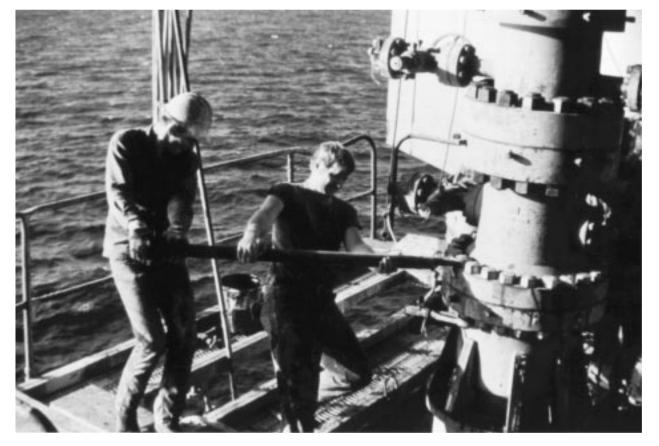
Appendix A

Summary of Data Collection and Report Methodology



Workmen perform maintenance on this offshore natural gas drilling platform.

Appendix A

Summary of Data Collection Operations and Report Methodology

The 1998 data for the Natural Gas Annual are taken primarily from Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition" and Form EIA-895, "Monthly Quantity and Value of Natural Gas Report." Each of these surveys and all other sources of data for this report are discussed separately in the following sections.

Form EIA-176

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 for the current version of this form.

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. 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.

In 1990, the Form EIA-176 was revised to include more detailed information for gas withdrawn from storage facilities, gas added to storage facilities, deliveries of company-owned natural gas and natural gas transported for the account of others. The revised form was approved for use beginning with report year 1990.

Upon the Office of Management and Budget's (OMB) approval in 1993, the Form EIA-176 was revised. All deliveries to consumers are now categorized as firm or interruptible. Commercial and industrial consumers are further categorized as nonutility power producers or as those excluding nonutility power producers.

Approval of the Form EIA-176 for use through 1999 was received in 1996 from OMB. The form was modified as outlined in the "Change in Definition of Consumption Sector" below.

Data reported on this form are no longer considered proprietary. Response to the form continues to be mandatory.

In January 1999, forms for report year 1998 were mailed to all identified interstate natural gas pipeline companies; intrastate natural gas pipeline companies; investor and municipally owned natural gas distributors; underground natural gas storage operators; synthetic natural gas plant operators; field, well, or processing plant operators that deliver natural gas directly to consumers (including their own industrial facilities) other than for lease or plant use or processing; and field, well, or processing-plant operators that transport gas to, across, or from a State border through field or gathering facilities. Detailed instructions for completing the form were included in each survey package.

Completed forms were returned to the Natural Gas Division, Office of Oil & Gas, where each was checked for errors, corrected as necessary, and processed into computer-generated State and national data summaries.

Change in Definition of Consumption Sector

With the 1996 annual reporting cycle, the Energy Information Administration has changed the customer category used for reporting deliveries to consumers in the agricultural industry from commercial to industrial. Most natural gas consumed in agriculture is used to drive irrigation systems and to dry crops. Separate reports of the volumes affected are not available so the direct impact of this change is not known.

In comparing sectoral use over time, note that:

- there is an inherent shift in natural gas volumes from the commercial to industrial sectors due simply to changes in the reporting requirements. This break in series may indicate a spurious increase in industrial consumption with a corresponding decrease in the commercial sector;
- the sum of natural gas volumes consumed by the commercial and industrial sectors will not be changed by this modification in the instructions.

Response Statistics

Each company and its parent company or subsidiaries were required to file if they met the survey specifications. The original mailing totaled 1910 questionnaire packages. To this original mailing, 5 names were added and 32 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 1,883 responses from approximately 1,800 companies.

Following the original mailing, second request mailing, and nonrespondents follow-up, 1883 responses were entered into the data base. There were 50 nonrespondents.

Summary of Form EIA-176 Data Reporting Requirements

The Form EIA-176 is a five-page form consisting of seven parts. Part I of the form contains identifying information including the company identification number, the company name and address, the State for which the report is filed, and address correction information. Part II contains certification information. The body of the form (Parts III-VII) is a multiline schedule for reporting all supplies of natural gas and supplemental gaseous fuels and their disposition within the State indicated. Respondents filed completed forms with the EIA in Washington, D.C. Data for the year 1998 were due April 1, 1999.

Computer edit programs verified the report year, State code, and arithmetic totals. Further tests were made to ensure that all necessary data elements were present and that the data were reasonable and internally consistent. The computerized edit system produced error listings with messages for each failed edit test. To resolve problems, respondents were contacted by telephone and were required to file amended forms with corrected data.

All natural gas and supplemental gaseous fuels volumes were reported on a physical custody basis in thousand cubic feet, and dollar values were reported to the nearest whole dollar. All volumes were reported at 14.73 pounds per square inch absolute pressure and 60 degrees Fahrenheit. Other minor report standards were specified in the instructions booklet to assure that the filed data were consistent and could be readily processed.

Comparison of the Form EIA-176 with Other Data Sources

Comparison of the EIA-176 data with data from similar series is another method of ensuring the validity of the data published in this report. This comparison on a company-by-company basis showed significant differences that respondents were required to reconcile.

The FPC-14, "Annual Report for Importers and Exporters of Natural Gas," was discontinued in September 1995. Data on imports and exports of natural gas, as collected by the EIA-176 survey, were checked by comparing individual responses with quarterly data reports, "Natural Gas Imports and Exports," filed with the Office of Fossil Energy, U.S. Department of Energy. These quarterly reports are required as a condition of import/export authorizations. Where discrepancies were noted, respondents were required to file corrected reports.

Similarly, data on the underground storage of natural gas were compared with submissions of Form EIA-191, Underground Gas Storage Report." If significant differences were noted, companies were contacted to reconcile the discrepancies. During 1998, the 117 companies filing the Form EIA-191 reported total injections of 2,905 billion cubic feet and total withdrawals of 2,386 billion cubic feet. This compares to 2,904 billion cubic feet of injections and 2,377 billion cubic feet of withdrawals, as reported on the Form EIA-176.

Data on deliveries to residential, commercial, and industrial consumers were compared with data submitted on Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers." Where discrepancies were noted, respondents were required to file corrected reports for either and sometimes both surveys. Numerous telephone calls were made to clarify any misunderstandings concerning the correct filing of both forms. Typical errors included electric utility volumes combined with industrial volumes, sale for resale volumes reported as industrial consumption, cogeneration volumes not reported on Form EIA-857, and misinterpretation of general instructions.

A discussion of the comparison of the data on deliveries to electric utilities filed on Form EIA-176 and that reported in the EIA publication, *Electric Power Annual*, is included in this Appendix under "Electric Utility Data."

Routine Form EIA-176 Edit Checks

A series of manual and computerized edit checks were used to screen the Form EIA-176. The edits performed included validity, arithmetic, and analytical checks. A computerized check was also made for consistency with previous filings.

The incoming forms for the survey were reviewed prior to keying. This prescan determined if the respondent identification (ID) number and the company name and address were correct, if the data on the form appeared complete and reasonable, and if the certifying information was complete.

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

Form EIA-627 and Form EIA-895

Survey Design

Beginning with 1980 data, natural gas production data previously obtained on an informal basis from appropriate State agencies were collected on Form EIA-627. This form was designed by the 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 the efforts involved in the collection of production and value data by producing States and to avoid an unnecessary respondent burden on gas and oil well operators.

In 1993, the Office of Management and Budget approved the Form EIA-627 for use in report years 1994 through 1996. In April 1999, forms for report year 1998 were mailed to the appropriate agencies in 33 States. Completed forms were returned to the Data Operations Branch of the Reserves and Natural Gas Division for review, processing, and compilation. In 1996, the Reserves and Natural Gas Division redesigned the Form EIA-895, formerly known as the "Monthly Quantity of Natural Gas Report." The Form EIA-895, "Monthly Quantity and Value of Natural Gas Report," has a Monthly and Annual Schedule (replaces the Form EIA-627) for quantity and value of natural gas production. The Annual Schedule is to be filed with the December Monthly Schedule each year and should include any changes or updates in previously reported monthly data.

Response Statistics

Of the 33 natural gas producing States, 31 participated in the voluntary EIA-895 survey by filing the completed from or by responding to telephone contacts. Data for the 2 nonresponding States (Illinois and West Virginia) were estimated. Data on the quantities of nonhydrocarbon gases removed in 1998 were reported by the appropriate agencies of 22 of the 33 producing States. These 22 States accounted for 66 percent of total 1998 gross withdrawals. In addition, the gross withdrawal data from Kansas, Louisiana, Montana, and Oklahoma, which together accounted for 39 percent of total production, excluded all or most of the nonhydrocarbon gases removed on leases. Gross withdrawals from Louisiana excludes most quantities of nonhydrocarbon gases removed on leases. The State of Missouri reported zero gross withdrawals.

The commercial recovery of methane from coalbeds contribute a significant amount to the production totals in a number of States. Coalbed methane seams production quantities (in million cubic feet) are included in gross withdrawals totals for the following States: Alabama (116,946), Colorado (387,376), and New Mexico (608,000).

Summary of EIA-895 Data Reporting Requirements

The Form EIA-895 is a two-page form divided into five parts. Part I requests identifying information including the name and location of the responding State agency and the name and telephone number of a contact person within the agency. Part II collects monthly data on the production 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; quantities of fuel used on lease; and marketed production. Part III of the form is for reporting the monthly volume and value of marketed production. Part IV of the form is for reporting the annual data, including the number of producing gas wells, the production of natural gas including gross withdrawals from both gas and oil wells; volumes returned to formation for repressuring,

Figure A1. Form EIA-176

EIA-176 (Revised 1996)

U.S. DEPARTMENT OF ENERGY

Energy Information Administration Washington DC 20585

ANNUAL 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). For the provisions concerning the confidentiality of information and sanctions statement, see Sections VI and VII of the instructions. Respondents are not required to file or reply to any Federal collection of information unless it has a valid OMB control number. Public reporting burden for this collection of information is estimated to average 20.8 hours per response, including the time for 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: Energy Information Administration, Office of Statistical Standards, EI-73, 1000 Independence Avenue, S.W., Washington, D.C. 20585; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, D.C. 20503.

PART I: IDENTIFICATION									
1.0 Control No.	2.0 Company Name	3.0 Report State	El/	4	4.0 Resubmittal				
						Date			
	5.0 Company status, name, and/or address change or correction. (Check appropriate box)								
	me and address on mailing label are correct.								
	ange name, attention line, and/or mail address as indicated below.								
	mpany was sold to , or merged with, company entered below.								
	mpany went out of business. Customer accounts taken over by co								
e. Ot	her changes, corrections, or comments:								
5.1 Change co	ompany name and/or address to:								
a. Comp	any Name:								
b. Opera	tions in (State):								
c. Street	or Post Office Box:								
d. City, S	tate, Zip Code:								
e. Attenti	e. Attention:								
PART II: CONT	ACT PERSON								

1.0 Name (Type or Print)	2.0 Telephone Number (including Area Code and Extension)
3.0 Signature	4.0 Date

Page 1

Form Approved

OMB No. 19050175 Expires 12/31/99

1.0 Control No.	2.0 Company Name		3	.0 Rep	ort State	EIA	4.0	Resubmittal	
								Date:	
PART III: TYPE OI	F COMPANY AND GAS ACTIVITIES OPERATED	IN THE REPORT STA	ATE						
1.0 Type of Com	pany (check one)		2.0	Gas Act	ivities Operated On-syst	tem Withi	n the	Report State	
				(check a	II that apply)				
	estor owned distributor			a	Produced Natural Gas	6	m	Delivered for Re	sale
	nicipally owned distributor			b	Gathered		r	Delivered direct	у
	erstate pipeline			с	Processed			to consumers	
	astate pipeline rage operator			d	Purchased		C	Other (specify)	
	G plant operator			e	Transported Interstate	;			
	egrated oil and gas			f	Transported Intrastate	;			
	ducer			g	Stored Underground				
	therer			h	Stored LNG				
	cessor			i	Injected Propane-air				
	er (specify)			j	Produced SNG				
				k	Imported				
					Exported				
PART IV: SUPPLY	OF NATURAL AND SUPPLEMENTAL GAS REC	CEIVED WITHIN OR T	RANSPO		ITO REPORT STATE				
					Volume	e or		Cost	e or
				(1	Vlcf at 14.73 psia)	f		(Including taxes)	f
									1
	urchases received:								
· · ·	, , , , , , , , , , , , , , , , , , , ,								
	5 1								
	line or U.S. border from:								
	y Country								
	e on Part VI, if more space is needed)								
	n and/or exchange receipts:								
	d at the State line or U.S. border from:								
	y								
	Country								
	e on Part VI, if more space is needed)								
4.0 Transportated	d into the report State from:								
State or	Country								
(Continue	e on Part VI, if more space is needed)								
	om storage facilities:								
5.1 Withdraw	n from company-opeated underground storage:								
5.1.1 C	Company-owned natural gas								
5.1.2 N	latural gas owned by others								
5.2 Company	y-owned natural gas received directly from under	ground							
storage of	operators								
5.3 Received	from underground storage operators for the								
account	of others								
	uefied natural gas storage								
	ural gas produced								
	s of supply (specify source and/or kind			-					
of fuel):									
	Part VI, if more space is needed)								
8.0 Total supply v	within report State								

RESPONDENT COPY Page 2

1.0	Cont	rol No.	2.0 Company Name	3.0 Report State	EIA	4.0	Resubmittal	
							Date	
PAF	RT V:	DISPOS	SITION OF NATURAL AND SUPPLEMENTAL GAS WITHIN OR TR	ANSPORTED OUT OF REI	PORT STA	TE		
				Volume (Mcf at 14.73 psia)	e or f		Cost or Revenue (Including taxes)	e or f
1.0	Used	d in well,	lease, and field operations					
2.0	Retu	rned to	oil and/or gas reservoirs					
3.0	Used	d, remov	ed, or lost in gas processing or treating plants					
	3.1	Compa	iny-operated plants:					
			Volume delivered to company-	_				
			operated plants for redelivery	cf		-		
		3.1.2	Volume used for plant fuel			_		
			Extraction loss estimated gas phase volume of liquids extracted					
			Volume of nonhydrocarbons removed (e.g. H ₂ S & CO ₂)			1		
			Vented, flared, and/or lost					
	32		operated by others:			-		
	0.2		Volume delivered to plants			÷		
				cf				
			Total volume used, removed, vented and/or flared					
4.0	Adde		rage facilities:					
1.0			d into company-operated underground storage:			ł		
		-	Company-owned natural gas					
			Natural gas owned by others					
	42		iny owned gas delivered directly to underground storage operators					
	4.3		ed to underground storage operators for the account of others					
			to liquefied natural gas storage					
5.0			company-owned natural gas					
0.0			ed to other pipelines within the report State					
			ed to resellers (e.g., distribution companies)					
	5.3		ed at the State line or U.S. border to:					
	5.5	Compa						
			r Country					
			ue on Part VI if more space is needed)			-		
	54		ed directly to consumers Number of consumers					
	0.1		Residential sales			÷		
			5.4.1.1 Firm					
			5.4.1.2 Interruptible					
			Commercial Sales					
			5.4.2.1 Commercial (excluding nonutility					
			power producer sales)			÷		
			5.4.2.1.1 Firm					
			5.4.2.1.2 Interruptible					
			5.4.2.2 Commercial nonutility power					
			producer sales			-		
			5.4.2.2.1 Firm					
			5.4.2.2.2 Interruptible					
		543				:		
			5.4.3.1 Industrial (excluding nonutility	-				
			power producer sales)			÷		
			5.4.3.1.1 Firm					
			5.4.3.1.2 Interruptible			1		
			5.4.3.2 Industrial nonutility power			-		
			producer sales					
			5.4.3.2.1 Firm					
			5.4.3.2.2 Interruptible					
		511	Other Nonutility Power Producer Sales					
			5.4.4.1 Firm			1		
			5.4.4.2 Interruptible					
				••				

RESPONDENT COPY Page 3

		E	IA-176,	ANNUAL REPORT OF NATURAL A	ND SUPPLEMENTA	L G/	AS SUPPLY AND DISP	OSITION	, 19	
1.0	Cont	trol No.	2.0 C	Company Name		3.0	Report State	EIA	4.0 Resubmittal	
									Date	
PAR		CONTIN	UATION.	DISPOSITION OF NATURAL AND SUPPLEI	MENTAL GAS WITHIN O	RT	ANSPORTED OUT OF REP	ORT STAT	E E	
							Volume	1	Cost or Revenue	1
		Delive	red direc	tly to consumers	Number of consume	s	(Mcf at 14.73 psia)	e or f	(Including taxes)	e or f
		5.4.5	Electric	Utility Sales						
			5.4.5.1	Firm						
			5.4.5.2							
		5.4.6		Gas Used as Vehicle Fuel						1
			5.4.6.1		-					
60	Avor	ogo hoo		of gas delivered directly						
6.0		age near	Content		E	Btu		1		1
7.0				d for the account of others				1		į.
1.0	7.1	•		er pipelines within the				<u> </u>	ļ	1
	1.1									
	7.2									
	7.3			State line or U.S. border to:				1		į.
	1.5			State life of 0.3. border to.					-	1
		Compa State of	or Country]	
		(Contir	nue on Pa	art VI if more space is needed)						
	7.4			d delivered to consumers						
				of others:	Number of consume	'S				1
		7.4.1	Resider	ntial Consumers				<u> </u>		1
			7.4.1.1	Firm						
		742		ercial Consumers				1		
		1.4.2		Commercial (excluding nonutility						1
			7.4.2.1	power producer consumers)						
				7.4.2.1.1 Firm					{	1
				7.4.2.1.2 Interruptible						
			7.4.2.2	Commercial nonutility power				-	{	1
				producer consumers					1	1
				7.4.2.2.1 Firm						1
				7.4.2.2.2 Interruptible	. <u></u>				1	
		7.4.3	Industria	al Consumers						į.
			7.4.3.1	Industrial (excluding nonutility					1	1
				power producer consumers)						1
				7.4.3.1.1 Firm				1	ļ	
				7.4.3.1.2 Interruptible						
			7.4.3.2	Industrial nonutility power					j	1
				producer consumers						1
				7.4.3.2.1 Firm				<u>i</u>		
				7.4.3.2.2 Interruptible	. <u></u>					
		7.4.4	Other N	Ionutility Power Producer Consumers				<u> </u>)	1
			7.4.4.1	Firm						1
				Interruptible						
		745		Utility Sales						
		,	7.4.5.1							1
								1	1	
		7 4 2								
		7.4.6		Gas Used as Vehicle Fuel				1		
			7.4.6.1					+	л 1	1
			7.4.6.2	Interruptible					1	
8.0	Deliv	eries of	exchange	e gas or storage gas						
	8.1	Delive	red at poi	nt(s) within the report State						
	8.2	Delive	red at the	State line or U.S. Border to						
		Compa	any			_				
			or Country							
		,		art VI if more space is needed)						
9.0				ge, and/or distribution operations				+		
10.0	Othe	er disposi	ition (spe	cify)						
	(Con	ntinue on	Part VI if	more space is needed)						
11 0			tion accou							
				supply (+) or disposition (-)						1

1.0 Control No. 2.0 Company Name 3.0					3.0	Report State	EIA	4.0 Resubmittal Date:		
	CONTINUATION SHEET								5000.	
	(To be used only if insufficient space was provided in Part	IV and/	or Pa	art V)						
	Supply (Continued)						Volume (Mcf at 14.73 psia)	e or f	Cost or Revenue (Including taxes)	e or f
PART IV,	2.4 On-system purchases received at State line or U.S. border from: (Continued)									
	Company					_				
	State or Country							_		
	Company									
PART IV,	State or Country 3.2 Transportation and or exchange receipts at State line or U.S. border from: (Continued)									1
	Company								_	
	State or Country									
	Company				_	_		_	-	
	State or Country									
PART IV,	4.0 Transported into the report State from: (Cont'd)									
	State or Country			\vdash					-	
	State or CountryState or Country			\vdash	-			-	-	
	State of Country							-	-	
PART IV,	7.0 Other sources of supply (specify source and/or kind	_							-	
,	of fuel): (Continued)									
	, , , ,									
									-	
										-
	Disposition (Continued)									
PART V,	5.3 Company-owned natural gas deliveries at State line or									
	U.S. border to: (Continued) Company									
	State or Country									
	Company	_			_	_		_		
	State or Country									
PART V,	7.3 Transported for the account of others out of report State to: (Continued)									
	State or Country	_		\vdash	_			_	-	
	State or Country	_		\vdash	_				-	
	State or CountryState or Country	-		\vdash	_			-	-	
PART V,	8.2 Deliveries of exchange gas at State line or U.S.									
	border to: (Continued) Company									
	State or Country]	
	Company	_			_	_			-	
	State or Country									
PART V,	10.0 Other disposition (specify): (Continued)									
									-	
									-	
								-	-	

RESPONDENT COPY Page 5

1.0 Control No.

2.0 Company Name

3.0 Report State

EIA 4.0 Resubmittal Date:

DADT		F-0			
1	II: FOOTNO	160			
Part No.	ltem No.	EIA Use	Sub-item (State, Company, or Line)	Line No.	Footnote
i					
i					
1					
, , ,					
		1			
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1					
1					
1					
1					

RESPONDENT COPY Page 6

Figure A2. Form EIA-176, Short Form

EIA-176 (Revised 1996)

U.S. DEPARTMENT OF ENERGY

Energy Information Administration Washington DC 20585

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

SHORT FORM

Form Approved OMB No. 19050175

Expires 12/31/99

This report is mandatory under the Federal Energy Administration Act of 1974 (Public Law 93-275). For the provisions concerning the confidentiality of information and sanctions statement, see Sections VI and VII of the instructions. Respondents are not required to file or reply to any Federal collection of information unless it has a valid OMB control number. Public reporting burden for this collection of information is estimated to average 20.8 hours per response, including the time for 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: Energy Information Administration, Office of Statistical Standards, EI-73, 1000 Independence Avenue, S.W., Washington, D.C. 20585; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, D.C. 20503.

	EIA USE
EIA COPY. Tear out, complete, and return to: Energy Information Administration: EI-441	Affix mailing label or enter mail address Control (ID) No
Mail Station: BG-094 FORSTL U.S. Department of Energy Washington, D.C. 20585 Attn: Form EIA-176	Operations in (State):

		FICATION			1.0 5	
1.0 Con	trol No.	2.0 Company Name	3.0 Report State	EIA	4.0 F	Resubmittal
						Date
5.0 Co	mpany s	tatus, name, and/or address change or correction. (Check appropria	ate box)			
a.	Nan	ne and address on mailing label are correct.				
b.[Cha	nge name, attention line, and/or mail address as indicated below.				
c.	Con	npany was sold to , or merged with, company entered below.				
d.	Con	npany went out of business. Customer accounts taken over by cor	mpany entered below.			
e.	Oth	er changes, corrections, or comments				
1						
5.1 Ch a.		npany name and/or address to:				
b.		ons in (State):				
c.	Street o	r.Post Office Box:				
d.	City, Sta	te, Zip Code:				
e.	Attentio	n:				
PART II	CONTA	ACT PERSON				
1.0 Nor		as Drint)	2.0. Telephone Number (i	ممانيمانيم		Order and Enternation)

1.0 Name (Type or Print)	2.0 Telephone Number (including Area Code and Extension)
3.0 Signature	4.0 Date

1.0 Control N	No. 2.0 Company Name	3.0 Report State EIA 4.0 Resubmittal Date:
PART III: TYP	PE OF COMPANY AND GAS ACTIVITIES OPERATED IN THE REPORT STAT	TE
	Company (check one) Investor owned distributor Municipally owned distributor	2.0 Gas Activities Operated On-system Within the Report State (check all that apply) a Produced Natural Gas m Delivered for Resale
c d e f g h i k	Interstate pipeline Intrastate pipeline Storage operator SNG plant operator Integrated oil and gas Producer Gatherer Processor Other (specify)	b Gathered n Delivered directly to consumers c Processed o Other (specify) e Transported Interstate Other (specify) f Transported Interstate Other (specify) g Stored Underground Injected Propane-air j Produced SNG Imported k Imported Exported
PART IV: SUF	PPLY OF NATURAL AND SUPPLEMENTAL GAS RECEIVED WITHIN OR TR	
2.1 From 2.2 From	em purchases received: n producers, gatherers, and/or gas processors n pipelines and/or distribution companies	
7.0 Other so	m synthetic natural gas plants or SNG pipeline	
	e on Part IV, if more space is needed) oply within report State	
PART V: DISE	POSITION OF NATURAL AND SUPPLEMENTAL GAS WITHIN OR TRANSPO	ORTED OUT OF REPORT STATE
		Volume Cost or Revenue (Mcf at 14.73 psia) e or f (Including taxes) e or f
5.4 Delivere	pipeline, storage and/or distribution operations ed directly to consumers (Type of transaction and consumer) Number of consume	
5.4.1	Residential sales	
	Commercial Sales	·····
	5.4.2.2 Commercial nonutility power producer sales 5.4.2.2.1 Firm 5.4.2.2.2 Interruptible	
	5.4.3.1 Industrial (excluding nonutility power producer sales) 5.4.3.1.1 Firm	
	5.4.3.2 Interruptible 5.4.3.2 Industrial nonutility power producer sales 5.4.3.2.1 Firm	
	5.4.3.2.2 Interruptible	

RESPONDENT COPY Page 2

1.0	Control No.	2.0 Company Name	3.0	Report State	EIA	4.0 Resubmittal	
						Date	
PAF	RT V: CONTINU	ATION, DISPOSITION OF NATURAL AND SUPPLEMENTAL GA	S WITHIN OR TR	RANSPORTED OUT OF RE	PORT STAT	ΓE	
				Volume		Cost or Revenue	
				(Mcf at 14.73 psia)	e or f	(Including taxes)	e or f
	5.4.4 Other I	Nonutility Power Producer Sales			_		
	5.4.4.1	Firm					
	5.4.4.2	Interruptible			_		
		Utility Sales					<u> </u>
		Firm					
	5.4.5.2	Interruptible					
		I Gas Used as Vehicle Fuel	I				
		Firm					
		Interruptible					
6.0		ontent of gas delivered directly to consumers					
	(Btu per cubic	Btu Btu					
10.0	Other dispositi	on (specify)					
	(Continue on F	art VI, if more space is needed)					
110	t.	n accounted for					
		or gas supply (+) or disposition (-)					1
1 2.0	onaccounteur						1

RESPONDENT COPY Page 3

1.0 C	ontrol No.	2.0 Company Name						3.	0	Report State	EIA	4.0 Resubmittal Date:	
PART		I JATION SHEET sed only if insufficient space was pro	ovided in Pa	rt IV and	l/or Pa	art V	/)						of
		Supply (Continue	ed)							Volume (Mcf at 14.73 psia)	e or f	Cost or Revenue (Including taxes)	e or f
PARTI		er sources of supply (specify source : : (Continued)	and/or kind										
		Disposition (Contin	und)						+				
PART	/, 10.0 O	ther disposition (specify): (Continued											
											İ	-j	
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PART	VII: FOOTNO	ITES											
Part No.	Item No.	EIA Use	Sub-it Compa	em (Stat ny, or Li	te, ine)		Line No.				Footr	note	
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RESPONDENT COPY Page 4

pressure maintenance, and cycling; quantities vented and flared; quantities of nonhydrocarbon gases removed; quantities of fuel used on lease; marketed production; value of marketed production; and quantity of marketed production (value based). Part V is space to be used by the respondent to explain data elements reported that may be based on definitions differing from those applied to data in previous years.

Routine Form EIA-895 Edit Checks

Each filing of the Form EIA-895 is manually checked for reasonableness and mathematical accuracy. Volumes are converted, as necessary, to a standard 14.73 psia pressure base. Value data are compared to the previous year's data for reasonableness. When data on nonhydrocarbon gases removed, gas vented and flared, and gas used for repressuring are not reported for a State that historically reported one or more of these items, a volume is imputed. The imputation is based on the average ratio of gas volumes in the missing category to total gross withdrawals in States with values reporting gas in that category. This average ratio is applied to the volume of total gross withdrawals reported by the State to calculate the volume for the missing items. State agencies are contacted by telephone in order to correct errors. Amended filings or resubmissions are not a requirement, since participation in the survey is voluntary.

Comparison of the Form EIA-895 with Other Data Sources

Annual production data, as reported on the Form EIA-895, are compared to the sum of monthly data previously reported on the Monthly Schedule. The comparison is made in order to assure the reasonableness of the data reported on the Form EIA-895, Annual Schedule. Any significant differences are resolved by contacting the reporting State.

For discussion of the comparison of production data collected on Form EIA-895 and that collected on Form EIA-23, "Annual Survey of Domestic Oil and Gas Reserves," see the EIA report, U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves, Annual Reports.

Electric Utility Data

The electric utility data published in this report are taken from the Forms EIA-759, "Monthly Power Plant Report" and FERC-423, "Monthly Report of Cost and Quality of Fuels for Electric Plants." These data were used in order to maintain consistency among EIA publications. Electric data are necessary on the Form EIA-176 to provide a supply/disposition balance on the form. Differences in the two surveys are apparent in the results published in Table 15, "Natural Gas Deliveries to Consumers by State," and Table 18, "Natural Gas Delivered to Electric Utilities for the Account of Others by State," where volumes in Table 18 sometimes exceed volumes in Table 15. A State-by-State comparison of the reported volumes of natural gas, as collected on the Forms EIA-176 and EIA-759 is shown in Table A1. The national totals differ by 327 billion cubic feet or 11 percent in relative terms.

While processing the data reported on the Form EIA-176, the EIA made special efforts to determine the reasons for the differences in reporting of electric utility data on the Forms EIA-176 and EIA-759. Typical instances of misreporting occurred in the reporting of gas delivered to electric utilities for the account of others. Some companies reported these deliveries under sales for resale. Others reported them under transportation, exchange and/or storage deliveries. A few others reported them under transported to file when they were found making deliveries of gas. Most companies were cooperative, and their refilings and new filings improved the accuracy of the data.

Other Data Sources

The U.S. Minerals Management Service (USMMS) supplied data on the quantity and value of natural gas production and the number of producing wells in the Gulf of Mexico Outer Continental Shelf. Volumes of extraction losses were reported on Form EIA-64A, "Annual Report of the Origin of Natural Gas Liquids Production." Heat (Btu) content extraction loss was estimated from data reported on Form EIA-64A and Form EIA-816, "Monthly Natural Gas Liquids Report." Volumes and prices of natural gas imports and exports were reported to the Office of Fossil Energy, U.S. Department of Energy, *Natural Gas Imports and Exports*. These data are nonproprietary and are filed annually by each individual or organization having authorization to import and export natural gas.

Report Methodology

Marketed Production

Marketed production of natural gas is taken from responses to Part IV of the Form EIA-895. It is the quantity of natural gas produced that is available for marketing and is reported in Tables 3 and 7. It refers to quantities of gas available after processes related to production are complete. These processes are repressuring, pressure maintenance, cycling, venting and flaring, removing nonhydrocarbon gases, using fuel on the lease.

EIA-895				U.S. I Ene	DEPARTME rev Information	U.S. DEPARTMENT OF ENERGY Energy Information Administration	× ·		Forr	Form Approved OMB No. 19050192
					Washingtor	Washington, DC 20585			Expi	Expires: 12/31/99
			EIA-895, MOI	EIA-895, MONTHLY QUANTITY AND VALUE OF NATURAL GAS REPORT	AND VALU	E OF NATURAL	GAS REPOF	Ш		
PART IV: A	PART IV: ANNUAL SCHEDULE		ompleted when	(to be completed when a calendar year of monthly reports has been completed)	nonthly reports	s has been comple	ted)			
Enter the tot	al number of pr	Enter the total number of producing gas wells in operation		as of December 31 for the reporting year.	or the reporting	l year.				
Month	Gas and Condensate Wells	Oil Wells (Casinghead)	Total	Used for Repressuring, Etc.	Vented and Flared	Vented and Nonhydrocarbon Flared Gases Removed	Natural Gas Used as Fuel on Leases	Marketed Production	Value of Marketed Production	Quantity of Marketed Production (Value Based)
January										
February										
March										
April										
May										
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September										
October										
November										
December										
Total										
PART V: COMMENTS	MMENTS									

Figure A3. Form EIA-895

U.S. DEPARTMENT OF ENERGY

Average wellhead prices are calculated from volumes and values reported in Part IV of the Form EIA-895. These data are shown as "Reported Wellhead Value" in Table 7. The volumes in this section refer to the actual amounts of natural gas reported to the States as sold.

In many States, the marketed production volumes are larger than the reported wellhead value volumes. Differences in these volumes generally result from differences in definition and reporting requirements for separate data systems in the State. For example, while production quantities of federal, tribal, and State royalty gas are included in marketed production, some State reporting rules exclude these quantities from reported wellhead value volumes.

Natural Gas Processed and Extraction Loss

Extraction loss is the reduction in the volume of natural gas available for disposition resulting from the removal of natural gas liquid constituents at natural gas processing plants. It represents that portion of the "raw" gas stream that is transferred from the natural gas supply chain to the petroleum and natural gas liquids supply chain. Extraction loss does not include the reduction in volume resulting from the removal of nonhydrocarbon constituents or gas used as fuel, vented, flared, or otherwise disposed of within natural gas processing plants. Extraction loss also results in a reduction in the total heat (Btu) content of the natural gas stream equal to the heat content of the liquids extracted.

The Form EIA-64A, "Annual Report of the Origin of Natural Gas Liquids Production," collects data on the volume of natural gas received for processing, the total quantity of natural gas liquids produced, and the resulting shrinkage (defined as extraction loss in this report) from all natural gas processingand cycling-plant operators. The quantity of natural gas received and liquids produced are reported by State of origin of the natural gas. Shrinkage volumes are calculated and reported by plant operators based upon the chemical composition of the liquids extracted using standard conversion factors specified in the form instructions. A description of the Form EIA-64A survey is presented in the EIA publication, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves, Annual Reports.*

The heat (Btu) content of liquids extracted is not reported on the Form EIA-64A. Therefore, in order to estimate the extraction loss heat content, data reported on the Form EIA-816, "Monthly Natural Gas Liquids Report," were used to determine the individual products contained in the total liquids reported on Form EIA-64A. A description of the Form EIA-816 survey is presented in the EIA publication, *Petroleum Supply Annual 1998*, Volume II. To estimate the quantities of individual products extracted in each State, data from the Form EIA-64A survey were used to determine the total liquids production, and data from the Form EIA-816 survey were used to estimate the quantities of the individual products contained in those total liquids.

The Form EIA-816 captures information on the quantity of individual components (i.e., ethane, propane, normal butane, isobutane, and pentanes plus) produced or contained in mixes of plant liquids as determined by chemical analysis. The volumetric ratios of the individual components to the total liquids, as calculated from the 12 monthly Form EIA-816 reports for each State, were applied to the annual total liquids production, as reported on the Form EIA-64A, to estimate the quantities of individual components removed at gas-processing plants (Table A4).

The heat (Btu) content of extracted liquids was estimated by applying conversion factors to the estimated quantities of products extracted in each State. These conversion factors, in million Btu per barrel of liquid produced, were ethane, 3.082; propane, 3.836; normal butane, 4.326; isobutane, 3.974; and pentane plus, 4.620. It should be noted that, at the State level, extraction losses are not necessarily related to State production. All gas processed in 9 States originated, or was produced in those States; but part of the gas processed in the other 15 States originated outside of the State in which the gas was processed. Gas produced from 9 States (Arizona, Indiana, Maryland, Missouri, New York, Oregon, South Dakota, Tennessee, and Virginia) was not processed.

For comparative purposes, the quantities of natural gas delivered to processing plants, total liquids extracted, and estimated volumetric and heat content extraction losses by State or origin of the gas (i.e., the State in which the gas was produced) are shown in Table A5.

Lease and Plant Fuel

Lease and plant fuel represent those quantities of natural gas used in well, field, and/or lease operations (such as gas used in drilling operations, heaters, dehydrators, and field compressors) and as fuel in natural gas processing plants.

Lease fuel data were collected for report year 1998, on the Form EIA-895, "Monthly Quantity and Value of Natural Gas Report." Of the 33 States reporting on the Form EIA-895, 21 States reported quantities of natural gas used as lease fuel. In the absence of reporting quantities on the Form EIA-895, the Form EIA-176 was used to estimate lease fuel quantities. Although EIA recognizes that lease data collected on the Form EIA-176 do not constitute a census or result from a statistically selected sample, the data collected in the survey provide

the best information available to the EIA for estimating such usage. To estimate lease use during 1998 (Table 14), several simplifying assumptions were made:

- The quantity of gas used for lease fuel was assumed to be a function of gross withdrawals of natural gas from gas and oil wells.
- The average proportion of company-owned on-system production reported as used in lease operations by respondents to the Form EIA-176 was assumed to be typical of the average use by all operators as a proportion of gross withdrawals.
- Average usage was calculated separately for Alaska and for the lower 48 States to reflect the distinctive field operations in Alaska, particularly on the North Slope.

Form EIA-176 respondents reported volumes of company-owned onsystem production amounting to 9 percent of 1998 gross withdrawals (37 percent of withdrawals in Alaska and 4 percent of withdrawals in the lower 48 States). Lease use reported by respondents averaged 0.02432 per thousand cubic feet of reported production in Alaska and 0.02171 per thousand cubic feet of reported production in the lower 48 States. The fuel-use estimates shown in Table 13 were calculated by applying the above ratios to the gross withdrawals from the various States (Table 3), not reporting lease use on the EIA-895.

Natural Gas Consumed as a Vehicle Fuel

Data on deliveries of natural gas delivered for use as a vehicle fuel were collected for the first time in 1990. In 1990 and 1991 deliveries of natural gas for vehicle fuel use were included with volumes delivered to commercial consumers. Beginning with the *Natural Gas Annual 1992*, vehicle fuel volumes are no longer included with commercial volumes.

Coverage of Consumer Prices

Coverage for prices varies by consumer sector as discussed below. All average prices are computed by dividing the reported revenue by its associated sales volume. Prices for deliveries of natural gas to consumers, except electric utilities, are calculated from reports to Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition." City gate prices are calculated from reports to the Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers." Both of these forms are completed by companies that deliver natural gas to end-use consumers.

With the unbundling of services in the natural gas industry, pipeline and local distribution companies provide transportation service for their end-user customers. In this report, those volumes are described as deliveries of gas for the account of others. When companies that deliver gas are the sellers of that gas, they are able to report the associated revenue to the Energy Information Administration. Those volumes are described as onsystem sales. When the firm that physically delivers gas to the end user acts as a transportation agent, it does not know the sales price of the gas. Respondents, therefore, do not report a revenue amount associated with deliveries for the account of others in their submissions of the Form EIA-176.

City gate: City gate prices represent the total cost paid by gas distribution companies for gas received at the point where the gas is physically transferred from a pipeline company or transmission system. This price is intended to reflect all charges for the acquisition, storage, and transportation of gas as well as other charges associated with the LDC's obtaining the gas for sale to consumers.

Prices for gas delivered to the city gate represent all of the volumes of gas delivered. Since these prices are reported on a monthly form, the annual average city gate price is calculated by summing the monthly revenues reported and dividing that figure by the sum of the monthly reported volumes.

Residential: Prices in this publication for the residential sector cover nearly all of the volumes of gas delivered.

Commercial and Industrial: Prices for the commercial and industrial sectors are often associated with relatively small volumes of the total gas delivered. This occurs because they are reported by those that deliver gas and not by either the gas resellers or by the consumers. Beginning with the reporting of 1996 data, the EIA has changed the customer classification used for reporting deliveries to consumers in the agricultural industry from commercial to industrial. This change affects the calculation of prices because these volumes and revenues previously classified as commercial are now classified as industrial. Separate reports of the volumes and revenues affected are not available so the direct impact of this change is not known.

Facilities that generate electricity but are not regulated are known as nonutility power producers. A nonutility power producer may be a commercial facility, an industrial facility, or a facility that produces electricity for resale. Deliveries of natural gas to nonutility power producers are reported on the Form EIA-176. The volumes and associated revenues for deliveries to nonutility producers who are primarily commercial establishments are included in the calculation of commercial prices. Those for deliveries to both nonutility producers who are primarily industrial establishments and nonutility establishments that produce electricity for resale are included in the calculation of industrial prices. **Electric Utilities:** Prices for natural gas are also reported to the EIA on the Form FERC-423, "Monthly Report of Cost and Quality of Fuels for Electric Plants," a consumer survey form. Electric utility prices in this report are taken from this form. The respondents are all large regulated electric utilities that report consumption and prices of fuels and represent most of the volumes delivered to electric utilities. These prices are also published in the EIA report, *Cost and Quality of Fuels for Electric Utility Plants*. Prices to electric utilities, because they are derived from a survey of the utilities themselves, represent most of the volumes consumed by this sector.

Vehicle Fuel: Most of the natural gas delivered for vehicle fuel represents deliveries to refueling stations that are used primarily or exclusively by fleet vehicles. Thus, the prices are often those associated with the operation of fleet vehicles and may be based on internal transfer prices for companies primarily in the natural gas business.

Natural Gas Balancing Item

The natural gas balancing item represents the difference between the sum of the components of natural gas supply and the sum of the components of natural gas disposition. It is calculated for each State as the result of a comparison between total reported supply and total reported disposition (Table 2). In the formula used, total reported supply is the sum of marketed production, net interstate movements, net movements across U.S. borders, and supplemental gaseous fuels supply. Total reported disposition is the sum of extraction loss, net storage changes (net additions to storage), and consumption. When this calculation results in a negative quantity for the balancing item it represents an excess of reported supply in relation to reported disposition, and positive quantities indicate the opposite situation.

The differences between supply and demand represent quantities lost, the net result of gas company conversions of flow data metered at varying temperature and pressure conditions to a standard temperature and pressure base, metering inaccuracies, the effect of variations in company accounting and billing practices, differences between billing cycle and calendar-period time frames, and imbalances resulting from EIA's merger of data reporting systems, which vary in scope, format, definitions, and type of respondents. The balancing items in individual States may also reflect the underreporting on Form EIA-176 of gas transported across State borders for the account of others by some interstate pipelines.

Census Divisions

The Bureau of the Census, U.S. Department of Commerce, has grouped the 50 States and the District of Columbia into Census divisions. Some of the tables and graphs in this report show data by Census division. These groupings are:

New England: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont.

Middle Atlantic: New Jersey, New York, and Pennsylvania.

East North Central: Illinois, Indiana, Michigan, Ohio, and Wisconsin.

West North Central: Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota.

South Atlantic: Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, and West Virginia.

East South Central: Alabama, Kentucky, Mississippi, and Tennessee.

West South Central: Arkansas, Louisiana, Oklahoma, and Texas.

Mountain: Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming.

Pacific Contiguous: California, Oregon, and Washington.

Pacific Noncontiguous: Alaska and Hawaii.

Table A1. Comparison of Electric Utility Natural Gas Consumption Data by State, 1998 (Million Cubic Feet)

State	Form EIA-176	Form EIA-759	Difference	MDP ^a
Alabama	26,165	25,546	-618	2.4
			-018	0.6
Alaska	28,961	28,784		
Arizona	39,137	38,674	-463	1.2
Arkansas	40,150	40,576	426	1.1
California	323,664	271,154	-52,510	19.4
Colorado	8,894	10,627	1,733	19.5
Connecticut	10,655	10,719	64	0.6
Delaware	10.828	11.135	307	2.8
Florida	290,361	281,346	-9,015	3.2
Georgia	26,058	22,371	-3,688	16.5
Illinois	59,857	56,337	-3,520	6.2
Indiana	6.084	9.096	3,012	49.5
lowa	8,814	5,947	-2,868	49.5
	28.432	36,896	-2,000 8.464	29.8
Kansas			- / -	
Kentucky	1,159	5,760	4,601	396.8
Louisiana	253,617	318,395	64,779	25.5
Maryland	7,939	12,303	4,364	55.0
Massachusetts	18,428	18,427	-1	0
Michigan	46,779	48,321	1,542	3.3
Minnesota	5,553	7,738	2,185	39.3
Mississippi	71,560	76,362	4,802	6.7
Missouri	14,294	16,035	1.741	12.2
Montana	527	522	-5	0.9
Nebraska	2,210	5,044	2,834	128.2
Nevada	47,235	60,937	13,703	29.0
	, A	,	,	
New Hampshire	0	149	149	0
New Jersey	28,063	30,996	2,933	10.4
New Mexico	16,939	39,034	22,095	130.4
New York	190,757	208,348	17,591	9.2
North Carolina	11,485	12,418	934	8.1
North Dakota	1	0	-1	0
Ohio	8,374	7,663	-710	9.3
Oklahoma	135.604	174.577	38.973	28.7
Oregon	28,065	28,883	818	2.9
Pennsylvania	7,725	6,890	-835	12.1
Rhode Island	22.984	15,589	-7,395	47.4
	6.109			
South Carolina		5,893	-216	3.7
South Dakota	240	2,865	2,626	_
Tennessee	6,058	6,213	156	2.6
Texas	1,003,298	1,242,574	239,276	23.8
Utah	5,651	5,945	294	5.2
Vermont	210	188	-22	11.7
Virginia	57,442	20,386	-37,056	181.8
Washington	6,344	13,352	7,007	110.5
West Virginia	221	417	197	89.0
Wisconsin	17,815	16,348	-1,467	9.0
Wyoming	0	271	271	0
Total	2,930,744	3,258,054	327,309	11.2

^a Relative comparisons are expressed as the maximum difference percentage (MDP), or the absolute value of the difference between two volumes divided by the smaller of the two volumes, multiplied by 100. — = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. **Sources:** Energy Information Administration (EIA), Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition" and Form EIA-759, "Monthly Power Plant Report."

Table A2. Natural Gas Unaccounted for by State, 1994-1998

(Million Cubic Feet)

State	1994	1995	1996	1997	1998
Iabama	5,295	9,997	-2,954	15,799	32,788
Jaska	2.669	-592	1.032	-1.790	3.923
rizona	-1,782	2,606	1,191	2,975	-40,211
rkansas	5,650	8,881	7,639	7,569	3,985
alifornia	217,809	174,506	277,924	292,339	61,625
	211,000	11 1,000	211,021	202,000	01,020
olorado	9,023	8,734	6,652	9,110	11,664
onnecticut	1,491	3,826	1,055	334	2,187
C	528	1.006	784	1.074	794
elaware	479	2.065	438	5,935	4.808
orida	6,063	3,554	-4	4,391	3,105
eorgia	2,104	3,712	1,666	-1,260	9,828
awaii	53	21	88	6	61
aho	5.572	8.893	-18.969	-61.021	-19.015
nois	5,205	30,648	10,867	15,349	14,312
diana	979	539	-3,307	11,848	10,081
wa	4,963	4.849	4,500	5,370	34,578
	4.819	14.287	7.904	25.939	22.666
ansas					
entucky	4,534	9,808	9,410	8,345	409
puisiana	58,677	10,248	19,555	40,760	82,184
aine	-131	292	241	231	78
andand	3.620	9.879	5.592	12.147	6.588
aryland					
assachusetts	12,194	1,091	-5,692	1,359	4,702
lichigan	-14,398	4,028	16,836	42,875	2,685
innesota	-22,290	-32,466	6,703	4,855	825
ississippi	35,595	21,441	13,047	18,066	-122,470
1	0.050	40.004	4 500	F 770	7 007
lissouri	2,253	13,981	1,596	5,779	7,267
ontana	79	-5,345	-6,233	-6,635	2,146
ebraska	22.179	2,403	4,354	1,531	1,630
evada	-1	533	1,479	2.795	623
ew Hampshire	327	453	466	1,046	149
				,	
ew Jersey	-31,893	1,790	-741	3,500	-16,615
ew Mexico	7,827	9,924	6,859	R2,010	-2,065
ew York	84,704	18,129	940	126,641	115,611
orth Carolina	2,906	7,640	1,300	8,125	-274
	728	-66			7.590
orth Dakota	120	-00-	1,259	1,041	7,590
hio	10,641	31,518	16,344	-67,821	6,586
klahoma	8,976	13,742	302	-32,983	29,312
regon	57	5,406	1,560	1,603	3,116
ennsylvania	-1,317	18,220	-4,426	12,631	6,187
node Island	-1,603	2,362	-646	-2,652	-3,400
outh Carolina	298	2,315	846	2,807	138
outh Dakota	999	1.107	994	500	1.227
ennessee	2,884	8,123	11,613	8,426	1,630
exas	-28,206	-6,590	51,729	10,262	-73,153
ah	6,461	5,669	15,207	35,469	3,895
ormont	14	000	1 017	1 600	777
ermont		802	1,817	4,690	777
rginia	-831	8,328	4,810	7,057	5,521
ashington	68,028	66,580	68,447	59,159	1,772
est Virginia	7,790	8,561	5,044	64,475	11,554
	1.218			7.001	7.791
isconsin yoming	1,218	5,402 -1,784	-2,756 3,911	5,349	7,791 7,961
, onling	1,001	1,704	0,011	0,040	7,301
otal	514,924	521,057	548,274	^R 724,409	259,157

R = Revised data.

Source: Energy Information Administration (EIA), Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition."

Table A3. Natural Gas Processed and Liquids Extracted at Natural Gas Processing Plants by State, 1998

Location Alabama Alabka Arkansas California	State Production 105,708 2,966,461 198,148 235,558 424,984	Out of State Production 1,626 0 0 0	Natural Gas Processed 107,334 2,966,461 198,148	Extracted ^b (thousand barrels) 3,199 33,889	(million cubic feet) 4,263
Alaska Arkansas California	2,966,461 198,148 235,558	0 0 0	2,966,461	33,889	
Alaska Arkansas California	2,966,461 198,148 235,558	0 0 0	2,966,461	33,889	
Arkansas California	198,148 235,558	0			
California	235,558	0		365	40,120 451
			235,558	8,351	10.242
Colorado	424,964	99	425.083	17.467	
Colorado		99	425,083	17,407	24,365
Florida	5.037	3,137	8.174	1.559	1.523
Illinois	468	0	468	59	70
Kansas	600,453	132,375	732,828	32,853	45,801
Kentucky	37.929	0	37.929	1.661	2,263
Louisiana	4.520.288	90,681	4.610.969	101.358	144.609
Louisiana	4,020,200	30,001	4,010,303	101,550	144,003
Michigan	83.052	0	83.052	4.399	5.938
Mississippi	3.668	0	3.668	370	495
Montana	8.715	õ	8,715	318	410
New Mexico	867.041	1,168	868.209	74.058	106.665
North Dakota	52,777	0	52,777	4,234	5,481
			,	,	,
Ohio	2,895	0	2,895	61	78
Oklahoma	944,568	2,609	947,177	65,306	92,785
Pennsylvania	8,400	2,966	11,366	554	732
Texas	4.045.405	28,334	4.073.739	272.512	388.011
Utah	235,896	6,174	242,070	8,280	11,801
Most Virginia	70.400	150	70 644	E 1E0	7 007
West Virginia	70,488 869.726	153 792	70,641 870.518	5,158 32.000	7,337 44.358
Wyoming	009,720	192	070,010	32,000	44,338
Total1	16,287,665	270,114	16,557,779	668,011	937,798

^a "State Production" refers to gas delivered to processing plants located in the same State in which the gas was produced. "Out of State Production" refers to gas produced in other States and delivered to plants located in the State listed for processing. ^b "Totals Liquids Extracted" represents the total quantity of liquids extracted from natu-ral gas at natural gas processing plants located in the State.

Note: Totals may not equal sum of components due to independent rounding. **Source:** Energy Information Administration (EIA), Form EIA-64A, "Annual Report of the Origin of Natural Gas Liquids Production."

Table A4. Estimated Composition of Liquids Extracted at Natural Gas Processing Plants and the Resulting Heat Content Extraction Loss by State, 1998

(Liquid Volumes in Thousand Barrels, Heat Content in Billion Btu)

State		Estimated Compo	onents and Products in Li	quids Extracted ^a		Estimated Heat Content Extraction Loss ^b
	Ethane	Propane	Isobutane	N-Butane	Pentanes Plus	Heat Content
Alabama	22	1.141	172	826	1,036	13,496
Alaska	0	1.319	3,490	9.724	19.356	150.419
Arkansas	39	51	29	110	137	1,536
California	18	2,159	2,523	1,377	2,274	34,826
Colorado	6,345	5,096	875	2,205	2,946	65,730
Florida	546	521	0	335	157	5,856
llinois	0	22	0	0	37	255
Kansas	6.605	14.223	2,450	4,751	4,823	127,491
Kentucky	274	823	79	275	211	6,476
_ouisiana	33,494	29,514	9,727	10,370	18,252	384,288
Vichigan	1,209	1,238	566	511	875	16,977
Vississippi	3	94	16	97	160	1,592
Montana	11	144	17	77	69	1,306
New Mexico	34,811	20,311	3,637	7,154	8,145	268,232
North Dakota	0	1,969	0	1,171	1,094	17,673
Ohio	0	23	1	16	20	258
Oklahoma	27,416	19,789	3,516	6,756	7,829	239,776
Pennsylvania	0	258	54	144	98	2,280
Texas	104,408	76,501	36,787	10,131	44,686	1,011,707
Jtah	2,317	2,270	320	1,048	2,325	32,395
Nest Virginia	1,674	2,054	276	591	563	19,293
Wyoming	7,319	11,562	2,728	4,403	5,988	124,462
Гotal	226,511	191,082	67,263	62,072	121,081	2,526,324

^a The liquid quantities shown are the estimated quantities of individual components and products contained in the liquids at the point at which the liquids were extracted from the natural gas. The estimates are based upon the assumption that the liquids extracted in each State were composed of natural gas components and products in the same proportions as those ultimately fractionated at processing and fractionating plants within the State. The quantities ultimately extracted in each State were obtained from unpublished summaries of the 12 monthly reports on Form EIA-816. For each State, ratios of the quantities of each component and product ultimately fractionated to the total quantity of liquids fractionated were developed. Those ratios were applied to the total liquids quantities extracted from natural gas in each State (see Table A3) to derive the estimated component and product quantities shown.

part of the natural gas constituents in the form of natural gas liquids at natural gas processing plants. Estimates of the heat content extraction loss, i.e., the heat content of the extracted liquids, were computed using the following average heat content conversion factors (million Btu per barrel): ethane, 3.082; propane, 3.836; normal butane, 4.326; isobutane, 3.974; and pentanes plus, 4.620.

Note: Totals may not equal sum of components due to independent rounding. Sources: Estimated Components and Products in Liquids Extracted: Total liquids from Form EIA-64A, "Annual Report of the Origin of Natural Gas Liquids Production," apportioned to components and products based upon quantities of components and products fractionated as reported on Energy Information Administration (EIA), Form EIA-816, "Monthly Natural Gas Liquids Report" (see footnote a above). Heat Content extraction loss conversion factors (see footnote b above): Energy Information Administration, Annual Energy Review, 1998.

^b Extraction loss represents that portion of the natural gas stream which was transferred to the petroleum and natural gas liquids supply chain as a result of the removal of

Table A5. Natural Gas Processed, Liquids Extracted, and Estimated Extraction Loss by State of Origin (Production) of Natural Gas, 1998

	Vo	blume of Natural Gas Delive to Processing Plants (million cubic feet)	ered	Total Liquids	Extraction Loss		
State	Located Within the State	Located Outside of the State	Total Processed	Extracted (thousand barrels)	Volume (million cubic feet	Estimated Heat Content (billion Btu)	
labama	105.708	3.137	108.845	3.756	4.783	15.572	
laska	2,966,461	0,137	2.966.461	33,889	40.120	150,419	
kansas	198.148	4	198.152	365	451	1,536	
alifornia	235.558	0	235,558	8,351	10.242	34,826	
olorado	424,984	766	425,750	17,541	24,401	66,018	
lorida	5,037	0	5,037	967	939	3,632	
inois	468	0	468	59	70	255	
ansas	600,453	2,170	602,623	28,316	37,739	109,867	
entucky	37,929	28	37,957	2,715	2,266	10,418	
ouisiana	4,520,288	1,911	4,522,199	99,380	141,947	376,778	
lichigan	83,052	0	83,052	4,399	5,938	16,977	
lississippi	3,668	1,626	5,294	405	560	1,740	
lontana	8,715	246	8,961	354	423	1,446	
ew Mexico	867,041	678	867,719	73,932	106,586	267,777	
orth Dakota	52,777	0	52,777	4,234	5,481	17,673	
hio	2,895	0	2,895	61	78	258	
klahoma	944,568	88,885	1,033,453	69,393	98,914	255,324	
ennsylvania	8,400	125	8,525	449	554	1,846	
exas	4,045,405	161,299	4,206,704	275,056	392,670	1,021,709	
tah	235,896	99	235,995	8,060	11,506	31,534	
est Virginia	70,488	2,966	73,454	4,209	7,512	15,785	
/yoming	869,726	6,174	875,900	32,120	44,619	124,934	
otal	16,287,665	270,114	16,557,779	668,011	937,798	2,526,324	

Notes: This table shows the volume of natural gas delivered to processing plants, the quantity of natural gas liquids extracted, and the estimated volumetric and heat content extraction losses traced back to the State of origin of the gas, i.e., to the State from which the gas was produced whether processed within or outside of the producing State. Totals may not equal sum of components due to independent rounding.

Sources: Natural gas delivered to plants, and total liquids extracted: Energy Information Administration (EIA), Form EIA-64A, "Annual Report of the Origin of Natural Gas Liquids Production." Extraction Loss: Extraction loss volumes (Table A3) and estimated heat contents (Table A4) apportioned to State of origin based upon the origin of gas processed as reported on Form EIA-64A.

Table A6. Estimated Total Dry Natural Gas Proved Reserves by State, 1994-1998 (Billion Cubic Feet)

State	1994	1995	1996	1997	1998
Alabama	4.830	4.868	5.033	4.968	NA
Alaska	9,733	9,497	9,294	10,562	NA
Arkansas	1,607	1.563	1.470	1.475	NA
California	2,402	2,243	2,082	2,273	NA
Colorado	6,753	7,256	7,710	6,828	NA
-lorida	98	92	96	96	NA
(ansas	9,156	8,571	7,694	6,989	NA
Kentucky	969	1.044	983	1.364	NA
_ouisiana	9.748	9.274	9.543	9.673	NA
Vichigan	1,323	1,294	2,061	2,195	NA
Mississippi	650	663	631	582	NA
Montana	717	782	796	762	NA
New Mexico	17,228	17.491	16,485	15,514	NA
	242	197	232	224	NA
New York	242 507	463	462	479	
North Dakota	507	463	462	479	NA
Dhio	1,094	1,054	1,113	985	NA
Oklahoma	13,487	13,438	13,074	13,439	NA
Pennsylvania	1,800	1,482	1,696	1,852	NA
Texas	35,974	36,542	38,270	37,761	NA
Jtah	1,789	1,580	1,633	1,839	NA
/irginia	1,833	1,836	1,930	2,446	NA
Nest Virginia	2,565	2,499	2,703	2,846	NA
Vyoming	10,879	12,166	12.320	13,562	NA
ederal Offshore	28,388	29,182	29,096	28,466	NA
Other States ^a	65	69	67	43	NA
otal	163,837	165,146	166,474	167,223	NA

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

Note: Totals may not equal sum of components due to independent rounding. Sources: Energy Information Administration (EIA), U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves, Annual Reports, DOE/EIA-0216.

Natural gas reserves information for 1998 was not available at the time that the *Natural Gas Annual 1998* (NGA) was published. When this information does become available, it will be added to the tables, and they will be updated to the NGA report posted on the Energy Information Administration (EIA) World Wide Web Site. Both the Advance Summary and the full EIA report, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves, Annual Report 1998*, will be available on the EIA Web Site later this fall. The EIA Web Site address is: http://www.eia.doe.gov.

Table A7. Number of Natural Gas Residential Consumers by State, 1997-1998

		1997			1998	
State	Sales	Transported	Total	Sales	Transported	Total
1-h	704 744	0	704 744	700 404	2	700 10
labama	781,711	0	781,711	788,464	0	788,464
laska	83,596	0	83,596	86,243	0	86,243
rizona	724,911	0	724,911	764,167	0	764,167
rkansas	544,460	0	544,460	550,017	0	550,017
alifornia	9,056,483	3,990	9,060,473	9,177,195	4,733	9,181,928
olorado	1,183,978	0	1,183,978	1,223,433	0	1,223,433
onnecticut	436,119	0	436,119	438,716	0	438,716
.C	134,807	0	134,807	132,824	43	132,867
elaware	109,400	0	109,400	112,507	0	112,507
lorida	532,789	1	532,790	542,769	1	542,770
eorgia	1,553,948	0	1,553,948	1,597,331	62,399	1,659,730
awaii	30,990	ő	30.990	30.918	02,000	30.918
	200,165	0	200.165	213,786	0	
daho						213,786
linois	3,509,907	11,800	3,521,707	3,538,850	17,886	3,556,736
diana	1,509,142	0	1,509,142	1,531,912	2	1,531,914
wa	780,746	0	780,746	790,162	0	790,162
ansas	811,975	õ	811,975	841,843	õ	841,843
entucky	713,509	Ő	713,509	726,960	ŏ	726,960
ouisiana	962.604	182		962.250	186	
laine	962,604 15,221	0	962,786 15,221	962,250 15,646	0	962,430 15,640
	, , , , ,				=0.040	
laryland	866,646	23,549	890,195	822,509	78,946	901,455
lassachusetts	1,189,768	14,726	1,204,494	1,193,867	18,619	1,212,486
ichigan	2,885,776	3,707	2,859,483	2,899,463	4,235	2,903,698
linnesota	1,134,019	0	1,134,019	1,161,423	0	1,161,423
lississippi	423,397	Ō	423,397	415,673	0	415,673
lissouri	1,293,032	0	1,293,032	1,307,563	0	1,307,563
Iontana	209,806	0	209,806	218,851	0	218,851
lebraska	444,970	0	444,970	452,269	71,521	523,790
levada	426,221	0	426,221	458,737	0	458,737
lew Hampshire	77,092	0	77,092	78,786	0	78,786
ew Jersey	2,175,973	17,656	2,193,629	2,210,479	41,769	2,252,248
ew Mexico	443.165	2	443,167	453.916	149	454.065
ew York	4,071,620	5,765	4,077,385	4,081,435	35,872	4,117,307
orth Carolina	740,013	0	740,013	777,805	0	777,805
orth Dakota	98,326	0	98,326	101,930	0	101,930
hio	3,001,134	40,814	3,041,948	2,807,626	243,334	3,050,960
klahoma	872,454	0	872,454	877,236	2 10,000	877,230
	456,960	0	456,960	477,796	0	477,796
regon						
ennsylvania	2,332,168	120,356	2,452,524	2,287,814	205,825	2,493,639
hode Island	212,777	0	212,777	208,208	0	208,208
outh Carolina	443,093	0	443,093	460,141	0	460,14 ²
outh Dakota	130,306	1	130,307	133.095	0	133.09
ennessee	867,793	ò	867,793	905,757	ŏ	905,75
	3,543,027	0	3,543,027	3,600,505	0	3,600,50
exas tah	3,543,027 567,786	0	567,786	588,364	0	3,600,503
	,		,	,		,
ermont	25,539	0	25,539	26,664	0	26,664
irginia	812,866	0	812,866	843,157	4,781	847,938
/ashington	702,701	0	702,701	737,208	0	737,208
/est Virginia	362,374	58	362,432	359,743	40	359,783
/isconsin	1.360.489	859	1,361,348	1,388,630	1.438	1,390,068
/yoming	116,423	9,317	125,740	117,839	9,485	127,324
	EE 024 475	050 700	EC 400 050	EC E00 400	004 004	E7 004 74
otal	55,934,175	252,783	56,186,958	56,520,482	801,264	57,321,74

Note: Totals may not equal sum of components due to independent rounding.

Source: Energy Information Administration (EIA), Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition."

Please see the cautionary note regarding the number of residential customers located in the Consumption and Consumer Prices sections of this report.