major interstate pipeline companies. Totals may not equal sum of components because of independent rounding.

Source:

- Form FERC-11.

Table 14

Notes: Two lines have been added to this table to explicitly differentiate transactions between major and nonmajor pipeline companies. Totals may not equal sum of components due to independent rounding and provisions for pending regulatory adjustments.

Source:

- Form FERC-11.

Table 15

Notes: Previously published manufactured gas is now summarized with liquefied natural gas, gasified coal, and synthetic gas production. Also, the summaries presented in this table are exclusive of transactions between major pipeline companies in the computation of total pipeline activities to eliminate double counting. See Explanatory Note 9 for discussion of major interstate pipeline companies. Totals may not equal sum of components because of independent rounding.

Source:

- Form FERC-11.

Table 16

Notes: Previously published manufactured gas is now summarized with liquefied natural gas, gasified coal, and synthetic gas production. Two lines have been added to this table that explicitly differentiate transactions between major and nonmajor pipeline companies. See Explanatory Note 9 for discussion of major interstate pipeline companies. Totals may not equal sum of components because of independent rounding.

Source:

- Form FERC-11.

Table 17

Notes: Data for 1984 through 1989 are final. All other data are preliminary unless otherwise noted. See Explanatory Note 7 for discussion of revision policy. Gas in storage at the end of a reporting period may not equal the quantity derived by adding or subtracting net injections or withdrawals during the period to the quantity of gas in storage at the beginning of the period. This is due to changes in the quantities of native gas included in base gas and/or losses in base gas due to migration from storage reservoirs. Totals may not equal sum of components because of independent rounding. Geographic coverage is the 50 States and the District of Columbia.

Sources:

- Form EIA-191, Form FERC-8, and Form EIA-176.

Table 18

Notes: Data for 1984 through 1989 are final. All other data are preliminary unless otherwise noted. See Explanatory Note 7 for discussion of revision policy. Gas in storage at the end of a reporting period may not equal the quantity derived by adding or subtracting net injections or withdrawals during the period to the quantity of gas in storage at the beginning of the period. This is due to changes in the quantities of native gas included in base gas and/or losses in base gas due to migration from storage reservoirs. Totals may not equal sum of components because of independent rounding. Geographic coverage is the 50 States and the District of Columbia.

Sources:

- Form EIA-191, Form FERC-8, and Form EIA-176.

Table 19

Notes: Data for 1984 through 1989 are final. All other data are preliminary unless otherwise noted. See Explanatory Note 7 for discussion of revision policy. Gas in storage at the end of a reporting period may not equal the quantity derived by adding or subtracting net injections or withdrawals during the period to the quantity of gas in storage at the beginning of the period. This is due to changes in the quantities of native gas included in base gas and/or losses in base gas due to migration from storage reservoirs. Totals may not equal sum of components because of independent rounding. Geographic coverage is the 50 States and the District of Columbia.

Sources:

- Form EIA-191, Form FERC-8, and Form EIA-176.

Table 20

Notes: Gas in storage at the end of a reporting period may not equal the quantity derived by adding or subtracting net injections or withdrawals during the period to the quantity of gas in storage at the beginning of the period. This is due to changes in the quantities of native gas included in base gas and/or losses in base gas due to migration from storage reservoirs. Totals may not equal sum of components because of independent rounding. Geographic coverage is the 50 States and the District of Columbia.

Source:

- Form FERC-8.

Table 21

Notes: Gas in storage at the end of a reporting period may not equal the quantity derived by adding or subtracting net injections or withdrawals during the period to the quantity of gas in storage at the beginning of the period. This is due to changes in the quantities of native gas included in base gas and/or losses in base gas due to migration from storage reservoirs. Totals may not equal sum of components because of independent rounding. Geographic coverage is the 50 States and the District of Columbia.

Sources:

- Form FERC-8 and Form EIA-191.

Tables 22-25

Notes: Geographic coverage is the 50 States and the District of Columbia. Volumes in these tables represent the amount of natural gas delivered to four groups of natural gas consumers. See Explanatory Note 5 for discussion of computations and revision policy.

Sources:

- Residential, Commercial, and Industrial Volumes: Form EIA-857.
- Electric Utility Volumes: Form EIA-759.

Table 26

Notes: Geographic coverage is the 50 States and the District of Columbia. Volumes in this table represent the amount of natural gas delivered to all consumers. See Explanatory Note 5 for discussion of computations and revision policy.

Source:

- Form EIA-857 and Form EIA-759.

Table 27

Notes: Geographic coverage is the 50 States and the District of Columbia. Prices in this table represent the average price of natural gas by State at the point where the gas is transferred from a pipeline to a local distribution company within the State. See Explanatory Note 5 for discussion of computations and revision policy.

Source:

- Form EIA-857.

Tables 28-31

Notes: Data for 1988 and 1989 are final. All other data are preliminary unless otherwise indicated. Geographic coverage is the 50 States and the District of Columbia. Average prices for gas delivered to commercial and industrial consumers for 1988 forward reflect onsystem sales prices only. See Explanatory Note 5 for discussion of computations and revision policy. See Table 33 for data on onsystem sales expressed as a percentage of both total commercial and total industrial deliveries.

Sources:

- Residential, Commercial, and Industrial Prices: Form EIA-857.
- Electric Utility Prices: Form FERC-423.

Table 32

Notes: Geographic coverage is the 50 States and the District of Columbia. Prices in this table represent the on-system average price of natural gas delivered to all consumers. See preceding note regarding break in average price series. See Explanatory Note 5 for discussion of computations and revision policy.

Sources:

- Form EIA-857 and Form FERC-423.

Table 33

Notes: Volumes of natural gas reported for the commercial and industrial sectors in this publication include data for both sales and deliveries for the account of others. This table shows the percent of the total State volume that represents natural gas sales to the commercial and industrial sectors. This information may be helpful in evaluating commercial and industrial price data which are based on sales data only. See Appendix C, Statistical Considerations, for a discussion of the computation of natural gas prices.

Source:

- Form EIA-857.

Table 34

Notes: Degree-days are relative measurements of outdoor air temperature. Heating degree-days are deviations of the mean daily temperature below 65 degrees Fahrenheit. A weather station recording a mean daily temperature of 40 degrees Fahrenheit would report 25 heating degree-days.

There are several degree-day data bases maintained by the National Oceanic and Atmospheric Administration. The information published in the EIA *Natural Gas Monthly* is developed by the National Weather Service Climate Analysis Center, Camp Springs, Maryland. The data are available weekly with monthly summaries and are based on mean daily temperatures recorded at about 200 major weather stations around the country. The temperature information recorded at

these weather stations is used to calculate Statewide degree-day averages weighted by gas home customers. The State figures are then aggregated into Census Divisions and into the national average.

Sources:

- National Oceanic and Atmospheric Administration.

Appendix A

Explanatory Notes

Appendix A

Explanatory Notes

Note 1. Nonhydrocarbon Gases Removed

Annual Data

Data on nonhydrocarbon gases removed from marketed production--carbon dioxide, helium, hydrogen sulfide, and nitrogen--are reported by State agencies on the voluntary Form EIA-627. For 1989, of the 32 producing States, 22 reported data on nonhydrocarbon gases removed. The 22 States accounted for 57 percent of total 1989 gross withdrawals. Of the 22 States reporting nonhydrocarbon gases removed, 11 reported zero values: Alaska, Arizona, Arkansas, Illinois, Indiana, Maryland, Missouri, New York, Oregon, South Dakota, and Virginia. The nine States reporting volumes greater than zero are Alabama, California, Colorado, Florida, Mississippi, New Mexico, North Dakota, Texas, and Wyoming. Two States (Kentucky and Nebraska) reported quantities unknown but considered insignificant. In addition, Kansas, Louisiana, Montana, and Oklahoma, which together accounted for 38 percent of gross withdrawals, did not report nonhydrocarbon gases removed separately. However, their gross withdrawal data excluded all or most of the nonhydrocarbon gases removed on leases. No estimates are made for States not reporting nonhydrocarbon gases removed.

Preliminary Monthly Data

All monthly data are considered preliminary until after publication of the *Natural Gas Annual* for the year in which the report month falls. Three States report monthly data on nonhydrocarbon gases removed: Alabama, Texas, and Mississippi. Monthly data for California, Colorado, Florida, New Mexico, North Dakota, and Wyoming are estimated based on annual data reported on Form EIA-627. Nonhydrocarbon gases as an annual percentage of gross withdrawals reported by each of the six States is applied to each State's monthly gross withdrawal data to produce an estimate of nonhydrocarbon gases removed.

Final Monthly Data

Monthly data are revised after publication of the *Natural Gas Annual* by proportionally allocating the differences between annual data reported on the Form EIA-627 and the sum of monthly data (January-December).

Note 2. Supplemental Gaseous Fuels

Annual Data

Annual data are published from Form EIA-176.

Preliminary Monthly Data

All monthly data are considered preliminary until after the publication of the *Natural Gas Annual* for the year in which the report month falls. Monthly estimates are based on the annual ratio of supplemental gaseous fuels to the sum of dry gas production, net imports, and net withdrawals from storage. This ratio is applied to the monthly sum of these three elements to compute a monthly supplemental gaseous fuels figure.

Final Monthly Data

Monthly data are revised after publication of the *Natural Gas Annual*. Final monthly data are estimated based on the revised annual ratio of supplemental gaseous fuels to the sum of dry gas production, net imports, and net withdrawals from storage. This ratio is applied to the revised monthly sum of these three elements to compute final monthly data.

Note 3. Production

Annual Data

Natural gas production data are collected from 32 gas-producing States on Form EIA-627. The U.S. Minerals Management Service (MMS) also supplies data on the quantity and value of natural gas production on the Gulf of Mexico and Outer Continental Shelf. No adjustments are made to the data.

Estimated Monthly Data

State marketed production data for a particular month are estimated if data are unavailable at the time of publication. The data are estimated based on an average rate of change between the report month and the prior month over the previous 3 years. The rate-of-change percentage is applied to the data for the month prior to the report month to compute the estimate for the report month in the current year.

Estimates for total U.S. marketed production are based on the application of historical (latest 3 calendar years) month-to-month ratios of daily production rates to the latest preliminary reported monthly production data. State estimates for nonhydrocarbon gas removed, gas used for repressuring, and gas vented and flared are based on the ratio of the latest preliminary reported 3-month average of these categories to marketed production. These ratios are applied to the estimates of marketed production to calculate figures for nonhydrocarbon gases removed, gas used for repressuring, and gas vented and flared. Estimates for gross withdrawal data are the sum of the estimates calculated for nonhydrocarbon gases removed, gas used for repressuring, gas vented and flared, and marketed production.

Preliminary Monthly Data

All monthly data are considered preliminary until after publication of the *Natural Gas Annual* for the year in which the report month falls. Preliminary monthly data are published from reports from the Interstate Oil Compact Commission (IOCC) and the MMS. Volumetric data are converted, as necessary, to a standard 14.73 psia pressure base. Data are revised as Table 7 monthly data are updated.

Final Monthly Data

The differences between each State's annual production data reported on the annual Form EIA-627 and the sum of its monthly IOCC reports (January-December) are allocated proportionally to the monthly IOCC data.

Note 4. Imports and Exports

Annual Data and Final Monthly Data

Annual and final monthly data are published from the annual Form FPC-14, which requires data to be reported by month for the calendar year.

Preliminary Monthly Data - Imports

Preliminary monthly import data are based on data from the National Energy Board of Canada and responses to informal industry contacts and EIA estimates. Preliminary data are revised after the publication of the article "U.S. Imports and Exports of Natural Gas" for the calendar year.

Preliminary Monthly Data - Exports

Preliminary monthly export data are based on historical data from the Form FPC-14, informal industry contacts, and information gathered from natural gas industry trade publications. Preliminary monthly data are revised after publication of "U.S. Imports and Exports of Natural Gas" for the calendar year in which the report month falls.

Note 5. Consumption

All Annual Data

All consumption data except electric utility data are from the Form EIA-857 and Form EIA-176. No adjustments are made to the data. Electric utility data are reported on Form EIA-759.

Monthly Data

All monthly data are considered preliminary until after publication of the *Natural Gas Annual*.

Total Consumption

Preliminary Monthly Data

The most current month estimate is calculated based on the arithmetic average change from the previous month for the previous 3 years. The following month this estimate is revised by summing the components (pipeline fuel, lease and plant fuel, and deliveries to consumers).

Final Monthly Data

Monthly data are revised after publication of the *Natural Gas Annual*. Final monthly total consumption is obtained by summing its components.

Residential, Commercial, and Industrial Sector Consumption

Preliminary Monthly Data

Preliminary monthly residential, commercial, and industrial data are from Form EIA-857. See Appendix C, "Statistical Considerations," for a detailed explanation of sample selection and estimation procedures.

Price data are representative of prices for gas sold and delivered to residential, commercial, and industrial consumers. These prices do not reflect average prices of natural gas transported to consumers for the account of third parties or "spot-market" prices.

Final Monthly Data

Monthly data are revised after the publication of the *Natural Gas Annual*. Final monthly data are estimated by allocating annual consumption data from the Form EIA-176 to each month in proportion to monthly sales volumes reported in Form EIA-857.

Electric Utility Sector Consumption

All Monthly Data

Monthly data published are from Form EIA-759.

Pipeline Fuel Consumption

Preliminary Monthly Data

Preliminary data are estimated based on the pipeline fuel consumption as an annual percentage of total consumption from the previous year's Form EIA-176. This percentage is applied to each month's total consumption figure to compute the monthly estimate.

Final Monthly Data

Monthly data are revised after the publication of the *Natural Gas Annual*. Final monthly data are based on the revised annual ratio of pipeline fuel consumption

to total consumption from the Form EIA-176. This ratio is applied to each month's revised total consumption figure to compute final monthly pipeline fuel consumption estimates.

Lease and Plant Fuel Consumption

Preliminary Monthly Data

Preliminary monthly data are estimated based on lease and plant fuel consumption as an annual percentage of marketed production (excluding nonhydrocarbon gases). This percentage is applied to each month's marketed production figure to compute estimated lease and plant fuel consumption.

Final Monthly Data

Monthly data are revised after publication of the *Natural Gas Annual*. Final monthly data are based on a revised annual ratio of lease and plant fuel consumption to marketed production (excluding nonhydrocarbon gases) from Form EIA-176. This ratio is applied to each month's revised marketed production figure to compute final monthly lease and plant fuel consumption estimates.

Note 6. Extraction Loss

Annual Data

Extraction loss data are calculated from filings of Form EIA-64A, "Annual Report of the Origin of Natural Gas Liquids Production." For a fuller discussion, see the *Natural Gas Annual 1989*.

Preliminary Monthly Data

Preliminary data are estimated based on extraction loss as an annual percentage of marketed production. This percentage is applied to each month's marketed production to estimate monthly extraction loss.

Final Monthly Data

Monthly data are revised after the publication of the *Natural Gas Annual*. Final monthly data are estimated by allocating annual extraction loss data to each month based on its total natural gas disposition.

Note 7. Natural Gas Storage

Underground Natural Gas Storage

All monthly data concerning underground storage are published from the essentially identical forms, FERC-8 and EIA-191. Monthly data are revised after publication of "Underground Natural Gas Storage in the United States" for the heating year (April through March) in which the report month falls. In addition, injection and withdrawal data from the FERC-8/EIA-191 survey are adjusted to correspond to data from Form EIA-176 following publication of the *Natural Gas Annual*.

Underground and Liquefied Natural Gas Storage

The final monthly and annual storage and withdrawal data for 1984 through 1989 shown in Table 2 include both underground and liquefied natural gas (LNG) storage. Underground storage data are obtained from the FERC-8/EIA-191 and EIA-176 surveys in the manner described earlier. Annual data on LNG additions and withdrawals are taken from Form EIA-176. Monthly data are estimated by computing the ratio of each month's underground storage additions and withdrawals to annual underground storage additions and withdrawals and applying it to annual LNG data.

Note 8. Average Wellhead Value

Annual Data

Form EIA-627 requests State agencies to report the quantity and value of marketed production. When complete data are unavailable, the form instructs the State agency to report the available value and the quantity of marketed production associated with this value. A number of States reported volumes of production and associated values for other than marketed production. In addition, information for several States which were unable to provide data was obtained from Form EIA-176. It should be noted that Form EIA-176 reports a fraction of State production. The imputed value of marketed production in each State is calculated by dividing the State's reported value by its associated wellhead value. This unit price is then applied to the quantity of the State's marketed production to derive the imputed value of marketed production.

Preliminary Monthly Data

An estimate of the U.S. gas price is made each month based on monthly gas prices from four States: Mississippi, New Mexico, Oklahoma, and Texas.

Final Monthly Data

Preliminary monthly data are revised after the publication of the *Natural Gas Annual*. The weighted average 12-month prices for Texas, New Mexico, Oklahoma, and Mississippi are compared to the wellhead prices published for each of the four States in the *Natural Gas Annual*. The ratio derived from this comparison is then applied to each month's estimates for those States, and the monthly data are revised.

Note 9. Financial Data of Major Interstate Pipeline Companies

The prices in Table 4 for imports and purchases from producers, and industrial sales by major interstate pipeline companies, and all data in Tables 12 through 16 are derived from Form FERC-11. Form FERC-11 is filed monthly by the approximately 47 major interstate natural gas pipeline companies. A major pipeline company is defined as one "whose combined sales for resale, and gas transported interstate or stored for a fee exceeded 50 billion cubic feet in the previous calendar year."

Data reported by the major interstate pipeline companies on Form FERC-11 generally reflect the timing of data entry, revision, and/or reclassification of accounts in the companies' accounting records in accordance with the FERC regulations and regulatory filings. Certain data may also be estimated. Consequently, the data reported and shown in Tables 12 through 16 for any given month may include or reflect out-of-period dollar or volume adjustments, restatements or revisions, or account reclassifications. The dollar amounts reported as paid or received and volumes reported as delivered or received may also include amounts paid, delivered, or received under contractual provisions such as prepayment, take-or-pay, minimum take, or minimum bill provisions. Unless otherwise footnoted, the individual data items, computed averages, and aggregated totals shown include the effect of any and all such adjustments, revisions, estimates, reclassifications, and/or contractual provisions. Average prices are not reported on the Form 11. The averages shown are computed by dividing the total dollars reported for the particular item by the total volume reported for the same item.

Final Monthly Data

Final revisions for the prior year's data are made upon receipt of the December data for the current survey year.

Note 10. Natural Gas Policy Act of 1978

Tables 5 and 8 through 11, in this publication contain data reported by the natural gas industry under Title I of the Natural Gas Policy Act of 1978 (NGPA).

Title I of the NGPA - Wellhead Prices

The NGPA signed into law on November 9, 1978, mandated a new framework for the regulation of most facets of the natural gas industry. Ceiling prices were established for all production of natural gas. For gas produced from both new and old (pre-NGPA) reserves, ceiling prices depend on contract provisions and the characteristics of the well. If a well qualifies under more than one provision in Title I of the NGPA, the highest maximum ceiling price is applicable. Further, all price ceilings are adjusted by a monthly inflation adjustment.

Natural gas dedicated to interstate commerce on or before the November 9, 1978 enactment of the NGPA has as a maximum lawful price the "just and reasonable" rate as established by the Federal Energy Regulatory Commission under Section 104.

The maximum lawful price of natural gas under old intrastate contracts (Section 105) is based on its contract price on November 9, 1978, and is, in general, much higher than for comparable old interstate gas. Gas production under Sections 104, 105, and 106 (old contracts that have "rolled over") constitute what is referred to as "old gas."

Almost all development and extension wells begun after February 19, 1977, qualify as new onshore production (Section 103). In order to qualify for new gas status under Section 102, an onshore well started after February 19, 1977, must produce from a new reservoir or be at least 2.5 miles from, or 1,000 feet deeper than, a "marker well" (a well producing in commercial quantities any time between January 1, 1970, and April 20, 1977). Offshore gas qualifies for Section 102 if production is from new leases (entered into on or after April 20, 1977) or reservoirs "discovered" on or after July 27, 1976.

Production from wells qualifying under Section 107 is given special treatment as "high-cost gas" and is defined as gas produced:

- from wells started after February 19, 1977, and completed to produce from a depth greater than 15,000 feet
- from geopressured brine
- from coal seams
- from Devonian shale
- under conditions determined by the Federal Energy Regulatory Commission to present extraordinary risks or costs.

On November 1, 1979, gas from the first four categories was deregulated. On August 15, 1980, natural gas produced from tight formations (geologic formation where tight packing of the reservoir rock causes low production rates) was defined as high-cost gas with a ceiling price set at 200 percent of the Section 103 price.

Under the NGPA, producers applying for price classification under Sections 102, 103, 107, or 108 must file Form FERC-121, with the applicable State jurisdictional agency. The forms are then sent to FERC for review. The filings are grouped according to the month received by FERC. Not all submissions contain estimated annual volumes or contract prices. Annual volumes are often estimated by producers prior to actual operations or based on short periods of operation. Price data from Form FERC-121 are not included in this publication, since submission dates vary and prices may have changed subsequent to submission.

On January 1, 1985, the following categories of gas were deregulated pursuant to NGPA Section 121:

- Section 102(c) "new natural gas"
- Section 103(c) "new onshore production wells" which were not committed or dedicated to interstate commerce on April 20, 1977, and which produce gas from a completion location deeper than 5,000 feet.
- Sections 105 and 106(b) "intrastate gas under contracts" where the price paid on December 31, 1984, is higher than \$1.00 per million Btu, provided that such price over \$1.00 was not established by operation of an indefinite escalator clause.

On July 1, 1987, the following category of gas was deregulated pursuant to NGPA Section 121:

- Section 103(b)(2) "new onshore production wells" which were not committed or dedicated to interstate commerce on April 20, 1977, and which produce gas from a completion location less than 5,000 feet deep.

On July 26, 1989, the President signed legislation to remove all remaining natural gas wellhead price controls by 1993.

Note 11. Unaccounted For

The "unaccounted for" category represents the difference between the sum of the components of natural gas supply and the sum of the components of natural gas disposition. These differences may be due to quantities lost or to the effects of data reporting problems. Reporting problems include differences due to the net result of conversions of flow data metered at varying temperatures and pressure bases and converted to a standard temperature and pressure base; the effect of variations in company accounting and billing practices; differences between billing cycles and calendar periods; and imbalances resulting from the merger of data reporting systems, which vary in scope, format, definitions, and type of respondents.

Annual Data

Annual data are from the *Natural Gas Annual*. For an explanation of the methodology involved in calculating annual "unaccounted for" data, see the *Natural Gas Annual 1988*.

Preliminary Monthly Data

Preliminary monthly data in the "unaccounted for" category are calculated by subtracting additions to storage, exports, and consumption from total supply/disposition.

Final Monthly Data

Final monthly data in the "unaccounted for" category are calculated by subtracting storage additions, exports, and total consumption from total supply.

Note 12. Purchased Gas Adjustments

The Purchased Gas Adjustment filings for selected interstate pipeline companies have been aggregated to present volume and price data by NGPA category as shown in Table 5. These filings represent over 85 percent of the wellhead purchases subject to the NGPA and dedicated to the interstate market.

These filings were submitted every 6 months by most of the pipeline companies and once a year by the others. Beginning June 1, 1988, all pipelines will file projections quarterly in an abbreviated format, and one detailed filing per year. The projected volume and price data are used for each month for which the filing is effective. The filing dates, which are different for the different companies, are shown in Table A1.

Table A1. PGA Filing Schedule

Pipeline Company	Annual Filing Effective Date
Alabama-Tenn (b)	January
Algonguin Gas Trans (a)	March
ANR Pipeline	May
Arkla Gas (a,b)	April
Bayou Inter	August
Carnegie Nat Gas	September
Colorado Inter	October
Columbia (a,c)	May
Commercial	April
Consolidated (a)	September
E. Tenn Natural Gas (b)	January
Eastern Shore (c)	November
El Paso (b)	July
Equitrans Inc (a)	September
Florida (a,c)	May
Granite St Gas Trans(a,b)	January
Great Lakes Gas (a,c)	November
KN Energy (a)	December
Kentucky W. Va (a,c)	May
Lawrenceburg Gas	February
Mid-Louisiana Gas	September
Midwestern No. Div (b,c)	October
Midwestern So. Div	April
MIGC, Inc. (c)	May
MS. River Trans	June
National Fuel Supply(a,b)	January
Natural (a)	March
North Penn Gas (d)	March
Northern Natural (a,b)	January
Northwest Pipeline (a)	April
Panhandle Eastern (a)	March
Questar Pipeline Co	June
Ringwood Gathering	October
Sea Robin Pipeline (a)	January
South Georgia	July
Southern Natural	April
Tennessee Gas Pipeline(b)	January
Texas Eastern (a)	February
Texas Gas Pipeline	November
Texas Gas Trans (a,c)	February
Transcontinental (a)	August
Transwestern	July
Trunkline (a)	September
United (a)	October
Valero Interstate	June
Valley Gas	November
Western Gas Inter	August
Williams Nat Gas (a,c)	May
Williston Basin (a)	August

(a) Filed quarterly effective June 1, 1988.

(b) Filed quarterly effective July 1, 1988.

(c) Filed quarterly effective August 1, 1988.

Appendix B

Data Sources

Appendix B

Data Sources

The data in this publication are taken from survey reports authorized by the U.S. Department of Energy (DOE), Energy Information Administration (EIA) and by the Federal Energy Regulatory Commission (FERC). The EIA is the independent statistical and analytical agency within the DOE. The FERC is an independent regulatory commission within the DOE which has jurisdiction primarily in the regulation of electric utilities and the interstate natural gas industry. The EIA conducts and processes some of the surveys authorized by the FERC.

Data are collected from two annual surveys and five monthly surveys. Filings with the FERC also provide sources of data for this publication.

The annual reports are the Form EIA-176, a mandatory survey of all companies that deliver natural gas to consumers or that transport gas across State lines, and the Form EIA-627, a voluntary survey completed by energy or conservation agencies in the gas-producing States.

The monthly reports include three surveys of the natural gas industry and two surveys of the electric utility industry. The natural gas industry surveys are the Forms FERC-8 and EIA-191 filed by companies that operate underground storage facilities, the Form FERC-11 filed by major interstate natural gas pipeline companies, and the Form EIA-857 filed by a sample of companies that deliver natural gas to consumers. The electric utility industry surveys are the Form EIA-759 filed by all generating electric utilities and the Form FERC-423 filed by fossil fuel plants. Responses to these five monthly surveys are mandatory.

Data in this publication are also taken from two types of reports that are filed with the FERC under its regulatory functions. One filing is the Form FERC-121, filed by natural gas producers who are the first seller of gas that qualified for an incentive price. The other filing is the "Purchased Gas Adjustment," which is filed by interstate pipeline companies to allow them to recover changes in their purchase prices for natural gas above the cost of service reflected in their current filings.

A description of the survey respondents, reporting requirements, and processing and editing of the data is given on the following pages for each of the surveys. Also shown are copies of the EIA and FERC survey forms that are sources of data for this publication.

Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition"

Survey Design

The original version of Form EIA-176 was approved in 1980 with a mandatory response requirement. Prior to 1980, published data were based on voluntary responses to Bureau of Mines, U.S. Department of the Interior predecessor Forms BOM-6-1340-A and BOM-6-1341-A of the same title.

In 1982, the scope of the revised EIA-176 survey was expanded to collect the number of electric utility consumers in each State, volumes of gas transported to industrial and electric utility consumers, detailed information on volumes transported across State borders by the respondent for others and for the responding company, and detailed information on other disposition. These changes were incorporated to provide more complete survey information with a minimal change in respondent burden. The 1982 revision of the Form EIA-176 continues to be the basis of the current version of this form. On March 4, 1985, the Form EIA-176 was again approved by the Office of Management and Budget for use through report year 1986.

In 1988, the Form EIA-176 was revised to include data collection for deliveries of natural gas to commercial consumers for the account of others. The revised form was approved for use during report years 1987 through 1989. Response to the form continues to be mandatory.

A short version of Form EIA-176 was also approved in 1988. Companies engaged in purchase and delivery activities, but not in transportation and storage

activities, may file the short form. Usually, these companies are municipals handling small volumes of gas.

Survey Universe and Response Statistics

The Form EIA-176 is mailed to all identified interstate and intrastate natural gas pipeline companies, investor and municipally owned natural gas distributors, underground natural gas storage operators, synthetic natural gas plant operators, and field, well, or processing plant operators that deliver natural gas directly to consumers (including their own industrial facilities) and/or that transport gas to, across, or from a State border through field or gathering facilities.

Each company and its parent company or subsidiaries were required to file if they met the survey specifications. The original mailing in February 1990 for report year 1989 totaled 2,138 questionnaire packages. To this original mailing, 9 names were added and 2 were deleted as a result of the survey processing. Additions were the result of comparisons of the mailing list to other survey mailing lists. Deletions resulted from post office returns and determinations that companies were out of business, sold, or not within the scope of the survey. After all updates, the survey universe was 2,145 responses from approximately 1,800 companies.

Following the original mailing, second request mailing, and nonrespondents followup, 2,145 responses were entered into the data base, and there were no nonrespondents.

Summary of Form EIA-176 Data Reporting Requirements

The EIA-176 is a multiline schedule for reporting all supplies of natural gas and supplemental gaseous fuels and their disposition within the State indicated. Respondents file completed forms with EIA in Washington, DC. Data for the report year are due by April 1 of the following year. Extensions of the filing deadline for up to 45 days are granted to any respondent on request.

All natural gas and supplemental gaseous fuels volumes are reported on a physical custody basis in thousand cubic feet (Mcf), and dollar values are reported to the nearest whole dollar. All volumes are reported at 14.73 pounds per square inch absolute pressure (psia) and 60 degrees Fahrenheit.

Routine Form EIA-176 Edit Checks

A series of manual and computerized edit checks are used to screen the Form EIA-176. The edits performed include validity, arithmetic, and analytical checks.

The incoming forms are reviewed prior to keying. This prescan determines if the respondent identification (ID) number and the company name and address are correct, if the data on the form appear complete and reasonable, and if the certifying information is complete.

Manual checks on the data are also made. Each form is prescanned to determine that data were reported on the correct lines. The flow of gas through interstate pipelines is checked at the company level to ensure that each delivery from a State is matched with a corresponding receipt in an adjoining State.

After the data are keyed, computer edit procedures are performed. Edit programs verify the report year, State code, and arithmetic totals. Further tests are made to ensure that all necessary data elements are present and that the data are reasonable and internally consistent. The computerized edit system produces error listings with messages for each failed edit test. When problems occur, respondents are contacted by telephone and required to file amended forms with corrected data.

Other EIA Publications Referencing Form EIA-176

Data from Form EIA-176 are also published in the *Natural Gas Annual*.

Form EIA-176

U.S. DEPARTMENT OF ENERGY
ENERGY INFORMATION ADMINISTRATIONForm Approved
OMB No. 19050175
Expires: 12/31/90ANNUAL REPORT OF NATURAL AND SUPPLEMENTAL GAS SUPPLY AND DISPOSITION, 19

This report is mandatory under the Federal Energy Administration Act of 1974 (Public Law 93-275). Failure to report may result in criminal fines, civil penalties, and other sanctions as provided by law. See Section VI of the Instructions for confidentiality statement. Public reporting burden for this collection of information is estimated to average 19.8 hours per response, including the time of reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Energy Information Administration, Office of Statistical Standards EI-73, Mail Station 1H-023 Forrestal, 1000 Independence Ave SW, Washington DC 20585; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington DC 20503.

EIA USE

Affix mailing label or enter mail address

Control (ID) No. _____

Name: _____

Operations in (State): _____

Street or Post Office Box: _____

City, State, Zip Code: _____

Attention: _____

EIA COPY. Tear out, complete, and return to:

Energy Information Administration
Mail Station: BG-094 FORSTL
U.S. Department of Energy
Washington, D.C. 20585
Attn: Form EIA-176

PART I: IDENTIFICATION

1.0 Control No.	2.0 Company Name:	3.0 Report State	EIA <input type="text"/>	4.0 Resubmittal <input type="text"/>	Date: <input type="text"/>
5.0 Company status, name, and/or address change or correction. (Check appropriate box.)					
a. ☐ Name and address on mailing label are correct. b. ☐ Change name, attention line, and/or mail address as indicated below. c. ☐ Company was sold to, or merged with, company entered below. d. ☐ Company went out of business. Customer accounts taken over by company entered below. e. ☐ Other changes, corrections, or comments: _____ _____					
5.1 Change mail address to:					
a. Company Name: _____ b. Operations in (State): _____ c. Street or Post Office Box: _____ d. City, State, Zip Code: _____ e. Attention: _____					
6.0 Contact person:					
Name: _____		Telephone Number: _____	Area Code: _____	No. _____	Ext. _____

PART II: CERTIFICATION AND DISCLOSURE STATEMENT

1.0 I certify that (Check appropriate box):	
a. ☐ The information provided herein and appended hereto is true and accurate or, where indicated on the form, reasonable estimates to the best of my knowledge. b. ☐ My company does not meet any of the criteria set forth in Section II, "Who must submit," of the instructions and is therefore not required to complete and submit a Form EIA-176 for the report State. c. Does the information supplied on this form contain trade secrets and/or confidential commercial information? ☐ Yes ☐ No	
2.0 Name	3.0 Title
4.0 Signature	5.0 Date

Title 18, USC 1001, makes it a crime for any person knowingly and willingly to make to any agency or department of the United States any false, fictitious or fraudulent statements as to any matter within its jurisdiction.

ANNUAL REPORT OF NATURAL AND SUPPLEMENTAL GAS SUPPLY AND DISPOSITION, 19

1.0 Control No.	2.0 Company Name	3.0 Report State	EIA 	4.0 Resubmittal Date:
-----------------	------------------	------------------	--	--

PART III: TYPE OF COMPANY AND GAS ACTIVITIES OPERATED IN THE REPORT STATE

<p>1.0 Type of Company (check one)</p> <p>a ☐ Investor owned distributor</p> <p>b ☐ Municipally owned distributor</p> <p>c ☐ Interstate pipeline</p> <p>d ☐ Intrastate pipeline</p> <p>e ☐ Storage operator</p> <p>f ☐ SNG plant operator</p> <p>g ☐ Integrated oil and gas</p> <p>h ☐ Producer</p> <p>i ☐ Gatherer</p> <p>j ☐ Processor</p> <p>k ☐ Other (specify) _____</p>	<p>2.0 Gas Activities Operated On-system Within the Report State (check all that apply)</p> <table style="width: 100%;"> <tr> <td style="width: 60%;">a ☐ Produced Natural Gas</td> <td style="width: 40%;">m ☐ Delivered for Resale</td> </tr> <tr> <td>b ☐ Gathered</td> <td>n ☐ Delivered directly to consumers</td> </tr> <tr> <td>c ☐ Processed</td> <td>☐ Other (specify) _____</td> </tr> <tr> <td>d ☐ Purchased</td> <td></td> </tr> <tr> <td>e ☐ Transported Interstate</td> <td></td> </tr> <tr> <td>f ☐ Transported Intrastate</td> <td></td> </tr> <tr> <td>g ☐ Stored Underground</td> <td></td> </tr> <tr> <td>h ☐ Stored LNG</td> <td></td> </tr> <tr> <td>i ☐ Injected Propane-air</td> <td></td> </tr> <tr> <td>j ☐ Produced SNG</td> <td></td> </tr> <tr> <td>k ☐ Imported</td> <td></td> </tr> <tr> <td>l ☐ Exported</td> <td></td> </tr> </table>	a ☐ Produced Natural Gas	m ☐ Delivered for Resale	b ☐ Gathered	n ☐ Delivered directly to consumers	c ☐ Processed	☐ Other (specify) _____	d ☐ Purchased		e ☐ Transported Interstate		f ☐ Transported Intrastate		g ☐ Stored Underground		h ☐ Stored LNG		i ☐ Injected Propane-air		j ☐ Produced SNG		k ☐ Imported		l ☐ Exported	
a ☐ Produced Natural Gas	m ☐ Delivered for Resale																								
b ☐ Gathered	n ☐ Delivered directly to consumers																								
c ☐ Processed	☐ Other (specify) _____																								
d ☐ Purchased																									
e ☐ Transported Interstate																									
f ☐ Transported Intrastate																									
g ☐ Stored Underground																									
h ☐ Stored LNG																									
i ☐ Injected Propane-air																									
j ☐ Produced SNG																									
k ☐ Imported																									
l ☐ Exported																									

PART IV: SUPPLY OF NATURAL AND SUPPLEMENTAL GAS RECEIVED WITHIN OR TRANSPORTED INTO REPORT STATE

	Volume (Mcf at 14.73 psia)	e or f	Cost (Dollars)	e or f
1.0 Company owned natural gas produced on-system				
2.0 On-system purchases received:				
2.1 From producers, gatherers, and/or gas processors				
2.2 From pipeline, distribution, and/or storage operators				
2.3 From synthetic natural gas plants or SNG pipeline				
2.4 At State line or U.S. border from:				
(Company) _____				
(State or Country) _____				
(Continue on Part VI, if more space is needed)				
3.0 Transportation, exchange, and/or storage receipts:				
3.1 Received within the report State				
3.2 Received at this State line or U.S. border from:				
(Company) _____				
(State or Country) _____				
(Continue on Part VI, if more space is needed)				
4.0 Transported into the report State from:				
(State or Country) _____				
(Continue on Part VI, if more space is needed)				
5.0 Withdrawn from company operated storage facilities:				
5.1 From underground storage				
5.2 From liquefied natural gas storage				
6.0 Synthetic natural gas produced				
7.0 Other sources of supply (specify):				
(Source and/or kind of fuel) _____				
(Continue on Part VI, if more space is needed)				
8.0 Total supply within report State				

ANNUAL REPORT OF NATURAL AND SUPPLEMENTAL GAS SUPPLY AND DISPOSITION, 19

1.0 Control No.	2.0 Company Name	3.0 Report State	EIA ☐	4.0 Resubmittal ☐	Date: <input type="text"/>
-----------------	------------------	------------------	------------------------------	--	----------------------------

PART V: DISPOSITION OF NATURAL AND SUPPLEMENTAL GAS WITHIN OR TRANSPORTED OUT OF REPORT STATE					
	Volume (Mcf at 14.73 psia)	e or f	Cost or Revenue (Dollars)	e or f	
1.0 Used in well, lease, and field operations					
2.0 Returned to oil and/or gas reservoirs					
3.0 Used, removed, or lost in gas processing or treating plants					
3.1 Company operated plants:					
3.1.1 Volume delivered to company operated plants for redelivery	<input type="text"/> Mcf				
3.1.2 Volume used for plant fuel					
3.1.3 Extraction loss (Estimated gas phase volume of liquids extracted)					
3.1.4 Volume of nonhydrocarbons removed (e.g., H ₂ S & CO ₂)					
3.1.5 Vented, flared, and/or lost					
3.2 Plants operated by others:					
3.2.1 Volume delivered to plants operated by others for redelivery	<input type="text"/> Mcf				
3.2.2 Total volume used, removed, vented, and/or flared					
4.0 Used in pipeline, storage, and/or distribution operations					
5.0 Added to company operated storage facilities:					
5.1 Injected into underground storage					
5.2 Added to liquefied natural gas storage					
6.0 Transportation, exchange, and/or storage deliveries:					
6.1 Delivered at point(s) within the report State					
6.2 Delivered at the State line or U.S. border to:					
(Company)					
(State or Country)	<input type="text"/>				
(Continue on Part VI, if more space is needed)					
7.0 Transported out of the report State to:					
(State or Country)	<input type="text"/>				
(Continue on Part VI, if more space is needed)					
8.0 Delivered for sales for resale:					
8.1 Delivered within the report State					
8.2 Delivered at the State line or U.S. border to:					
(Company)					
(State or Country)	<input type="text"/>				
(Continue on Part VI, if more space is needed)					
9.0 Delivered directly to consumers:					
(Type of transaction and consumer)	(Number of consumers)				
9.1 Residential sales	<input type="text"/>				
9.2 Commercial sales	<input type="text"/>				
9.3 Industrial sales	<input type="text"/>				
9.4 Electric utility sales	<input type="text"/>				
9.5 Transported to industrials	<input type="text"/>				
9.6 Transported to electric utilities	<input type="text"/>				
9.7 Transported to commercial consumers	<input type="text"/>				
10.0 Average heat content of gas delivered directly to consumers (Btu per cubic foot)	<input type="text"/> Btu				
11.0 Other disposition (specify)	<input type="text"/>				
(Continue on Part VI, if more space is needed)					
12.0 Total disposition accounted for					
13.0 Unaccounted for gas supply (+) or disposition (-)					

ANNUAL REPORT OF NATURAL AND SUPPLEMENTAL GAS SUPPLY AND DISPOSITION, 19

1.0 Control No.	2.0 Company Name	3.0 Report State	EIA 	4.0 Resubmittal Date: 	
PART VI: CONTINUATION SHEET (To be used only if insufficient space was provided on Part IV and/or Part V)				Sheet of 	
Supply (Continued)		Volume (Mcf at 14.73 psia)	# or f	Cost or Revenue (Dollars)	# or f
PART IV, 2.4 On-system purchases received at State line or U.S. border from: (Continued)					
Company 					
State or Country 					
Company 					
State or Country 					
PART IV, 3.2 Transportation, exchange, and/or storage receipts at State line or U.S. border from: (Continued)					
Company 					
State or Country 					
Company 					
State or Country 					
PART IV, 4.0 Transported into report State from: (Continued)					
State or Country 					
State or Country 					
State or Country 					
State or Country 					
PART IV, 7.0 Other sources of supply (specify): (Continued) (Source and/or kind of fuel)					
					
					
					
Disposition (Continued)					
PART V, 6.2 Transportation, exchange, and/or storage deliveries at State line or U.S. border to: (Continued)					
Company 					
State or Country 					
Company 					
State or Country 					
PART V, 7.0 Transported out of report State to: (Continued)					
State or Country 					
State or Country 					
State or Country 					
State or Country 					
PART V, 8.2 Delivered for sale for resale at State line or U.S. border to: (Continued)					
Company 					
State or Country 					
Company 					
State or Country 					
PART V, 11.0 Other Disposition (specify): (Continued)					
					
					
					

ANNUAL REPORT OF NATURAL AND SUPPLEMENTAL GAS SUPPLY AND DISPOSITION, 19

1.0 Control No.	2.0 Company Name	3.0 Report State	EIA 	4.0 Resubmittal 	Date:
-----------------	------------------	------------------	--	--	--

PART VII: FOOTNOTES					
Part No.	Item No.	EIA Use	Sub-Item (State, Company, or Line)	Line No.	Footnote
		<div style="border: 1px solid black; height: 15px; width: 100%; display: flex; justify-content: space-between;"> 1 2 3 4 5 6 7 8 9 10 </div>			
		<div style="border: 1px solid black; height: 15px; width: 100%; display: flex; justify-content: space-between;"> 1 2 3 4 5 6 7 8 9 10 </div>			
		<div style="border: 1px solid black; height: 15px; width: 100%; display: flex; justify-content: space-between;"> 1 2 3 4 5 6 7 8 9 10 </div>			
		<div style="border: 1px solid black; height: 15px; width: 100%; display: flex; justify-content: space-between;"> 1 2 3 4 5 6 7 8 9 10 </div>			
		<div style="border: 1px solid black; height: 15px; width: 100%; display: flex; justify-content: space-between;"> 1 2 3 4 5 6 7 8 9 10 </div>			

U.S. DEPARTMENT OF ENERGY
ENERGY INFORMATION ADMINISTRATION

Form Approved
OMB No. 19050175
Expires: 12/31/90

ANNUAL REPORT OF NATURAL AND SUPPLEMENTAL GAS SUPPLY AND DISPOSITION, 19 ☐ ☐ **SHORT FORM**

This report is mandatory under the Federal Energy Administration Act of 1974 (Public Law 93-275). Failure to report may result in criminal fines, civil penalties, and other sanctions as provided by law. See Section VI of the instructions for confidentiality statement. Public reporting burden for this collection of information is estimated to average 2 hours per response, including the time of reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Energy Information Administration, Office of Statistical Standards, EI-73, Mail Station 1H-023 Forrestal, 1000 Independence Ave SW, Washington DC 20585; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington DC 20503.

EIA USE

Affix mailing label or enter mail address

Control (ID) No. _____

Name: _____
Operations in (State): _____
Street or Post Office Box: _____
City, State, Zip Code: _____
Attention: _____

EIA COPY. Tear out, complete, and return to:

Energy Information Administration
Mail Station: BG-094 FORSTL
U.S. Department of Energy
Washington, D.C. 20585
Attn: Form EIA-176

PART I: IDENTIFICATION

1.0 Control No.	2.0 Company Name:	3.0 Report State	EIA ☐ ☐	4.0 Resubmittal ☐ Date: _____
-----------------	-------------------	------------------	---	--

5.0 Company status, name, and/or address change or correction. (Check appropriate box.)

- a. ☐ Name and address on mailing label are correct.
b. ☐ Change name, attention line, and/or mail address as indicated below.
c. ☐ Company was sold to, or merged with, company entered below.
d. ☐ Company went out of business. Customer accounts taken over by company entered below.
e. ☐ Other changes, corrections, or comments: _____

5.1 Change mail address to:

a. Company Name: _____
b. Operations in (State): _____
c. Street or Post Office Box: _____
d. City, State, Zip Code: _____
e. Attention: _____

6.0 Contact person:

Name: _____ Telephone Area Number: _____ Code _____ No. _____ Ext. _____

PART II: CERTIFICATION AND DISCLOSURE STATEMENT

1.0 I certify that (Check appropriate box):

- a. ☐ The information provided herein and appended hereto is true and accurate or, where indicated on the form, reasonable estimates to the best of my knowledge.
b. ☐ My company does not meet any of the criteria set forth in Section II, "Who must submit," of the instructions and is therefore not required to complete and submit a Form EIA-176 for the report State.
c. Does the information supplied on this form contain trade secrets and/or confidential commercial information? ☐ Yes ☐ No

2.0 Name	3.0 Title
4.0 Signature	5.0 Date

Title 18, USC 1001, makes it a crime for any person knowingly and willingly to make to any agency or department of the United States any false, fictitious or fraudulent statements as to any matter within its jurisdiction.

ANNUAL REPORT OF NATURAL AND SUPPLEMENTAL GAS SUPPLY AND DISPOSITION, 19

1.0 Control No.	2.0 Company Name:	3.0 Report State	EIA 	4.0 Resubmittal Date:
-----------------	-------------------	------------------	--	---

PART III: TYPE OF COMPANY AND GAS ACTIVITIES OPERATED IN THE REPORT STATE

<p>1.0 Type of Company (check one)</p> <p>a. ☐ Investor owned distributor</p> <p>b. ☐ Municipally owned distributor</p> <p>c. ☐ Interstate pipeline</p> <p>d. ☐ Intrastate pipeline</p> <p>e. ☐ Storage operator</p> <p>f. ☐ SNG plant operator</p> <p>g. ☐ Integrated oil and gas</p> <p>h. ☐ Producer</p> <p>i. ☐ Gatherer</p> <p>j. ☐ Processor</p> <p>k. ☐ Other (specify) _____</p>	<p>2.0 Gas Activities Operated On-system Within the Report State (check all that apply)</p> <table style="width: 100%;"> <tr> <td style="width: 50%;"> <p>a. ☐ Produced Natural Gas</p> <p>b. ☐ Gathered</p> <p>c. ☐ Processed</p> <p>d. ☐ Purchased</p> <p>e. ☐ Transported Interstate</p> <p>f. ☐ Transported Intrastate</p> <p>g. ☐ Stored Underground</p> <p>h. ☐ Stored LNG</p> <p>i. ☐ Injected Propane-air</p> <p>j. ☐ Produced SNG</p> <p>k. ☐ Imported</p> <p>l. ☐ Exported</p> </td> <td style="width: 50%;"> <p>m. ☐ Delivered for Resale</p> <p>n. ☐ Delivered directly to consumers</p> <p>o. ☐ Other (specify) _____</p> </td> </tr> </table>	<p>a. ☐ Produced Natural Gas</p> <p>b. ☐ Gathered</p> <p>c. ☐ Processed</p> <p>d. ☐ Purchased</p> <p>e. ☐ Transported Interstate</p> <p>f. ☐ Transported Intrastate</p> <p>g. ☐ Stored Underground</p> <p>h. ☐ Stored LNG</p> <p>i. ☐ Injected Propane-air</p> <p>j. ☐ Produced SNG</p> <p>k. ☐ Imported</p> <p>l. ☐ Exported</p>	<p>m. ☐ Delivered for Resale</p> <p>n. ☐ Delivered directly to consumers</p> <p>o. ☐ Other (specify) _____</p>
<p>a. ☐ Produced Natural Gas</p> <p>b. ☐ Gathered</p> <p>c. ☐ Processed</p> <p>d. ☐ Purchased</p> <p>e. ☐ Transported Interstate</p> <p>f. ☐ Transported Intrastate</p> <p>g. ☐ Stored Underground</p> <p>h. ☐ Stored LNG</p> <p>i. ☐ Injected Propane-air</p> <p>j. ☐ Produced SNG</p> <p>k. ☐ Imported</p> <p>l. ☐ Exported</p>	<p>m. ☐ Delivered for Resale</p> <p>n. ☐ Delivered directly to consumers</p> <p>o. ☐ Other (specify) _____</p>		

PART IV: SUPPLY OF NATURAL AND SUPPLEMENTAL GAS RECEIVED WITHIN OR TRANSPORTED INTO REPORT STATE

	Volume (Mcf at 14.73 psia)	# or f	Cost (Dollars)	# or f
2.0 On-system purchases received:				
2.1 From producers, gatherers, and/or gas processors				
2.2 From pipeline, distribution, and/or storage operators				
2.3 From synthetic natural gas plants or SNG pipeline				
7.0 Other sources of supply (specify): (Source and/or kind of fuel)				
(Continue on Part VI, if more space is needed)				
8.0 Total Supply within report State				

PART V: DISPOSITION OF NATURAL AND SUPPLEMENTAL GAS WITHIN OR TRANSPORTED OUT OF REPORT STATE

	Volume (Mcf at 14.73 psia)	# or f	Cost or Revenue (Dollars)	# or f
4.0 Used in pipeline, storage and/or distribution operations				
9.0 Delivered directly to consumers:				
(Type of transaction and consumer) (Number of consumers)				
9.1 Residential sales				
9.2 Commercial sales				
9.3 Industrial sales				
9.4 Electric utility sales				
10.0 Average heat content of gas delivered directly to consumers (Btu per cubic foot)				
11.0 Other disposition (specify)				
(Continue on Part VI, if more space is needed)				
12.0 Total disposition accounted for				
13.0 Unaccounted for gas supply (+) or disposition (-)				

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

EIA-176 SHORT FORM

Page 3

Form EIA-627, "Annual Quantity and Value of Natural Gas Report"

Survey Design

Beginning with 1980, natural gas production data previously obtained on an informal basis from State conservation agencies were collected on Form EIA-627 (Figure D2). This form was designed by EIA to collect annual natural gas production data from the appropriate State agencies under a standard data reporting system within the limits imposed by the diversity of data collection systems of the various producing States. It was also designed to avoid duplication of effort in collecting production and value data by producing States and to avoid an unnecessary respondent burden on gas and oil well operators.

Survey Universe and Response Statistics

Form EIA-627 is mailed to energy or conservation agencies in all 32 natural gas producing States. All producing States participate voluntarily in the EIA-627 survey by filing the completed form or by responding to telephone contacts. For 1989, data on the quantities of nonhydrocarbon gases removed were reported by the appropriate agencies of 22 of the 32 States. These 22 States accounted for 57 percent of total 1989 gross withdrawals. In addition, gross withdrawal data from Kansas, Oklahoma, Louisiana, and Montana, which together accounted for 38 percent of total production, excluded all or most of the nonhydrocarbon gases removed on leases.

Summary of Form EIA-627 Data Reporting Requirements

Form EIA-627 is a multipart form that collects data on the production volume of natural gas (including gross withdrawals from both gas and oil wells); volumes returned to formation for repressuring, pressure maintenance, and cycling; quantities vented and flared; quantities of nonhydrocarbon gases removed; marketed production; the value of marketed production; and the number of producing gas wells.

Respondents are asked to report all volumes in million cubic feet at the State's standard pressure base and at 60 degrees Fahrenheit. All dollar values are reported in thousands.

Routine Form EIA-627 Edit Checks

Each filing of Form EIA-627 is manually checked for reasonableness and mathematical accuracy. Information on the forms is compared to totals of monthly data reported to the Interstate Oil Compact Commission (see Appendix B, "Data Sources"). Volumes are converted, as necessary, to a standard 14.73 psia pressure base. Reasonableness of data is assessed by comparing reported data to the previous year's data. State agencies are contacted by telephone to correct errors. Amended filings or resubmissions are not a requirement, since participation in the survey is voluntary.

Other EIA Publications Referencing Form EIA-627

Data from Form EIA-627 are also published in the EIA publication, *Natural Gas Annual*.

Interstate Oil Compact Commission Form "Monthly Report of Natural Gas Production"

Survey Design

The Interstate Oil Compact Commission (IOCC) is an organization comprised of 32 gas and oil producing States; the Governor of each State sits on the board of the IOCC. The IOCC form, "Monthly Report of Natural Gas Production," (Figure D3) is a voluntary report filed to the IOCC by most of the producing States. The IOCC forwards copies of these forms to the EIA. The purpose of the form is to standardize, to the extent possible, the reporting of natural gas data by the States.

Survey Universe and Response Statistics

Most of the 32 States report data to the IOCC. Two exceptions are Florida, which submits its own form, and California, whose data are taken from the Conservation Committee of California Oil Producers publication. Reports on State production are forwarded to the EIA by the IOCC approximately 80 days after the end of the report month.

Form EIA-627
U.S. DEPARTMENT OF ENERGY
Energy Information Administration

Form Approved
OMB No. 19050175
Expires: 12/31/90

ANNUAL QUANTITY AND VALUE OF NATURAL GAS REPORT

This report is collected under P.L. 93-275, Federal Energy Administration Act of 1974. Your voluntary cooperation and response are urgently needed to provide comprehensive, accurate and timely energy information. Because the data collected on EIA-627 are already aggregated by state, no confidentiality pledges are required.

PART I: IDENTIFICATION DATA	
1. Name of State Reporting	2. Calendar Year Being Reported <div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto;"></div>
3. Name of Office/Agency	
4. Office Address (Street, City, State, Zip Code)	
5. Name of Contact Person	6. Phone Number of Contact Person (<div style="border: 1px solid black; width: 40px; height: 20px; display: inline-block;"></div>) <div style="border: 1px solid black; width: 40px; height: 20px; display: inline-block;"></div> - <div style="border: 1px solid black; width: 60px; height: 20px; display: inline-block;"></div>
PART II: NATURAL GAS VOLUMES	
7. Enter the pressure base at which all volumes are reported (psia at 60°F)	
8. Gross Withdrawals	
REPORT ALL VOLUMES IN MILLIONS OF CUBIC FEET <i>Gross withdrawals should represent full well stream volumes including all natural gas plant liquids and nonhydrocarbon gases, but excluding lease condensate. Also, include amounts delivered as royalty payments or consumed in field operations. PROVIDE BEST ESTIMATE WHEN GAS IS NOT METERED</i>	
Item (a)	Volume (b)
(1) Are the gross withdrawal quantities available from your records consistent with the definition stated above? (i) ☐ Yes (ii) ☐ No . . . Explain the difference(s) in PART IV	
(2) Enter the volume of natural gas from gas and condensate wells	
(3) Enter the volume of natural gas from oil wells (casinghead)	
(4) Enter the total of 8(2) and 8(3)	
9. Enter quantity of natural gas returned to formation for repressuring, pressure maintenance and cycling	
10. Enter quantity of natural gas vented to air or burned in flares on the lease or at gas processing plants	
11. Enter quantity of nonhydrocarbon gases removed in treating or processing operations	
12. Enter marketed production (Enter the result of line 8(4) less lines 9, 10, and 11)	

ANNUAL QUANTITY AND VALUE OF NATURAL GAS REPORT

PART III: NATURAL GAS VALUES

13. Value of Marketed Production (Wellhead Sales Prices)

NOTE

The value reported on line 14 below should represent wellhead sales prices including charges for natural gas plant liquids subsequently removed from the gas and for gathering and compression, in addition to state production, severance, and/or similar taxes.

Complete the table below only if your method of reporting is inconsistent with the above note. For each item in column (a) of the table, enter an "X" in column (b) or (c) to indicate whether the item is included or excluded from the amount reported on line 14.

Line No.	Item (a)	Included (b)	Excluded (c)
(1)	Natural gas plant liquids		
(2)	Lease condensate		
(3)	Gathering and compression charges		
(4)	State production, severance, and/or similar taxes		

14. Enter the available value of marketed production

REPORT IN THOUSANDS OF DOLLARS

\$

15. Enter the quantity of marketed production associated with the value entered in 14.

REPORT IN MILLIONS OF CUBIC FEET

16. Enter the total number of producing gas wells in operation as of December 31 for the reporting year.

PART IV: COMMENTS

17. Enter any additional comments you may have, including identification and explanation of any data elements submitted based on definitions differing from those applications to data which you provided for the previous year. If more space is needed, please attach separate sheet(s) and put "sheet ____ of ____" in the upper right corner of those sheets.

INTERSTATE OIL COMPACT COMMISSION

HEADQUARTERS OFFICE: 901 N. E. 23RD STREET

P. O. BOX 53127

OKLAHOMA CITY, OKLAHOMA 73152

TELEPHONE: (405) 525-3556

Address Reply to Headquarters Office

Monthly Report of Natural Gas Production for the State of _____

Month of _____

Please return two copies of this report as soon as the figures are available after the close of the month for which data are reported. Reports should be addressed to the Interstate Oil Compact Commission, Box 53127, Oklahoma City, OK 73152.

Name of Reporting Agency _____

Address _____

Correspondent & Title _____

Please adjust all volumes to the same pressure base:

Report pressure base used (_____ lbs. absolute at 60° F.)

(Millions of Cubic Feet)

1. Gross gas production* _____
 - (a) Natural gas from gas and condensate wells _____
 - (b) Natural gas from oil wells (casinghead) _____

* Include amounts delivered as royalty payments or consumed in field operations. Please provide best estimates when gas is not metered.

2. Quantity of natural gas returned to formation for repressuring, pressure maintenance and cycling. _____

3. Quantity of natural gas vented to air or burned in flares on the lease or at gas processing plants. _____

MEMBER STATES: ALABAMA • ALASKA • ARIZONA • ARKANSAS • CALIFORNIA • COLORADO • FLORIDA • ILLINOIS • INDIANA • KANSAS • KENTUCKY
LOUISIANA • MARYLAND • MICHIGAN • MISSISSIPPI • MONTANA • NEBRASKA • NEVADA • NEW MEXICO • NEW YORK • NORTH DAKOTA • OHIO
OKLAHOMA • PENNSYLVANIA • SOUTH DAKOTA • TENNESSEE • TEXAS • UTAH • WEST VIRGINIA • WYOMING
ASSOCIATES: GEORGIA • IDAHO • NORTH CAROLINA • OREGON • SOUTH CAROLINA • WASHINGTON

Summary of Data Requirements

The IOCC form consists of three questions on one page, and requires volumetric information on gross production, quantities of gas vented or flared, and gas used for repressuring.

Routine Edit Checks

State data are checked for reasonableness and, in the event of problems, the appropriate State agency is called.

FERC-8/EIA-191 Surveys, "Underground Natural Gas Storage Report"

Survey Design

This survey was jointly implemented in 1975 by the Federal Power Commission (FPC), the Federal Energy Administration (FEA), and the Bureau of Mines (BOM) as the FPC-8/ FEA-G-318 system. The data received on both the FPC-8 and FEA-G-318 were computerized and aggregated by FPC.

At the beginning of 1979, the EIA assumed responsibility for the collection, processing, and publication of the data gathered in the survey. Form FEA-G-318 was renewed on July 1, 1979, as Form EIA-191 and the survey was retitled the FPC-8/EIA-191 Survey (Figure D4 shows the EIA-191). Form FPC-8 was renewed in December 1985 and the survey retitled FERC-8/EIA-191 Survey. The forms have not been merged because of FERC's stated desire to maintain the separate identity of the FERC-8 for administrative reasons.

Survey Universe and Response Statistics

Currently, 91 companies operate underground storage facilities. Of these companies, 40 are subject to the jurisdiction of FERC and are required to report data on Form FERC-8. The other 51 companies are required to file the essentially identical Form EIA-191. Both forms are filed with EIA and the data are merged in a unified data processing system.

The response rate as of the filing deadline is approximately 20 percent. Data from the remaining 80 percent of respondents are received in writing and/or by telephone within 3 to 4 days after the filing deadline. All

data supplied by telephone are subsequently filed in writing, generally within 15 days of the filing deadline. The final response rate is 100 percent.

Summary of FERC-8/EIA-191 Data Reporting Requirements

The virtually identical Forms FERC-8 and EIA-191 are multipart forms that report the quantities of gas in storage, injections and withdrawals, and the location (including State and county), and capacity of underground storage reservoirs. Information on co-owners of storage reservoirs is also required.

Collection of the survey is on a custody basis, although some respondent ownership data are required. Information requested must be provided within 10 days after the first day of each month. Twelve reports are required per calendar year. Respondents are required to indicate whether the data reported are actual or estimated. In the case of most estimated filings, the necessary revisions are reflected in subsequent scheduled filings or in a revised submission that provides actual data filed, although there is no specific requirement that the respondent do either. Actual data on natural gas injections and withdrawals from underground storage are based on metered quantities. Data on quantities of gas in storage and on storage capacity represent, in part, reservoir engineering evaluations. All volumes are reported at 14.73 psia and 60 degrees Fahrenheit.

Routine Forms FERC-8/EIA-191 Edit Checks

Data received on Form FERC-8 are merged with data received on Form EIA-191 in a unified data processing system. The survey's five principal data elements (total, base, and working gas in storage, injections, and withdrawals) are hand tabulated to provide preliminary totals.

Individual company reports are manually checked for reasonableness by comparing current reports with prior responses. Mathematical calculations are manually checked for accuracy and all data are checked for internal consistency. Respondents are required to refile reports containing any inconsistencies or errors.

Other EIA Publications Referencing Forms FERC-8/EIA-191

The EIA publication *Monthly Energy Review* contains data from the FERC-8/EIA-191 survey.

Form EIA-191

U.S. DEPARTMENT OF ENERGY
ENERGY INFORMATION ADMINISTRATION
Washington, D.C. 20585

Form Approved
OMB No. 19050175
Expires: 12/31/90

UNDERGROUND GAS STORAGE REPORT

This report is mandatory under Public Law 93-275. Failure to report may result in criminal fines, civil penalties, or other sanctions as provided by law. See Part F of the General Instructions for information concerning confidentiality.

I. RESPONDENT IDENTIFICATION DATA										
(1)	a. IRS EIN Number				b. DOE Code		c. Report Period Ending Date		d. ☐ Check if this is a revision to report previously submitted for the report period indicated.	e. ☐ Check box if respondent identification has changed. If name has changed, enter previous name:
							Mo	Da		
(2)	Respondent's Name				Street Address				City, State and Zip Code	
(3)	Person to contact if questions arise concerning this report:				Title		City and State		Tel. No. (Include Area Code and Extension)	
II. GAS STORAGE DATA										
Line No.	BALANCES (All volumes in Mcf - 14.73 psia - 60°F)					INJECTIONS & WITHDRAWALS				
		Base Gas (a)	Working Gas (b)	Total Gas in Storage (c)	Natural Gas Included in Column (a) (d)	Time Period	Injections (e)	Withdrawals (f)		
	A. Respondent's Gas In Reservoirs Operated By Respondent					☐ Estimated ☐ Actual				
4	Balance Nov. 1					Nov. 1 To Date				
5	Report Period					Report Period				
	B. Gas Belonging To Others In Reservoirs Operated By Respondent									
6	Balance Nov. 1					Nov. 1 To Date				
7	Report Period					Report Period				
	C. Total Gas (Sum Of A And B)									
8	Balance Nov. 1					Nov. 1 To Date				
9	Report Period					Report Period				
	D. Respondent's Gas In Reservoirs Operated By Others									
10	Balance Nov. 1					Nov. 1 To Date				
11	Report Period					Report Period				
	E. Reservoirs In Development Stage Included In A And B Above									
12	Balance Nov. 1					Nov. 1 To Date				
13	Report Period					Report Period				
III. CERTIFICATION										
I certify that the information submitted on this form is the most accurate available at this time to the best of my knowledge										
Name (Type or Print)				Title			Signature		Date	
Title 18 USC 1001 makes it a crime for any person knowingly and willingly to make to any Agency or Department of the United States any false, fictitious or fraudulent statements as to any matter within its jurisdiction.										

Form FERC-11, "Natural Gas Pipeline Company Monthly Statement"

Survey Design

The collection of monthly data from major pipeline companies was begun in December 1964 by the Federal Power Commission (FPC). On October 1, 1977, FPC ceased to exist, and its functions and regulatory responsibilities were transferred to the Secretary of Energy and to the Federal Energy Regulatory Commission (FERC), an independent commission within the Department of Energy.

Information collected on Form FERC-11 (Figure D5) is used by FERC in carrying out its regulatory authority. Form FERC-11 is a monthly regulatory reporting form rather than one filed for statistical purposes.

Survey Universe and Response Statistics

Form FERC-11 is filed by major interstate natural gas pipeline companies whose combined sales for resale and gas transported interstate or stored for a fee exceeded 50 billion cubic feet in the previous calendar year. Approximately 40 pipeline companies report data on Form FERC-11. Natural gas pipeline companies are monitored annually to determine whether each has met the requirements for classification as a major pipeline.

Information is collected monthly by mail. Historically, the response rate has been 100 percent.

Summary of Form FERC-11 Data Requirements

Form FERC-11 requires information on revenues, expenses, and sales data, as well as volumetric data on purchases and production.

Submission of Form FERC-11 is required no later than 40 days after the close of the report month. The form requires reporting of both preliminary data for the report month and final data for the same month in the previous year. All data are reported on an equity basis.

Routine Form FERC-11 Edit Checks

Data are collected on standard forms that initially are manually reviewed and coded. Reviews are made to ensure consistency in reporting within and among utilities in the presentation of current and 12-month financial and sales data. Also, receipts and disposition of gas are analyzed between domestic and foreign producers. Data are later sent for keying, which begins the automated processing. Data are keyed to tape or disk for data editing. Edit reports are produced and are reviewed manually.

Other EIA Publications Referencing Form FERC-11

The Energy Information Administration publication *Monthly Energy Review* contains data from Form FERC-11.

FERC-121, "Application for Determination of the Maximum Lawful Price Under the Natural Gas Policy Act"

Survey Design

Form FERC-121 (Figure D6) was designed by the Federal Energy Regulatory Commission (FERC) to carry out its authority to regulate natural gas prices under the Natural Gas Policy Act. Form FERC-121 is initially filed with the agency having jurisdiction over the lease on the land where the well is drilled, for example, State agencies or the Department of Interior. The agencies determine whether or not to grant the application. The application, support documentation, and decision are forwarded to FERC, which has 45 days to review the decision.

Survey Universe and Response Statistics

Form FERC-121 must be filed by any natural gas producer who is the first seller of gas that qualifies for an incentive price. At the end of February 1988, FERC had 408,363 applications from 12,000 producers on file. Of the total applications, approximately 20 percent are reapplications requesting new price determinations on wells that have been producing under a previous application.

U.S. DEPARTMENT OF ENERGY
Federal Energy Regulatory Commission
Washington, D.C. 20426

Form Approved, OMB No. 1902-0032
(Expires 6-30-90)

FERC FORM NO. 11: NATURAL GAS PIPELINE COMPANY MONTHLY STATEMENT

This report is mandatory under the authority granted by Sections 10 and 16 and sanctions provided by Section 21(b) of the Natural Gas Act. Failure to report may result in criminal fines, civil penalties and other sanctions as provided by law.

Company Code Number

Month Being Reported
19 ____

PART I: IDENTIFICATION

1. Name of Company			
2. Address of Company (1) Number and Street		(2) City	(3) State
			(4) Zip Code
3. Person Authorized To Sign This Report (1) Signature		(2) Phone Number (Including area code)	

PART II: REVENUE DATA

Line No. (a)	Item (b)	Revenues (In thousands of dollars)		Sales (In millions of cubic feet)		Foot-note (g)
		Current Year (c)	Previous Year (d)	Current Year (e)	Previous Year (f)	
4	Sales of Natural Gas					
5	Firm Industrial					
6	Off-peak Industrial					
7	Interruptible Industrial					
8	TOTAL INDUSTRIAL (Enter total of lines 5, 6 and 7)					
9	Other Ultimate Consumers					
10	TOTAL SALES TO ULTIMATE CONSUMERS (Enter total of lines 8 and 9)					
	Sales For Resale (483)					
11	Total Major Gas Pipelines					
12	Total to All Other Pipelines and Gas Utilities					
13	TOTAL SALES FOR RESALE (Enter total of lines 11 and 12)					
14	TOTAL SALES OF NATURAL GAS (Enter total of lines 10 and 13)					
15	Intracompany Transfers (485)					
16	Revenues From Transportation of Gas of Others (489)			(Enter volume of gas transported)		
17	Provision for Rate Refunds (496)					

Company Code Number	Month and Year Being Reported
---------------------	-------------------------------

PART III: INCOME DATA

Line No. (a)	Item (b)	Current Year (In thousands of dollars) (c)	Previous Year (In thousands of dollars) (d)	Foot-note (e)
18	Gas Operating Revenues (400)			
19	Operation and Maintenance Expense (401, 402)			
20	Depreciation, Depletion and Amortization Expense (403-407)			
21	Taxes Other Than Income Taxes, Utility Operating Income (408.1)			
22	Total Gas Operating Expenses (401, 402, 403-407, 408.1, 409.1, 410.1, 411.1, 411.4)			
23	Net Gas Operating Revenues (Enter the result of lines 18 minus 22) (Including Plant Leased to Others)			
24	Total Gas Utility Operating Income (Refer to specific instruction for line 24.)			
25	Allowance For All Funds Used During Construction - Credit (419.1, 432)			
26	Total Income Before Interest Charges (427-432) and Extraordinary Items (409.3, 434, 435)			
27	Net Income (433) Before Extraordinary Items (434, 435), Income Taxes (409.1, 409.2, 409.3, 410.1, 410.2, 411.1, 411.2), and Investment Tax Credits (411.4, 411.5, 420)			
28	Net Income (Monthly Amount Related to 433.)			

PART IV: OTHER SELECTED DATA

Line No. (a)	Item (b)	Current Year (In thousands of dollars) (c)	Previous Year (In thousands of dollars) (d)	Foot-note (e)
29	Gas Utility Plant in Service (101)			
30	Accumulated Provision For Depreciation, Depletion, and Amortization of Gas Utility Plant (108, 111)			
31	Gas Plant Construction Work In Progress (107)			
32	Gross Additions To Construction Work In Progress (107) For This Month Being Reported			
33	Amount Collected Which Is Subject To Refund During This Month Being Reported			
34	Cumulative Amount Collected Since January 1 This Year Subject To Refund, At End Of This Month Being Reported			
35	Monthly Amount Subject To Refund Actually Refunded During This Month Being Reported			
36	Cumulative Amount Subject To Refund Refunded Since January 1 This Year, To The End Of This Month Being Reported			

Company Code Number	Month and Year Being Reported
---------------------	-------------------------------

PART V: OPERATION AND MAINTENANCE EXPENSE DATA

Line No. (a)	Item (b)	Amount (In thousands of dollars)		Gas Volume (In millions of cubic feet)		Foot-note (g)
		Current Year (c)	Previous Year (d)	Current Year (e)	Previous Year (f)	
37	Manufactured Gas Production					
38	Liquefied Petroleum Gas					
39	Other Manufactured Gas					
40	TOTAL (Enter total of lines 38 and 39)					
41	Natural Gas Production					
42	Production and Gathering (750-769)					
43	Products Extraction (770-791)			(Enter thousands of gallons) 7		
44	Exploration and Development (795-798)					
	Purchased Natural Gas From					
45	Producers (800, 801-803)					
46	Intracompany Transfers (800.1)					
47	Imports					
48	Major Gas Pipelines (800, 801-803)					
49	Other Pipelines (800, 801-803)					
50	Other Gas Purchases (804, 805, 805.1 minus line 68-71)					
51	TOTAL (Enter total of lines 45 to 50)					
52	Natural Gas Produced					
53	Exchange Gas - In (806)					
54	Exchange Gas - Out (806)					
55	Purchased Gas Expenses (807.1-807.5)					
56	Gas Withdrawn From Underground Storage - Debit (808.1, 809.1)					
57	Gas Delivered To Underground Storage - Credit (808.2, 809.2)					
58	Gas Used For Compressor Station Fuel - Credit (810)					
59	Gas Used For Products Extraction - Credit (811)					
60	Gas Used For Other Utility Operations - Credit (812)					
61	Other Gas Supply Expenses (813)					
62	TOTAL GAS PRODUCTION (Enter total of lines 40, 42, 43, 44, 51, 53 to 61)					
63	Storage Expenses (814-843.9)					
64	LNG Terminating and Processing Expenses (844.1-847.8)					
65	Transmission Expenses (850-867)					
66	Distribution Expenses (870-894)					
67	Other Gas Purchased and Produced (Entries here should not be included under any other item in this part.)					
68	Liquefied Natural Gas (804.1)					
69	Gasified Coal					
70	Synthetic Gas (Reformed (gasified) liquid hydrocarbons.)					
71	TOTAL (Enter total of lines 68 to 70)					
72	All Other Operating and Maintenance Expenses (901-905, 907-916, 920-931, 935)					
73	TOTAL OPERATING AND MAINTENANCE EXPENSES (Enter total of lines 62, 63, 64, 65, 66, 71, 72)					

Summary of Form FERC-121 Data Reporting Requirements

Form FERC-121 requires information on the location and API number of the well, the name and address of the applicant, the type of determination being sought, the estimated annual production, and the contract price.

In addition to Form FERC-121, each application must be submitted with support documentation; for example, a well completion report for Section 103 filings, and geological information on surrounding wells for Section 102 applications.

Routine Form FERC-121 Edit Checks

Upon receipt at FERC, forms are checked manually for completeness. In addition, a computerized edit program flags incomplete or incorrect data.

Purchased Gas Adjustment Filings

The purpose of the PGA is to allow interstate natural gas pipeline companies to recover changes in their purchase prices for natural gas above the cost of service reflected in their current tariff filings. To allow recovery in a timely manner, the key data reported in the PGA are projections of purchases in the immediate future. In most cases, companies report both the NGPA Section number covering each contracted purchase and the date of the contract. These data make the PGA filings a unique source of information about the current state of the natural gas market.

Description of Data

Fifty-eight interstate pipeline companies submit PGA filings. Pipeline companies that transport only intrastate supplies of natural gas do not submit filings, nor do companies that have no purchased gas adjustment clauses in their tariffs.

Prior to July 1, 1984, filings for 20 of the largest interstate pipeline companies were included in Table 5. Together, they accounted for between 86 and 88 percent of all interstate wellhead purchases reported on Form FERC-2 for each year between 1976 and 1982. These

companies were also the subject of an informal 1979 FERC study of NGPA prices.

The portion of the PGA filing used was generally referred to as the supporting cost-study. This study was not filed in a specific format or for specified time periods. As a result, the level of detail included varied from company to company, as did the exact time period covered. In most cases, however, companies filed price and volume data for their purchase contracts, along with the following:

- Contract date
- NGPA category
- Geographic source
- FERC account category.

For the 20 pipeline companies, the timing of PGA submissions varied in two ways:

- Seventeen companies reported data semi-annually, while three reported annually.
- The dates on which the filings became effective and the periods covered by the filings varied.

Because of the lack of a specified form for PGA filings, each submission was processed separately. Major adjustments required to transform the various submissions into a single data base are described in the section on data transformations.

Effective July 1, 1984, Form 542-PGA required that certain purchased gas cost information that is common to all PGA filings be set forth in a standardized format. Filings received after July 1, 1984, are now being included in Table 5 as they are computerized and become available. Eventually all pipeline companies that file the Form 542-PGA will be included in the table. It is expected that there will be approximately 54 companies included.

All PGA filings included projected purchases for a defined future period. Projected volumes and prices represent the company's best estimate of natural gas purchase volumes and costs during the subsequent effective tariff period. The figures are usually derived from those of similar past periods. Some PGA filings also include "actual" volumes and prices for some past period. The two sets of figures cannot, in general, be used to check each other because the actual figures can cover periods other than past projections. To the extent that the two sets of figures can be compared, they appear to approximate but not to match each other.

Form FERC-121

U.S. DEPARTMENT OF ENERGY
Federal Energy Regulatory Commission
Washington, D.C. 20426

Form Approved
OMB No. 19050175
Expires: 12/31/90

APPLICATION FOR DETERMINATION OF THE MAXIMUM LAWFUL PRICE UNDER THE NATURAL GAS POLICY ACT (NGPA) (Sections 102, 103, 107 and 108)

GENERAL INSTRUCTIONS

Complete this form if you are applying for price classification under sections 102, 103, 107 or 108 of the NGPA.

Complete each appropriate item on the reverse side of this page. The code numbers used in items 4 and 6 can be obtained from the Buyer/Seller Code Book. If there is more than one purchaser or contract, identify the additional information in the space below. Also enter any additional remarks in the space below. The data reported on this form are not considered to be confidential and will not be treated as such.

Submit the completed application to the appropriate Jurisdictional Agency as listed in title 18 of the CFR, part 274.501. If there are any questions, call (202) 357-8585.

SPECIFIC INSTRUCTIONS

Use the codes in the table below for type of determination in item 2.

Section of NGPA (a)	Category Code (b)	Description (c)
102	1	New OCS lease
102	2	New onshore well (2.5 mile test)
102	3	New onshore well (1000 feet deeper test)
102	4	New onshore reservoir
102	5	New reservoir on old OCS lease
103	-	New onshore production well
107	0	Deep (more than 15,000 feet) high-cost gas
107	1	Gas produced from geopressured brine
107	2	Gas produced from coal seams
107	3	Gas produced from Devonian shale
107	5	Production enhancement gas
107	6	New tight formation gas
107	7	Recompletion tight formation gas
108	0	Stripper well
108	1	Stripper well - seasonally affected
108	2	Stripper well - enhanced recovery
108	3	Stripper well - temporary pressure buildup
108	4	Stripper well - protest procedure

Enter the appropriate information regarding other Purchasers/Contracts.

Line No.	Contract Date (Mo, Da, Yr) (a)	Purchaser (b)	Buyer Code (c)
1			
2			
3			
4			
5			
6			

Remarks:

FERC-121 (8-82)

**APPLICATION FOR DETERMINATION OF THE MAXIMUM LAWFUL
PRICE UNDER THE NATURAL GAS POLICY ACT (NGPA)**

1.0 API well number: (If not assigned, leave blank. 14 digits.)	_____				
2.0 Type of determination being sought: (Use the codes found on the front of this form.)	_____		_____		
	Section of NGPA		Category Code		
3.0 Depth of the deepest completion location: (Only needed if sections 103 or 107 in 2.0 above.)	_____ feet				
4.0 Name, address and code number of applicant: (35 letters per line maximum. If code number not available, leave blank.)	Name _____				Seller Code _____
	Street _____				
	City _____	State _____	Zip Code _____		
5.0 Location of this well: (Complete (a) or (b).) (a) For onshore wells (35 letters maximum for field name.)	Field Name _____				
	County _____	State _____			
(b) For OCS wells	Area Name _____				Block Number _____
	Date of Lease:				
	Mo.	Day	Yr.	OCS Lease Number _____	
(c) Name and identification number of this well. (35 letters and digits maximum.)	_____				
(d) If code 4 or 5 in 2.0 above, name of the reservoir. (35 letters maximum.)	_____				
6.0 (a) Name and code number of the purchaser: (35 letters and digits maximum. If code number not available, leave blank.)	Name _____				Buyer Code _____
(b) Date of the contract:	_____				
	Mo.	Day	Yr.		
(c) Estimated total annual production from the well:	_____ Million Cubic Feet				
		(a) Base Price	(b) Tax	(c) All Other Prices (Indicate (+) or (-).)	(d) Total of (a), (b) and (c)
7.0 Contract price: (As of filing date. Complete to 3 decimal places.)	S/MMBTU	_____	_____	_____	_____
8.0 Maximum lawful rate: (As of filing date. Complete to 3 decimal places.)	S/MMBTU	_____	_____	_____	_____
9.0 Person responsible for this application:					
Agency Use Only	Name _____ Title _____				
Date Received by Juris. Agency	Signature _____				
Date Received by FERC	Date Application is Completed _____ Phone Number _____				

FERC-121 (8-82)

Only projected figures for volumes and costs have been used. They are considered more generally useful and accurate than the reports of actual production for the following reasons:

- Companies file actual reports largely as a convenience to themselves. The data are not generally subjected to the same scrutiny as projections. Moreover, pipeline companies have considerable latitude as to which time they use in reporting actual figures.
- The costs reported as actual costs are costs derived from previous projections.
- Not all companies filed actual totals.
- As a general rule, neither projected nor actual volumes are audited. In the absence of such an audit, it is thought that actual volumes may be as subject to error as the projections.

It appears that PGA data have become increasingly accurate and complete with each submission. The number of cases requiring imputation for missing data (for example, NGPA Section number) has been reduced, as has the incidence of obviously incorrect data. Moreover, company submissions have become increasingly consistent with each other.

Purchased volumes and prices were checked against control totals taken from the hard copy of the submission on file with the FERC. The data comprising inconsistent totals were compared directly with the filing. Discrepancies were forwarded to the FERC for consideration. Errors discovered in this way were corrected, and the process was repeated until agreement was reached.

PGA data (through mid-1982) were also compared with data from Form FERC-2 to ensure that the totals derived from the two sources were compatible. The two filings cannot be compared directly because the PGA is not usually filed for calendar years.

The results of this comparison suggest that PGA filings approximate the best currently available source for aggregate information, but do not match it very closely. Volumes can differ by as much as 20 percent (though many are very close). There is no consistent pattern of volume differences. In the case of prices, there appears to be two patterns: either the two reports agree quite closely, or else the PGA projects prices 10 to 20 percent lower than those reported on Form FERC-2. The reason for such consistent discrepancy is at present unknown. In general, differences between PGA filings and Form 2 information may be due to a variety of causes, including:

- PGA filings are projections that may not always reflect future behavior accurately.
- Companies may use different methods to obtain PGA projections.

- There may be systematic differences in reporting practices between the two reports for some or all companies.

The PGA filings contain a rough indication of the error due to using projections in the form of the surcharge adjustment. The surcharge adjustment is used to recover purchase costs beyond those expected or to repay costs below those expected. The surcharge adjustment cannot be applied directly to PGA filings because:

- It contains only a summary figure for all differences from projected levels. This includes costs of pipeline purchases and imports.
- No volumes are directly reported. A cost per thousand cubic feet figure is reported but is based on projected future purchases only.
- It covers time periods different from previous projections. Normally, the surcharge adjustment covers a period from 9 to 3 months prior to the beginning of a new projection period.

The PGA filings remain the only source of information for analyzing gas categories, however, and the data problems do not appear to be crippling for purposes of drawing general conclusions.

No further validation of the PGA data has been performed because of the difficulties involved in such a process. There are some procedural issues that may affect the accuracy of filings, however. PGA filings are not intended to serve as data collection instruments per se but as a regulatory system for natural gas. Questions concerning the data are usually aired during FERC rate hearings, where the primary concern is resolution of legal issues. No attempt is made to revise PGA submissions to reflect the results of such questioning. In addition, most PGA filings are protested and the resulting tariffs are suspended for a time. In cases of successful protests, a new PGA must be filed. The precise status of data on a given current submission becomes difficult to judge.

Interpretation of Data. The projected purchase cost for each contract volume represents the pipeline company's estimates of the purchase costs it will incur during the coverage period of the filing. These costs include:

- The average price to be paid to the producer
- Gathering charges
- Transportation charges
- Taxes.

Royalty payments and payments for gas not received under take-or-pay clauses are among the costs not included.

Projected volumes reported in the PGA filings are generally based on actual volumes for a similar

preceding period (though they are typically adjusted to fit current market conditions). A number of projected gas purchases reported in the PGA filings have not been considered because they would have resulted in significant double counting. They are:

- Purchases from other pipelines
- Imports
- Exchange gas.

In addition, cost-of-service gas (a company's own production from specific leaseholds of pre-NGPA gas) is not considered because it is not covered by the NGPA and because most companies do not include it in their PGA filings.

The table included in this publication is therefore designed to cover a specific part of the overall national gas market: wellhead purchases that are both subject to the NGPA and dedicated to the interstate market.

Imputation of NPGA Category Data. NGPA categories were not included in part or all of some early PGA filings. To make filings comparable, each contract that did not have a reported NGPA section was assigned one based on cost. The same procedure was used for reported NGPA sections when the prices were obviously inappropriate. Less than 10 percent of the volume was subjected to this procedure in any given month. Since the inception of the Form 542-PGA, NGPA categories are included in all PGA filings.

Miscellaneous Adjustments. Slight reporting discrepancies among the companies required further minor adjustments to the data base. The adjustments are as follows:

- All volumetric projections have been converted to monthly rates.
- In their PGA filing, many companies, in whole or in part, reported their gas volumes at a pressure base other than 14.73 psia. Volumes provided at the other pressure bases (14.65 and 15.025) were adjusted to the 14.73 psia level. The factors used in the adjustment were:
 - Volume (at 14.65) $\times$ 0.9946 = Volume (at 14.73)
 - Volume (at 15.025) $\times$ 1.02 = Volume (at 14.73).
- Volumetric data are presented in cubic feet, although several companies reported in therms for their hardcopy filings. Volumes in cubic feet are available on tape.
- All prices are reported in cents (or dollars and cents) per thousand cubic feet.

In filings received since July 1, 1984, all companies are reporting volumes in million Btu making pressure base adjustments to volumes unnecessary.

Form FPC-14, "Annual Report for Importers and Exporters of Natural Gas"

Survey Design

The collection of data covering natural gas imports and exports was begun in 1973 by the Federal Power Commission (FPC). On October 1977, FPC ceased to exist and its data collection functions were transferred to the Federal Energy Regulatory Commission (FERC) within the Department of Energy (DOE). Since 1979, the Energy Information Administration (EIA) has had the responsibility for collecting Form FPC-14.

Survey Universe and Response Statistics

The Form FPC-14 is filed annually by each organization or individual having authorization to import and export natural gas regardless of whether any imports or exports took place during the reporting year. The authorization to import and export was originally granted by the FPC. In 1977, it was transferred to the Economic Regulatory Commission (ERA) and it now resides with the Office of Fuels Programs in the Office of Fossil Energy. In 1989, 205 companies met the reporting criteria, only 76 reported import or export of natural gas.

The respondent list for the Form FPC-14 is updated at the beginning of each year. All new respondents with authorization to import or export natural gas are added to the list and respondents whose licenses have expired are deleted. Five copies of Form FPC-14 are mailed in February to all companies authorized to import or export natural gas. The completed original and three copies are to be filed with the EIA on or before March 31 of each year, for the preceding calendar year. Companies that have not filed by March 31 are contacted.

Routine Form FPC-14 Edit Checks

Respondents are required to certify the accuracy of all data reported. The survey forms are checked at the EIA for reasonableness and accuracy. If errors are found the companies are required to file corrected data. The data are processed at the EIA and published as reported. All natural gas volumes in this report are expressed at a pressure base of 14.73 pounds per square inch absolute and temperature of 60 degrees Fahrenheit, except as noted. All prices are in U.S. dollars and import/export prices are those paid at the U.S. border (except exports of LNG are those prices paid at the point of sale and delivery in Yokohama, Japan).

"Quarterly Natural Gas Import and Export Sales and Price Report"

This report is prepared quarterly by the Office of Fuels Programs in the Office of Fossil Energy based on information submitted by all firms having authorization to import or export natural gas. All data on this report is considered preliminary until the annual data on the Form FPC-14 is final, usually in September of the following year.

Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers"

Survey Design

The original Form EIA-857 was approved for use in December 1984. Response to the Form EIA-857 is mandatory on a monthly basis. Data collected on the Form EIA-857 cover the 50 States and the District of Columbia and include both price and volume data.

Survey Universe and Response Statistics

A sample of 408 natural gas companies including interstate pipelines, intrastate pipelines, and local distribution companies report to the survey. The sample was selected independently for each of the 50 States and the District of Columbia. Each selected company is required to complete and file the Form EIA-857 on a monthly basis. Initial response statistics on a monthly basis are as follows: responses received by due date,

approximately 90 percent, and responses received after follow-up, 100 percent.

The Form EIA-857 is a monthly sample survey of natural gas marketers, including interstate pipelines, intrastate pipelines, and local distribution companies. It provides data that are used to estimate monthly sales of natural gas (volume and price) by State and monthly deliveries of natural gas on behalf of others (volume) by State to three consumer sectors - residential, commercial, and industrial. (Monthly deliveries and prices of natural gas to electric utilities are reported on the Form FERC-423, "Monthly Report of Cost and Quality of Fuels for Electric Plants," and the Form EIA-759, "Monthly Power Plant Report.")

See Appendix C for a discussion of the sample design and estimation procedures.

Summary of Form EIA-857 Data Reporting Requirements

Data collected monthly on the Form EIA-857 on a State level include the volume and cost of purchased gas, the volume and cost of natural gas consumed by sector (residential, commercial, and industrial), and the average heat content of all gas consumed. Respondents file completed forms with EIA in Washington, DC on or before the 30th day after the end of the report month.

All natural gas volumes are reported in thousand cubic feet at 14.73 psia at 60 degrees Fahrenheit and dollar values are reported to the nearest whole dollar.

Routine Form EIA-857 Edit Checks

A series of manual and computerized edit checks are used to screen the Form EIA-857. The edits performed include validity and analytical checks.

Form EIA-857
U.S. Department of Energy
Energy Information Administration

Form Approved
OMB No. 19050175
Expires: 12/31/90

MONTHLY REPORT OF NATURAL GAS PURCHASES AND DELIVERIES TO CONSUMERS

This report is mandatory under the Federal Energy Administration Act of 1974 (Public Law 93-275). Failure to report may result in criminal fines, civil penalties, and other sanctions as provided by law. See section VI of the instructions for the confidentiality statement. Public reporting burden for this collection of information is estimated to average 4 hours per response, including time of reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden or any other aspect of this collection of information, including suggestions for reducing this burden, to the Energy Information Administration, Office of Statistical Standards EI-73, Mail Station: 1H-023 Forrestal, 1000 Independence Ave. SW, Washington, DC 20585; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

Affix Identification Label or Enter:

01 Control No.: _____

02 Company Name: _____

State of Operation: _____

Return completed forms to:

Energy Information Administration
Mail Station: BG-094
U.S. Department of Energy
Washington, D.C. 20585
Attn: Form EIA-857

SECTION I — Natural Gas Purchases and Deliveries to Consumers

		Report Period Mo.	Yr.	Revised Report Indicator
		03		04
		Volume (Mcf at 14.73 psia)		Cost or Revenue (Dollars)
Purchased Gas Received in Distribution Service Area	05			
Delivered to Residential Consumers (Onsystem Sales)	06			
Delivered to Commercial Consumers (Onsystem Sales)	07			
Delivered to Industrial Consumers (Onsystem Sales)	08			
Transported to Commercial Consumers	09			
Transported to Industrial Consumers	10			
				(Btu/cu. ft.)
Average Btu Content of Gas Delivered to Consumers	11			

SECTION II — FOOTNOTES

--	--

SECTION III — CONTACT PERSON AND CERTIFICATION

Contact Person: 12 Name:	(Area Code—Number—Extension) 13 Telephone:
Certification: I certify that the information provided hereon is true and accurate or, where indicated on the form, reasonable estimates to the best of my knowledge.	
Name: 14	Title: 15
Signature:	Date:

EIA-857
(Revised 1988)

ANNUAL REPORT FOR
IMPORTERS AND EXPORTERS OF NATURAL GAS

Form Approved
OMB Number 1902-0027
Expiration Date 03/31/89

GENERAL INSTRUCTIONS

1. The completed original and 3 conformed copies of this report shall be filed with the Federal Energy Regulatory Commission, Washington, D.C. 20426 on or before March 31, of each year, for the preceding calendar year.
2. The report will be filed by each person having authorization to import or export natural gas.
3. Use a separate schedule for each authorization. If one authorization involves more than one import or export point, a separate schedule must be filed for each point.
4. All volumes reported in Mcf will be at 14.73 Psia and 60°F.
5. Where transactions are based primarily on volumetric measurement, weighted average Btu data should be used to estimate total monthly Btu's.
6. Amounts paid or received and cost or receipts shall be reported in U.S. Dollars.
7. DEFINITIONS: -- Transporter--the party or parties, other than buyer or seller, owning the facilities by which gas or LNG is physically transferred between buyer and seller; Costs--all expenses incurred by importer up to the U.S. point of delivery for the reported quantity imported; Receipts--all revenues received by exporter for the reported quantity exported.

Name of Respondent	Address of Respondent	Year Ending December 31, _____
--------------------	-----------------------	-----------------------------------

SCHEDULE I - GASEOUS PHASE NATURAL GAS

NOTE: If authorization granted is increased, decreased, or extended under a succession of docket numbers and all related gas moved through the same border facilities and authorized expansions thereof, moved to or from the same purchaser or supplier, and was subject to the same rate, such transaction shall be combined for reporting purposes and appropriate Docket Numbers shown.

Report for (Check one) ☐ Import ☐ Export	Foreign Seller or Foreign Buyer
---	---------------------------------

U.S. Entry or Exit Point	Transporter	Docket Number(s)
--------------------------	-------------	------------------

Line No.	Month (a)	QUANTITY RECEIVED OR SHIPPED AT THE ENTRY OR EXIT POINT				Amount Paid or Received at Entry or Exit Point (f)
		Peak Day		Mcf (d)	MMBtu (e)	
		Date (b)	Mcf (c)			
1	January					
2	February					
3	March					
4	April					
5	May					
6	June					
7	July					
8	August					
9	September					
10	October					
11	November					
12	December					
13	TOTAL					

ANNUAL WEIGHTED AVERAGE IN Btu's PER CUBIC FOOT (Line 13; (Column (e) ÷ (Column (d) X 1000))) _____	ANNUAL WEIGHTED AVERAGE PRICE IN CENTS PER MMBtu (Line 13; Column (f) ÷ Column (e) X 100) _____
--	--

FPL-14 (8-82)

Appendix C

Statistical Considerations

Appendix C

Statistical Considerations

The monthly sales (volume and price) and monthly deliveries (volume) of natural gas by State presented in this report are estimated from data reported on the Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers." (See Appendix B for a description of this Form.) These estimations must be made from the reported data since the Form EIA-857 is a sample survey. A description of the sample design and the estimation procedures is given below.

Sample Design

The Form EIA-857 is a monthly sample survey of natural gas marketers including interstate pipeline companies, intrastate pipeline companies, producers, and local distribution companies. It provides data that are used to estimate monthly onsystem sales of natural gas (volume and price) by State and monthly deliveries of natural gas (volume) by State to three consumer sectors--residential, commercial, and industrial. Monthly deliveries and prices of natural gas to electric utilities are reported on the Form EIA-759, "Monthly Power Plant Report," and the Form FERC-423, "Monthly Report of Costs and Quality of Fuels for Electric Plants."

Sample Universe. The sample currently in use was selected from a universe of 1,746 companies. These companies were respondents to the Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition," for reporting year 1988. (See Appendix B for a description of the Form EIA-176.)

Sampling Plan. The goal was a sample that would provide estimates of monthly natural gas consumption by the three consuming sectors within each State and the District of Columbia. A stratified sample using a single stage and systematic selection with probability proportional to size was designed. The measure of size was the volume of gas sales and deliveries by the company during 1988. There were two strata--companies selected with certainty and companies selected under the systematic probability proportional to size design.

Initial calculations showed that a 25 percent sample of companies would yield reasonably accurate estimates. The sample was selected independently in each State, resulting in a national total of 408 companies.

Certainty Stratum. Since estimates were needed for each of the 50 States and the District of Columbia, the strata were established independently within each State. In 16 States and the District of Columbia where sampling was not feasible due to small numbers of companies and/or small volumes of gas sales, all companies were selected. The 16 States were: Alaska, Connecticut, Delaware, Hawaii, Idaho, Maine, North Dakota, New Hampshire, New Jersey, Nevada, Oregon, Rhode Island, South Dakota, Utah, Vermont, and Washington.

For each of the remaining States, the total volumes of industrial sales and deliveries and of the combined residential/commercial sales were determined. Companies with gas sales/deliveries to the industrial sector or to the combined residential/commercial sector above a certain level were selected with certainty. This procedure ensured that large companies would be included since a few large companies often account for most of the volume of gas sales within a State. The formula for determining certainty was applied independently in the two consumer sectors--the industrial and the combined residential/commercial. These selected companies, together with the companies in the jurisdictions discussed where sampling was not feasible, formed the certainty stratum.

All companies with gas sales/deliveries in sector j greater than the cut-off value (C_j) were included in the certainty stratum. The formula for C_j was:

$$C_j = \frac{X_j}{2n} \quad (1)$$

where:

C_j = cutoff value for consumer sector j ,

n = target sample size to be selected for the State, 25 percent of the companies in the State,

X_{ij} = the annual volume of gas sales/deliveries by company i to customers in consumer sector j ,

X_i = the sum within State of annual gas volumes for company i ,

X_j = the sum within State of annual gas volumes in consumer sector j ,

$X_{..}$ = the sum within State of annual gas volumes in all consumer sectors.

Noncertainty Stratum. All other companies formed the noncertainty stratum. They were systematically sampled with probability proportional to size. The measure of size for each company was the total volume of gas sales to all consumer sectors (X_i). The number of companies to be selected from the noncertainty stratum was calculated for each State, with a minimum of 2.

The formula for selecting the number of noncertainty stratum companies was:

$$m = n \frac{X_2}{X_{..}} \quad (2)$$

where:

m = the sample size for the noncertainty stratum within a State,

X_2 = the sum within State of the X_i for all companies in the noncertainty stratum.

Companies were listed in ascending order according to their measure of size and then a cumulative measure of size in the stratum was calculated for each company. The cumulative measure of size was the sum of the measures of size for that company and all preceding companies on the list. An interval (I) for selecting the companies systematically was calculated ($I = \frac{X_2}{m}$). A uniform random number R was selected between zero and I . The first sampled company was the first company on the list to have a cumulative measure of size greater than R . The second company selected was the first company on the list to have a cumulative measure of size greater than $R + I$. $R + I$ was increased again by I to determine the third company to be selected. This procedure was repeated until the entire sample was drawn.

Subgroups. In 12 States, the noncertainty stratum was divided into subgroups to ensure that gas in each consumer sector could be estimated. The systematic sample with probability proportional to size design described above was applied independently in each subgroup. The methods for determining the subgroup sample size and calculating the subgroup interval for sample selection were the same as the methods described above for the noncertainty stratum, except that X_2 was

the sum within State of the X_i for only those companies in the subgroup.

These subgroups were defined only for the purpose of sample selection. They are:

West Virginia: companies handling only residential/commercial gas and all other companies.

California, Louisiana, and Mississippi: companies handling only industrial gas and all other companies.

Alabama, Illinois, Kentucky, and Ohio: companies handling any industrial gas and all other companies.

Texas: companies handling only residential/commercial gas, companies handling only industrial gas, and all other companies (three subgroups).

Arkansas: companies handling 0.5 million cubic feet or more of gas and companies handling less than 0.5 million cubic feet of gas.

Colorado: companies handling 1 million cubic feet or more of gas and companies handling less than 1 million cubic feet of gas.

New York: companies handling 8 million cubic feet or more of gas and companies handling less than 8 million cubic feet of gas.

Estimation Procedures

Estimates of Volumes. A ratio estimator is applied to the volumes reported in each State by the sampled companies to estimate the total gas sales and deliveries for the State. Ratio estimators are calculated for each consumer sector--residential, commercial, and industrial--in each State where companies are sampled. The following annual data are taken from the most recent 1989 submissions of Form EIA-176:

The formula for calculating the ratio estimator (E_{vj}) for the volume of gas in consumer sector j is:

$$E_{vj} = \frac{Y_j}{Y'_j} \quad (3)$$

where:

Y_j = the sum within State of annual gas volumes in consumer sector j for all companies,

Y'_j = the sum within State of annual gas volumes in consumer sector j for those companies in the sample.

The ratio estimator is applied as follows:

$$V_j = y_j \times E_{vj} \quad (4)$$

where:

V_j = the State estimate of monthly gas volumes in consumer sector j,

y_j = the sum within State of reported monthly gas volumes in consumer sector j.

Estimates of Revenues. State revenues are estimated from monthly data reported by the sample companies in the same way as the volumes are estimated. Ratio estimators are calculated for each consumer sector based on annual sales revenue in each State where companies are sampled. The estimated revenues are subsequently used to calculate average prices.

The formula for calculating the ratio estimator for residential gas sales revenues in consumer sector j is:

$$E_{rj} = \frac{Z_j}{Z'_j},$$

where:

Z_j = the sum within State of annual gas sales revenues in consumer sector j,

Z'_j = the sum within State of annual gas sales revenues for those companies in the sample in consumer sector j.

The ratio estimator is applied as follows:

$$R_j = z_j \times E_{rj}$$

where:

R_j = the monthly estimated revenue for gas sales in consumer sector j,

z_j = the sum within State of reported monthly gas sales revenues in consumer sector j.

Computation of Natural Gas Prices. The natural gas volumes that are included in the computation of prices represent only those volumes associated with natural gas sales.

The average price of natural gas is calculated as follows:

$$P_j = \frac{R_j}{V_j}$$

where:

P_j = the average price of gas sales within a State in consumer sector j,

V_j = the estimate of gas sales within a State in consumer sector j.

All average prices are weighted by their corresponding sales volume estimates when national average prices are computed.

The monthly average prices of natural gas in the commercial and industrial sectors are based on sales data only. Volumes of gas delivered for the account of others to these consumer sectors are not included in the State or national average prices. Virtually all natural gas deliveries to the residential sector represent sales volumes only.

Table 33 shows the percent of the total State volume that represents volumes from natural gas sales to the commercial and industrial sectors. This table may be helpful in evaluating commercial and industrial price data.

Estimation for Nonrespondents. A volume for each consumer category is imputed for companies that fail to respond. The imputation is based on the previous month's value reported by the non-responding company and the change from the previous month to the current month in volumes reported by other companies in the State. The imputed volumes are included in the State totals. To estimate prices for non-respondents, the unit price (dollars per thousand cubic feet) reported by the company in the previous month is used.

The formula for imputing volumes of gas sales for nonrespondents was:

$$F_t = F_{t-1} \times \frac{y_{jt}}{y_{jt-1}} \quad (5)$$

where:

F_t = imputed gas volume for current month t,

F_{t-1} = gas volume for the company for the previous month,

y_{jt} = gas volume reported by companies in the State stratum for report month t,

y_{jt-1} = gas volume in the previous month for companies in the State stratum that reported in month t.

Final Revisions

Adjusting Monthly Data to Annual Data. After the annual data reported on the Form EIA-176 have been submitted, edited, and prepared for publication in the *Natural Gas Annual*, revisions are made to monthly data. The revisions are made to the volumes and prices of natural gas delivered to consumers that have appeared in the *Natural Gas Monthly* to match them to the annual values appearing in the *Natural Gas Annual*. The revised monthly estimates allocate the difference between the sum of monthly estimates and the annual reports according to the distribution of the estimated values across the months.

Before the final revisions are made, changes or additions to submitted data received after publication of the monthly estimate and not sufficiently large to require a revision to be published in the *Natural Gas Monthly*, are used to derive an updated estimate of monthly consumption and revenues for each State's residential, commercial, or industrial natural gas consumption.

For each State, two numbers were revised, the estimated consumption and the estimated price per thousand cubic feet.

The formula for revising the estimated consumption is:

$$V_{jm}^* = V_{jm} + \left[(V_{ja} - V'_{jm}) \left(\frac{V_{jm}}{V'_{jm}} \right) \right] \quad (6)$$

where:

V_{jm}^* = the final volume estimate for month m in consumer sector j,

V_{jm} = the estimated volume for month m in consumer sector j,

V_{ja} = the volume for the year reported on Form EIA-176,

V'_{jm} = The annual sum of estimated monthly volumes.

The price is calculated as described above in the Estimation Procedures section, using the final revised consumption estimate and a revised revenue estimate.

The formula for revising the estimated revenue is:

$$R_{jm}^* = R_{jm} + \left[(R_{ja} - R'_{jm}) \left(\frac{R_{jm}}{R'_{jm}} \right) \right] \quad (7)$$

where:

R_{jm}^* = the final revenue estimate for month m in consumer sector j,

R_{jm} = the estimated revenue for month m in consumer sector j,

R_{ja} = the revenue for the year reported on Form EIA-176,

R'_{jm} = The annual sum of estimated monthly revenues.

Reliability of Monthly Data

The monthly data published in this report are subject to two sources of error - nonsampling error and sampling error. Nonsampling errors occur in the collection and processing of the data. See the discussion of the Form EIA-857 in Appendix B for a description of nonsampling errors for monthly data.

Sampling error may be defined as the difference between the results obtained from a sample and the results that a complete enumeration would provide. The standard error statistic is a measurement of sampling error.

Standard Errors

A standard error of an estimate is a statistical measure that indicates how the estimate from the sample compares to the result from a complete enumeration. Standard errors are calculated based on statistical theory that refers to all possible samples of the same size and design.

The standard errors for monthly natural gas volume estimates by State are given in Table C2. Ninety-five percent of the time, the volume that would have been obtained from a complete enumeration will lie in the range between the estimated volume minus two standard errors and the estimated volume plus two standard errors.

Table C-1. Standard Error for Natural Gas Deliveries and Price to Consumers by State, September 1990

State	Volume Million Cubic Feet				Price Dollars per Thousand Cubic Feet			
	Residential	Commercial	Industrial	Total	Residential	Commercial	Industrial	Total
Alabama	88	76	297	319	0.72	0.35	0.42	0.31
Alaska	0	0	0	0	.00	.00	.00	.00
Arizona	10	5	0	11	.00	.01	.00	.04
Arkansas	31	28	207	211	.14	.04	.29	.22
California	283	546	890	1,081	.09	.06	.01	.10
Colorado	18	17	1,016	1,016	.06	.03	.36	.76
Connecticut	0	0	0	0	.00	.00	.00	.00
Delaware	0	0	0	0	.00	.00	.00	.00
District of Columbia	0	0	0	0	.00	.00	.00	.00
Florida	28	576	1,004	1,158	.29	.02	.33	.98
Georgia	119	267	975	1,018	.16	.52	.86	2.59
Hawaii	0	0	0	0	.00	.00	.00	.00
Idaho	0	0	0	0	.00	.00	.00	.00
Illinois	161	123	108	229	.09	.04	.07	.08
Indiana	25	73	497	503	.54	.30	.12	.32
Iowa	5	10	41	42	.02	.01	.01	.09
Kansas	0	0	0	0	.00	.00	.00	.00
Kentucky	65	84	327	344	.17	.04	.52	.52
Louisiana	33	4	13,403	13,403	.24	.01	.08	.97
Maine	0	0	0	0	.00	.00	.00	.00
Maryland	2	6	74	74	.01	.02	.05	.24
Massachusetts	8	30	235	237	.16	.40	.11	.16
Michigan	429	215	3,136	3,173	.18	.25	.44	.36
Minnesota	205	116	422	484	.44	.16	.24	.34
Mississippi	116	130	1,043	1,057	.03	.38	.29	1.79
Missouri	29	132	39	140	.15	.09	.09	.15
Montana	4	3	0	5	.01	.01	.00	.03
Nebraska	25	166	94	193	.05	.02	.05	.20
Nevada	0	0	0	0	.00	.00	.00	.00
New Hampshire	0	0	0	0	.00	.00	.00	.00
New Jersey	0	0	0	0	.00	.00	.00	.00
New Mexico	113	300	0	320	.41	1.13	.00	1.36
New York	403	1,183	1,368	1,853	.26	.04	.23	.55
North Carolina	12	6	374	374	.09	.01	.12	.43
North Dakota	0	0	0	0	.00	.00	.00	.00
Ohio	207	95	9,874	9,877	.24	.35	.16	.29
Oklahoma	252	169	0	304	1.07	.23	.00	.10
Oregon	0	0	0	0	.00	.00	.00	.00
Pennsylvania	46	79	590	597	.05	.11	.61	1.19
Rhode Island	0	0	0	0	.00	.00	.00	.00
South Carolina	28	95	2,454	2,456	.38	.03	.21	1.14
South Dakota	0	0	0	0	.00	.00	.00	.00
Tennessee	48	112	703	713	.10	.10	.10	.44
Texas	27	7,700	13,173	15,259	.04	1.63	.08	.88
Utah	0	0	0	0	.00	.00	.00	.00
Vermont	0	0	0	0	.00	.00	.00	.00
Virginia	95	35	686	693	.09	.08	.73	1.01
Washington	0	0	0	0	.00	.00	.00	.00
West Virginia	16	52	4	54	.56	.14	.00	.26
Wisconsin	206	71	493	539	1.05	.81	.61	.58
Wyoming	5	46	21	51	.28	.33	.70	.75
U.S. Totals	847	7,855	21,811	23,198	.07	.17	.20	.11

The standard error of the natural gas volume estimate is the square root of the variance of the estimate. The formula for calculating the variance of the volume estimate is:

$$V(\hat{Y}) = \sum_{h=1} [N_h^2 \frac{(1 - \frac{n_h}{N_h})}{n_h(n_h - 1)} (\sum_{i=1} (y_i - Tx_i)^2)] \quad (8)$$

where:

N_h = the total number of companies in stratum h

n_h = the sample size in stratum h

y_i = the reported monthly volume for company i

x_i = the reported annual volume for company i

T = the ratio of the sum of the reported monthly volumes for sample companies to the sum of the reported annual volumes for the sample companies.

Appendix D

Natural Gas Reports and Feature Articles

Appendix D

Natural Gas Reports and Feature Articles

Reports Dealing Principally with Natural Gas and/or Natural Gas Liquids

- *Natural Gas Annual 1989*, DOE/EIA-0131(89), September 1990.
- *Statistics of Interstate Natural Gas Pipeline Companies 1988*, DOE/EIA-0145(88), November 1989. Published annually.
- *Gas Supplies of Interstate Natural Gas Pipeline Companies 1988*, DOE/EIA-0167(88), December 1989. Published annually.

Other Reports Covering Natural Gas, Natural Gas Liquids, and Other Energy Sources

- *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves - 1989 Annual Report*, DOE/EIA-0216(89), September 1990.
- *Monthly Energy Review*, DOE/EIA-0035. Published monthly. Provides national aggregate data for natural gas, natural gas liquids, and other energy sources.
- *Annual Report to Congress 1989*, DOE/EIA-0173(89), March 1990. Published annually.
- *Annual Energy Outlook 1990*, DOE/EIA-0383(90), January 1990. Published annually.
- *Annual Energy Review 1989*, DOE/EIA-0384(89), May 1990. Published annually.
- *Short-Term Energy Outlook*, DOE/EIA-0202. Published quarterly. Provides forecasts for next six quarters for natural gas and other energy sources.
- *Annual Outlook for Oil and Gas: 1990*, DOE/EIA-0517(90), May 1990.
- *International Oil and Gas Exploration and Development Activities*, DOE/EIA-0523. Published Quarterly. Provides a compilation of reported oil and gas reserve additions in foreign countries.

Selected One-Time Natural Gas and Related Reports

- *Drilling and Production Under Title I of the Natural Gas Policy Act, 1978-1986*, DOE/EIA-0448(86), January 1989.
- *An Examination of Domestic Natural Gas Resource Estimates*, SR/RNGD/89-01, February 1989.
- *Growth in Unbundled Natural Gas Transportation Services: 1982-1987*, DOE/EIA-0525, May 1989.
- *Assessment of Pipeline Capacity to Transport Domestic Natural Gas Supplies to the Northeast*, SR/RNGD/89-02, August 1989.
- *Natural Gas Production Responses to a Changing Market Environment, 1978-1988*, DOE/EIA-0532, June 1990.
- *Costs and Indices for Domestic Oil and Gas Field Equipment and Production Operations - 1987 through 1989*, DOE/EIA-0185(89), July 1990.
- *U.S. Oil and Gas Reserves by Year of Field Discovery*, DOE/EIA-0534, August 1990.

Selected and Recurring Natural Gas and Related Data Reference Reports

- *Directory of Energy Data Collection Forms*, DOE/EIA-0249(89), January 1990.
- *Oil and Gas Field Code Master List, 1989*, EIA-0370(89), January 1990.

NGM Feature Articles

March 1987

Estimated Distribution of Proved Natural Gas Reserves Among the Geologic Provinces of the Lower 48 States

(Presents an overview of the methodology and procedures employed in the formulation of certain positions of EIA's annual reserves study.)

April 1987

Contract Provisions Covering Production of New Gas

(Discusses various types of contract provisions included in recent natural gas contracts.)

May 1987

U.S. Imports and Exports of Natural Gas 1986

(Provides final 1986 data on all U.S. imports and exports of natural gas.)

July 1987

Underground Storage of Natural Gas

(Presents an analysis of the natural gas storage facilities and statistics.)

Domestic Natural Gas Reserves and Production Dedicated to Interstate Pipeline Companies, 1986

(Provides preliminary data on natural gas reserves and production dedicated to the interstate market.)

October 1987

Main Line Natural Gas Sales to Industrial Users, 1986

(Describes and analyzes direct sales to end users by interstate pipeline companies and SIC codes.)

December 1987

Overview of Wellhead Purchases by Interstate Natural Gas Pipeline Companies Since the NGPA

(Presents an overview of gas purchasing trends and practices since 1979.)

January 1988

Gas Deliverability in Louisiana

(Provides information on the levels of natural gas deliverability in the State of Louisiana.)

April 1988

Overview of Pipeline Take-or-Pay Exposure: 1983-1987

(Presents information on the recent history of the take-or-pay issue.)

June 1988

Domestic Natural Gas Reserves and Production Dedicated to Interstate Pipeline Companies, 1987

(Provides preliminary data on natural gas reserves and production dedicated to the interstate market.)

July 1988

U.S. Imports and Exports of Natural Gas - 1987

(Contains final 1987 data on all U.S. imports and exports of natural gas.)

September 1988

Status of Coalbed Methane Recovery in the United States

(Presents an overview of coalbed methane gas in the U.S.)

January 1989

Main Line Natural Gas Sales by Interstate Pipeline Companies, 1987

(Describes and analyzes direct sales to end users by interstate pipeline companies and SIC codes.)

Summary of An Examination of Domestic Gas Resource Estimates

(Provides an overview of the various natural gas resource estimates currently in use.)

May 1989

The Outlook for Natural Gas Supply in the 1990's

(Discusses recent conditions in the oil and gas producing industry.)

June 1989

Domestic Natural Gas Reserves and Production Dedicated to Interstate Pipeline Companies, 1988

(Provides preliminary data on natural gas reserves and production dedicated to the interstate market.)

August 1989

U.S. Natural Gas Imports and Exports - 1988

(Contains final 1988 data on all U.S. imports and exports of natural gas.)

September 1989

Natural Gas Production in the Post-NGPA Decade

(Presents data on the production of natural gas by categories defined under the Natural Gas Policy Act of 1978 (NGPA).)

November 1989

Natural Gas Wellhead Decontrol Act of 1989

(Describes the categories of natural gas most affected by the decontrol provisions and provides market data for these categories and the overall markets during the 1980's.)

March 1990

The Developing Natural Gas Futures Market and Its Potential Impact on Domestic Natural Gas Markets

(Discusses futures markets vs. physicals markets (which include spot markets).)

April 1990

The Outlook for Natural Gas

(Discusses projections of natural gas markets through the year 2010.)

May 1990

Domestic Natural Gas Reserves and Production Dedicated to Interstate Pipeline Companies, 1989

(Provides preliminary data on natural gas reserves and production dedicated to the interstate market.)

June 1990

U.S. Natural Gas Imports and Exports - 1989

(Contains final 1989 data on all U.S. imports and exports of natural gas.)

July 1990

Resurgence in Natural Gas Wellhead Productivity

(Explores the factors that contributed to the recent increases in natural gas wellhead production.)

Appendix E

Technical Contacts

Appendix E

Technical Contacts

Section	Tables		Principal Data Sources	Technical Contact
Summary Statistics: Natural Gas Production and Consumption	1, 2, 3	Monthly: Annual: Monthly:	Interstate Oil Compact Commission (IOCC) Form EIA-627, "Annual Quantity and Value of Natural Gas Report" Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers"	Sheila Darnell (202) 586-6165
Extraction Loss	1	Monthly: Annual:	EIA computations Form EIA-816, "Monthly Natural Gas Liquids Report" and Form EIA-64A, "Annual Report of the Origin of Natural Gas Liquids Production"	Margo Natof (202) 586-6303
Supplemental Gaseous Fuels	2	Monthly: Annual:	EIA computations Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition"	Margo Natof (202) 586-6303
Imports and Exports	2	Monthly Annual:	EIA computations Form FPC-14, "Annual Report for Importers and Exporters of Natural Gas"	Margo Natof (202) 586-6303 Fay Dillard (202) 586-6181
Price: City Gate, Residential, Commercial, and Industrial	4	Monthly:	Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers"	Roy Kass (202) 586-4790
Imports and Purchases from Producers	4	Monthly:	Form FERC-11, "Natural Gas Pipeline Company Monthly Statement"	James Keeling (202) 586-6107
Wellhead	4	Monthly: Annual:	EIA computations Form EIA-627, "Annual Quantity and Value of Natural Gas Report"	Sheila Darnell (202) 586-6165
Electric Utility	4	Monthly:	Form FPC-423, "Cost and Quality of Fuels for Electric Power Plants"	Margo Natof (202) 586-6303
NGPA Category - Prices And Volumes	5	Periodic:	Purchased Gas Adjustment Filings	Norman Crabtree (202) 586-6180
Summary of Natural Gas Imports and Exports	6	Quarterly:	Form FPC-14, "Annual Report for Importers and Exporters of Natural Gas" and "Quarterly Sales and Price Report"	James Todaro (202) 586-6305
Producer Related Activities: Natural Gas Production	7	Monthly:	Interstate Oil Compact Commission (IOCC)	Sheila Darnell (202) 586-6165
Well Determination Filings	8, 9, 10,	Monthly:	Form FERC-121, "Application for Determination of Maximum Lawful Price Under the Natural Gas Policy Act"	Norman Crabtree (202) 586-6180
NGPA Ceiling Prices	11	Monthly:	<i>Federal Register</i>	Eva Fleming (202) 586-6113
Interstate Pipeline Activities:	12, 13, 14, 15, 16	Monthly:	Form FERC-11, "Natural Gas Pipeline Company Monthly Statement"	James Keeling (202) 586-6107

Underground Storage:	17, 18, 19, 20, 21	Monthly:	Forms FERC-8 and EIA-191, "Underground Gas Storage Report"	Ellis Maupin (202) 586-6178
Distribution and Consumption:				
Deliveries to:				
Residential,	22	Monthly:	Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers"	Roy Kass (202) 586-4790
Commercial,	23			
Industrial,	24			
Electric Utility,	25		Form FERC-423, "Cost and Quality of Fuels for Electric Power Plants"	Margo Natof (202) 586-6303
All Consumers	26			
Average Price to:				
City Gate	27	Monthly:	Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers"	Roy Kass (202) 586-4780
Residential,	28			
Commercial,	29			
Industrial,	30		Form FERC-423, "Cost and Quality of Fuels for Electric Power Plants"	Margo Natof (202) 586-6303
Electric Utility,	31			
and All Consumers	32			
Onsystem Sales	33	Monthly:	Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers"	Roy Kass (202) 586-4790
Heating Degree Days	34	Seasonal:	National Oceanic and Atmospheric Administration	Rosemary Jameson (202) 586-6229
Highlights and Industry Overview				James Todaro (202) 586-6305
Recent Developments				James Todaro (202) 586-6305

Glossary

Base (Cushion) Gas: The volume of gas needed as a permanent inventory to maintain adequate underground storage reservoir pressures and deliverability rates throughout the withdrawal season. All native gas is included in the base gas volume.

British Thermal Unit (Btu): The heat required to raise the temperature of one pound of water by one degree Fahrenheit at or near 39.2 degrees Fahrenheit.

City-gate: A point or measuring station at which a gas distribution company receives gas from a pipeline company or transmission system.

Commercial Consumption: Gas used by nonmanufacturing organizations such as hotels, restaurants, retail stores, laundries, and other service enterprises, and gas used by local, State, and Federal agencies engaged in nonmanufacturing activities.

Depletion: The loss in service value incurred in connection with the exhaustion of the natural gas reserves in the course of service.

Depreciation: The loss in service value not restored by current maintenance, incurred in connection with the consumption or respective retirement of a gas plant in the course of service from causes that are known to be in current operation and against which the utility is not protected by insurance; for example, wear and tear, decay, obsolescence, changes in demand and requirements of public authorities, and the exhaustion of natural resources.

Dry Natural Gas Production: Marketed production less extraction loss.

Electric Utility Consumption: Gas used as fuel in electric utility plants.

Exports: Natural gas deliveries out of the Continental United States (including Alaska) to foreign countries. {3}

Extraction Loss: The reduction in volume of natural gas resulting from the removal of natural gas liquid constituents at natural gas processing plants.

Flared: The volume of gas burned in flares on the base site or at gas processing plants.

Gross Withdrawals: Full well stream volume, including all natural gas plant liquid and nonhydrocarbon gases, but excluding lease condensate. Also includes amounts delivered as royalty payments or consumed in field operations.

Hinshaw Pipeline: A pipeline or local distribution company that has received exemption, (by Section 1 (c) of the Natural Gas Act), from regulations pursuant to the Natural Gas Act. These companies transport interstate natural gas not subject to regulations under NGA.

Imports: Natural gas received in the Continental United States (including Alaska) from a foreign country.

Independent Producers: Independent natural gas producers subject to the jurisdiction of the FERC.

Industrial Consumption: Natural gas used by manufacturing and mining establishments for heat, power, and chemical feedstock.

Interstate Companies: Natural gas pipeline companies subject to FERC jurisdiction.

Intransit Deliveries: Redeliveries to a foreign country of foreign gas received for transportation across U.S. territory and deliveries of U.S. gas to a foreign country for transportation across its territory and redelivery to the United States.

Intransit Receipts: Receipts of foreign gas for transportation across U.S. territory and redelivery to a foreign country and redeliveries to the United States of U.S. gas transported across foreign territory.

Intrastate Companies: Companies not subject to FERC jurisdiction.

Lease and Plant Fuel: Natural gas used in lease operations, as gas processing plant fuel, and net used for gas lift.

Liquefied Natural Gas (LNG): Natural gas that has been liquefied by reducing its temperature to minus 260 degrees Fahrenheit at atmospheric pressure.

Marketed Production: Gross withdrawals less gas used for repressuring, quantities vented and flared, and nonhydrocarbon gases removed in treating or processing operations. Includes all quantities of gas used in field and processing operations. See Explanatory Note 1 for discussion of coverage of data concerning nonhydrocarbon gases removed.

Major Interstate Pipeline Company: A company whose combined sales for resale, and gas transported interstate or stored for a fee, exceeded 50 million thousand cubic feet in the previous year.

Native Gas: Gas in place at the time that a reservoir was converted to use as an underground storage reservoir. Excludes quantities of gas added or injected.

Natural Gas: A mixture of hydrocarbon compounds and small quantities of various nonhydrocarbons existing in the gaseous phase or solution with oil in natural underground reservoirs at reservoir conditions.

Natural Gas Policy Act of 1978 (NGPA): Signed into law on November 9, 1978, the NGPA is a framework

for the regulation of most facets of the natural gas industry. See Explanatory Note 10 for a full discussion.

Nonhydrocarbon Gases: Typical nonhydrocarbon gases that may be present in reservoir natural gas are carbon dioxide, helium, hydrogen sulfide, and nitrogen.

Onsystem Sales: Sales to customers where the delivery point is a point on, or directly interconnected with, a transportation, storage, and/or distribution system operated by the reporting company.

Pipeline Fuel: Gas consumed in the operation of pipelines, primarily in compressors.

Repressuring: The injection of gas into oil or gas formations for pressure maintenance and cycling purposes.

Residential Consumption: Gas used in private dwellings, including apartments, for heating, cooking, water heating, and other household uses.

Storage Additions: The volume of gas injected or otherwise added to underground natural gas or liquefied natural gas storage during the applicable reporting period.

Storage Withdrawals: Total volume of gas withdrawn from underground storage or liquefied natural gas storage during the applicable reporting period.

Supplemental Gaseous Fuels Supplies: Synthetic natural gas, propane-air, refinery gas, biomass gas, air injected for stabilization of heating content, and manufactured gas commingled and distributed with natural gas.

Synthetic Natural Gas (SNG): A manufactured product chemically similar in most respects to natural gas, that results from the conversion or reforming of petroleum hydrocarbons and may easily be substituted for or interchanged with pipeline quality natural gas.

Therm: One-hundred thousand British thermal units.

Unaccounted For: Represents the difference between the sum of the components of natural gas supply and the sum of the components of natural gas disposition. These differences may be due to quantities lost or to the effects of data reporting problems. Reporting problems include differences due to the net result of conversions of flow data metered at varying temperature and pressure bases and converted to a standard temperature and pressure base; the effect of variations in company accounting and billing practices; differences between billing cycle and calendar period time frames; and imbalances resulting from the merger of data reporting systems which vary in scope, format, definitions, and type of respondents.

Underground Gas Storage Reservoir Capacity: Interstate company reservoir capacities are those certificated by FERC. Independent producer and intrastate company reservoir capacities are reported as developed capacity.

Vented Gas: Gas released into the air on the base site or at processing plants.

Wellhead Price: Represents the wellhead sales price, including charges for natural gas plant liquids subsequently removed from the gas, gathering and compression charges, and State production, severance, and/or similar charges.

Working (Top Storage) Gas: The volume of gas in an underground storage reservoir above the designed level of the base. It may or may not be completely withdrawn during any particular withdrawal season. Conditions permitting, the total working capacity could be used more than once during any season.

Your Entrée to
Federal Statistics!

CENSUS CATALOG AND GUIDE: 1990

Helps you select from all the products

Every Census Bureau product issued mid-1988--1989:

*Reports Microfiche Computer tapes CD-ROM
Maps Floppy disks Online access*

Key statistical publications from other Federal agencies (NEW!)

Features facts about each product

Topics Areas Dates Prices

Makes finding the right product easy

*Extensive overview chapter Title Index
Detailed subject index Guides to each statistical subject*

Identifies sources of assistance

*1,400 State Data Center organizations
200 Census Bureau specialists
1,500 depository libraries
Other Federal statistical agencies
4 other directory lists*

Contents

General and Reference
Agriculture
Business
Construction and Housing
Foreign Trade
Geography
Governments
International
Manufacturing and Mineral Industries
Population
Transportation
1990 Census Product Plans (NEW!)
Sources of Assistance
Factfinder Guides

***6835**

Superintendent of Documents Publication Order Form

Yes, please send me: _____ copies of **Census Catalog and Guide: 1990** at \$14, S/N 003-024-07169-0.

1. The total cost of my order is \$ _____. (International customers please add 25%.) All prices include regular domestic postage and handling and are good through 1/91. After this date, please call Order and Information Desk at 202-783-3238 to verify prices.

*Charge your order.
It's easy!*

2. Please Type or Print

(Company or personal name)

(Additional address/attention line)

(Street address)

(City, State, ZIP Code)

(Daytime phone including area code)

3. Please Choose Method of Payment:

- ☐ Check payable to the Superintendent of Documents
☐ GPO Deposit Account
☐ VISA or MasterCard Account

(Credit card expiration date)

Thank you for your order!

(Signature)

8/90

4. **Mail To:** Superintendent of Documents, Government Printing Office, Washington, DC 20402-9325

END

DATE FILMED

01 / 22 / 91