Petroleum Supply Monthly

July 1990

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Preface

The *Petroleum Supply Monthly* (PSM) is one of a family of three publications produced by the Petroleum Supply Division within the Energy Information Administration (EIA) reflecting different levels of data timeliness and completeness. The other two publications are the *Weekly Petroleum Status Report* (WPSR) and the *Petroleum Supply Annual* (PSA).

Data presented in the *PSM* describe the supply and disposition of petroleum products in the United States and major U.S. geographic regions. The data series describe production, imports and exports, inter-Petroleum Administration for Defense (PAD) District movements, and inventories by the primary suppliers of petroleum products in the United States (50 States and the District of Columbia). The reporting universe includes those petroleum sectors in Primary Supply. Included are: petroleum refiners, motor gasoline blenders, operators of natural gas processing plants and fractionators, inter-PAD transporters, importers, and major inventory holders of petroleum products and crude oil. When aggregated, the data reported by these sectors approximately represent the consumption of petroleum products in the United States.

Data presented in the *PSM* are divided into two sections (1) the Summary Statistics and (2) the Detailed Statistics.

Summary Statistics

The tables and figures in the Summary Statistics section of the *PSM* present a time series of selected petroleum data on a U.S. level. Most time series include preliminary estimates for one month based on the Weekly Petroleum Supply Reporting System (WPSRS); statistics based on the most recent data from the Monthly Petroleum Supply Reporting System (MPSRS); and statistics published in prior issues of the *PSM* and *PSA*.

Detailed Statistics

The Detailed Statistics tables of the *PSM* present statistics for the most current month available as well as year-to-date. In most cases, the statistics are presented for several geographic areas - - the United States (50 States and the District of Columbia), five PAD Districts, and 12 Refining Districts. At the U.S. level, the total volume and the daily rate of activities are presented. The statistics are developed from monthly survey forms submitted by respondents to the EIA and from data provided from other sources.

Appendices

Explanatory Notes, located at the end of this publication, present information describing data collection, sources, estimation methodology, data quality control procedures, modifications to reporting requirements and interpretation of tables. Industry terminology and product definitions are listed alphabetically in the Glossary. Final statistics for the data series published in the *PSM*, as well as additional data from an annual refinery survey are published in the *PSA*. During the processing year, a summary of the impact of resubmissions (corrections) on major series is provided in Appendix C. The *PSA* is published approximately five months after the end of the report year.

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Feature Article

A refinery worker makes his way around a towering storage tank to check the tank level.

Heating Fuel Outlook: Winter 1990-91

by James M. Kendell

Because of the current uncertainty about energy markets over the next several months, the Energy Information Administration has examined three supply and demand scenarios reflecting alternative estimates of world oil market conditions. These scenarios each include the assumption of constant nominal crude oil prices beginning in September 1990, with values of \$20, \$25, and \$30 per barrel. The results of the \$30 case are presented in this article.

Iraq's invasion of Kuwait assured that distillate fuel oil and propane consumers would pay higher prices this winter than last winter. Unless the weather is significantly colder than normal or an unusual number of refinery breakdowns occur, the biggest problem distillate fuel oil consumers face is the possibility of tight crude oil supplies beginning toward the end of the year. Propane consumers, on the other hand, already face lower primary stocks this year than last year.

After reviewing events in the distillate and propane markets during the winter of 1989-90, this article presents current conditions in the distillate and propane markets and the *Short-Term Energy Outlook* estimates of distillate consumption, supply, and prices, assuming a \$30 world oil price. The fourth section discusses some of the factors not considered by the short-term forecasting model. The final section shows where to find further official information.

Distillate Fuel Oil

During the winter of 1989-90, the Nation witnessed an extraordinary increase—and almost as extraordinary a decrease—in the prices of home heating and diesel fuel oils. December's cold weather drove consumption and prices to unexpectedly high levels, and pulled end-of-December inventories to unusually low levels. However, significant increases in domestic production and imports, combined with warm January and February temperatures, alleviated any threats of shortages and reduced prices to pre-season levels.

Consumption

Despite very cold December temperatures, U.S. distillate fuel oil consumption from October 1989 to March 1990 was slightly less than the preceding winter¹ (Table 1). Warm January and February temperatures prevented a disastrous winter for home heating oil users.

In the United States, distillate fuel oil is used primarily in the form of diesel fuel oil for transportation (Table 2). In calendar

¹ In this article, "winter" refers to the winter heating season from October 1 through March 31 and "consumption" refers to product supplied. Tables and graphs for this article were prepared with the assistance of Doris M. Ferguson.

year 1988, 55 percent was consumed as transportation fuel, 18 percent in industrial facilities, 16 percent in homes, 9 percent in commercial buildings, and 2 percent in electric generating plants. Distillate fuel oil was the main heating fuel in 10.9 million or 12 percent of the Nation's households in 1987.²

U.S. consumption of distillate fuel oil in 1989-90 was lower than the previous winter in October, January, February, and March and higher than the previous winter in November and December (Table 3). These differences reflect colder November and December 1989 weather than in 1988, and warmer weather than the previous year in the other months. Normally, January is the coldest month of the winter, but this past heating season December was the coldest month. For the entire winter, 1989-90 heating degree days were 4.1 percent less than 1988-89. Temperatures in the winter of 1988-89 were closer to the weather pattern prevailing from 1951-80, than the winter of 1989-90.³

Nationally, cold weather pushed distillate fuel oil consumption 4 percent above November 1988 and 10 percent above December 1988 (Table 3). To the surprise of nearly everyone, December 1989 consumption was 354,000 barrels per day above December 1988 and the highest of any month since January 1981. Nationally, heating degree days were 8 percent above November in 1988, and 30 percent above the December 1988. December 1989 temperatures were the coldest since 1983. Some 46 cities reported their lowest December temperatures ever.⁴

² Energy Information Administration, *State Energy Data Report*, DOE/EIA-0214(88)(Washington, DC, April 1990); *Housing Characteristics 1987*, DOE/EIA-0314(87)(Washington, DC, May 1989), pp. 45, 46.

³ National Oceanic and Atmospheric Administration, *Monthly State, Regional and National Heating/Cooling Degree Days Weighted by Population*, (Washington, DC).

⁴ National Oceanic and Atmospheric Administration, *Monthly State, Regional and National Heating/Cooling Degree Days Weighted by Population*, (Washington, DC); telephone discussions with representatives of National Oceanic and Atmospheric Administration, June 28, and August 13, 1990.

Note: Unless otherwise cited, data in this article are from the following Energy Information Administration publications: *Petroleum Supply Annual 1989, Volume 1 or Volume 2*, DOE/EIA-340(89)/1 (May 1990) or /2 (June 1990) and predecessor publications; *Petroleum Supply Monthly*, DOE/EIA-0109(90/04) (June 1990) and predecessor publications; *An Analysis of Heating Fuel Market Behavior 1989-1990*, SR/OG/90-01 (June 1990); and *Short-Term Energy Outlook*, DOE/EIA-0202(90/3Q) (September 1990).

Table 1. U.S. Consumption, Supply, and Price of Distillate Fuel Oil, Winter 1988-90
(Thousand Barrels per Day)

	1988-89	1989-90	Percent Change
Consumption (Thousand Bbl/Day)	3352.9	3342.3	-0.3
Supply (Thousand Bbl/Day)			
Production	2882.6	2966.1	2.9
Net Imports	279.9	247.1	-11.7
Stock Changes	190.6	129.0	-32.3
Total	3352.9	3342.3	-0.3
Price (Dollars/Bbl)			
Wholesale	\$20.97	\$27.10	29.2
Residential	\$34.41	\$41.09	19.4

Note: "Winter" is the winter heating season from October 1 through March 31. Data are time-weighted averages of monthly data. "Product supplied" data are used to represent consumption. Supply components do not equal total supply because of independent rounding.

Sources: Calculated from Energy Information Administration, *Petroleum Supply Monthly* (June 1990); *Petroleum Marketing Monthly* (February 1989 through April 1990); *Petroleum Marketing Annual 1988* (October 1989).

The difference in heating degree days in January and February 1990 from the previous year nearly mirrored the differences in November and December from the previous years. Nationally, it was 8 percent warmer than 1989 in January, 22 percent warmer than 1989 in February, and 12 percent warmer than 1989 in March. January was the warmest since at least 1895.⁵ However, warmer weather translated into only a 5-percent drop in consumption for January through March (Table 3), because less than half of distillate consumption is devoted to space heating (Table 2).

⁵ National Oceanic and Atmospheric Administration, *Monthly State, Regional and National Heating/Cooling Degree Days Weighted by Population*, (Washington, DC); telephone discussion with representative of National Oceanic and Atmospheric Administration, June 28, 1990.

Table 2. U.S. Distillate Consumption by Sector and Region, 1988
(Thousand Barrels per Day)

Petroleum Administration for Defense District						
Sector	I	II	III	IV	V	U.S.
Residential	392	85	0	3	18	499
Commercial	154	47	26	7	35	269
Industrial	114	179	164	33	82	573
Transportation	521	539	323	68	279	1730
Electric	31	10	3	1	6	51
Total	1212	861	517	111	420	3122

Source: Calculated from Energy Information Administration, *State Energy Data Report* (May 1990).

Table 3. U.S. Distillate Consumption and Production, 1988-90
(Thousand Barrels per Day)

	1988-89	1989-90	Percent Change
Consumption			
October	3218	3127	-2.83
November	3183	3311	4.02
December	3560	3914	9.94
January	3303	3177	-3.81
February	3427	3250	-5.16
March	3428	3265	-4.75
Production			
October	2827	2906	2.79
November	2909	3063	5.29
December	3068	3266	6.45
January	2974	3136	5.45
February	2797	2753	-1.57
March	2713	2655	-2.14

Note: "Product supplied" data is used to represent consumption.

Source: Energy Information Administration, *Petroleum Supply Monthly* (June 1990).

Distillate fuel oil consumption in 1989-90 was not only slightly less than 1988-89, it was also 2 percent less than expected under weather-adjusted consumption⁶ (Figure 1). In November 1989, consumption was 2 percent more than the weather-adjusted estimate and in December it was 11 percent more than the weather-adjusted estimate. In the other 4 months consumption ranged from 1 percent less than the weather-adjusted estimate in October to 10 percent less than the weather-adjusted estimate in January.

Regional

Forty-three percent of the distillate fuel oil used during the 1989-90 heating season was consumed on the East Coast (Petroleum Administration for Defense District (PADD) I), more than in any other region of the country. The Midwest (PADD II) was next, at 26 percent, followed by the Gulf Coast (PADD III), the West Coast (PADD V), and the Rocky Mountain region (PADD IV).⁷

As the Nation's largest consumer of distillate fuel oil, the East Coast has a disproportionate effect on total consumption. During the month of December, East Coast consumption was up 17 percent from 1988, while West Coast and Rocky Mountain consumption were actually down from the previous year. In the West, warmer December 1989 weather than 1988 and in the East, 34 percent colder weather than 1988 accounted for

⁶ "Weather-adjusted" distillate consumption is an estimate of fuel oil consumption in the winter of 1989-90, assuming weather follows historically normal patterns. The estimate was made by the Energy Analysis and Forecasting Division with the Short-Term Integrated Forecasting System using 1951-1980 weather data from the National Oceanic and Atmospheric Administration.

⁷ Consumption data in this paragraph and the next paragraph: Energy Information Administration, *Petroleum Supply Annual 1989, Volume 1*, DOE/EIA-0340/1 (Washington, DC, May 1990); *Petroleum Supply Monthly*, DOE/EIA-0109 (90/06).

Figure 1. U.S. Distillate Consumption, Actual and Weather-Adjusted, 1988-90

Note: "Weather-adjusted" distillate consumption is an estimate of fuel oil consumption, if weather had followed historically normal patterns. The estimate was made with the Short-Term Integrated Forecasting System using 1951-80 weather data from the National Oceanic and Atmospheric Administration.

Sources: Energy Information Administration, *Actual: Petroleum Supply Monthly* (June 1990); *Weather Adjusted: Office of Energy Markets and End Use*.

these consumption patterns. By February 1990, all regions of the country were warmer than in February 1989. The East Coast was 19 percent warmer and the Gulf Coast was 38 percent warmer.⁸

Weather has a significant impact on East Coast distillate fuel oil consumption, because residential consumption is the second largest end use on the East Coast, after transportation. In the New England and Mid-Atlantic subregions, residential consumers are the largest users of distillate fuel oil. According to the latest available data, 43 percent of East Coast consumption was devoted to transportation and 32 percent to residential uses in calendar year 1988 (Table 2). East Coast residential consumption was 79 percent of total U.S. residential distillate fuel oil consumption in calendar year 1988. Eight of the top 10 States in residential consumption were on the East Coast. Only 30 percent of diesel fuel consumed in the United States is consumed on the East Coast.⁹

The West Coast showed the largest variation in year-to-year consumption changes from last winter to the previous winter. January 1990 consumption was 5 percent less than 1989, while March 1990 consumption was 22 percent more than 1989. However, because the West Coast was the next to the smallest of five PADD regions, these variations had little effect on overall consumption.¹⁰

⁸ National Oceanic and Atmospheric Administration, *Monthly State, Regional and National Heating/Cooling Degree Days Weighted by Population*, (Washington, DC).

⁹ Energy Information Administration, *State Energy Data Report*, DOE/EIA-0214(88)(Washington, DC, April 1990).

¹⁰ Energy Information Administration, *Petroleum Supply Annual 1989, Volume 1*, DOE/EIA-0340(89)/1 (Washington, DC, May 1990); *Petroleum Supply Monthly*, DOE/EIA-0190(90/03) (Washington, DC, May 1990).

Supply

Although overall consumption of distillate fuel oil was slightly less last winter than the winter before, domestic production increased, while net imports and supplies taken from inventory decreased (Table 1). By the end of December, cold weather sent inventories plunging to their lowest year-end level in nearly 40 years. To rebuild inventories, December production and January gross imports were the highest of any month in more than 10 years.

Domestic production is the largest source of distillate fuel oil; it made up 89 percent of consumption during the winter of 1989-90. But with refineries operating very close to their maximum capacity, supplies from imports and inventories were just as important. Net imports and inventories supplied 7 and 4 percent, respectively, of the Nation's needs.

Domestic Production

Distillate fuel oil production was up about 3 percent in the United States last winter, compared to the winter of 1988-89. Monthly rates of change ranged from an increase of over 6 percent to a decrease of 2 percent (Table 3). During each month last winter—except the crucial month of December—the rate of change in production grew faster or declined more slowly than consumption, when compared to the previous year.

During the last 2 weeks of December, at least 17 major refineries reduced distillate fuel oil production, because of fires or freezing weather.¹¹ These 17 represented more than one-quarter of U.S. refining capacity. Many of the affected refineries were on the Gulf Coast, the Nation's major oil-refining area, where heating degree days for December were 57 percent above 1988. Temperatures in Houston, Texas, reached a record low of 7 degrees above zero. Refineries along the Gulf Coast—designed to operate in a warm climate—reported frozen pipes, pumps, gauges, and valves.¹² The second largest U.S. refinery, the Exxon Baton Rouge plant, suffered a fire on Christmas Eve, which killed two workers and completely shut down operations for a week.¹³ Gulf Coast refiners reported that production slipped 27 percent for the week ending December 29, 1989, compared to the previous week.¹⁴

Even though distillate fuel oil production failed to keep up with consumption in December, refiners—motivated by rapidly rising prices—made a concerted effort to do so. Domestic production for December reached 3.3 million barrels per day (Table 3), the highest since September 1979. During the week

¹¹ Telephone discussions with respondents to Form EIA-800, "Weekly Refinery Report."

¹² National Oceanic and Atmospheric Administration, *Monthly State, Regional and National Heating/Cooling Degree Days Weighted by Population*, (Washington, DC); telephone discussion with representative of National Weather Service, August 13, 1990.

¹³ "Baton Rouge Refinery In Operation, Exxon Says," *Oil Daily* (Washington, DC, January 3, 1990), p. 1.

¹⁴ Energy Information Administration, *Weekly Petroleum Status Report*, DOE/EIA-0208(90-02)(Washington, DC, December 29, 1989), p. 22.

ending December 22, production rose to 3.5 million barrels per day, the highest 1-week level in more than 10 years.¹⁵ Distillate fuel oil yields were 23.8 percent in December, the highest since December 1985, because refiners produced distillate fuel oil instead of lighter products. For the entire winter, distillate fuel oil yields averaged 21.5 percent, compared to 21.1 percent during the winter of 1988-89.¹⁶

As with distillate fuel oil production, refinery utilization of operating capacity in 1989-90 exceeded that in 1988-89 in each month except December. Utilization of operating capacity was 87.6 percent in December 1989, but 91 percent in December 1988, reflecting the refinery problems on the Gulf Coast. Overall utilization of operating capacity was 89.7 percent last winter, compared to 88.7 percent the previous winter.¹⁷

Transportation problems also limited the ability of refiners to get their product to market in December. The Jones Act, which prohibits foreign ships from delivering cargoes from one U.S. port to another, prevented at least two ships from delivering oil to the East Coast during late December and early January. On the Mississippi River, low water and ice jams between mouth of the Missouri River and St. Louis, Missouri, caused suspension of navigation during the last half of December. (Ice jams normally close the mid-Mississippi in late January, but warm weather prevented formation of any jams during January 1990.) On the East Coast, icy conditions during December sometimes made it difficult to unload barges and to deliver fuel oil by truck.¹⁸

While no terminals or pipelines were consistently out of distillate fuel oil for days at a time, a few terminals in the Northeast ran out for a day or two. Some dealers reported waits of 3 to 4 hours to pick up distillate fuel oil. Exxon, Mobil, and Texaco reported temporary depletions at some of their terminals late in December. Mobil rationed heating oil to its dealers in 11 Northeastern States from December 20 through 31 and Colonial Pipeline pro-rated space for distillate fuel oil shipments late in December.¹⁹

Although each month's production exceeded the previous year's during the first 4 months of the winter of 1989-90, February and March 1990 production were lower than in 1989 (Table 3). High production in December and January and high

imports in January and February, as well as warm weather, filled inventories to seasonal levels, brought down prices, and reduced production.

Foreign Trade

Net imports of distillate fuel oil during the winter of 1989-90 were down 12 percent compared to the previous winter (Table 1). Ties between the European and U.S. East Coast fuel oil markets were evident in this decline. High European prices drew supplies of distillate fuel oil to Europe that normally would have been sent to the United States. Some U.S. distillate fuel oil even went to Europe.

Gross distillate fuel oil imports for the 1989-90 heating season were lower than the previous heating season in each month, except January and February (Table 4). Month-to-month differences in imports from the previous year ranged from a gain of 45 percent to a loss of 36 percent. Exports were up for the first 3 months of the heating season and down for the last 3 months, compared to the previous year. Because exports are much smaller than imports, percentage differences in exports fluctuated even more wildly, from an increase of 262 percent (89,000 barrels per day) to a decrease of 60 percent (99,000 barrels per day).

A short-lived October cold spell in Northern Europe combined with several other factors²⁰ to increase European consumption of distillate fuel oil. October 1989 European consumption was 8 percent greater than October 1988, while November and December 1989 consumption were lower than November and December 1988.²¹

Higher European consumption raised relative European/U.S. prices, compared to 1988. The relatively high prices of European distillate fuel oil tended to reduce European exports to the United States and to draw other foreign supplies toward Europe instead of to the United States.²² Although the United States received distillate fuel oil imports from four European nations and Saudi Arabia in November 1989, in December 1989 all U.S. distillate fuel oil imports came from the Western Hemisphere.²³

Meanwhile, U.S. exports of distillate fuel oil to several European and Asian nations increased sharply in November and December. For example, Japan, Netherlands, Singapore, Italy, and even Venezuela²⁴ received significantly increased

¹⁵ Energy Information Administration, *Weekly Petroleum Status Report*, DOE/EIA-0208(90-02)(Washington, DC, December 29, 1989), p. 22.

¹⁶ Energy Information Administration, *Petroleum Supply Annual 1989, Volume 1*, DOE/EIA-0340(89)/1 (Washington, DC, May 1990); *Petroleum Supply Monthly*, DOE/EIA-0190(90/03)(Washington, DC, May 1990).

¹⁷ Energy Information Administration, *Petroleum Supply Monthly*, EIA/DOE-0109, (Washington, DC, December 1989 and March 1990), Table H2.

¹⁸ Telephone conversation, representative of U.S. Army Corps of Engineers, St. Louis, July 30, 1990; American Petroleum Institute, *Response 438* (December 27, 1989).

¹⁹ Minutes from Government/Industry Meeting on Severe Weather Conditions at U.S. Department of Energy, December 23, 1989; Todd Smith, "Cold snap drains heating oil supply," *Washington Times* (Washington, DC, December 25, 1989), p. B5; T.C. DeLoach, Mobil Oil Corporation, to Robert Abrams, New York Attorney General, letter (January 17, 1990); David L. Langley, "Heating Fuel Price Increases," hearing before Robert Abrams and other New York officials, January 23, 1990.

²⁰ Low water on the Rhine River, coal strikes in the U.S.S.R., and European delays in filling heating oil tanks. "Cold Snap Warms Refiners' Hearts in Europe and US," *Petroleum Intelligence Weekly* (New York, NY, December 18, 1989), p. 3.

²¹ International Energy Agency, *Monthly Oil and Gas Statistics* (Paris, France).

²² Energy Information Administration, *An Analysis of Heating Fuel Market Behavior 1989-1990*, SR/OG/90-01 (Washington, DC, June 1990), p. 39-40.

²³ These data and data in the following three paragraphs are from: Energy Information Administration, *Petroleum Supply Annual 1989, Volume 1* (DOE/EIA-0340(89)/1 (Washington, DC, May 1990); *Volume 2* (DOE/EIA-0340(89)/2 (Washington, DC, June 1990); *Petroleum Supply Monthly*, DOE/EIA-0109(90/03) (Washington, DC, May 1990).

²⁴ Venezuela is the largest foreign supplier of distillate fuel oil to the United States.

Table 4. U.S. Distillate Foreign Trade, 1988-90
(Thousand Barrels per Day)

	Imports			Exports			Net Imports		
	1988-89	1989-90	Percent Change	1988-89	1989-90	Percent Change	1988-89	1989-90	Percent Change
October	336	261	-22.3	48	90	87.5	288	171	-40.6
November	327	307	-6.1	34	123	261.8	293	184	-37.2
December	409	324	-20.8	87	130	49.4	322	194	-39.8
January	346	501	44.8	110	62	-43.6	236	439	86.0
February	331	357	7.9	164	65	-60.4	167	292	74.9
March	439	280	-36.2	76	75	-1.3	363	205	-43.5

Source: Energy Information Administration, *Petroleum Supply Monthly* (June 1990).

quantities in November and December 1989, compared to 1988. With the early cold spell in Europe, Europeans and others were willing to pay higher prices than American buyers, thus drawing distillate fuel oil exports away from the United States.

As the December cold spell in the United States lengthened, prices soared and drew more imports toward the United States. Although December distillate fuel oil imports were 6 percent above the November 1989 level, the sharp December increases in imports of the past 2 years never materialized (Table 4). Gross imports were the equivalent of 8 percent of product supplied in December 1989, compared to 11 percent during the previous two Decembers.

Transportation lags and storms in the Atlantic Ocean delayed a surge in imports until after the cold spell had almost ended. Gross distillate fuel oil imports averaged more than half a million barrels per day in January, more than any month since March 1977. Although the United States received imports from only 4 countries in December 1989, imports came from

14 nations in January 1990. Most of the incremental supplies came from Eastern Hemisphere countries, such as the U.S.S.R, Algeria, and West Germany.²⁵

Net imports in January and February 1990 were higher than the same months in 1989, but by March 1990 imports had once again fallen below March 1989 (Table 4). Lower consumption in the first 3 months of 1990 than 1989, combined with ample inventories resulting from high January and February domestic production, made significant March imports unnecessary.

Inventories

Even though inventories of distillate fuel oil began the heating season at their lowest level in 4 years, significant domestic production and warm weather brought end-of-season stocks to their highest level in 3 years (Figure 2). Partly because distillate fuel oil stocks were lower during the 1989-90 heat-

²⁵ Energy Information Administration, *Petroleum Supply Annual 1989, Volume 1*, DOE/EIA-0340(89)/1 (Washington, DC, May 1990); *Petroleum Supply Monthly*, DOE/EIA-0190(90/03) (Washington, DC, May 1990).

Figure 2. U.S. Distillate Fuel Oil Stocks, Heating Season 1980-1990

Note: Beginning Stocks are as of September 30 (S); Ending Stocks are as of March 31 (M).

Source: Energy Information Administration, *Petroleum Supply Monthly*, (June 1990); *Petroleum Supply Annual 1989*, (May 1989) and predecessor publications.

ing season than the year before, absolute withdrawals from stocks were about one-third less last winter than the previous winter (Table 1).

During the winter of 1989-90, distillate fuel oil stocks were below the previous winter's level for the first 4 months of the season, but above the previous year's level at the end of February and March (Table 5). Stocks began the heating season at low levels, because of strong consumption of diesel fuel in the spring and summer, and increased summer exports

of distillate fuel oil. Tight international supplies had raised prices in the summer, not only luring exports from the United States, but also reducing incentives to store distillate fuel oil for the winter.

In order to meet December's increased demand, stocks were drawn down to 106 million barrels (Table 5), the lowest year-end level since 1952. Distillate fuel oil stocks do not normally fall this low until February or March. The 14-million-barrel November-to-December 1989 withdrawal was the largest in

Table 5. U.S. Distillate Fuel Oil Stocks, 1988-1991
(Million Barrels)

	UNITED STATES					EAST COAST (PADD I)				
	1988- 1989 (a)	1989- 1990 (b)	1990- 1991 (c)	Percent Change (b-a)*100 a	Percent Change (c-b)*100 b	1988- 1989 (a)	1989- 1990 (b)	1990- 1991 (c)	Percent Change (b-a)*100 a	Percent Change (c-b)*100 b
June	110	100	109	-9	9	37	36	40	-3	11
July	120	115	126	-4	10	45	45	52	0	16
August	126	116	130	-8	12	52	48	56	-8	17
September	131	123	--	-6	--	57	50	--	-12	--
October	128	122	--	-5	--	57	52	--	-9	--
November	129	120	--	-7	--	55	50	--	-9	--
December	124	106	--	-15	--	49	35	--	-29	--
January	121	118	--	-2	--	47	44	--	-6	--
February	108	112	--	4	--	37	39	--	5	--
March	97	100	--	3	--	33	31	--	-6	--
April	99	99	--	0	--	33	30	--	-9	--
May	100	103	--	3	--	33	34	--	3	--

	MIDWEST (PADD II)					GULF COAST (PADD III)				
	1988- 1989 (a)	1989- 1990 (b)	1990- 1991 (c)	Percent Change (b-a)*100 a	Percent Change (c-b)*100 b	1988- 1989 (a)	1989- 1990 (b)	1990- 1991 (c)	Percent Change (b-a)*100 a	Percent Change (c-b)*100 b
June	30	27	30	-10	11	27	24	25	-11	4
July	31	29	32	-6	10	29	28	28	-3	0
August	31	29	32	-6	10	28	26	29	-7	12
September	30	31	--	3	--	29	29	--	0	--
October	29	29	--	0	--	29	28	--	-3	--
November	29	29	--	0	--	30	27	--	-10	--
December	31	31	--	0	--	28	25	--	-11	--
January	33	33	--	0	--	28	26	--	-7	--
February	31	33	--	6	--	26	25	--	-4	--
March	27	30	--	11	--	23	24	--	4	--
April	27	29	--	7	--	24	25	--	4	--
May	27	30	--	11	--	25	24	--	-4	--

Note: August 1990 data are preliminary.

Sources: Energy Information Administration, *Petroleum Supply Monthly*, (June 1990); *Petroleum Supply Annual 1989*, Volume 2, (June 1990) and predecessor publications; *Weekly Petroleum Status Report*, (September 7, 1990).

almost 2 years and represented a 12-percent drop in stocks. East Coast (PADD I) inventories declined 29 percent from November to December 1989, while Gulf Coast (PADD III) inventories fell 7 percent. In January, however, aided by warm weather, U.S. stocks increased by 12 million barrels, the fastest rise since August 1986.

Throughout the 1980's, high carrying costs and volatile prices have contributed to the gradual decline of beginning-of-season distillate fuel oil inventories. This past winter, in addition to the higher than normal pre-season demands, exports, and prices already mentioned, forecasts of warmer-than-normal weather and memories of costly high stock levels in the winter of 1988-89 also contributed to low beginning stocks.

Refiners, pipelines, and large terminal operators have little incentive to accumulate large inventories, unless they have good prospects of recovering their costs to store distillate fuel oil. In addition to the cost of investing capital in inventories for several months during a time of high interest rates, inventory holders must pay the cost of purchasing and maintaining tanks. During the 1980's, the prime interest rate averaged 11.8 percent, compared to 8.1 percent in the 1970's and just 5.3 percent in the 1960's.²⁶ These rising costs give inventory holders an incentive to take advantage of the computerized measuring, monitoring, and distribution methods that make it possible to control inventory—and costs—more carefully.

In the summer of 1989, strong diesel demand and strong international demand pulled prices upward. As a result, the spread between spot and futures market prices was rarely as high as 2 cents per gallon, averaging about 1.5 cents in August and less in September. This spread was probably insufficient to cover carrying costs. Meanwhile, the prime interest rate averaged 10.9 percent.²⁷

Price volatility makes it risky to hold stocks inventories of distillate fuel oil. If retail prices rise, holders of inventory will benefit, but if prices fall, they will be forced to sell their product at a loss. During the 1980's wholesale prices were more volatile than during the 1970's.²⁸ Price volatility has increasingly forced the industry to hedge its purchases and sales on the commodity markets. A hedge may deprive a firm of profits from a price increase, but can insure a firm against losses in the event of a price decrease. Hedging itself has

further reduced incentives to hold stocks, because it takes over much of the speculative function sometimes formerly performed by holding stocks.

Forecasts of warmer-than-normal weather complicated the inventory picture in 1989. At the end of October, the National Weather Service predicted a 60-percent chance of warmer-than-normal weather in much of New England and the Mid-Atlantic for November through January. As late as the end of November, the 90-day forecast showed a 60-percent probability for warmer-than-normal weather in lower New England and the Mid-Atlantic, and a 70-percent probability of warmer-than-normal weather in Delaware, southern New Jersey, eastern Maryland, eastern Virginia, and eastern North Carolina.²⁹ On top of these forecasts, some dealers remembered that they had stocked up in 1988, only to end up selling at a loss or at a smaller profit than usual. Some consumers also remembered the warm weather and failed to stock up before the onset of winter.³⁰

Even though end-of-December inventories dipped to historically low levels, stocks at the end of March were close to 100 million barrels (Figure 2). During the last 7 years, end-of-March stocks have only exceeded this level once.

Price

Distillate fuel oil prices responded to the winter heating season's unusual demand and supply conditions by increasing very rapidly and unexpectedly in late December and declining almost as rapidly in January. This rapid increase in prices gave inflation a temporary boost and resulted in increased low-income heating assistance, but did not significantly improve oil company profits during the heating season.

During the entire winter of 1989-90, both wholesale and retail distillate fuel oil prices were more than \$6 per barrel higher than the previous winter (Table 1). Much of the year-to-year increase is attributable to increased refiner acquisition costs for crude oil, but part of it is attributable to declining stock levels at a time when high refinery utilization rates made it impossible to increase domestic production.

Changes in both supply and demand played a role in the rapid December escalation of prices. Distillate fuel oil supplies were restricted by cold weather on the Gulf Coast and by declining imports. This forced inventories to serve as the marginal source of supply—a role usually taken by imports. Demand increased sharply because of the cold, as well. A significant share of the weather-induced jump in consumption came from consumers of distillate fuel oil like utilities, hospitals, and schools, that normally rely on other fuels.

²⁶ Calculated from *Economic Report of the President* (Washington, DC, February 1990), p. 376.

²⁷ Energy Information Administration, *An Analysis of Heating Fuel Market Behavior 1989-1990*, SR/OG/90-01 (Washington, DC, June 1990), p. 37; calculated from *Economic Report of the President* (Washington, DC, February 1990), p. 376.

²⁸ The standard deviation of monthly wholesale prices was never below 2 cents per gallon in any year of the 1980's, and was more than 10 cents per gallon in 1986, while the standard deviation occasionally slipped below 1 cent per gallon during the 1970's. With the significant runup in prices at the end of the year, 1989's standard deviation was 5.8 cents per gallon. Calculated from Energy Information Administration, *Petroleum Marketing Annual*, DOE/EIA-0487(88) (Washington, DC, October 1989); *Petroleum Marketing Monthly*, DOE/EIA-0380(90/03) (Washington, DC, June 1990).

²⁹ National Oceanic and Atmospheric Administration, *Monthly & Seasonal Weather Outlook* (Washington, DC, October 31 and November 29, 1989).

³⁰ John M. Berry, "Heating Oil Prices Surge In Northeastern States," *Washington Post* (Washington, DC, December 22, 1989), p. A9; Minutes from Government/Industry Meeting on Severe Weather Conditions at U.S. Department of Energy, December 23, 1989.

Supply and demand played an equally important role in the rapid fall in prices during January. High domestic production in December and January and high imports during January and February restored inventories to seasonal levels and eased fears of shortages. In early January the cold wave broke and soon gave way to balmy February temperatures, reducing demand for distillate fuel oil.

As a result of this rapid rise and fall in prices, both wholesale and retail monthly average prices were more volatile in 1989-90 than the previous winter. Monthly retail prices varied less than 12 cents per gallon in 1988-89, but more than 28 cents per gallon in 1989-90. From November to December 1989, average retail prices increased 19.3 cents per gallon to \$1.08 cents per gallon. This 22-percent increase was the largest 1-month increase recorded since the Department of Energy began retail price data collection in 1982. Prices peaked in January at \$1.14 per gallon. Then, from January to February 1990, retail prices dropped 17.8 cents per gallon. This 16-percent drop was the largest 1-month decrease since data collection began.³¹

Average monthly wholesale prices did not move as rapidly as average monthly retail prices, but wholesale spot prices moved even more rapidly (Figure 3). From their November 15 low of \$23.85 per barrel, prices more than doubled to \$48.39 at their December 27 peak. By February 9, however, wholesale spot prices were back down to \$23.14 per barrel. Wholesale prices went so high that during December and January the

³¹ Energy Information Administration, *Petroleum Marketing Annual*, DOE/EIA-0487(88) (Washington, DC, October 1989); *Petroleum Marketing Monthly*, DOE/EIA-0380(90/03) (Washington, DC, June 1990). The Bureau of Labor Statistics reported a 25 percent increase in residential fuel oil prices from December 1989 to January 1990, the biggest monthly increase since it began collecting data in 1956.

average monthly wholesale price of distillate fuel oil exceeded the wholesale price of finished gasoline for the first time in 4 years.³²

The East Coast, the area of the country consuming the largest amount of distillate fuel oil, experienced the highest retail prices during the winter of 1989-90. Within this area, New England and the Mid-Atlantic States experienced average prices of more than \$1.18 cents per gallon in January. Retail prices as high as \$1.50 per gallon were reported in New Hampshire.³³ Unlike most parts of the country, high natural gas transportation costs make home heating oil generally cheaper than natural gas in New England. During December and January, however, natural gas was less expensive than heating oil.³⁴ Prices in the Nation's second largest consuming area, the Midwest, increased 16 percent from November to December; West Coast prices were minimally affected.³⁵

The December rise in distillate fuel oil prices had a significant, though temporary, effect on consumer prices. Consumer prices rose 0.4 percent in December; only a small part of the increase was caused by heating fuel price increases. However, consumer prices rose 1.1 percent in January 1990, the largest

³² Energy Information Administration, *Petroleum Marketing Annual*, DOE/EIA-0487(88) (Washington, DC, October 1989); *Petroleum Marketing Monthly*, DOE/EIA-0380(90/03) (Washington, DC, June 1990).

³³ Energy Information Administration, *Petroleum Marketing Annual*, DOE/EIA-0487(88) (Washington, DC, October 1989); *Petroleum Marketing Monthly*, DOE/EIA-0380(90/03) (Washington, DC, June 1990); State of New Hampshire, *Energy Supply Crisis Review Board Report* (Concord, NH, February 14, 1990), p. 11.

³⁴ Calculated from Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(90-03) (Washington, DC, June 1990), pp. 99, 107, 124, 125.

³⁵ Energy Information Administration, *Petroleum Marketing Annual*, DOE/EIA-0487(88) (Washington, DC, October 1989); *Petroleum Marketing Monthly*, DOE/EIA-0380(90/03) (Washington, DC, June 1990).

Figure 3. U.S. Wholesale Distillate Fuel Oil Prices, 1989-1990

Sources: Spot: Reuter's News Service; Monthly Average: Energy Information Administration, *Petroleum Marketing Monthly* (October through May 1990).

increase in more than 7 years. Energy and food costs increases accounted for more than 60 percent of the increase. Fuel oil costs alone soared a record 27 percent in January. The monthly increase in the Consumer Price Index was only 0.5 percent in February, and even less in March, as heating oil prices eased.³⁶

Trucking companies, some of the largest users of distillate fuel oil, responded to the rise in diesel fuel prices with rate surcharges of their own or by indexing freight rates to fuel costs. According to a weekly survey of truckstops by the Interstate Commerce Commission, diesel prices remained around \$1.15 per gallon from mid-October through mid-December. By January 8, however, prices increased 25 percent to an average of \$1.44 per gallon. Individual truckers reported paying more than \$2 per gallon in Connecticut and Massachusetts.³⁷

Wholesale prices were similarly affected by heating oil prices. The January increase in the Producer Price Index was 1.8 percent. But the December increase in prices had little effect on economic growth. In a typical U.S. household the average monthly distillate fuel oil bill increased \$14 from October through February—not enough to significantly depress consumer demand and economic growth.³⁸

During the winter of 1989-90, the amount of Federal funds available to assist low-income persons with heating bills was significantly less than it had been at its peak 5 years before. In terms of current dollars, only about two-thirds of what had been available in 1985 was available; in terms of constant dollars, only 58 percent of the 1985 amount was available.³⁹

Advocates of low-income energy assistance argued that the December price increases merited additional appropriations. Programs in the Northeast quickly ran short of money and requested the balance of their Fiscal Year 1990 money months in advance. Congress agreed to provide more money, and on May 25, 1990, President Bush signed into law an emergency supplemental appropriations bill providing an additional \$50 million.⁴⁰

³⁶ Hilary Stout, "Economy: Consumer Prices Climbed 1.1% During January," *Wall Street Journal* (New York, NY, February 22, 1990), p. A2; Energy Information Administration, *An Analysis of Heating Fuel Market Behavior 1989-1990*, SR/OG/90-01 (Washington, DC, June 1990), p. 15.

³⁷ Interstate Commerce Commission, "Diesel Fuel Prices," July 10, 1990; Lana Batts, "Heating Oil, Propane, and Diesel Fuel Price Increases," hearing before Subcommittee on Energy and Power of House Committee on Energy and Commerce, January 9, 1990.

³⁸ Hilary Stout, "Economy: Consumer Prices Climbed 1.1% During January," *Wall Street Journal* (New York, NY, February 22, 1990), p. A2. Energy Information Administration, *An Analysis of Heating Fuel Market Behavior 1989-1990*, SR/OG/90-01 (Washington, DC, June 1990), p. xi.

³⁹ Family Support Administration, "Summary Statistics on HHS Energy Assistance Programs, Fiscal Years 1981-1990" (March 15, 1990); Calculated from *Economic Report of the President* (Washington, DC, February 1990), p. 376.

⁴⁰ Lawrence Kelly, "Home Heating Fuels Crisis," hearings before the Senate Governmental Affairs Committee, January 16, 1990; U.S. House of Representatives, Committee Report 101-434; Family Services Administration, Low-Income Home Energy Assistance Action Transmittal No. FSA-AT-90-4, June 8, 1990.

While the December runup in prices undoubtedly helped the profits of refiners and marketers who were holding stocks at the time of the price increase, in fact, refinery profits fared rather poorly during the 1989-90 heating season. Among other problems, product prices tended to fall faster than crude oil prices during the first quarter of 1990, weather problems and the cost of quickly changing refinery product slates increased operating costs, and sales were down sharply in the first quarter of 1990.

Compared with the same quarters the previous year, profits from the major oil companies refinery and marketing operations were 70 percent less in the last quarter of 1989 and 48 percent less in the first quarter of 1990. Independent refiners suffered comparable declines of 57 percent and 32 percent in their net income.⁴¹

Propane

Because shortages lasting more than a day or two occurred in some places, propane prices were more volatile than distillate fuel oil prices during the 1989-90 heating season. Yet, overall consumption was about the same as during the previous winter heating season. Domestic production and inventory withdrawals declined while imports increased in 1989-90, compared to the previous winter season.

Consumers affected by price increases and shortages were primarily residents of rural areas and small towns. Natural gas utilities also use propane to maintain pressure in distribution lines during peak demand periods. Natural gas customers, whose supplies have been interrupted, sometimes use propane as a substitute.⁴²

Although overall propane consumption has been stable during the last two heating seasons, month-to-month consumption varied sharply. During October, November, and December 1989, propane consumption increased 9, 10, and 20 percent, respectively, compared to 1988. However, in January, February, and March 1990, propane consumption was down 16, 18, and 8 percent, respectively, compared to 1989. The November through February increases and decreases in consumption largely reflect weather patterns.⁴³

Domestic production, the most important source of propane, made up 76 percent of consumption during the 1989-90 heating season. Although both petroleum refineries and

⁴¹ Energy Information Administration, *An Analysis of Heating Fuel Market Behavior 1989-1990*, SR/OG/90-01 (Washington, DC, June 1990), p. xi.

⁴² Thomas W. Lipman and Alison Howard, "Cold Strains Nation's Energy Delivery System; Area Utilities, Faced with Record Usage, Ask Customers to Conserve," *Washington Post* (December 24, 1989); New Jersey Board of Public Utilities, *An Analysis of December 1989 Heating Oil Prices Increases* (February 5, 1990), pp. 7-8; Pennsylvania Energy Office, *Final Report: Heating Fuels Survey, 1989/1990 Heating Season* (Harrisburg, PA, April 16, 1990), p. 12.

⁴³ Data in this paragraph and the next four paragraphs: Energy Information Administration, *Petroleum Supply Annual 1989, Volume 1*, DOE/EIA-0340(89)/1 (Washington, DC, May 1990); *Volume 2*, DOE/EIA-0340(89)/2 (Washington, DC, June 1990); *Petroleum Supply Monthly*, DOE/EIA-0109(90/03) (Washington, DC, May 1990).

natural gas-processing plants produce propane, more propane typically comes from natural gas processing plants than from refineries. Withdrawals from existing stocks supplied 16 percent of consumption in 1989-90, and net imports supplied the rest. Compared with 1988-89, production declined 3 percent and stock withdrawals declined 4 percent. Net imports grew 24 percent in 1989-90, from 7 to 9 percent of total consumption.

Propane production in the United States was lower than the previous year in each month of the 1989-90 heating season, except February when it was up 6 percent. Production was off

7 percent in both October and the cold month of December, as well as down 3 percent in November and January. Declines in November through January production were caused primarily by weather-related operating problems. February production increased as the industry rebuilt stocks,

Propane stocks began the 1989-90 heating season at a lower level than the previous year and sank to very low levels at the end of December (Table 6). At the beginning of October 1989, propane stocks in primary storage were just over 59 million barrels, about 6 percent below October 1, 1988. In December 1989, however, stock withdrawals amounted to 16.7 million

Table 6. U.S. Propane Stocks, 1988-1991
(Thousand Barrels)

	UNITED STATES					EAST COAST (PADD I)				
	1988-1989	1989-1990	1990-1991	Percent Change	Percent Change	1988-1989	1989-1990	1990-1991	Percent Change	Percent Change
	(a)	(b)	(c)	(b-a)*100	(c-b)*100	(a)	(b)	(c)	(b-a)*100	(c-b)*100
	a					a				
June	52196	49609	43990	-5	-11	3039	4030	3323	33	-18
July	58731	56517	48930	-4	-13	3726	4865	3365	31	-31
August	63594	60394	E 53000	-5	-12	4662	4823	E 3305	3	-31
September	63074	59047	--	-6	--	4901	4949	--	1	--
October	61771	53922	--	-13	--	4804	4858	--	1	--
November	59226	48224	--	-19	--	4916	4825	--	-2	--
December	50427	31528	--	-37	--	3847	1789	--	-53	--
January	45099	32979	--	-27	--	3868	2481	--	-36	--
February	36425	32171	--	-12	--	2921	2681	--	-8	--
March	32286	31103	--	-4	--	2298	2710	--	18	--
April	36734	31705	--	-14	--	2633	3009	--	14	--
May	43888	35584	--	-19	--	3049	3216	--	5	--

	MIDWEST (PADD II)					GULF COAST (PADD III)				
	1988-1989	1989-1990	1990-1991	Percent Change	Percent Change	1988-1989	1989-1990	1990-1991	Percent Change	Percent Change
	(a)	(b)	(c)	(b-a)*100	(c-b)*100	(a)	(b)	(c)	(b-a)*100	(c-b)*100
	a					a				
June	17965	16594	16083	-8	-3	30390	27926	23632	-8	-15
July	20430	19503	18009	-5	-8	33532	30820	26412	-8	-14
August	22926	20514	E 20942	-11	2	34766	33629	E 27921	-3	-17
September	22917	19596	--	-14	--	33795	33025	--	-2	--
October	21390	16768	--	-22	--	34024	30833	--	-9	--
November	21116	14781	--	-30	--	31824	27311	--	-14	--
December	17408	9498	--	-45	--	28026	19093	--	-32	--
January	15372	11364	--	-26	--	25081	18271	--	-27	--
February	10612	10616	--	0	--	22286	18177	--	-18	--
March	9139	10749	--	18	--	20182	17109	--	-15	--
April	11524	11396	--	-1	--	21718	16674	--	-23	--
May	14088	13561	--	-4	--	25707	18046	--	-30	--

E=Estimated

Sources: Energy Information Administration, *Petroleum Supply Monthly*, (June 1990); *Petroleum Supply Annual 1989*, Volume 2, (June 1990) and predecessor publications; *Weekly Petroleum Status Report*, (September 7, 1990).

barrels, pulling stocks down to 31.5 million barrels. This level of inventories was 37 percent below December 31, 1988. Because of good weather and high domestic production, stocks remained stable through the balance of the season, finishing at 31.1 million barrels, nearly 4 percent below March 31, 1989.

Imports of propane during the 1989-90 heating season were greater than or equal to imports in each month of the previous heating season. December 1989 imports were more than double December 1988 imports. Propane imports did not increase in all parts of the country, however. The East Coast, the area most dependent on propane imports, saw a more than 60-percent decrease in imports from December 1988 to December 1989.

Although no distillate fuel oil dealers were reportedly unable to buy fuel oil for more than a few hours during the winter of 1989-90, the same could not be said of propane. In late December, many propane suppliers could get no more of their product to sell. Shortages were reported in the Northeast, upper Midwest, and as far south as Tennessee and Kansas. Residential customers received the first supplies and lower-priority commercial and industrial customers—like construction sites—were cut off selectively. Dealers also allocated supplies to spread the shortage and refused to accept new customers. Emergency supplies had to be trucked several hundred miles in some cases.⁴⁴

In late December, Governor Madeleine M. Kunin of Vermont restricted propane dealers to making deliveries to tanks that were less than 10 percent full. In neighboring New Hampshire, the State ran an emergency propane distribution program. Using 100,000 gallons of propane from EnergyNorth, Inc., and Northern Utilities, Inc., (local natural gas distribution companies), the State made 18 allocations of propane to dealers who were unable to serve their residential heating customers. Deliveries were limited to 100 gallons and could only be made to customers whose tanks were below 5 percent full.⁴⁵

Propane prices were even more volatile than distillate heating oil prices during the winter of 1989-90. This volatility was unusual because propane prices had been fairly stable for the past 3 years.

At the beginning of the heating season, propane prices were near those of the previous season, and during October and November they remained relatively flat. On December 1, residential propane prices ranged from 66 cents per gallon in Indiana to \$1.06 per gallon in Massachusetts. After that, however, propane prices began to rise steadily. During the

first half of December, residential prices rose an average of less than 8 cents per gallon, though they rose 19 cents in Massachusetts.

During the last half of December, prices rose very rapidly. Residential prices increased 19 to 40 cents per gallon, with the largest increases in New England and the Mid-Atlantic area. Prices peaked just after the first of the year. Vermont residential consumers paid \$1.54 per gallon on January 11, 1990. Prices declined in February, but by May 1 they were still 6 to 8 cents per gallon above December 1 levels.

Outlook

Because of the current uncertainty about energy markets over the next several months, the Energy Information Administration has examined three supply and demand scenarios reflecting alternative estimates of world oil market conditions. These scenarios each include the assumption of constant nominal crude oil prices beginning in September 1990, with values of \$20, \$25, and \$30 per barrel. The results of the \$30 case are presented in this article.

Higher distillate fuel oil and propane prices were assured by Iraq's invasion of Kuwait. The answers to several outstanding questions will determine how much higher prices will go: Will the weather be normal this winter, both in the United States and Europe? Can U.S. refineries continue to operate at high rates of capacity utilization? How long will the standoff with Iraq last? Can lost crude oil production be made up by December? and, Will the already low propane inventories be adequate for this winter?

Distillate Fuel Oil

If crude oil prices remain at about \$30 per barrel, distillate fuel oil consumers would pay at least 23 cents more per gallon this winter than last winter. This projection, in the September *Short-Term Energy Outlook*,⁴⁶ assumes normal weather and sluggish economic growth.

In the \$30 case, retail prices for heating oil average \$1.24 per gallon during the October 1990 through March 1991 heating season, compared to 99 cents per gallon during the previous season. Diesel oil would sell at \$1.31 per gallon.

Wholesale distillate fuel oil prices—covering both heating oil and diesel—would be 89 cents per gallon during the October to March heating season. Distillate fuel oil prices in the New York wholesale spot market closed \$1.01 per gallon on September 26, 1990.⁴⁷ Higher distillate fuel oil prices largely reflect higher crude oil prices, which would rise from \$19.31 per barrel in the winter of 1989-90 to \$30 per barrel this winter.

In addition to an average refiner acquisition cost for crude oil at \$30 per barrel, this case assumes: 1) normal weather, 2)

⁴⁴ "Big Freeze in US Adds Million BD to World Oil Demand," *Petroleum Intelligence Weekly* (New York, NY, January 1, 1990), p. 1.

⁴⁵ Thomas W. Lippman and Alison Howard, "Cold Strains Nation's Energy Delivery System; Area Utilities, Faced with Record Usage, Ask Customers to Conserve," *Washington Post* (Washington, DC, December 24, 1989); State of New Hampshire, *Energy Supply Crisis Review Board Report* (Concord, NH, February 14, 1990), p. 9.

⁴⁶ The full forecast appears in Energy Information Administration, *Short-Term Energy Outlook*, DOE/EIA-0202(90/3Q) (Washington, DC, September 1990).

⁴⁷ Reuters News Service.

average annual growth in real Gross National Product during the 1990-91 heating season of 0.7 percent, and 3) a 1.4 percent increase in the Industrial production index, compared to that of the winter of 1989-90.

In the \$30 price scenario, distillate fuel oil consumption (product supplied) averages 3.3 million barrels per day during the 1990-91 heating season. Although this level is exactly the same as the 1989-90 heating season, it actually represents a drop in consumption when compared to the weather-adjusted level for the 1989-90 heating season, because the 1990-91 consumption number is weather-adjusted, as well. As with other petroleum products, increasing prices tend to reduce consumption of distillate fuel oil. For the first 7 months of 1990 consumption of distillate fuel oil was 3.06 million barrels per day, down slightly from 1989.

It is possible, however, that the winter of 1990-91 could be colder than normal. In the past 50 years about one-third of the winters were 5 percent colder or warmer than normal. The most recent National Oceanic and Atmospheric Administration forecast indicates the next 3 months will have a 55 percent chance of being below normal from lakes Michigan and Huron to the Ohio River and eastward to the coast of the Mid-Atlantic region. A cold winter would lead consumers to draw down domestic inventories and increase pressure on prices.⁴⁸

As always, domestic refinery production will supply the largest share of distillate fuel oil consumption. In the \$30 case, U.S. refiners produce about 2.80 million barrels of distillate fuel oil per day during the 1990-91 heating season, compared to 2.97 million barrels per day during the 1989-90 heating season. In other words, refiners would supply 86 percent of total product supplied from current production in the 1990-91 season. During the previous heating season, they supplied 89 percent of consumption. For the first 7 months of 1990 production was 2.89 million barrels per day, up 3 percent from 1989.

It is not known how long the refinery industry can sustain currently high utilization rates. If operating and maintenance problems begin to proliferate, production levels will fall. A substantial reduction in capacity utilization would reduce stocks and put additional upward pressure on prices.

Gross imports of crude oil were equivalent to 45 percent of the crude oil input to domestic refineries during the 1989-90 heating season. The equivalent of 43 percent of crude inputs would be imported during this coming heating season. It is possible, however, that crude oil imports might be constrained by the availability of supply, if increases in overseas crude oil production are insufficient to offset the loss of Iraqi and Kuwait supplies. In that case, domestic inventories would be drawn down further, and additional price pressure would build in domestic markets. An estimated 4.3 million barrels per day of crude oil was lost to the world market as a result of

trade sanctions against Iraq—more than in either the 1973 or 1979 oil disruption.

The second most important source of supply, net imports, would provide 246,000 barrels per day of the total distillate fuel oil consumed during the upcoming heating season, if world oil prices remain about \$30. This would be 8 percent of the total consumption. During the 1989-90 heating season, imports supplied 7 percent of consumption. During this past heating season, Venezuela, the Virgin Islands, and Canada were the principal sources of imports. For the first 7 months of 1990 net imports were 237,000 barrels per day, down 2 percent from 1989.

It is possible, however, that cold weather in Europe or insufficient foreign crude supplies could constrain distillate fuel oil imports. Cold weather in Europe would make distillate fuel oil more valuable in Europe than the United States, and tend to draw imports toward Europe and away from the United States. Insufficient foreign crude supplies would simply mean reduced distillate fuel oil production. Both conditions would reduce domestic inventories and increase upward pressure on prices.

Finally, by December 31, 1990, U.S. stocks would reach 123 million barrels, 16 percent above 1989's ending value of 106 million barrels. By March 31, 1991, stocks would fall to 88 million barrels, compared to 100 million barrels at the end of March 1990. Thus, stocks would finish the heating season above the Minimum Operating Inventory, the level at which local supply disruptions can be expected. Stock drawdowns would provide 7 percent of the distillate fuel oil consumed in the 1990-91 season. During the previous heating season stock drawdowns supplied 4 percent of consumption.

At the end of August 1990, U.S. inventories of distillate fuel oil were about 130 million barrels, some 12 percent above the end of August 1989. Distillate fuel oil stocks on the East Coast—which consumes more distillate than any other area—were at about 56 million barrels, up 16 percent from last year.⁴⁹ Although increased domestic production is the key factor in increased distillate fuel oil inventories, the rest of the difference in inventories between August 1989 and August 1990 is attributable to lower consumption.

Propane

Although EIA does not project propane supply and disposition, current inventory levels and prices of propane fuel indicate the possibility of significant problems during the forthcoming winter. Propane inventory levels have never fully recovered from last winter's sudden cold spell in December and remain substantially below even last year. Inventories of propane at the end of August 1990 were at a level of 53 million barrels compared to 60 million barrels a year earlier (Table 6). Propane inventories in August 1990 were the lowest for that month in 20 years.

⁴⁸ Energy Information Administration, *Short-Term Energy Outlook*, DOE/EIA-0202 (89/4Q) (Washington, DC, October 1989), p. 39.

⁴⁹ Energy Information Administration, *Weekly Petroleum Status Report*, DOE/EIA-0208 (90-38) (Washington, DC, September 7, 1990), p. 10.

More than three-quarters the decline in stocks was on the Gulf Coast. At the end of August propane stocks in PADD III were 27.9 million barrels, 5.7 million barrels or 17 percent below the end of August 1989. In the Midwest, the region most affected by propane shortages last winter, primary propane stocks were 20.9 million barrels at the end of August, 0.4 million barrels above the end of August 1989. East Coast stocks at the end of August were 31 percent lower than last year.

Although primary propane stocks are lower this year than last year, through the end of June production was essentially the same, imports were up, and demand was down. This leads to the conclusion that stocks held at secondary (distributor) and tertiary (end-user) facilities may well be above normal levels. The buildup of propane stocks may be held by end-users in petrochemical plants. It is estimated that at least 10 to 20 million barrels of propane have moved into end-user stocks since the beginning of spring.

Current wholesale prices of propane are twice the level of the same time last year. These prices reflect the current high prices of crude oil and will remain high as long as crude oil remains high in price. Additionally, the high crude oil prices have resulted in even higher prices for ethane, butane, and naphtha, traditionally the competing products to propane for use as petrochemical feedstocks. Petrochemical companies, therefore, are continuing to purchase propane for feedstocks use later into the fall than usual. This presence will result in a continued diversion of some propane to the petrochemical industry and provide significant price competition to the heating fuels market thus keeping retail propane prices high probably throughout the season.

Should the forthcoming winter be anything other than normal or warmer than normal, current and projected inventory levels could prove inadequate and lead to shortages and significant price increases.

Additional Factors Affecting the Outlook

Although this outlook takes most factors affecting distillate fuel oil demand, supplies, and prices into account, no model can incorporate every facet of the market. Three factors not considered in constructing the model on which this forecast is based are: competition with natural gas pipelines in the Northeast, temporary effects of the 1989 price spike, and hedging of heating oil prices.

Natural Gas Pipelines

Greater availability of Canadian natural gas might slightly reduce distillate fuel oil consumption in the Northeast next winter. Subject to approval by the Canadian Government, Phase II of the Niagara Import Point projects has the potential of reducing distillate fuel oil consumption in the Northeast by

8 million barrels, or about 2.9 percent of annual consumption.⁵⁰

The Northeast United States, including New England and New York, is the last major area of the country where distillate fuel oil has a significant share of the market for heating fuels.⁵¹ Natural gas pipelines, which until now have often brought gas from faraway Texas, have not yet fully penetrated the Northeast. In the past few years, however, a series of pipelines have been proposed that will bring natural gas to New England from the western Canadian province of Alberta. Although natural gas in New England is generally more expensive than distillate fuel oil, promoters of the pipeline projects believe they can supply "new" gas at competitive prices.⁵²

On May 2, 1990, the Federal Energy Regulatory Commission issued a certificate approving construction of the second phase of the "Niagara Import Point" projects. Phase II will provide capacity to import 206.5 million cubic feet of natural gas per day, including 81.5 million cubic feet per day for electricity cogeneration projects presently under construction. The gas would enter the United States near Niagara Falls and be transported to Maryland, Massachusetts, New Jersey, New York, and Rhode Island. Tennessee Gas Pipeline Co., National Fuel Gas Supply Corp., CNG Transmission Corp., and Texas Eastern Transmission Corp. are sponsoring the project. Completion of the project is expected in November 1990.⁵³

Price Spike Effects

The sudden December 1989 price increase for distillate fuel oil will also have an effect—probably temporary—on conversion from oil heat to other fuels. While many utility, industrial, and commercial users have the ability to burn more than one kind of heating fuel and can make a choice based on price, residential consumers are usually tied to only one fuel. A survey conducted in late February for the East Coast Energy Council, an organization promoting oil heat, found that the percentage of customers who were considering converting from oil to natural gas went from 8 percent in August 1989 to 16 percent in February. The percentage of customers who were definitely switching went from 2 to 4 percent. In addition, conversions appear to be running 10 to 15 percent above previous years.⁵⁴

⁵⁰ Calculated from Foster Natural Gas Report, "FERC Certificates NIP Projects Despite Absence of Long-Term Export Licenses: Trabandt Outlines Rate Levelization Concept for Imported Gas" (May 10, 1990), p. 8, and Energy Information Administration, *State Energy Data Report*, DOE/EIA-0214(88) (Washington, DC, April 1990).

⁵¹ Energy Information Administration, *Housing Characteristics 1987*, DOE/EIA-0314(87) (Washington, DC, May 1989), pp. 45-47.

⁵² Calculated from Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(90-03) (Washington, DC, June 1990), pp. 99, 107, 124, 125; "Conditional Order Granting Authorization to Import Natural Gas From Canada and Granting Intervention," DOE/EI Opinion and Order No. 368 (January 11, 1990).

⁵³ "FERC Certificates NIP Projects Despite Absence of Long-Term Export Licenses: Trabandt Outlines Rate Levelization Concept for Imported Gas," *Foster Natural Gas Report* (May 10, 1990), p. 8, and 51 FERC P61,113 (May 2, 1990).

⁵⁴ "Marketer Forum '90," *Fueloil & Oil Heat* (June 1990), p. 38ff.

Hedging

A third factor that the outlook does not take into account is hedging activity. Heating oil consumers responded to December 1989's sharp price increases by searching for ways to protect themselves against a recurrence of such events. So, for the coming heating season some fuel oil dealers offered heating oil at a fixed price, while others offered their customers price ceilings.⁵⁵

Although some fuel oil dealers are using traditional methods to stabilize prices, an increasing number are using hedging tools. Traditionally, fuel oil dealers would hold down prices by purchasing oil relatively cheaply during the summer, storing it, and selling it at a fixed price during the winter. However, the high cost of oil storage has created incentives for dealers to purchase futures and options in the commodity markets. As defined by commodity traders, "hedging" is the use of futures or forward contracts in managing the risk associated with commodity ownership in order to maximize profits.⁵⁶

During the January 1990 U.S. Senate hearings on heating oil price increases, at least two witnesses recommended that heating oil dealers and low income energy assistance programs purchase options or futures to protect their customers and clients from price increases. The National Association of Attorneys General recommended that Congress study whether low income energy assistance programs should be allowed to purchase futures contracts to lock in price and supply.⁵⁷ Favorable articles about futures have also appeared in the trade press.⁵⁸

Three of the leading marketers of price "insurance," Global Petroleum Corp., Phibro Energy, Inc. and Northeast Petroleum Corp., report sharply increased interest in their products and some increased sales. Global's "Price Assurance Contract" offers a price cap, if prices increase, but requires dealers to pay higher-than-market prices, if prices fall. Phibro's "Energy Price Indexed Caps" offer a price ceiling, if prices increase. Northeast's program tailors contracts to the amount of risk the buyer wants to assume. All three programs are based on the use of options, or some combination of futures and options.⁵⁹

Unlike stockpiling, the use of hedging offers fuel oil dealers some protection against falling prices. In addition, it offers aggressive oil dealers a way to increase their market share.

⁵⁵ Telephone discussion with representative of New York State Energy Office, June 12, 1990.

⁵⁶ Philip K. Verleger, Jr., "The Role and Impact of Commodity Market Institutions in the Determination of Oil Prices," *Annual Review of Energy* (Palo Alto, CA, 1988), p. 374. ⁵⁷ Philip K. Verleger, Jr., and Rutherford Poats, "Home Heating Fuels Crisis," hearings before the Senate Governmental Affairs Committee, January 16, 1990; National Association of Attorneys General, *Preliminary Report on the December 1989 Energy Crisis* (March 18, 1990), p. 17.

⁵⁸ See for example: J. Richard Shaner, "For Some Fuel Oil Dealers, Price Spikes Are Bonanzas," *National Petroleum News* (April 1990), pp. 16-17 and "Price drop leads to flurry of market-related deals," *Oil Marketing Bulletin*, (Bethesda, MD), April 16, 1990).

⁵⁹ Telephone discussions with company representatives June 11 and June 14, 1990.

However, traditionally, consumers have been unwilling to lock in prices at the beginning of the heating season, because prices might fall during the season. Dealers, too, have been unwilling to take on the complexities of commodity markets or construction of new storage facilities. Futures advocates also say that dealers benefit from existing price volatility, because they are able to fatten their profit margins when wholesale prices are falling.⁶⁰

Although hedging offers an incentive to reduce inventories, hedging's effect on prices is less clear. Advocates of futures argue that they stabilize prices. If prices rise, futures or options would tend to reduce consumer prices; if prices fall, futures would tend to raise consumer prices. Futures advocates also argue that they tend to stabilize prices by spreading out fuel oil purchases over a longer time period.⁶¹

However, consumer groups argue that the reduced stocks brought on by the futures market tend to exaggerate price increases and decreases for those dealers and consumers not participating in the hedging process. They say that this increased volatility may end up costing consumers money.⁶¹

⁶⁰ Philip K. Verleger, Jr., "Home Heating Fuels Crisis," hearings before the Senate Governmental Affairs Committee, January 16, 1990; telephone discussion with representative of New York Mercantile Exchange, June 12, 1990.

⁶¹ Telephone discussion with representative of Northeast Petroleum, June 14, 1990.

⁶² Joan Claybrook, "Heating Oil, Propane, and Diesel Fuel Price Increases," hearing before Subcommittee on Energy and Power of House Committee on Energy and Commerce, January 9, 1990.

FOR ADDITIONAL OFFICIAL INFORMATION:

Weekly Petroleum Status Report: Weekly estimates of distillate: fuel oil consumption, production, stocks, and imports. Weekly spot distillate fuel oil prices; monthly residential distillate heating oil prices. Publication lags estimates by 6 days.

Petroleum Supply Monthly: Monthly data on distillate fuel oil and propane consumption, production, stocks, and imports. Publication lags data by about 60 days.

Petroleum Marketing Monthly: Monthly data on wholesale and retail propane, heating oil, and diesel fuel prices. Publication lags data by about 70 days.

Short-Term Energy Outlook: Quarterly projections of distillate fuel oil consumption, production, stocks, imports, and heating oil and diesel prices. Publication normally lags the beginning of the quarter by 30 days.

Petroleum Marketing Annual: Annual data on distillate fuel oil sales by end use by state. Publication lags data by about 10 months.

Electronic Publication System: Data from the above publications and others in standard ASCII format. Free public access by dialing (202) 586-8658 at 3(X) to 24(X) baud. Weekly estimates available at 5 p.m. Wednesday; monthly data available on the 20th of the month.

National Energy Information Center: Distributes above publications. Answers energy-related questions, including questions about propane and distillate fuel oil. Phone (202) 586-8800 between 8 a.m. and 5 p.m., Monday through Friday.

Highlights

Highlights

Despite continued sluggish growth in the economy and industrial production, total petroleum product demand (measured as product supplied) in July 1990 was comparatively strong for this time of year. Demand of 16.9 million barrels per day was slightly below the June 1990 level, but was higher than levels for July 1989 and 1988 (Table H1). For the year to date, demand declined 1 percent from the comparable period of 1989, reflecting the slowdown in gross national product growth this year.

Gross imports increased in July, as an increase in crude oil imports more than offset a decline in product imports. Net imports, including the Strategic Petroleum Reserve (SPR), represented 46 percent of total product supplied during the first 7 months of 1990. Net imports accounted for 42 percent of demand during the same period in 1989.

Information about the effects of the Persian Gulf situation on world oil markets, and the oil spill legislation begin on page xxxii.

Other July 1990 highlights include:

- Year-to-date demand for motor gasoline remained below comparable 1989 and 1988 levels. Finished motor gasoline stocks increased in July, but were well below the normal level for this time of year.
- Unusually high refinery production of distillate fuel oil helped to keep the stock buildup for the winter heating season well ahead of 1989. Ending stocks were at the highest July level since 1983.
- Higher residual fuel oil spot prices in July had a moderating influence on demand, as some utilities equipped with dual-fuel boilers switched to natural gas. Ending stocks remained high, and were at the highest level for July since 1984.
- Stocks of liquefied petroleum gases (LPGs) increased in July, but were well below the year-earlier level, as

New legislation requiring double hulls for all new tankers and establishing a 15-year phase-out schedule for most single-hull tankers and barges was signed into law in August. About 90 percent of U.S. petroleum imports arrive by tanker.

Table H1. Petroleum Supply Summary
(Million Barrels per Day, Except Where Noted)

Category	1990			1989	January — July	
	July	June	Difference ^a	July	1990	1989
Products Supplied	16.9	17.1	-0.3	16.5	16.9	17.2
Finished Motor Gasoline	7.4	7.5	-0.1	7.3	7.2	7.3
Distillate Fuel Oil	2.7	2.9	-0.3	2.6	3.0	3.1
Residual Fuel Oil	1.3	1.4	-0.1	1.3	1.3	1.4
Liquefied Petroleum Gases	1.4	1.2	0.2	1.3	1.5	1.6
Other Petroleum Products ^b	4.1	4.1	(s)	3.9	3.9	3.7
Crude Oil	(s)	(s)	(s)	(s)	(s)	(s)
Crude Oil Inputs	14.2	13.7	0.5	13.8	13.5	13.3
Operable Utilization Rate (percent)	92.6	89.4	3.2	88.9	87.8	86.0
Imports	8.9	8.7	0.2	8.4	8.5	8.0
Crude Oil	6.8	6.4	0.4	6.2	6.2	5.7
Strategic Petroleum Reserve	0.0	(s)	(s)	0.1	(s)	0.1
Other	6.8	6.4	0.4	6.1	6.2	5.6
Products	2.1	2.3	-0.2	2.2	2.3	2.3
Finished Motor Gasoline	0.4	0.4	(s)	0.4	0.4	0.4
Distillate Fuel Oil	0.2	0.3	(s)	0.3	0.3	0.3
Residual Fuel Oil	0.5	0.5	(s)	0.6	0.6	0.7
Liquefied Petroleum Gases	0.2	0.2	(s)	0.2	0.2	0.2
Other Petroleum Products ^b	0.8	0.9	-0.1	0.7	0.8	0.8
Exports	0.7	0.8	-0.1	0.8	0.8	0.8
Crude Oil	0.1	0.1	(s)	0.1	0.1	0.2
Products	0.6	0.7	-0.1	0.7	0.7	0.7
Total Net Imports	8.2	7.9	0.3	7.6	7.7	7.2
Stock Change^c	0.9	0.4	0.4	1.3	0.6	0.2
Crude Oil	-0.2	0.1	-0.2	0.1	0.2	0.1
Products	1.0	0.3	0.7	1.2	0.4	0.2
Total Stocks at End of Period (million barrels)	1,711	1,884	27	1,649	--	--
Crude Oil	966	971	-5	908	--	--
Strategic Petroleum Reserve	587	587	0	574	--	--
Other	380	384	-5	333	--	--
Products	744	713	32	741	--	--
Finished Motor Gasoline	180	176	5	190	--	--
Distillate Fuel Oil	125	109	16	115	--	--
Residual Fuel Oil	49	47	2	43	--	--
Liquefied Petroleum Gases	112	104	8	116	--	--
Other Petroleum Products ^b	278	277	1	276	--	--

^a Difference is equal to volume for current month minus volume for previous month.

^b Includes pentanes plus, other hydrocarbons and alcohol, unfinished oils, gasoline blending components, and all finished petroleum products except finished motor gasoline, distillate fuel oil, residual fuel oil, and liquefied petroleum gases.

^c A negative number indicates a decrease in stocks and a positive number indicates an increase.

(s) = Less than 0.05 million barrels per day, or less than 0.05 percent, or less than 0.5 million barrels.

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

Source: Energy Information Administration, appropriate issues of *Petroleum Supply Monthly*, see Explanatory Note 5.

propane stocks continued to be lower than normal for this time of year. Demand for propane increased in July.

- Although crude oil stocks (excluding the SPR) declined slightly in July, stocks were at the highest level for July since 1981.
- Continued emphasis on summer motor gasoline production led to a further increase in the operable refinery utilization rate.

Motor Gasoline

Demand for motor gasoline edged downward during July to 7.4 million barrels per day. This was slightly above the July 1989 level. Year-to-date demand for motor gasoline was 1 percent below the level for the comparable period of 1989, even though highway travel increased moderately.¹ One reason may be a slight increase in gasoline mileage resulting from the effects of lower summer gasoline volatility. Lower volatility gasolines have a slightly higher energy level.²

Stocks of finished motor gasoline rose slightly to 180 million barrels in July. This was well below the level at the end of July 1989, but was close to the July 1988 level. Except for July 1988 and this year, finished motor gasoline stocks at the end of July have been around 190 million barrels in recent years.

Distillate Fuel Oil

The stock buildup of distillate fuel oil in preparation for the winter heating season was well ahead of 1989 in July. Stocks at the end of July of 125 million barrels represented the highest July level since 1983. Refinery production of distillate fuel oil of 3.0 million barrels per day was the highest July level since the late 1970's, and helped to push stocks well above the year-earlier level.

Residual Fuel Oil

Higher spot prices for residual fuel oil in July had a moderating influence on demand, despite seasonally hot weather which contributed to increased generation of electricity. With the firming of residual fuel oil prices, some utilities with fuel-switching capability went back to burning natural gas. Residual fuel oil demand declined from the unusually high June level to 1.3 million barrels per day. Year-to-date demand was 7 percent below the level for the comparable period in 1989.

¹ U.S. Department of Transportation, Federal Highway Administration, *Traffic Volume Trends*, June 1990, Table 2.

² "Reduced Gasoline Volatility Levels Putting Damper on Demand," *The Oil Daily*, August 3, 1990, p. 5.

The decline in demand contributed to the increase in stocks in July to 49 million barrels. This was the highest level for the end of July since 1984, and well above the level for July 1989.

Liquefied Petroleum Gases

Stocks of LPGs increased substantially in July to 112 million barrels, but were well below the unusually high level of a year earlier. Butane stocks hit a record high for July of 33 million barrels, as refiners began to build up inventories for the winter gasoline blending period.³ Propane stocks increased somewhat from the June 1990 level to 49 million barrels, but remained substantially below year-earlier levels, especially in PAD Districts II and III. Increased demand for propane in July, resulting from continued early purchasing by consumers seeking to avoid a possible supply shortage during the coming winter, contributed to the below-normal stock level for propane.

Crude Oil

The world price of crude oil increased steadily after hitting the 1990 low price of \$13.09 per barrel on June 22, 1990. By the end of July, however, the world price was still under \$17.00 per barrel (Figure H1). Crude oil at these prices stimulated imports (excluding the SPR), which increased in July to 6.8 million barrels per day. Imports were the highest since October 1979. For the first 7 months of 1990, imports of crude oil were 11 percent above the level for the same period of 1989.

³ *Pace Petrochemical Service*, September 1990, p. 39.

Figure H1. World Price of Crude Oil
(Dollars Per Barrel)

Sources: Energy Information Administration, *Weekly Petroleum Status Report*, Table 12.

Stocks of crude oil (excluding the SPR) declined slightly in July to 380 million barrels, but were at the highest level for July since 1981.

Refinery Utilization

The operable refinery utilization rate increased in July to 92.6 percent, as high summer motor gasoline production continued. Refinery utilization in July was well above the July 1989 refinery utilization rate of 88.9 percent. Gross inputs (crude and other oils) to atmospheric crude oil distillation units increased to 14.4 million barrels per day. The operating utilization rate, which reflects refinery utilization if all idle capacity is removed, increased to 95.8 percent in July 1990 (Table H2).

News Highlights

Persian Gulf Situation and Petroleum Markets

The sharp rise in oil prices since the Iraqi invasion of Kuwait on August 2, 1990, and the United Nations embargo are continuing to affect petroleum markets worldwide.

Countries that were trading partners with Iraq and Kuwait, as well as countries that relied on them for oil or for jobs, are feeling the strain. Production increases by other producing countries have begun filling the gap caused by the loss of approximately 4.3 million barrels per day of Iraqi and Kuwaiti oil. Additional crude oil production by these countries is expected to reach 3.3 million barrels per day by the end of the year.

Possible production increases in the United States could further offset the loss of crude oil supplies. Based on an assumed world oil price of \$30 per barrel, the Energy Information Administration (EIA) forecasts that an additional 220,000 barrels per day of crude oil will be produced domestically during the fourth quarter of 1990. In addition, the Department of Energy is involved in mediation of a dispute between Chevron Corporation and the State of California over the Point Arguello offshore oil field. The field, which lies 50 miles off the coast of California, is capable of producing 50,000 to 75,000 barrels of crude oil per day within a 6-month time frame, should the dispute be settled.

Effects on World Markets

In addition to problems caused directly by the loss of Iraqi and Kuwaiti crude oil on the world market, developing countries have felt further economic losses as a result of the current

Table H2. U.S. Refinery Inputs, Capacities and Utilization Rates: 1989-1990
(Thousand Barrels per Day, Except Where Noted)

Item	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
1989												
Gross Refinery Inputs	13,502	12,974	13,131	13,123	13,566	14,067	13,957	14,024	13,898	13,533	13,549	13,244
Operable Refinery Capacity	15,655	15,671	15,669	15,687	15,692	15,698	15,690	15,706	15,722	15,722	15,732	15,761
Idle Capacity ¹	643	707	738	743	683	575	602	632	759	775	626	644
Idle Three Months or Less	175	233	225	180	140	46	50	80	211	201	51	66
Idle More than Three Months	468	474	513	563	543	529	552	552	548	574	575	578
Operating Capacity ²	15,012	14,964	14,931	14,944	15,008	15,124	15,097	15,075	14,963	14,946	15,106	15,117
Utilization Rate (percent)												
Operable Capacity	86.2	82.8	83.8	83.7	86.5	89.6	88.9	89.3	88.4	86.1	86.1	84.0
Operating Capacity	89.9	86.7	87.9	87.8	90.4	93.0	92.4	93.0	92.9	90.6	89.7	87.6
1990												
Gross Refinery Inputs	13,628	13,653	13,047	13,234	13,570	13,886	14,397	NA	NA	NA	NA	NA
Operable Refinery Capacity	15,533	15,540	15,498	15,496	15,527	15,527	15,543	NA	NA	NA	NA	NA
Idle Capacity ¹	550	578	712	729	621	621	507	NA	NA	NA	NA	NA
Idle Three Months or Less	135	154	293	258	133	130	34	NA	NA	NA	NA	NA
Idle More than Three Months	415	424	419	471	488	491	473	NA	NA	NA	NA	NA
Operating Capacity ²	14,983	14,962	14,786	14,767	14,906	14,906	15,036	NA	NA	NA	NA	NA
Utilization Rate (percent)												
Operable Capacity	87.7	87.9	84.2	85.4	87.4	89.4	92.6	NA	NA	NA	NA	NA
Operating Capacity	91.0	91.3	88.2	89.6	91.0	93.2	95.8	NA	NA	NA	NA	NA

¹ Idle capacity is the component of operable capacity that is not in operation and not under active repair, but is capable of being placed in operation within 30 days; and capacity not in operation but is under active repair that can be completed within 90 days.

² Operating capacity equals the operable capacity less the total idle capacity.

NA= Not Available.

Sources: Energy Information Administration, *Petroleum Supply Monthly*, 1990 issues, Table 18; *Petroleum Supply Annual*, Volume 2, 1989, Table 16; Form EIA- 810, "Monthly Refinery Report."

Persian Gulf crisis. Many Asian and Middle Eastern countries such as India, Pakistan, Jordan, Egypt, and Turkey relied on the millions of dollars in income from thousands of countrymen working in Iraq or Kuwait.^{4,5} The jobs brought hard currency into these developing countries and contributed substantially to their economies. An additional loss to some of these countries was the elimination of major trading partnerships with Iraq or Kuwait. Other countries, including several African nations that have no alternative technology to replace oil, and the Philippines where the government subsidizes the price of oil to consumers, are facing economic hardship because of the sharp price rise.^{6,7}

Brazil, a major trading partner with Iraq before the invasion and, until this year, a principal supplier of motor gasoline to the United States, must find a replacement source for approximately 200,000 barrels per day of crude oil no longer available from Iraq and Kuwait. Iran and Venezuela have been negotiating with Brazil to replace the missing oil. Brazil was a major supplier of motor gasoline to the United States in recent years because the Brazilian government sponsored a program to replace motor gasoline in Brazil with alcohol-based fuel a few years ago. Brazil then increased its exports of motor gasoline, providing about 20 percent of U.S. gasoline imports in 1987 and 1988. The portion decreased somewhat in 1989 because problems with the alcohol fuel program in Brazil caused an increase in motor gasoline demand there. During the first 7 months of 1990, Brazil accounted for 6 percent of U.S. imports of motor gasoline.

OPEC Production Increases

Crude oil production by the Organization of Petroleum Exporting Countries (OPEC) declined in August from 23.2 million barrels per day to about 19.7 million barrels per day.⁸ Most of the decline was in Iraqi and Kuwaiti production, but an additional decline was due to a decision by the United Arab Emirates to keep its production within its newly raised quota (Figure H2). The effects of the August decline were starting to be felt in mid-September, because of the 6-week lag time for tanker delivery to many world ports from the Persian Gulf area.

On August 29, 1990, OPEC members passed a resolution allowing member countries with excess production capacity to produce above their quotas to help fill the shortfall in production from Kuwait and Iraq. Saudi Arabia, the United Arab Emirates, Nigeria, Libya, and Venezuela then increased

Figure H2. Major Changes In Crude Oil Production for Selected OPEC Countries (Million Barrels Per Day)

Source: *The Wall Street Journal*, September 10, 1990, p. A2.

production. OPEC production for September is expected to be about 21.9 million barrels per day, 2 million barrels per day above the August level, but well below the pre-invasion level in July of 23.2 million barrels per day.

The OPEC resolution to increase production was aimed at helping poor countries that have been hit hard by the Persian Gulf crisis. The additional supplies of OPEC crude oil will be directed toward the poor and developing nations first, because more affluent countries can draw on their own reserves or pay market prices for crude oil from other sources.

The replacement of Iraqi and Kuwaiti crude oil with oil from other sources poses problems for many countries, because they lack the funds to pay the higher prices, and the new supplies are often lower quality crude oils that are not compatible with the specifications of the countries' refineries.

Jet Fuel Supplies

Of the refined products, the international embargo of Iraqi and Kuwaiti oil has had its greatest impact so far on the price and availability of jet fuel in the world. Jet fuel supplies from Saudi Arabia were diverted from foreign markets in late August in order to accommodate the fuel needs for the military buildup there, and supplies were cut off from Kuwait, which had become a major supplier of jet fuel for commercial and military use.

The sharp increase in jet fuel prices following the Iraq invasion of Kuwait prompted most of the world's airlines to seek fare increases of 7 to 8 percent on international flights, to

⁴ "India's Fragile Economy Hurt by Gulf Crisis," *The Washington Post*, September 13, 1990, pp. E1 and E3.

⁵ "World Bank, IMF Working on Plan to Aid Countries Hurt by Crisis," *The Washington Post*, September 13, 1990, p. E3.

⁶ "Expected Fuel Price Increases in the Philippines Threaten to Worsen Aquino's Crisis of Confidence," *The Wall Street Journal*, September 10, 1990, p. A9A.

⁷ "African Oil-Producers See Bonanza, But Other Nations Expect Hardships," *The Washington Post*, September 7, 1990, p. A25.

⁸ "OPEC Production Rises, but Reaching Pre-Crisis Levels Could Take Awhile," *The Wall Street Journal*, September 10, 1990, pp. A2 and A4.

go into effect on October 1, 1990.⁹ On August 30, U. S. domestic carriers imposed a fare increase of 5.3 percent. Fuel accounts for as much as 30 percent of an airline's operating costs and, with little capacity to store fuel as a hedge against possible price increases or supply disruptions, airlines were immediately affected by the price escalation.

The military buildup in Saudi Arabia has increased U.S. military demand for domestic supplies, for flights carrying troops, supplies, and equipment to Saudi Arabia. Military use of U.S. supplies of jet fuel had been declining before the invasion because of reductions in military operations that had recently occurred. Military use accounted for approximately 20 percent of U.S. jet fuel demand until this year, when reductions in military operations resulted in a decline to about 15 percent before the invasion on August 2.¹⁰

In addition to domestic supplies for U.S. military use, other countries provide jet fuel and other products to U.S. military bases around the world. Kuwait was the principal source for the U.S. military's aircraft fuel needs in the western Pacific region, which includes Japan and the Philippines. The inability of Kuwait to fulfill its contracts has required the military to look for other sources of supply.¹¹ The supply problem was compounded somewhat by a reduction in military inventories in recent months related to the reduced military operations.

Jet fuel represents about 70 percent of U.S. military petroleum use throughout the world; the rest is primarily distillate and residual fuel oil for use in ships. Direct peacetime U.S. military fuel use, including jet fuel and fuel oil, is about 500,000 barrels per day. The EIA estimates that U.S. military operations in the Persian Gulf added approximately 300,000 barrels per day to peacetime needs. The additional supplies are being provided by the United States, Europe, and Persian Gulf allies.

Primary stocks of jet fuel (naphtha- and kerosene-type) in the United States at the end of July 1990 were very high at 51 million barrels, compared with 47 million barrels at the end of July 1989. As of September 14, 1990, stocks were at 50 million barrels, slightly higher than the levels at the end of both August and September 1989.

⁹ "Fares to Rise On Foreign Flights," *The New York Times*, September 5, 1990, pp. D1 and D7.

¹⁰ U.S. Department of Defense, Defense Fuel, Supply Center, personal communication, July 23, 1990.

¹¹ "OPEC Approves Higher Output," *The Washington Post*, August 30, 1990, p. A33.

President Bush Signs Oil Spill Bill

On August 20, 1990, President Bush signed the Oil Pollution Liability and Compensation Act of 1990. The Act sets standards for tanker construction and crew certification, outlines Federal oil spill response procedures, and authorizes multi-agency research and development. It also sets liability for tankers, offshore and onshore facilities, and deepwater ports. It establishes a fee of 5 cents per barrel on oil, which will go into a \$1 billion Federal oil spill cleanup fund. The fund will be used to pay claims in excess of the spiller's maximum liability, or when the spiller is unknown. The Act also forbids oil and gas development off the coast of North Carolina.

The new legislation requires double hulls for all new tankers, and establishes a 15-year phase-out schedule for most single-hulled tankers and barges.

The recently passed oil spill legislation was before Congress several times over the past 15 years in one form or another. A major impediment to the passage was a difference between the House of Representatives, which supported international spill liability agreements that limited liability, and the Senate, which did not want to limit the rights of States to impose unlimited liability. The Act allows for unlimited liability in cases where gross negligence or willful misconduct is involved, and does not preclude States from imposing unlimited liability. In 17 of the 24 coastal States, there are now regulations that impose unlimited liability on tanker owners for oil spills.

The State laws have prompted several international shippers to stop delivering oil to U.S. mainland ports because of the substantial financial risk involved. The British Royal Dutch/Shell Group, Elf Aquitaine of France, Petrofina SA of Belgium, A.P. Moller of Denmark, and Teekay Shipping of the United States have all announced that they will deliver oil by tanker in the United States only to the Louisiana Offshore Oil Port (LOOP). The LOOP is a terminal located off the coast of Louisiana.

In 1989, ships owned by these companies delivered about 6 percent of U.S. petroleum imports. At least one-third of the 464,000 barrels per day known to be delivered to U.S. ports by these companies in 1989 was offloaded at the LOOP.¹² About 90 percent of U.S. petroleum imports arrive by tanker.

¹² *Oil and Gas Journal*, July 30, 1990, p. 25.

Summary Statistics

Incinerators such as this one at a chemical installation turn toxic chemicals into water vapor and other harmless elements.

Table S1. Crude Oil^a and Petroleum Products Overview

		Field Production			Stock Change ^b			Ending Stocks ^c
		Total Domestic ^d	Crude Oil	Natural Gas Plant Liquids	Crude Oil ^e	Petroleum Products	Petroleum Products Supplied	Crude Oil ^a and Petroleum Products
		Thousand Barrels per Day						Million Barrels
1973	Average	10,975	9,208	1,738	-11	146	17,308	1,008
1974	Average	10,498	8,774	1,688	62	117	16,883	^h 1,074
1975	Average	10,048	8,375	1,633	^h 17	^h 15	16,322	1,193
1976	Average	9,774	8,132	1,603	39	-96	17,481	1,112
1977	Average	9,913	8,245	1,618	170	378	18,431	1,312
1978	Average	10,328	8,707	1,587	78	-172	18,847	1,278
1979	Average	10,179	8,552	1,584	148	25	18,513	1,341
1980	Average	10,214	8,597	1,573	98	42	17,056	^h 1,392
1981	Average	10,230	8,572	1,609	^h 290	^h -130	16,058	1,484
1982	Average	10,252	8,649	1,550	136	-283	15,296	^h 1,430
1983	Average	10,299	8,688	1,559	^h 214	^h -234	15,231	1,454
1984	Average	10,554	8,879	1,630	199	81	15,726	1,550
1985	Average	10,636	8,971	1,609	50	-153	16,726	1,819
1986	Average	10,289	8,680	1,551	78	124	16,281	1,593
1987	Average	10,008	8,349	1,595	128	-87	16,865	1,607
1988	January	9,876	8,250	1,579	-43	-294	17,403	1,597
	February	10,018	8,374	1,605	133	-868	17,760	1,576
	March	10,071	8,374	1,636	219	-748	17,612	1,559
	April	9,946	8,288	1,618	190	445	16,561	1,578
	May	9,899	8,229	1,627	96	1,048	16,197	1,614
	June	9,833	8,170	1,616	43	-109	17,059	1,612
	July	9,713	8,040	1,618	-261	819	16,695	1,620
	August	9,762	8,079	1,616	-488	307	17,482	1,624
	September	9,575	7,895	1,621	-83	245	17,072	1,628
	October	9,737	8,023	1,661	399	-333	17,580	1,630
	November	9,751	8,023	1,666	3	25	17,620	1,631
	December	9,641	7,942	1,634	-188	-911	18,365	1,597
	Average	9,818	8,140	1,625	1	-29	17,283	--
1989	January	9,678	7,937	1,664	179	563	17,269	1,620
	February	9,441	7,788	1,607	47	-733	17,920	1,601
	March	9,284	7,575	1,650	-127	-924	17,989	1,568
	April	9,501	7,772	1,674	494	413	16,624	1,596
	May	9,498	7,816	1,620	271	598	16,546	1,623
	June	9,188	7,624	1,507	-434	-64	17,497	1,608
	July	9,055	7,444	1,541	148	1,182	16,453	1,649
	August	9,106	7,544	1,504	283	-104	17,360	1,654
	September	9,096	7,548	1,480	-144	577	16,795	1,667
	October	8,983	7,453	1,478	73	-378	17,304	1,658
	November	9,084	7,536	1,483	541	-367	17,311	1,663
	December	8,734	7,337	1,343	-302	-2,335	18,858	1,581
	Average	9,219	7,613	1,548	86	-120	17,325	--
1990	January	^E 9,113	^E 7,522	1,525	377	1,189	16,968	1,632
	February	^E 9,093	^E 7,465	1,558	-316	577	17,024	1,639
	March	^E 8,986	^E 7,394	1,519	1,030	-883	17,083	1,643
	April	^E 8,883	^E 7,331	1,481	-94	-25	16,666	1,640
	May	^E 8,838	^E 7,259	1,499	501	505	16,843	1,671
	June	^E 8,602	^E 7,076	1,453	75	348	17,112	1,684
	July*	^{RE} 8,694	^{RE} 7,144	^R 1,480	^R -152	^R 1,019	^R 16,856	^R 1,711
	August**	^{PE} 8,697	^{PE} 7,150	^E 1,477	^E -227	^E 149	^E 17,849	^E 1,704
	8-Mo. Average	^{PE} 8,881	^{PE} 7,291	^E 1,498	^E 156	^E 359	^E 17,052	--
1989	8-Mo. Average	9,343	7,686	1,596	109	126	17,200	--
1988	8-Mo. Average	9,889	8,224	1,614	-16	82	17,093	--

^a Includes lease condensate.^b A negative number indicates a decrease in stocks and a positive number indicates an increase.^c Stocks are totals as of end of period.^d Includes crude oil, natural gas plant liquids, other hydrocarbons, and alcohol.^e Includes stocks located in the Strategic Petroleum Reserve.^f Includes crude oil for storage in the Strategic Petroleum Reserve.^g Net Imports equal Imports minus Exports.^h In January 1975, 1981, and 1983, numerous respondents were added to surveys affecting stocks reported and stock change calculations.

See Explanatory Note 11.

Footnotes continued on following page

Table S1. Crude Oil^a and Petroleum Products Overview (Continued)

		Imports			Exports			
		Total	Crude Oil ^f	Petroleum Products	Total	Crude Oil	Petroleum Products	Net Imports ^g
Thousand Barrels per Day								
1973	Average	6,256	3,244	3,012	231	2	229	6,025
1974	Average	6,112	3,477	2,635	221	3	218	5,892
1975	Average	6,056	4,105	1,951	209	6	204	5,846
1976	Average	7,313	5,287	2,026	223	8	215	7,090
1977	Average	8,807	6,615	2,193	243	50	193	8,555
1978	Average	8,363	6,366	2,008	362	158	204	8,002
1979	Average	8,456	6,519	1,937	472	235	237	7,984
1980	Average	6,909	5,263	1,646	544	287	258	6,365
1981	Average	5,996	4,396	1,599	595	228	367	5,401
1982	Average	5,113	3,488	1,625	815	236	579	4,298
1983	Average	5,051	3,329	1,722	739	164	575	4,312
1984	Average	5,437	3,428	2,011	722	181	541	4,715
1985	Average	5,067	3,201	1,866	781	204	577	4,286
1986	Average	6,224	4,178	2,045	785	154	631	5,439
1987	Average	6,678	4,674	2,004	764	151	613	5,914
1988	January	7,181	4,662	2,519	885	206	679	6,296
	February	7,256	4,650	2,605	864	146	718	6,392
	March	6,944	4,868	2,076	834	213	622	6,110
	April	7,270	5,167	2,103	676	114	562	6,594
	May	7,469	5,339	2,130	814	138	676	6,655
	June	7,239	5,322	1,917	938	138	800	6,301
	July	7,297	5,100	2,197	826	186	640	6,471
	August	7,386	5,089	2,296	814	152	661	6,572
	September	7,506	5,212	2,294	673	119	554	6,833
	October	7,830	5,551	2,279	732	166	566	7,098
	November	7,714	5,070	2,644	717	148	569	6,997
	December	7,727	5,230	2,497	1,008	129	879	6,719
	Average	7,402	5,107	2,295	815	155	661	6,587
1989	January	8,255	5,661	2,594	761	137	624	7,494
	February	8,032	5,305	2,727	875	208	666	7,157
	March	7,456	5,035	2,421	860	156	704	6,596
	April	8,078	5,750	2,328	810	139	670	7,268
	May	7,778	5,729	2,049	791	131	661	6,986
	June	7,977	5,976	2,002	975	243	732	7,002
	July	8,369	6,214	2,155	780	69	711	7,589
	August	8,560	6,565	1,995	967	162	805	7,593
	September	8,002	6,028	1,975	655	32	623	7,347
	October	8,301	6,187	2,115	791	61	730	7,511
	November	8,341	6,171	2,170	975	120	855	7,366
	December	7,579	5,463	2,116	1,067	247	821	6,512
	Average	8,061	5,843	2,217	859	142	717	7,202
1990	January	9,147	6,206	2,941	710	132	578	8,437
	February	8,306	5,858	2,447	822	102	720	7,483
	March	7,925	6,125	1,800	881	133	748	7,045
	April	7,758	5,740	2,018	761	112	649	6,997
	May	8,738	6,438	2,300	690	112	578	8,048
	June	8,690	6,413	2,276	804	88	715	7,886
	July*	R 8,893	R 6,812	R 2,081	R 696	R 89	R 606	R 8,197
	August**	E 8,897	E 6,717	E 2,180	E 745	E 100	E 644	E 8,152
	8-Mo. Average	E 8,550	E 6,296	E 2,254	E 763	E 109	E 654	E 7,787
1989	8-Mo. Average	8,064	5,785	2,279	852	155	697	7,212
1988	8-Mo. Average	7,255	5,026	2,229	831	162	669	6,424

Footnotes continued.

R = Revised data. (s) = Less than 500 barrels per day. E = Estimated. PE = Preliminary estimate. RE = Revised estimate.

* See Explanatory Note 5.

** Italics denote estimates based upon preliminary data. See Explanatory Note 4.

Notes: • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

Source: See the last page of this section.

Figure S1. Petroleum Overview

(Thousand Barrels per Day)

Legend:
 Petroleum Products Supplied
 Refinery Production
 Net Petroleum Products Imports

Figure S2. Petroleum Products Supplied

(Thousand Barrels per Day)

Legend:
 Motor Gasoline
 Distillate Fuel Oil
 Residual Fuel Oil
 Liquefied Petroleum Gases

Figure S3. Crude Oil Supply and Disposition

(Thousand Barrels per Day)

Legend:
 Refinery Inputs
 Domestic Crude Oil Production
 Net Imports (excludes SPR)

Figure S4. Crude Oil Ending Stocks

(Million Barrels)

Legend:
 Other Primary
 SPR
 Average Stock Range (excludes SPR)
 (See Explanatory Note 6.)

Table S2. Crude Oil^a Supply and Disposition

		Field Production			Imports			Disposition	
		Total Domestic	Alaskan	Total	SPP ^d	Other	Unaccounted for Crude Oil ^e	Crude Used Directly ^f	Crude Losses
Thousand Barrels per Day									
1973	Average	9,208	198	9,244	--	3,244	3	-19	13
1974	Average	8,774	193	3,477	--	3,477	-25	-15	13
1975	Average	8,378	191	4,108	--	4,108	17	-17	13
1976	Average	8,132	173	8,287	--	8,287	77	-18	15
1977	Average	8,245	484	8,815	21	8,594	-8	-14	16
1978	Average	8,707	1,229	8,356	162	8,195	-57	-14	16
1979	Average	8,552	1,401	8,319	67	8,452	-11	-13	16
1980	Average	8,597	1,817	8,203	44	8,219	34	-13	15
1981	Average	8,572	1,809	4,398	258	4,141	83	-58	5
1982	Average	8,649	1,896	3,488	185	3,323	71	-59	3
1983	Average	8,688	1,714	3,329	234	3,098	114	--	2
1984	Average	8,879	1,722	3,428	107	3,229	185	--	2
1985	Average	8,971	1,825	3,201	118	3,083	14 ^g	--	1
1986	Average	8,680	1,867	4,178	48	4,130	1 ^h	--	(5)
1987	Average	8,349	1,962	4,674	73	4,601	14 ^h	--	(5)
1988	January	8,250	1,999	4,602	67	4,595	218	--	(5)
	February	8,374	2,070	4,850	49	4,601	-50	--	(5)
	March	8,374	2,086	4,868	23	4,845	258	--	(5)
	April	8,288	2,029	5,167	78	5,090	27	--	(5)
	May	8,229	2,016	5,339	22	5,317	125	--	(5)
	June	8,170	1,984	5,322	70	5,252	208	--	(5)
	July	8,040	1,980	5,100	42	5,058	432	--	1
	August	8,079	2,009	5,089	26	5,064	278	--	(5)
	September	7,895	2,019	5,212	84	5,128	228	--	(5)
	October	8,023	2,010	5,551	43	5,508	160	--	(5)
	November	8,023	2,027	5,070	89	4,981	258	--	(5)
	December	7,942	1,996	5,230	27	5,203	196	--	(5)
	Average	8,140	2,017	5,107	51	5,055	196	--	(5)
1989	January	7,937	1,958	5,661	65	5,596	94	--	(5)
	February	7,788	1,962	5,305	84	5,221	-28	--	(5)
	March	7,575	1,886	5,035	75	4,960	426	--	(5)
	April	7,772	1,890	5,750	59	5,690	91	--	(5)
	May	7,816	1,973	5,729	77	5,652	280	--	(5)
	June	7,824	1,801	5,976	55	5,920	135	--	(5)
	July	7,444	1,725	6,214	75	6,139	426	--	(5)
	August	7,544	1,870	6,565	32	6,533	213	--	(5)
	September	7,548	1,875	6,028	59	5,969	121	--	1
	October	7,453	1,877	6,187	37	6,149	-125	--	0
	November	7,536	1,915	6,171	41	6,131	397	--	(5)
	December	7,337	1,904	5,463	12	5,452	343	--	(5)
	Average	7,813	1,874	5,843	58	5,787	200	--	(5)
1990	January	E 7,522	E 1,864	6,206	24	6,182	321	--	(5)
	February	E 7,465	E 1,834	5,858	12	5,847	-9	--	0
	March	E 7,394	E 1,819	6,125	44	6,081	544	--	0
	April	E 7,331	E 1,803	5,740	38	5,702	22	--	(5)
	May	E 7,259	E 1,766	6,438	89	6,349	335	--	0
	June	E 7,076	E 1,813	6,413	17	6,397	394	--	(5)
	July	PE 7,144	PE 1,687	R 6,812	0	R 6,812	R 220	--	R 0
	August	PE 7,150	PE 1,721	E 6,717	E 95	E 6,622	E 338	--	E (5)
	8-Mo. Average	PE 7,291	PE 1,783	E 6,296	E 40	E 6,256	E 275	--	E (5)
1989	8-Mo. Average	7,888	1,864	5,785	65	5,719	208	--	(5)
1988	8-Mo. Average	8,224	2,019	5,026	47	4,979	189	--	(5)

^a Includes lease condensate.^b Stocks are totals as of end of period.^c A negative number indicates a decrease in stocks and a positive number indicates an increase.^d Strategic Petroleum Reserve.^e Unaccounted for crude oil is a balancing item. Preliminary estimates of crude oil imports at the National level have historically understated final values by approximately 50 thousand barrels per day. This causes the preliminary values of unaccounted for crude oil to overstate the final values by the same amount.^f Beginning in January 1983, crude oil used directly as fuel is shown as product supplied.^g Stocks of Alaskan crude oil in transit were included beginning in January 1981. Stock changes are calculated using new basis stock levels.

See Explanatory Notes 11, 12, and 13.

Footnotes continued on following page.

Table S2. Crude Oil^a Supply and Disposition (Continued)

		Disposition					Ending Stocks ^b		
		Stock Change ^d		Refinery Inputs	Exports	Product Supplied ^f	Total	SPR ^d	Other Primary
		SPR ^d	Other						
		Thousand Barrels per Day					Million Barrels		
1970	Average	..	-11	12,431	2	..	242	..	242
1974	Average	..	62	12,133	3	..	268	..	268
1975	Average	..	17	12,442	6	..	271	..	271
1976	Average	..	39	13,416	6	..	288	..	288
1977	Average	20	150	14,602	80	..	348	7	340
1978	Average	183	-84	14,739	188	..	376	87	309
1979	Average	87	81	14,848	238	..	430	91	339
1980	Average	46	52	13,481	287	..	466	108	358
1981	Average	336	0 -16	12,170	228	..	594	230	363
1982	Average	174	-30	11,774	238	..	644	294	350
1983	Average	234	0 -20	11,688	164	68	723	379	344
1984	Average	195	4	12,044	181	64	796	481	345
1985	Average	117	-67	12,002	204	60	814	493	321
1986	Average	50	28	12,718	184	49	843	512	331
1987	Average	80	49	12,854	181	34	890	541	349
1988	January	67	-110	12,920	206	45	888	543	346
	February	49	84	12,644	146	52	892	544	348
	March	26	193	13,016	213	52	899	545	354
	April	77	112	13,135	114	42	905	547	357
	May	22	74	13,425	138	34	908	548	360
	June	70	-27	13,487	138	32	909	550	359
	July	42	-302	13,617	186	29	901	551	349
	August	26	-514	13,752	152	30	886	552	334
	September	84	-167	13,281	119	37	883	555	329
	October	43	356	13,126	166	42	898	556	340
	November	89	-86	13,156	148	44	896	559	337
	December	27	-215	13,381	129	44	890	560	330
	Average	52	-51	13,246	155	40	..	..	..
1989	January	65	115	13,330	137	47	895	562	334
	February	85	-38	12,765	208	48	897	564	333
	March	75	-202	12,863	155	45	893	566	327
	April	60	434	12,956	139	23	908	568	340
	May	77	194	13,405	131	19	916	570	346
	June	44	-478	13,805	243	20	903	572	331
	July	86	62	13,848	89	19	908	574	333
	August	32	251	13,861	162	17	916	575	341
	September	59	-203	13,791	32	18	912	577	335
	October	37	38	13,360	61	21	914	578	336
	November	41	500	13,420	120	25	930	579	351
	December	12	-313	13,165	247	33	921	580	341
	Average	56	30	13,401	142	28	..	..	..
1990	January	24	353	13,499	132	40	933	581	352
	February	12	-328	13,494	102	36	924	581	343
	March	44	986	12,876	133	24	958	582	374
	April	38	-132	13,051	112	24	953	583	370
	May	89	412	13,389	112	30	969	586	382
	June	16	59	13,690	88	29	971	587	384
	July*	R 0	R -152	R 14,208	R 89	R 31	R 968	R 587	R 380
	August**	E 95	E -322	E 14,172	E 100	E 30	E 968	E 590	E 376
	8-Mo. Average	E 40	E 116	E 13,549	E 109	E 30	..	..	..
1989	8-Mo. Average	65	44	13,386	155	29	..	..	..
1988	8-Mo. Average	47	-83	13,254	182	39	..	..	..

Footnotes continued.

R = Revised data. (s) = Less than 500 barrels per day. E = Estimated. PE = Preliminary estimate. RE = Revised estimate.

* See Explanatory Note 5.

** Italics denote estimates based upon preliminary data. See Explanatory Note 4.

Notes: • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

Source: See the last page of this section.

Table S3. Crude Oil and Petroleum Product Imports

		Imports from OPEC Sources ^a										
		Algeria	Libya	Saudi Arabia ^b	United Arab Emirates	Indonesia	Iran	Nigeria	Venezuela	Other OPEC ^c	Total OPEC ^d	Total Arab OPEC ^e
		Thousand Barrels per Day										
1973	Average	136	164	488	71	218	223	489	1,135	106	2,993	916
1974	Average	190	4	481	74	300	469	710	979	68	3,280	752
1975	Average	282	232	718	117	390	280	762	702	122	3,601	1,383
1976	Average	432	453	1,230	254	539	298	1,025	700	134	5,066	2,424
1977	Average	559	723	1,380	335	541	535	1,143	690	287	6,193	3,185
1978	Average	549	654	1,144	383	573	555	919	645	226	5,751	2,963
1979	Average	636	656	1,356	281	420	304	1,080	690	212	5,637	3,056
1980	Average	488	554	1,261	172	348	9	557	481	130	4,300	2,551
1981	Average	311	319	1,129	61	366	0	620	406	90	3,323	1,848
1982	Average	170	26	552	92	248	35	514	412	97	2,146	854
1983	Average	240	0	337	30	330	48	302	422	144	1,662	632
1984	Average	323	1	325	117	343	10	216	548	166	2,049	819
1985	Average	167	4	168	45	314	27	293	605	167	1,930	472
1986	Average	271	0	685	44	318	19	440	703	265	2,837	1,102
1987	Average	295	0	751	61	288	95	535	804	231	3,060	1,274
1988	January	333	0	849	61	179	1	408	766	540	3,134	1,552
	February	359	0	1,265	79	194	0	508	848	214	3,461	1,683
	March	259	0	937	6	127	0	569	803	352	3,073	1,509
	April	342	0	929	48	180	0	711	833	385	3,413	1,610
	May	320	0	1,041	41	290	0	601	841	360	3,501	1,724
	June	262	0	923	11	184	0	875	850	527	3,632	1,635
	July	225	0	1,076	43	216	0	715	724	590	3,599	1,911
	August	257	0	1,169	0	153	0	623	830	669	3,703	2,036
	September	289	0	1,066	22	242	0	546	824	697	3,665	2,042
	October	326	0	1,244	16	265	0	686	772	552	3,861	2,069
	November	322	0	986	0	240	0	469	779	694	3,510	1,914
	December	312	0	1,289	19	194	0	667	869	524	3,874	2,080
	Average	300	0	1,064	29	205	(s)	618	794	510	3,520	1,839
1989	January	335	0	1,449	59	218	0	782	941	429	4,212	2,219
	February	310	0	1,290	17	292	0	567	775	593	3,845	2,126
	March	272	0	1,108	64	167	0	702	909	471	3,693	1,805
	April	235	0	1,226	14	129	0	750	831	743	3,927	2,030
	May	272	0	1,155	61	264	0	789	853	630	4,025	1,977
	June	205	0	1,249	17	138	0	864	778	856	4,106	2,104
	July	263	0	1,182	0	113	0	1,094	794	992	4,437	2,308
	August	216	0	1,310	44	115	0	948	834	1,060	4,531	2,453
	September	256	0	1,109	20	113	0	867	914	957	4,236	2,195
	October	250	0	1,158	14	167	0	713	1,004	872	4,177	2,122
	November	323	0	1,342	0	231	0	770	924	762	4,353	2,257
	December	268	0	1,115	26	263	0	915	903	602	4,111	1,905
	Average	269	0	1,224	28	183	0	815	873	748	4,140	2,130
1990	January	418	0	1,212	37	137	0	830	1,138	1,047	4,819	2,592
	February	280	0	1,557	18	260	0	833	890	753	4,590	2,504
	March	301	0	1,157	17	138	0	1,054	876	824	4,368	2,115
	April	234	0	1,149	9	88	0	969	1,005	742	4,196	2,078
	May	247	0	1,225	73	77	0	1,008	1,087	836	4,554	2,337
	June	333	0	1,137	20	138	0	778	1,070	960	4,436	2,293
	July	308	0	1,369	13	143	0	830	999	1,291	4,954	2,653
	7-Mo. Average	303	0	1,255	27	139	0	902	1,011	925	4,561	2,396
1989	7-Mo. Average	270	0	1,236	33	187	0	795	842	673	4,036	2,089
1988	7-Mo. Average	299	0	1,001	41	192	(s)	629	808	426	3,399	1,703

^a Excludes petroleum imported into the United States indirectly from members of the Organization of Petroleum Exporting Countries (OPEC), primarily from Caribbean and West European areas, as petroleum products that were refined from crude oil produced by OPEC.

^b Includes petroleum imported into the United States indirectly from members of OPEC, primarily from Caribbean and West European areas as petroleum products that were refined from crude oil produced by OPEC.

^c The other members of OPEC are Ecuador, Gabon, Iraq, Kuwait, and Qatar. Prior to January 1988, imports from the Neutral Zone between Kuwait and Saudi Arabia are included in imports from Saudi Arabia. From January 1988 forward, those imports are included in imports from "Other OPEC".

^d "Total OPEC" consists of Ecuador, Gabon, Indonesia, Iran, Nigeria, and Venezuela, as well as the Arab members. Imports from the Neutral Zone between Kuwait and Saudi Arabia are included in imports from "Total OPEC".

^e The Arab members of OPEC are Algeria, Iraq, Kuwait, Libya, Qatar, Saudi Arabia, and the United Arab Emirates.

Footnotes continued on following page.

Table S3. Crude Oil and Petroleum Product Imports (Continued)

		Imports from Non-OPEC Sources ^b										
		Bahamas	Canada	Mexico	Nether-lands Antilles	Trinidad and Tobago	United Kingdom	Puerto Rico	Virgin Islands	Other Non-OPEC	Total Non-OPEC	Total Imports
		Thousand Barrels per Day										
1973	Average	174	1,328	16	589	255	15	99	329	465	3,263	6,256
1974	Average	164	1,070	8	511	251	8	90	391	340	2,832	6,112
1975	Average	182	848	71	332	242	14	90	406	300	2,484	6,086
1976	Average	118	599	87	275	274	31	88	422	353	2,247	7,313
1977	Average	171	517	179	211	289	126	105	466	550	2,614	8,007
1978	Average	160	467	318	229	253	180	94	429	484	2,613	8,363
1979	Average	147	538	439	231	190	202	92	431	548	2,819	8,456
1980	Average	78	455	533	225	176	176	88	388	491	2,609	6,909
1981	Average	74	447	522	197	133	375	82	327	534	2,672	5,998
1982	Average	65	482	655	175	112	458	80	316	627	2,968	5,113
1983	Average	125	547	826	189	96	382	40	282	701	3,189	5,081
1984	Average	88	630	748	188	94	402	42	294	902	3,388	5,437
1985	Average	40	770	816	40	113	310	28	247	873	3,237	5,067
1986	Average	37	807	699	25	125	350	21	244	1,080	3,387	6,224
1987	Average	37	848	655	29	106	352	21	272	1,296	3,617	6,678
1988	January	51	959	808	40	97	313	29	341	1,410	4,047	7,181
	February	79	1,033	710	21	93	334	18	200	1,308	3,794	7,256
	March	47	1,002	745	46	89	461	22	180	1,280	3,871	6,944
	April	26	985	678	43	82	594	29	193	1,227	3,857	7,270
	May	24	1,001	722	27	102	389	20	257	1,426	3,968	7,469
	June	15	1,032	766	31	112	232	13	212	1,194	3,607	7,239
	July	15	972	723	35	96	214	22	215	1,416	3,708	7,297
	August	12	1,009	704	32	97	111	23	172	1,523	3,683	7,388
	September	37	938	843	25	96	149	29	236	1,469	3,820	7,506
	October	13	998	743	17	98	447	21	234	1,398	3,969	7,850
	November	27	1,080	811	72	80	246	15	286	1,587	4,204	7,714
	December	40	990	711	40	125	294	28	372	1,453	4,053	7,727
	Average	32	999	747	36	97	315	22	242	1,392	3,882	7,402
1989	January	53	1,065	809	59	105	215	30	415	1,293	4,043	8,255
	February	24	1,007	756	44	92	221	24	369	1,649	4,186	8,032
	March	41	961	687	52	82	174	38	324	1,424	3,763	7,456
	April	55	877	1,002	14	117	148	24	407	1,507	4,151	8,078
	May	29	901	808	32	68	202	46	379	1,288	3,753	7,778
	June	28	921	688	34	143	181	32	383	1,461	3,871	7,977
	July	32	849	758	49	89	328	39	331	1,458	3,932	8,369
	August	19	911	806	43	101	370	21	239	1,519	4,029	8,560
	September	8	949	721	35	95	191	33	190	1,545	3,766	8,002
	October	44	857	837	38	71	309	32	180	1,756	4,124	8,301
	November	41	911	743	72	91	165	42	279	1,645	3,988	8,341
	December	29	973	810	29	81	78	24	377	1,266	3,468	7,579
	Average	34	931	767	42	94	215	32	321	1,484	3,921	8,081
1990	January	74	952	789	9	109	219	35	409	1,732	4,328	9,147
	February	74	919	722	27	89	74	32	323	1,456	3,716	8,306
	March	35	823	812	10	103	273	32	264	1,205	3,557	7,925
	April	51	908	466	29	114	274	33	283	1,404	3,562	7,758
	May	29	994	778	20	88	347	38	285	1,804	4,184	8,738
	June	36	927	912	21	118	249	27	299	1,666	4,255	8,690
	July	25	882	695	30	107	211	35	252	1,701	3,939	8,893
	7-Mo. Average	46	915	740	21	104	237	33	302	1,840	3,938	8,499
1989	7-Mo. Average	37	939	764	41	99	210	33	370	1,439	3,953	7,991
1988	7-Mo. Average	36	997	736	35	96	362	22	229	1,324	3,837	7,236

Footnotes continued.

A small amount of Iranian crude oil entered the United States (defined in this publication as the 50 States and the District of Columbia) in January 1988 from the Virgin Islands. This oil originated in Iran and was exported to the Virgin Islands prior to the signing of Executive Order 12613 on October 29, 1987.

(a) = Less than 500 barrels per day.

Notes: • Beginning in October 1977, Strategic Petroleum Reserve imports are included. • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

Source: See the last page of this section.

Figure S5. Finished Motor Gasoline Supply and Disposition

(Thousand Barrels per Day)

Figure S6. Motor Gasoline Ending Stocks

(Million Barrels)

¹ Includes motor gasoline blending components and finished motor gasoline.

Table S4. Finished Motor Gasoline Supply and Disposition

		Supply		Disposition					Ending Stocks ^a	
		Total Production	Imports ^b	Stock Change ^{b,c}	Exports	Product Supplied			Total Motor Gasoline ^e	Finished Motor Gasoline
		Thousand Barrels per Day						Percent of Total	Million Barrels	
		Total ^d	Unleaded	Unleaded						
1973	Average	6,535	134	-9	4	6,674	--	--	209	--
1974	Average	6,380	204	24	2	6,537	--	--	218	--
1975	Average	6,520	184	28	2	6,675	--	--	235	--
1976	Average	6,841	131	-10	3	6,978	--	--	231	--
1977	Average	7,033	217	72	2	7,177	1,976	27.5	258	--
1978	Average	7,169	190	-54	1	7,412	2,521	34.0	238	--
1979	Average	8,852	181	-2	(s)	7,034	2,798	39.8	237	--
1980	Average	6,506	140	68	1	6,579	3,067	46.6	261	--
1981	Average ^d	6,405	157	-28	2	6,588	3,284	49.5	253	--
1982	Average	6,338	197	-25	20	6,539	3,409	52.1	235	--
1983	Average	6,340	247	-45	10	6,822	3,647	55.1	222	186
1984	Average	6,453	299	54	6	6,893	3,987	59.6	243	205
1985	Average	6,419	381	-41	10	6,831	4,406	64.5	223	190
1986	Average	6,752	326	11	33	7,034	4,854	69.0	233	194
1987	Average	6,841	384	-15	35	7,206	5,470	75.9	226	189
1988	January	6,730	357	387	8	6,693	5,395	80.6	240	201
	February	6,736	397	75	18	7,030	5,607	79.7	241	203
	March	6,715	349	-277	18	7,323	5,894	80.5	232	194
	April	6,907	399	-142	18	7,430	5,991	80.6	227	190
	May	6,851	437	-43	28	7,303	5,861	80.3	226	189
	June	6,983	428	-465	59	7,817	6,336	81.1	210	175
	July	7,159	482	148	12	7,482	6,144	82.1	215	179
	August	7,209	494	131	15	7,556	6,232	82.5	220	184
	September	6,948	443	-28	16	7,404	6,115	82.6	221	183
	October	6,858	352	-75	13	7,271	5,988	82.4	218	180
	November	7,060	451	118	15	7,379	6,157	83.4	221	184
	December	7,303	277	192	45	7,344	6,220	84.7	228	190
	Average	6,956	405	3	22	7,336	5,995	81.7	--	--
1989	January	6,937	353	512	33	6,745	5,754	85.3	249	206
	February	6,650	423	-70	24	7,119	6,141	86.3	248	204
	March	6,612	381	-471	43	7,421	6,380	86.0	230	189
	April	6,811	370	-22	46	7,157	6,248	87.3	227	188
	May	6,894	355	-163	31	7,381	6,454	87.5	223	183
	June	7,275	386	-180	60	7,790	6,864	88.2	216	178
	July	7,360	383	390	57	7,296	6,509	89.2	229	190
	August	7,155	360	-260	58	7,717	6,934	89.8	221	182
	September	7,069	320	118	31	7,240	6,443	89.0	227	186
	October	6,845	389	-97	29	7,302	6,642	91.0	222	183
	November	7,046	406	81	18	7,353	6,756	91.9	224	185
	December	6,884	306	-257	37	7,410	6,027	93.5	213	177
	Average	6,963	369	-35	39	7,328	6,507	88.8	--	--
1990	January	6,889	417	599	31	6,675	6,272	94.0	236	196
	February	6,978	407	204	53	7,129	6,657	93.4	246	201
	March	6,612	265	-493	45	7,325	6,881	93.9	228	186
	April	6,764	327	-52	28	7,116	6,696	94.1	224	184
	May	6,599	535	-196	25	7,304	6,884	94.2	218	178
	June	7,084	361	-86	52	7,478	7,059	94.4	213	176
	July [*]	R 7,230	R 372	R 146	R 41	R 7,415	R 7,012	R 94.6	R 219	R 180
	August ^{**}	E 7,255	E 334	E -206	E 38	E 7,757	E 7,342	E 94.6	E 211	E 173
	8-Mo. Average	E 6,926	E 377	E -13	E 39	E 7,277	E 6,852	E 94.2	--	--
1989	8-Mo. Average	6,965	376	-32	44	7,328	6,413	87.5	--	--
1988	8-Mo. Average	6,912	418	-22	22	7,330	5,933	80.9	--	--

^a Stocks are totals as of end of period.^b Beginning in 1981, excludes blending components.^c A negative number indicates a decrease in stocks and a positive number indicates an increase.^d Includes gasoline.^e Includes motor gasoline blending components.^f In January 1975, 1981, and 1983, numerous respondents were added to surveys affecting stocks reported and stock change calculations.

See Explanatory Note 11.

^g Beginning in January 1981, survey forms were modified. See Explanatory Note 12.

R = Revised data. (s) = Less than 500 barrels per day. E = Estimated.

^{*} See Explanatory Note 5.^{**} Italics denote estimates based upon preliminary data. See Explanatory Note 4.

Notes: * Geographic coverage is the 50 States and the District of Columbia. * Totals may not equal sum of components due to independent rounding.

Source: See the last page of this section.

Figure S7. Distillate Fuel Oil Supply and Disposition

(Thousand Barrels per Day)

Figure S8. Distillate Fuel Oil Ending Stocks

(Million Barrels)

Table S5. Distillate Fuel Oil Supply and Disposition

		Supply			Disposition				
		Total Production	Imports	Crude Used Directly ^a	Stock Change ^b	Exports	Product Supplied ^a	Ending Stocks ^c	
		Thousand Barrels per Day							Million Barrels
1973	Average	2,822	392	2	115	9	3,092	196	
1974	Average	2,669	289	2	9	2	2,948	^d 200	
1975	Average	2,654	155	2	^d -40	1	2,851	209	
1976	Average	2,924	146	1	-62	1	3,133	186	
1977	Average	3,278	250	1	178	1	3,352	250	
1978	Average	3,167	173	1	-93	3	3,432	216	
1979	Average	3,153	193	1	34	3	3,311	229	
1980	Average	2,662	142	1	-64	3	2,868	^d 205	
1981	Average ^a	2,613	173	10	^d -38	5	2,829	192	
1982	Average	2,606	93	10	-35	74	2,671	^d 179	
1983	Average	2,456	174	--	^d -124	64	2,690	140	
1984	Average	2,681	272	--	57	51	2,845	161	
1985	Average	2,687	200	--	-48	67	2,868	144	
1986	Average	2,798	247	--	31	100	2,914	155	
1987	Average	2,731	255	--	-56	66	2,976	134	
1988	January	3,010	424	--	-206	82	3,558	128	
	February	2,667	383	--	-614	107	3,557	110	
	March	2,706	247	--	-660	74	3,539	90	
	April	2,867	210	--	171	42	2,864	95	
	May	2,936	253	--	320	74	2,795	105	
	June	2,893	222	--	185	76	2,854	110	
	July	2,784	222	--	308	58	2,640	120	
	August	2,848	279	--	185	70	2,873	126	
	September	2,778	307	--	192	72	2,821	131	
	October	2,827	336	--	-103	48	3,218	128	
	November	2,909	327	--	19	34	3,183	129	
	December	3,068	409	--	-171	87	3,560	124	
	Average	2,859	302	--	-30	69	3,122	--	
1989	January	2,974	346	--	-93	110	3,303	121	
	February	2,797	331	--	-463	164	3,427	108	
	March	2,713	439	--	-352	76	3,428	97	
	April	2,789	301	--	60	56	2,975	99	
	May	2,750	290	--	35	51	2,954	100	
	June	2,809	233	--	(s)	39	3,002	100	
	July	2,848	334	--	498	89	2,596	115	
	August	2,907	254	--	41	154	2,966	116	
	September	2,952	249	--	231	81	2,889	123	
	October	2,906	261	--	-50	90	3,127	122	
	November	3,063	307	--	-64	123	3,311	120	
	December	3,266	324	--	-454	130	3,914	106	
	Average	2,899	306	--	-49	97	3,157	--	
1990	January	3,136	501	--	398	62	3,177	118	
	February	2,753	357	--	-204	65	3,250	112	
	March	2,655	280	--	-405	75	3,265	100	
	April	2,802	308	--	-8	59	3,059	99	
	May	2,873	207	--	109	75	2,897	103	
	June	2,995	257	--	219	84	2,949	109	
	July [*]	^R 3,006	^R 229	--	^R 512	^R 30	^R 2,693	^R 125	
	August ^{**}	^E 3,074	^E 269	--	^E 264	^E 79	^E 3,000	^E 130	
	8-Mo. Average	^E 2,914	^E 301	--	^E 114	^E 66	^E 3,034	--	
1989	8-Mo. Average	2,824	316	--	-30	92	3,078	--	
1988	8-Mo. Average	2,840	280	--	-36	73	3,083	--	

^a Beginning in January 1983, product supplied for distillate fuel oil does not include crude oil used directly. See Explanatory Note 7.

^b A negative number indicates a decrease in stocks and a positive number indicates an increase.

^c Stocks are totals as of end of period.

^d In January 1975, 1981, and 1983, numerous respondents were added to surveys affecting stocks reported and stock change calculations. See Explanatory Note 11.

^e Beginning in January 1981, survey forms were modified. See Explanatory Note 12.

^R = Revised data. (s) = Less than 500 barrels per day. ^E = Estimated.

^{*} See Explanatory Note 5.

^{**} Italics denote estimates based upon preliminary data. See Explanatory Note 4.

Notes: * Geographic coverage is the 50 States and the District of Columbia. * Totals may not equal sum of components due to independent rounding.

Source: See the last page of this section.

Figure S9. Residual Fuel Oil Supply and Disposition

(Thousand Barrels per Day)

Figure S10. Residual Fuel Oil Ending Stocks

(Million Barrels)

Table S6. Residual Fuel Oil Supply and Disposition

		Supply			Disposition			Ending Stocks ^c
		Total Production	Imports	Crude Used Directly ^a	Stock Change ^b	Exports	Product Supplied ^a	
								Million Barrels
1973	Average	971	1,853	17	-5	23	2,822	53
1974	Average	1,070	1,587	13	17	14	2,839	^d 60
1975	Average	1,235	1,223	15	^d -2	15	2,462	74
1976	Average	1,377	1,413	17	-5	12	2,801	72
1977	Average	1,754	1,359	13	48	6	3,071	90
1978	Average	1,667	1,355	13	1	13	3,023	90
1979	Average	1,887	1,151	12	15	9	2,826	96
1980	Average	1,580	939	12	-10	33	2,508	^d 92
1981	Average ^b	1,321	800	48	^d -37	118	2,088	78
1982	Average	1,070	776	48	-32	209	1,716	^d 66
1983	Average	852	699	--	^d -55	185	1,421	49
1984	Average	891	681	--	12	190	1,369	53
1985	Average	882	510	--	-7	197	1,202	50
1986	Average	889	669	--	-8	147	1,418	47
1987	Average	885	565	--	(s)	186	1,284	47
1988	January	1,002	805	--	-44	190	1,661	46
	February	994	901	--	-33	229	1,698	45
	March	948	650	--	-43	165	1,476	44
	April	960	495	--	-33	170	1,318	43
	May	862	432	--	94	263	938	46
	June	880	336	--	-117	249	1,083	42
	July	906	479	--	-37	206	1,217	41
	August	866	581	--	-97	225	1,320	38
	September	852	698	--	220	100	1,230	45
	October	852	603	--	-68	181	1,343	42
	November	916	785	--	51	146	1,504	44
	December	1,069	975	--	20	271	1,754	45
	Average	926	644	--	-8	200	1,378	--
1989	January	949	909	--	84	151	1,623	47
	February	930	877	--	-58	146	1,719	46
	March	937	706	--	-128	220	1,551	42
	April	904	681	--	-52	236	1,401	40
	May	934	538	--	77	276	1,119	42
	June	953	533	--	54	208	1,223	44
	July	862	556	--	-44	176	1,286	43
	August	903	501	--	58	225	1,121	45
	September	856	454	--	162	137	1,010	49
	October	1,001	583	--	50	243	1,292	51
	November	1,075	543	--	48	330	1,240	52
	December	1,140	680	--	-275	226	1,870	44
	Average	954	629	--	-2	215	1,370	--
1990	January	1,129	809	--	191	186	1,561	50
	February	1,060	640	--	63	214	1,424	51
	March	974	334	--	-171	277	1,202	46
	April	880	555	--	93	200	1,142	49
	May	877	507	--	21	141	1,222	50
	June	926	536	--	-96	207	1,350	47
	July*	^R 987	^R 535	--	^R 72	^R 171	^R 1,279	^R 49
	August**	^E 954	^E 534	--	^E 38	^E 173	^E 1,277	^E 49
	8-Mo. Average	^E 973	^E 555	--	^E 26	^E 196	^E 1,306	--
1989	8-Mo. Average	921	681	--	(s)	205	1,377	--
1988	8-Mo. Average	927	584	--	-39	212	1,337	--

^a Beginning in January 1983, product supplied for residual fuel oil does not include crude oil used directly. See Explanatory Note 7.

^b A negative number indicates a decrease in stocks and a positive number indicates an increase.

^c Stocks are totals as of end of period.

^d In January 1975, 1981, and 1983, numerous respondents were added to surveys affecting stocks reported and stock change calculations. See Explanatory Note 11.

^e Beginning in January 1981, survey forms were modified. See Explanatory Note 12.

R = Revised data. (s) = Less than 500 barrels per day. E = Estimated.

* See Explanatory Note 5.

** Italics denote estimates based upon preliminary data. See Explanatory Note 4.

Notes: • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

Source: See the last page of this section.

Figure S11. Liquefied Petroleum Gases Supply and Disposition

(Thousand Barrels per Day)

Legend:
 Products Supplied
 Total Production
 Imports

Figure S12. Liquefied Petroleum Gases Ending Stocks

(Million Barrels)

Legend:
 Average Stock Range
 (See Explanatory Note 6.)

Table S7. Liquefied Petroleum Gases^a Supply and Disposition

		Supply		Disposition					
		Total Production	Imports	Stock Change ^b	Refinery Inputs	Exports	Product Supplied	Ending Stocks ^b	
		Thousand Barrels per Day							Million Barrels
1973	Average	1,600	132	35	220	27	1,449	99	
1974	Average	1,565	123	38	220	25	1,408	^d 113	
1975	Average	1,527	112	^d 35	246	26	1,333	125	
1976	Average	1,535	130	-24	260	25	1,404	116	
1977	Average	1,566	161	55	233	18	1,422	136	
1978	Average	1,537	123	-12	239	20	1,413	132	
1979	Average	1,556	217	-70	236	15	1,592	111	
1980	Average	1,535	216	27	233	21	1,469	^d 120	
1981	Average	1,571	244	^d 18	289	42	1,466	135	
1982	Average	1,528	226	-11	300	65	1,499	^d 94	
1983	Average	1,642	190	^d -4	253	73	1,509	^d 101	
1984	Average	1,697	195	^d -19	291	48	1,572	101	
1985	Average	1,704	187	-75	304	62	1,599	74	
1986	Average	1,695	242	80	302	42	1,512	103	
1987	Average	1,748	190	-15	304	38	1,612	97	
1988	January	1,734	226	-566	383	44	2,099	80	
	February	1,770	245	-328	366	47	1,929	70	
	March	1,819	165	-50	292	36	1,707	68	
	April	1,806	205	361	277	43	1,329	79	
	May	1,817	165	343	277	37	1,324	90	
	June	1,814	144	331	256	38	1,333	100	
	July	1,842	233	380	248	35	1,412	112	
	August	1,847	241	287	262	50	1,490	121	
	September	1,841	194	20	274	43	1,698	121	
	October	1,872	216	-47	318	56	1,761	120	
	November	1,835	258	-206	445	71	1,782	114	
	December	1,811	222	-522	461	85	2,010	97	
	Average	1,817	209	1	321	49	1,656	-	
1989	January	1,885	239	-335	422	19	2,018	87	
	February	1,798	260	-333	328	31	2,032	78	
	March	1,909	150	-85	274	43	1,827	75	
	April	1,950	121	294	242	27	1,507	84	
	May	1,943	110	428	226	43	1,357	97	
	June	1,824	155	269	254	35	1,422	105	
	July	1,850	192	407	247	45	1,343	118	
	August	1,787	202	272	245	40	1,433	126	
	September	1,737	182	-46	303	31	1,631	125	
	October	1,679	176	-313	371	31	1,766	115	
	November	1,643	179	-389	446	33	1,732	103	
	December	1,483	205	-749	424	37	1,975	80	
	Average	1,791	181	-47	315	35	1,668	-	
1990	January	1,700	245	-174	416	44	1,660	76	
	February	1,784	223	20	346	42	1,599	77	
	March	1,760	152	42	205	44	1,620	78	
	April	1,738	148	136	200	25	1,525	92	
	May	1,760	189	279	216	36	1,417	91	
	June	1,722	201	451	220	28	1,223	104	
	July*	1,750	156	259	230	36	1,379	112	
	7-Mo. Average	1,744	187	145	281	37	1,489	--	
1989	7-Mo. Average	1,881	175	96	284	35	1,640	--	
1988	7-Mo. Average	1,800	197	68	300	40	1,590	--	

^a Includes ethane, propane, normal butane, and isobutane. Beginning in January 1984, unfractionated stream is reported by individual product.

^b A negative number indicates a decrease in stocks and a positive number indicates an increase.

^c Stocks are totals as of end of period.

^d In January 1975, 1981, 1983, and 1984, a new stock basis was established affecting stocks reported and stock change calculations.

See Explanatory Note 11.

* See Explanatory Note 5.

Notes: • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal sum of components due to independent rounding.

Source: See the last page of this section.

Table S8. Other Petroleum Products^a Supply and Disposition

		Supply		Disposition				
		Total Production	Imports	Stock Change ^b	Refinery Inputs	Exports	Products Supplied	Ending Stocks ^b
Thousand Barrels per Day								Million Barrels
1973	Average	3,693	502	9	750	166	3,270	208
1974	Average	3,558	432	28	665	174	3,123	^d 218
1975	Average	3,418	277	^d -4	537	160	3,002	219
1976	Average	3,643	206	5	524	175	3,145	220
1977	Average	3,912	205	27	514	165	3,410	230
1978	Average	4,046	166	-14	492	167	3,568	225
1979	Average	4,153	195	37	352	209	3,749	238
1980	Average	3,956	210	23	311	198	3,634	^d 247
1981	Average	3,739	226	^d -46	723	199	3,088	282
1982	Average	3,453	334	-80	787	211	2,869	^d 253
1983	Average	3,460	411	^d -6	712	242	2,923	^d 256
1984	Average	3,632	565	^d -23	791	245	3,183	240
1985	Average	3,721	588	17	886	240	3,166	246
1986	Average	3,997	561	10	888	308	3,353	250
1987	Average	4,080	610	-1	829	289	3,572	250
1988	January	3,942	706	136	812	354	3,347	254
	February	3,905	680	31	753	318	3,484	255
	March	4,147	666	282	687	328	3,515	264
	April	4,010	794	87	851	288	3,577	266
	May	4,071	843	335	501	274	3,803	277
	June	4,265	787	-43	777	379	3,939	276
	July	4,315	781	21	831	329	3,915	276
	August	4,413	701	-199	796	302	4,215	270
	September	4,245	651	-159	850	323	3,882	265
	October	4,163	771	-40	762	268	3,944	264
	November	4,098	823	43	818	303	3,728	265
	December	4,155	613	-429	1,153	392	3,653	252
	Average	4,143	735	6	799	321	3,751	--
1989	January	4,198	746	396	706	311	3,532	264
	February	3,957	837	191	726	302	3,574	270
	March	4,067	745	112	660	321	3,718	273
	April	3,953	854	133	808	306	3,561	277
	May	4,131	755	221	688	260	3,718	284
	June	4,375	695	-206	838	389	4,049	278
	July	4,454	690	-69	955	344	3,913	276
	August	4,436	677	-215	893	328	4,107	269
	September	4,428	770	112	737	343	4,005	272
	October	4,191	705	32	730	337	3,796	273
	November	4,122	736	-43	900	351	3,650	272
	December	3,763	600	-601	918	391	3,655	253
	Average	4,174	733	4	797	332	3,774	--
1990	January	4,014	970	176	699	255	3,854	259
	February	4,255	819	495	645	347	3,587	273
	March	4,115	769	144	787	306	3,646	278
	April	4,125	679	-195	861	337	3,800	272
	May	4,235	861	292	531	300	3,973	281
	June	4,267	922	-141	904	345	4,082	277
	July*	4,581	789	30	954	327	4,059	278
	7-Mo. Average	4,227	830	112	770	316	3,860	--
1989	7-Mo. Average	4,165	759	112	769	319	3,725	--
1988	7-Mo. Average	4,095	751	123	744	324	3,655	--

^a Includes pentanes plus, other hydrocarbons and alcohol, unfinished oils, gasoline blending components and all finished petroleum products except finished motor gasoline, distillate fuel oil, residual fuel oil, and liquefied petroleum gases.

^b A negative number indicates a decrease in stocks and a positive number indicates an increase.

^c Stocks are totals as of end of period.

^d In January 1975, 1981, 1983, and 1984, a new stock basis was established affecting stocks reported and stock change calculations. See Explanatory Note 11.

* See Explanatory Note 5.

Notes: * Geographic coverage is the 50 States and the District of Columbia. * Totals may not equal sum of components due to independent rounding. Source: See the last page of this section.

Sources of Summary Statistics

1. 1973 through 1976: U.S. Department of the Interior, Bureau of Mines, *Mineral Industry Surveys, Petroleum Statement, Annual* and *PAD Districts Supply/Demand, Annual*.
2. 1977 through 1980: U.S. Department of Energy, Energy Information Administration (EIA), *Energy Data Reports, Petroleum Statement, Annual* and *PAD Districts Supply/Demand, Annual*, and unleaded gasoline data from *Monthly Petroleum Statistics Report*.
3. 1981 through 1989: EIA, *Petroleum Supply Annual*.
4. January 1990 through July 1990: Detailed Statistics in appropriate issues of the *Petroleum Supply Monthly*. (See Explanatory Note 5.)
5. August 1990: Estimates based on EIA weekly data (except domestic crude oil production). (See Explanatory Note 4.)
6. January 1990 through August 1990: Domestic crude oil production estimate based on historical statistics from State conservation agencies and the Minerals Management Service of the U.S. Department of the Interior. (See Explanatory Note 8.)

Note: Additional source information by table is available in Appendix B (Explanatory Notes 5 and 6).

Table 1, U.S. Petroleum Balance, July 1990

	Commodity	Current Month		Year to Date	
		Thousand Barrels	Thousand Barrels per Day	Thousand Barrels	Thousand Barrels per Day
Crude Oil					
Field Production					
(1)	Alaska	62,291	1,667	375,006	1,769
(2)	Lower 48 States	169,167	5,467	1,175,119	5,543
(3)	Total U.S.	231,458	7,144	1,550,125	7,312
Not Imports					
(4)	Imports (Gross Excluding Strategic Petroleum Reserve (SPR))	211,173	6,812	1,314,818	6,202
(5)	SPR Imports	0	0	6,826	32
(6)	Exports	2,707	89	23,315	110
(7)	Imports (Net Including SPR)	208,466	6,723	1,298,329	6,124
Other Sources					
(8)	SPR Stock Change (Withdrawal (+), Addition (-))	0	0	-6,821	-32
(9)	Other Stock Change (Withdrawal (+), Addition (-))	4,719	162	-36,209	-180
(10)	Product Supplied and Losses	-968	-31	-6,404	-31
(11)	Unaccounted for ^a	6,823	220	56,205	265
(12)	Total Other Sources	10,576	341	4,741	22
(13)	Crude Input to Refineries	440,440	14,208	2,853,195	13,458
(13) = (3) + (7) + (12)					
Natural Gas Liquids (NGL)					
(14)	Field Production	45,872	1,480	318,335	1,502
(15)	Not Imports ^b	59	2	1,378	7
(16)	Stock Change (Withdrawal (+), Addition (-)) ^b	-974	-31	-261	-1
(17)	Total NGL Supply	44,957	1,450	319,452	1,507
Other Liquids					
Unfinished Oils and Gasoline Blending Components, Total					
(18)	Stock Change (Withdrawal (+), Addition (-))	3,445	111	-9,413	-44
(19)	Imports	13,098	422	98,501	465
(20)	Other Hydrocarbons and Alcohol New Supply (Field Production)	2,174	70	15,227	72
(21)	Refinery Processing Gain ^a	18,908	612	138,397	653
(22)	Crude Oil Product Supplied	966	31	6,481	31
(23)	Total Other Liquids	38,649	1,247	249,273	1,170
(23) = (18) through (22)					
(24)	Total Production of Products	524,048	16,905	3,421,920	16,141
(24) = (13) + (17) + (23)					
Not Imports of Refined Products					
(25)	Imports (Gross)	51,301	1,655	379,794	1,791
(26)	Exports	18,761	605	138,550	654
(27)	Imports (Net)	32,540	1,050	241,244	1,138
(28)	Total New Supply of Products	556,588	17,954	3,663,164	17,279
(28) = (24) + (27)					
(29)	Refined Products Stock Change (Withdrawal (+), Addition (-))	-34,046	-1,098	-72,882	-344
(30)	Total Petroleum Products Supplied for Domestic Use	522,540	16,856	3,590,282	16,935
(30) = (28) + (29)					
(31)	Finished Motor Gasoline	229,855	7,415	1,527,723	7,208
(32)	Distillate Fuel Oil	83,481	2,693	644,234	3,039
(33)	Residual Fuel Oil	39,641	1,279	277,837	1,311
(34)	Liquefied Petroleum Gases	42,758	1,379	315,606	1,489
(35)	Other ^c	125,839	4,059	818,401	3,860
(36)	Crude Oil	966	31	6,481	31
(37)	Total Products Supplied	522,540	16,856	3,590,282	16,935
(37) = (31) through (36)					
Ending Stocks, All Oils					
(38)	Crude Oil (Excluding SPR)	379,518	..	379,518	..
(39)	Strategic Petroleum Reserve	586,678	..	586,678	..
(40)	Finished Motor Gasoline	180,358	..	180,358	..
(41)	Distillate Fuel Oil	125,250	..	125,250	..
(42)	Residual Fuel Oil	49,000	..	49,000	..
(43)	Liquefied Petroleum Gases	112,289	..	112,289	..
(44)	Other ^c	277,544	..	277,544	..
(45)	Total Stocks	1,710,637	..	1,710,637	..
(45) = (38) through (44)					

^a Unaccounted for crude oil and refinery processing gain are balancing items. Preliminary estimates of crude oil imports at the National level have historically understated final values by approximately 50 thousand barrels per day. This causes the preliminary values of unaccounted for crude oil to overstate the final values by the same amount.

^b Includes products in the pentanes plus category only.

^c Includes pentanes plus, other liquids, and all finished petroleum products except finished motor gasoline, distillate fuel oil, residual fuel oil, and liquefied petroleum gases.

(s) - Less than 500 barrels per day.

E - Estimated

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

Sources: See Explanatory Notes.

**Table 2. Supply, Disposition, and Ending Stocks of Crude Oil and Petroleum Products,
July 1990**
(Thousand Barrels)

Commodity	Supply				Disposition					Ending Stocks
	Field Production	Refinery Production	Imports	Unaccounted For Crude Oil ^a	Stock Change ^b	Crude Losses	Refinery Inputs	Exports	Products Supplied ^c	
Crude Oil	221,488	--	211,173	6,823	-4,719	0	440,440	2,767	988	988,108
Natural Gas Liquids and LRGs	45,872	17,993	4,921	--	9,014	--	12,908	1,171	48,898	121,020
Propanes Plus	9,815	--	99	--	974	--	8,762	40	2,938	8,731
Liquefied Petroleum Gases	36,267	17,993	4,822	--	8,040	--	7,143	1,131	42,758	112,289
Ethane/Ethylene	13,414	820	0	--	-1,888	--	0	2	18,703	20,713
Propane/Propylene	13,810	12,711	2,788	--	4,940	--	281	714	23,504	48,930
Normal Butane/Butylene	3,911	4,174	1,351	--	4,772	--	1,983	410	2,808	32,668
Isobutane	5,022	482	843	--	7	--	4,909	0	1,248	9,981
Other Liquids	2,174	--	13,098	--	-3,448	--	23,803	0	-8,088	182,908
Other Hydrocarbons/Alcohol	2,174	--	0	--	238	--	1,936	0	0	1,342
Unfinished Oils	--	--	10,934	--	-5,088	--	23,137	0	-7,117	112,429
Motor Gasoline Blend. Comp.	--	--	2,162	--	1,439	--	-1,305	0	2,020	38,993
Aviation Gasoline Blend. Comp.	--	--	0	--	-30	--	35	0	1	142
Finished Petroleum Products	--	478,123	46,479	--	28,008	--	--	17,829	480,867	470,518
Finished Motor Gasoline	--	224,119	11,538	--	4,518	--	--	1,284	229,855	180,368
Loaded	--	12,584	16	--	29	--	--	86	12,488	10,589
Unloaded	--	211,836	11,522	--	4,489	--	--	1,198	217,370	169,779
Finished Aviation Gasoline	--	793	8	--	-181	--	--	0	982	1,872
Jet Fuel	--	43,413	2,832	--	3,638	--	--	318	42,091	50,891
Naphtha-Type	--	3,910	53	--	-635	--	--	18	4,582	6,334
Kerosene-Type	--	39,503	2,879	--	4,271	--	--	302	37,609	44,557
Kerosene	--	2,346	23	--	888	--	--	10	1,473	5,987
Distillate Fuel Oil	--	93,193	7,091	--	15,858	--	--	945	83,481	125,250
Residual Fuel Oil	--	30,588	18,598	--	2,234	--	--	5,309	39,641	49,000
Naphtha for Petro. Feed. Use	--	4,700	2,071	--	-38	--	--	61	6,740	1,813
Other Oils for Petro. Feed. Use	--	9,468	4,648	--	-191	--	--	488	13,836	2,398
Special Naphthas	--	1,814	118	--	287	--	--	331	1,342	2,954
Lubricants	--	5,422	368	--	701	--	--	445	4,642	13,052
Waxes	--	644	32	--	29	--	--	50	591	930
Petroleum Cokes	--	17,165	158	--	-1,078	--	--	8,209	10,190	7,527
Asphalt and Road Oil	--	19,419	1,137	--	-679	--	--	105	21,130	26,298
Still Gas	--	23,023	0	--	0	--	--	0	23,023	0
Miscellaneous Products	--	2,019	83	--	30	--	--	89	1,903	2,418
Total	288,504	498,118	278,669	6,823	28,858	0	477,148	21,568	522,540	1,710,637

^a Unaccounted for crude oil is a balancing item. Preliminary estimates of crude oil imports at the National level have historically understated final values by approximately 80 thousand barrels per day. This causes the preliminary values of unaccounted for crude oil to overstate the final values by the same amount.

^b A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.

^c Products supplied is equal to field production, plus refinery production, plus imports, plus unaccounted for crude oil, minus stock change, minus crude losses, minus refinery inputs, minus exports.

(a) = Less than 500 barrels.

E = Estimated.

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

Sources: See Explanatory Notes.

**Table 3. Year-to-Date Supply, Disposition, and Ending Stocks of Crude Oil and Petroleum Products,
January-July 1990
(Thousand Barrels)**

Commodity	Supply				Disposition					Ending Stocks
	Field Production	Refinery Production	Imports	Unaccounted For Crude Oil ^a	Stock Change ^b	Crude Losses	Refinery Inputs	Exports	Products Supplied ^c	
Crude Oil	^E 1,550,125	--	1,321,844	56,265	45,030	13	2,853,195	23,315	6,401	966,196
Natural Gas Liquids and LRGs	318,335	115,379	41,455	--	31,044	--	92,815	5,116	343,394	121,020
Pentanes Plus	63,896	--	1,736	--	261	--	37,225	358	27,788	8,731
Liquefied Petroleum Gases	254,439	115,379	39,719	--	30,783	--	55,590	7,758	315,606	112,289
Ethane/Ethylene	93,125	2,851	886	--	-2,630	--	58	14	99,420	20,713
Propane/Propylene	98,973	84,813	26,497	--	15,803	--	1,647	5,399	187,434	48,930
Normal Butane/Butylene	29,058	25,148	9,310	--	15,700	--	21,736	2,344	24,342	32,685
Isobutane	32,663	2,567	3,020	--	1,910	--	31,949	0	4,411	9,981
Other Liquids	15,227	--	98,581	--	9,413	--	125,909	0	-21,514	152,906
Other Hydrocarbons/Alcohol	15,227	--	0	--	660	--	14,567	0	0	1,342
Unfinished Oils	--	--	82,603	--	6,238	--	112,744	0	-36,377	112,429
Motor Gasoline Blend Comp.	--	--	15,978	--	2,533	--	-1,371	0	14,816	38,993
Aviation Gasoline Blend Comp.	--	--	0	--	-18	--	-31	0	47	142
Finished Petroleum Products	--	3,094,737	340,075	--	42,099	--	--	130,792	3,281,921	470,515
Finished Motor Gasoline	--	1,458,031	81,302	--	3,279	--	--	8,331	1,527,723	180,358
Leaded	--	84,073	178	--	-7,092	--	--	1,141	90,200	10,589
Unleaded	--	1,373,958	81,126	--	10,371	--	--	7,191	1,437,522	169,769
Finished Aviation Gasoline	--	4,982	33	--	-399	--	--	0	5,394	1,672
Jet Fuel	--	298,635	25,297	--	9,689	--	--	4,694	309,249	50,891
Naphtha-Type	--	38,275	351	--	-97	--	--	1,040	37,683	6,334
Kerosene-Type	--	260,360	24,946	--	10,086	--	--	3,655	271,585	44,557
Kerosene	--	15,656	1,389	--	818	--	--	144	16,043	6,957
Distillate Fuel Oil	--	612,778	1,1694	--	19,632	--	--	13,606	644,234	125,250
Residual Fuel Oil	--	208,859	11,1380	--	5,191	--	--	42,211	277,837	49,000
Naphtha for Petro. Feed Use	--	28,020	17,560	--	-144	--	--	1,031	44,893	1,813
Other Oils for Petro. Feed Use	--	56,704	20,240	--	394	--	--	4,888	71,862	2,398
Special Naphthas	--	11,932	2,066	--	-54	--	--	1,578	12,474	2,954
Lubricants	--	34,865	2,005	--	-774	--	--	3,997	33,667	13,052
Waxes	--	3,538	226	--	-92	--	--	377	3,477	930
Petroleum Coke	--	115,796	515	--	-988	--	--	49,305	67,994	7,527
Asphalt and Road Oil	--	90,493	5,986	--	5,683	--	--	457	90,339	28,298
Still Gas	--	143,244	0	--	0	--	--	0	143,244	0
Miscellaneous Products	--	13,206	382	--	-436	--	--	373	13,651	2,415
Total	1,883,687	3,210,116	1,801,755	56,265	127,586	13	3,071,719	162,223	3,590,282	1,710,637

^a Unaccounted for crude oil is a balancing item. Preliminary estimates of crude oil imports at the National level have historically understated final values by approximately 50 thousand barrels per day. This causes the preliminary values of unaccounted for crude oil to overstate the final values by the same amount.

^b A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.

^c Products supplied is equal to field production, plus refinery production, plus imports, plus unaccounted for crude oil, minus stock change, minus crude losses, minus refinery inputs, minus exports.

(s) = Less than 500 barrels

E = Estimated.

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

Sources: See Explanatory Notes.

**Table 4. Daily Average Supply and Disposition of Crude Oil and Petroleum Products,
July 1990**
(Thousand Barrels per Day)

Commodity	Supply				Disposition				
	Field Production	Refinery Production	Imports	Unaccounted For Crude Oil ^a	Stock Change ^b	Crude Losses	Refinery Inputs	Exports	Products Supplied ^c
Crude Oil	E 7,144	--	8,812	220	-152	0	14,208	89	31
Natural Gas Liquids and LRGs	1,480	580	159	--	291	--	416	38	1,474
Pentanes Plus	310	--	3	--	31	--	188	1	98
Liquefied Petroleum Gases	1,170	550	156	--	259	--	230	36	1,379
Ethane/Ethylene	433	20	0	--	-54	--	0	(s)	507
Propane/Propylene	449	410	90	--	159	--	8	23	758
Normal Butane/Butylene	128	135	45	--	154	--	84	13	74
Isobutane	162	18	21	--	(s)	--	158	0	40
Other Liquids	70	--	422	--	-111	--	788	0	-164
Other Hydrocarbons/Alcohol	70	--	0	--	8	--	62	0	0
Unfinished Oils	--	--	353	--	-164	--	746	0	-230
Motor Gasoline Blend. Comp.	--	--	70	--	46	--	-42	0	88
Aviation Gasoline Blend. Comp.	--	--	0	--	-1	--	1	0	(s)
Finished Petroleum Products	--	15,423	1,499	--	839	--	--	569	15,515
Finished Motor Gasoline	--	7,230	372	--	146	--	--	41	7,415
Leaded	--	408	1	--	1	--	--	3	403
Unleaded	--	6,824	372	--	145	--	--	39	7,012
Finished Aviation Gasoline	--	28	(s)	--	-5	--	--	0	31
Jet Fuel	--	1,400	85	--	117	--	--	10	1,358
Naphtha-Type	--	128	2	--	-20	--	--	1	148
Kerosene-Type	--	1,274	83	--	138	--	--	10	1,210
Kerosene	--	78	1	--	29	--	--	(s)	48
Distillate Fuel Oil	--	3,008	229	--	512	--	--	30	2,693
Residual Fuel Oil	--	987	535	--	72	--	--	171	1,279
Naphtha for Petro. Feed. Use	--	152	67	--	-1	--	--	2	218
Other Oils for Petro. Feed. Use	--	305	150	--	-8	--	--	15	448
Special Naphthas	--	59	4	--	8	--	--	11	43
Lubricants	--	175	12	--	23	--	--	14	150
Waxes	--	21	1	--	1	--	--	2	19
Petroleum Coke	--	554	5	--	-35	--	--	265	329
Asphalt and Road Oil	--	626	37	--	-22	--	--	3	682
Still Gas	--	743	0	--	0	--	--	0	743
Miscellaneous Products	--	65	2	--	1	--	--	3	63
Total	8,694	10,004	8,893	220	866	0	15,392	696	16,856

^a Unaccounted for crude oil is a balancing item. Preliminary estimates of crude oil imports at the National level have historically understated final values by approximately 50 thousand barrels per day. This causes the preliminary values of unaccounted for crude oil to overstate the final values by the same amount.

^b A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.

^c Products supplied is equal to field production, plus refinery production, plus imports, plus unaccounted for crude oil, minus stock change, minus crude losses, minus refinery inputs, minus exports.

(s) = Less than 500 barrels per day.

E = Estimated.

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

Sources: See Explanatory Notes.

**Table 5. Year-to-Date Daily Average Supply and Disposition of Crude Oil and Petroleum Products,
January-July 1990**
(Thousand Barrels per Day)

Commodity	Supply				Disposition				
	Field Production	Refinery Production	Imports	Unaccounted For Crude Oil ^a	Stock Change ^b	Crude Losses	Refinery Inputs	Exports	Products Supplied ^c
Crude Oil	E 7,312	--	6,234	265	212	(s)	13,458	110	31
Natural Gas Liquids and LRGs	1,502	544	196	--	146	--	437	38	1,620
Pentanes Plus	301	--	8	--	1	--	176	2	131
Liquefied Petroleum Gases	1,200	544	187	--	145	--	261	37	1,489
Ethane/Ethylene	439	13	4	--	-12	--	(s)	(s)	469
Propane/Propylene	467	400	125	--	75	--	8	25	884
Normal Butane/Butylene	140	119	44	--	74	--	103	11	115
Isobutane	154	12	14	--	9	--	151	0	21
Other Liquids	72	--	465	--	44	--	594	0	-101
Other Hydrocarbons/Alcohol	72	--	0	--	3	--	69	0	0
Unfinished Oils	--	--	390	--	29	--	532	0	-172
Motor Gasoline Blend. Comp.	--	--	75	--	12	--	-6	0	70
Aviation Gasoline Blend. Comp.	--	--	0	--	(s)	--	(s)	0	(s)
Finished Petroleum Products	--	14,598	1,604	--	199	--	--	617	15,386
Finished Motor Gasoline	--	6,878	384	--	15	--	--	39	7,206
Leaded	--	397	1	--	-33	--	--	5	425
Unleaded	--	6,481	383	--	49	--	--	34	6,781
Finished Aviation Gasoline	--	23	(s)	--	-2	--	--	0	25
Jet Fuel	--	1,409	119	--	47	--	--	22	1,459
Naphtha-Type	--	181	2	--	(s)	--	--	5	178
Kerosene-Type	--	1,228	118	--	48	--	--	17	1,281
Kerosene	--	74	7	--	4	--	--	1	76
Distillate Fuel Oil	--	2,890	305	--	93	--	--	64	3,039
Residual Fuel Oil	--	976	558	--	24	--	--	199	1,311
Naphtha for Petro. Feed. Use	--	132	83	--	-1	--	--	5	211
Other Oils for Petro. Feed. Use	--	267	95	--	2	--	--	22	339
Special Naphthas	--	56	10	--	(s)	--	--	7	59
Lubricants	--	165	9	--	-4	--	--	19	159
Waxes	--	17	1	--	(s)	--	--	2	16
Petroleum Coke	--	546	2	--	-5	--	--	233	321
Asphalt and Road Oil	--	427	28	--	27	--	--	2	426
Still Gas	--	676	0	--	0	--	--	0	676
Miscellaneous Products	--	62	2	--	-2	--	--	2	64
Total	8,885	15,142	8,499	265	602	(s)	14,489	765	16,935

^a Unaccounted for crude oil is a balancing item. Preliminary estimates of crude oil imports at the National level have historically understated final values by approximately 50 thousand barrels per day. This causes the preliminary values of unaccounted for crude oil to overstate the final values by the same amount.

^b A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.

^c Products supplied is equal to field production, plus refinery production, plus imports, plus unaccounted for crude oil, minus stock change, minus crude losses, minus refinery inputs, minus exports.

(s) = Less than 500 barrels per day.

E = Estimated.

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

Sources: See Explanatory Notes.

**Table 6. PAD District I—Supply, Disposition, and Ending Stocks of Crude Oil and Petroleum Products,
July 1990
(Thousand Barrels)**

Commodity	Supply					Disposition					Ending Stocks
	Field Production	Refinery Production	Imports by PAD District of Entry ^a	Unaccounted For Crude Oil ^b	Net Receipts	Stock Change ^c	Crude Losses	Refinery Inputs	Exports	Products Supplied ^d	
Crude Oil	E 877	--	43,133	714	388	441	0	44,871	0	0	15,628
Natural Gas Liquids and LRGs	407	1,598	618	--	2,599	499	--	44	147	4,530	5,274
Pentanes Plus	92	--	0	--	0	6	--	0	(s)	86	35
Liquefied Petroleum Gases	315	1,596	618	--	2,599	493	--	44	146	4,445	5,239
Ethane/Ethylene	45	140	0	--	0	0	--	0	2	183	18
Propane/Propylene	164	1,085	605	--	2,469	42	--	0	30	4,251	3,365
Normal Butane/Butylene	79	360	2	--	-6	438	--	0	115	-118	1,801
Isobutane	27	11	11	--	136	13	--	44	0	128	55
Other Liquids	159	--	5,359	--	392	2,058	--	3,707	0	145	20,357
Other Hydrocarbons/Alcohol	159	--	0	--	0	85	--	74	0	0	183
Unfinished Oils	--	--	3,648	--	221	1,352	--	3,837	0	-1,320	15,196
Motor Gasoline Blend. Comp.	--	--	1,711	--	171	621	--	-204	0	1,465	4,978
Aviation Gasoline Blend. Comp.	--	--	0	--	0	0	--	0	0	0	0
Finished Petroleum Products	--	48,747	35,722	--	73,104	17,449	--	--	1,237	138,887	157,335
Finished Motor Gasoline	--	20,366	10,000	--	44,107	1,788	--	--	62	72,623	56,164
Leaded	--	428	0	--	0	-37	--	--	1	464	151
Unleaded	--	19,938	10,000	--	44,107	1,825	--	--	61	72,159	56,013
Finished Aviation Gasoline	--	12	3	--	99	82	--	--	0	32	268
Jet Fuel	--	2,678	1,832	--	10,520	1,683	--	--	1	13,346	13,720
Naphtha-Type	--	164	0	--	254	50	--	--	0	368	859
Kerosene-Type	--	2,514	1,832	--	10,266	1,633	--	--	1	12,978	12,861
Kerosene	--	134	23	--	26	-13	--	--	3	193	2,385
Distillate Fuel Oil	--	11,935	6,516	--	16,337	11,552	--	--	17	23,219	51,663
Residual Fuel Oil	--	4,031	15,540	--	933	1,363	--	--	698	18,443	21,496
Petrochemical Feedstocks ^e	--	488	331	--	-84	-44	--	--	16	763	281
Special Naphthas	--	73	10	--	370	56	--	--	11	386	642
Lubricants	--	581	338	--	397	264	--	--	148	904	3,163
Waxes	--	86	28	--	5	-6	--	--	9	116	52
Petroleum Coke	--	1,330	0	--	0	-168	--	--	260	1,238	834
Asphalt and Road Oil	--	4,583	1,046	--	313	919	--	--	2	5,021	5,895
Still Gas	--	2,168	0	--	0	0	--	--	0	2,168	0
Miscellaneous Products	--	282	55	--	81	-27	--	--	11	434	772
Total	1,443	50,343	84,832	714	76,483	20,447	0	48,422	1,384	143,562	198,594

^a Imports by PAD District of Entry represents the PAD District in which the material entered the United States. The PAD District of Entry is not necessarily the District in which the crude oil or product is processed and/or consumed.

^b Unaccounted for crude oil is a balancing item.

^c A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.

^d Products supplied is equal to field production, plus refinery production, plus imports, plus unaccounted for crude oil, plus net receipts, minus stock change, minus crude losses, minus refinery inputs, minus exports.

^e Includes naphtha less than 401° F endpoint and other oils equal to or greater than 401° F endpoint.

(s) = Less than 500 barrels.

E = Estimated.

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

Sources: See Explanatory Notes.

Table 7. PAD District I—Year-to-Date Daily Average Supply and Disposition of Crude Oil and Petroleum Products, January-July 1990
(Thousand Barrels per Day)

Commodity	Supply					Disposition				
	Field Production	Refinery Production	Imports by PAD District of Entry ^a	Unaccounted For Crude Oil ^b	Net Receipts	Stock Change ^c	Crude Losses	Refinery Inputs	Exports	Products Supplied ^d
Crude Oil	E 32	--	1,277	12	18	11	(s)	1,328	(s)	0
Natural Gas Liquids and LRGs	24	48	42	--	82	12	--	2	3	179
Pentanes Plus	4	--	3	--	0	(s)	--	(s)	(s)	7
Liquefied Petroleum Gases	20	48	39	--	82	12	--	2	3	172
Ethane/Ethylene	6	5	0	--	0	(s)	--	0	(s)	10
Propane/Propylene	9	36	36	--	79	7	--	0	1	153
Normal Butane/Butylene	4	8	2	--	1	5	--	1	2	7
Isobutane	1	(s)	(s)	--	2	(s)	--	1	0	2
Other Liquids	2	--	172	--	13	16	--	134	0	38
Other Hydrocarbons/Alcohol	2	--	0	--	0	(s)	--	2	0	0
Unfinished Oils	--	--	110	--	5	13	--	125	0	-24
Motor Gasoline Blend. Comp.	--	--	62	--	8	3	--	6	0	61
Aviation Gasoline Blend. Comp. ...	--	--	0	--	0	0	--	0	0	0
Finished Petroleum Products	--	1,478	1,271	--	2,385	123	--	--	31	4,981
Finished Motor Gasoline	--	642	337	--	1,414	17	--	--	1	2,375
Leaded	--	9	0	--	4	-4	--	--	(s)	17
Unleaded	--	634	337	--	1,410	21	--	--	1	2,358
Finished Aviation Gasoline	--	(s)	(s)	--	3	(s)	--	--	0	4
Jet Fuel	--	98	86	--	340	16	--	--	(s)	508
Naphtha-Type	--	14	0	--	16	-2	--	--	(s)	33
Kerosene-Type	--	83	86	--	324	18	--	--	(s)	475
Kerosene	--	8	4	--	11	1	--	--	(s)	22
Distillate Fuel Oil	--	352	292	--	554	78	--	--	1	1,119
Residual Fuel Oil	--	146	505	--	29	13	--	--	13	654
Petrochemical Feedstocks ^e	--	12	9	--	-4	(s)	--	--	(s)	17
Special Naphthas	--	4	1	--	8	-1	--	--	(s)	13
Lubricants	--	21	8	--	15	(s)	--	--	5	38
Waxes	--	2	1	--	(s)	(s)	--	--	(s)	3
Petroleum Coke	--	42	0	--	0	(s)	--	--	9	34
Asphalt and Road Oil	--	80	27	--	11	-1	--	--	1	118
Still Gas	--	63	0	--	0	0	--	--	0	63
Miscellaneous Products	--	9	2	--	2	(s)	--	--	(s)	13
Total	58	1,527	2,762	12	2,498	181	(s)	1,464	34	5,197

^a Imports by PAD District of Entry represents the PAD District in which the material entered the United States. The PAD District of Entry is not necessarily the District in which the crude oil or product is processed and/or consumed.

^b Unaccounted for crude oil is a balancing item.

^c A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.

^d Products supplied is equal to field production, plus refinery production, plus imports, plus unaccounted for crude oil, plus net receipts, minus stock change, minus crude losses, minus refinery inputs, minus exports.

^e Includes naphtha less than 401° F endpoint and other oils equal to or greater than 401° F endpoint.

(s) = Less than 500 barrels per day.

E = Estimated.

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

Sources: See Explanatory Notes.

**Table 8. PAD District II—Supply, Disposition, and Ending Stocks of Crude Oil and Petroleum Products,
July 1990
(Thousand Barrels)**

Commodity	Supply					Disposition					Ending Stocks
	Field Production	Refinery Production	Imports by PAD District of Entry ^a	Unaccounted For Crude Oil ^b	Net Receipts	Stock Change ^c	Crude Losses	Refinery Inputs	Exports	Products Supplied ^d	
Crude Oil	^E 22,363	--	15,938	-2,001	63,124	-714	0	99,754	384	0	83,406
Natural Gas Liquids and LRGs	8,465	3,558	1,566	--	1,788	3,037	--	3,122	346	8,872	35,350
Pentanes Plus	1,426	--	38	--	689	156	--	1,479	0	518	2,444
Liquefied Petroleum Gases	7,039	3,558	1,528	--	1,099	2,881	--	1,643	346	8,354	32,906
Ethane/Ethylene	2,220	26	0	--	-584	-377	--	0	0	2,039	4,773
Propane/Propylene	3,103	3,291	1,085	--	1,086	1,926	--	66	152	6,421	18,009
Normal Butane/Butylene	1,036	264	437	--	32	1,229	--	158	194	188	7,183
Isobutane	680	-23	6	--	565	103	--	1,419	0	-294	2,941
Other Liquids	122	--	0	--	144	-1,561	--	3,407	0	-1,580	25,464
Other Hydrocarbons/Alcohol	122	--	0	--	0	33	--	89	0	0	263
Unfinished Oils	--	--	0	--	-219	-1,424	--	2,424	0	-1,219	16,750
Motor Gasoline Blend. Comp.	--	--	0	--	363	-124	--	848	0	-361	8,399
Aviation Gasoline Blend. Comp.	--	--	0	--	0	-46	--	46	0	0	62
Finished Petroleum Products	--	106,976	608	--	21,101	-1,421	--	--	1,002	129,104	112,497
Finished Motor Gasoline	--	56,626	173	--	12,755	-1,806	--	--	113	71,247	48,970
Leaded	--	2,407	0	--	75	-255	--	--	(s)	2,737	3,201
Unleaded	--	54,219	173	--	12,680	-1,551	--	--	113	68,510	45,769
Finished Aviation Gasoline	--	148	0	--	97	-14	--	--	0	259	464
Jet Fuel	--	5,745	49	--	3,108	581	--	--	20	8,301	10,085
Naphtha-Type	--	470	49	--	87	-104	--	--	0	710	987
Kerosene-Type	--	5,275	0	--	3,021	685	--	--	20	7,591	9,098
Kerosene	--	334	0	--	-26	150	--	--	2	156	1,557
Distillate Fuel Oil	--	23,463	225	--	4,864	1,553	--	--	67	26,932	31,602
Residual Fuel Oil	--	2,106	0	--	-550	-269	--	--	(s)	1,825	3,574
Petrochemical Feedstocks ^e	--	1,270	36	--	55	13	--	--	1	1,353	324
Special Naphthas	--	595	40	--	138	93	--	--	44	636	729
Lubricants	--	818	28	--	319	234	--	--	37	894	2,120
Waxes	--	51	1	--	0	-4	--	--	1	55	122
Petroleum Coke	--	3,805	0	--	0	-783	--	--	626	3,962	2,219
Asphalt and Road Oil	--	6,761	49	--	350	-1,212	--	--	86	8,286	10,497
Still Gas	--	4,774	0	--	0	0	--	--	0	4,774	0
Miscellaneous Products	--	474	7	--	-9	43	--	--	4	425	234
Total	30,950	110,534	18,112	-2,001	86,157	-659	0	106,283	1,731	136,397	256,717

^a Imports by PAD District of Entry represents the PAD District in which the material entered the United States. The PAD District of Entry is not necessarily the District in which the crude oil or product is processed and/or consumed.

^b Unaccounted for crude oil is a balancing item.

^c A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.

^d Products supplied is equal to field production, plus refinery production, plus imports, plus unaccounted for crude oil, plus net receipts, minus stock change, minus crude losses, minus refinery inputs, minus exports.

^e Includes naphtha less than 401° F endpoint and other oils equal to or greater than 401° F endpoint.

(s) = Less than 500 barrels.

E = Estimated.

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

Sources: See Explanatory Notes.

Table 9. PAD District II—Year-to-Date Daily Average Supply and Disposition of Crude Oil and Petroleum Products, January-July 1990
(Thousand Barrels per Day)

Commodity	Supply					Disposition				
	Field Production	Refinery Production	Imports by PAD District of Entry ^a	Unaccounted For Crude Oil ^b	Net Receipts	Stock Change ^c	Crude Losses	Refinery Inputs	Exports	Products Supplied ^d
Crude Oil	E 738	--	475	-7	1,872	62	0	3,004	13	0
Natural Gas Liquids and LRGs	273	109	75	--	54	57	--	113	9	332
Pentanes Plus	45	--	1	--	16	-3	--	43	0	23
Liquefied Petroleum Gases	228	109	74	--	38	60	--	70	9	309
Ethane/Ethylene	65	1	0	--	-19	3	--	(s)	(s)	43
Propane/Propylene	105	100	56	--	41	40	--	2	5	255
Normal Butane/Butylene	37	7	15	--	-3	15	--	25	4	12
Isobutane	21	1	3	--	19	3	--	43	0	-2
Other Liquids	5	--	(s)	--	-1	3	--	46	0	-45
Other Hydrocarbons/Alcohol	5	--	0	--	0	1	--	4	0	0
Unfinished Oils	--	--	0	--	-1	-1	--	22	0	-21
Motor Gasoline Blend. Comp.	--	--	(s)	--	(s)	3	--	20	0	-23
Aviation Gasoline Blend. Comp. ...	--	--	0	--	0	(s)	--	(s)	0	0
Finished Petroleum Products	--	3,193	19	--	699	20	--	--	15	3,878
Finished Motor Gasoline	--	1,706	5	--	444	-4	--	--	1	2,159
Leaded	--	77	0	--	6	-12	--	--	(s)	94
Unleaded	--	1,630	5	--	438	7	--	--	1	2,065
Finished Aviation Gasoline	--	3	0	--	3	(s)	--	--	0	6
Jet Fuel	--	191	2	--	91	8	--	--	(s)	276
Naphtha-Type	--	15	2	--	3	(s)	--	--	(s)	19
Kerosene-Type	--	177	(s)	--	88	8	--	--	(s)	256
Kerosene	--	15	0	--	(s)	(s)	--	--	(s)	15
Distillate Fuel Oil	--	710	6	--	151	4	--	--	2	861
Residual Fuel Oil	--	70	2	--	-13	(s)	--	--	1	58
Petrochemical Feedstocks ^e	--	36	1	--	3	(s)	--	--	(s)	40
Special Naphthas	--	16	1	--	4	1	--	--	(s)	21
Lubricants	--	26	1	--	10	(s)	--	--	1	35
Waxes	--	2	(s)	--	0	(s)	--	--	(s)	1
Petroleum Coke	--	122	0	--	0	-5	--	--	9	118
Asphalt and Road Oil	--	142	(s)	--	6	17	--	--	1	131
Still Gas	--	140	0	--	0	0	--	--	0	140
Miscellaneous Products	--	15	(s)	--	(s)	(s)	--	--	(s)	15
Total	1,016	3,302	570	-7	2,624	141	0	3,163	38	4,163

^a Imports by PAD District of Entry represents the PAD District in which the material entered the United States. The PAD District of Entry is not necessarily the District in which the crude oil or product is processed and/or consumed.

^b Unaccounted for crude oil is a balancing item.

^c A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.

^d Products supplied is equal to field production, plus refinery production, plus imports, plus unaccounted for crude oil, plus net receipts, minus stock change, minus crude losses, minus refinery inputs, minus exports.

^e Includes naphtha less than 401° F endpoint and other oils equal to or greater than 401° F endpoint.

(s) = Less than 500 barrels per day.

E = Estimated.

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

Sources: See Explanatory Notes.

Table 10. PAD District III—Supply, Disposition, and Ending Stocks of Crude Oil and Petroleum Products, July 1990
(Thousand Barrels)

Commodity	Supply					Disposition					Ending Stocks
	Field Production	Refinery Production	Imports by PAD District of Entry ^a	Unaccounted For Crude Oil ^b	Net Receipts	Stock Change ^c	Crude Losses	Refinery Inputs	Exports	Products Supplied ^d	
Crude Oil	^E 100,769	--	140,703	8,674	-53,217	-2,878	0	199,807	0	0	767,775
Natural Gas Liquids and LRGs	31,662	10,598	2,478	--	-3,004	4,903	--	7,385	368	29,078	75,815
Pentanes Plus	6,038	--	1	--	-445	820	--	3,296	37	1,441	6,012
Liquefied Petroleum Gases	25,624	10,598	2,477	--	-2,559	4,083	--	4,089	331	27,637	69,803
Ethane/Ethylene	10,750	406	0	--	847	-1,282	--	0	0	13,285	15,789
Propane/Propylene	9,159	7,133	1,003	--	-3,144	2,780	--	178	229	10,964	26,412
Normal Butane/Butylene	1,776	2,709	910	--	275	2,785	--	953	103	1,829	21,187
Isobutane	3,939	350	564	--	-537	-200	--	2,958	0	1,558	6,415
Other Liquids	1,474	--	7,584	--	-536	-2,446	--	13,459	0	-2,491	69,431
Other Hydrocarbons/Alcohol	1,474	--	0	--	0	26	--	1,448	0	0	517
Unfinished Oils	--	--	7,286	--	-2	-3,705	--	14,415	0	-3,426	52,051
Motor Gasoline Blend. Comp.	--	--	298	--	-534	1,226	--	-2,396	0	934	16,786
Aviation Gasoline Blend. Comp.	--	--	0	--	0	7	--	-8	0	1	77
Finished Petroleum Products	--	218,581	7,910	--	-96,656	10,459	--	--	8,149	111,207	133,340
Finished Motor Gasoline	--	100,610	338	--	-58,196	3,823	--	--	1,092	37,837	49,908
Leaded	--	1,586	0	--	-175	-140	--	--	79	1,472	961
Unleaded	--	99,024	338	--	-58,021	3,963	--	--	1,014	36,364	48,947
Finished Aviation Gasoline	--	428	0	--	-217	-112	--	--	0	323	567
Jet Fuel	--	22,822	472	--	-14,514	1,807	--	--	240	6,733	18,181
Naphtha-Type	--	2,410	0	--	-503	-83	--	--	15	1,975	2,586
Kerosene-Type	--	20,412	472	--	-14,011	1,890	--	--	225	4,758	15,595
Kerosene	--	1,751	0	--	0	724	--	--	1	1,026	1,893
Distillate Fuel Oil	--	40,722	0	--	-21,459	3,621	--	--	671	14,971	28,478
Residual Fuel Oil	--	11,147	564	--	-383	662	--	--	812	9,854	14,610
Petrochemical Feedstocks ^e	--	12,226	6,322	--	29	-142	--	--	195	18,524	3,372
Special Naphthas	--	1,055	64	--	-508	51	--	--	232	328	1,420
Lubricants	--	3,473	0	--	-668	235	--	--	172	2,398	5,870
Waxes	--	366	2	--	-5	9	--	--	36	318	433
Petroleum Coke	--	7,821	107	--	0	-63	--	--	4,625	3,366	2,701
Asphalt and Road Oil	--	4,270	40	--	-663	-191	--	--	3	3,835	4,724
Still Gas	--	10,787	0	--	0	0	--	--	0	10,787	0
Miscellaneous Products	--	1,083	1	--	-72	35	--	--	70	907	1,183
Total	133,905	229,159	158,675	8,674	-153,413	10,038	0	220,651	8,518	137,793	1,046,361

^a Imports by PAD District of Entry represents the PAD District in which the material entered the United States. The PAD District of Entry is not necessarily the District in which the crude oil or product is processed and/or consumed.

^b Unaccounted for crude oil is a balancing item.

^c A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.

^d Products supplied is equal to field production, plus refinery production, plus imports, plus unaccounted for crude oil, plus net receipts, minus stock change, minus crude losses, minus refinery inputs, minus exports.

^e Includes naphtha less than 401° F endpoint and other oils equal to or greater than 401° F endpoint.

(s) = Less than 500 barrels.

E = Estimated.

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

Sources: See Explanatory Notes.

Table 11. PAD District III—Year-to-Date Daily Average Supply and Disposition of Crude Oil and Petroleum Products, January-July 1990
(Thousand Barrels per Day)

Commodity	Supply					Disposition				
	Field Production	Refinery Production	Imports by PAD District of Entry ^a	Unaccounted For Crude Oil ^b	Net Receipts	Stock Change ^c	Crude Losses	Refinery Inputs	Exports	Products Supplied ^d
Crude Oil	E 3,299	--	4,151	242	-1,489	123	(s)	6,081	0	0
Natural Gas Liquids and LRGs	1,019	322	66	--	-79	80	--	246	16	986
Pentanes Plus	188	--	1	--	-7	5	--	101	2	76
Liquefied Petroleum Gases	830	322	65	--	-71	75	--	145	15	910
Ethane/Ethylene	346	7	4	--	37	-15	--	(s)	0	408
Propane/Propylene	300	221	27	--	-105	27	--	6	10	400
Normal Butane/Butylene	66	83	24	--	12	58	--	46	5	77
Isobutane	119	11	10	--	-15	6	--	93	0	25
Other Liquids	50	--	287	--	-15	9	--	391	0	-78
Other Hydrocarbons/Alcohol	50	--	0	--	0	1	--	49	0	0
Unfinished Oils	--	--	277	--	-7	-4	--	381	0	-107
Motor Gasoline Blend. Comp.	--	--	11	--	-8	12	--	-39	0	29
Aviation Gasoline Blend. Comp. ...	--	--	0	--	0	(s)	--	(s)	0	(s)
Finished Petroleum Products	--	6,699	258	--	-3,162	69	--	--	297	3,429
Finished Motor Gasoline	--	3,117	24	--	-1,903	19	--	--	35	1,184
Leaded	--	78	(s)	--	-15	-9	--	--	5	66
Unleaded	--	3,039	24	--	-1,888	28	--	--	30	1,118
Finished Aviation Gasoline	--	14	0	--	-8	(s)	--	--	0	8
Jet Fuel	--	689	25	--	-460	26	--	--	11	218
Naphtha-Type	--	97	0	--	-24	4	--	--	(s)	69
Kerosene-Type	--	592	25	--	-436	23	--	--	11	149
Kerosene	--	48	2	--	-11	4	--	--	(s)	35
Distillate Fuel Oil	--	1,281	2	--	-710	17	--	--	41	515
Residual Fuel Oil	--	372	27	--	-16	4	--	--	52	327
Petrochemical Feedstocks ^e	--	341	166	--	1	2	--	--	18	488
Special Naphthas	--	33	8	--	-13	(s)	--	--	4	24
Lubricants	--	99	(s)	--	-24	-4	--	--	9	70
Waxes	--	10	(s)	--	(s)	(s)	--	--	1	9
Petroleum Coke	--	238	1	--	0	(s)	--	--	124	115
Asphalt and Road Oil	--	112	1	--	-17	3	--	--	(s)	93
Still Gas	--	313	0	--	0	0	--	--	0	313
Miscellaneous Products	--	33	(s)	--	-2	-1	--	--	1	31
Total	4,368	7,021	4,762	242	-4,744	280	(s)	6,718	313	4,337

^a Imports by PAD District of Entry represents the PAD District in which the material entered the United States. The PAD District of Entry is not necessarily the District in which the crude oil or product is processed and/or consumed.

^b Unaccounted for crude oil is a balancing item.

^c A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.

^d Products supplied is equal to field production, plus refinery production, plus imports, plus unaccounted for crude oil, plus net receipts, minus stock change, minus crude losses, minus refinery inputs, minus exports.

^e Includes naphtha less than 401° F endpoint and other oils equal to or greater than 401° F endpoint.

(s) = Less than 500 barrels per day.

E = Estimated.

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

Sources: See Explanatory Notes.

Table 12. PAD District IV—Supply, Disposition, and Ending Stocks of Crude Oil and Petroleum Products, July 1990
(Thousand Barrels)

Commodity	Supply					Disposition					Ending Stocks
	Field Production	Refinery Production	Imports by PAD District of Entry ^a	Unaccounted For Crude Oil ^b	Net Receipts	Stock Change ^c	Crude Losses	Refinery Inputs	Exports	Products Supplied ^d	
Crude Oil	E 15,165	--	2,647	451	-3,578	-759	0	15,444	0	0	12,581
Natural Gas Liquids and LRGs	2,094	249	158	--	-1,383	15	--	487	3	1,813	1,119
Pentanes Plus	703	--	60	--	-244	4	--	129	0	386	153
Liquefied Petroleum Gases	2,291	249	98	--	-1,139	11	--	358	3	1,127	966
Ethane/Ethylene	398	0	0	--	-263	-6	--	0	0	141	133
Propane/Propylene	1,183	211	62	--	-411	1	--	0	2	1,042	408
Normal Butane/Butylene	497	38	14	--	-301	25	--	241	1	-19	296
Isobutane	213	0	22	--	-164	-9	--	117	0	-37	129
Other Liquids	16	--	0	--	0	-277	--	284	0	9	3,863
Other Hydrocarbons/Alcohol	16	--	0	--	0	7	--	9	0	0	70
Unfinished Oils	--	--	0	--	0	-203	--	135	0	68	2,055
Motor Gasoline Blend, Comp.	--	--	0	--	0	-81	--	140	0	-59	1,738
Aviation Gasoline Blend, Comp.	--	--	0	--	0	0	--	0	0	0	0
Finished Petroleum Products	--	16,277	175	--	-669	-1,269	--	--	15	17,037	11,295
Finished Motor Gasoline	--	8,075	57	--	-389	-307	--	--	(s)	8,050	4,436
Leaded	--	2,184	16	--	-400	-38	--	--	(s)	1,838	1,396
Unleaded	--	5,891	41	--	11	-269	--	--	0	6,212	3,040
Finished Aviation Gasoline	--	45	0	--	21	18	--	--	0	48	60
Jet Fuel	--	1,094	0	--	361	-205	--	--	0	1,660	991
Naphtha-Type	--	350	0	--	-141	-101	--	--	0	310	242
Kerosene-Type	--	744	0	--	502	-104	--	--	0	1,350	749
Kerosene	--	40	0	--	0	39	--	--	0	1	70
Distillate Fuel Oil	--	4,226	109	--	-662	6	--	--	0	3,667	3,123
Residual Fuel Oil	--	311	9	--	0	9	--	--	0	311	527
Petrochemical Feedstocks ^e	--	9	0	--	0	-33	--	--	0	42	2
Special Naphthas	--	0	0	--	0	-1	--	--	0	1	7
Lubricants	--	-32	0	--	0	-51	--	--	8	11	73
Waxes	--	38	0	--	0	-11	--	--	0	49	92
Petroleum Coke	--	374	0	--	0	-16	--	--	7	383	26
Asphalt and Road Oil	--	1,346	0	--	0	-721	--	--	(s)	2,067	1,084
Still Gas	--	686	0	--	0	0	--	--	0	686	0
Miscellaneous Products	--	65	0	--	0	4	--	--	(s)	61	14
Total	18,175	16,528	2,980	451	-5,630	-2,290	0	16,215	19	18,558	28,858

^a Imports by PAD District of Entry represents the PAD District in which the material entered the United States. The PAD District of Entry is not necessarily the District in which the crude oil or product is processed and/or consumed.

^b Unaccounted for crude oil is a balancing item.

^c A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.

^d Products supplied is equal to field production, plus refinery production, plus imports, plus unaccounted for crude oil, plus net receipts, minus stock change, minus crude losses, minus refinery inputs, minus exports.

^e Includes naphtha less than 401° F endpoint and other oils equal to or greater than 401° F endpoint.

(s) = Less than 500 barrels.

E = Estimated.

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

Sources: See Explanatory Notes.

Table 13. PAD District IV—Year-to-Date Daily Average Supply and Disposition of Crude Oil and Petroleum Products, January-July 1990
(Thousand Barrels per Day)

Commodity	Supply					Disposition				
	Field Production	Refinery Production	Imports by PAD District of Entry ^a	Unaccounted For Crude Oil ^b	Net Receipts	Stock Change ^c	Crude Losses	Refinery Inputs	Exports	Products Supplied ^d
Crude Oil	E 501	--	70	27	-137	1	0	480	(s)	0
Natural Gas Liquids and LRGs	115	9	8	--	-57	(s)	--	18	(s)	56
Pentanes Plus	24	--	3	--	-9	(s)	--	5	0	13
Liquefied Petroleum Gases	91	8	5	--	-48	(s)	--	13	(s)	43
Ethane/Ethylene	23	(s)	0	--	-17	(s)	--	0	0	6
Propane/Propylene	42	8	3	--	-18	(s)	--	(s)	(s)	37
Normal Butane/Butylene	17	2	1	--	-10	(s)	--	10	(s)	1
Isobutane	8	(s)	(s)	--	-6	(s)	--	3	0	-1
Other Liquids	1	--	(s)	--	0	-5	--	3	0	3
Other Hydrocarbons/Alcohol	1	--	0	--	0	(s)	--	1	0	0
Unfinished Oils	--	--	(s)	--	0	-2	--	-1	0	4
Motor Gasoline Blend. Comp.	--	--	0	--	0	-2	--	4	0	-1
Aviation Gasoline Blend. Comp. ...	--	--	0	--	0	0	--	(s)	0	(s)
Finished Petroleum Products	--	483	3	--	-22	-4	--	--	(s)	489
Finished Motor Gasoline	--	240	1	--	-17	-4	--	--	(s)	228
Leaded	--	60	(s)	--	-13	-3	--	--	(s)	51
Unleaded	--	180	1	--	-5	-1	--	--	(s)	177
Finished Aviation Gasoline	--	1	0	--	(s)	(s)	--	--	0	1
Jet Fuel	--	40	0	--	10	-1	--	--	(s)	50
Naphtha-Type	--	14	0	--	-6	-1	--	--	0	8
Kerosene-Type	--	26	0	--	16	(s)	--	--	(s)	42
Kerosene	--	(s)	0	--	0	(s)	--	--	0	(s)
Distillate Fuel Oil	--	124	2	--	-15	-1	--	--	(s)	112
Residual Fuel Oil	--	11	(s)	--	0	(s)	--	--	0	11
Petrochemical Feedstocks ^e	--	(s)	0	--	0	(s)	--	--	0	(s)
Special Naphthas	--	(s)	0	--	0	(s)	--	--	(s)	(s)
Lubricants	--	(s)	0	--	0	(s)	--	--	(s)	1
Waxes	--	1	0	--	0	(s)	--	--	(s)	1
Petroleum Coke	--	11	0	--	0	(s)	--	--	(s)	11
Asphalt and Road Oil	--	33	0	--	0	1	--	--	(s)	32
Still Gas	--	20	0	--	0	0	--	--	0	20
Miscellaneous Products	--	2	0	--	0	(s)	--	--	(s)	2
Total	616	491	82	27	-216	-9	0	481	(s)	527

^a Imports by PAD District of Entry represents the PAD District in which the material entered the United States. The PAD District of Entry is not necessarily the District in which the crude oil or product is processed and/or consumed.

^b Unaccounted for crude oil is a balancing item.

^c A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.

^d Products supplied is equal to field production, plus refinery production, plus imports, plus unaccounted for crude oil, plus net receipts, minus stock change, minus crude losses, minus refinery inputs, minus exports.

^e Includes naphtha less than 401° F endpoint and other oils equal to or greater than 401° F endpoint.

(s) = Less than 500 barrels per day.

E = Estimated.

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

Sources: See Explanatory Notes.

**Table 14. PAD District V—Supply, Disposition, and Ending Stocks of Crude Oil and Petroleum Products,
July 1990
(Thousand Barrels)**

Commodity	Supply					Disposition					Ending Stocks
	Field Production	Refinery Production	Imports by PAD District of Entry ^a	Unaccounted For Crude Oil ^b	Net Receipts	Stock Change ^c	Crude Losses	Refinery Inputs	Exports	Products Supplied ^d	
Crude Oil	^E 82,284	..	8,782	-1,018	-6,717	-809	0	80,784	2,383	988	86,808
Natural Gas Liquids and LRGs	2,344	1,992	101	..	0	880	..	1,867	307	1,703	3,482
Pentanes Plus	1,356	..	0	..	0	-12	..	858	2	808	87
Liquefied Petroleum Gases	988	1,992	101	..	0	672	..	1,009	308	1,195	3,375
Ethane/Ethylene	1	54	0	..	0	0	..	0	0	55	0
Propane/Propylene	301	991	33	..	0	191	..	7	301	826	736
Normal Butane/Butylene	523	803	28	..	0	295	..	631	3	425	2,198
Isobutane	163	144	40	..	0	86	..	371	0	-110	441
Other Liquids	403	..	153	..	0	-1,219	..	2,948	0	-1,171	33,791
Other Hydrocarbons/Alcohol	403	..	0	..	0	87	..	318	0	0	309
Unfinished Oils	..	..	0	..	0	-1,106	..	2,328	0	-1,220	26,377
Motor Gasoline Blend, Comp.	..	..	153	..	0	-203	..	307	0	49	7,102
Aviation Gasoline Blend, Comp.	..	..	0	..	0	3	..	-3	0	0	3
Finished Petroleum Products	..	87,582	2,084	..	3,120	788	..	..	7,226	84,732	88,048
Finished Motor Gasoline	..	38,442	970	..	1,723	1,020	..	..	17	40,098	20,890
Loaded	..	5,979	0	..	500	499	..	..	6	5,974	4,880
Unloaded	..	32,463	970	..	1,223	521	..	..	11	34,124	18,000
Finished Aviation Gasoline	..	160	5	..	0	-135	..	..	0	300	323
Jet Fuel	..	11,074	279	..	525	-230	..	..	58	12,050	7,914
Naphtha-Type	..	516	4	..	303	-397	..	..	1	1,219	1,860
Kerosene-Type	..	10,558	275	..	222	167	..	..	57	10,831	8,254
Kerosene	..	87	0	..	0	-14	..	..	4	97	52
Distillate Fuel Oil	..	12,847	241	..	920	-874	..	..	189	14,893	10,384
Residual Fuel Oil	..	12,993	483	..	0	469	..	..	3,798	9,209	8,793
Petrochemical Feedstocks ^e	..	166	30	..	0	-21	..	..	317	-100	232
Special Naphthas	..	91	2	..	0	58	..	..	45	-10	156
Lubricants	..	582	0	..	-48	19	..	..	80	435	1,026
Waxes	..	103	1	..	0	41	..	..	10	53	231
Petroleum Coke	..	3,835	51	..	0	-46	..	..	2,891	1,241	1,747
Asphalt and Road Oil	..	2,459	2	..	0	526	..	..	14	1,921	3,298
Still Gas	..	4,608	0	..	0	0	..	..	0	4,608	0
Miscellaneous Products	..	115	0	..	0	-25	..	..	3	137	212
Total	85,031	89,554	11,070	-1,018	-3,597	-680	0	85,577	9,916	86,230	180,107

^a Imports by PAD District of Entry represents the PAD District in which the material entered the United States. The PAD District of Entry is not necessarily the District in which the crude oil or product is processed and/or consumed.

^b Unaccounted for crude oil is a balancing item.

^c A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.

^d Products supplied is equal to field production, plus refinery production, plus imports, plus unaccounted for crude oil, plus net receipts, minus stock change, minus crude losses, minus refinery inputs, minus exports.

^e Includes naphtha less than 401° F endpoint and other oils equal to or greater than 401° F endpoint.

(s) = Less than 500 barrels.

E = Estimated.

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

Sources: See Explanatory Notes.

Table 15. PAD District V -- Year-to-Date Daily Average Supply and Disposition of Crude Oil and Petroleum Products, January-July 1990
(Thousand Barrels per Day)

Commodity	Supply					Disposition				
	Field Production	Refinery Production	Imports by PAD District of Entry ^a	Unaccounted For Crude Oil ^b	Net Receipts	Stock Change ^c	Crude Losses	Refinery Inputs	Exports	Products Supplied ^d
Crude Oil	2,742	..	280	-9	-264	16	0	2,586	96	31
Natural Gas Liquids and LRGs	71	87	8	..	0	-2	..	88	9	88
Pentanes Plus	40	..	0	..	0	(8)	..	27	(8)	19
Liquefied Petroleum Gases	31	57	5	..	0	-2	..	31	8	55
Ethane/Ethylene	(8)	1	0	..	0	0	..	0	(8)	1
Propane/Propylene	10	36	3	..	0	(8)	..	(8)	0	39
Normal Butane/Butylene	18	19	1	..	0	-3	..	21	(8)	18
Isobutane	5	1	1	..	0	1	..	10	0	-4
Other Liquids	15	..	5	..	3	21	..	20	0	-19
Other Hydrocarbons/Alcohol	15	..	0	..	0	1	..	13	0	0
Unfinished Oils	..	..	3	..	3	24	..	5	0	-23
Motor Gasoline Blend, Comp.	..	..	2	..	0	-3	..	1	0	4
Aviation Gasoline Blend, Comp.	..	..	0	..	0	(8)	..	(8)	0	0
Finished Petroleum Products	..	2,744	53	..	101	-8	..	..	274	2,632
Finished Motor Gasoline	..	1,172	16	..	82	-13	..	..	2	1,201
Loaded	..	173	1	..	18	-8	..	..	(8)	197
Unloaded	..	999	16	..	44	-7	..	..	2	1,084
Finished Aviation Gasoline	..	5	(8)	..	(8)	-1	..	..	0	8
Jet Fuel	..	390	8	..	18	-3	..	..	11	407
Naphtha-Type	..	41	(8)	..	11	-1	..	..	5	48
Kerosene-Type	..	350	6	..	7	-2	..	..	6	359
Kerosene	..	3	0	..	0	(8)	..	..	(8)	3
Distillate Fuel Oil	..	423	3	..	21	-6	..	..	20	433
Residual Fuel Oil	..	378	24	..	1	8	..	..	133	281
Petrochemical Feedstocks ^e	..	11	1	..	0	-1	..	..	9	4
Special Naphthas	..	3	(8)	..	0	(8)	..	..	2	1
Lubricants	..	19	(8)	..	-1	(8)	..	..	3	15
Waxes	..	2	(8)	..	0	(8)	..	..	(8)	2
Petroleum Coke	..	133	1	..	0	(8)	..	..	91	43
Asphalt and Road Oil	..	80	(8)	..	0	7	..	..	(8)	53
Still Gas	..	140	0	..	0	0	..	..	0	140
Miscellaneous Products	..	4	0	..	0	(8)	..	..	(8)	4
Total	2,828	2,801	323	-9	-161	28	0	2,663	379	2,711

^a Imports by PAD District of Entry represents the PAD District in which the material entered the United States. The PAD District of Entry is not necessarily the District in which the crude oil or product is processed and/or consumed.

^b Unaccounted for crude oil is a balancing item.

^c A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.

^d Products supplied is equal to field production, plus refinery production, plus imports, plus unaccounted for crude oil, plus net receipts, minus stock change, minus crude losses, minus refinery inputs, minus exports.

^e Includes naphtha less than 401° F endpoint and other oils equal to or greater than 401° F endpoint.

(8) = Less than 500 barrels per day.

E = Estimated.

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

Sources: See Explanatory Notes.

Table 16. Production of Crude Oil by PAD District and State
(Thousand Barrels)

PAD District and State	May 1990		January-May 1990	
	Total	Daily Average	Total	Daily Average
PAD District I	883	82	4,908	83
Florida	828	17	2,721	18
New York	30	1	101	1
Pennsylvania	227	7	1,131	7
Virginia	2	(b)	8	(b)
West Virginia	177	8	919	8
Adjustment ^a	10	1	7	(b)
PAD District II	22,801	708	112,410	744
Illinois	1,028	83	8,248	88
Indiana	251	8	1,283	8
Kansas	4,000	148	22,836	149
Kentucky	440	14	2,186	14
Michigan	1,700	68	8,339	66
Missouri	11	(b)	68	(b)
Nebraska	800	10	2,440	10
North Dakota	3,121	101	18,231	101
Ohio	760	26	4,139	27
Oklahoma	8,582	278	48,282	300
South Dakota	138	4	688	5
Tennessee	43	1	224	1
Adjustment ^a	1,080	34	1,784	12
PAD District III	101,221	3,288	501,278	3,320
Alabama	1,822	62	7,874	62
Arkansas	901	29	4,410	29
Louisiana ^b	11,977	398	61,239	408
Mississippi	2,272	73	11,108	74
New Mexico	5,871	183	27,928	185
Texas ^b	88,871	1,838	278,888	1,883
Federal Offshore PAD District III	20,817	872	108,283	897
Adjustment ^a	1,081	36	3,571	24
PAD District IV	18,487	499	78,138	504
Colorado	2,801	84	12,300	81
Montana	1,820	62	8,163	64
Utah	2,380	77	11,877	77
Wyoming	8,878	288	43,224	288
Adjustment ^a	-19	-1	783	5
PAD District V	84,878	2,728	421,808	2,792
Alaska ^b	84,731	1,766	274,337	1,817
South Alaska	408	13	3,232	21
North Slope	84,322	1,752	271,103	1,795
Adjustment for Alaska ^a	1	(b)	1	(b)
Arizona	9	(b)	62	(b)
California ^b	27,254	879	133,093	881
Nevada	343	11	1,583	10
Federal Offshore PAD District V	2,681	88	12,978	88
Adjustment excluding Alaska ^a	-441	-14	-439	-3
U.S. Total^b	228,040	7,289	1,118,303	7,393

^a These adjustments are used to reconcile the national and PAD District level sums of the State data with the independently estimated U.S. and Alaskan figures shown in the Summary Statistics portion of this issue and with the PAD District level figures published in a previous issue. Revised data at the State, PAD District, and national levels will be published without adjustments in the *Petroleum Supply Annual*.

^b Includes the following current month offshore production (thousand barrels): Alaska: State - 3,511; California: State - 1,998; Louisiana: State - 1,746; Texas: State - 148; U.S. Total, including Federal offshore - 830,902.

(b) = Less than 500 barrels or less than 500 barrels per day.

E = Estimated.

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

Sources: See Explanatory Notes.

Table 17. Natural Gas Plant Net Production and Stocks of Petroleum Products by PAD and Refining Districts, July 1990
(Thousand Barrels)

Commodity	PAD District I			PAD District II			
	East Coast	Appalachian No. 1	Total	Ind., Ill., Ky.	Minn., Wis., N. Dak., S. Dak.	Okl., Kans., Mo.	Total
Net Production							
Natural Gas Liquids	224	183	407	608	408	7,449	8,465
Pentanes Plus	81	31	92	127	108	1,194	1,428
Liquefied Petroleum Gases	183	182	318	481	303	8,288	7,039
Ethane	40	8	48	88	0	2,182	2,220
Propane	64	100	164	238	174	2,894	3,103
Normal Butane	42	37	79	98	125	813	1,038
Isobutane	17	10	27	80	4	596	680
Stocks							
Natural Gas Liquids	182	23	208	112	43	1,617	1,772
Pentanes Plus	8	0	8	20	18	180	198
Liquefied Petroleum Gases	174	23	197	92	25	1,487	1,574
Ethane	0	0	0	9	0	565	574
Propane	107	22	129	43	16	557	616
Normal Butane	85	1	86	20	9	280	289
Isobutane	2	0	2	20	0	75	95

Commodity	PAD District III					Total	PAD Dist. IV	PAD Dist. V	U.S. Total
	Texas Inland	Texas Gulf Coast	La. Gulf Coast	N. La., Ark.	New Mexico		Rocky Mt.	West Coast	
Net Production									
Natural Gas Liquids	17,036	2,884	6,928	642	3,875	31,662	2,994	2,344	45,872
Pentanes Plus	3,443	601	1,283	185	548	6,038	703	1,358	9,815
Liquefied Petroleum Gases	14,393	1,983	5,662	457	3,129	25,624	2,291	988	30,257
Ethane	5,883	958	2,384	95	1,430	10,750	398	1	13,414
Propane	5,202	842	1,963	192	1,080	9,159	1,183	301	13,910
Normal Butane	2,355	1,664	554	120	411	1,776	497	523	3,911
Isobutane	873	2,047	761	50	208	3,939	213	183	5,022
Stocks									
Natural Gas Liquids	978	4,178	1,891	148	84	7,259	182	118	9,533
Pentanes Plus	441	544	428	40	5	1,458	87	22	1,753
Liquefied Petroleum Gases	537	3,634	1,483	108	59	5,801	115	93	7,780
Ethane	87	885	64	38	15	889	5	0	1,488
Propane	207	797	248	37	35	1,322	68	76	2,211
Normal Butane	201	1,469	868	27	7	2,570	33	11	2,969
Isobutane	42	683	287	6	2	1,020	9	6	1,132

Sources: See Explanatory Notes.

**Table 18. Refinery Input of Crude Oil and Petroleum Products by PAD and Refining Districts,
July 1990**
(Thousand Barrels, Except Where Noted)

Commodity	PAD District I			PAD District II			Total
	East Coast	Appalachian No. 1	Total	Ind., Ill., Ky.	Minn., Wis., N. Dak., S. Dak.	Okla., Kans., Mo.	
Crude Oil	41,871	3,100	44,871	65,443	11,191	23,120	99,754
Natural Gas Liquids	44	0	44	1,892	70	1,180	3,122
Pentanes Plus	0	0	0	807	18	887	1,479
Liquefied Petroleum Gases	44	0	44	1,085	55	803	1,843
Ethane	0	0	0	0	0	0	0
Propane	0	0	0	88	0	0	88
Normal Butane	0	0	0	88	4	88	188
Isobutane	44	0	44	931	51	437	1,419
Other Liquids	3,442	255	3,707	2,485	20	922	3,407
Other Hydrocarbons/Alcohol	74	0	74	85	4	0	89
Unfinished Oils (net)	3,583	274	3,837	1,751	18	855	2,424
Motor Gasoline Blend, Comp. (net)	-195	-9	-204	598	-2	254	848
Aviation Gasoline Blend, Comp. (net)	0	0	0	33	0	13	48
Total Input to Refineries	48,057	3,355	48,422	69,800	11,281	25,202	106,283
Atmospheric Crude Oil Distillation							
Gross Input (daily average)	1,307	100	1,407	2,147	363	752	3,262
Operable Capacity (daily average)	1,337	124	1,461	2,194	343	740	3,278
Operable Utilization Rate (percent) ^{a,b}	97.8	80.6	96.4	97.8	105.9	101.8	99.5
Downstream Processing							
Fresh Feed Input (daily average)							
Catalytic Cracking	500	18	518	781	121	281	1,163
Catalytic Hydrocracking	72	4	77	119	0	8	126
Delayed and Fluid Coking	78	0	78	160	40	84	263
Crude Oil Qualities							
Sulfur Content, Weighted Average (percent)	1.34	0.81	1.29	1.09	1.79	0.86	1.07
API Gravity, Weighted Average (degrees)	29.70	37.85	30.25	33.95	31.25	35.91	34.10
Operable Capacity (daily average)							
Operating	1,337	124	1,461	2,194	343	740	3,278
Idle	0	0	0	1	0	0	1
Alaskan Crude Oil Receipts	0	0	0	1,102	0	538	1,638

See footnotes at end of table.

**Table 18. Refinery Input of Crude Oil and Petroleum Products by PAD and Refining Districts,
July 1990 (Continued)**
(Thousand Barrels, Except Where Noted)

Commodity	PAD District III						PAD Dist. IV	PAD Dist. V	U.S. Total
	Texas Inland	Texas Gulf Coast	La. Gulf Coast	N. La., Ark.	New Mexico	Total	Rocky Mt.	West Coast	
Crude Oil	16,433	98,149	76,873	5,945	2,407	199,807	15,444	80,784	440,440
Natural Gas Liquids	1,313	2,925	2,854	260	233	7,385	487	1,867	12,905
Pentanes Plus	938	1,422	593	162	181	3,296	129	858	5,762
Liquefied Petroleum Gases	375	1,503	2,061	98	52	4,089	358	1,009	7,143
Ethane	0	0	0	0	0	0	0	0	0
Propane	1	82	95	0	0	178	0	7	251
Normal Butane	44	251	657	0	1	953	241	631	1,983
Isobutane	330	1,170	1,309	98	51	2,958	117	371	4,909
Other Liquids	224	12,022	1,098	94	21	13,459	284	2,946	23,803
Other Hydrocarbons/Alcohol	129	866	429	10	14	1,448	9	316	1,936
Unfinished Oils (net)	99	13,361	838	78	39	14,415	135	2,326	23,137
Motor Gasoline Blend. Comp. (net)	-4	-2,204	-162	6	-32	-2,396	140	307	-1,305
Aviation Gasoline Blend. Comp. (net)	0	-1	-7	0	0	-8	0	-3	35
Total Input to Refineries	17,970	113,096	80,625	6,299	2,661	220,651	16,215	85,577	477,148
Atmospheric Crude Oil Distillation									
Gross Input (daily average)	534	3,182	2,522	185	78	6,502	501	2,726	14,397
Operable Capacity (daily average)	579	3,339	2,922	255	78	7,172	555	3,078	15,543
Operable Utilization Rate (percent) ^{a,b}	92.2	95.3	86.3	72.8	99.8	90.7	90.2	88.6	92.6
Downstream Processing									
Fresh Feed Input (daily average)									
Catalytic Cracking	192	1,368	812	32	28	2,432	178	684	4,975
Catalytic Hydrocracking	23	183	217	0	0	423	5	390	1,021
Delayed and Fluid Coking	10	193	339	14	0	555	22	427	1,343
Crude Oil Qualities									
Sulfur Content, Weighted Average (percent)	0.75	1.03	1.36	1.53	0.74	1.15	1.00	1.14	1.14
API Gravity, Weighted Average (degrees)	38.04	33.65	30.78	32.89	39.16	32.92	35.10	25.61	31.66
Operable Capacity (daily average)	579	3,339	2,922	255	78	7,172	555	3,078	15,543
Operating	547	3,280	2,583	228	74	6,712	540	3,047	15,036
Idle	32	59	339	27	4	461	15	30	507
Alaskan Crude Oil Receipts	0	6,589	257	0	0	6,846	0	44,085	52,569

^a Represents gross input divided by operable capacity.

^b See Table H2 in the Highlights Section for additional information concerning utilization rates.

(s) = Less than 500 barrels.

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

Sources: See Explanatory Notes.

**Table 19. Net Refinery Production of Finished Petroleum Products by PAD and Refining Districts,
July 1990**
(Thousand Barrels)

Commodity	PAD District I			PAD District II			
	East Coast	Appalachian No. 1	Total	Ind., Ill., Ky.	Minn., Wis., N. Dak., S. Dak.	Okla., Kans., Mo.	Total
Liquefied Refinery Gases	1,547	49	1,596	2,710	270	578	3,558
Ethane/Ethylene	140	0	140	26	0	0	26
Ethane	W	W	W	W	W	W	W
Ethylene	W	W	W	W	W	W	W
Propane/Propylene	1,053	32	1,085	2,402	257	632	3,291
Propane	W	W	W	W	W	W	W
Propylene	W	W	W	W	W	W	W
Normal Butane/Butylene	333	27	360	287	31	54	264
Normal Butane	W	W	W	W	W	W	W
Butylene	W	W	W	W	W	W	W
Isobutane	21	-10	11	-5	-18	0	-23
Finished Motor Gasoline	19,179	1,187	20,366	37,598	5,555	13,473	56,626
Leaded	358	70	428	257	531	1,619	2,407
Unleaded	18,821	1,117	19,938	37,341	5,024	11,854	54,219
Finished Aviation Gasoline	12	0	12	84	35	29	148
Jet Fuel	2,578	100	2,678	3,824	606	1,315	5,745
Naphtha-Type	64	100	164	175	13	282	470
Kerosene-Type	2,514	0	2,514	3,649	593	1,033	5,275
Kerosene	71	63	134	311	0	23	334
Distillate Fuel Oil	10,909	1,026	11,935	14,356	2,755	6,352	23,463
Residual Fuel Oil	3,940	91	4,031	1,597	321	188	2,106
Less than 0.31 percent sulfur	-12	50	38	50	0	0	50
0.31 to 1.00 percent sulfur	3,077	41	3,118	146	0	83	229
Greater than 1.00 percent sulfur	875	0	875	1,401	321	105	1,827
Naphtha for Petrochemical Feedstock Use	474	0	474	614	0	40	654
Other Oils for Petrochemical Feedstock Use	14	0	14	586	0	36	622
Special Naphthas	35	38	73	259	0	336	595
Lubricants	342	239	581	588	0	230	818
Naphthenic	93	0	93	0	0	0	0
Paraffinic	249	239	488	588	0	230	818
Waxes	0	86	86	28	0	23	51
Petroleum Coke	1,302	28	1,330	2,458	490	857	3,805
Marketable	399	0	399	1,397	321	554	2,272
Catalyst	903	28	931	1,061	169	303	1,533
Asphalt and Road Oil	4,323	260	4,583	4,232	1,340	1,189	6,761
Still Gas	1,938	170	2,168	3,300	373	1,101	4,774
Miscellaneous Products	246	36	282	383	43	48	474
Fuel Use	9	0	9	0	0	0	0
Nonfuel Use	237	36	273	383	43	48	474
Total	46,970	3,373	50,343	72,928	11,788	25,818	110,534
Processing Gain(-) or Loss(+) ^a	-1,913	-8	-1,921	-3,128	-507	-616	-4,251

See footnotes at end of table.

**Table 19. Net Refinery Production of Finished Petroleum Products by PAD and Refining Districts,
July 1990 (Continued)**
(Thousand Barrels)

Commodity	PAD District III						PAD Dist. IV	PAD Dist. V	U. S. Total
	Texas Inland	Texas Gulf Coast	La. Gulf Coast	N. La., Ark.	New Mexico	Total	Rocky Mt.	West Coast	
Liquefied Refinery Gases	715	6,059	3,548	130	146	10,598	249	1,992	17,993
Ethane/Ethylene	-45	287	164	0	0	406	0	54	626
Ethane	W	W	W	W	W	W	W	W	431
Ethylene	W	W	W	W	W	W	W	W	195
Propane/Propylene	651	4,030	2,286	90	76	7,133	211	991	12,711
Propane	W	W	W	W	W	W	W	W	9,238
Propylene	W	W	W	W	W	W	W	W	3,473
Normal Butane/Butylene	-171	1,639	1,147	36	58	2,709	38	803	4,174
Normal Butane	W	W	W	W	W	W	W	W	3,830
Butylene	W	W	W	W	W	W	W	W	344
Isobutane	280	103	-49	4	12	350	0	144	482
Finished Motor Gasoline	9,700	51,456	36,199	1,816	1,439	100,610	8,075	38,442	224,119
Leaded	622	71	569	2	322	1,586	2,184	5,979	12,584
Unleaded	9,078	51,385	35,630	1,814	1,117	99,024	5,891	32,463	211,535
Finished Aviation Gasoline	150	149	129	0	0	428	45	160	793
Jet Fuel	1,758	10,445	9,982	306	331	22,822	1,094	11,074	43,413
Naphtha-Type	690	845	434	170	271	2,410	350	516	3,910
Kerosene-Type	1,068	9,600	9,548	136	60	20,412	744	10,558	39,503
Kerosene	47	1,392	301	11	0	1,751	40	87	2,346
Distillate Fuel Oil	3,666	18,666	16,136	1,697	557	40,722	4,226	12,847	93,193
Residual Fuel Oil	447	6,485	3,848	342	25	11,147	311	12,993	30,588
Less than 0.31 percent sulfur	161	0	794	97	13	1,065	87	1,129	2,369
0.31 to 1.00 percent sulfur	138	1,562	514	182	12	2,408	49	943	6,747
Greater than 1.00 percent sulfur	148	4,923	2,540	63	0	7,674	175	10,921	21,472
Naphtha for Petrochemical Feedstock Use	110	3,292	109	0	1	3,512	0	60	4,700
Other Oils for Petrochemical Feedstock Use	180	5,249	3,285	0	0	8,714	9	106	9,465
Special Naphthas	93	808	46	108	0	1,055	0	91	1,814
Lubricants	27	2,170	789	487	0	3,473	-32	582	5,422
Naphthenic	27	567	0	350	0	944	0	216	1,253
Paraffinic	0	1,603	789	137	0	2,529	-32	366	4,169
Waxes	8	197	85	76	0	366	38	103	644
Petroleum Coke	356	3,606	3,709	129	21	7,821	374	3,835	17,165
Marketable	52	1,621	2,741	83	0	4,497	168	2,784	10,120
Catalyst	304	1,985	968	46	21	3,324	206	1,051	7,045
Asphalt and Road Oil	557	1,103	1,518	990	102	4,270	1,346	2,459	19,419
Still Gas	732	5,962	3,776	215	102	10,787	686	4,608	23,023
Miscellaneous Products	37	565	481	0	0	1,083	65	115	2,019
Fuel Use	1	0	8	0	0	9	0	0	18
Nonfuel Use	36	565	473	0	0	1,074	65	115	2,001
Total	18,583	117,604	83,941	6,307	2,724	229,159	16,526	89,554	498,118
Processing Gain(-) or Loss(+) ^a	-613	-4,508	-3,316	-8	-63	-8,508	-311	-3,977	-18,968

^a Represents the arithmetic difference between input and production.

W = Withheld to avoid disclosure of individual company data.

Sources: See Explanatory Notes.

**Table 20. Refinery Stocks of Crude Oil and Petroleum Products by PAD and Refining Districts,
July 1990**
(Thousand Barrels)

Commodity	PAD District I			PAD District II			
	East Coast	Appalachian No. 1	Total	Ind., Ill., Ky.	Minn., Wis., N. Dak., S. Dak.	Okla., Kans., Mo.	Total
Crude Oil	13,851	720	14,371	9,151	2,278	3,087	14,498
Petroleum Products	45,145	2,928	48,073	40,558	7,291	15,942	63,789
Pentanes Plus	14	0	14	136	0	193	329
Liquefied Petroleum Gases	1,057	14	1,071	3,072	165	538	3,775
Ethane/Ethylene	16	0	16	1	0	0	1
Propane/Propylene	526	4	530	1,863	38	69	1,970
Normal Butane/Butylene	472	8	480	919	56	354	1,329
Isobutane	43	2	45	289	71	115	475
Other Hydrocarbons and Alcohol	183	0	183	216	5	42	263
Unfinished Oils	14,223	973	15,196	11,376	468	4,906	16,750
Naphtha and Lighter	4,417	332	4,749	2,902	184	1,457	4,543
Kerosene and Light Gas Oils	1,877	138	2,015	1,187	58	178	1,423
Heavy Gas Oils	6,997	328	7,325	3,739	224	2,060	6,023
Residuum	932	175	1,107	3,548	2	1,211	4,761
Motor Gasoline Blending Components	4,678	131	4,807	4,698	916	1,806	7,420
Aviation Gasoline Blending Components	0	0	0	24	0	38	62
Finished Motor Gasoline	8,314	337	8,651	5,820	954	2,978	9,752
Leaded	40	24	64	101	157	564	822
Unleaded	8,274	313	8,587	5,719	797	2,414	8,930
Finished Aviation Gasoline	12	0	12	67	38	20	125
Jet Fuel	2,366	87	2,453	1,578	253	608	2,439
Naphtha-Type	153	87	240	229	32	136	397
Kerosene-Type	2,213	0	2,213	1,349	221	472	2,042
Kerosene	185	49	234	517	99	209	825
Distillate Fuel Oil	7,906	295	8,201	5,090	1,640	2,162	8,892
Residual Fuel Oil	2,544	96	2,640	1,882	279	157	2,318
Less than 0.31 percent sulfur	69	75	144	45	0	0	45
0.31 to 1.00 percent sulfur	1,916	21	1,937	299	0	77	376
Greater than 1.00 percent sulfur	559	0	559	1,538	279	80	1,897
Naphtha for Petrochemical Feedstock Use	278	0	278	204	0	88	292
Other Oils for Petrochemical Feedstock Use	3	0	3	0	0	32	32
Special Naphthas	61	38	99	154	0	197	351
Lubricants	388	331	719	976	0	0	976
Waxes	0	52	52	100	0	22	122
Petroleum Coke (Marketable)	834	0	834	914	874	431	2,219
Asphalt and Road Oil	1,883	485	2,368	3,560	1,597	1,498	6,655
Miscellaneous Products	218	40	258	172	3	17	192
Total Stocks, All Oils	58,796	3,648	62,444	49,707	9,569	19,009	78,285

See footnotes at end of table.

**Table 20. Refinery Stocks of Crude Oil and Petroleum Products by PAD and Refining Districts,
July 1990 (Continued)**
(Thousand Barrels)

Commodity	PAD District III						PAD Dist. IV	PAD Dist. V	U. S. Total
	Texas Inland	Texas Gulf Coast	La. Gulf Coast	N. La., Ark.	New Mexico	Total	Rocky Mt.	West Coast	
Crude Oil	1,408	29,873	17,531	1,203	332	50,147	2,232	28,472	109,718
Petroleum Products	11,541	82,394	50,683	5,284	1,283	151,185	10,914	63,266	337,207
Pentanes Plus	275	178	102	12	19	586	3	27	959
Liquefied Petroleum Gases	2,504	3,783	4,543	73	59	10,962	353	1,008	17,169
Ethane/Ethylene	74	673	0	0	0	747	0	0	764
Propane/Propylene	1,272	1,335	794	6	5	3,412	112	83	6,107
Normal Butane/Butylene	840	1,011	3,113	56	48	5,068	189	604	7,650
Isobutane	318	764	636	11	6	1,735	72	321	2,648
Other Hydrocarbons and Alcohol	47	283	137	1	49	517	70	309	1,342
Unfinished Oils	2,852	28,489	19,596	848	266	52,051	2,055	26,377	112,429
Naphthas and Lighter	944	6,821	5,115	216	23	13,119	604	4,333	27,348
Kerosene and Light Gas Oils	337	6,655	2,595	81	7	9,675	405	3,956	17,474
Heavy Gas Oils	895	9,714	7,839	499	236	19,183	640	13,722	46,893
Residuum	676	5,299	4,047	52	0	10,074	403	4,366	20,714
Motor Gasoline Blending Components	1,120	8,851	5,569	133	199	15,872	1,698	7,051	36,848
Aviation Gasoline Blending Components	0	0	77	0	0	77	0	3	142
Finished Motor Gasoline	1,522	12,320	4,757	812	135	19,546	1,661	7,759	47,369
Leaded	191	123	62	1	42	419	635	1,671	3,611
Unleaded	1,331	12,197	4,695	811	93	19,127	1,026	6,088	43,758
Finished Aviation Gasoline	102	284	117	0	0	503	32	132	804
Jet Fuel	785	4,795	3,472	245	193	9,490	613	4,020	19,015
Naphtha-Type	294	789	443	210	117	1,853	182	848	3,520
Kerosene-Type	491	4,006	3,029	35	76	7,637	431	3,172	15,495
Kerosene	43	754	320	25	0	1,142	48	37	2,286
Distillate Fuel Oil	856	9,590	4,141	917	111	15,615	1,823	4,570	39,101
Residual Fuel Oil	405	3,892	2,942	163	30	7,432	527	6,042	18,959
Less than 0.31 percent sulfur	74	0	1,344	4	22	1,444	46	895	2,374
0.31 to 1.00 percent sulfur	103	828	339	85	8	1,363	250	594	4,520
Greater than 1.00 percent sulfur	228	3,064	1,259	74	0	4,625	231	4,753	12,065
Naphtha for Petrochemical Feedstock Use	22	872	222	0	8	1,124	0	119	1,813
Other Oils for Petrochemical Feedstock Use	143	1,722	383	0	0	2,248	2	113	2,398
Special Naphthas	105	1,047	19	101	0	1,272	7	112	1,841
Lubricants	4	3,674	1,037	474	0	5,189	65	906	7,855
Waxes	9	221	174	29	0	433	92	231	930
Petroleum Coke (Marketable)	18	449	1,908	326	0	2,701	26	1,747	7,527
Asphalt and Road Oil	698	885	815	1,125	194	3,717	1,825	2,573	17,138
Miscellaneous Products	31	305	352	0	0	688	14	130	1,282
Total Stocks, All Oils	12,949	112,067	68,214	6,487	1,595	201,312	13,146	91,738	446,925

Note: Stocks are reported as of the last day of the month.
Sources: See Explanatory Notes.

**Table 21. Percent Refinery Yield of Petroleum Products by PAD and Refining Districts,^a
July 1990**

Commodity	PAD District I			PAD District II			
	East Coast	Appalachian No. 1	Total	Ind., Ill., Ky.	Minn., Wis., N. Dak., S. Dak.	Okla., Kans., Mo.	Total
Liquefied Refinery Gases	3.4	1.5	3.3	4.0	2.4	2.4	3.6
Finished Motor Gasoline ^b	42.7	35.4	42.2	52.1	48.9	50.7	51.4
Finished Aviation Gasoline ^c	0.0	0.0	0.0	0.1	0.3	0.1	0.1
Naphtha-Type Jet Fuel	0.1	3.0	0.3	0.3	0.1	1.2	0.5
Kerosene-Type Jet Fuel	5.6	0.0	5.2	5.4	5.3	4.3	5.2
Kerosene	0.2	1.9	0.3	0.5	0.0	0.1	0.3
Distillate Fuel Oil	24.2	30.4	24.6	21.4	24.6	26.7	23.0
Residual Fuel Oil	8.7	2.7	8.3	2.4	2.9	0.8	2.1
Naphtha for Petrochemical Feedstock Use	1.1	0.0	1.0	0.9	0.0	0.2	0.6
Other Oils for Petrochemical Feedstock Use	0.0	0.0	0.0	0.9	0.0	0.2	0.6
Special Naphthas	0.1	1.1	0.2	0.4	0.0	1.4	0.6
Lubricants	0.8	7.1	1.2	0.9	0.0	1.0	0.8
Waxes	0.0	2.5	0.2	0.0	0.0	0.1	0.0
Petroleum Coke	2.9	0.8	2.7	3.7	4.4	3.6	3.7
Asphalt and Road Oil	9.6	7.7	9.4	6.3	12.0	5.0	6.6
Still Gas	4.4	5.0	4.5	4.9	3.3	4.6	4.7
Miscellaneous Products	0.5	1.1	0.6	0.6	0.4	0.2	0.5
Processing Gain(-) or Loss(+) ^d	-4.2	-0.2	-4.0	-4.7	-4.5	-2.6	-4.2

Commodity	PAD District III						PAD Dist. IV	PAD Dist. V	U. S. Total
	Texas Inland	Texas Gulf Coast	La. Gulf Coast	N. La., Ark.	New Mexico	Total	Rocky Mt.	West Coast	
Liquefied Refinery Gases	4.3	5.4	4.6	2.2	6.0	4.9	1.6	2.4	3.9
Finished Motor Gasoline ^b	50.0	44.7	42.8	25.6	50.0	44.0	47.8	43.3	45.4
Finished Aviation Gasoline ^c	0.9	0.1	0.2	0.0	0.0	0.2	0.3	0.2	0.2
Naphtha-Type Jet Fuel	4.2	0.8	0.6	2.8	11.1	1.1	2.2	0.6	0.8
Kerosene-Type Jet Fuel	6.5	8.6	12.3	2.3	2.5	9.5	4.8	12.7	8.5
Kerosene	0.3	1.2	0.4	0.2	0.0	0.8	0.3	0.1	0.5
Distillate Fuel Oil	22.2	16.7	20.8	28.2	22.8	19.0	27.1	15.5	20.1
Residual Fuel Oil	2.7	5.8	5.0	5.7	1.0	5.2	2.0	15.6	6.6
Naphtha for Petrochemical Feedstock Use	0.7	3.0	0.1	0.0	0.0	1.6	0.0	0.1	1.0
Other Oils for Petrochemical Feedstock Use	1.1	4.7	4.2	0.0	0.0	4.1	0.1	0.1	2.0
Special Naphthas	0.6	0.7	0.1	1.8	0.0	0.5	0.0	0.1	0.4
Lubricants	0.2	1.9	1.0	8.1	0.0	1.6	-0.2	0.7	1.2
Waxes	0.0	0.2	0.1	1.3	0.0	0.2	0.2	0.1	0.1
Petroleum Coke	2.2	3.2	4.8	2.1	0.9	3.7	2.4	4.6	3.7
Asphalt and Road Oil	3.4	1.0	2.0	16.4	4.2	2.0	8.6	3.0	4.2
Still Gas	4.4	5.3	4.9	3.6	4.2	5.0	4.4	5.5	5.0
Miscellaneous Products	0.2	0.5	0.6	0.0	0.0	0.5	0.4	0.1	0.4
Processing Gain(-) or Loss(+) ^d	-3.7	-4.0	-4.3	-0.1	-2.6	-4.0	-2.0	-4.8	-4.1

^a Based on crude oil input and net reruns of unfinished oils.

^b Based on total finished motor gasoline output minus net input of motor gasoline blending components, minus input of natural gas plant liquids, other hydrocarbons and alcohol.

^c Based on finished aviation gasoline output minus net input of aviation gasoline blending components.

^d Represents the difference between input and production.

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

Sources: See Explanatory Notes.

Table 22. Imports of Residual Fuel Oil by Sulfur Content and by State of Entry, July 1990
(Thousand Barrels)

State	Residual Fuel Oil			Total
	Less than 0.31% Sulfur	0.31 to 1.00% Sulfur	Greater than 1.00% Sulfur	
PAD District I	2,905	3,900	8,735	15,540
Connecticut	0	440	57	497
Florida	144	615	1,160	1,909
Maine	51	0	757	808
Maryland	0	844	509	1,353
Massachusetts	145	0	1,484	1,639
New Hampshire	0	0	96	96
New Jersey	677	266	1,606	2,549
New York	1,298	1,735	2,045	5,078
North Carolina	0	0	174	174
Pennsylvania	563	0	149	712
South Carolina	27	0	166	193
Vermont	0	0	1	1
Virginia	0	0	531	531
PAD District III	370	20	174	564
Texas	370	20	174	564
PAD District IV	0	0	9	9
Idaho	0	0	9	9
PAD District V	483	0	0	483
California	211	0	0	211
Hawaii	272	0	0	272
U.S. Total	3,758	3,920	8,918	16,596

Sources: See Explanatory Notes.

**Table 23. Imports of Crude Oil and Petroleum Products by PAD District,
July 1990
(Thousand Barrels)**

Commodity	Petroleum Administration for Defense Districts						Daily Average
	I	II	III	IV	V	U.S. Total	
Crude Oil^{a,b}	43,133	40,004	116,637	2,647	8,752	211,173	6,812
Natural Gas Liquids	618	1,566	2,478	188	101	4,921	169
Pentanes Plus	0	38	1	60	0	99	3
Liquefied Petroleum Gases	618	1,528	2,477	98	101	4,822	165
Ethane/Ethylene	0	0	0	0	0	0	0
Propane/Propylene	605	1,085	1,003	62	33	2,788	90
Normal Butane/Butylene	2	437	910	14	28	1,391	45
Isobutane	11	6	564	22	40	643	21
Other Liquids	5,359	0	7,584	0	183	13,096	422
Unfinished Oils ^a	3,648	0	7,286	0	0	10,934	363
Naphthas and Lighter	101	0	1,836	0	0	1,937	62
Kerosene and Light Gas Oils	0	0	0	0	0	0	0
Heavy Gas Oils	3,208	0	1,701	0	0	4,909	168
Residuum	339	0	3,749	0	0	4,088	132
Motor Gasoline Blending Components	1,711	0	298	0	153	2,162	70
Aviation Gasoline Blending Components	0	0	0	0	0	0	0
Finished Petroleum Products	35,722	608	7,910	175	2,084	46,479	1,499
Finished Motor Gasoline	10,000	173	338	57	970	11,538	372
Leaded	0	0	0	16	0	16	1
Unleaded	10,000	173	338	41	970	11,522	372
Finished Aviation Gasoline	3	0	0	0	5	8	(8)
Jet Fuel	1,832	49	472	0	279	2,632	85
Naphtha-Type	0	49	0	0	4	53	2
Kerosene-Type	1,832	0	472	0	275	2,579	83
Bonded Aircraft Fuel	856	0	314	0	226	1,396	45
Other	976	0	158	0	49	1,183	38
Kerosene	23	0	0	0	0	23	1
Distillate Fuel Oil	6,516	225	0	109	241	7,091	229
Bonded Ship Bunkers	119	0	0	3	0	122	4
Other	6,397	225	0	106	241	6,969	225
Residual Fuel Oil	15,540	0	564	9	483	16,596	535
Bonded Ship Bunkers	0	0	0	0	0	0	0
Other	15,540	0	564	9	483	16,596	535
Naphtha for Petrochemical Feedstock Use	331	36	1,674	0	30	2,071	67
Other Oils for Petrochemical Feedstock Use	0	0	4,648	0	0	4,648	150
Special Naphthas	10	40	64	0	2	116	4
Lubricants	338	28	0	0	0	366	12
Waxes	28	1	2	0	1	32	1
Petroleum Coke	0	0	107	0	51	158	5
Asphalt and Road Oil	1,046	49	40	0	2	1,137	37
Miscellaneous Products	55	7	1	0	0	63	2
Total	84,832	42,176	134,609	2,980	11,070	275,669	8,893

^a Crude oil and unfinished oils are reported by the PAD District in which they are to be processed; all other products are reported by the PAD District of entry.

^b Includes crude oil imported for storage in the Strategic Petroleum Reserve.

(a) = Less than 500 barrels or less than 500 barrels per day.

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

Sources: See Explanatory Notes.

**Table 24. Year-to-Date Imports of Crude Oil and Petroleum Products by PAD District,
January-July 1990
(Thousand Barrels)**

Commodity	Petroleum Administration for Defense Districts						Daily Average
	I	II	III	IV	V	U.S. Total	
Crude Oil^{a,b}	270,750	247,080	733,288	15,417	55,129	1,321,644	6,234
Natural Gas Liquids	8,837	15,901	14,020	1,898	999	41,455	196
Petroleum Plus	620	233	276	607	0	1,736	8
Liquefied Petroleum Gases	8,217	15,668	13,744	1,091	999	39,719	187
Ethane/Ethylene	0	0	886	0	0	886	4
Propane/Propylene	7,724	11,835	5,622	717	599	26,497	125
Normal Butane/Butylene	444	3,263	5,173	281	155	9,316	44
Isobutane	49	570	2,063	93	245	3,020	14
Other Liquids	36,440	96	60,425	5	1,115	98,581	465
Unfinished Oils ^a	23,301	0	58,663	5	634	82,603	390
Naphthas and Lighter	2,077	0	15,452	5	0	17,534	83
Kerosene and Light Gas Oils	0	0	0	0	0	0	0
Heavy Gas Oils	19,950	0	15,997	0	634	36,581	173
Residuum	1,274	0	27,214	0	0	28,488	134
Motor Gasoline Blending Components	13,139	96	2,262	0	481	15,978	75
Aviation Gasoline Blending Components	0	0	0	0	0	0	0
Finished Petroleum Products	269,520	4,046	54,816	705	11,188	340,074	1,604
Finished Motor Gasoline	71,340	1,047	5,172	276	3,467	81,302	384
Leaded	0	0	25	34	117	176	1
Unleaded	71,340	1,047	5,147	242	3,350	81,126	383
Finished Aviation Gasoline	9	0	0	0	24	33	(8)
Jet Fuel	18,244	366	5,359	0	1,328	25,297	119
Naphtha-Type	0	336	0	0	15	351	2
Kerosene-Type	18,244	30	5,359	0	1,313	24,946	118
Bonded Aircraft Fuel	5,851	30	4,556	0	1,005	11,442	54
Other	12,393	0	803	0	308	13,504	64
Kerosene	947	0	442	0	0	1,389	7
Distillate Fuel Oil	61,896	1,278	440	370	710	64,694	305
Bonded Ship Bunkers	119	0	0	8	0	127	1
Other	61,777	1,278	440	362	710	64,567	305
Residual Fuel Oil	107,108	485	5,720	59	5,008	118,380	558
Bonded Ship Bunkers	226	0	0	0	0	226	1
Other	106,882	485	5,720	59	5,008	118,154	557
Naphtha for Petrochemical Feedstock Use	1,980	314	15,024	0	262	17,560	83
Other Oils for Petrochemical Feedstock Use	0	0	20,240	0	0	20,240	95
Special Naphthas	111	257	1,648	0	50	2,066	10
Lubricants	1,712	167	56	0	70	2,005	9
Waxes	160	39	12	0	15	226	1
Petroleum Coke	0	0	273	0	242	515	2
Asphalt and Road Oil	5,690	56	228	0	12	5,986	28
Miscellaneous Products	343	37	2	0	0	382	2
Total	585,547	267,103	862,849	17,825	68,431	1,801,755	8,499

^a Crude oil and unfinished oils are reported by the PAD District in which they are to be processed; all other products are reported by the PAD District of entry.

^b Includes crude oil imported for storage in the Strategic Petroleum Reserve.

(a) = Less than 500 barrels or less than 500 barrels per day.

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

Sources: See Explanatory Notes.

**Table 25. Imports of Crude Oil and Petroleum Products Into the United States by Country of Origin,^a
July 1990
(Thousand Barrels)**

Country of Origin	Crude Oil ^b	Liquefied Petroleum Gases	Unfinished Oils	Gasoline Blending Components	Finished Motor Gasoline	Jet Fuel	Distillate Fuel Oil	Residual Fuel Oil			Total
								Less than 0.31% Sulfur	0.31 to 1.00% Sulfur	Greater than 1.00% Sulfur	
Arab OPEC	76,807	530	3,198	0	2,047	0	0	1,051	20	112	1,183
Algeria	2,165	530	998	0	0	0	0	1,051	20	112	1,183
Iraq	34,705	0	0	0	0	0	0	0	0	0	0
Kuwait	1,013	0	307	0	0	0	0	0	0	0	0
Saudi Arabia	38,509	0	1,893	0	2,047	0	0	0	0	0	0
United Arab Emirates	415	0	0	0	0	0	0	0	0	0	0
Other OPEC	53,905	211	951	238	2,498	1,136	2,910	355	0	1,798	2,153
Ecuador	1,340	0	0	0	0	0	131	0	0	379	379
Gabon	2,151	0	0	0	0	0	0	0	0	0	0
Indonesia	4,235	0	0	0	0	0	0	211	0	0	211
Nigeria	25,578	0	0	0	0	0	0	144	0	0	144
Venezuela	20,801	211	951	238	2,498	1,136	2,779	0	0	1,419	1,419
Non OPEC	80,481	4,081	6,787	1,924	6,993	1,498	4,181	2,352	3,900	7,008	13,260
Angola	9,395	0	0	0	0	0	0	0	0	0	0
Argentina	313	0	207	32	219	0	0	198	153	0	349
Australia	3,143	749	0	0	0	0	0	0	0	0	0
Bahama Islands	0	0	0	0	0	0	0	0	878	114	700
Belgium	0	0	273	660	251	0	0	0	0	0	0
Benin	553	0	0	0	0	0	0	0	0	0	0
Brazil	0	0	4	0	1,155	0	0	708	384	0	1,092
Brunei	935	0	0	0	0	0	0	0	0	0	0
Cameroon	485	0	0	0	0	0	0	0	0	0	0
Canada	20,423	2,345	27	53	1,209	339	1,352	0	0	948	948
China, People's Republic of	3,773	0	0	153	161	0	0	0	0	0	0
Colombia	3,429	0	0	0	0	0	0	327	253	1,231	1,811
Congo	1,104	0	0	0	0	0	0	0	0	0	0
Egypt	703	0	241	0	0	0	0	0	0	0	0
France	0	0	0	0	228	0	0	0	289	0	289
Germany, FR (W)	0	0	0	0	0	0	0	0	0	0	0
Greece	0	0	0	0	0	0	300	0	0	0	0
India	0	0	238	0	0	0	0	0	0	0	0
Italy	345	0	635	272	0	0	0	0	310	171	481
Japan	0	0	0	0	0	0	0	0	0	0	0
Korea, Republic of	0	0	0	0	0	0	0	0	0	0	0
Malaysia	613	0	0	0	0	0	0	0	0	0	0
Mexico	20,189	987	0	0	0	260	110	0	0	0	0
Netherlands	0	0	1,028	80	0	0	0	0	0	0	0
Netherlands Antilles	0	0	0	0	0	0	0	0	0	879	879
Norway	3,994	0	0	0	0	0	0	0	0	0	0
Oman	2,518	0	0	0	0	0	0	0	0	0	0
Peru	0	0	0	0	0	0	0	0	119	958	1,075
Portugal	0	0	0	18	211	0	0	0	0	0	0
Puerto Rico	0	0	0	405	0	0	0	0	0	0	0
Romania	0	0	0	0	324	0	0	0	0	0	0
Singapore	0	0	0	0	0	0	0	272	0	0	272
Spain	0	0	586	0	1,540	0	0	0	388	84	472
Sweden	0	0	0	0	0	0	0	0	0	0	0
Thailand	511	0	0	0	0	0	0	0	0	0	0
Trinidad and Tobago	2,257	0	0	0	54	0	0	0	333	677	1,010
United Kingdom	5,132	0	214	0	248	0	225	0	712	0	712
U.S.S.R.	0	0	1,199	0	0	0	0	553	85	698	1,338
Virgin Islands	0	0	2,137	253	1,397	897	1,982	27	50	1,078	1,153
Yugoslavia	0	0	0	0	0	0	212	0	0	0	0
Zaire	608	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	269	168	174	611
Total	211,173	4,822	10,934	2,162	11,538	2,632	7,091	3,758	3,920	8,918	18,598

See footnotes at end of table.

Table 25. Imports of Crude Oil and Petroleum Products Into the United States by Country of Origin,^a
July 1990 (Continued)
(Thousand Barrels)

Country of Origin									Crude Oil and Products	
	Kerosene	Special Naphtha	Naphtha for Petrochemical Feedstock Use	Other Oils for Petrochemical Feedstock Use	Lubricants	Asphalt and Road Oil	Other Products ^b	Total Products	Total	Daily Average
Arab OPEC	0	29	0	4,648	0	0	0	11,633	88,440	2,853
Algeria	0	29	0	4,648	0	0	0	7,388	9,581	308
Iraq	0	0	0	0	0	0	0	0	34,708	1,120
Kuwait	0	0	0	0	0	0	0	307	1,320	43
Saudi Arabia	0	0	0	0	0	0	0	3,040	42,440	1,309
United Arab Emirates	0	0	0	0	0	0	0	0	418	13
Other OPEC	0	0	389	0	0	741	0	11,227	66,132	2,101
Ecuador	0	0	0	0	0	0	0	510	1,860	60
Gabon	0	0	0	0	0	0	0	0	2,151	69
Indonesia	0	0	0	0	0	0	0	211	4,440	143
Nigeria	0	0	0	0	0	0	0	144	25,722	830
Venezuela	0	0	389	0	0	741	0	10,362	30,983	999
Non OPEC	23	87	1,682	0	368	398	300	41,838	122,097	3,939
Angola	0	0	0	0	0	0	0	0	9,308	303
Argentina	0	14	0	0	0	0	107	928	1,241	40
Australia	0	0	0	0	0	0	0	749	3,892	126
Bahama Islands	0	0	0	0	0	0	0	790	790	25
Belgium	0	0	0	0	0	0	1	1,185	1,185	38
Benin	0	0	0	0	0	0	0	0	853	18
Brazil	0	21	0	0	0	0	1	2,273	2,273	73
Brunei	0	0	0	0	0	0	0	0	935	30
Cameroon	0	0	0	0	0	0	0	0	485	16
Canada	23	52	42	0	69	272	177	8,908	27,331	882
China, People's Republic of	0	0	0	0	0	0	0	314	4,087	132
Colombia	0	0	0	0	0	0	2	1,813	5,242	169
Congo	0	0	0	0	0	0	0	0	1,104	36
Egypt	0	0	0	0	0	0	0	241	944	30
France	0	0	169	0	0	0	0	684	684	21
Germany, FR (W)	0	0	0	0	0	0	7	7	7	(a)
Greece	0	0	0	0	0	0	0	300	300	10
India	0	0	633	0	0	0	0	871	871	28
Italy	0	0	0	0	0	0	8	1,394	1,739	58
Japan	0	0	0	0	0	0	1	1	1	(a)
Korea, Republic of	0	0	30	0	0	0	0	30	30	1
Malaysia	0	0	0	0	0	0	0	0	613	20
Mexico	0	0	0	0	0	8	2	1,385	21,534	695
Netherlands	0	0	20	0	0	0	0	1,128	1,128	36
Netherlands Antilles	0	0	0	0	0	58	0	937	937	30
Norway	0	0	0	0	0	0	0	0	3,994	129
Oman	0	0	0	0	0	0	0	0	2,518	81
Peru	0	0	0	0	0	0	0	1,075	1,075	35
Portugal	0	0	0	0	0	0	0	227	227	7
Puerto Rico	0	0	345	0	285	0	55	1,090	1,090	35
Romania	0	0	0	0	0	0	0	324	324	10
Singapore	0	0	0	0	0	0	0	272	272	9
Spain	0	0	100	0	12	60	0	2,770	2,770	89
Sweden	0	0	22	0	0	0	0	22	22	1
Thailand	0	0	0	0	0	0	0	0	511	16
Trinidad and Tobago	0	0	0	0	0	0	0	1,084	3,321	107
United Kingdom	0	0	0	0	0	0	0	1,397	8,529	211
U.S.S.R.	0	0	321	0	0	0	0	2,856	2,856	92
Virgin Islands	0	0	0	0	0	0	0	7,819	7,819	252
Yugoslavia	0	0	0	0	0	0	0	212	212	7
Zaire	0	0	0	0	0	0	0	0	688	21
Other	0	0	0	0	0	0	1	612	612	20
Total	23	110	2,071	4,648	368	1,137	380	64,498	275,689	8,893

^a Crude oil and unfinished oils are reported by the PAD District in which they are to be processed; all other products are reported by the PAD District of entry.

^b Includes crude oil imported for storage in the Strategic Petroleum Reserve.

^c Includes aviation gasoline, aviation gasoline blending components, miscellaneous products, pentanes plus, petroleum coke, and waxes.

(a) = Less than 500 barrels or less than 500 barrels per day.

E = Estimated.

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

Sources: See Explanatory Notes.

Table 26. PAD District I—Imports of Crude Oil and Petroleum Products by Country of Origin,^a
July 1990
(Thousand Barrels)

Country of Origin	Crude Oil ^b	Liquefied Petroleum Gases	Unfinished Oils	Gasoline Blending Components	Finished Motor Gasoline	Jet Fuel	Distillate Fuel Oil	Residual Fuel Oil			Total
								Less than 0.31% Sulfur	0.31 to 1.00% Sulfur	Greater than 1.00% Sulfur	
Arab OPEC	8,041	0	339	0	1,822	0	0	1,081	0	112	1,193
Algeria	0	0	339	0	0	0	0	1,081	0	112	1,193
Iraq	2,020	0	0	0	0	0	0	0	0	0	0
Saudi Arabia	6,013	0	0	0	1,822	0	0	0	0	0	0
Other OPEC	17,389	0	0	0	2,258	888	2,910	144	0	1,798	1,942
Ecuador	1,022	0	0	0	0	0	131	0	0	379	379
Nigeria	11,810	0	0	0	0	0	0	144	0	0	144
Venezuela	4,555	0	0	0	2,258	888	2,770	0	0	1,419	1,419
Non OPEC	16,903	618	3,009	1,711	6,220	976	3,606	1,710	3,900	6,825	12,435
Angola	5,073	0	0	0	0	0	0	0	0	0	0
Argentina	0	0	207	0	0	0	0	196	153	0	349
Australia	811	0	0	0	0	0	0	0	0	0	0
Bahama Islands	0	0	0	0	0	0	0	0	676	114	790
Belgium	0	0	273	680	251	0	0	0	0	0	0
Brazil	0	0	0	0	1,155	0	0	708	384	0	1,092
Brunei	668	0	0	0	0	0	0	0	0	0	0
Canada	1,727	618	0	53	914	237	777	0	0	939	939
Colombia	0	0	0	0	0	0	0	327	253	1,231	1,811
Congo	882	0	0	0	0	0	0	0	0	0	0
Egypt	703	0	0	0	0	0	0	0	0	0	0
France	0	0	0	0	228	0	0	0	269	0	269
Germany, FR (W)	0	0	0	0	0	0	0	0	0	0	0
Greece	0	0	0	0	0	0	300	0	0	0	0
Italy	345	0	474	244	0	0	0	0	310	171	481
Japan	0	0	0	0	0	0	0	0	0	0	0
Mexico	2,424	0	0	0	0	0	110	0	0	0	0
Netherlands	0	0	173	80	0	0	0	0	0	0	0
Netherlands Antilles	0	0	0	0	0	0	0	0	0	879	879
Norway	3,470	0	0	0	0	0	0	0	0	0	0
Peru	0	0	0	0	0	0	0	0	119	956	1,075
Portugal	0	0	0	16	211	0	0	0	0	0	0
Puerto Rico	0	0	0	405	0	0	0	0	0	0	0
Romania	0	0	0	0	324	0	0	0	0	0	0
Spain	0	0	415	0	1,540	0	0	0	388	84	472
Trinidad and Tobago	0	0	0	0	54	0	0	0	333	677	1,010
United Kingdom	0	0	0	0	246	0	225	0	712	0	712
U.S.S.R.	0	0	0	0	0	0	0	183	85	698	966
Virgin Islands	0	0	1,787	253	1,299	739	1,982	27	50	1,076	1,153
Yugoslavia	0	0	0	0	0	0	212	0	0	0	0
Other	0	0	0	0	0	0	0	269	168	0	437
Total	43,133	618	3,048	1,711	10,000	1,832	6,516	2,905	3,900	8,735	15,540

See footnotes at end of table.

**Table 20. PAD District I—Imports of Crude Oil and Petroleum Products by Country of Origin,^a
July 1990 (Continued)
(Thousand Barrels)**

Country of Origin	Kerosene	Special Naphthas	Naphtha for Petrochemical Feedstock Use	Other Oils for Petrochemical Feedstock Use	Lubricants	Asphalt and Road Oil	Other Products ^c	Total Products	Crude Oil and Products	
									Total	Daily Average
Arab OPEC	0	0	0	0	0	0	0	3,024	11,888	383
Algeria	(1)	0	0	0	0	0	0	1,502	1,502	48
Iraq	0	0	0	0	0	0	0	0	2,828	91
Saudi Arabia	0	0	0	0	0	0	0	1,522	7,535	240
Other OPEC	0	0	0	0	0	741	0	8,707	28,096	842
Ecuador	0	0	0	0	0	0	0	510	1,532	49
Nigeria	0	0	0	0	0	0	0	144	11,956	388
Venezuela	0	0	0	0	0	741	0	8,053	12,608	407
Non OPEC	23	10	331	0	338	305	86	29,968	48,871	1,512
Angola	0	0	0	0	0	0	0	0	5,973	193
Argentina	0	0	0	0	0	0	0	556	556	18
Australia	0	0	0	0	0	0	0	0	811	26
Bahama Islands	0	0	0	0	0	0	0	790	790	25
Belgium	0	0	0	0	0	0	0	1,184	1,184	38
Brazil	0	0	0	0	0	0	1	2,248	2,248	73
Brunei	0	0	0	0	0	0	0	0	568	18
Canada	23	10	6	0	41	221	15	3,854	5,501	180
Colombia	0	0	0	0	0	0	0	1,511	1,511	58
Congo	0	0	0	0	0	0	0	0	882	28
Egypt	0	0	0	0	0	0	0	0	703	23
France	0	0	0	0	0	0	0	495	495	16
Germany, FR (W)	0	0	0	0	0	0	7	7	7	(8)
Greece	0	0	0	0	0	0	0	300	300	10
Italy	0	0	0	0	0	0	6	1,205	1,550	50
Japan	0	0	0	0	0	0	1	1	1	(8)
Mexico	0	0	0	0	0	0	0	110	2,534	82
Netherlands	0	0	0	0	0	0	0	253	253	8
Netherlands Antilles	0	0	0	0	0	24	0	903	903	29
Norway	0	0	0	0	0	0	0	0	3,470	112
Peru	0	0	0	0	0	0	0	1,075	1,075	35
Portugal	0	0	0	0	0	0	0	227	227	7
Puerto Rico	0	0	325	0	285	0	55	1,070	1,070	35
Romania	0	0	0	0	0	0	0	324	324	10
Spain	0	0	0	0	12	60	0	2,499	2,499	81
Trinidad and Tobago	0	0	0	0	0	0	0	1,084	1,084	34
United Kingdom	0	0	0	0	0	0	0	1,183	1,183	38
U.S.S.R.	0	0	0	0	0	0	0	966	966	31
Virgin Islands	0	0	0	0	0	0	0	7,193	7,193	232
Yugoslavia	0	0	0	0	0	0	0	212	212	7
Other	0	0	0	0	0	0	1	438	438	14
Total	23	10	331	0	338	1,046	86	41,699	84,832	2,737

^a Crude oil and unfinished oils are reported by the PAD District in which they are to be processed; all other products are reported by the PAD District of entry.

^b Includes crude oil imported for storage in the Strategic Petroleum Reserve.

^c Includes aviation gasoline, aviation gasoline blending components, miscellaneous products, pentanes plus, petroleum coke, and waxes.

(s) = Less than 500 barrels or less than 500 barrels per day.

E = Estimated.

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

Sources: See Explanatory Notes.

Table 27. PAD District II—Imports of Crude Oil and Petroleum Products by Country of Origin,^a
July 1990
(Thousand Barrels)

Country of Origin	Crude Oil ^b	Liquefied Petroleum Gases	Unfinished Oil	Gasoline Blending Components	Finished Motor Gasoline	Jet Fuel	Distillate Fuel Oil	Residual Fuel Oil			Total
								Less than 0.31% Sulfur	0.31 to 1.00% Sulfur	Greater than 1.00% Sulfur	
Arab OPEC	11,328	0	0	0	0	0	0	0	0	0	0
Algeria	969	0	0	0	0	0	0	0	0	0	0
Iraq	5,584	0	0	0	0	0	0	0	0	0	0
Saudi Arabia	4,773	0	0	0	0	0	0	0	0	0	0
Other OPEC	9,150	0	0	0	0	0	0	0	0	0	0
Ecuador	318	0	0	0	0	0	0	0	0	0	0
Indonesia	465	0	0	0	0	0	0	0	0	0	0
Nigeria	4,897	0	0	0	0	0	0	0	0	0	0
Venezuela	3,470	0	0	0	0	0	0	0	0	0	0
Non OPEC	19,528	1,528	0	0	173	49	225	0	0	0	0
Canada	16,938	1,528	0	0	173	49	225	0	0	0	0
Mexico	1,892	0	0	0	0	0	0	0	0	0	0
Trinidad and Tobago	472	0	0	0	0	0	0	0	0	0	0
United Kingdom	1,082	0	0	0	0	0	0	0	0	0	0
Zaire	144	0	0	0	0	0	0	0	0	0	0
Total	40,004	1,528	0	0	173	49	225	0	0	0	0

See footnotes at end of table.

Table 27. PAD District II—Imports of Crude Oil and Petroleum Products by Country of Origin,^a
July 1990 (Continued)
(Thousand Barrels)

Country of Origin	Kerosene	Special Naphthas	Naphtha for Petrochemical Feedstock Use	Other Oils for Petrochemical Feedstock Use	Lubricants	Asphalt and Road Oil	Other Products ^c	Total Products	Crude Oil and Products	
									Total	Daily Average
Arab OPEC	0	0	0	0	0	0	0	0	11,326	365
Algeria	0	0	0	0	0	0	0	0	969	31
Iraq	0	0	0	0	0	0	0	0	5,584	180
Saudi Arabia	0	0	0	0	0	0	0	0	4,773	154
Other OPEC	0	0	0	0	0	0	0	0	9,150	285
Ecuador	0	0	0	0	0	0	0	0	318	10
Indonesia	0	0	0	0	0	0	0	0	465	15
Nigeria	0	0	0	0	0	0	0	0	4,897	158
Venezuela	0	0	0	0	0	0	0	0	3,470	112
Non OPEC	0	40	36	0	28	49	46	2,174	21,702	700
Canada	0	40	36	0	28	49	46	2,174	18,112	584
Mexico	0	0	0	0	0	0	0	0	1,892	61
Trinidad and Tobago	0	0	0	0	0	0	0	0	472	15
United Kingdom	0	0	0	0	0	0	0	0	1,082	35
Zaire	0	0	0	0	0	0	0	0	144	5
Total	0	40	36	0	28	49	46	2,174	42,178	1,361

^a Crude oil and unfinished oils are reported by the PAD District in which they are to be processed; all other products are reported by the PAD District of entry.

^b Includes crude oil imported for storage in the Strategic Petroleum Reserve.

^c Includes aviation gasoline, aviation gasoline blending components, miscellaneous products, pentanes plus, petroleum coke, and waxes.

(s) = Less than 500 barrels or less than 500 barrels per day.

E = Estimated.

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

Sources: See Explanatory Notes.

Table 28. PAD District III—Imports of Crude Oil and Petroleum Products by Country of Origin,^a
July 1990
(Thousand Barrels)

Country of Origin	Crude Oil ^b	Liquefied Petroleum Gases	Unfinished Oils	Gasoline Blending Components	Finished Motor Gasoline	Jet Fuel	Distillate Fuel Oil	Residual Fuel Oil			Total
								Less than 0.31% Sulfur	0.31 to 1.00% Sulfur	Greater than 1.00% Sulfur	
Arab OPEC	55,271	530	2,857	0	0	0	0	0	20	0	20
Algeria	1,196	530	657	0	0	0	0	0	20	0	20
Iraq	25,993	0	0	0	0	0	0	0	0	0	0
Kuwait	1,013	0	307	0	0	0	0	0	0	0	0
Saudi Arabia	26,654	0	1,893	0	0	0	0	0	0	0	0
United Arab Emirates	415	0	0	0	0	0	0	0	0	0	0
Other OPEC	23,870	211	951	238	240	54	0	0	0	0	0
Gabon	2,151	0	0	0	0	0	0	0	0	0	0
Indonesia	74	0	0	0	0	0	0	0	0	0	0
Nigeria	8,869	0	0	0	0	0	0	0	0	0	0
Venezuela	12,576	211	951	238	240	54	0	0	0	0	0
Non OPEC	37,696	1,736	3,478	60	98	418	0	370	0	174	544
Angola	3,422	0	0	0	0	0	0	0	0	0	0
Argentina	313	0	0	32	0	0	0	0	0	0	0
Australia	648	749	0	0	0	0	0	0	0	0	0
Belgium	0	0	0	0	0	0	0	0	0	0	0
Benin	553	0	0	0	0	0	0	0	0	0	0
Brazil	0	0	4	0	0	0	0	0	0	0	0
Cameroon	485	0	0	0	0	0	0	0	0	0	0
Canada	0	0	27	0	0	0	0	0	0	0	0
China, People's Republic of	3,773	0	0	0	0	0	0	0	0	0	0
Colombia	3,429	0	0	0	0	0	0	0	0	0	0
Congo	222	0	0	0	0	0	0	0	0	0	0
Egypt	0	0	241	0	0	0	0	0	0	0	0
France	0	0	0	0	0	0	0	0	0	0	0
India	0	0	238	0	0	0	0	0	0	0	0
Italy	0	0	161	28	0	0	0	0	0	0	0
Malaysia	613	0	0	0	0	0	0	0	0	0	0
Mexico	14,839	987	0	0	0	260	0	0	0	0	0
Netherlands	0	0	853	0	0	0	0	0	0	0	0
Netherlands Antilles	0	0	0	0	0	0	0	0	0	0	0
Norway	524	0	0	0	0	0	0	0	0	0	0
Oman	2,518	0	0	0	0	0	0	0	0	0	0
Puerto Rico	0	0	0	0	0	0	0	0	0	0	0
Spain	0	0	171	0	0	0	0	0	0	0	0
Sweden	0	0	0	0	0	0	0	0	0	0	0
Trinidad and Tobago	1,785	0	0	0	0	0	0	0	0	0	0
United Kingdom	4,050	0	214	0	0	0	0	0	0	0	0
U.S.S.R.	0	0	1,199	0	0	0	0	370	0	0	370
Virgin Islands	0	0	370	0	98	158	0	0	0	0	0
Zaire	522	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	174	174
Total	116,637	2,477	7,286	298	338	472	0	370	20	174	564

See footnotes at end of table.

**Table 28. PAD District III—Imports of Crude Oil and Petroleum Products by Country of Origin,^a
July 1990 (Continued)
(Thousand Barrels)**

Country of Origin	Kerosene	Special Naphthas	Naphtha for Petrochemical Feedstock Use	Other Oils for Petrochemical Feedstock Use	Lubricants	Asphalt and Road Oil	Other Products ^c	Total Products	Crude Oil and Products	
									Total	Daily Average
Arab OPEC	0	29	0	4,648	0	0	0	8,084	63,355	2,044
Algeria	0	29	0	4,648	0	0	0	5,884	7,080	228
Iraq	0	0	0	0	0	0	0	0	25,993	838
Kuwait	0	0	0	0	0	0	0	307	1,320	43
Saudi Arabia	0	0	0	0	0	0	0	1,893	28,547	921
United Arab Emirates	0	0	0	0	0	0	0	0	415	13
Other OPEC	0	0	389	0	0	0	0	2,083	25,753	831
Gabon	0	0	0	0	0	0	0	0	2,151	69
Indonesia	0	0	0	0	0	0	0	0	74	2
Nigeria	0	0	0	0	0	0	0	0	8,869	286
Venezuela	0	0	389	0	0	0	0	2,083	14,659	473
Non OPEC	0	35	1,285	0	0	40	111	7,805	45,501	1,488
Angola	0	0	0	0	0	0	0	0	3,422	110
Argentina	0	14	0	0	0	0	107	163	466	15
Australia	0	0	0	0	0	0	0	749	1,397	45
Belgium	0	0	0	0	0	0	1	1	1	(9)
Benin	0	0	0	0	0	0	0	0	553	18
Brazil	0	21	0	0	0	0	0	25	25	1
Cameroon	0	0	0	0	0	0	0	0	485	16
Canada	0	0	0	0	0	0	0	27	27	1
China, People's Republic of	0	0	0	0	0	0	0	0	3,773	122
Colombia	0	0	0	0	0	0	2	2	3,431	111
Congo	0	0	0	0	0	0	0	0	222	7
Egypt	0	0	0	0	0	0	0	241	241	8
France	0	0	169	0	0	0	0	169	169	5
India	0	0	633	0	0	0	0	871	871	28
Italy	0	0	0	0	0	0	0	189	189	6
Malaysia	0	0	0	0	0	0	0	0	613	20
Mexico	0	0	0	0	0	8	1	1,254	16,093	519
Netherlands	0	0	20	0	0	0	0	873	873	26
Netherlands Antilles	0	0	0	0	0	34	0	34	34	1
Norway	0	0	0	0	0	0	0	0	524	17
Oman	0	0	0	0	0	0	0	0	2,518	81
Puerto Rico	0	0	20	0	0	0	0	20	20	1
Spain	0	0	100	0	0	0	0	271	271	9
Sweden	0	0	22	0	0	0	0	22	22	1
Trinidad and Tobago	0	0	0	0	0	0	0	0	1,785	58
United Kingdom	0	0	0	0	0	0	0	214	4,264	138
U.S.S.R.	0	0	321	0	0	0	0	1,890	1,890	61
Virgin Islands	0	0	0	0	0	0	0	626	626	20
Zaire	0	0	0	0	0	0	0	0	522	17
Other	0	0	0	0	0	0	0	174	174	6
Total	0	64	1,674	4,848	0	40	111	17,972	134,809	4,342

^a Crude oil and unfinished oils are reported by the PAD District in which they are to be processed; all other products are reported by the PAD District of entry.

^b Includes crude oil imported for storage in the Strategic Petroleum Reserve.

^c Includes aviation gasoline, aviation gasoline blending components, miscellaneous products, pentanes plus, petroleum coke, and waxes.

(s) = Less than 500 barrels or less than 500 barrels per day.

E = Estimated.

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

Sources: See Explanatory Notes.

Table 29. PAD Districts IV and V—Imports of Crude Oil and Petroleum Products by Country of Origin,^a
July 1990
(Thousand Barrels)

Country of Origin	Crude Oil ^b	Liquefied Petroleum Gases	Unfinished Oils	Gasoline Blending Components	Finished Motor Gasoline	Jet Fuel	Distillate Fuel Oil	Residual Fuel Oil			Total
								Less than 0.31% Sulfur	0.31 to 1.00% Sulfur	Greater than 1.00% Sulfur	
PAD District IV											
Non OPEC	2,647	98	0	0	57	0	109	0	0	9	9
Canada	2,647	98	0	0	57	0	109	0	0	9	9
Total	2,647	98	0	0	57	0	109	0	0	9	9
PAD District V											
Arab OPEC	1,369	0	0	0	525	0	0	0	0	0	0
Iraq	300	0	0	0	0	0	0	0	0	0	0
Saudi Arabia	1,069	0	0	0	525	0	0	0	0	0	0
Other OPEC	3,696	0	0	0	0	226	0	211	0	0	211
Indonesia	3,696	0	0	0	0	0	0	211	0	0	211
Venezuela	0	0	0	0	0	226	0	0	0	0	0
Non OPEC	3,687	101	0	153	445	53	241	272	0	0	272
Argentina	0	0	0	0	219	0	0	0	0	0	0
Australia	1,684	0	0	0	0	0	0	0	0	0	0
Brunei	367	0	0	0	0	0	0	0	0	0	0
Canada	111	101	0	0	65	53	241	0	0	0	0
China, People's Republic of	0	0	0	153	161	0	0	0	0	0	0
Korea, Republic of	0	0	0	0	0	0	0	0	0	0	0
Mexico	1,014	0	0	0	0	0	0	0	0	0	0
Singapore	0	0	0	0	0	0	0	272	0	0	272
Thailand	511	0	0	0	0	0	0	0	0	0	0
Total	8,752	101	0	153	970	279	241	483	0	0	483

See footnotes at end of table.

**Table 29. PAD Districts IV and V—Imports of Crude Oil and Petroleum Products by Country of Origin,^a
July 1990 (Continued)
(Thousand Barrels)**

Country of Origin	Kerosene	Special Naphtha	Naphtha for Petrochemical Feedstock Use	Other Oils for Petrochemical Feedstock Use	Lubricants	Asphalt and Road Oil	Other Products ^c	Total Products	Crude Oil and Products	
									Total	Daily Average
PAD District IV										
Non OPEC	0	0	0	0	0	0	60	333	2,980	96
Canada	0	0	0	0	0	0	60	333	2,980	96
Total	0	0	0	0	0	0	60	333	2,980	96
PAD District V										
Arab OPEC	0	0	0	0	0	0	0	525	1,894	61
Iraq	0	0	0	0	0	0	0	0	300	10
Saudi Arabia	0	0	0	0	0	0	0	525	1,594	51
Other OPEC	0	0	0	0	0	0	0	437	4,133	133
Indonesia	0	0	0	0	0	0	0	211	3,907	126
Venezuela	0	0	0	0	0	0	0	226	226	7
Non OPEC	0	2	30	0	0	2	57	1,356	5,043	163
Argentina	0	0	0	0	0	0	0	219	219	7
Australia	0	0	0	0	0	0	0	0	1,884	54
Brunel	0	0	0	0	0	0	0	0	367	12
Canada	0	2	0	0	0	2	56	520	631	20
China, People's Republic of	0	0	0	0	0	0	0	314	314	10
Korea, Republic of	0	0	30	0	0	0	0	30	30	1
Mexico	0	0	0	0	0	0	1	1	1,015	33
Singapore	0	0	0	0	0	0	0	272	272	9
Thailand	0	0	0	0	0	0	0	0	511	16
Total	0	2	30	0	0	2	57	2,318	11,070	357

^a Crude oil and unfinished oils are reported by the PAD District in which they are to be processed; all other products are reported by the PAD District of entry.

^b Includes crude oil imported for storage in the Strategic Petroleum Reserve.

^c Includes aviation gasoline, aviation gasoline blending components, miscellaneous products, pentanes plus, petroleum coke, and waxes.

(s) = Less than 500 barrels or less than 500 barrels per day.

E = Estimated.

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

Sources: See Explanatory Notes.

Table 30. Year-to-Date Imports of Crude Oil and Petroleum Products into the United States by Country of Origin,^a January-July 1990
(Thousand Barrels)

Country of Origin	Crude Oil ^b	Liquefied Petroleum Gases	Unfinished Oils	Gasoline Blending Components	Finished Motor Gasoline	Jet Fuel	Distillate Fuel Oil	Residual Fuel Oil			Total
								Less than 0.31% Sulfur	0.31 to 1.00% Sulfur	Greater than 1.00% Sulfur	
Arab OPEC	21,849	5,574	27,545	0	7,290	3,409	6,000	6,028	551	2,478	9,057
Algeria	13,759	5,864	7,709	0	0	0	4,560	6,028	316	354	6,698
Iraq	146,397	0	1,432	0	0	0	188	0	0	0	0
Kuwait	21,536	0	614	0	0	35	260	0	0	0	0
Qatar	1,293	0	0	0	0	0	0	0	0	0	0
Saudi Arabia	235,564	710	16,040	0	7,290	3,374	992	0	235	1,449	1,684
United Arab Emirates	3,300	0	1,750	0	0	0	0	0	0	675	675
Other OPEC	373,225	1,189	6,860	1,754	15,572	7,813	24,848	4,940	1,016	15,445	21,401
Ecuador	8,540	0	0	0	0	0	121	0	0	2,217	2,217
Gabon	13,306	0	0	0	0	0	0	0	0	105	105
Indonesia	25,310	0	863	0	0	0	0	2,442	0	0	2,442
Nigeria	188,048	0	0	0	184	0	0	1,828	1,016	44	2,888
Venezuela	138,021	1,189	5,977	1,754	15,388	7,813	24,818	670	0	13,079	13,749
Non OPEC	526,570	31,958	48,198	14,224	58,440	14,275	33,745	14,781	27,458	45,683	87,922
Angola	59,873	0	0	0	0	0	0	0	0	0	0
Argentina	1,798	0	1,063	487	1,057	0	1,263	196	2,047	0	2,243
Australia	11,288	749	0	0	0	0	0	81	145	0	226
Bahama Islands	0	0	0	0	0	0	208	0	2,861	6,723	9,584
Belgium	0	0	2,094	2,938	1,758	0	0	215	224	0	439
Benin	1,192	0	0	0	0	0	0	0	0	0	0
Brazil	0	0	4	0	4,535	0	0	4,109	3,678	88	7,075
Brunei	2,248	0	0	0	0	0	0	0	0	0	0
Cameroon	3,338	0	0	0	0	0	0	0	941	329	1,270
Canada	133,243	22,714	3,131	191	11,082	2,339	11,357	181	1,107	4,553	5,841
China, People's Republic of	17,047	0	0	481	161	0	0	0	0	0	0
Colombia	30,034	0	481	0	0	0	0	327	1,135	7,964	9,448
Congo	5,855	0	0	0	0	0	0	410	572	0	982
Denmark	0	0	0	0	0	0	217	0	190	0	190
Egypt	4,941	0	1,968	0	0	0	0	0	172	0	172
France	0	20	200	276	6,118	296	777	0	1,568	212	1,780
Germany, DR (E)	0	0	0	0	0	0	295	0	0	265	265
Germany, FR (W)	0	0	0	0	0	0	0	0	0	0	0
Greece	0	0	0	252	607	551	847	587	0	0	587
Guatemala	633	0	0	0	0	0	0	0	0	0	0
India	210	0	3,988	0	0	0	0	0	0	0	0
Italy	669	27	4,627	567	8,232	258	185	0	1,120	522	1,650
Ivory Coast	0	0	110	0	0	0	0	0	168	0	168
Japan	0	6	0	0	0	0	0	0	0	0	0
Korea, Republic of	0	0	0	0	0	0	0	0	0	0	0
Malaysia	3,584	0	0	0	0	0	0	117	0	0	117
Mauritania	0	0	0	0	0	40	0	0	0	0	0
Mexico	142,489	7,870	0	0	5	2,606	1,956	0	0	987	987
Netherlands	0	4	4,129	930	3,959	450	721	0	898	340	1,238
Netherlands Antilles	0	0	509	0	244	0	0	0	0	3,372	3,372
Norway	23,271	0	334	0	744	0	189	0	0	0	0
Oman	11,912	0	256	0	0	0	0	0	0	0	0
Panama	0	0	0	0	0	0	0	0	0	181	181
Peru	0	0	0	0	0	0	0	172	496	2,654	3,322
Portugal	0	16	0	42	910	0	0	0	716	0	716
Puerto Rico	0	0	1,380	2,337	0	0	0	0	0	0	0
Romania	0	0	0	2,925	866	187	625	0	0	0	0
Singapore	0	0	309	0	0	3	0	1,455	363	0	1,818
Spain	0	0	2,797	138	5,404	838	0	71	1,122	483	1,676
Sweden	0	0	381	0	0	0	0	0	460	0	460
Syria	218	0	0	0	0	0	0	0	0	622	622
Thailand	3,394	0	0	0	0	0	0	0	0	0	0
Trinidad and Tobago	16,435	0	0	0	250	220	160	0	333	4,676	5,011
Tunisia	0	0	0	0	0	0	0	179	0	0	179
Turkey	499	0	639	419	0	0	0	0	0	80	80
United Kingdom	41,157	550	1,833	468	2,768	56	954	0	1,590	189	1,779
U.S.S.R.	0	0	1,876	0	124	0	1,856	553	85	1,900	2,538
Virgin Islands	0	0	14,505	1,773	9,592	6,320	11,923	5,718	4,005	9,252	18,975
Yemen (Sana)	6,993	0	671	0	0	0	0	0	0	0	0
Yugoslavia	0	0	0	0	0	0	212	0	0	0	0
Zaire	4,249	0	0	0	0	0	0	0	0	0	0
Other	0	0	913	0	24	111	0	410	1,454	269	2,133
Total	1,321,644	39,719	82,603	15,978	81,302	25,297	64,894	25,749	29,025	83,808	118,380

See footnotes at end of table.

Table 30. Year-to-Date Imports of Crude Oil and Petroleum Products Into the United States by Country of Origin,^a January-July 1990 (Continued)
(Thousand Barrels)

Country of Origin	Kerosene	Special Naphthas	Naphtha for Petrochemical Feedstock Use	Other Oils for Petrochemical Feedstock Use	Lubricants	Asphalt and Road Oil	Other Products ^b	Total Products	Crude Oil and Products	
									Total	Daily Average
Arab OPEC	138	29	5,997	19,978	0	0	0	86,017	507,866	2,396
Algeria	0	29	5,738	19,978	0	0	0	50,576	64,335	303
Iraq	0	0	0	0	0	0	0	1,620	148,017	696
Kuwait	0	0	0	0	0	0	0	909	22,445	106
Qatar	0	0	0	0	0	0	0	0	1,293	6
Saudi Arabia	138	0	259	0	0	0	0	30,487	266,051	1,255
United Arab Emirates	0	0	0	0	0	0	0	2,425	5,725	27
Other OPEC	221	129	1,691	0	0	4,485	28	85,892	459,117	2,166
Ecuador	0	0	0	0	0	0	0	2,348	10,888	51
Gabon	0	0	0	0	0	0	0	105	13,411	63
Indonesia	0	0	716	0	0	0	28	4,069	29,379	139
Nigeria	0	0	0	0	0	0	0	3,072	191,120	902
Venezuela	221	129	975	0	0	4,485	0	76,298	214,319	1,011
Non OPEC	1,030	1,908	9,872	262	2,005	1,501	2,864	308,202	834,772	3,938
Angola	0	0	0	0	0	0	0	0	59,873	282
Argentina	0	127	15	0	0	0	267	6,522	6,320	39
Australia	0	0	0	0	0	0	0	975	12,263	58
Bahama Islands	0	0	0	0	0	0	0	9,792	9,792	46
Belgium	0	0	0	0	0	0	2	7,231	7,231	34
Benin	0	0	0	0	0	0	0	0	1,192	6
Brazil	0	23	0	0	18	0	7	12,462	12,462	59
Brunei	0	0	0	0	0	0	0	0	2,248	11
Cameroon	0	0	0	0	0	0	0	1,270	4,608	22
Canada	164	892	683	0	412	676	1,251	60,733	193,976	915
China, People's Republic of	0	0	0	0	95	0	15	752	17,799	84
Colombia	0	0	0	0	0	0	5	9,932	39,966	189
Congo	0	0	0	0	0	0	0	982	6,837	32
Denmark	0	0	0	0	0	0	0	407	407	2
Egypt	0	0	705	0	0	0	4	2,849	7,790	37
France	0	0	340	0	0	0	0	9,807	9,807	46
Germany, DR (E)	0	0	0	0	0	0	0	560	560	3
Germany, FR (W)	0	0	0	0	0	0	58	56	56	(s)
Greece	0	0	235	0	0	0	0	3,079	3,079	15
Guatemala	0	0	0	0	0	0	0	0	633	3
India	0	0	2,995	0	0	0	0	6,983	7,193	34
Italy	0	8	21	262	0	0	11	15,848	16,517	78
Ivory Coast	0	0	0	0	0	0	0	278	278	1
Japan	0	4	75	0	31	0	59	175	175	1
Korea, Republic of	0	0	212	0	0	0	0	212	212	1
Malaysia	0	0	0	0	0	0	0	117	3,701	17
Mauritania	0	0	0	0	0	0	0	40	40	(s)
Mexico	0	0	0	0	0	67	825	14,316	156,805	740
Netherlands	0	803	1,399	0	30	0	10	13,673	13,673	64
Netherlands Antilles	0	0	0	0	0	252	0	4,377	4,377	21
Norway	0	0	0	0	0	0	0	1,267	24,538	116
Oman	0	0	0	0	0	0	0	256	12,168	57
Panama	0	0	0	0	0	0	0	181	181	1
Peru	0	0	0	0	0	0	0	3,322	3,322	16
Portugal	0	28	0	0	22	0	0	1,734	1,734	8
Puerto Rico	0	0	1,577	0	1,385	0	339	7,018	7,018	33
Romania	0	0	0	0	0	0	0	4,603	4,603	22
Singapore	0	0	0	0	0	0	0	2,130	2,130	10
Spain	0	0	100	0	12	506	0	11,471	11,471	54
Sweden	0	0	246	0	0	0	0	1,087	1,087	5
Syria	0	0	0	0	0	0	0	622	840	4
Thailand	0	0	0	0	0	0	0	0	3,394	16
Trinidad and Tobago	0	22	0	0	0	0	0	5,663	22,098	104
Tunisia	0	0	0	0	0	0	0	179	179	1
Turkey	0	0	0	0	0	0	0	1,138	1,837	8
United Kingdom	0	1	728	0	0	0	0	9,137	50,294	237
U.S.S.R.	160	0	321	0	0	0	0	6,875	6,875	32
Virgin Islands	706	0	220	0	0	0	0	64,014	64,014	302
Yemen (Sana)	0	0	0	0	0	0	0	671	7,664	36
Yugoslavia	0	0	0	0	0	0	0	212	212	1
Zaire	0	0	0	0	0	0	0	0	4,249	20
Other	0	0	0	0	0	0	13	3,194	3,194	15
Total	1,389	2,066	17,560	20,240	2,005	5,986	2,892	480,111	1,801,755	8,499

^a Crude oil and unfinished oils are reported by the PAD District in which they are to be processed; all other products are reported by the PAD District of entry.

^b Includes crude oil imported for storage in the Strategic Petroleum Reserve.

^c Includes aviation gasoline, aviation gasoline blending components, miscellaneous products, pentanes plus, petroleum coke, and waxes.

(s) = Less than 500 barrels or less than 500 barrels per day.

E = Estimated.

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

Sources: See Explanatory Notes.

**Table 31. PAD District I—Year-to-Date Imports of Crude Oil and Petroleum Products by Country of Origin,^a
January-July 1990
(Thousand Barrels)**

Country of Origin	Crude Oil ^b	Liquefied Petroleum Gases	Unfinished Oils	Gasoline Blending Components	Finished Motor Gasoline	Jet Fuel	Distillate Fuel Oil	Residual Fuel Oil			Total
								Less than 0.31% Sulfur	0.31 to 1.00% Sulfur	Greater than 1.00% Sulfur	
Arab OPEC	48,255	4,180	1,617	0	5,875	1,970	5,797	5,504	296	973	6,773
Algeria	419	3,470	1,617	0	0	0	4,560	5,504	296	112	5,012
Iraq	14,686	0	0	0	0	0	188	0	0	0	0
Kuwait	1,619	0	0	0	0	0	260	0	0	0	0
Saudi Arabia	31,631	710	0	0	5,875	1,970	789	0	0	861	861
Other OPEC	134,230	0	238	0	14,014	5,798	24,742	2,140	1,016	15,118	18,274
Ecuador	4,558	0	0	0	0	0	131	0	0	2,217	2,217
Gabon	7,014	0	0	0	0	0	0	0	0	105	105
Nigeria	96,264	0	0	0	184	0	0	1,828	1,016	44	2,888
Venezuela	26,394	0	238	0	13,830	5,798	24,611	312	0	12,752	13,064
Non OPEC	88,265	4,037	21,446	13,139	51,451	10,476	31,357	12,577	25,165	44,299	82,061
Angola	23,823	0	0	0	0	0	0	0	0	0	0
Argentina	387	0	723	455	830	0	1,263	196	2,447	0	2,243
Australia	811	0	0	0	0	0	0	0	0	0	0
Bahama Islands	0	0	0	0	0	0	208	0	2,861	6,442	9,303
Belgium	0	0	1,045	2,938	1,758	0	0	215	224	0	439
Benin	327	0	0	0	0	0	0	0	0	0	0
Brazil	0	0	0	0	3,651	0	0	4,109	3,678	88	7,875
Brunei	568	0	0	0	0	0	0	0	0	0	0
Cameroon	1,878	0	0	0	0	0	0	0	941	329	1,270
Canada	12,771	3,851	601	95	8,863	1,890	8,999	0	681	4,291	4,972
China, People's Republic of	3,653	0	0	0	0	0	0	0	0	0	0
Colombia	2,398	0	0	0	0	0	0	327	892	7,984	9,203
Congo	882	0	0	0	0	0	0	410	572	0	982
Denmark	0	0	0	0	0	0	217	0	190	0	190
Egypt	4,941	0	724	0	0	0	0	0	172	0	172
France	0	0	200	276	5,618	296	777	0	1,568	212	1,780
Germany, DR (E)	0	0	0	0	0	0	295	0	0	265	265
Germany, FR (W)	0	0	0	0	0	0	0	0	0	0	0
Greece	0	0	0	252	607	379	847	587	0	0	587
India	0	0	498	0	0	0	0	0	0	0	0
Italy	669	0	2,113	449	7,783	258	185	0	592	522	1,114
Ivory Coast	0	0	110	0	0	0	0	0	168	0	168
Japan	0	0	0	0	0	0	0	0	0	0	0
Mauritania	0	0	0	0	0	40	0	0	0	0	0
Mexico	16,021	0	0	0	0	451	1,926	0	0	596	596
Netherlands	0	0	1,256	814	3,423	450	721	0	898	340	1,238
Netherlands Antilles	0	0	0	0	244	0	0	0	0	3,372	3,372
Norway	10,205	0	0	0	744	0	189	0	0	0	0
Panama	0	0	0	0	0	0	0	0	0	181	181
Peru	0	0	0	0	0	0	0	172	496	2,654	3,322
Portugal	0	0	0	16	668	0	0	0	716	0	716
Puerto Rico	0	0	1,380	2,337	0	0	0	0	0	0	0
Romania	0	0	0	2,925	866	187	625	0	0	0	0
Spain	0	0	1,180	138	5,126	838	0	71	903	302	1,276
Sweden	0	0	0	0	0	0	0	0	460	0	460
Syria	0	0	0	0	0	0	0	0	0	622	622
Trinidad and Tobago	2,716	0	0	0	250	0	160	0	333	4,678	5,011
Tunisia	0	0	0	0	0	0	0	179	0	0	179
Turkey	0	0	201	236	0	0	0	0	0	80	80
United Kingdom	2,453	186	528	468	2,768	56	854	0	1,590	189	1,779
U.S.S.R.	0	0	0	0	124	0	1,856	183	85	1,900	2,168
Virgin Islands	0	0	10,709	1,740	8,120	5,620	11,923	5,718	3,756	9,252	18,728
Yemen (Sana)	998	0	0	0	0	0	0	0	0	0	0
Yugoslavia	0	0	0	0	0	0	212	0	0	0	0
Zaire	2,964	0	0	0	0	0	0	0	0	0	0
Other	0	0	178	0	0	111	0	410	1,300	0	1,770
Total	270,750	8,217	23,301	13,139	71,340	18,244	61,898	20,221	26,497	60,390	107,108

See footnotes at end of table.

Table 31. PAD District I—Year-to-Date Imports of Crude Oil and Petroleum Products by Country of Origin,^a
January-July 1990 (Continued)
(Thousand Barrels)

Country of Origin								Crude Oil and Products		
	Kerosene	Special Naphthas	Naphtha for Petrochemical Feedstock Use	Other Oils for Petrochemical Feedstock Use	Lubricants	Asphalt and Road Oil	Other Products ^c	Total Products	Total	Daily Average
Arab OPEC	138	0	0	0	0	0	0	26,350	74,605	352
Algeria	0	0	0	0	0	0	0	15,559	15,978	75
Iraq	0	0	0	0	0	0	0	188	14,874	70
Kuwait	0	0	0	0	0	0	0	260	1,779	8
Saudi Arabia	138	0	0	0	0	0	0	10,343	41,974	198
Other OPEC	221	0	0	0	0	4,358	0	67,645	201,875	952
Ecuador	0	0	0	0	0	0	0	2,348	8,908	33
Gabon	0	0	0	0	0	0	0	105	7,119	34
Nigeria	0	0	0	0	0	0	0	3,072	99,338	469
Venezuela	221	0	0	0	0	4,358	0	62,120	88,514	418
Non OPEC	588	111	1,960	0	1,712	1,332	1,132	220,802	309,067	1,458
Angola	0	0	0	0	0	0	0	0	23,823	112
Argentina	0	0	0	0	0	0	0	5,522	5,909	28
Australia	0	0	0	0	0	0	0	0	811	4
Bahama Islands	0	0	0	0	0	0	0	9,511	9,511	45
Belgium	0	0	0	0	0	0	0	8,180	8,180	29
Berlin	0	0	0	0	0	0	0	0	327	2
Brazil	0	0	0	0	18	0	7	11,551	11,551	54
Brunel	0	0	0	0	0	0	0	0	568	3
Cameroon	0	0	0	0	0	0	0	1,270	2,948	14
Canada	164	71	129	0	245	608	88	30,578	43,347	204
China, People's Republic of	0	0	0	0	0	0	15	15	3,668	17
Colombia	0	0	0	0	0	0	0	9,203	11,601	55
Congo	0	0	0	0	0	0	0	982	1,864	9
Denmark	0	0	0	0	0	0	0	407	407	2
Egypt	0	0	227	0	0	0	1	1,124	6,065	29
France	0	0	9	0	0	0	0	8,956	8,956	42
Germany, DR (E)	0	0	0	0	0	0	0	560	560	3
Germany, FR (W)	0	0	0	0	0	0	37	37	37	(s)
Greece	0	0	0	0	0	0	0	2,672	2,672	13
India	0	0	0	0	0	0	0	498	498	2
Italy	0	8	0	0	0	0	11	11,921	12,590	59
Ivory Coast	0	0	0	0	0	0	0	278	278	1
Japan	0	4	14	0	0	0	8	24	24	(s)
Mauritania	0	0	0	0	0	0	0	40	40	(s)
Mexico	0	0	0	0	0	0	620	3,593	19,614	93
Netherlands	0	0	0	0	30	0	0	7,932	7,932	37
Netherlands Antilles	0	0	0	0	0	218	0	3,834	3,834	18
Norway	0	0	0	0	0	0	0	933	11,138	53
Panama	0	0	0	0	0	0	0	181	181	1
Peru	0	0	0	0	0	0	0	3,322	3,322	18
Portugal	0	28	0	0	22	0	0	1,450	1,450	7
Puerto Rico	0	0	1,401	0	1,385	0	339	6,842	6,842	32
Romania	0	0	0	0	0	0	0	4,603	4,603	22
Spain	0	0	0	0	12	508	0	9,078	9,078	43
Sweden	0	0	0	0	0	0	0	460	460	2
Syria	0	0	0	0	0	0	0	622	622	3
Trinidad and Tobago	0	0	0	0	0	0	0	5,421	8,137	38
Tunisia	0	0	0	0	0	0	0	179	179	1
Turkey	0	0	0	0	0	0	0	517	517	2
United Kingdom	0	0	0	0	0	0	0	6,739	9,192	43
U.S.S.R.	160	0	0	0	0	0	0	4,308	4,308	20
Virgin Islands	264	0	180	0	0	0	0	57,184	57,184	270
Yemen (Sana)	0	0	0	0	0	0	0	0	998	5
Yugoslavia	0	0	0	0	0	0	0	212	212	1
Zaire	0	0	0	0	0	0	0	0	2,964	14
Other	0	0	0	0	0	0	8	2,067	2,067	10
Total	947	111	1,960	0	1,712	5,690	1,132	314,797	585,547	2,762

^a Crude oil and unfinished oils are reported by the PAD District in which they are to be processed; all other products are reported by the PAD District of entry.

^b Includes crude oil imported for storage in the Strategic Petroleum Reserve.

^c Includes aviation gasoline, aviation gasoline blending components, miscellaneous products, pentanes plus, petroleum coke, and waxes.

(s) = Less than 500 barrels or less than 500 barrels per day.

E = Estimated.

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

Sources: See Explanatory Notes.

Table 32. PAD District II—Year-to-Date Imports of Crude Oil and Petroleum Products by Country of Origin,^a
January-July 1990
(Thousand Barrels)

Country of Origin	Crude Oil ^b	Liquefied Petroleum Gases	Unfinished Oils	Gasoline Blending Components	Finished Motor Gasoline	Jet Fuel	Distillate Fuel Oil	Residual Fuel Oil			Total
								Less than 0.31% Sulfur	0.31 to 1.00% Sulfur	Greater than 1.00% Sulfur	
Arab OPEC	48,816	0	0	0	0	20	0	0	0	0	0
Algeria	2,855	0	0	0	0	0	0	0	0	0	0
Iraq	15,405	0	0	0	0	0	0	0	0	0	0
Kuwait	946	0	0	0	0	0	0	0	0	0	0
Saudi Arabia	29,610	0	0	0	0	20	0	0	0	0	0
Other OPEC	63,983	0	0	0	0	0	0	0	0	0	0
Ecuador	1,458	0	0	0	0	0	0	0	0	0	0
Indonesia	1,470	0	0	0	0	0	0	0	0	0	0
Nigeria	33,594	0	0	0	0	0	0	0	0	0	0
Venezuela	27,461	0	0	0	0	0	0	0	0	0	0
Non OPEC	134,281	15,668	0	96	1,047	366	1,278	165	101	219	485
Canada	107,778	15,668	0	96	1,047	336	1,278	165	101	219	485
Colombia	1,002	0	0	0	0	0	0	0	0	0	0
Germany, FR (W)	0	0	0	0	0	0	0	0	0	0	0
Mexico	17,551	0	0	0	0	10	0	0	0	0	0
Norway	949	0	0	0	0	0	0	0	0	0	0
Trinidad and Tobago	4,621	0	0	0	0	0	0	0	0	0	0
Turkey	499	0	0	0	0	0	0	0	0	0	0
United Kingdom	4,712	0	0	0	0	0	0	0	0	0	0
Yemen (Sana)	4,005	0	0	0	0	0	0	0	0	0	0
Zaire	144	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0
Total	247,060	15,668	0	96	1,047	366	1,278	165	101	219	485

See footnotes at end of table.

**Table 32. PAD District II—Year-to-Date Imports of Crude Oil and Petroleum Products by Country of Origin,^a
January-July 1990 (Continued)
(Thousand Barrels)**

Country of Origin									Crude Oil and Products	
	Kerosene	Special Naphthas	Naphtha for Petrochemical Feedstock Use	Other Oils for Petrochemical Feedstock Use	Lubricants	Asphalt and Road Oil	Other Products ^c	Total Products	Total	Daily Average
Arab OPEC	0	0	0	0	0	0	0	20	48,836	230
Algeria	0	0	0	0	0	0	0	0	2,855	13
Iraq	0	0	0	0	0	0	0	0	15,405	73
Kuwait	0	0	0	0	0	0	0	0	948	4
Saudi Arabia	0	0	0	0	0	0	0	20	29,630	140
Other OPEC	0	0	0	0	0	0	0	0	63,983	302
Ecuador	0	0	0	0	0	0	0	0	1,458	7
Indonesia	0	0	0	0	0	0	0	0	1,470	7
Nigeria	0	0	0	0	0	0	0	0	33,564	158
Venezuela	0	0	0	0	0	0	0	0	27,461	130
Non OPEC	0	257	314	0	167	56	309	20,023	154,254	728
Canada	0	257	314	0	167	56	290	19,964	120,772	570
Colombia	0	0	0	0	0	0	0	0	1,002	5
Germany, FR (W)	0	0	0	0	0	0	17	17	17	(s)
Mexico	0	0	0	0	0	0	0	10	17,561	83
Norway	0	0	0	0	0	0	0	0	949	4
Trinidad and Tobago	0	0	0	0	0	0	0	0	4,621	22
Turkey	0	0	0	0	0	0	0	0	499	2
United Kingdom	0	0	0	0	0	0	0	0	4,712	22
Yemen (Sana)	0	0	0	0	0	0	0	0	4,005	19
Zaire	0	0	0	0	0	0	0	0	144	1
Other	0	0	0	0	0	0	2	2	2	(s)
Total	0	257	314	0	167	56	309	20,043	267,103	1,260

^a Crude oil and unfinished oils are reported by the PAD District in which they are to be processed; all other products are reported by the PAD District of entry.

^b Includes crude oil imported for storage in the Strategic Petroleum Reserve.

^c Includes aviation gasoline, aviation gasoline blending components, miscellaneous products, pentanes plus, petroleum coke, and waxes.

(s) = Less than 500 barrels or less than 500 barrels per day.

E = Estimated.

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

Sources: See Explanatory Notes.

**Table 33. PAD District III—Year-to-Date Imports of Crude Oil and Petroleum Products by Country of Origin,^a
January-July 1990
(Thousand Barrels)**

Country of Origin	Crude Oil ^b	Liquefied Petroleum Gases	Unfinished Oils	Gasoline Blending Components	Finished Motor Gasoline	Jet Fuel	Distillate Fuel Oil	Residual Fuel Oil			Total
								Less than 0.31% Sulfur	0.31 to 1.00% Sulfur	Greater than 1.00% Sulfur	
Arab OPEC	320,489	2,394	25,928	0	0	1,202	203	524	255	1,505	2,264
Algeria	10,485	2,394	6,092	0	0	0	0	524	20	242	786
Iraq	115,882	0	1,432	0	0	0	0	0	0	0	0
Kuwait	18,548	0	814	0	0	0	0	0	0	0	0
Qatar	1,293	0	0	0	0	0	0	0	0	0	0
Saudi Arabia	172,216	0	16,040	0	0	1,202	203	0	235	588	823
United Arab Emirates	2,295	0	1,750	0	0	0	0	0	0	675	675
Other OPEC	150,493	1,189	5,481	1,754	1,558	1,379	207	358	0	327	685
Ecuador	1,751	0	0	0	0	0	0	0	0	0	0
Gabon	6,292	0	0	0	0	0	0	0	0	0	0
Indonesia	1,907	0	742	0	0	0	0	0	0	0	0
Nigeria	55,190	0	0	0	0	0	0	0	0	0	0
Venezuela	82,353	1,189	5,739	1,754	1,558	1,379	207	358	0	327	685
Non OPEC	262,308	10,161	26,254	508	3,614	2,778	30	370	1,259	1,122	2,751
Angola	36,050	0	0	0	0	0	0	0	0	0	0
Argentina	1,411	0	156	32	0	0	0	0	0	0	0
Australia	648	749	0	0	0	0	0	0	0	0	0
Bahama Islands	0	0	0	0	0	0	0	0	0	281	281
Belgium	0	0	1,049	0	0	0	0	0	0	0	0
Bonin	865	0	0	0	0	0	0	0	0	0	0
Brazil	0	0	4	0	570	0	0	0	0	0	0
Cameroon	1,660	0	0	0	0	0	0	0	0	0	0
Canada	2,603	1,105	2,525	0	0	0	0	0	257	0	257
China, People's Republic of	10,839	0	0	0	0	0	0	0	0	0	0
Colombia	26,634	0	481	0	0	0	0	0	0	0	0
Congo	4,973	0	0	0	0	0	0	0	0	0	0
Egypt	0	0	1,244	0	0	0	0	0	0	0	0
France	0	20	0	0	500	0	0	0	0	0	0
Germany, FR (W)	0	0	0	0	0	0	0	0	0	0	0
Greece	0	0	0	0	0	0	0	0	0	0	0
Guatemala	633	0	0	0	0	0	0	0	0	0	0
India	210	0	3,490	0	0	0	0	0	0	0	0
Italy	0	27	2,514	118	229	0	0	0	538	0	538
Japan	0	6	0	0	0	0	0	0	0	0	0
Malaysia	613	0	0	0	0	0	0	0	0	0	0
Mexico	105,714	7,870	0	0	5	1,978	30	0	0	391	391
Netherlands	0	4	2,873	116	538	0	0	0	0	0	0
Netherlands Antilles	0	0	509	0	0	0	0	0	0	0	0
Norway	12,117	0	334	0	0	0	0	0	0	0	0
Oman	11,412	0	256	0	0	0	0	0	0	0	0
Portugal	0	18	0	26	0	0	0	0	0	0	0
Puerto Rico	0	0	0	0	0	0	0	0	0	0	0
Spain	0	0	1,617	0	278	0	0	0	219	181	400
Sweden	0	0	381	0	0	0	0	0	0	0	0
Syria	218	0	0	0	0	0	0	0	0	0	0
Trinidad and Tobago	9,098	0	0	0	0	0	0	0	0	0	0
Turkey	0	0	438	183	0	0	0	0	0	0	0
United Kingdom	33,477	364	1,305	0	0	0	0	0	0	0	0
U.S.S.R.	0	0	1,876	0	0	0	0	370	0	0	370
Virgin Islands	0	0	3,796	33	1,472	800	0	0	247	0	247
Yemen (Sana)	1,990	0	671	0	0	0	0	0	0	0	0
Zaire	1,141	0	0	0	0	0	0	0	0	0	0
Other	0	0	735	0	24	0	0	0	0	269	269
Total	733,288	13,744	58,663	2,262	5,172	5,359	440	1,252	1,514	2,954	5,720

See footnotes at end of table.

**Table 33. PAD District III—Year-to-Date Imports of Crude Oil and Petroleum Products by Country of Origin,^a
January-July 1990 (Continued)
(Thousand Barrels)**

Country of Origin									Crude Oil and Products	
	Kerosene	Special Naphthas	Naphtha for Petrochemical Feedstock Use	Other Oils for Petrochemical Feedstock Use	Lubricants	Asphalt and Road Oil	Oil or Products ^b	Total Products	Total	Daily Average
Arab OPEC	0	29	5,997	19,978	0	0	0	58,018	378,504	1,788
Algeria	0	29	5,738	19,978	0	0	0	35,017	45,502	215
Iraq	0	0	0	0	0	0	0	1,432	117,094	552
Kuwait	0	0	0	0	0	0	0	514	19,182	90
Qatar	0	0	0	0	0	0	0	0	1,293	6
Saudi Arabia	0	0	289	0	0	0	0	18,527	190,743	900
United Arab Emirates	0	0	0	0	0	0	0	2,425	4,710	22
Other OPEC	0	129	1,691	0	0	127	28	15,228	165,721	782
Ecuador	0	0	0	0	0	0	0	0	1,751	8
Gabon	0	0	0	0	0	0	0	0	6,292	30
Indonesia	0	0	716	0	0	0	28	1,486	3,393	16
Nigeria	0	0	0	0	0	0	0	0	58,100	274
Venezuela	0	129	975	0	0	127	0	13,742	96,095	453
Non OPEC	442	1,490	7,336	262	56	101	535	50,318	318,624	1,503
Angola	0	0	0	0	0	0	0	0	36,050	170
Argentina	0	127	15	0	0	0	267	597	2,008	9
Australia	0	0	0	0	0	0	0	749	1,397	7
Bahama Islands	0	0	0	0	0	0	0	281	201	1
Belgium	0	0	0	0	0	0	2	1,051	1,051	5
Benin	0	0	0	0	0	0	0	0	865	4
Brazil	0	23	0	0	0	0	0	597	597	3
Cameroon	0	0	0	0	0	0	0	0	1,060	8
Canada	0	514	240	0	0	0	0	4,841	7,244	34
China, People's Republic of	0	0	0	0	56	0	0	56	10,895	51
Colombia	0	0	0	0	0	0	5	480	27,120	128
Congo	0	0	0	0	0	0	0	0	4,973	23
Egypt	0	0	478	0	0	0	3	1,725	1,725	8
France	0	0	331	0	0	0	0	851	851	4
Germany, FR (W)	0	0	0	0	0	0	1	1	1	(s)
Greece	0	0	235	0	0	0	0	235	235	1
Guatemala	0	0	0	0	0	0	0	0	633	3
India	0	0	2,995	0	0	0	0	6,485	6,695	32
Italy	0	0	21	262	0	0	0	3,707	3,707	17
Japan	0	0	11	0	0	0	53	70	70	(s)
Malaysia	0	0	0	0	0	0	0	0	813	3
Mexico	0	0	0	0	0	67	191	10,532	116,246	548
Netherlands	0	803	1,399	0	0	0	10	5,741	5,741	27
Netherlands Antilles	0	0	0	0	0	34	0	543	543	3
Norway	0	0	0	0	0	0	0	334	12,451	59
Oman	0	0	0	0	0	0	0	256	11,668	55
Portugal	0	0	0	0	0	0	0	42	42	(s)
Puerto Rico	0	0	176	0	0	0	0	176	176	1
Spain	0	0	100	0	0	0	0	2,395	2,395	11
Sweden	0	0	246	0	0	0	0	627	627	3
Syria	0	0	0	0	0	0	0	0	218	1
Trinidad and Tobago	0	22	0	0	0	0	0	22	9,120	43
Turkey	0	0	0	0	0	0	0	621	621	3
United Kingdom	0	1	728	0	0	0	0	2,398	35,875	169
U.S.S.R.	0	0	321	0	0	0	0	2,567	2,567	12
Virgin Islands	442	0	40	0	0	0	0	8,830	8,830	32
Yemen (Sana)	0	0	0	0	0	0	0	671	2,661	13
Zaire	0	0	0	0	0	0	0	0	1,141	5
Other	0	0	0	0	0	0	3	1,031	1,031	5
Total	442	1,648	15,024	20,240	56	228	563	129,561	662,849	4,070

^a Crude oil and unfinished oils are reported by the PAD District in which they are to be processed; all other products are reported by the PAD District of entry.

^b Includes crude oil imported for storage in the Strategic Petroleum Reserve.

^c Includes aviation gasoline, aviation gasoline blending components, miscellaneous products, pentanes plus, petroleum coke, and waxes.

(s) = Less than 500 barrels or less than 500 barrels per day.

E = Estimated.

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

Sources: See Explanatory Notes.

Table 34. PAD Districts IV and V—Year-to-Date Imports of Crude Oil and Petroleum Products by Country of Origin,^a January-July 1990
(Thousand Barrels)

Country of Origin	Crude Oil ^b	Liquefied Petroleum Gases	Unfinished Oils	Gasoline Blending Components	Finished Motor Gasoline	Jet Fuel	Distillate Fuel Oil	Residual Fuel Oil			Total
								Less than 0.31% Sulfur	0.31 to 1.00% Sulfur	Greater than 1.00% Sulfur	
PAD District IV											
Non OPEC	15,417	1,091	5	0	276	0	370	16	0	43	59
Canada	14,902	1,091	5	0	276	0	370	16	0	43	59
United Kingdom	515	0	0	0	0	0	0	0	0	0	0
Total	15,417	1,091	5	0	276	0	370	16	0	43	59
PAD District V											
Arab OPEC	4,289	0	0	0	1,415	217	0	0	0	0	0
Iraq	544	0	0	0	0	0	0	0	0	0	0
Kuwait	523	0	0	0	0	35	0	0	0	0	0
Saudi Arabia	2,107	0	0	0	1,415	182	0	0	0	0	0
United Arab Emirates	1,015	0	0	0	0	0	0	0	0	0	0
Other OPEC	24,519	0	141	0	0	438	0	2,442	0	0	2,442
Ecuador	773	0	0	0	0	0	0	0	0	0	0
Indonesia	21,933	0	141	0	0	0	0	2,442	0	0	2,442
Venezuela	1,813	0	0	0	0	438	0	0	0	0	0
Non OPEC	26,321	999	493	481	2,052	675	710	1,653	913	0	2,566
Argentina	0	0	184	0	219	0	0	0	0	0	0
Australia	9,829	0	0	0	0	0	0	81	145	0	226
Brazil	0	0	0	0	314	0	0	0	0	0	0
Brunei	1,880	0	0	0	0	0	0	0	0	0	0
Canada	2,189	999	0	0	898	113	710	0	68	0	68
China, People's Republic of	2,555	0	0	481	161	0	0	0	0	0	0
Colombia	0	0	0	0	0	0	0	0	243	0	243
Germany, FR (W)	0	0	0	0	0	0	0	0	0	0	0
Greece	0	0	0	0	0	172	0	0	0	0	0
Italy	0	0	0	0	220	0	0	0	0	0	0
Japan	0	0	0	0	0	0	0	0	0	0	0
Korea, Republic of	0	0	0	0	0	0	0	0	0	0	0
Malaysia	2,971	0	0	0	0	0	0	117	0	0	117
Mexico	3,203	0	0	0	0	167	0	0	0	0	0
Oman	500	0	0	0	0	0	0	0	0	0	0
Portugal	0	0	0	0	242	0	0	0	0	0	0
Singapore	0	0	309	0	0	3	0	1,455	363	0	1,818
Thailand	3,394	0	0	0	0	0	0	0	0	0	0
Trinidad and Tobago	0	0	0	0	0	220	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	94	0	94
Total	55,129	990	634	481	3,467	1,328	710	4,095	913	0	5,008

See footnotes at end of table.

Table 34. PAD Districts IV and V—Year-to-Date Imports of Crude Oil and Petroleum Products by Country of Origin,^a January-July 1990 (Continued)
(Thousand Barrels)

Country of Origin	Kerosene	Special Naphthas	Naphtha for Petrochemical Feedstock Use	Other Oils for Petrochemical Feedstock Use	Lubricants	Asphalt and Road Oil	Other Products ^c	Total Products	Crude Oil and Products	
									Total	Daily Average
PAD District IV										
Non OPEC	0	0	0	0	0	0	607	2,408	17,825	84
Canada	0	0	0	0	0	0	607	2,408	17,310	82
United Kingdom	0	0	0	0	0	0	0	0	515	2
Total	0	0	0	0	0	0	607	2,408	17,825	84
PAD District V										
Arab OPEC	0	0	0	0	0	0	0	1,832	5,921	28
Iraq	0	0	0	0	0	0	0	0	644	3
Kuwait	0	0	0	0	0	0	0	35	558	3
Saudi Arabia	0	0	0	0	0	0	0	1,597	3,704	17
United Arab Emirates	0	0	0	0	0	0	0	0	1,015	5
Other OPEC	0	0	0	0	0	0	0	3,019	27,538	130
Ecuador	0	0	0	0	0	0	0	0	773	4
Indonesia	0	0	0	0	0	0	0	2,583	24,516	116
Venezuela	0	0	0	0	0	0	0	436	2,249	11
Non OPEC	0	50	262	0	70	12	281	8,651	34,972	165
Argentina	0	0	0	0	0	0	0	403	403	2
Australia	0	0	0	0	0	0	0	226	10,055	47
Brazil	0	0	0	0	0	0	0	314	314	1
Brunei	0	0	0	0	0	0	0	0	1,680	8
Canada	0	50	0	0	0	12	266	3,114	5,303	25
China, People's Republic of	0	0	0	0	39	0	0	681	3,236	15
Colombia	0	0	0	0	0	0	0	243	243	1
Germany, FR (W)	0	0	0	0	0	0	1	1	1	(s)
Greece	0	0	0	0	0	0	0	172	172	1
Italy	0	0	0	0	0	0	0	220	220	1
Japan	0	0	50	0	31	0	0	81	81	(s)
Korea, Republic of	0	0	212	0	0	0	0	212	212	1
Malaysia	0	0	0	0	0	0	0	117	3,088	15
Mexico	0	0	0	0	0	0	14	181	3,384	16
Oman	0	0	0	0	0	0	0	0	500	2
Portugal	0	0	0	0	0	0	0	242	242	1
Singapore	0	0	0	0	0	0	0	2,130	2,130	10
Thailand	0	0	0	0	0	0	0	0	3,394	16
Trinidad and Tobago	0	0	0	0	0	0	0	220	220	1
Other	0	0	0	0	0	0	0	94	94	(s)
Total	0	50	262	0	70	12	281	13,302	68,431	323

^a Crude oil and unfinished oils are reported by the PAD District in which they are to be processed; all other products are reported by the PAD District of entry.

^b Includes crude oil imported for storage in the Strategic Petroleum Reserve.

^c Includes aviation gasoline, aviation gasoline blending components, miscellaneous products, pentanes plus, petroleum coke, and waxes.

(s) = Less than 500 barrels or less than 500 barrels per day.

E = Estimated.

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

Sources: See Explanatory Notes.

**Table 35. Exports of Crude Oil and Petroleum Products by PAD District,
July 1990**
(Thousand Barrels)

Commodity	Petroleum Administration for Defense Districts					U.S. Total	Daily Average
	I	II	III	IV	V		
Crude Oil ^a	0	384	0	0	2,383	2,767	89
Natural Gas Liquids	147	346	368	3	307	1,171	38
Pentanes Plus	(s)	0	37	0	2	40	1
Liquefied Petroleum Gases	146	346	331	3	305	1,131	36
Ethane/Ethylene	2	0	0	0	0	2	(s)
Propane/Propylene	30	152	229	2	301	714	23
Normal Butane/Butylene	115	194	103	1	3	416	13
Isobutane	0	0	0	0	0	0	0
Finished Petroleum Products	1,237	1,002	8,149	15	7,226	17,629	569
Finished Motor Gasoline	62	113	1,092	(s)	17	1,284	41
Naphtha-Type Jet Fuel	0	0	15	0	1	16	1
Kerosene-Type Jet Fuel	1	20	225	0	57	302	10
Kerosene	3	2	1	0	4	10	(s)
Distillate Fuel Oil	17	67	671	0	189	945	30
Residual Fuel Oil	598	(s)	812	0	3,798	5,309	171
Naphtha for Petrochemical Feedstock Use	16	1	38	0	6	61	2
Other Oils for Petrochemical Feedstock Use	0	0	157	0	312	468	15
Special Naphthas	11	44	232	0	45	331	11
Lubricants	148	37	172	8	80	445	14
Waxes	9	1	36	0	10	56	2
Petroleum Coke	260	626	4,625	7	2,691	8,209	265
Asphalt and Road Oil	2	86	3	(s)	14	105	3
Miscellaneous Products	11	4	70	(s)	3	89	3
Total	1,384	1,731	8,518	19	9,916	21,568	696

^a Crude oil exports are restricted to: (1) crude oil derived from fields under the State waters of Alaska's Cook Inlet; (2) certain domestically produced crude oil destined for Canada; and (3) shipments to U.S. territories.

(s) = Less than 500 barrels or less than 500 barrels per day.

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

Sources: See Explanatory Notes.

**Table 36. Year-to-Date Exports of Crude Oil and Petroleum Products by PAD District,
January-July 1990
(Thousand Barrels)**

Commodity	Petroleum Administration for Defense Districts					U.S. Total	Daily Average
	I	II	III	IV	V		
Crude Oil ^a	10	2,858	0	2	20,444	23,315	110
Natural Gas Liquids	665	1,975	3,481	9	1,988	8,116	38
Pentanes Plus	21	0	323	0	13	358	2
Liquefied Petroleum Gases	643	1,975	3,158	9	1,973	7,758	37
Ethane/Ethylene	12	(s)	0	0	2	14	(s)
Propane/Propylene	203	1,123	2,124	6	1,943	5,399	25
Normal Butane/Butylene	429	852	1,033	3	27	2,344	11
Isobutane	0	0	0	0	0	0	0
Finished Petroleum Products	6,829	3,231	62,898	51	57,983	130,792	617
Finished Motor Gasoline	213	177	7,419	1	501	8,331	39
Naphtha-Type Jet Fuel	(s)	(s)	33	0	1,006	1,040	5
Kerosene-Type Jet Fuel	32	73	2,226	(s)	1,323	3,655	17
Kerosene	48	23	37	0	35	144	1
Distillate Fuel Oil	226	342	8,784	1	4,253	13,606	64
Residual Fuel Oil	2,709	198	11,023	0	28,280	42,211	199
Naphtha for Petrochemical Feedstock Use	106	2	880	0	43	1,031	5
Other Oils for Petrochemical Feedstock Use	0	0	2,872	0	1,816	4,688	22
Special Naphthas	81	94	904	2	497	1,578	7
Lubricants	1,096	300	1,940	30	630	3,997	19
Waxes	50	30	191	(s)	106	377	2
Petroleum Coke	1,840	1,815	26,335	16	19,299	49,305	233
Asphalt and Road Oil	158	171	41	(s)	87	457	2
Miscellaneous Products	69	5	212	(s)	88	373	2
Total	7,304	8,064	66,379	62	80,413	162,223	785

^a Crude oil exports are restricted to: (1) crude oil derived from fields under the State waters of Alaska's Cook Inlet; (2) certain domestically produced crude oil destined for Canada; and (3) shipments to U.S. territories.

(s) = Less than 500 barrels or less than 500 barrels per day.

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

Sources: See Explanatory Notes.

Table 37. Exports of Crude Oil and Petroleum Products by Destination, July 1990
(Thousand Barrels)

Destination	Crude Oil ^a	Pentanes Plus	Liquefied Petroleum Gases	Finished Motor Gasoline	Jet Fuel	Kerosene	Distillate Fuel Oil	Residual Fuel Oil	Naphtha for Petrochemical Feedstock Use
Argentina	0	0	0	0	0	0	0	0	0
Australia	0	0	0	0	0	0	3	515	0
Bahama Islands	0	0	0	60	28	0	207	267	0
Bahrain	0	0	0	0	0	0	3	0	0
Belgium & Luxembourg	0	2	42	0	0	0	0	0	0
Brazil	0	0	(s)	0	0	0	0	0	7
Canada	384	0	365	304	283	2	182	253	1
Chile	0	(s)	(s)	0	0	0	(s)	0	0
China, People's Republic of ...	0	0	0	0	0	0	0	0	0
China, Taiwan	0	0	0	0	0	0	1	672	1
Colombia	0	0	1	0	0	0	(s)	0	(s)
Costa Rica	0	0	0	0	0	0	0	0	1
Denmark	0	0	1	0	0	0	0	0	(s)
Dominican Republic	0	0	88	0	0	0	1	0	1
Ecuador	0	0	0	0	0	0	0	0	0
Egypt	0	0	0	0	0	0	0	0	0
El Salvador	0	0	0	38	12	0	48	0	0
Finland	0	0	0	0	0	0	0	0	0
France	0	0	3	0	0	0	(s)	0	0
French Pacific Islands	0	0	0	0	0	0	0	0	0
Germany, FR (W)	0	0	68	0	0	0	0	0	1
Ghana	0	0	0	0	0	0	0	0	0
Greece	0	0	(s)	0	0	0	0	30	0
Guatemala	0	0	(s)	47	14	0	84	1	0
Guinea	0	0	0	0	0	0	0	0	0
Honduras	0	0	3	0	0	1	0	0	0
Hong Kong	0	0	0	0	0	0	0	(s)	1
India	0	0	0	0	0	0	0	0	2
Indonesia	0	0	0	0	0	0	0	0	0
Ireland	0	0	0	0	0	1	0	0	0
Israel	0	0	0	198	0	0	0	0	(s)
Italy	0	0	1	0	0	0	0	0	0
Jamaica	0	0	11	7	0	(s)	127	844	0
Japan	0	2	(s)	60	0	0	58	68	25
Korea, Republic of	0	0	(s)	0	0	0	51	1,035	5
Malaysia	0	0	0	0	0	1	0	0	0
Mexico	0	35	476	569	0	3	20	1,075	3
Netherlands	0	0	29	0	0	0	(s)	0	0
Netherlands Antilles	0	0	0	0	0	0	(s)	305	0
New Zealand	0	0	0	0	0	0	0	0	(s)
Nigeria	0	0	0	0	0	0	0	0	0
Norway	0	0	0	(s)	0	0	0	0	0
Panama	0	0	21	0	0	0	143	0	0
Peru	0	0	0	0	0	0	0	0	0
Philippines	0	0	(s)	0	0	0	0	0	0
Portugal	0	0	0	0	0	0	0	0	0
Puerto Rico	499	0	8	0	0	0	10	(s)	11
Saudi Arabia	0	0	0	0	0	0	1	0	0
Singapore	0	0	0	0	0	0	(s)	0	(s)
South Africa	0	0	0	0	0	0	0	0	0
Spain	0	0	0	0	0	0	(s)	0	1
Suriname	0	0	0	0	0	0	0	0	0
Sweden	0	0	0	0	0	(s)	(s)	0	0
Switzerland	0	0	0	0	0	0	0	0	0
Thailand	0	0	(s)	0	0	0	0	0	1
Trinidad and Tobago	0	0	0	0	0	0	0	140	0
Turkey	0	0	0	0	0	0	0	0	0
United Arab Emirates	0	0	0	0	0	0	1	0	0
United Kingdom	0	0	0	(s)	0	0	2	104	0
U.S.S.R.	0	0	0	0	0	0	0	0	0
Uruguay	0	0	0	0	0	0	0	0	0
Venezuela	0	0	2	0	0	0	0	0	0
Virgin Islands	1,884	0	0	0	0	2	0	0	0
Yugoslavia	0	0	0	0	0	0	0	0	0
Other	0	0	12	0	0	0	1	0	0
Total	2,767	40	1,131	1,284	318	10	945	5,309	61

See footnotes at end of table.

Table 37. Exports of Crude Oil and Petroleum Products by Destination, July 1990 (Continued)
(Thousand Barrels)

Destination	Other Oils for Petrochemical Feedstock Use	Special Naphthas	Lubricants	Waxes	Petroleum Coke	Asphalt and Road Oil	Miscellaneous Products	Crude Oil and Products	
								Total	Daily Average
Argentina	0	0	(s)	(s)	0	0	0	(s)	(s)
Australia	0	0	4	1	128	(s)	(s)	650	21
Bahama Islands	0	0	1	0	0	(s)	(s)	563	18
Bahrain	0	0	0	0	64	0	0	66	2
Belgium & Luxembourg	0	(s)	12	(s)	894	2	(s)	952	31
Brazil	0	0	1	0	0	(s)	(s)	9	(s)
Canada	0	95	121	8	259	90	6	2,332	75
Chile	0	0	2	(s)	1	(s)	2	6	(s)
China, People's Republic of ..	0	0	(s)	0	0	0	0	(s)	(s)
China, Taiwan	0	(s)	10	1	1	(s)	2	690	22
Colombia	0	0	2	(s)	0	0	(s)	3	(s)
Costa Rica	0	1	7	(s)	0	0	(s)	9	(s)
Denmark	0	0	(s)	0	137	(s)	(s)	138	4
Dominican Republic	0	0	14	0	0	0	(s)	104	3
Ecuador	0	(s)	1	(s)	0	(s)	0	1	(s)
Egypt	0	0	1	0	0	0	0	1	(s)
El Salvador	0	1	1	0	0	0	(s)	101	3
Finland	0	0	2	(s)	333	0	(s)	335	11
France	93	0	5	2	55	0	66	223	7
French Pacific Islands	0	0	(s)	0	0	0	0	(s)	(s)
Germany, FR (W)	0	(s)	2	18	(s)	1	1	91	3
Ghana	0	0	(s)	0	55	0	0	55	2
Greece	0	0	(s)	(s)	0	0	(s)	30	1
Guatemala	0	2	3	(s)	0	0	(s)	152	5
Guinea	0	0	1	0	0	0	0	1	(s)
Honduras	0	(s)	2	(s)	0	0	(s)	6	(s)
Hong Kong	0	1	2	1	0	0	(s)	5	(s)
India	0	0	17	(s)	0	(s)	0	19	1
Indonesia	0	0	2	(s)	103	(s)	(s)	105	3
Ireland	0	0	0	0	0	0	0	1	(s)
Israel	0	0	1	(s)	0	0	0	199	6
Italy	0	2	1	(s)	2,139	0	0	2,142	69
Jamaica	0	(s)	(s)	0	32	0	(s)	1,022	33
Japan	113	(s)	32	3	1,204	2	1	1,567	51
Korea, Republic of	199	(s)	7	1	202	(s)	(s)	1,500	48
Malaysia	0	0	1	(s)	0	0	(s)	2	(s)
Mexico	0	2	105	13	70	5	1	2,378	77
Netherlands	64	221	9	1	731	1	3	1,059	34
Netherlands Antilles	0	0	1	(s)	0	0	0	307	10
New Zealand	0	0	1	(s)	(s)	(s)	0	1	(s)
Nigeria	0	0	1	0	0	0	0	1	(s)
Norway	0	0	1	(s)	72	0	(s)	73	2
Panama	0	0	2	0	0	0	0	187	5
Peru	0	1	(s)	0	(s)	0	(s)	1	(s)
Philippines	0	0	4	(s)	0	0	(s)	4	(s)
Portugal	0	0	(s)	(s)	0	0	0	(s)	(s)
Puerto Rico	0	3	23	2	0	0	1	557	18
Saudi Arabia	0	0	2	0	0	0	(s)	3	(s)
Singapore	0	(s)	1	(s)	(s)	(s)	(s)	3	(s)
South Africa	0	0	0	(s)	0	0	(s)	(s)	(s)
Spain	0	0	(s)	(s)	365	(s)	0	367	12
Suriname	0	0	1	0	0	(s)	(s)	1	(s)
Sweden	0	0	1	0	0	0	(s)	2	(s)
Switzerland	0	0	(s)	(s)	0	0	0	(s)	(s)
Thailand	0	0	3	0	0	0	(s)	5	(s)
Trinidad and Tobago	0	0	(s)	0	0	(s)	(s)	140	5
Turkey	0	0	0	0	533	0	0	533	17
United Arab Emirates	0	0	(s)	(s)	58	0	0	60	2
United Kingdom	0	0	16	1	691	1	1	815	26
U.S.S.R.	0	0	4	0	0	0	0	4	(s)
Uruguay	0	0	1	0	0	0	0	1	(s)
Venezuela	0	2	(s)	(s)	(s)	(s)	1	6	(s)
Virgin Islands	0	0	(s)	0	0	0	0	1,886	61
Yugoslavia	0	0	(s)	0	84	0	0	84	3
Other	0	(s)	15	1	0	(s)	1	30	1
Total	468	331	445	56	8,209	105	89	21,568	696

* Crude oil exports are restricted to: (1) crude oil derived from fields under the State waters of Alaska's Cook Inlet; (2) certain domestically produced crude oil destined for Canada; and (3) shipments to U.S. territories.

(s) = Less than 500 barrels or less than 500 barrels per day.

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

Sources: See Explanatory Notes.

**Table 38. Year-to-Date Exports of Crude Oil and Petroleum Products by Destination,
January-July 1990
(Thousand Barrels)**

Destination	Crude Oil ^a	Pentanes Plus	Liquefied Petroleum Gases	Finished Motor Gasoline	Jet Fuel	Kerosene	Distillate Fuel Oil	Residual Fuel Oil	Naphtha for Petrochemical Feedstock Use
Argentina	0	0	0	0	0	0	0	0	0
Australia	0	0	3	38	0	3	711	1,579	40
Bahama Islands	0	0	37	423	301	0	1,560	3,460	(s)
Bahrain	0	0	0	0	0	0	3	0	(s)
Belgium & Luxembourg	0	124	83	1	0	2	3	1	111
Brazil	0	0	(s)	1	0	0	0	0	77
Cameroon	0	0	0	0	0	0	0	0	0
Canada	2,871	0	2,162	698	1,702	57	870	3,234	11
Chile	0	(s)	(s)	53	0	0	45	0	4
China, People's Republic of ..	0	0	0	0	0	0	2	1	2
China, Taiwan	300	0	58	0	0	9	3	4,492	21
Colombia	0	0	27	100	0	0	(s)	0	3
Costa Rica	0	0	(s)	408	48	0	763	0	11
Denmark	0	0	4	0	0	0	0	0	(s)
Dominican Republic	0	0	310	73	28	0	206	587	6
Ecuador	0	0	0	11	0	0	3	0	3
Egypt	0	0	(s)	0	0	0	0	1	(s)
El Salvador	0	0	31	243	23	0	186	0	2
Finland	0	0	0	0	0	(s)	0	0	0
France	0	0	22	(s)	0	0	(s)	0	19
French Pacific Islands	0	0	0	0	0	0	(s)	543	0
Germany, FR (W)	0	0	123	1	0	2	(s)	58	30
Ghana	0	0	0	0	0	0	0	0	0
Greece	0	0	1	3	0	0	1	30	0
Guatemala	0	0	44	1,015	100	10	1,378	1	1
Guinea	0	0	0	0	0	0	(s)	0	0
Honduras	0	0	17	35	0	16	51	0	9
Hong Kong	0	8	(s)	0	0	0	15	10	1
India	0	0	1	0	0	0	0	0	18
Indonesia	0	0	0	0	0	0	0	0	(s)
Ireland	0	0	0	0	0	1	0	0	0
Israel	0	0	6	242	389	0	1	213	1
Italy	0	0	45	0	0	2	(s)	681	0
Jamaica	0	1	83	143	165	1	572	3,738	3
Japan	0	6	9	214	1,589	3	1,367	3,578	168
Korea, Republic of	0	0	12	(s)	0	(s)	674	7,133	104
Malaysia	0	0	0	0	0	1	0	0	1
Mexico	0	197	4,039	3,913	(s)	31	255	8,613	29
Netherlands	0	0	29	27	0	(s)	3	(s)	90
Netherlands Antilles	0	0	0	139	0	0	1,044	777	(s)
New Zealand	0	0	(s)	0	0	0	0	0	1
Nigeria	0	0	0	0	0	0	0	0	(s)
Norway	0	0	2	(s)	0	1	0	0	(s)
Panama	0	0	44	54	47	0	846	1,734	6
Peru	0	2	60	0	290	0	100	321	(s)
Philippines	0	0	(s)	0	0	0	0	1	1
Poland	0	0	0	0	0	0	38	73	0
Portugal	0	0	0	0	0	0	0	0	0
Puerto Rico	1,281	18	110	216	0	3	80	3	152
Saudi Arabia	0	0	(s)	0	0	0	2	0	7
Singapore	0	0	2	0	0	0	860	520	6
South Africa	0	0	0	0	0	0	(s)	0	0
Spain	0	0	0	0	0	0	708	120	8
Suriname	0	0	83	0	0	0	0	0	(s)
Sweden	0	0	0	(s)	0	1	1	(s)	0
Switzerland	0	0	43	1	0	(s)	0	0	0
Thailand	0	0	1	34	0	(s)	0	0	14
Trinidad and Tobago	0	0	1	0	(s)	0	0	140	0
Turkey	0	0	32	0	0	0	(s)	0	0
United Arab Emirates	0	0	0	(s)	0	0	0	0	0
United Kingdom	0	2	5	3	0	0	4	104	1
U.S.S.R.	0	0	0	0	0	0	(s)	0	0
Uruguay	0	0	0	0	0	0	0	131	0
Venezuela	0	0	143	215	0	0	1,153	334	0
Virgin Islands	18,863	0	(s)	0	0	2	1	0	0
Yugoslavia	0	0	0	0	0	0	0	0	58
Other	0	1	84	30	11	0	34	1	7
Total	23,315	358	7,758	8,331	4,694	144	13,606	42,211	1,031

See footnotes at end of table.

**Table 38. Year-to-Date Exports of Crude Oil and Petroleum Products by Destination,
January-July 1990 (Continued)**
(Thousand Barrels)

Destination	Other Oils for Petrochemical Feedstock Use	Special Naphthas	Lubricants	Waxes	Petroleum Coke	Asphalt and Road Oil	Miscellaneous Products	Crude Oil and Products	
								Total	Daily Average
Argentina	142	(s)	24	(s)	(s)	0	(s)	166	1
Australia	128	91	68	5	1,759	1	1	4,424	21
Bahama Islands	0	0	18	0	0	1	1	5,807	27
Bahrain	0	0	1	0	401	0	0	404	2
Belgium & Luxembourg	0	24	86	3	4,050	8	2	4,495	21
Brazil	0	0	49	(s)	237	(s)	(s)	365	2
Cameroon	0	0	(s)	0	38	0	0	38	(s)
Canada	0	227	870	59	2,696	319	18	15,794	75
Chile	0	(s)	73	1	3	(s)	3	182	1
China, People's Republic of	0	(s)	2	1	0	(s)	(s)	8	(s)
China, Taiwan	0	(s)	163	12	35	2	17	5,112	24
Colombia	0	(s)	26	1	2	(s)	1	180	1
Costa Rica	0	12	59	1	0	0	1	1,303	6
Denmark	0	2	(s)	1	394	1	(s)	402	2
Dominican Republic	0	1	39	1	0	6	1	1,258	6
Ecuador	0	(s)	24	1	0	(s)	1	43	(s)
Egypt	0	0	9	(s)	0	(s)	(s)	11	(s)
El Salvador	0	3	12	(s)	0	0	(s)	501	2
Finland	0	0	7	(s)	334	0	1	342	2
France	1,018	(s)	15	14	1,200	15	88	2,391	11
French Pacific Islands	0	(s)	1	0	0	0	(s)	545	3
Germany, FR (W)	70	1	35	48	558	28	4	959	5
Ghana	0	0	1	0	223	0	0	224	1
Greece	0	1	4	(s)	831	0	(s)	871	4
Guatemala	0	11	34	2	0	0	1	2,596	12
Guinea	0	0	5	0	0	0	(s)	5	(s)
Honduras	0	6	20	(s)	0	0	(s)	154	1
Hong Kong	0	1	10	3	0	0	3	49	(s)
India	0	(s)	33	2	(s)	1	4	59	(s)
Indonesia	0	1	13	1	200	1	23	237	1
Ireland	0	0	7	1	0	0	(s)	9	(s)
Israel	0	(s)	12	(s)	548	0	1	1,412	7
Italy	314	5	11	4	7,864	4	1	8,930	42
Jamaica	0	(s)	16	1	81	0	2	4,785	23
Japan	592	120	271	21	9,623	12	13	17,586	83
Korea, Republic of	932	194	69	4	605	2	64	9,793	48
Malaysia	203	(s)	5	5	17	0	1	240	1
Mexico	6	17	699	70	452	23	21	18,365	87
Netherlands	515	703	58	5	5,188	7	48	8,873	31
Netherlands Antilles	0	0	243	1	7	2	(s)	2,212	10
New Zealand	0	0	11	1	254	(s)	(s)	269	1
Nigeria	0	0	7	(s)	0	0	1	8	(s)
Norway	0	0	2	(s)	458	0	(s)	461	2
Panama	0	1	147	(s)	0	0	(s)	2,880	14
Peru	0	1	53	(s)	1	(s)	(s)	828	4
Philippines	119	0	29	2	(s)	0	1	154	1
Poland	0	0	1	0	0	0	0	162	1
Portugal	0	0	10	(s)	0	(s)	(s)	10	(s)
Puerto Rico	0	133	135	9	0	0	8	2,148	10
Saudi Arabia	0	1	25	(s)	(s)	0	7	43	(s)
Singapore	98	1	56	1	25	6	17	1,592	8
South Africa	0	(s)	(s)	(s)	381	1	(s)	383	2
Spain	365	(s)	19	51	5,671	2	(s)	6,945	33
Suriname	0	0	3	0	0	(s)	1	87	(s)
Sweden	0	1	8	(s)	295	(s)	1	308	1
Switzerland	0	0	4	(s)	8	1	(s)	56	(s)
Thailand	89	0	17	(s)	0	0	5	160	1
Trinidad and Tobago	0	(s)	1	(s)	2	(s)	1	145	1
Turkey	0	0	14	(s)	1,822	0	0	1,869	9
United Arab Emirates	0	(s)	5	(s)	239	(s)	(s)	251	1
United Kingdom	92	(s)	69	42	1,384	6	6	1,717	8
U.S.S.R.	0	6	174	0	279	0	0	460	2
Uruguay	0	0	6	(s)	0	0	(s)	137	1
Venezuela	0	2	8	1	335	2	1	2,194	10
Virgin Islands	0	9	1	(s)	0	0	(s)	18,877	89
Yugoslavia	0	0	(s)	(s)	613	2	0	674	3
Other	0	2	101	1	217	4	2	493	2
Total	4,688	1,578	3,997	377	49,305	457	373	162,223	765

^a Crude oil exports are restricted to: (1) crude oil derived from fields under the State waters of Alaska's Cook Inlet; (2) certain domestically produced crude oil destined for Canada; and (3) shipments to U.S. territories.

(s) = Less than 500 barrels or less than 500 barrels per day.

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

Sources: See Explanatory Notes.

Table 39. Net Imports of Crude Oil and Petroleum Products Into the United States by Country,
July 1990
(Thousand Barrels per Day)

Country	Crude Oil ^a	Liquefied Petroleum Gases	Finished Motor Gasoline	Jet Fuel	Distillate Fuel Oil	Residual Fuel Oil	Petroleum Coke	Lubricants	Other Products ^b	Total Products	Total Crude Oil and Products
Arab OPEC	2,478	17	66	0	(s)	38	-2	(s)	254	373	2,851
Algeria	70	17	0	0	0	38	0	0	183	238	308
Iraq	1,120	0	0	0	0	0	0	(s)	0	(s)	1,120
Kuwait	33	0	0	0	0	0	0	(s)	10	10	43
Qatar	0	0	0	0	(s)	0	0	0	0	(s)	(s)
Saudi Arabia	1,242	0	68	0	(s)	0	0	(s)	61	127	1,369
United Arab Emirates	13	0	0	0	(s)	0	-2	(s)	(s)	-2	11
Other OPEC	1,739	7	81	37	94	69	-3	(s)	75	359	2,097
Ecuador	43	0	0	0	4	12	0	(s)	(s)	18	60
Gabon	69	0	0	0	0	0	0	0	0	0	69
Indonesia	137	0	0	0	0	7	-3	(s)	(s)	3	140
Nigeria	825	0	0	0	0	5	0	(s)	0	5	830
Venezuela	665	7	81	37	90	46	(s)	(s)	75	334	999
Non OPEC	2,506	95	184	38	104	256	-255	-2	321	742	3,249
Angola	303	0	0	0	0	0	0	(s)	(s)	(s)	303
Argentina	10	0	7	0	0	11	3	(s)	8	30	40
Australia	101	24	0	0	(s)	-17	-4	(s)	(s)	3	105
Bahama Islands	0	0	-2	-1	-7	17	0	(s)	(s)	7	7
Belgium & Luxembourg	0	-1	8	0	0	0	-29	(s)	30	8	8
Brazil	0	(s)	37	0	0	35	0	(s)	1	73	73
Brunei	30	0	0	0	0	0	0	0	0	0	30
Cameroon	16	0	0	0	0	0	0	0	0	0	16
Canada	646	64	29	2	38	22	-7	-2	13	160	806
China, People's Republic of	122	0	5	0	0	0	0	(s)	5	10	132
China, Taiwan	0	0	0	0	(s)	-22	(s)	(s)	(s)	-22	-22
Colombia	111	(s)	0	0	(s)	58	0	(s)	(s)	58	169
Congo	36	0	0	0	0	0	0	0	0	0	36
Egypt	23	0	0	0	0	0	0	(s)	8	8	30
France	0	(s)	7	0	(s)	9	-2	(s)	(s)	14	14
Greece	0	(s)	0	0	10	-1	0	(s)	(s)	9	9
Guatemala	0	(s)	-2	(s)	-3	(s)	0	(s)	(s)	-5	-5
India	0	0	0	0	0	0	0	-1	28	27	27
Italy	11	(s)	0	0	0	16	-69	(s)	29	-24	-13
Jamaica	0	(s)	(s)	0	-4	-22	-1	(s)	(s)	-27	-27
Japan	0	(s)	-2	0	-2	-2	-39	-1	-5	-51	-51
Korea, Republic of	0	(s)	0	0	-2	-33	-7	(s)	-6	-47	-47
Malaysia	20	0	0	0	0	0	0	(s)	(s)	(s)	20
Mexico	851	16	-18	8	3	-35	-2	-3	-2	-33	618
Netherlands	0	-1	0	0	(s)	0	-24	(s)	27	2	2
Netherlands Antilles	0	0	0	0	(s)	19	0	(s)	2	20	20
Norway	129	0	(s)	0	0	0	-2	(s)	(s)	-2	126
Oman	81	0	0	0	0	0	0	0	0	0	81
Panama	0	-1	0	0	-5	0	0	(s)	0	-5	-5
Peru	0	0	0	0	0	35	(s)	(s)	(s)	35	35
Puerto Rico	-18	(s)	0	0	(s)	(s)	0	8	25	33	17
Romania	0	0	10	0	0	0	0	0	(s)	10	10
Spain	0	0	50	0	(s)	15	-12	(s)	24	78	78
Sweden	0	0	0	0	(s)	0	0	(s)	1	1	1
Thailand	16	(s)	0	0	0	0	0	(s)	(s)	(s)	16
Trinidad and Tobago	73	0	2	0	0	28	0	(s)	(s)	30	103
Turkey	0	0	0	0	0	0	-17	0	0	-17	-17
United Kingdom	166	0	8	0	7	20	-22	-1	7	19	184
U.S.S.R.	0	0	0	0	0	43	0	(s)	49	92	92
Virgin Islands	-61	0	45	29	64	37	0	(s)	77	252	191
Zaire	21	0	0	0	0	0	0	0	0	0	21
Other	18	-6	-1	(s)	5	23	-22	-2	(s)	-3	15
Total	6,723	119	331	75	198	364	-260	-3	649	1,474	8,197

^a Includes crude oil imported for storage in the Strategic Petroleum Reserve.

^b Includes asphalt and road oil, aviation gasoline, aviation gasoline blending components, kerosene, miscellaneous products, motor gasoline blending components, naphtha for petrochemical feedstock use, other oils for petrochemical feedstock use, pentanes plus, special naphthas, unfinished oils, and waxes.
(s) = Less than 500 barrels per day.

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

Sources: See Explanatory Notes.

**Table 40. Year-to-Date Net Imports of Crude Oil and Petroleum Products Into the United States by Country,
January-July 1990**
(Thousand Barrels per Day)

Country	Crude Oil ^a	Liquefied Petroleum Gases	Finished Motor Gasoline	Jet Fuel	Distillate Fuel Oil	Residual Fuel Oil	Petroleum Coke	Lubricants	Other Products ^b	Total Products	Total Crude Oil and Products
Arab OPEC	1,990	31	34	18	28	43	-1	(s)	253	404	2,394
Algeria	65	28	0	0	22	32	0	(s)	158	239	303
Iraq	691	0	0	0	1	0	0	(s)	7	8	698
Kuwait	102	0	0	(s)	1	0	0	(s)	3	4	106
Qatar	6	0	0	0	(s)	0	0	(s)	0	(s)	6
Saudi Arabia	1,111	3	34	16	5	8	(s)	(s)	77	144	1,255
United Arab Emirates	16	0	(s)	0	(s)	3	-1	(s)	8	10	26
Other OPEC	1,780	5	72	36	112	99	-3	(s)	71	393	2,154
Ecuador	40	0	(s)	0	1	10	0	(s)	(s)	11	51
Gabon	63	0	0	0	0	(s)	0	(s)	0	(s)	63
Indonesia	119	0	0	0	0	12	-1	(s)	7	18	137
Iran	0	0	0	0	0	0	(s)	0	0	(s)	(s)
Nigeria	887	0	1	0	0	14	0	(s)	(s)	14	901
Venezuela	651	5	72	36	112	63	-2	(s)	64	350	1,001
Non OPEC	2,374	115	237	45	100	217	-226	-9	332	812	3,186
Angola	282	0	0	0	0	0	0	(s)	(s)	(s)	282
Argentina	8	0	5	0	6	11	1	(s)	8	30	38
Australia	53	4	(s)	0	-3	-8	-8	(s)	-1	-16	37
Bahama Islands	0	(s)	-2	-1	-6	29	0	(s)	(s)	10	19
Belgium & Luxembourg	0	(s)	8	0	(s)	2	-19	(s)	22	13	13
Brazil	0	(s)	21	0	0	37	-1	(s)	(s)	57	57
Brunei	11	0	0	0	0	0	0	0	0	0	11
Cameroon	16	0	0	0	0	6	(s)	(s)	0	6	22
Canada	615	97	49	3	49	12	-12	-2	29	226	840
China, People's Republic of	80	0	1	0	(s)	(s)	0	(s)	2	4	84
China, Taiwan	-1	(s)	0	0	(s)	-21	(s)	-1	(s)	-23	-24
Colombia	142	(s)	(s)	0	(s)	45	(s)	(s)	2	46	188
Congo	28	0	0	0	0	5	0	0	(s)	5	32
Egypt	23	(s)	0	0	0	1	0	(s)	13	13	37
France	0	(s)	29	1	4	8	-6	(s)	-2	35	35
Greece	0	(s)	3	3	4	3	-4	(s)	2	10	10
Guatemala	3	(s)	-5	(s)	-6	(s)	0	(s)	(s)	-12	-9
India	1	(s)	0	0	0	0	(s)	(s)	33	33	34
Italy	3	(s)	39	1	1	5	-37	(s)	24	33	36
Jamaica	0	(s)	-1	-1	-3	-17	(s)	(s)	(s)	-22	-22
Japan	0	(s)	-1	-7	-6	-17	-45	-1	-4	-82	-82
Korea, Republic of	0	(s)	(s)	0	-3	-34	-3	(s)	-5	-45	-45
Malaysia	17	0	0	0	0	1	(s)	(s)	-1	-1	16
Mexico	672	18	-18	12	8	-36	-2	-3	2	-19	653
Netherlands	0	(s)	19	2	3	6	-24	(s)	28	33	23
Netherlands Antilles	0	0	(s)	0	-5	12	(s)	-1	4	10	10
Norway	110	(s)	4	0	1	0	-2	(s)	2	4	114
Oman	56	0	0	0	0	0	0	(s)	1	1	57
Panama	0	(s)	(s)	(s)	-4	-7	0	-1	(s)	-13	-13
Peru	0	(s)	0	-1	(s)	14	(s)	(s)	(s)	12	12
Puerto Rico	-6	-1	-1	0	(s)	(s)	0	6	25	29	23
Romania	0	0	4	1	3	0	0	0	14	22	22
Spain	0	0	25	4	-3	7	-27	(s)	15	21	21
Sweden	0	0	(s)	0	(s)	2	-1	(s)	3	4	4
Syria	1	0	0	0	(s)	3	0	(s)	(s)	3	4
Thailand	16	(s)	(s)	0	0	0	0	(s)	-1	-1	15
Trinidad and Tobago	78	(s)	1	1	1	23	(s)	(s)	(s)	26	104
Turkey	2	(s)	0	0	(s)	(s)	-9	(s)	5	-3	-1
United Kingdom	194	3	13	(s)	4	8	-7	(s)	14	35	229
U.S.S.R.	0	0	1	0	9	12	-1	-1	11	30	30
Virgin Islands	-89	(s)	45	30	56	90	0	(s)	81	302	213
Yemen (Sana)	33	0	0	0	0	0	0	0	3	3	36
Zaire	20	0	0	0	(s)	0	0	(s)	(s)	(s)	20
Other	6	-3	-1	-2	-7	15	-18	-2	4	-14	-9
Total	6,124	151	344	97	241	359	-230	-9	657	1,609	7,734

^a Includes crude oil imported for storage in the Strategic Petroleum Reserve.

^b Includes asphalt and road oil, aviation gasoline, aviation gasoline blending components, kerosene, miscellaneous products, motor gasoline blending components, naphtha for petrochemical feedstock use, other oils for petrochemical feedstock use, pentanes plus, special naphthas, unfinished oils, and waxes.

(s) = Less than 500 barrels per day.

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

Sources: See Explanatory Notes.

**Table 41. Stocks of Crude Oil and Petroleum Products by PAD District,
July 1990**
(Thousand Barrels)

Commodity	Petroleum Administration for Defense Districts					U. S. Total
	I	II	III	IV	V	
Crude Oil	15,828	83,408	787,775	12,581	86,806	966,196
Refinery	14,371	14,498	50,147	2,232	28,472	109,718
Tank Farms and Pipelines	1,233	87,546	115,087	9,352	33,282	226,500
Leases	24	1,364	15,863	997	1,310	19,558
Strategic Petroleum Reserve ^a	0	0	586,978	0	0	586,878
Alaskan In Transit	0	0	0	0	23,742	23,742
Total Stocks, All Oils (excluding Crude Oil)	182,966	173,311	278,586	16,277	93,301	744,441
Refinery	48,073	63,789	151,165	10,914	63,266	337,207
Bulk Terminal	107,312	72,749	77,839	2,804	24,502	285,206
Pipeline	27,376	35,001	42,323	2,377	5,418	112,495
Natural Gas Processing Plant	205	1,772	7,259	182	115	9,533
Pentanes Plus	35	2,444	6,012	153	87	8,731
Refinery	14	329	586	3	27	959
Bulk Terminal	13	1,152	2,818	0	7	3,988
Pipeline	0	765	1,152	83	31	2,031
Natural Gas Processing Plant	8	198	1,458	67	22	1,753
Liquefied Petroleum Gases	5,239	32,908	69,803	966	3,375	112,289
Refinery	1,071	3,775	10,962	353	1,008	17,169
Bulk Terminal	2,240	20,675	46,495	72	2,274	71,756
Pipeline	1,731	6,882	6,545	426	0	15,584
Natural Gas Processing Plant	197	1,574	5,801	115	93	7,780
Ethane/Ethylene	18	4,773	15,789	133	0	20,713
Refinery	18	1	747	0	0	764
Bulk Terminal	2	2,763	11,675	0	0	14,440
Pipeline	0	1,435	2,478	128	0	4,041
Natural Gas Processing Plant	0	574	889	5	0	1,468
Propane/Propylene	3,365	18,009	28,412	408	736	48,930
Refinery	530	1,970	3,412	112	83	6,107
Bulk Terminal	1,156	12,188	18,980	72	577	32,973
Pipeline	1,550	3,235	2,698	156	0	7,639
Natural Gas Processing Plant	129	616	1,322	68	78	2,211
Normal Butane/Butylene	1,801	7,183	21,187	296	2,198	32,665
Refinery	480	1,329	5,068	169	604	7,650
Bulk Terminal	1,074	4,239	12,727	0	1,583	19,623
Pipeline	181	1,326	822	94	0	2,423
Natural Gas Processing Plant	66	289	2,570	33	11	2,969
Isobutane	55	2,941	6,415	129	441	9,981
Refinery	45	475	1,735	72	321	2,648
Bulk Terminal	8	1,485	3,113	0	114	4,720
Pipeline	0	886	547	48	0	1,481
Natural Gas Processing Plant	2	95	1,020	9	6	1,132
Other Hydrocarbons/Alcohol	183	263	517	70	309	1,342
Refinery	183	263	517	70	309	1,342
Unfinished Oils	15,196	16,750	52,051	2,055	26,377	112,429
Refinery						
Naphtha and Lighter	4,749	4,543	13,119	604	4,333	27,348
Kerosene and Light Gas Oils	2,015	1,423	9,675	405	3,956	17,474
Heavy Gas Oils	7,325	6,023	19,183	640	13,722	46,893
Residuum	1,107	4,761	10,074	406	4,366	20,714
Motor Gasoline Blending Components	4,978	8,389	18,786	1,738	7,102	38,993
Refinery	4,807	7,420	15,872	1,698	7,051	36,848
Bulk Terminal	161	652	909	40	20	1,762
Pipeline	10	317	5	0	31	363

See footnotes at end of table.

**Table 41. Stocks of Crude Oil and Petroleum Products by PAD District,
July 1990 (Continued)**
(Thousand Barrels)

Commodity	Petroleum Administration for Defense Districts					U. S. Total
	I	II	III	IV	V	
Aviation Gasoline Blending Components	0	82	77	0	3	142
Refinery	0	62	77	0	3	142
Finished Motor Gasoline	56,164	48,970	49,908	4,438	20,880	180,358
Refinery	8,651	9,752	19,548	1,661	7,759	47,360
Bulk Terminal	33,700	24,151	10,680	1,684	10,606	80,821
Pipeline	13,813	15,067	19,682	1,091	2,515	52,168
Finished Leaded Motor Gasoline	151	3,201	981	1,398	4,880	10,589
Refinery	64	822	419	635	1,671	3,611
Bulk Terminal	87	1,193	293	500	2,831	4,904
Pipeline	0	1,186	249	261	378	2,074
Finished Unleaded Motor Gasoline	56,013	45,769	48,947	3,040	16,000	169,789
Refinery	8,587	8,930	19,127	1,026	6,088	43,758
Bulk Terminal	33,613	22,958	10,387	1,184	7,775	75,917
Pipeline	13,813	13,861	19,433	830	2,137	50,094
Finished Aviation Gasoline	268	464	567	50	323	1,672
Refinery	12	125	503	32	132	804
Bulk Terminal	235	310	56	12	191	804
Pipeline	21	29	8	6	0	64
Naphtha-Type Jet Fuel	859	987	2,586	242	1,660	6,334
Refinery	240	397	1,853	182	848	3,520
Bulk Terminal	485	342	144	0	622	1,593
Pipeline	134	248	589	60	190	1,221
Kerosene-Type Jet Fuel	12,861	9,098	15,595	749	6,254	44,557
Refinery	2,213	2,042	7,637	431	3,172	15,495
Bulk Terminal	8,164	3,750	1,585	238	2,077	13,814
Pipeline	4,484	3,306	6,373	80	1,005	15,248
Kerosene	2,385	1,557	1,893	70	52	5,957
Refinery	234	825	1,142	48	37	2,286
Bulk Terminal	2,048	570	458	22	10	3,108
Pipeline	103	162	293	0	5	563
Distillate Fuel Oil	51,663	31,602	28,478	3,123	10,384	125,250
Refinery	8,201	8,892	15,815	1,823	4,570	39,101
Bulk Terminal	36,382	14,498	5,207	669	4,479	61,235
Pipeline	7,080	8,212	7,656	631	1,335	24,914
Residual Fuel Oil ^b	21,496	3,574	14,610	527	8,793	49,000
Refinery	2,640	2,318	7,432	527	6,042	18,959
Bulk Terminal	18,856	1,256	7,178	0	2,469	29,759
Pipeline	0	0	0	0	282	282
Less than 0.31% Sulfur	3,953	300	1,709	46	897	6,905
Refinery	144	45	1,444	46	695	2,374
Bulk Terminal	3,809	255	265	0	202	4,531
0.31 to 1.00% Sulfur	8,526	818	3,654	250	715	13,963
Refinery	1,937	376	1,363	250	594	4,520
Bulk Terminal	6,589	442	2,291	0	121	9,443
Greater than 1.00% Sulfur	9,017	2,456	9,247	231	6,899	27,850
Refinery	559	1,897	4,625	231	4,753	12,085
Bulk Terminal	8,458	559	4,622	0	2,146	15,785
Naphtha for Petrochemical Feedstock Use	278	292	1,124	0	119	1,813
Refinery	278	292	1,124	0	119	1,813

See footnotes at end of table.

**Table 41. Stocks of Crude Oil and Petroleum Products by PAD District,
July 1990 (Continued)
(Thousand Barrels)**

Commodity	Petroleum Administration for Defense Districts					U. S. Total
	I	II	III	IV	V	
Other Oils for Petrochemical Feedstock Use	3	32	2,248	2	113	2,398
Refinery	3	32	2,248	2	113	2,398
Special Naphthas	642	729	1,420	7	156	2,954
Refinery	99	351	1,272	7	112	1,841
Bulk Terminal	543	378	148	0	44	1,113
Lubricants	3,163	2,120	5,870	73	1,826	13,052
Refinery	719	976	5,169	65	906	7,855
Bulk Terminal	2,444	1,144	681	8	920	5,197
Waxes	52	122	433	92	231	930
Refinery	52	122	433	92	231	930
Petroleum Coke	834	2,219	2,701	26	1,747	7,527
Refinery	834	2,219	2,701	26	1,747	7,527
Asphalt and Road Oil	5,895	10,497	4,724	1,884	3,298	26,298
Refinery	2,368	6,655	3,717	1,825	2,573	17,138
Bulk Terminal	3,527	3,842	1,007	59	725	9,160
Miscellaneous Products	772	234	1,183	14	212	2,415
Refinery	258	192	688	14	130	1,282
Bulk Terminal	514	29	475	0	58	1,076
Pipeline	0	13	20	0	24	57
Total Stocks, All Oils	198,594	256,717	1,046,361	28,858	180,107	1,710,637

^a Includes 38,395 thousand barrels of domestic crude oil.

^b Sulfur content not available for stocks held by pipelines.

Note: Stocks are reported as of the last day of the month.

Sources: See Explanatory Notes.

**Table 42. Refinery, Bulk Terminal, and Natural Gas Plant Stocks of Selected Petroleum Products by State,
July 1990**
(Thousand Barrels)

State	Leaded Motor Gasoline	Unleaded Motor Gasoline	Kerosene	Distillate Fuel Oil	Residual Fuel	Propane/ Propylene
PAD District I	151	42,200	2,282	44,583	21,498	1,815
Connecticut	0	1,474	135	2,584	476	W
Delaware, D.C., Maryland	19	1,819	136	4,574	2,244	W
Florida	1	6,810	207	2,202	1,106	190
Georgia	1	2,911	91	1,261	89	W
Maine, New Hampshire, Vermont	0	882	370	2,372	897	W
Massachusetts	7	1,637	88	2,475	1,813	W
New Jersey	41	9,838	44	11,541	8,099	W
New York	39	3,840	241	6,233	4,123	W
North Carolina	5	2,678	273	1,531	244	W
Pennsylvania	15	4,657	403	5,030	1,012	W
Rhode Island	0	1,028	W	1,267	W	W
South Carolina	0	1,552	99	720	W	W
Virginia	10	3,008	167	2,694	589	W
West Virginia	13	266	W	99	W	W
PAD District II	2,015	31,888	1,395	23,390	3,574	14,774
Illinois	163	6,534	332	3,881	1,405	1,252
Indiana	223	4,002	76	3,870	423	W
Iowa	124	1,183	W	961	W	W
Kansas, Nebraska	572	2,877	18	1,772	53	8,798
Kentucky	9	1,522	49	627	W	W
Michigan	80	3,332	121	2,038	180	1,523
Minnesota	161	1,286	W	2,178	220	W
Missouri	222	1,359	W	928	W	W
North Dakota, South Dakota	110	399	W	680	W	W
Ohio	11	3,834	469	2,241	265	W
Oklahoma	314	1,547	W	1,328	312	1,082
Tennessee	0	2,208	39	981	301	W
Wisconsin	26	1,805	W	1,905	78	W
PAD District III	712	29,514	1,600	20,822	14,610	23,714
Alabama	0	1,487	52	1,084	486	95
Arkansas	20	580	W	204	W	W
Louisiana	11	5,883	346	4,227	5,188	1,883
Mississippi	52	2,080	15	1,760	W	2,952
New Mexico	117	279	W	208	30	W
Texas	512	19,205	1,181	13,339	8,750	18,690
PAD District IV	1,135	2,210	70	2,492	527	252
Colorado	226	699	W	377	W	W
Idaho	136	240	W	169	W	W
Montana	406	591	W	678	48	15
Utah	175	274	W	439	110	164
Wyoming	192	406	W	829	W	43
PAD District V	4,502	13,863	47	9,049	8,511	736
Alaska	174	458	W	885	W	W
Arizona	240	519	W	267	W	W
California	2,321	9,119	38	4,846	5,137	126
Hawaii	71	492	W	478	W	W
Nevada	87	202	W	138	W	W
Oregon	510	917	W	710	212	W
Washington	1,099	2,158	W	1,725	1,485	27
U.S. Total	8,515	119,675	5,394	100,336	48,718	41,291

W = Withheld to avoid disclosure of individual company data.

Notes: • Stocks are reported as of the last day of the month. • Totals may not equal sum of components due to independent rounding.

Sources: See Explanatory Notes.

Table 43. Movements of Crude Oil and Petroleum Products by Pipeline, Tanker, and Barge Between PAD Districts, July 1990
(Thousand Barrels)

Commodity	From I to			From II to				From III to	
	II	III	V	I	III	IV	V	I	II
Crude Oil	0	0	0	128	1,981	430	0	262	63,104
Petroleum Products	7,524	180	0	4,446	5,424	1,726	0	79,353	25,562
Pentanes Plus	0	0	0	0	277	1	0	0	638
Liquefied Petroleum Gases	0	6	0	866	1,886	22	0	1,739	3,431
Unfinished Oils	0	0	0	0	219	0	0	221	0
Motor Gasoline Blending Components	0	0	0	0	0	0	0	171	363
Finished Motor Gasoline	5,393	0	0	2,069	1,773	912	0	47,431	11,609
Leaded	0	0	0	0	68	55	0	0	91
Unleaded	5,393	0	0	2,069	1,705	857	0	47,431	11,518
Finished Aviation Gasoline	9	0	0	0	14	21	0	108	123
Jet Fuel	224	0	0	247	138	585	0	10,497	3,751
Naphtha-Type	0	0	0	0	89	0	0	254	75
Kerosene-Type	224	0	0	247	49	585	0	10,243	3,676
Kerosene	0	0	0	26	0	0	0	0	0
Distillate Fuel Oil	1,812	0	0	754	653	185	0	17,395	4,282
Residual Fuel Oil	0	0	0	150	400	0	0	783	0
Petrochemical Feedstocks ^a	86	20	0	22	19	0	0	0	10
Special Naphthas	0	6	0	0	0	0	0	376	138
Lubricants	0	35	0	39	36	0	0	393	394
Waxes	0	0	0	0	0	0	0	5	0
Asphalt and Road Oil	0	113	0	273	0	0	0	153	623
Miscellaneous Products	0	0	0	0	9	0	0	81	0
Total	7,524	180	0	4,572	7,405	2,156	0	79,815	88,668

Commodity	From III to		From IV to			From V to			
	IV	V	II	III	V	I	II	III	IV
Crude Oil	0	0	2,557	1,451	0	0	0	6,717	0
Petroleum Products	0	1,768	1,543	835	1,400	0	0	48	0
Pentanes Plus	0	0	129	116	0	0	0	0	0
Liquefied Petroleum Gases	0	0	442	719	0	0	0	0	0
Unfinished Oils	0	0	0	0	0	0	0	0	0
Motor Gasoline Blending Components	0	0	0	0	0	0	0	0	0
Finished Motor Gasoline	0	929	507	0	794	0	0	0	0
Leaded	0	152	107	0	348	0	0	0	0
Unleaded	0	777	400	0	446	0	0	0	0
Finished Aviation Gasoline	0	0	0	0	0	0	0	0	0
Jet Fuel	0	404	103	0	121	0	0	0	0
Naphtha-Type	0	263	101	0	40	0	0	0	0
Kerosene-Type	0	141	2	0	81	0	0	0	0
Kerosene	0	0	0	0	0	0	0	0	0
Distillate Fuel Oil	0	435	362	0	485	0	0	0	0
Residual Fuel Oil	0	0	0	0	0	0	0	0	0
Petrochemical Feedstocks ^a	0	0	0	0	0	0	0	0	0
Special Naphthas	0	0	0	0	0	0	0	0	0
Lubricants	0	0	0	0	0	0	0	48	0
Waxes	0	0	0	0	0	0	0	0	0
Asphalt and Road Oil	0	0	0	0	0	0	0	0	0
Miscellaneous Products	0	0	0	0	0	0	0	0	0
Total	0	1,768	4,100	2,286	1,400	0	0	6,765	0

^a Includes naphtha less than 401° F endpoint and other oils equal to or greater than 401° F endpoint.
Sources: See Explanatory Notes.

**Table 44. Movements of Crude Oil and Petroleum Products by Pipeline Between PAD Districts,
July 1990
(Thousand Barrels)**

Commodity	From I to		From II to			From III to	
	II	III	I	III	IV	I	II
Crude Oil	0	0	0	1,981	430	0	83,104
Petroleum Products	7,438	0	1,935	4,685	1,728	63,426	20,820
Pentanes Plus	0	0	0	277	1	0	838
Liquefied Petroleum Gases	0	0	866	1,886	22	1,569	3,392
Motor Gasoline Blending Components	0	0	0	0	0	74	0
Finished Motor Gasoline	5,393	0	767	1,738	912	37,772	9,897
Leaded	0	0	0	68	55	0	91
Unleaded	5,393	0	767	1,670	857	37,772	9,806
Finished Aviation Gasoline	9	0	0	0	21	22	106
Jet Fuel	224	0	125	138	585	8,484	3,478
Naphtha-Type	0	0	0	89	0	122	75
Kerosene-Type	224	0	125	49	585	8,362	3,403
Kerosene	0	0	0	0	0	0	0
Distillate Fuel Oil	1,812	0	177	637	185	15,505	3,309
Residual Fuel Oil	0	0	0	0	0	0	0
Miscellaneous Products	0	0	0	9	0	0	0
Total	7,438	0	1,935	6,666	2,156	63,426	83,924

Commodity	From III to		From IV to			From V to	
	IV	V	II	III	V	III	IV
Crude Oil	0	0	2,557	1,451	0	3,259	0
Petroleum Products	0	1,768	1,543	835	1,400	0	0
Pentanes Plus	0	0	129	116	0	0	0
Liquefied Petroleum Gases	0	0	442	719	0	0	0
Motor Gasoline Blending Components	0	0	0	0	0	0	0
Finished Motor Gasoline	0	929	507	0	794	0	0
Leaded	0	152	107	0	348	0	0
Unleaded	0	777	400	0	446	0	0
Finished Aviation Gasoline	0	0	0	0	0	0	0
Jet Fuel	0	404	103	0	121	0	0
Naphtha-Type	0	263	101	0	40	0	0
Kerosene-Type	0	141	2	0	81	0	0
Kerosene	0	0	0	0	0	0	0
Distillate Fuel Oil	0	435	362	0	485	0	0
Residual Fuel Oil	0	0	0	0	0	0	0
Miscellaneous Products	0	0	0	0	0	0	0
Total	0	1,768	4,100	2,286	1,400	3,259	0

Sources: See Explanatory Notes.

Table 45. Movements of Crude Oil and Petroleum Products by Tanker and Barge Between PAD Districts, July 1990
(Thousand Barrels)

Commodity	From I to			From II to			From III to	
	II	III	V	I	III	V	I	New England
Crude Oil	0	0	0	126	0	0	262	0
Petroleum Products	86	180	0	2,511	739	0	15,927	108
Liquefied Petroleum Gases	0	6	0	0	0	0	170	0
Unfinished Oils	0	0	0	0	219	0	221	0
Motor Gasoline Blending Components	0	0	0	0	0	0	97	0
Finished Motor Gasoline	0	0	0	1,302	35	0	9,659	38
Leaded	0	0	0	0	0	0	0	0
Unleaded	0	0	0	1,302	35	0	9,659	38
Finished Aviation Gasoline	0	0	0	0	14	0	86	0
Jet Fuel	0	0	0	122	0	0	2,013	0
Naphtha-Type	0	0	0	0	0	0	132	0
Kerosene-Type	0	0	0	122	0	0	1,881	0
Kerosene	0	0	0	26	0	0	0	0
Distillate Fuel Oil	0	0	0	577	16	0	1,890	0
Residual Fuel Oil	0	0	0	150	400	0	783	0
Less than 0.31 percent sulfur	0	0	0	0	0	0	0	0
0.31 to 1.00 percent sulfur	0	0	0	0	0	0	0	0
Greater than 1.00 percent sulfur	0	0	0	150	400	0	783	0
Petrochemical Feedstocks ^a	86	20	0	22	19	0	0	0
Special Naphthas	0	6	0	0	0	0	376	70
Lubricants	0	35	0	39	36	0	393	0
Waxes	0	0	0	0	0	0	5	0
Asphalt and Road Oil	0	113	0	273	0	0	153	0
Miscellaneous Products	0	0	0	0	0	0	81	0
Total	86	180	0	2,637	739	0	16,189	108

Commodity	From III to				From V to		
	Central Atlantic	Lower Atlantic	II	V	I	II	III
Crude Oil	262	0	0	0	0	0	3,458
Petroleum Products	1,038	14,761	4,742	0	0	0	48
Liquefied Petroleum Gases	0	170	39	0	0	0	0
Unfinished Oils	61	160	0	0	0	0	0
Motor Gasoline Blending Components	97	0	363	0	0	0	0
Finished Motor Gasoline	73	9,548	1,912	0	0	0	0
Leaded	0	0	0	0	0	0	0
Unleaded	73	9,548	1,912	0	0	0	0
Finished Aviation Gasoline	55	31	17	0	0	0	0
Jet Fuel	195	1,818	273	0	0	0	0
Naphtha-Type	0	132	0	0	0	0	0
Kerosene-Type	195	1,686	273	0	0	0	0
Kerosene	0	0	0	0	0	0	0
Distillate Fuel Oil	22	1,868	973	0	0	0	0
Residual Fuel Oil	0	783	0	0	0	0	0
Less than 0.31 percent sulfur	0	0	0	0	0	0	0
0.31 to 1.00 percent sulfur	0	0	0	0	0	0	0
Greater than 1.00 percent sulfur	0	783	0	0	0	0	0
Petrochemical Feedstocks ^a	0	0	10	0	0	0	0
Special Naphthas	166	140	138	0	0	0	0
Lubricants	276	117	394	0	0	0	48
Waxes	5	0	0	0	0	0	0
Asphalt and Road Oil	7	146	623	0	0	0	0
Miscellaneous Products	81	0	0	0	0	0	0
Total	1,300	14,761	4,742	0	0	0	3,506

^a Includes naphtha less than 401° F endpoint and other oils equal to or greater than 401° F endpoint.
Sources: See Explanatory Notes.

Table 46. Net Movements of Crude Oil and Petroleum Products by Pipeline, Tanker, and Barge Between PAD Districts, July 1990
(Thousand Barrels)

Commodity	PAD District I			PAD District II		
	Receipts	Shipments	Net Receipts	Receipts	Shipments	Net Receipts
Crude Oil	388	0	388	65,661	2,537	63,124
Petroleum Products	83,799	7,704	76,095	34,629	11,596	23,033
Pentanes Plus	0	0	0	967	278	689
Liquefied Petroleum Gases	2,605	6	2,599	3,873	2,774	1,099
Ethane/Ethylene	0	0	0	296	880	-584
Propane/Propylene	2,469	0	2,469	2,321	1,235	1,086
Normal Butane/Butylene	0	6	-6	367	335	32
Isobutane	136	0	136	889	324	565
Unfinished Oils	221	0	221	0	219	-219
Motor Gasoline Blending Components	171	0	171	363	0	363
Finished Motor Gasoline	49,500	5,393	44,107	17,509	4,754	12,755
Leaded	0	0	0	198	123	75
Unleaded	49,500	5,393	44,107	17,311	4,631	12,680
Finished Aviation Gasoline	108	9	99	132	35	97
Jet Fuel	10,744	224	10,520	4,078	970	3,108
Naphtha-Type	254	0	254	176	89	87
Kerosene-Type	10,490	224	10,266	3,902	881	3,021
Kerosene	26	0	26	0	26	-26
Distillate Fuel Oil	18,149	1,812	16,337	6,456	1,592	4,864
Residual Fuel Oil	933	0	933	0	550	-550
Petrochemical Feedstocks ^a	22	108	-84	96	41	55
Special Naphthas	378	6	370	138	0	138
Lubricants	432	35	397	394	75	319
Waxes	5	0	5	0	0	0
Asphalt and Road Oil	426	113	313	623	273	350
Miscellaneous Products	81	0	81	0	9	-9
Total	84,187	7,704	76,483	100,290	14,133	86,157

Commodity	PAD District III			PAD District IV			PAD District V		
	Receipts	Shipments	Net Receipts	Receipts	Shipments	Net Receipts	Receipts	Shipments	Net Receipts
Crude Oil	10,149	63,386	-53,217	430	4,008	-3,578	0	6,717	-6,717
Petroleum Products	6,487	106,683	-100,196	1,726	3,778	-2,052	3,168	48	3,120
Pentanes Plus	393	838	-445	1	245	-244	0	0	0
Liquefied Petroleum Gases	2,611	5,170	-2,559	22	1,161	-1,138	0	0	0
Ethane/Ethylene	1,070	223	847	0	263	-263	0	0	0
Propane/Propylene	748	3,892	-3,144	21	432	-411	0	0	0
Normal Butane/Butylene	502	227	275	1	302	-301	0	0	0
Isobutane	291	828	-537	0	164	-164	0	0	0
Unfinished Oils	219	221	-2	0	0	0	0	0	0
Motor Gasoline Blending Components	0	534	-534	0	0	0	0	0	0
Finished Motor Gasoline	1,773	59,969	-58,196	912	1,301	-389	1,723	0	1,723
Leaded	68	243	-175	55	455	-400	500	0	500
Unleaded	1,705	59,726	-58,021	857	846	11	1,223	0	1,223
Finished Aviation Gasoline	14	231	-217	21	0	21	0	0	0
Jet Fuel	138	14,652	-14,514	585	224	361	525	0	525
Naphtha-Type	89	592	-503	0	141	-141	303	0	303
Kerosene-Type	49	14,060	-14,011	585	83	502	222	0	222
Kerosene	0	0	0	0	0	0	0	0	0
Distillate Fuel Oil	653	22,112	-21,459	185	647	-662	920	0	920
Residual Fuel Oil	400	783	-383	0	0	0	0	0	0
Petrochemical Feedstocks ^a	39	10	29	0	0	0	0	0	0
Special Naphthas	6	514	-508	0	0	0	0	0	0
Lubricants	119	787	-668	0	0	0	0	48	-48
Waxes	0	5	-5	0	0	0	0	0	0
Asphalt and Road Oil	113	776	-663	0	0	0	0	0	0
Miscellaneous Products	9	81	-72	0	0	0	0	0	0
Total	16,636	170,049	-153,413	2,156	7,786	-5,630	3,168	6,765	-3,597

^a Includes naphtha less than 401° F endpoint and other oils equal to or greater than 401° F endpoint.
Sources: See Explanatory Notes.

Appendix A

District Descriptions and Maps

Tank trucks are used to pick up crude oil gathered at leases in remote areas.

Appendix A

District Descriptions and Maps

The following are the Refining Districts which make up the Petroleum Administration for Defense (PAD) Districts.

PAD District I

East Coast: District of Columbia and the States of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New Jersey, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida, and the following counties of the State of New York: Cayuga, Tompkins, Chemung, and all counties east and north thereof. Also the following counties in the State of Pennsylvania: Bradford, Sullivan, Columbia, Montour, Northumberland, Dauphin, York, and all counties east thereof.

Appalachian No. 1: The State of West Virginia and those parts of the States of Pennsylvania and New York not included in the East Coast District.

Sub-PAD District I

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

Central Atlantic: The District of Columbia and the States of Delaware, Maryland, New Jersey, New York, and Pennsylvania.

Lower Atlantic: The States of Florida, Georgia, North Carolina, South Carolina, Virginia and West Virginia.

PAD District II

Indiana-Illinois-Kentucky: The States of Indiana, Illinois, Kentucky, Tennessee, Michigan, and Ohio.

Minnesota-Wisconsin-North and South Dakota: The States of Minnesota, Wisconsin, North Dakota, and South Dakota.

Oklahoma-Kansas-Missouri: The States of Oklahoma, Kansas, Missouri, Nebraska, and Iowa.

PAD District III

Texas Inland: The State of Texas except the Texas Gulf Coast District.

Texas Gulf Coast: The following counties of the State of Texas: Newton, Orange, Jefferson, Jasper, Tyler, Hardin, Liberty, Chambers, Polk, San Jacinto, Montgomery, Harris, Galveston, Waller, Fort Bend, Brazoria, Wharton, Matagorda, Jackson, Victoria, Calhoun, Refugio, Aransas, San Patricio, Nueces, Kleberg, Kenedy, Willacy, and Cameron.

Louisiana Gulf Coast: The following Parishes of the State of Louisiana: Vernon, Rapides, Avoyelles, Pointe Coupee, West Feliciana, East Feliciana, Saint Helena, Tangipahoa, Washington, and all Parishes south thereof. Also the following counties of the State of Mississippi: Pearl River, Stone, George, Hancock, Harrison, and Jackson. Also the following counties of the State of Alabama: Mobile and Baldwin.

North Louisiana-Arkansas: The State of Arkansas and those parts of the States of Louisiana, Mississippi, and Alabama not included in the Louisiana Gulf Coast District.

New Mexico: The State of New Mexico.

PAD District IV

Rocky Mountain: The States of Montana, Idaho, Wyoming, Utah, and Colorado.

PAD District V

West Coast: The States of Washington, Oregon, California, Nevada, Arizona, Alaska, and Hawaii.

Petroleum Administration for Defense (PAD) Districts

Refining Districts

Appendix B

Explanatory Notes

The cluster of pipes and valves that control the flow of oil at the mouth of an oil well is what oilmen call a "Christmas Tree."

Appendix B

Explanatory Notes

Note 1. Overview

The following Explanatory Notes are provided to assist in understanding and interpreting the data presented in this publication.

- Note 2. Petroleum Supply Reporting System
- Note 3. Monthly Petroleum Supply Reporting System
- Note 4. Preliminary Monthly Statistics Derivation
- Note 5. Summary Statistics Table Sources
- Note 6. Summary Statistics Figure Sources
- Note 7. Detailed Statistics Table Sources
- Note 8. Domestic Crude Oil Production
- Note 9. Export Data Source
- Note 10. Quality Control and Data Revision
- Note 11. Frames Maintenance
- Note 12. 1981 Changes in the Petroleum Supply Reporting System
- Note 13. 1984 Changes in the Petroleum Supply Reporting System
- Note 14. 1985 Changes in the Petroleum Supply Reporting System
- Note 15. 1986 Changes in the Petroleum Supply Reporting System
- Note 16. 1987 Changes in the Petroleum Supply Reporting System
- Note 17. 1989 Changes in the Petroleum Supply Reporting System

Note 2. Petroleum Supply Reporting System

The Petroleum Supply Reporting System (PSRS) represents a family of data collection survey forms, data processing systems and publication systems that have been consolidated to achieve comparability and consistency throughout. The survey forms that comprise the PSRS are:

Form Number	Name
EIA-800	<i>Weekly Refinery Report</i>
EIA-801	<i>Weekly Bulk Terminal Report</i>
EIA-802	<i>Weekly Product Pipeline Report</i>
EIA-803	<i>Weekly Crude Oil Stocks Report</i>
EIA-804	<i>Weekly Imports Report</i>
EIA-810	<i>Monthly Refinery Report</i>
EIA-811	<i>Monthly Bulk Terminal Report</i>
EIA-812	<i>Monthly Product Pipeline Report</i>
EIA-813	<i>Monthly Crude Oil Report</i>
EIA-814	<i>Monthly Imports Report</i>
EIA-816	<i>Monthly Natural Gas Liquids Report</i>
EIA-817	<i>Monthly Tanker and Barge Movement Report</i>
EIA-820	<i>Annual Refinery Report</i>

Forms EIA-800 through 804 comprise the Weekly Petroleum Supply Reporting System (WPSRS). A sample of all petroleum companies report weekly data to the Energy Information Administration (EIA) on crude oil and petroleum product stocks, refinery inputs and production, and crude oil and petroleum product imports. The sample of companies that report weekly is selected from the universe of companies that report on the comparable monthly surveys. Data collected from the WPSRS are used to develop estimates of the most current monthly quantities which appear in the Summary Statistics section of the *Petroleum Supply Monthly* (PSM) and are published in the *Weekly Petroleum Status Report*.

Forms EIA-810 through 814, 816 and 817 comprise the Monthly Petroleum Supply Reporting System (MPSRS). These surveys collect detailed refinery and natural gas plant operations data; refinery, bulk terminal, natural gas plant, and pipeline stocks data; crude oil and petroleum product imports data; and data on movements of petroleum products and crude oil between Petroleum Administration for Defense Districts. A description of the MPSRS forms follow in Explanatory Note 3.

Data from these surveys are published in preliminary form in the *PSM*. They are published in final form in the Summary Statistics and the Detailed Statistics sections of the *Petroleum Supply Annual* (PSA), Volumes 1 and 2.

Summary information on the revision error between preliminary and final data is found in the feature article in the *PSM* entitled, "Timeliness and Accuracy of Petroleum Supply Data." The last article was published in the July 1989 issue and dealt with the years 1984-1988. Subsequent updates to this article will be published in the April issues of this publication.

The Form EIA-820, *Annual Refinery Report*, collects data on refinery fuel use and consumption of steam and electricity, refinery receipts of crude oil by method of transportation, and refinery operable and storage capacity. This survey is the primary source of data in the Refinery Capacity section of the *PSA*, Volume 1.

Note 3. Monthly Petroleum Supply Reporting System

The Monthly Petroleum Supply Reporting System (MPSRS) was implemented in January 1983 as the result of an extensive effort by the Energy Information Administration (EIA) to integrate the collection and processing of petroleum supply data that had been collected on other survey forms for many years. The collection of monthly petroleum supply statistics began as early as 1918 when the U.S. Bureau of Mines began collecting data on refinery operations and crude oil stocks and movements. The collection systems were further expanded to include natural gas plant liquids production and storage in 1925, imports of crude oil and petroleum products and storage and movement of petroleum products in 1959, and tanker and barge movements of crude oil and petroleum products in 1964. Since their inception, each survey has undergone numerous changes, but the MPSRS was the first effort to make them all consistent and comparable.

The forms that comprise the MPSRS are:

Form Number	Name
EIA-810	<i>Monthly Refinery Report</i>
EIA-811	<i>Monthly Bulk Terminal Report</i>
EIA-812	<i>Monthly Product Pipeline Report</i>
EIA-813	<i>Monthly Crude Oil Report</i>
EIA-814	<i>Monthly Imports Report</i>
EIA-816	<i>Monthly Natural Gas Liquids Report</i>
EIA-817	<i>Monthly Tanker and Barge Movement Report</i>

Respondent Frame

Form EIA-810 *Monthly Refinery Report* - Operators of all operating and idle petroleum refineries and blending plants located in the 50 States, the District of Columbia, Puerto Rico, the Virgin Islands, Guam and other U.S.

possessions. Approximately 240 respondents report on the Form EIA-810.

Form EIA-811 *Monthly Bulk Terminal Report* - Every bulk terminal operating company located in the 50 States, the District of Columbia, Puerto Rico, the Virgin Islands, and other U.S. possessions. A bulk terminal is primarily used for storage and/or marketing of petroleum products and has a total bulk storage capacity of 50,000 barrels or more, and/or receives petroleum products by tanker, barge, or pipeline. Bulk terminal facilities associated with a product pipeline are included. Approximately 350 respondents report on the Form EIA-811.

Form EIA-812 *Monthly Product Pipeline Report* - All product pipeline companies that carry petroleum products (including interstate, intrastate, and intra-company pipelines) in the 50 States and the District of Columbia. Approximately 90 respondents report on the Form EIA-812.

Form EIA-813 *Monthly Crude Oil Report* - All companies which carry or store 1,000 barrels or more of crude oil. Included in this survey are gathering and trunk pipeline companies (including interstate, intrastate, and intra-company pipelines), crude oil producers, terminal operators, storers of crude oil (except refineries), and companies transporting Alaskan crude oil by water in the 50 States and the District of Columbia. Approximately 170 respondents report on the Form EIA-813.

Form EIA-814 *Monthly Imports Report* - All companies, including subsidiary or affiliated companies, that import crude oil or petroleum products (1) into the 50 States and the District of Columbia, (2) into Puerto Rico, the Virgin Islands and other U.S. possessions (Guam, Midway Islands, Wake Island, American Samoa, and Northern Mariana Islands), and (3) from Puerto Rico, the Virgin Islands and other U.S. possessions into the 50 States and the District of Columbia. Imports into Foreign Trade Zones located in the 50 States and the District of Columbia are considered imports into the 50 States and the District of Columbia and must be reported. A report is required only if there has been an import during the month unless the importer has been selected as part of a sample to report every month regardless of activity. Approximately 860 respondents report on the Form EIA-814.

Form EIA-816 *Monthly Natural Gas Liquids Report* - Operators of all facilities that extract liquid hydrocarbons from a natural gas stream (natural gas processing plant) and/or separate a liquid hydrocarbon stream into its component products (fractionator). Approximately 900 respondents report on the Form EIA-816.

Form EIA-817 *Monthly Tanker and Barge Movement Report* - All companies that have custody of crude oil or

petroleum products transported by tanker or barge between Petroleum Administration for Defense (PAD) Districts or between the Panama Canal and the United States. For purposes of this report, custody is defined as physical possession of crude oil or petroleum products on a company-owned tanker or barge. Also, companies which lease vessels or contract for the movement of crude oil or petroleum products on a tanker or barge between PAD Districts or between the Panama Canal and the United States are considered to have custody. Approximately 35 respondents report on the Form EIA-817.

Description of Survey Forms

The Form EIA-810, *Monthly Refinery Report*, collects data on refinery input and capacity, sulfur content and API gravity of crude oil, and data on supply (beginning stocks, receipts, and production) and disposition (inputs, shipments, fuel use and losses, and ending stocks) of crude oil and refined products.

The Form EIA-811, *Monthly Bulk Terminal Report*, collects data on end-of-month stock levels of finished petroleum products by State in the custody of the bulk terminal company regardless of ownership. Leased tankage at other facilities is excluded. All domestic and foreign stocks held at bulk terminals and in-transit thereto, except those in-transit by pipeline are included. Petroleum products in-transit by pipeline are reported by pipeline operators on Form EIA-812, *Monthly Product Pipeline Report*.

The Form EIA-812, *Monthly Product Pipeline Report*, collects data on end-of-month stock levels and movements of petroleum products transported by pipeline. Intermediate movements for pipeline systems operating in more than two PAD Districts are included.

The Form EIA-813, *Monthly Crude Oil Report*, collects data on end-of-month stocks of crude oil held at pipeline and tank farms (associated with the pipelines) and terminals operated by the reporting company. Also, crude oil consumed by pipelines and on leases as pump fuel, boiler fuel, etc., is reported. Data are reported on a PAD District basis.

Total Alaskan crude oil stocks in-transit by water (including stocks held at transshipment terminals between Alaska and the continental United States) to the 50 States, the District of Columbia, Puerto Rico, and the Virgin Islands are also reported by the transporting company having custody of the stocks.

Inter-PAD District movements of crude oil by pipeline are collected by the shipping and receiving PAD District. Intermediate movements for pipeline systems operating in more than two PAD Districts are not included.

The Form EIA-814, *Monthly Imports Report*, collects data on imports of crude oil and petroleum products (1) into the 50 States and the District of Columbia, (2) into Puerto Rico, the Virgin Islands, and other U.S. possessions (Guam, Midway Islands, Wake Island, American Samoa, and Northern Mariana Islands), and (3) from Puerto Rico, the Virgin Islands, and other U.S. possessions into the 50 States and the District of Columbia. Imports into Foreign Trade Zones located in the 50 States and the District of Columbia are considered imports into the 50 States and the District of Columbia.

The type of commodity, port of entry, country of origin, quantity (thousand barrels), sulfur percent by weight, API gravity, and name and location of the processing or storage facility are reported. Sulfur percent by weight is requested for crude oil, crude oil burned as fuel, and residual fuel oil only. API gravity is requested for crude oil only. The name and location of the processing or storage facility is requested for crude oil, unfinished oils, other hydrocarbons/alcohol, and blending components only.

The Form EIA-816, *Monthly Natural Gas Liquids Report*, collects data on the operations of natural gas processing plants and fractionators. Beginning and end-of-month stocks, receipts, inputs, production, shipments, and plant fuel use and losses during the month are collected from natural gas processing plants. End-of-month stocks are collected from fractionators.

The Form EIA-817, *Monthly Tanker and Barge Movement Report*, collects data on the movements of crude oil and petroleum products between PAD Districts. Data is reported by shipping and receiving PAD District and sub-PAD District. Shipments to and from the Panama Canal are also included if the shipment was delivered to the Canal.

Collection Methods

Survey forms for the MPSRS can be submitted by mail, facsimile, or electronic transmission. Completed forms are required to be postmarked by the 20th calendar day following the end of the report month. Receipt of the reports are monitored using an automated respondent mailing list. Telephone follow-up calls are made to non-respondents prior to the publication deadline.

Response Rate

The response rate is generally 98 to 100 percent. Chronic nonrespondents and late filing respondents are contacted in writing and reminded of their requirement to report. Companies that file late or fail to file are subject to criminal fines, civil penalties, and other sanctions as

provided by Section 13(i) of the Federal Energy Administration (FEA) Act.

Data Imputation

Imputation is performed for companies that fail to file Forms EIA-810 through 813 and 816. For such companies, previous monthly values are used for current values. The previous month's ending stocks value is used for both the current month's beginning stocks and ending stocks. Data for nonrespondents on the Forms EIA-814 and 817 are not imputed because these data series, by respondent, are highly variable.

Confidentiality

The information contained on Forms EIA-810 through 813, 816 and 817 are kept confidential to the extent that they satisfy the criteria for exemption in the Freedom of Information Act (FOIA), the Department of Energy regulations implementing the FOIA, and the Trade Secrets Act, 18 U.S.C. §1905. The information contained on Form EIA-814 are not considered confidential and historically has not been treated as such.

Note 4. Preliminary Monthly Statistics Derivation

Data collected from the Weekly Petroleum Supply Reporting System (WPSRS) are used to develop estimates of the most current monthly quantities in the Summary Statistics section. The forms that comprise the WPSRS are:

Form Number	Name
EIA-800	<i>Weekly Refinery Report</i>
EIA-801	<i>Weekly Bulk Terminal Report</i>
EIA-802	<i>Weekly Product Pipeline Report</i>
EIA-803	<i>Weekly Crude Oil Stocks Report</i>
EIA-804	<i>Weekly Imports Report</i>

A sample of all petroleum companies report weekly data to the Energy Information Administration (EIA) on crude oil and petroleum products stocks, refinery inputs and production, and crude oil and petroleum product imports. The sample of companies that report weekly is selected from the universe of companies that report on the comparable monthly surveys.

The sampling procedure used for the weekly system is the cut-off method. In the cut-off method, companies are ranked from largest to smallest on the basis of the quantities reported during a 12-month period. Companies are chosen for the sample beginning with the largest companies with additional companies added until the total

sample coverage represents a minimum of 90 percent of each item by geographic region being measured. All monthly-from-weekly estimates in the Summary Statistics section are shown in italics.

In calculating monthly estimates based upon weekly submissions, an interpolation process is used to make the weekly figures comparable to the monthly. The interpolation process is designed to resolve the timing differences between the weekly and the monthly systems -- the time-of-day of reporting periods and the day-of-month of reporting periods. The end of the weekly reporting period (exactly 1 week long) is 7 a.m. Friday. The end of the monthly reporting period (one calendar month long) is 12 midnight on the last day of the month. To resolve the difference in the time-of-day of the weekly and monthly reporting periods, it is assumed that there is no activity during the period 12 midnight Thursday through 7 a.m. Friday. Thus, for the purposes of interpolation, the weekly system reporting period is assumed to end at 12 midnight on Thursday. The resolution of the day-of-month differences depends on whether the series is a cumulative one (such as production and imports) or a value at a fixed point-in-time (i.e., stocks).

For cumulative items (all items except stocks) the following method is used to calculate a monthly-from-weekly figure for a given month. First, a weight is assigned to each week in the month based on the number of days in that week that are in the month. (All intermediate weeks in a month will have a weight of seven; the beginning and ending weeks in the month may have a weight of less than seven, according to the number of days of the week that are in the month.) Then, the weight for each week is multiplied by the average daily volume for that week. To arrive at the monthly-from-weekly figure, a sum is taken of these weighted weekly volumes. The daily average for the monthly-from-weekly figure is calculated by dividing the total monthly-from-weekly figure by the number of days in the month.

Stocks figures are not cumulative but represent inventories as of the last day of the reporting period. When the reporting week does not coincide with the end of a reporting month, an interpolation is necessary to derive a monthly-from-weekly figure for end-of-month stocks.

To derive the monthly-from-weekly stock figures, the two weekly reports that bracket the end of the month are used. Average daily stock change and the number of interpolated days are determined. The average daily stock change is defined as one-seventh of the difference between the stock level at the end of the last full week of the month and the stock level at the end of the week containing the last day of the month. The number of interpolation days is defined as the number of days between the end of the preceding weekly reporting period (midnight Thursday)

and the end of the monthly reporting period. The end-of-month stock levels are then estimated as the sum of (a) the stock level reported the last full week of the month, plus (b) the number of interpolation days multiplied by the average daily stock change for the week.

Note 5. Summary Statistics Table Sources

Information about petroleum supply and disposition series at the National level are presented in the Summary Statistics tables. Definitions for the data series, corresponding to the column headings, are contained in the Glossary.

The data presented in these tables are from several sources and represent different levels of timeliness and data finality. For most tables, the most current month, shown in italics is an estimate based on the data collected in the Weekly Petroleum Supply Reporting System (WPSRS). Refer to Explanatory Note 4. The source for the most current month where the data are not shown in italics is the Monthly Petroleum Supply Reporting System (MPSRS), reflecting that these data are not collected on a weekly basis. Statistics for earlier months and years were published in prior issues of the *Petroleum Supply Monthly* (PSM) and *Petroleum Supply Annual* (PSA). Following are the sources for the data contained in the Summary Statistics tables are:

- **Table S1. Crude Oil and Petroleum Products Overview**

The current month statistics appear as labeled in Detailed Statistics (DS) Table 4, unless otherwise noted.

Total Domestic Field Production is the sum of Crude Oil Field Production, Natural Gas Plant Liquids Field Production, and Other Hydrocarbons and Alcohol Field Production.

Crude Oil Field Production is estimated according to procedures described in Explanatory Note 8, Domestic Crude Oil Production.

Natural Gas Plant Liquids Field Production is the sum of liquefied petroleum gases and pentanes plus produced at natural gas processing plants.

Ending Stocks of Crude Oil and Petroleum Products appear in thousand barrels in DS Table 2.

Petroleum Product Imports is the sum of Natural Gas Liquids and LRGs, Other Liquids, and Finished Petroleum Products Imports.

- **Table S2. Crude Oil Supply and Disposition**

Unless otherwise noted, data are from DS Tables 2 and 4. Total Domestic Field Production and Alaskan Field Production are estimated according to procedures described in Explanatory Note 8, Domestic Crude Oil Production, SPR Imports, Other Imports, SPR Stock Change, Other Stock Change, SPR Ending Stocks and Other Primary Ending Stocks appear in DS Table 1.

- **Table S3. Crude Oil and Petroleum Product Imports**

Data on the country of origin of imports are from DS Table 25.

- **Table S4. Finished Motor Gasoline Supply and Disposition**

Data are from DS Table 4 except for Ending Stocks. Ending Stocks are from DS Table 2 rounded to million barrels.

- **Table S5. Distillate Fuel Oil Supply and Disposition**

Data are from DS Table 4 except for Ending Stocks. Ending Stocks are from DS Table 2 rounded to million barrels.

- **Table S6. Residual Fuel Oil Supply and Disposition**

Data are from DS Table 4 except for Ending Stocks. Ending Stocks are from DS Table 2 rounded to million barrels.

- **Table S7. Liquefied Petroleum Gases Supply and Disposition**

Data are from DS Table 4 except for Ending Stocks. Ending Stocks are from DS Table 2 rounded to million barrels.

Total Production is the sum of Field Production and Refinery Production.

- **Table S8. Other Petroleum Products Supply and Disposition**

Data are from DS Table 4 except for Ending Stocks. Ending Stocks are from DS Table 2 rounded to million barrels. Other Products include pentanes plus, other hydrocarbons and alcohol, unfinished oils, gasoline blending components and all finished petroleum products except finished motor gasoline, distillate fuel oil, residual fuel oil, and liquefied petroleum gases.

Note 6. Summary Statistics Figure Sources

Figures associated with the Summary Statistics tables are provided which depict the balance between supply, disposition, and ending stocks for various commodities. Displayed below are the figure sources (Refer to Explanatory Note 4 for further detail).

Figure	Figure Source
Figure S1. Petroleum Overview	Table S1
Figure S2. Petroleum Products Supplied	Table S1
Figure S3. Crude Oil Supply & Disposition	Table S2
Figure S4. Crude Oil Ending Stocks	Table S2
Figure S5. Finished Motor Gasoline Supply & Disposition	Table S4
Figure S6. Motor Gasoline Ending Stocks	Table S4
Figure S7. Distillate Fuel Oil Supply & Disposition	Table S5
Figure S8. Distillate Fuel Oil Ending Stocks	Table S5
Figure S9. Residual Fuel Oil Supply & Disposition	Table S6
Figure S10. Residual Fuel Oil Ending Stocks	Table S6
Figure S11. Liquefied Petroleum Gases Supply & Disposition	Table S7
Figure S12. Liquefied Petroleum Gases Ending Stocks	Table S7

The national inventory (stocks) graphs (figures S4, S6, S8, S10, and S12) for crude oil, finished motor gasoline, distillate fuel oil, residual fuel oil, and liquefied petroleum gases, in this publication included features to assist in comparing current inventory levels with past inventory levels and minimum operating levels. These features are described below.

The graphs displaying inventory levels provide the reader with actual inventory data compared to an *average range* from the most recent 3-year period running from January through December or from July through June. The ranges are updated every 6 months in April and October. The 3-year period is adjusted by dropping the oldest 6 months and including the most recent 6 months. The ranges also reflect seasonal variation determined from a 7-year period. The seasonal factors, which determine the shape of the upper and lower curves, are updated annually in October, using the most recent year's final monthly data.

The monthly seasonal factors are estimated by means of a seasonal adjustment technique developed at the U.S. Bureau of the Census (Census X-11). The seasonal factors

are assumed to be stable (i.e., unchanging from year to year) and additive (i.e., the series is deseasonalized by subtracting the seasonal factor for the appropriate month from the reported inventory levels). The intent of deseasonalization is to remove only variation from the data. Thus, a deseasonalized series would contain the same trends, cyclical components, and irregularities as the original data.

After seasonal factors are derived, data from the most recent 3-year period (January-December or July-June) are deseasonalized. The average of the deseasonalized 36-month series determines the midpoint of the deseasonalized average band. The standard deviation of the deseasonalized 36 months is calculated adjusting for extreme data points. The upper curve of the average range is defined as the average plus the standard deviation. The lower curve is defined as the average plus the seasonal factors minus the standard deviation. Thus, the width of the average range is twice the standard deviation.

Note 7. Detailed Statistics Table Sources

The detailed statistics tables in the *Petroleum Supply Monthly* (PSM) provide complete supply and demand information for the current year. The tables are organized to locate National and Petroleum Administration for Defense (PAD) District summary data at the front followed by tables on crude oil and petroleum product production, import/export data, stocks information, and lastly, data on crude oil and petroleum product movements. The table, form or other source for items of each table are described below. Column and row headings are defined in the Glossary.

- **Table 1 - Energy Information Administration (EIA) Forms EIA-810 through 817, forecast estimate for domestic crude oil production, and Census Export data (EM-522 and EM-594).**
 - Lines (1) through (3): Crude Oil Field Production for Alaska and Total U.S. appear as labeled in Table 14. Lower 48 states are calculated by subtracting Alaska crude oil production from Total U. S. crude oil production.
 - Line (4): Crude Oil Imports, excluding Strategic Petroleum Reserve (SPR), are reported on Form EIA-814.
 - Line (5): SPR Imports are reported on Form EIA-814.

- Line (6): Exports of crude oil taken from Census tapes and data are reported on Form EIA-810 for U.S. territories.
- Line (7): Sum of lines (4) through (6).
- Line (8): The difference between the previous month and current month ending stocks held in the SPR.
- Line (9): The difference between the previous month and current month ending stocks (excluding SPR).
- Line (10): The sum of Crude Oil Product Supplied and Crude Losses as shown in Table 2.
- Line (11): Unaccounted for (Other Sources) is a balancing item for crude oil that represents the difference between crude oil supply and disposition.
- Line (12): Total Other Sources equals crude oil stock change, plus unaccounted for crude oil, minus crude oil losses, minus crude oil product supplied.
- Line (13): Crude Input to Refineries is the sum of lines (3), (7), and (12).
- Line (14): Natural Gas Liquids (NGL) Field Production equals field production of NGLs as shown in Table 2.
- Line (15): NGL Net Imports equals the sum of the imports of pentanes plus minus the exports of pentanes plus as shown in Table 2.
- Line (16): NGL Stock Change is equal to the stock change of pentanes plus in Table 2.
- Line (17): Total NGL Supply equals the sum of lines (14), (15), and (16).
- Line (18): Other Liquids Stock Change equals the aggregate stock change for other hydrocarbons and alcohol, unfinished oils, motor gasoline blending components, and aviation gasoline blending components.
- Line (19): The sum of unfinished oils and motor and aviation gasoline blending component imports reported on Form EIA-814.
- Line (20): Other Hydrocarbons and Alcohol New Supply equals the field production of same in Table 2 and is calculated by taking imports minus stock change minus refinery input.
- Line (21): Refinery Processing Gain is a balancing item equal to total refinery production minus total refinery input as shown in Table 2.
- Line (22): Crude Oil Product Supplied equals the amount reported on Form EIA-813 as crude oil consumed as fuel.
- Line (23): Total Other Liquids equals the sum of lines (18) through (22).
- Line (24): Total Production of Products equals the sum of lines (13), (17), and (23).
- Line (25): Gross Imports of Refined Products equals imports of LPGs plus imports of finished petroleum products as shown in Table 2.
- Line (26): Exports of Refined Products equals exports of LPGs plus exports of finished petroleum products as shown in Table 2.
- Line (27): Net Imports of Refined Products equals the difference between lines (25) and (26).
- Line (28): Total New Supply of Products equals the sum of lines (24) and (27).
- Line (29): Refined Products Stock Change equals the sum of stock change for LPGs and finished petroleum products in Table 2.
- Line (30): Total Petroleum Products Supplied for Domestic Use equals the total products supplied as shown in Table 2.
- Lines (31) through (34): Equal the respective products supplied of same in Table 2.
- Line (35): Other Products Supplied equals the sum of pentanes plus, aviation gasoline, naphtha-type jet fuel, kerosene-type jet fuel, kerosene, naphtha less than 401 degrees fahrenheit for petrochemical feedstock use, other oils equal to or greater than 401 degrees fahrenheit for petrochemical feedstock use, special naphthas, lubricants, waxes, petroleum coke, asphalt and road oil, still gas, unfinished oils, other hydrocarbons/alcohol, motor gasoline blending components, aviation gasoline blending components, and miscellaneous products products supplied in Table 2.
- Line (36): Crude Oil Product Supplied is equal to the amount displayed on Table 2.
- Line (37): Total Products Supplied is equal to total products supplied in Table 2.

- Lines (38) and (39): Stocks of Crude Oil (Excluding SPR) and stocks held by the SPR equals ending stocks of crude in Table 2.
- Line (40): Finished Motor Gasoline stocks equals ending stocks displayed on Table 2.
- Line (41): Distillate Fuel Oil stocks equals ending stocks displayed on Table 2.
- Line (42): Residual Fuel Oil stocks equals ending stocks displayed on Table 2.
- Line (43): Liquefied Petroleum Gases stocks equals ending stocks displayed on Table 2.
- Line (44): Other Products stocks equals the sum of pentanes plus, aviation gasoline, naphtha-type jet fuel, kerosene-type jet fuel, kerosene, naphtha less than 401 degrees fahrenheit for petrochemical feedstock use, other oils equal to or greater than 401 degrees fahrenheit for petrochemical feedstock use, special naphthas, lubricants, waxes, petroleum coke, asphalt and road oil, still gas, unfinished oils, other hydrocarbons/alcohol, motor gasoline blending components, aviation gasoline blending components, and miscellaneous products products supplied in Table 2.
- Line (45): Equals the sum of lines (38) through (44).

• Table 2

Field Production - Field production is the sum of crude oil production, natural gas plant liquids production, and other liquids.

Crude oil production is an estimate based on data received from State conservation agencies and the Mineral Management Service of the U.S. Department of the Interior. Refer to Explanatory Note 8 for further details.

Field production of natural gas plant liquids is reported on Form EIA-816, *Monthly Natural Gas Liquids Report*, and published on a net basis (i.e., production minus inputs) in this column.

Other liquids field production is calculated by adding the stock change to the refinery inputs reported on Form EIA-810, *Monthly Refinery Report*.

Negative production will occur when the amount of a product produced during the month is less than the amount of that same product that is reprocessed (input) or reclassified to become another product during the same month.

Refinery Production - Published production of these products equal refinery production minus refinery input as reported on Form EIA-810, *Monthly Refinery Report*. Refinery production of other hydrocarbons, hydrogen and alcohol, unfinished oils, and motor and aviation gasoline blending components appear on a net basis under refinery input. Negative refinery production will occur when the amount of a product produced during the month is less than the amount of that same product that is reprocessed (input) or reclassified to become another product during the same month.

Imports - Imports of crude oil and petroleum products are reported on Form EIA-814, *Monthly Imports Report*.

Unaccounted for Crude Oil - This column is a balancing item for crude oil. This data element represents the difference between crude oil supply and disposition. Crude oil supply is the sum of field production and imports. Crude oil disposition is the sum of stock change, losses, refinery inputs, exports, and products supplied. A positive result indicates that refiners and exporters reported use of more crude oil than was reported to have been available to them. (This occurs, for example, when imports are undercounted due to late reporting or other problems). A negative result indicates that more crude oil was reported to have been supplied to refiners and exporters than they reported to have used.

Stock Change - This column is calculated as the difference between the Ending Stocks column of this table and the Ending Stocks column of this table in the prior month's publication. A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.

Crude Losses - The volume of crude oil reported by petroleum refineries on Form EIA-810, *Monthly Refinery Report*, as being lost in their operations. These losses are due to spills, contamination, fires, etc., as opposed to refining processing losses or gains.

Refinery Inputs - Refinery inputs of crude oil and intermediate materials (unfinished oils, gasoline blending components, other hydrocarbons and alcohol, liquefied petroleum gases, and pentanes plus) reported on Form EIA-810, *Monthly Refinery Report*, that are processed at refineries to produce finished petroleum products.

Crude oil inputs represents total crude oil (domestic and foreign) input to atmospheric crude oil distillation units and other refinery processing units (i.e., catalytic cracking units, cokers).

Inputs of natural gas liquids are natural gas liquids received from natural gas plants for blending and processing are reported on Form EIA-810, *Monthly Refinery Report*. Published inputs of natural gas liquids are reported on a gross basis.

Inputs of unfinished oils, motor and aviation gasoline blending components, and other hydrocarbons and alcohol are reported on Form EIA-810, *Monthly Refinery Report*, and published on a net basis (i.e., refinery input minus refinery production).

Inputs of finished petroleum products are reported on Form EIA-810, *Monthly Refinery Report*, and published on a net basis (i.e., refinery production minus refinery inputs) and displayed under the refinery production column.

Exports - The source of these data are the U.S. Bureau of the Census and the Form EIA-810, *Monthly Refinery Report*. Exports of crude oil and petroleum products are compiled from U.S. Census Bureau tabulations EM-522 and EM-594. Exports include crude oil shipments from the 50 states to Puerto Rico, and the Virgin Islands, and are obtained from refinery receipts reported on Form EIA-810, *Monthly Refinery Report*, by refineries located in Puerto Rico and the Virgin Islands.

Products Supplied - Products supplied is equal to field production, plus refinery production, plus imports, plus unaccounted for crude oil, (plus net receipts on a PAD District basis), minus stock change, minus crude losses, minus refinery inputs, minus exports.

Products supplied indicates those quantities of petroleum products supplied for domestic consumption. Occasionally, the result for a product is negative because total disposition of the product exceeds total supply. Negative product supplied may occur for a number of reasons: (1) product reclassification has not been reported; (2) data were misreported or reported late; (3) in the case of calculations on a PAD District basis, the figure for net receipts was inaccurate because the coverage of interdistrict movements was incomplete; and (4) products such as gasoline blending components and unfinished oils have entered the primary supply channels with their production not having been reported, e.g., streams returned to refineries from petrochemical plants.

Product supplied for crude oil is the sum of crude oil burned on leases and by pipelines as fuel. These data are reported on Form EIA-813, *Monthly Crude Oil Report*. Prior to January 1983, crude oil burned on leases and by pipelines as fuel were reported as either

distillate or residual fuel oil and were included in product supplied for these products.

Ending Stocks - Ending stocks of crude oil are reported on Forms EIA-810 and 813. Ending stocks of natural gas liquids and LRGs are reported on Forms EIA-810, 811, 812 and 816. Ending stocks for other liquids are reported on Forms EIA-810 and 811. Ending stocks for finished petroleum products are reported on Forms EIA-810, 811, 812.

- **Table 3** - Sources are the same as described in Table 2. The values in this table are year-to-date quantities.
- **Table 4** - Sources are the same as described in Table 2. The values in this table are calculated by dividing the values in Table 2 by the number of days in the report month.
- **Table 5** - Sources are the same as described in Table 2. The values in this table are calculated by dividing the values in Table 3 by the number of days in the year-to-date.
- **Tables 6 through 15** - Sources are the same as described for Table 2 for all corresponding column headers. A net receipts column is required to calculate products supplied on a PAD District basis. Net receipts are calculated from data on inter-PAD District movements reported on Forms EIA-812, 813, and 817.
- **Table 16** - State government agencies. See Explanatory Note 8.
- **Table 17** - Form EIA-816, *Monthly Natural Gas Liquids Report*.

Table 16 provides estimates for crude oil production for the latest month for which State production data are available. There is a time lag of approximately 4 months between the end of the production month and the time when most monthly State crude oil production data become available.

Production of these products equals natural gas processing plant production minus natural gas processing plant input. Negative production will occur when the amount of a product produced during the month is less than the amount of that same product that is reprocessed (input) or reclassified to become another product during the same month.

- **Table 18** - Form EIA-810, *Monthly Refinery Report*.
- **Table 19** - Form EIA-810, *Monthly Refinery Report*.

Published production of these products equals refinery production minus refinery input. Negative production will occur when the amount of a product produced during the month is less than the amount of that same product that is reprocessed (input) or reclassified to become another product during the same month.

- **Table 20** - Form EIA-810, *Monthly Refinery Report*.
- **Table 21** - Calculated from Tables 18 and 19.

To calculate the refinery yields of finished motor gasoline, subtract the inputs of pentanes plus, liquefied petroleum gases, other hydrocarbons/alcohol and motor gasoline blending components reported on Table 18 from the production of finished motor gasoline reported on Table 19 before dividing by the sum of crude oil input and unfinished oils input (net).

To calculate the refinery yield of finished aviation gasoline, subtract the inputs of aviation gasoline blending components from the production of finished aviation gasoline before dividing by the sum of crude oil input and unfinished oils input (net).

To arrive at refinery yields for all products (except finished motor gasoline and finished aviation gasoline), the production for each product listed on Table 19 is divided by the sum of crude oil input and unfinished oils input (net) reported in the U.S. total column on Table 18.

- **Tables 22 through 34** - Form EIA-814, *Monthly Imports Report*.
- **Tables 35 through 38** - Census Export data (EM-522 and 594) and Form EIA-810, *Monthly Refinery Report*.
- **Tables 39 and 40** - Form EIA-814, *Monthly Imports Report*, Census Export data (EM 522 and 594) and Form EIA-810, *Monthly Refinery Report*.

A negative number will occur when the amount of a product imported is less than the amount of that same product exported during the same month.

- **Table 41** - Primary stocks of crude oil are the sum of ending stocks reported on Forms EIA-810 and EIA-813. Crude oil held in the Strategic Petroleum Reserve and Alaskan crude oil in transit are shown as separate entries. Primary stocks of petroleum products are summed from data reported on Forms EIA-810 through 812 and EIA-816. Primary stocks of petroleum products do not include either secondary stocks held by dealers and jobbers or tertiary stocks held by consumers.

- **Table 42** - Forms EIA-810, *Monthly Refinery Report* and EIA-811, *Monthly Bulk Terminal Report*.
- **Table 43** - Forms EIA-812, *Monthly Product Pipeline Report*, EIA-813, *Monthly Crude Oil Report*, and EIA-817, *Monthly Tanker and Barge Movement Report*.
- **Table 44** - Crude Oil (Form EIA-813, *Monthly Crude Oil Report*), Petroleum Products (Form EIA-812, *Monthly Product Pipeline Report*).

Movements of crude oil by pipeline between PAD Districts include trunk pipeline companies (interstate, intrastate, and intracompany pipelines). Intermediate movements for crude oil pipeline systems operating in more than two PAD Districts are not included.

Movements of petroleum products by pipeline between PAD Districts include trunk pipeline companies (interstate, intrastate and intracompany pipelines). Intermediate movements for product pipeline systems operating in more than two PAD Districts are included. For example, a shipment originating in PAD District 3, passing through PAD District 2 to PAD District 1, is reported as a movement from PAD District 3 to PAD District 2 and also from PAD District 2 to PAD District 1.

- **Table 45** - Form EIA-817, *Monthly Tanker and Barge Movement Report*. Waterborne movements of crude oil and petroleum products between PAD Districts include all shipments of crude oil or petroleum products for which the transporter has custody at the time of shipment. Custody is defined as physical possession of crude oil or petroleum products on a company-owned tanker and barge.
- **Table 46** - Crude Oil (Forms EIA-813, *Monthly Crude Oil Report*, and EIA-817, *Monthly Tanker and Barge Movement Report*), Petroleum Products (Forms EIA-812, *Monthly Product Pipeline Report* and EIA-817, *Monthly Tanker and Barge Movement Report*).

Note 8. Domestic Crude Oil Production

The Energy Information Administration (EIA) collects monthly crude oil production data on an ongoing basis. Data on crude oil production for States are reported to the EIA by State government agencies. Data on crude oil production for Federal offshore areas are reported to the EIA by the Minerals Management Service of the U.S. Department of the Interior and the Conservation Committee of California Oil Producers.

Currently, all except four crude oil producing States (Michigan, New York, Ohio, and Pennsylvania) report production on a monthly basis. These four States report crude oil production on an annual basis. Estimates of monthly crude oil production for these four States are made by the EIA using data reported on Form EIA-182, *Domestic Crude Oil First Purchase Report*. After the end of each calendar year, the monthly crude oil production estimates are updated using annual reports from various State agencies, the Minerals Management Service, and the Conservation Committee of California Oil Producers. The final estimate is published in the *Petroleum Supply Annual* (PSA).

Table 16 of this publication provides estimates of crude oil production in the latest month for which most State production data are available. There is a time lag of approximately 4 months between the end of the production month and the time when most monthly State crude oil production data become available.

In order to present more timely crude oil production estimates, the EIA prepares an original, forecast estimate on the first day of the production month. Approximately 75 days later, this original estimate of monthly crude oil production is replaced by State-level interim estimates. The State-level interim estimates are based on: (a) data reported by the State (e.g., production data for Alaska are typically reported to the EIA before the interim estimate is made); (b) first purchase data reported on Form EIA-182, *Domestic Crude Oil First Purchase Report*; (c) exponential or hyperbolic curve fitted projections based on recent State data; or (d) constant level projections based on the average production rate during a recent time period.

Table B1 is intended to provide further insight into the EIA's estimates of monthly U.S. crude oil production. It shows: (a) how the aggregate of reported State data evolves over a period of 18 months; (b) the number of producing States that have not reported production for a given month within that period; and (c) various EIA estimates of monthly crude oil production within that period:

- The original estimate is used in the *Weekly Petroleum Status Report*, and in the *Petroleum Supply Monthly* (PSM) Tables S1 and S2 until replaced by the interim estimate.
- The interim estimate is used in the PSM Tables 1 through 15, and in Tables S1 and S2 until replaced by the final estimate.
- The initial estimate based upon first purchase data collected on the Form EIA-182 is used as an estimation tool in generating the interim estimate. The initial volume represents the best estimate available 40 days

after the end of the production month and includes imputation for nonresponse and possible reporting errors. The revised volume is the best estimate available about 70 days after the production month and includes imputation as needed. A final revision is published concurrent with publication of Form EIA-182 price data in the *Petroleum Marketing Annual*.

- The final estimate is published in the PSA.

Note 9. Export Data Source

Each month the Energy Information Administration (EIA) receives magnetic tapes of aggregated export statistics from the U.S. Bureau of the Census (EM-522 and EM-594).

Census export statistics used in the *Petroleum Supply Monthly* reflect both government and nongovernment exports of domestic and foreign merchandise from the United States (the 50 States and the District of Columbia) to foreign countries and U.S. possessions, without regard to whether or not the exportation involves a commercial transaction. The following types of transactions are excluded from the statistics:

- (1) Merchandise shipped in transit through the United States from one foreign country to another, when documented as such with U.S. Customs.
- (2) Bunker fuels and other supplies and equipment for use on departing vessels, planes, or other carriers engaged in foreign trade.

Source of Export Information

The official U.S. export statistics are compiled by the U.S. Bureau of the Census. Exporters are required to file export documents with U.S. Customs officials (Customs Form 7525).

Country and Area of Destination

The country of destination is defined as the country of ultimate destination or the country where the goods are to be consumed, further processed, or manufactured, as known to the shipper at the time of exportation. If the shipper does not know the country of ultimate destination, the shipment is credited to the last country to which the shipper knows that the merchandise will be shipped in the same form as it was when exported.

Table B1. U.S. Crude Oil^a Production Estimates and Reported State^b Data by Month

Date of Data Availability	Month of Production																	
	4-89	5-89	6-89	7-89	8-89	9-89	10-89	11-89	12-89	1-90	2-90	3-90	4-90	5-90	6-90	7-90	8-90	9-90
Reported State Data ^c																		
5-14-89	0																	
6-14-89	1987	0																
7-14-89	4279	2048	0															
8-14-89	6290	4565	1930	0														
9-14-89	7193	6423	2748	1789	0													
10-14-89	7630	7211	7008	4491	1939	0												
11-14-89	7665	7663	7023	6825	4796	1974	0											
12-14-89	7665	7703	7479	6876	6960	4639	1960	0										
1-14-90	7664	7700	7508	7307	7380	6659	4426	1993	0									
2-14-90	7668	7711	7515	7311	7400	7385	6640	4406	1990	0								
3-14-90	7727	7770	7576	7370	7460	7445	7367	6975	4649	1927	0							
4-14-90	7768	7811	7622	7428	7537	7542	7447	7532	6259	4575	1912	0						
5-14-90	7774	7818	7626	7438	7544	7549	7456	7541	7308	6240	4598	1893	0					
6-14-90	7777	7821	7629	7449	7549	7555	7461	7559	7305	7366	7274	4337	1977	0				
7-14-90	7777	7822	7629	7450	7549	7555	7462	7568	7314	7382	7320	6820	4705	1841	0			
8-14-90	7778	7823	7638	7452	7549	7556	7464	7572	7315	7393	7338	7256	6742	4444	1672	0		
9-14-90	7778	7823	7638	7452	7549	7556	7464	7572	7316	7394	7339	7263	6831	6701	3919	1757	0	0
Producing States Without Reported Monthly Production ^d																		
9-14-90	0	0	0	0	0	0	0	0	0	0	0	5	5	6	6	18	29	33
Production Estimate																		
Original ^e	7786	7843	7726	7622	7662	7641	7644	7601	7565	7512	7399	7410	7310	7241	6981	7130	6971	6991
Interim ^f	7747	7807	7660	7474	7589	7563	7462	7564	7372	7522	7465	7394	7331	7259	7076	7144		
Form EIA-182																		
Initial	7559	7636	7544	7351	7497	7442	7378	7473	7243	7479	7458	7356	7316	7220	7013	7116		
Revised	7563	7686	7541	7351	7499	7448	7389	7497	7247	7481	7440	7368	7317	7223	7022			
Final ^g	7772	7816	7624	7444	7544	7548	7453	7536	7337									

^a Includes lease condensate.

^b Includes Federal offshore areas, Gulf of Mexico (PAD District III) and Pacific (PAD District V), as two separate reporting entities.

^c Includes EIA prorated monthly production in 1989 (annual average of 96 thousand barrels per day) for four States (Michigan, New York, Ohio, and Pennsylvania) for which only annual State data are available.

^d Michigan is counted as having monthly reported data in 1989 after its annual report was received. These data are first reported as of 3-14-90. New York, Ohio, and Pennsylvania are counted as having monthly reported data in 1989 after their annual reports were received. These data were first reported as of 4-14-90.

^e Original estimates were made on the first of each month. The original estimate for March 1989 was revised on April 3, 1989, to reflect the Alaskan oil spill.

^f Interim estimates were made 44 days after the end of the production month.

^g Published in the *Petroleum Supply Annual* 1989, DOE/EIA 0340(89)/2.

Note 10. Quality Control and Data Revision

Quality Control

The Energy Information Administration (EIA) monitors the supply and disposition of crude oil, petroleum products, and natural gas liquids in the United States. Through a tracking system, the EIA provides insight into the activities of primary operators and distributors in the petroleum industry. The tracking system, known as the Petroleum Supply Reporting System (PSRS), consists of production, inputs, imports, inventories, movements, and other petroleum-related data collected on weekly, monthly, and annual surveys.

Survey forms are periodically reviewed for completeness, meaningfulness, and clarity. Modifications are made, when needed, to maintain efficient measure of the intended data items and to track product movement accurately throughout the industry. Through this process the EIA can maintain consistency among forms, minimize respondent burden, and eliminate ambiguity.

In any survey, nonresponse can be a major concern because the effects can cause serious bias in survey results. Nonresponse occurs whenever requested information is not obtained from all units in a survey. The PSRS surveys have a very high response rate. In general, response rates average above 95 percent for the weekly survey and above 98 percent for monthly surveys. Whenever survey responses are not received in time to be included in published statistics, the data are imputed. Although imputing for missing data may not eliminate the total error associated with nonresponse, it can serve to reduce the error. The data reported in the previous month are used as imputed values for missing data for all surveys except the Forms EIA-814, *Monthly Imports Report*, and EIA-817, *Monthly Tanker and Barge Movement Report*. There is no imputation procedure for these surveys because these data series, by respondent, are highly variable.

Response error is the major factor affecting the accuracy of PSRS data. Response, or reporting error, is the difference between the true value and the value reported on a survey form. Response error can occur for any number of reasons. For example, figures may be entered incorrectly when written on forms by the respondent, or errors may result from the misunderstanding of survey form instructions or definitions. Response error can also occur from the use of preliminary data when final data are not available. This can result in differences between published preliminary and final data. To help detect and minimize probable reporting errors, automated editing procedures are used to check current data for consistency with past data, as well as for internal consistency (e.g., totals equal

to the sums of the parts), and to flag those data elements that fail edit criteria.

Errors can also be introduced during data processing. For example, while creating computer data files, key errors can occur in transcribing or coding the data; or information can be entered into the wrong cell. Using well designed edit criteria which examine orders of magnitude, cell position, and historical reporting patterns many of these errors can be identified and corrected.

A principal objective of PSRS surveys is to provide a timely and accurate picture of petroleum industry activities. As part of this objective, a comparison of the data collected on the PSRS with other similar data series from sources outside of the Petroleum Supply Division is performed each year. The results of this data comparison are published in the *Petroleum Supply Monthly* (PSM) feature article, "Comparison of Independent Statistics on Petroleum Supply" and in subsequent explanatory notes.

Resubmissions

Resubmissions are any changes to the originally submitted data that were either requested by the EIA or initiated by respondent. Resubmissions are compared to the original submission and processed at the time of receipt. The Resubmission Tracking System (RTS) is run after resubmissions have been processed for the month. The RTS enables the user to study major products and data series to see how company resubmissions impact published data on a month by month basis. During the processing year, a summary of the effect of these resubmissions to major series is provided in Appendix C.

Late Response

Respondents who fail to respond within the prescribed time limit (25th day following the end of the report month) become nonrespondents for that particular report period and are contacted by phone to obtain the current month's data. Respondents who are chronically late (i.e., three consecutive months) are notified by EIA either by letter or telephone.

Nonresponse

Follow-up action is taken when a company fails to respond adequately to data requests from the EIA. Preliminary attempts to gather delinquent reports are made by phone. Noncompliance form letters are sent to those companies that have not submitted reports and have not responded to data requests by phone.

Note 11. Frames Maintenance

The Petroleum Supply Division (PSD) maintains complete lists of respondents to its monthly surveys. Each survey has a list of companies and facilities required to submit petroleum activity data. This list is known as the survey frame. Frame maintenance procedures are used to monitor the status of petroleum companies and facilities currently contained in each survey frame as well as to identify new members to be added to the frame. As a result, all known petroleum supply organizations falling within the definition of "Who Must Submit" participate in the survey.

The activities for frames maintenance are conducted within three time frames: monthly, annually, and triennially. Monthly frames maintenance procedures focus on examining several frequently published industry periodicals that report changes in status (births, deaths, sales, and acquisitions) of petroleum facilities producing, transporting, importing, and/or storing crude oil and petroleum products. These sources are augmented by articles in newspapers, letters from respondents indicating changes in status, and information received from survey systems operated by other offices. Survey managers review these sources to monitor changes in company operations and to develop lists of potential respondents. These activities assure coverage of the reporting universe and maintain accurate facility information on addresses and ownership. Annual frames maintenance focuses on re-evaluating the "must submit" companies filing the Form EIA-814.

To supplement monthly and annual frames maintenance activities and to provide more comprehensive coverage, the PSD conducts a comprehensive triennial frames investigation. These triennial evaluations result in the reassessment and recompilation of the complete frame for each survey.

In January 1975, 1981, and 1983, numerous respondents were added to bulk terminal and pipeline surveys affecting subsequent stocks reported and stock change calculations. Using the expanded coverage (new basis), the end-of-year stocks, in million barrels, would have been as listed below.

- Crude Oil: 1982 - 645 (Total) and 351 (Other Primary).
- Crude Oil and Petroleum Products: 1974 - 1,121; 1980 - 1,425; and 1982 - 1462.
- Motor Gasoline: 1974 - 225; 1980 - 263; 1982 - 244 (Total) and 203 (Finished).
- Distillate Fuel Oil: 1974 - 224; 1980 - 205; and 1982 - 186.
- Residual Fuel Oil: 1974 - 75; 1980 - 91; and 1982 - 68.
- Liquefied Petroleum Gases: 1974 - 113; 1980 - 128; and 1982 - 103.

- Other Petroleum Products: 1974 - 220; 1980 - 249; and 1982 - 259.
- Stock change calculations beginning in 1975, 1981, and 1983 were made using new basis stock levels.

Note 12. 1981 Changes in the Petroleum Supply Reporting System

Petroleum statistics contained in this report for all years through 1980 were developed using definitions, concepts, reporting procedures, and aggregation methods that are consistent with those developed by the U.S. Bureau of Mines. Research conducted by the Energy Information Administration (EIA) in 1979 and 1980 indicated that changes had occurred in the petroleum industry that were not being adequately reflected in EIA's reporting system.

The EIA reporting forms, definitions, and procedures were modified beginning in January 1981 to describe industry operations more accurately. Unfortunately, empirical information is not available to precisely measure the data shortcomings through 1980. However, estimates of the magnitudes of differences in the major data series are described below to form a basis for comparing 1979, 1980, and 1981 data.

Motor Gasoline

Prior to 1979, the EIA product-supplied series for motor gasoline was consistently about 2 percent lower than the Federal Highway Administration (FHWA) gasoline sales data series, which is derived from State tax receipts. The difference increased to about 3 percent in 1979 and 1980. There were two primary causes for this growing difference. First, refinery operations, particularly the flows of unfinished oils and the redesignation of some finished products, were not being accurately described on the EIA survey forms. Second, a large amount of gasoline was being produced away from refineries at "downstream blending stations" to take advantage of provisions in regulations governing the amount of lead that could be added. These blending stations were not reporting gasoline production to the EIA until the data system was changed in January 1981.

Quantitative estimates of the magnitude of the difference in EIA's gasoline product supplied data in 1979 and 1980 have been made by the EIA and the American Petroleum Institute (API). Table B2 provides 1979 and 1980 data as published in the *Petroleum Statement, Annual*, as well as EIA and API estimates of "recast" motor gasoline product supplied.

The EIA recast estimates were based upon preliminary monthly information in the *Monthly Petroleum Statement*.

Table B2. Finished Motor Gasoline Product Supplied
(Thousand Barrels per Day)

	EIA Reported	API Recast	EIA Recast	FHWA ^a
1979	7,034	7,302	7,183-7,347	7,258
1980	6,579	6,882	6,806-6,889	6,792

^a FHWA gasoline statistics based on data from Federal Highway Administration, *Estimate of Total Gasoline Use*, Table MF-21A published October 1980 and September 1981. Aviation gasoline (Table MF-24) has been subtracted from FHWA product supplied quantities to make data comparable.

The ranges displayed in the EIA column reflect uncertainty in the estimates. Also shown are the FHWA motor gasoline sales statistics for those years.

Distillate and Residual Fuel Oil

Distillate and residual fuel oil refinery production statistics through 1980 were adjusted to account for an imbalance between unfinished oil supply and disposition. The reported quantities of refinery inputs of unfinished oils typically exceed the available supply of unfinished oils. It has been assumed that this occurs when distillate and residual fuel oils produced by a refinery are shipped to another refinery, where it is treated as unfinished oil. This oil is then reprocessed rather than used or sold as distillate or residual fuel oil.

For many years (including 1980), the difference between unfinished oil disposition and supply was subtracted from distillate and residual fuel oil production to adjust for this discrepancy. Two-thirds of the difference was applied to distillate fuel oil, and one-third to residual fuel oil.

Beginning in January 1981, this adjustment was discontinued because there was not sufficient empirical evidence to support it. Table B3 presents distillate and residual fuel oil refinery production in 1979 and 1980 as published (adjusted) and on the same basis as 1981 statistics (unadjusted) to permit comparison.

Adjusted distillate and residual fuel oil product supplied volumes differ from the unadjusted volumes by the same amounts as the adjusted and unadjusted production volumes.

Total Petroleum Products

The imbalance between the supply and disposition of unfinished oils and gasoline blending components is included with other products (line 35) in the U.S. Petroleum Balance (Table 1). These imbalances are reported as negative product supplied in the Other Liquids section, Supply

Table B3. Distillate and Residual Fuel Oil Production and Product Supplied
(Thousand Barrels per Day)

	Adjusted Refinery Production	Unadjusted Refinery Production	Difference	Unadjusted Product Supplied
Distillate Fuel Oil				
1979	3,152	3,169	16	3,327
1980	2,661	2,764	103	2,969
Residual Fuel Oil				
1979	1,687	1,695	8	2,834
1980	1,580	1,634	54	2,562

and Disposition Statistics (Table 2). Since these changes only involve redistribution of the volumes of finished motor gasoline, distillate and residual fuel oil, gasoline blending components, and unfinished oils, the total volume of petroleum products supplied remains unaffected by them.

Alaskan In Transit Stocks

Stocks of Alaskan crude oil in transit were included for the first time in January 1981. The major impact of this change is on the reporting of stock change calculations. Using the expanded coverage (new basis), 1980 end-of-year crude oil stocks, in million barrels, would have been 488 (Total) and 380 (Other Primary).

Note 13. 1984 Changes in the Petroleum Supply Reporting System

In January 1984, a number of changes in the reporting of natural gas liquids (NGL) were implemented. The modified system reflects supply and disposition of NGL on a component, rather than a product, basis.

From 1979 to 1983, the Energy Information Administration (EIA) collected and reported information on the supply and disposition of nine NGL products. Beginning with January 1984, NGL supply and disposition data were reported on a five component basis (see Table B4) to be consistent with record keeping practices used by the industry. This table shows the product category under the new and old basis. Four Petroleum Supply Reporting System surveys were modified beginning in January 1984. They were:

Table B4. Product Basis vs. Component Basis Reporting

1979-1983 Product Basis	1984 Component Basis				
	Ethane	Propane	Normal Butane	Isobutane	Pentanes Plus
Ethane	.				
Ethane-Propane Mixtures	.	.			
Propane		.			
Butane-Propane Mixtures			.		
Butane			.		
Isobutane				.	
Unfractionated Stream	.	.	.	.	.
Natural Gasoline and Isopentane					.
Plant Condensate					.

EIA-810	<i>Monthly Refinery Report</i>
EIA-811	<i>Monthly Bulk Terminal Report</i>
EIA-812	<i>Monthly Product Pipeline Report</i>
EIA-816	<i>Monthly Natural Gas Liquids Report</i>

This change affected stocks reported and stock change calculations. Under the new basis, end-of-year 1983 stocks, in million barrels, would have been:

- Liquefied Petroleum Gases: 108,
- Other Petroleum Products: 248.

A fifth survey, the Form EIA-814, *Monthly Imports Report* (formerly Form ERA-60), was not modified. Therefore, in order to allocate imports and exports of mixed NGL streams to individual component parts, the EIA developed a statistical algorithm.

Imports

The Imports algorithm was based on information gathered from the larger importers of NGL, who were asked to provide component analysis of the products they imported during the first 6 months of 1983. The percentages shown in Table B5 are derived from the weighted averages of the data provided by the importers.

Exports

The export algorithm was based on information gathered from the larger exporters of NGL, who were asked to provide component analysis of the products they exported during 1983. The percentages shown in Table B5 are derived from the weighted averages of the data provided

by the exporters. It was necessary to derive percentages by Petroleum Administration for Defense Districts of exportation, due to the wide variation of components included in the mixed streams.

Note 14. 1985 Changes in the Petroleum Supply Reporting System

Beginning in January 1985, Inter-Petroleum Administration for Defense (PAD) District pipeline movements of crude oil were included in the crude oil supply balance at the PAD District level but did not affect National level statistics. As a result of including these movements, *Net Receipts* of crude oil and *Unaccounted for Crude Oil* at the PAD District level changed significantly. Also affected were crude oil imports and unfinished oil imports at the PAD District level which are provided by *PAD District of entry* (Tables 6-10) and by *PAD District of processing* (Tables 16-19).

The tables in the *Petroleum Supply Monthly* that were changed due to the inclusion of Inter-PAD District pipeline movements of crude oil are the following:

- Tables 6 through 10, "PAD Districts I to V, Supply and Disposition of Crude Oil and Petroleum Products".
 - Effective January 1985, crude oil imports and unfinished oil imports in Tables 4 through 8 were reported at the *PAD District of entry* rather than at the *PAD District of processing*. *Net Receipts* now include movements by pipeline as well as by tanker and barge.
- Table 26, "Movements of Crude Oil and Petroleum Products by Pipeline, Tanker, and Barge Between PAD Districts."
 - The crude oil line includes movements by pipeline as well as by tanker and barge.
- Table 27, "Movements of Crude Oil and Petroleum Products by Pipeline Between PAD Districts."
 - A line was added to report crude oil movements.
- Table 29, "Net Movements of Crude Oil and Petroleum Products by Pipeline, Tanker, and Barge Between PAD Districts."
 - The crude oil line includes movements by pipeline as well as by tanker and barge.

**Table B5. Algorithm for Allocating NGL Imports/Exports
(Percent)**

	EIA Component Slate				
	Ethane	Propane	Normal Butane	Isobutane	Pentanes Plus
Import Product					
Natural Gasoline and Isopentane (EIA-814) . . .	---	---	---	---	100
Plant Condensate (EIA-814)	---	---	---	---	100
Ethane (IM-145)	100	---	---	---	---
Propane (IM-145)	---	100	---	---	---
Butane (IM-145)	---	---	65	35	---
Butane-Propane Mixtures (IM-145)	---	40	35	20	5
Ethane-Propane Mixtures (IM-145)	60	40	---	---	---
Export Product					
Ethane (All PAD Districts)	100	---	---	---	---
Propane (All PAD Districts)	---	100	---	---	---
Butane (All PAD Districts)	---	---	100	---	---
Mixed Streams					
PAD Districts I, IV, V	---	40	60	---	---
PAD District II	30	25	15	15	15
PAD District III	---	80	20	---	---

Note 15. 1986 Changes in the Petroleum Supply Reporting System

Beginning in January 1986, several changes to the Petroleum Supply Reporting System (PSRS) went into effect. These changes affected the frame of operators of petroleum facilities required to complete the monthly surveys in the PSRS and resulted in some changes to the tables presented in the *Petroleum Supply Monthly* (PSM).

Changes in Survey Frames

As a result of frames maintenance activities, 39 respondents were added to the monthly survey frames. Table B6 shows the impact of the data reported by the new respondents on published data for production and stocks of major petroleum products.

Also, beginning in January 1986, a major petroleum company consolidated production and stocks reporting for some of its facilities. Data previously reported separately on Form EIA-811, *Monthly Bulk Terminal Report*, and on Form EIA-816, *Monthly Natural Gas Liquids Report* for two facilities were combined with data reported for two refineries on Form EIA-810, *Monthly Refinery Report*. The primary impact of this reporting change is on Table 24, "Stocks of Crude Oil and Petroleum Products by PAD District," which showed a decrease in natural gas liquids (NGL) stocks at bulk terminals and natural gas processing plants, and an increase in NGL stocks at refineries.

Changes in Publication Tables

Several changes were also made to tables in the *PSA* either as a direct result of changes in reporting requirements or to improve the usefulness of the publication. These changes were:

- Table 13, "Refinery Input of Crude Oil and Petroleum Products by PAD District,"
 - Alaskan crude oil receipts were shown separately.
- Table 14, "Refinery Production of Petroleum Products by PAD District,"
 - The "petrochemical feedstock use" and "other use" were no longer shown separately for still gas or for liquefied refinery gases.
- Table 16 and 17, "Imports of Crude Oil and Petroleum Products by PAD District,"
 - Imports of unfinished oils were separated into four categories: naphthas and lighter, kerosene and light gas oils, heavy gas oils, and residuum.
- Table 18 and 19, "Imports of Crude Oil and Petroleum Products by Source,"
 - Countries formerly included in the categories "Other Western Hemisphere" and "Other Eastern Hemisphere" were shown individually.

- Table 24, "Stocks of Crude Oil and Petroleum Products by PAD District."

- The breakout between "petrochemical feedstock use" and "other use" for each liquefied petroleum gas was eliminated.

Note 16. 1987 Changes in the Petroleum Supply Reporting System

Several changes to the Petroleum Supply Reporting System (PSRS) went into effect at the beginning of January 1987. These changes were made as part of the Energy Information Administration's (EIA's) continuing effort to provide pertinent, timely, and consistent energy information.

Changes in Data Collection

Fresh feed input to catalytic cracking units, hydrocracking units, and cokers were added to the Form EIA-810, *Monthly Refinery Report*.

Changes in Publication Tables

- The "Appalachian No. 2" Refining District was combined with the "Indiana, Illinois, Kentucky," Refining District. This affected *Petroleum Supply Monthly* (PSM) Tables 12 through 15, 24, 30, and 31.
- Fresh feed inputs to catalytic cracking units, hydrocracking units, and cokers were added to Table 13, "Refinery Input of Crude Oil and Petroleum Products by PAD District."

Clarification

In 1986, several refineries and terminals in the United States applied for Foreign Trade Zone (FTZ) status and applications from three refineries were approved. Consequently, during 1986, some refineries with FTZ status were treated as if they were within the United States while the Hawaiian FTZ was considered outside.

Effective with the January 1987 data, all FTZ facilities located within the 50 United States are considered domestic entities and are included in PSA statistics. The principal differences in the PSA data series as a result of adding the Hawaiian FTZ was an approximate 1 percent increase in crude imports and a 3 percent decrease in product imports.

Note 17. 1989 Changes in the Petroleum Supply Reporting System

Several changes to the Petroleum Supply Reporting System (PSRS) went into effect at the beginning of January 1989. These changes were made to reduce respondent burden, to fulfill user requests for additional data, and to improve accuracy and consistency in reporting. To reflect these changes and to improve the usefulness of the *Petroleum Supply Monthly* (PSM) publication, the following changes were made in January 1989 and subsequently reflected in the *Petroleum Supply Annual*.

Changes in Data Collection

- Data on inputs and production of naphthenic and paraffinic lubricants were added to the Form EIA-810, *Monthly Refinery Report*.

Table B6. Impact of New Respondents to December 1985 PSM Data

Product	Refinery Production (thousand barrels per day)		Stocks ^a (thousand barrels)	
	Reported by New Respondents	Published U.S. Total	Reported by New Respondents	Published U.S. Total
Leaded Gasoline	1.3	2,326	224	81,379
Unleaded Gasoline	0.6	4,323	276	108,422
Distillate Fuel Oil	0	3,174	1,217	143,911
Residual Fuel Oil	0	1,055	1,747	50,671
NGLs & LRGs	0	393	409	80,898
Other Products	0	3,302	1,413	239,158
Crude Oil (excl. SPR)	—	—	2,314	318,695

^a Stocks as of December 31, 1985.

- Separate lines for the collection of inputs and production of olefins (ethylene, propylene, and butylene) were added to Form EIA-810, *Monthly Refinery Report*.
- The collection of data on the movement of Liquefied Petroleum Gases (LPGs) and Liquefied Refinery Gases (LRGs) on a component basis were added to the Forms EIA-812, *Monthly Product Pipeline Report*, and the EIA-817, *Monthly Tanker and Barge Movement Report*.
- Bonded imports of jet fuel and fuel oils and imports of LPGs previously published from data provided by the U.S. Bureau of the Census were discontinued. Data are now published from the data reported on the Form EIA-814, *Monthly Imports Report*.
- Exports of butane/propane and ethane/propane mixtures were split in a ratio of 60 percent for the butane and ethane portions and 40 percent for the propane portion.
- The reporting of products other than Natural Gas Liquids (NGLs) by natural gas processing plants was eliminated on the Form EIA-816, *Monthly Natural Gas Liquids Report*.
- Fractionators were required to report only end-of-month stocks of NGLs on the Form EIA-816, *Monthly Natural Gas Liquids Report*.

Changes In Natural Gas Liquids and Crude Oil Statistics

Beginning with the January 1989 issue of the *PSM*, adjustments were being made to refinery inputs and product supplied of NGLs and refinery inputs of crude oil to account for refiner misreporting. Substantial volumes of NGLs are produced at natural gas processing plants in Alaska and injected into the crude oil moving in the Trans Alaska Pipeline System (TAPS). Refiners receiving any crude oil commingled with NGLs are instructed to report the NGL portion of that stream separately from the crude oil portion. This has not been done for Alaskan crude oil because refiners are unable to identify these volumes for accounting purposes. As a result, the NGL production in Alaska has been credited directly toward product supplied and also toward product supplied from refinery production when the refiner processes the crude oil-NGL mixture. In addition, the reporting of the commingled stream as crude oil by the refiner has overstated crude oil inputs and resulted in an increase in unaccounted for crude oil equal to the volume of NGL in the crude oil.

To offset this reporting error, an adjustment was made to refinery input in all Petroleum Administration for Defense (PAD) Districts receiving Alaskan crude oil. The adjustment reduces the crude oil inputs and increases the NGL inputs by an equal amount. Each PAD District adjustment

is a portion of the known Alaskan NGL production that is proportional to the PAD District's share of Alaskan crude oil received at all refineries in the United States. The greatest impact occurs in PAD District V for butane and pentanes plus.

The reporting problem began in 1987 and has grown as injections of NGLs into the TAPS have increased. Data for 1988 was revised to account for the adjustment in the *Petroleum Supply Annual* published in May 1989. Revisions for 1987 data are not planned.

Changes In Publication Tables

- Year-to-Date tables on Supply and Disposition by PAD District (Tables 7, 9, 11, 13, and 15) were added.
- "Stock Withdrawal" was renamed "Stock Change" and was moved from Supply to Disposition in Tables 2 through 15. A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.
- A jet fuel total line was added to Tables 2-15, 19, 20, 23, 24, 43-46.
- PAD District Supply and Disposition tables (Tables 6 through 15) now display liquefied petroleum gases on a component basis.
- Tables showing net imports by country for the current month and year-to-date (Tables 39 and 40) were added.
- Table numbers were changed as a result of data additions and table reorganization. Table B7 is provided to show the new to old table numbers for the detailed statistics tables.
- Table 17, "Natural Gas Plant Net Production and Stocks of Petroleum Products by PAD and Refining Districts."
 - Stocks at natural gas processing plants by Refining Districts previously published on Table 24 was included with net production of petroleum products at natural gas plants.
 - The reporting of products other than natural gas liquids by natural gas processing plants was eliminated.
- Table 19, "Net Refinery Production of Finished Petroleum Products by PAD and Refining District."
 - Net production of olefins (ethylene, propylene, and butylene) was added.

Table B7. Conversion Table for 1989 PSM

Table Numbers											
New	Old	New	Old	New	Old	New	Old	New	Old	New	Old
1	1	9	NA	17	12, 24	25	18, 33	33	19	41	24, 31
2	2	10	8	18	13	26	18, 33	34	19	42	25
3	3	11	NA	19	14, 30	27	18, 33	35	20	43	26
4	4	12	9	20	24, 31	28	18, 33	36	21	44	27
5	5	13	NA	21	15	29	18, 33	37	22	45	28, 32
6	6	14	10	22	34	30	19	38	23	46	29
7	NA	15	NA	23	16	31	19	39	NA		
8	7	16	11	24	17	32	19	40	NA		

NA = Not Applicable

- Net production of naphthenic and paraffinic lubricants was added.
- Net production of residual fuel oil by percent sulfur, previously published as Table 30, was added.
- Table 20, "Refinery Stocks of Crude Oil and Petroleum Products by PAD and Refining Districts."
 - Stocks at refineries by Refining District were added from the old stock table (Table 24).
 - Stocks of residual fuel oil by percent sulfur content, previously published as Table 31, were added.
- Tables 25 through 34, "Imports of Crude Oil and Petroleum Products by Country of Origin."
 - Data previously included in the "Other Products" category were displayed separately for the following products: naphthas for petrochemical feedstock use, other oils for petrochemical feedstock use, lubricants, and asphalt and road oil.
- Sulfur content categories for residual fuel oil, previously published as Table 33, were added.
- Tables 37 and 38, "Exports of Crude Oil and Petroleum Products by Destination."
 - Data for exports by destination previously included in the "Other Products" category were displayed separately for the following products: pentanes plus, kerosene, naphthas for petrochemical feedstock use, and other oils for petrochemical feedstock use.
- Table 41, "Stocks of Crude Oil and Petroleum Products by PAD District."
 - Refining District data were eliminated. Refinery stocks and natural gas processing plant stocks by Refining District were added to Tables 17 and 20, respectively.
 - Sulfur content categories for residual fuel oil, previously published as Table 31, were added.

Appendix C

Impact of Resubmissions on Major Series, 1990

This table contains information on revisions to published statistics caused by resubmission of respondent survey forms. The table shows the published value in the *Petroleum Supply Monthly* (PSM) and the cumulative difference resulting from resubmissions for the major product series. The official published petroleum supply statistics are not changed to reflect revisions until publication of the *Petroleum Supply Annual* (PSA), except in cases of catastrophic error.

This table is provided as a service to analysts who need to know the latest available statistics. It should be used with caution because resubmissions are received on an irregular basis and the impact on published data can change from month to month. In some cases, the pattern of revision caused by resubmissions during the year is a poor indicator of final statistics that will be published in the PSA.

Surface aerators are used at U.S. petroleum refineries to help prevent water pollution. These aerators speed up the oxidation process by beating air into water.

Table C1. Impact of Resubmissions on Major Series, 1990
(Thousand Barrels per Day, Except Where Noted)

Product	January		February		March		April		May		June		Year to Date
	PSM Value	Difference	PSM Value	Difference	PSM Value	Difference	PSM Value	Difference	PSM Value	Difference	PSM Value	Difference	Average Difference
Inputs.....	14,814	15	14,484	2	13,868	5	14,112	4	14,136	8	--	--	7
Crude Oil.....	13,499	-2	13,494	-1	12,876	4	13,051	4	13,389	(s)	--	--	1
Pentanes Plus.....	165	1	178	2	171	1	179	0	179	0	--	--	1
LPGs.....	418	-3	348	-2	205	(s)	200	(s)	218	0	--	--	-1
Ethane/Ethylene.....	0	0	(s)	0	(s)	0	1	0	(s)	0	--	--	0
Propane/Propylene.....	7	0	9	0	8	0	8	0	8	0	--	--	0
Normal Butane/Butylene.....	248	-2	183	-1	88	(s)	53	(s)	53	0	--	--	-1
Isobutane.....	181	-1	154	-1	129	(s)	141	(s)	154	0	--	--	(s)
Other Hydrocarbons.....	68	5	66	4	65	0	74	0	75	(s)	--	--	2
Unfinished Oils.....	534	26	513	(s)	481	(s)	510	1	338	8	--	--	7
Motor Gas. Blend. Comp.....	-68	-11	-107	-1	69	(s)	98	(s)	-60	(s)	--	--	-2
Aviation Gas. Blend. Comp.....	1	0	-3	0	1	0	1	0	-1	0	--	--	0
Production.....	16,868	30	16,830	9	16,116	16	16,310	15	16,343	8	--	--	15
Pentanes Plus.....	288	8	304	6	299	4	296	2	306	2	--	--	4
LPGs.....	1,700	-13	1,784	-34	1,760	4	1,738	9	1,780	3	--	--	-6
Ethane/Ethylene.....	462	5	465	6	454	3	453	5	448	(s)	--	--	4
Propane/Propylene.....	874	9	914	5	880	(s)	862	1	848	1	--	--	3
Normal Butane/Butylene.....	228	-28	230	-46	256	1	258	2	291	2	--	--	-14
Isobutane.....	136	1	176	(s)	169	(s)	165	1	173	1	--	--	1
Other Hydrocarbons.....	66	-10	69	-4	72	5	72	0	80	-1	--	--	-2
Finished Motor Gasoline.....	6,889	-28	6,978	-1	6,812	1	6,784	4	6,599	-1	--	--	-5
Leaded.....	411	-8	396	-1	389	(s)	393	2	400	(s)	--	--	-1
Unleaded.....	6,477	-20	6,582	(s)	6,223	1	6,371	2	6,199	-1	--	--	-4
Finished Aviation Gasoline.....	18	0	22	0	20	0	22	0	28	0	--	--	0
Jet Fuel.....	1,486	-1	1,498	-1	1,425	0	1,335	-1	1,365	-2	--	--	-1
Naphtha-Type Jet.....	187	-1	200	-1	201	0	178	(s)	198	0	--	--	(s)
Kerosene-Type Jet.....	1,299	(s)	1,298	0	1,224	0	1,156	(s)	1,167	-2	--	--	(s)
Kerosene.....	134	0	96	0	70	0	63	0	50	0	--	--	0
Distillate Fuel Oil.....	3,136	-7	2,753	(s)	2,655	1	2,802	(s)	2,873	(s)	--	--	-1
Residual Fuel Oil.....	1,129	33	1,060	0	974	1	880	1	877	6	--	--	8
Naphtha Pet. Feedstock.....	109	21	133	0	143	0	137	0	142	0	--	--	4
Other Oils Pet. Feedstock.....	200	25	264	42	268	0	303	0	287	0	--	--	13
Special Naphthas.....	54	-1	54	0	52	0	56	(s)	59	0	--	--	(s)
Lubricants.....	158	(s)	186	0	162	0	173	0	185	0	--	--	(s)
Waxes.....	14	0	19	(s)	17	0	15	0	15	0	--	--	0
Petroleum Coke.....	538	2	561	0	537	0	546	(s)	541	(s)	--	--	(s)
Asphalt and Road Oil.....	251	0	326	0	345	0	382	0	480	0	--	--	0
Still Gas.....	642	2	676	0	649	0	670	0	650	1	--	--	1
Miscellaneous Products.....	58	(s)	67	1	55	(s)	57	0	66	(s)	--	--	(s)
Imports.....	9,147	46	8,306	77	7,925	23	7,758	74	8,738	50	--	--	54
Crude Oil.....	6,206	6	5,858	30	6,125	-8	5,740	59	6,438	-5	--	--	16
Pentanes Plus.....	18	0	11	0	4	0	4	0	13	0	--	--	0
LPGs.....	245	15	223	11	152	2	148	2	189	1	--	--	6
Ethane/Ethylene.....	8	0	0	2	6	0	5	0	5	0	--	--	(s)
Propane/Propylene.....	172	13	147	5	117	1	115	(s)	135	(s)	--	--	4
Normal Butane/Butylene.....	53	(s)	65	-7	22	1	19	1	37	1	--	--	-1
Isobutane.....	12	2	11	12	7	1	9	(s)	13	0	--	--	3
Other Hydrocarbons.....	0	0	0	0	0	0	0	0	0	0	--	--	0
Unfinished Oils.....	441	0	401	0	369	17	350	7	430	-6	--	--	4
Motor Gas. Blend. Comp.....	71	0	61	0	71	0	49	0	74	(s)	--	--	(s)
Aviation Gas. Blend. Comp.....	0	0	0	0	0	0	0	0	0	0	--	--	0
Finished Motor Gasoline.....	417	(s)	407	0	265	0	327	0	535	49	--	--	10
Leaded.....	1	0	(s)	0	(s)	0	0	0	2	0	--	--	0
Unleaded.....	416	(s)	407	0	265	0	327	0	533	49	--	--	10
Finished Aviation Gasoline.....	0	0	0	0	(s)	0	(s)	0	(s)	0	--	--	0
Jet Fuel.....	157	8	147	12	109	11	103	0	113	0	--	--	6
Naphtha-Type Jet.....	1	0	1	0	2	0	1	0	2	0	--	--	0
Kerosene-Type Jet.....	155	6	145	12	108	11	102	0	111	0	--	--	6
Kerosene.....	24	0	6	0	1	0	8	0	(s)	0	--	--	0
Distillate Fuel Oil.....	501	4	357	(s)	280	(s)	308	(s)	207	(s)	--	--	1
Residual Fuel Oil.....	809	18	640	23	334	1	555	4	507	0	--	--	9
Naphtha Pet. Feedstock.....	139	-71	118	-82	111	-49	47	0	59	0	--	--	-36
Other Oils Pet. Feedstock.....	74	67	18	62	65	49	79	0	111	0	--	--	36
Special Naphthas.....	5	3	14	1	3	(s)	10	1	18	-2	--	--	1
Lubricants.....	12	0	14	0	11	0	7	0	3	13	--	--	3
Waxes.....	1	0	2	0	1	0	1	0	1	0	--	--	0
Petroleum Coke.....	1	0	5	0	1	0	2	0	1	0	--	--	0
Asphalt and Road Oil.....	25	0	21	(s)	19	(s)	20	0	35	(s)	--	--	(s)
Miscellaneous Products.....	2	(s)	2	0	2	(s)	1	(s)	3	0	--	--	(s)

(s) = Less than 500 barrels per day.

Note: • Volumes indicate cumulative changes resulting from resubmissions received for that month as of the date of this publication. • Totals may not equal sum of components due to independent rounding.

Table C1. Impact of Resubmissions on Major Series, 1990 (Continued)
(Thousand Barrels per Day, Except Where Noted)

Product	January		February		March		April		May		June		Year to Date
	PSM Value	Difference	PSM Value	Difference	PSM Value	Difference	PSM Value	Difference	PSM Value	Difference	PSM Value	Difference	Average Difference
Stocks (excl. SPR)	1,051,022	-3,802	1,058,003	-4,218	1,061,200	-1,840	1,056,496	-64	1,084,920	831	--	--	-1,779
Crude Oil (excl. SPR)	352,267	-3,117	343,081	-3,484	373,655	-2,802	369,705	787	382,480	133	--	--	-1,697
Pentanes Plus	7,968	127	7,239	10	7,334	-78	7,091	23	7,279	4	--	--	18
LPGs	78,107	399	76,675	539	77,962	1,406	82,047	29	90,708	3	--	--	475
Ethane/Ethylene	23,585	147	24,511	479	24,158	-296	24,219	4	22,899	1	--	--	67
Propane/Propylene	32,979	105	32,171	692	31,103	1,526	31,705	0	35,584	-4	--	--	464
Normal Butane/Butylene	12,571	106	12,142	-218	14,739	199	17,857	-2	22,867	5	--	--	18
Isobutane	6,972	41	7,851	-414	7,962	-23	8,266	27	9,356	1	--	--	-74
Other Hydrocarbons	644	154	749	167	977	0	907	0	1,037	9	--	--	66
Unfinished Oils	103,511	-89	106,466	-101	109,780	-5	108,729	-12	116,582	44	--	--	-33
Motor Gas. Blend. Comp.	40,350	-170	44,325	-214	42,133	0	39,126	-45	39,575	28	--	--	-80
Aviation Gas. Blend. Comp.	141	0	180	0	145	0	125	0	159	0	--	--	0
Finished Motor Gasoline	195,634	-66	201,341	6	186,056	-203	184,466	-72	178,416	222	--	--	-27
Leaded	17,828	-30	15,444	-146	13,559	-181	12,603	-20	11,906	-23	--	--	-80
Unleaded	177,806	-56	185,897	152	172,497	-22	171,863	-52	166,510	245	--	--	53
Finished Aviation Gasoline ...	1,976	-13	1,947	-1	1,843	-39	1,830	-30	1,884	0	--	--	-17
Jet Fuel	42,818	-141	46,389	-3	48,938	421	46,844	-272	46,832	-60	--	--	-11
Naphtha-Type Jet	6,381	1	6,336	1	7,082	-34	6,328	-29	6,853	0	--	--	-12
Kerosene-Type Jet	36,437	-142	40,053	-4	41,856	455	40,516	-243	39,979	-60	--	--	1
Kerosene	6,495	-44	5,693	-16	5,129	-16	5,194	0	5,501	0	--	--	-15
Distillate Fuel Oil	117,949	-262	112,224	-472	99,684	-768	99,459	-288	102,828	305	--	--	-297
Residual Fuel Oil	49,729	125	51,479	-395	46,190	117	48,993	-180	49,641	55	--	--	-56
Naphtha Pet. Feedstock	2,106	-5	2,292	-5	2,322	0	2,220	0	1,993	0	--	--	-2
Other Oils Pet. Feedstock	1,935	0	2,848	0	2,614	0	2,022	0	2,670	0	--	--	0
Special Naphthas	2,691	-93	2,844	-96	2,949	-4	2,699	-1	2,724	0	--	--	-39
Lubricants	13,597	-8	13,011	-19	12,264	2	12,353	0	12,256	65	--	--	8
Waxes	953	-2	1,032	-1	1,044	0	955	0	941	0	--	--	-1
Petroleum Coke	3,228	0	9,444	0	8,954	0	9,423	1	9,989	0	--	--	(s)
Asphalt and Road Oil	22,215	-100	25,957	103	28,519	303	29,673	-30	29,091	0	--	--	55
Miscellaneous Products	2,708	-477	2,785	-236	2,708	24	2,415	28	2,336	23	--	--	-128
Product Supplied	16,968	64	17,024	59	17,083	-20	16,666	96	16,843	5	--	--	45
Crude Oil	40	0	36	0	24	0	24	0	30	0	--	--	0
Pentanes Plus	156	3	161	8	128	5	128	-1	133	2	--	--	3
LPGs	1,680	-8	1,599	-26	1,620	-22	1,525	56	1,417	4	--	--	1
Ethane/Ethylene	462	(s)	431	-4	471	28	455	-5	495	(s)	--	--	4
Propane/Propylene	1,012	18	1,048	-11	993	-27	935	52	825	1	--	--	7
Normal Butane/Butylene	163	-30	117	-40	113	-12	112	10	101	2	--	--	-14
Isobutane	22	3	2	29	44	-12	23	-1	-4	1	--	--	4
Other Hydrocarbons	0	-10	0	-4	0	5	0	0	0	-1	--	--	-2
Unfinished Oils	-7	-23	-218	1	-219	13	-125	7	-161	-16	--	--	-3
Motor Gas. Blend. Comp.	14	16	26	2	73	-6	51	1	119	-3	--	--	2
Aviation Gas. Blend. Comp.	0	0	2	0	(s)	0	0	0	0	0	--	--	0
Finished Motor Gasoline	6,675	-26	7,129	-4	7,325	8	7,116	(s)	7,304	39	--	--	3
Leaded	404	-7	472	4	443	1	420	-3	421	(s)	--	--	-1
Unleaded	6,272	-18	6,657	-8	6,881	7	6,696	3	6,864	39	--	--	5
Finished Aviation Gasoline ...	19	(s)	23	(s)	24	1	23	(s)	27	-1	--	--	0
Jet Fuel	1,551	10	1,468	6	1,423	-3	1,488	22	1,470	-9	--	--	5
Naphtha-Type Jet	182	-1	203	-1	165	1	196	-1	182	-1	--	--	(s)
Kerosene-Type Jet	1,369	11	1,265	7	1,257	-4	1,292	23	1,288	-8	--	--	6
Kerosene	113	1	130	-1	87	0	66	-1	41	0	--	--	(s)
Distillate Fuel Oil	3,177	6	3,250	7	3,265	11	3,059	-16	2,897	-19	--	--	-2
Residual Fuel Oil	1,561	45	1,424	41	1,202	-15	1,142	15	1,222	-1	--	--	17
Naphtha Pet. Feedstock	238	-50	237	-62	250	-49	184	0	201	0	--	--	-32
Other Oils Pet. Feedstock	257	92	226	104	319	49	371	0	350	0	--	--	49
Special Naphthas	62	5	46	1	43	-3	73	1	71	-2	--	--	(s)
Lubricants	160	(s)	185	(s)	180	-1	147	(s)	153	11	--	--	2
Waxes	16	(s)	17	0	15	(s)	17	0	16	0	--	--	0
Petroleum Coke	346	2	332	0	336	0	291	(s)	295	(s)	--	--	(s)
Asphalt and Road Oil	223	3	211	-7	280	-6	351	11	540	-1	--	--	(s)
Still Gas	642	2	676	0	649	0	670	0	650	1	--	--	1
Miscellaneous Products	64	15	66	-8	58	-8	66	(s)	68	(s)	--	--	(s)

(s) = Less than 500 barrels per day.

Note: • Volumes indicate cumulative changes resulting from resubmissions received for that month as of the date of this publication. • Totals may not equal sum of components due to independent rounding.

Glossary

Definitions of Petroleum Products and Other Terms

Alcohol. The family name of a group of organic chemical compounds composed of carbon, hydrogen, and oxygen. The series of molecules vary in chain length and are composed of a hydrocarbon plus a hydroxyl group; $\text{CH}(\text{CH}_3)_n\text{-OH}$ (e.g., methanol, ethanol, and tertiary butyl alcohol (TBA)).

Alkylate. The product of an alkylation reaction. It usually refers to the high octane product from alkylation units. This alkylate is used in blending high octane gasoline.

Alkylation. A refining process for chemically combining isobutane with olefin hydrocarbons (e.g., propylene, butylene) through the control of temperature and pressure in the presence of an acid catalyst, usually sulfuric acid or hydrofluoric acid. The product alkylate, an isoparaffin, has high octane value and is blended with motor and aviation gasoline to improve the antiknock value of the fuel.

API Gravity. An arbitrary scale expressing the gravity or density of liquid petroleum products. The measuring scale is calibrated in terms of degrees API; it is calculated as follows:

$$\text{Degrees API} = \frac{141.5}{\text{sp.gr.}_{60^\circ\text{F}/60^\circ\text{F}}} - 131.5$$

Aromatics. Hydrocarbons characterized by unsaturated ring structures of carbon atoms. Commercial petroleum aromatics are benzene, toluene, and xylene (BTX).

Asphalt. A dark-brown-to-black cement-like material containing bitumens as the predominant constituents, obtained by petroleum processing. The definition includes crude asphalt as well as the following finished products: cements, fluxes, the asphalt content of emulsions (exclusive of water), and petroleum distillates blended with asphalt to make cutback asphalts. The conversion factor for asphalt is 5.5 barrels per short ton.

ASTM. The acronym for the American Society for Testing and Materials.

Atmospheric Crude Oil Distillation. The refining process of separating crude oil components at atmospheric pressure by heating to temperatures of about 600 F to 750 F (depending on the nature of the crude oil and desired products) and subsequent condensing of the fractions by cooling.

Aviation Gasoline (Finished). All special grades of gasoline for use in aviation reciprocating engines, as given in ASTM Specification D910 and Military Specification MIL-G-5572. Excludes blending components which will be used in blending or compounding into finished aviation gasoline.

Aviation Gasoline Blending Components. Naphthas which will be used for blending or compounding into finished aviation gasoline (e.g., straight-run gasoline, alkylate, and reformate). Excludes oxygenates (alcohols, ethers), butane, and pentanes plus. Oxygenates are reported as other hydrocarbons, hydrogen, and alcohol.

Barrel. A volumetric unit of measure for crude oil and petroleum products equivalent to 42 U.S. gallons. This measure is used in most statistical reports. Factors for converting petroleum coke, asphalt, still gas and wax to barrels are given in the definitions of these products.

Barrels Per Calendar Day. The maximum number of barrels of input that can be processed during a 24-hour period after making allowances for the following limitations:

the capability of downstream facilities to absorb the output of crude oil processing facilities of a given refinery. No reduction is made when a planned distribution of intermediate streams through other than downstream facilities is part of a refinery's normal operation;

the types and grades of inputs to be processed;

the types and grades of products expected to be manufactured;

the environmental constraints associated with refinery operations;

the reduction of capacity for scheduled downtime such as routine inspection, mechanical problems, maintenance, repairs, and turnaround; and

the reduction of capacity for unscheduled downtime such as mechanical problems, repairs, and slowdowns.

Barrels Per Stream Day. The amount a unit can process running at full capacity under optimal crude oil and product slate conditions.

Benzene. An aromatic hydrocarbon, (C_6H_6), present to a minor degree in most crude oils. Some important

products manufactured from benzene are: styrene, phenol, nylon, aniline, and synthetic detergents.

Blending Plant. A facility which has no refining capability but is capable of producing finished motor gasoline through mechanical blending.

Bonded Petroleum Imports. Petroleum imported and entered into Customs bonded storage. These imports are not included in the import statistics until they are: (1) withdrawn from storage free of duty for use as fuel for vessels and aircraft engaged in international trade; or (2) withdrawn from storage with duty paid for domestic use.

Bulk Terminal. A facility used primarily for the storage and/or marketing of petroleum products which has a total bulk storage capacity of 50,000 barrels or more and/or receives petroleum products by tanker, barge, or pipeline.

Butane. A normally gaseous straight-chain or branch-chain hydrocarbon, (C₄H₁₀). It is extracted from natural gas or refinery gas streams. It includes isobutane and normal butane and is designated in ASTM Specification D1835 and Gas Processors Association Specifications for commercial butane.

Isobutane. A normally gaseous branch-chain hydrocarbon, (C₄H₁₀). It is a colorless paraffinic gas that boils at a temperature of 10.9 F. It is extracted from natural gas or refinery gas streams.

Normal Butane. A normally gaseous straight-chain hydrocarbon, (C₄H₁₀). It is a colorless paraffinic gas that boils at a temperature of 31.1 F. It is extracted from natural gas or refinery gas streams.

Butylene. An olefinic hydrocarbon, (C₄H₈), recovered from refinery processes.

Catalytic Cracking. The refining process of breaking down the larger, heavier, and more complex hydrocarbon molecules into simpler and lighter molecules. Catalytic cracking is accomplished by the use of a catalytic agent and is an effective process for increasing the yield of gasoline from crude oil. Catalytic cracking processes fresh feeds and recycled feeds.

Fresh Feeds. Crude oil or petroleum distillates which are being fed to processing units for the first time.

Recycled Feeds. Feeds that are continuously fed back for additional processing.

Catalytic Hydrocracking. A refining process that uses hydrogen and catalysts with relatively low temperatures and high pressures for converting middle boiling or residual material to high-octane gasoline, reformer charge

stock, jet fuel and/or high grade fuel oil. The process uses one or more catalysts, depending upon product output, and can handle high sulfur feedstocks without prior desulfurization.

Catalytic Hydrotreating. A refining process for treating petroleum fractions from atmospheric or vacuum distillation units (e.g., naphthas, middle distillates, reformer feeds, residual fuel oil, and heavy gas oil) and other petroleum (e.g., cat cracked naphtha, coker naphtha, gas oil, etc.) in the presence of catalysts and substantial quantities of hydrogen. Hydrotreating includes desulfurization, removal of substances (e.g., nitrogen compounds) that deactivate catalysts, conversion of olefins to paraffins to reduce gum formation in gasoline, and other processes to upgrade the quality of the fractions.

Catalytic Reforming. A refining process using controlled heat and pressure with catalysts to rearrange certain hydrocarbon molecules, thereby converting paraffinic and naphthenic type hydrocarbons (e.g., low-octane gasoline boiling range fractions) into petrochemical feedstocks and higher octane stocks suitable for blending into finished gasoline. Catalytic reforming is reported in two categories. They are:

Low Pressure. A processing unit operating at less than 225 pounds per square inch gauge (PSIG) measured at the outlet separator.

High Pressure. A processing unit operating at either equal to or greater than 225 pounds per square inch gauge (PSIG) measured at the outlet separator.

Charge Capacity. The input (feed) capacity of the refinery processing facilities.

Coal. A generic term applied to carbonaceous rocks that were formed by the partial or complete decomposition of vegetation. These stratified carbonaceous rocks are either solid or brittle and are highly combustible. Includes lignite, bituminous coal, and anthracite which conform to ASTM Specification D388.

Crude Oil (including Lease Condensate). A mixture of hydrocarbons that exists in liquid phase in underground reservoirs and remains liquid at atmospheric pressure after passing through surface-separating facilities. Included are lease condensate and liquid hydrocarbons produced from tar sands, gilsonite, and oil shale. Drip gases are also included, but topped crude oil (residual oil) and other unfinished oils are excluded. Liquids produced at natural gas processing plants and mixed with crude oil are likewise excluded where identifiable. Crude oil is considered as either domestic or foreign, according to the following:

Domestic. Crude oil produced in the United States or from its "outer continental shelf" as defined in 43 USC 1331.

Foreign. Crude oil produced outside the United States. Imported Athabasca hydrocarbons are included.

Crude Oil, Refinery Receipts. Receipts of domestic and foreign crude oil at a refinery. Includes all crude oil in transit except crude oil in transit by pipeline. Foreign crude oil is reported as a receipt only after entry through customs. Crude oil of foreign origin held in bonded storage is excluded.

Crude Oil Losses. Represents the volume of crude oil reported by petroleum refineries as being lost in their operations. These losses are due to spills, contamination, fires, etc. as opposed to refinery processing losses.

Crude Oil Production. The volume of crude oil produced from oil reservoirs during given periods of time. The amount of such production for a given period is measured as volumes delivered from lease storage tanks (i.e., the point of custody transfer) to pipelines, trucks, or other media for transport to refineries or terminals with adjustments for (1) net differences between opening and closing lease inventories, and (2) basic sediment and water (BS&W).

Crude Oil Qualities. Refers to two properties of crude oil, the sulfur content and API gravity, which affect processing complexity and product characteristics.

Crude Oil Used Directly. Represents the amount of crude oil consumed as fuel by crude oil pipelines and on crude oil leases.

Delayed Coking. A process by which heavier crude oil fractions can be thermally decomposed under conditions of elevated temperatures and pressure to produce a mixture of lighter oils and petroleum coke. The light oils can be processed further in other refinery units to meet product specifications. The coke can be used either as a fuel or in other applications such as the manufacturing of steel or aluminum.

Disposition. The components of petroleum disposition are stock change, crude oil losses, refinery inputs, exports, and products supplied for domestic consumption.

Distillate Fuel Oil. A general classification for one of the petroleum fractions produced in conventional distillation operations. It is used primarily for space heating, on-and-off-highway diesel engine fuel including railroad engine fuel and fuel for agricultural machinery), and electric power generation. Included are products known as No. 1,

No. 2, and No. 4 fuel oils; No. 1, No. 2, and No. 4 diesel fuels.

No. 1 Fuel Oil. A light distillate fuel oil intended for use in vaporizing pot-type burners. ASTM Specification D396 specifies for this grade maximum distillation temperatures of 400 F at the 10-percent recovery point and 550 F at the 90-percent point, and kinematic viscosities between 1.4 and 2.2 centistokes at 100 F.

No. 2 Fuel Oil. A distillate fuel oil for use in atomizing-type burners for domestic heating or for moderate capacity commercial-industrial burner units. ASTM Specification D396 designates minimum and maximum distillation temperatures at the 90-percent recovery point of 540 F and 640 F, and kinematic viscosities between 2.0 and 3.6 centistokes at 100 F.

No. 1 and No. 2 Diesel Fuel Oils. Distillate fuel oils used in compression-ignition engines, as designated in the ASTM Specification D975:

No. 1-D. A volatile distillate fuel oil with a maximum distillation temperature of 550 F at the 90-percent recovery point for use in high-speed diesel engines generally operated under variations in speed and load. Includes type C-B diesel fuel used for city buses and similar operations. Properties are defined in ASTM Specification D975.

No. 2-D. A gas oil type distillate of lower volatility with minimum and maximum distillation temperatures at the 90-percent recovery point of 540 and 640 F for use in high-speed diesel engines generally operated under uniform speed and load conditions. Includes Type R-R diesel fuel used for railroad locomotive engines, and Type T-T for diesel-engine trucks. Properties are defined in ASTM Specification D975.

No. 4 Fuel Oil. A fuel oil for commercial burner installations not equipped with preheating facilities. It is used extensively in industrial plants. This grade is a blend of distillate fuel oil and residual fuel oil stocks that conforms to ASTM Specification D396 or Federal Specification VV-F-815C; with minimum and maximum kinematic viscosities between 5.8 and 26.4 centistokes at 100 F. Also included is No. 4-D, a fuel oil for low and medium-speed diesel engines that conforms to ASTM Specification D975.

Electricity (Purchased). Electricity purchased for refinery operations that is not produced within the refinery complex.

Ending Stocks. Primary stocks of crude oil and petroleum products held in storage as of 12 midnight on

the last day of the month. Primary stocks include crude oil or petroleum products held in storage at (or in) leases, refineries, natural gas processing plant pipelines, tank farms, and bulk terminals that can store at least 50,000 barrels of petroleum products or that can receive petroleum products by tanker, barge, or pipeline. Crude oil that is in-transit by water from Alaska, or that is stored on Federal leases or in the Strategic Petroleum Reserve is included. Primary Stocks exclude stocks of foreign origin that are held in bonded warehouse storage.

Ethane. A normally gaseous straight-chain hydrocarbon, (C₂H₆). It is a colorless paraffinic gas that boils at a temperature of -127.48 F. It is extracted from natural gas and refinery gas streams.

Ether. A generic term applied to a group of organic chemical compounds composed of carbon, hydrogen, and oxygen, characterized by an oxygen atom attached to two carbon atoms (e.g., methyl tertiary butyl ether).

Ethylene. An olefinic hydrocarbon, (C₂H₄), recovered from refinery processes or petrochemical processes.

Exports. Shipments of goods from the 50 States and the District of Columbia to foreign countries, Puerto Rico, the Virgin Islands, and other U.S. possessions and territories.

Field Production. Represents crude oil production on leases, natural gas liquids production at natural gas processing plants, and new supply of other hydrocarbons and alcohol.

Flexicoking. A thermal cracking process which converts heavy hydrocarbons such as crude oil, tar sands bitumen, and distillation residues into light hydrocarbons. Feedstocks can be any pumpable hydrocarbons including those containing high concentrations of sulfur and metals.

Fluid Coking. A thermal cracking process utilizing the fluidized-solids technique to remove carbon (coke) for continuous conversion of heavy, low-grade oils into lighter products.

Fresh Feed Input. Represents input of material (crude oil, unfinished oils, natural gas liquids, other hydrocarbons and alcohol or finished products) to processing units at a refinery that is being processed (input) into a particular unit for the first time.

Examples:

1) Unfinished oils coming out of a crude oil distillation unit which are input into a catalytic cracking unit are considered fresh feed to the catalytic cracking unit.

2) Unfinished oils coming out of a catalytic cracking unit being looped back into the same catalytic cracking unit to be reprocessed are not considered fresh feed.

Fuels Solvent Deasphalting. A refining process for removing asphalt compounds from petroleum fractions, such as reduced crude oil. The recovered stream from this process is used to produce fuel products.

Gas Oil. A liquid petroleum distillate having a viscosity intermediate between that of kerosene and lubricating oil. It derives its name from having originally been used in the manufacture of illuminating gas. It is now used to produce distillate fuel oils and gasoline.

Gasohol. A blend of finished motor gasoline (leaded or unleaded) and alcohol (generally ethanol but sometimes methanol), limited to 10 percent volume of alcohol. Gasohol is included in finished leaded and unleaded motor gasoline.

Gasoline Blending Components. Naphthas which will be used for blending or compounding into finished aviation or motor gasoline (e.g., straight-run gasoline, alkylate, and reformate). Excludes oxygenates (alcohols, ethers), butane, and pentanes plus.

Gross Input to Atmospheric Crude Oil Distillation Units. Total input to atmospheric crude oil distillation units. Includes all crude oil, lease condensate, natural gas plant liquids, unfinished oils, liquefied refinery gases, slop oils, and other liquid hydrocarbons (such as shale oil, tar sand oils, gilsonite, etc.).

Heavy Gas Oil. Petroleum distillates with an approximate boiling range from 651 F to 1000 F.

Hydrogen. The lightest of all gases, occurring chiefly in combination with oxygen in water; also in acids, bases, alcohols, petroleum, and other hydrocarbons.

Idle Capacity. The component of operable capacity that is not in operation and not under active repair, but capable of being placed in operation within 30 days; and capacity not in operation but under active repair that can be completed within 90 days.

Imported Crude Oil Burned As Fuel. The amount of foreign crude oil burned as a fuel oil, usually as residual fuel oil, without being processed as such. Imported crude oil burned as fuel includes lease condensate and liquid hydrocarbons produced from tar sand oil, gilsonite, and shale oil.

Imports. Receipts of goods into the 50 States and the District of Columbia from foreign countries, Puerto Rico,

the Virgin Islands, and other U.S. possessions and territories.

Isobutane. See Butane.

Isohexane. A saturated branch-chain hydrocarbon, (C₆H₁₄). It is a colorless liquid that boils at a temperature of 156.2 F.

Isomerization. A refining process which alters the fundamental arrangement of atoms in the molecule without adding or removing anything from the original material. Used to convert normal butane into isobutane (C₄), an alkylation process feedstock, and normal pentane and hexane into isopentane (C₅) and isohexane (C₆), high-octane gasoline components.

Isopentane. See Natural Gasoline and Isopentane.

Kerosene. A petroleum distillate that has a maximum distillation temperature of 401 F at the 10-percent recovery point, a final boiling point of 572 F, and a minimum flash point of 100 F. Included are the two grades designated in ASTM D3699: No. 1-K and No. 2-K, and all grades of kerosene called range or stove oil. Kerosene is used in space heaters, cook stoves, and water heaters and is suitable for use as an illuminant when burned in wick lamps.

Kerosene-Type Jet Fuel. A quality kerosene product with a maximum distillation temperature of 400 F at the 10-percent recovery point and a final maximum boiling point of 572 F. The fuel is designated in ASTM Specification D1655 and Military Specification MIL-T-5624L (Grades JP-5 and JP-8). A relatively low-freezing point distillate of the kerosene type used primarily for commercial turbojet and turboprop aircraft engines.

Lease Condensate. A natural gas liquid recovered from gas well gas (associated and non-associated) in lease separators or natural gas field facilities. Lease condensate consists primarily of pentanes and heavier hydrocarbons.

Light Gas Oils. Liquid petroleum distillates heavier than naphtha, with an approximate boiling range from 401 F to 650 F.

Liquefied Petroleum Gases (LPG). Ethane, ethylene, propane, propylene, normal butane, butylene, and isobutane produced at refineries or natural gas processing plants, including plants that fractionate raw natural gas plant liquids.

Liquefied Refinery Gases (LRG). Liquefied petroleum gases fractionated from refinery or still gases. Through compression and/or refrigeration, they are retained in the

liquid state. The reported categories are ethane/ethylene, propane/propylene, normal butane/butylene, and isobutane. Excludes still gas.

Lubricants. A substance used to reduce friction between bearing surfaces or as process materials either incorporated into other materials used as processing aids in the manufacturing of other products, or as carriers of other materials. Petroleum lubricants may be produced either from distillates or residues. Other substances may be added to impart or improve certain required properties. Do not include byproducts of lubricating oil refining such as aromatic extracts derived from solvent extraction or tars derived from deasphalting. "Lub. icants" includes all grades of lubricating oils from spindle oil to cylinder oil and those used in greases. Reporting categories include:

Paraffinic. Includes all grades of bright stock and neutrals with a Viscosity Index >75.

Naphthenic. Includes all lubricating oil base stocks with a Viscosity Index <75.

Note: The criterion for categorizing the lubricants is based solely on the Viscosity Index of the stocks and is independent of crude sources and type of processing used to produce the oils.

Exceptions: Lubricating oil base stocks that have been historically classified as naphthenic or paraffinic by a refiner may continue to be so categorized irrespective of the Viscosity Index criterion.

Example:

(1) Unextracted paraffinic oils that would not meet the Viscosity Index test.

Middle Distillates. A general classification that includes distillate fuel oil and kerosene.

Miscellaneous Products. Includes all finished products not classified elsewhere (e.g., petrolatum, lube refining byproducts (aromatic extracts and tars), absorption oils, ram-jet fuel, petroleum rocket fuels, synthetic natural gas feedstocks, and specialty oils).

Motor Gasoline (Finished). A complex mixture of relatively volatile hydrocarbons, with or without small quantities of additives, that has been blended to form a fuel suitable for use in spark-ignition engines. Motor gasoline, as given in ASTM Specification D439 or Federal Specification VV-G-1690B, includes a range in distillation temperatures from 122 to 158 F at the 10-percent recovery point and from 365 to 374 F at the 90-percent recovery point. The Reid Vapor Pressure ranges from 9 to 15 psi. "Motor gasoline" includes finished leaded

gasoline, finished unleaded gasoline, and gasohol. Blendstock is excluded until blending has been completed. Alcohol that is to be used in the blending of gasohol is also excluded.

Finished Leaded Gasoline. Contains more than 0.05 gram of lead per gallon or more than 0.005 gram of phosphorus per gallon. Premium and regular grades are included, depending on the octane rating. Includes leaded gasohol. Blendstock is excluded until blending has been completed. Alcohol that is to be used in the blending of gasohol is also excluded.

Finished Unleaded Gasoline. Contains not more than 0.05 gram of lead per gallon and not more than 0.005 gram of phosphorus per gallon. Premium and regular grades are included, depending on the octane rating. Includes unleaded gasohol. Blendstock is excluded until blending has been completed. Alcohol that is to be used in the blending of gasohol is also excluded.

Gasohol. A blend of finished motor gasoline (leaded or unleaded) and alcohol (generally ethanol but sometimes methanol), limited to 10 percent by volume of alcohol.

Motor Gasoline Blending Components. Naphthas which will be used for blending or compounding into finished motor gasoline (e.g. straight-run gasoline, alkylate, and reformate). Excludes oxygenates (alcohols, ethers), butane, and pentanes plus. Oxygenates are reported as other hydrocarbons, hydrogens, and alcohol.

Naphtha. A generic term applied to a petroleum fraction with an approximate boiling range between 122 and 400 F.

Naphtha Less Than 401 F. See Petrochemical Feedstocks.

Naphtha-Type Jet Fuel. A fuel in the heavy naphtha boiling range. ASTM Specification D1655 specifies for this fuel maximum distillation temperatures of 290 F at the 20-percent recovery point and 470 F at the 90-percent point, meeting Military Specification MIL-T-5624L (Grade JP-4). JP-4 is used for turbojet and turboprop aircraft engines, primarily by the military. Excludes ramjet and petroleum rocket fuels.

Natural Gas. A mixture of hydrocarbons and small quantities of various nonhydrocarbons existing in the gaseous phase or in solution with crude oil in underground reservoirs.

Natural Gas Field Facility. A field facility designed to process natural gas produced from more than one lease for the purpose of recovering condensate from a stream of natural gas; however, some field facilities are designed to

recover propane, normal butane, pentanes plus, etc., and to control the quality of natural gas to be marketed.

Natural Gas Plant Liquids. Natural gas liquids recovered from natural gas in gas processing plants, and in some situations, from natural gas field facilities. Natural gas liquids extracted by fractionators are also included. These liquids are defined according to the published specifications of the Gas Processors Association and the American Society for Testing and Materials and are classified as follows: ethane, propane, normal butane, isobutane, pentanes plus, and other products from natural gas processing plants (i.e., products meeting the standards for finished petroleum products produced at natural gas processing plants, such as finished motor gasoline, finished aviation gasoline, special naphthas, kerosene, distillate fuel oil, and miscellaneous products).

Natural Gas Processing Plant. A gas processing plant is a facility designed (1) to achieve the recovery of natural gas liquids from the stream of natural gas which may or may not have been processed through lease separators and field facilities, and (2) to control the quality of the natural gas to be marketed. Cyclic plants are classified as gas processing plants.

Natural Gasoline and Isopentane. A mixture of hydrocarbons, mostly pentanes and heavier, extracted from natural gas, that meets vapor pressure, end-point, and other specifications for natural gasoline set by the Gas Processors Association. Includes isopentane which is a saturated branch-chain hydrocarbon, (C₅H₁₂), obtained by fractionation of natural gasoline or isomerization of normal pentane.

Net Receipts. The difference between total movements into and total movements out of each PAD District by pipeline, tanker, and barge.

Normal Butane. See Butane.

OPEC. The acronym for the Organization of Petroleum Exporting Countries, that have organized for the purpose of negotiating with oil companies on matters of oil production, prices and future concession rights. Current members are Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates, and Venezuela. The Neutral Zone between Kuwait and Saudi Arabia is considered part of OPEC.

Operable Capacity. The amount of capacity that, at the beginning of the period, is in operation; not in operation and not under active repair, but capable of being placed in operation within 30 days; or not in operation but under active repair that can be completed within 90 days. Operable capacity is the sum of the operating and idle

capacity and is measured in barrels per calendar day or barrels per stream day.

Operable Utilization Rate. Represents the utilization of the atmospheric crude oil distillation units. The rate is calculated by dividing the gross input to these units by the operable refining capacity of the units.

Operating Capacity. The component of operable capacity that is in operation at the beginning of the period.

Other Hydrocarbons. Materials received by a refinery and consumed as a raw material. Includes hydrogen, coal tar derivatives, gilsonite, oxygenates, and natural gas received by the refinery for reforming into hydrogen. Natural gas to be used as fuel is excluded.

Other Oils Equal To or Greater Than 401 F. See Petrochemical Feedstocks.

Oxygenates. Oxygenates include both alcohols and ethers used as octane boosting additives for gasoline (e.g., methyl tertiary butyl ether).

Pentanes Plus. A mixture of hydrocarbons, mostly pentanes and heavier, extracted from natural gas. Includes isopentane, natural gasoline, and plant condensate.

Petrochemical Feedstocks. Chemical feedstocks derived from petroleum principally for the manufacture of chemicals, synthetic rubber, and a variety of plastics. The categories reported are "Naphtha Less Than 401 F" and "Other Oils Equal To or Greater Than 401 F."

Naphtha Less Than 401 F. A naphtha with a boiling range of less than 401 F that is intended for use as a petrochemical feedstock.

Other Oils Equal To or Greater Than 401 F. Oils with a boiling range equal to or greater than 401 F that are intended for use as a petrochemical feedstock.

Petroleum Administration for Defense (PAD) Districts. Geographic aggregations of the 50 States and the District of Columbia into five districts by the Petroleum Administration for Defense in 1950. These districts were originally instituted for economic and geographic reasons as Petroleum Administration for War (PAW) Districts, which was established in 1942.

Petroleum Coke. A residue, the final product of the condensation process in cracking. This product is reported as marketable coke or catalyst coke. The conversion factor is 5 barrels per short ton.

Marketable Coke. Those grades of coke produced in delayed or fluid cokers which may be recovered as rela-

tively pure carbon. This "green" coke may be sold as is or further purified by calcining.

Catalyst Coke. In many catalytic operations (e.g., catalytic cracking) carbon is deposited on the catalyst, thus deactivating the catalyst. The catalyst is reactivated by burning off the carbon, which is used as a fuel in the refining process. This carbon or coke is not recoverable in a concentrated form.

Petroleum Products. Petroleum products are obtained from the processing of crude oil (including lease condensate), natural gas, and other hydrocarbon compounds. Petroleum products include unfinished oils, liquefied petroleum gases, pentanes plus, aviation gasoline, motor gasoline, naphtha-type jet fuel, kerosene-type jet fuel, kerosene, distillate fuel oil, residual fuel oil, petrochemical feedstocks, special naphthas, lubricants, waxes, petroleum coke, asphalt, road oil, still gas, and miscellaneous products.

Pipeline. Crude oil and product pipelines used to transport crude oil and petroleum products respectively, (including interstate, intrastate, and intracompany pipelines) within the 50 States and the District of Columbia.

Plant Condensate. One of the natural gas liquids, mostly pentanes and heavier hydrocarbons, recovered and separated as liquids at gas inlet separators or scrubbers in processing plants.

Processing Gain. The volumetric amount by which total output is greater than input for a given period of time. This difference is due to the processing of crude oil into products which, in total, have a lower specific gravity than the crude oil processed.

Processing Loss. The volumetric amount by which total refinery output is less than input for a given period of time. This difference is due to the processing of crude oil into products which, in total, have a higher specific gravity than the crude oil processed.

Product Supplied, Crude Oil. Crude oil burned on leases and by pipelines as fuel.

Production Capacity. The amount of product that can be produced from processing facilities.

Products Supplied. Approximately represents consumption of petroleum products because it measures the disappearance of these products from primary sources, i.e., refineries, natural gas processing plants, blending plants, pipelines, and bulk terminals. In general, product supplied of each product in any given period is computed as follows: field production, plus refinery production, plus

Imports, plus unaccounted for crude oil, (plus net receipts when calculated on a PAD District basis), minus stock change, minus crude oil losses, minus refinery inputs, minus exports.

Propane. A normally gaseous straight-chain hydrocarbon, (C₃H₈). It is a colorless paraffinic gas that boils at a temperature of -43.67 F. It is extracted from natural gas or refinery gas streams. It includes all products designated in ASTM Specification D1835 and Gas Processors Association Specifications for commercial propane and HD-5 propane.

Propylene. An olefinic hydrocarbon, (C₃H₆), recovered from refinery processes or petrochemical processes.

Refinery. An installation that manufactures finished petroleum products from crude oil, unfinished oils, natural gas liquids, other hydrocarbons, and alcohol.

Refinery Input, Crude Oil. Total crude oil (domestic plus foreign) input to crude oil distillation units and other refinery processing units (cokers, etc.).

Refinery Input, Total. The raw materials and intermediate materials processed at refineries to produce finished petroleum products. They include crude oil, products of natural gas processing plants, unfinished oils, other hydrocarbons and alcohol, motor gasoline and aviation gasoline blending components and finished petroleum products.

Refinery Production. Petroleum products produced at a refinery or blending plant. Published production of these products equals refinery production minus refinery input. Negative production will occur when the amount of a product produced during the month is less than the amount of that same product that is reprocessed (input) or reclassified to become another product during the same month. Refinery production of unfinished oils, and motor and aviation gasoline blending components appear on a net basis under refinery input.

Refinery Yield. Refinery yield (expressed as a percentage) represents the percent of finished product produced from input of crude oil and net input of unfinished oils. It is calculated by dividing the sum of crude oil and net unfinished input into the individual net production of finished products. Before calculating the yield for finished motor gasoline, the input of natural gas liquids, other hydrocarbons and alcohol, and net input of motor gasoline blending components must be subtracted from the net production of finished motor gasoline. Before calculating the yield for finished aviation gasoline, input of aviation gasoline blending components must be subtracted from the net production of finished aviation gasoline.

Residual Fuel Oil. The heavier oils that remain after the distillate fuel oils and lighter hydrocarbons are distilled away in refinery operations and that conform to ASTM Specifications D396 and 975. Included are No. 5, a residual fuel oil of medium viscosity; Navy Special, for use in steam-powered vessels in government service and in shore power plants; No. 6, which includes Bunker C fuel oil, and is used for commercial and industrial heating, electricity generation and to power ships. Imports of residual fuel oil include imported crude oil burned as fuel.

Residuum. Residue from crude oil after distilling off all but the heaviest components, with a boiling range greater than 1000 F.

Road Oil. Any heavy petroleum oil, including residual asphaltic oil used as a dust palliative and surface treatment on roads and highways. It is generally produced in six grades from 0, the most liquid, to 5, the most viscous.

Shell Storage Capacity. The design capacity of a petroleum storage tank which is always greater than or equal to working storage capacity.

Special Naphthas. All finished products within the naphtha boiling range that are used as paint thinners, cleaners, or solvents. These products are refined to a specified flash point. Special naphthas include all commercial hexane and cleaning solvents conforming to ASTM Specification D1836 and D484, respectively. Naphthas to be blended or marketed as motor gasoline or aviation gasoline, or that are to be used as petrochemical and synthetic natural gas (SNG) feedstocks are excluded.

Steam (Purchased). Steam, purchased for use by a refinery, that was not generated from within the refinery complex.

Still Gas (Refinery Gas). Any form or mixture of gases produced in refineries by distillation, cracking, reforming, and other processes. The principal constituents are methane, ethane, ethylene, normal butane, butylene, propane, propylene, etc. Still gas is used as a refinery fuel and a petrochemical feedstock. The conversion factor is 6,000 million BTU's per fuel oil equivalent barrel.

Stock Change. The difference between stocks at the beginning of the month and stocks at the end of the month. A negative number indicates a decrease in stocks and a positive number indicates an increase in stocks.

Strategic Petroleum Reserve (SPR). Petroleum stocks maintained by the Federal Government for use during periods of major supply interruption.

Sulfur. A nonmetallic element of lemon-yellow color, sometimes known as "brimstone".

Supply. The components of petroleum supply are field production, refinery production, imports, and net receipts when calculated on a PAD District basis.

Tank Farm. An installation used by gathering and trunk pipeline companies, crude oil producers, and terminal operators (except refineries) to store crude oil.

Tanker and Barge. Vessels that transport crude oil or petroleum products. In this publication, data are reported for movements between PAD Districts; from a PAD District to the Panama Canal; or from the Panama Canal to a PAD District.

Thermal Cracking. A refining process in which heat and pressure are used to break down, rearrange, or combine hydrocarbon molecules. Thermal cracking includes gas oil, visbreaking, fluid coking, delayed coking, and other thermal cracking processes (e.g., flexicoking). See individual categories for definition.

Toluene. An aromatic hydrocarbon, (C₆H₅CH₃), somewhat similar to benzene but of a higher boiling point produced in the coking of coal and also by petroleum refining processes. It is the basis of dyes, explosives, and aromatic compounds. Along with xylene, it is a key component in unleaded gasoline.

Unaccounted for Crude Oil. Represents the arithmetic difference between the calculated supply and the calculated disposition of crude oil. The calculated supply is the sum of crude oil production plus imports minus changes in crude oil stocks. The calculated disposition of crude oil is the sum of crude oil input to refineries, crude oil exports, crude oil burned as fuel, and crude oil losses.

Unfinished Oils. Includes all oils requiring further processing, except those requiring only mechanical blending. Includes naphthas and lighter oils, kerosene and light gas oils, heavy gas oils, and residuum. See individual categories for definition.

Unfractionated Streams. Mixtures of unsegregated natural gas liquid components excluding those in plant condensate. This product is extracted from natural gas.

United States. The United States is defined as the 50 States and the District of Columbia.

Vacuum Distillation. Distillation under reduced pressure (less the atmospheric) which lowers the boiling tempera-

ture of the liquid being distilled. This technique with its relatively low temperatures prevents cracking or decomposition of the charge stock.

Visbreaking. A thermal cracking process in which heavy atmospheric or vacuum-still bottoms are cracked at moderate temperatures to increase production of distillate products and reduce viscosity of the distillation residues.

Wax. A solid or semi-solid material derived from petroleum distillates or residues by such treatments as chilling, precipitating with a solvent, or de-oiling. It is light-colored, more-or-less translucent crystalline mass, slightly greasy to the touch, consisting of a mixture of solid hydrocarbons in which the paraffin series predominates. Includes all marketable wax whether crude scale or fully refined. The three grades included are microcrystalline, crystalline-fully refined, and crystalline-other. The conversion factor is 280 pounds per 42 U.S. gallons per barrel.

Microcrystalline Wax. Wax extracted from certain petroleum residues having a finer and less apparent crystalline structure than paraffin wax and having the following physical characteristics: Penetration at 77 F (D1321)-60 maximum. Viscosity at 210 F in Saybolt Universal Seconds (SUS). (D88)-60 SUS (10.22 centistokes) minimum to 150 SUS (31.8 centistokes) maximum. Oil content (D721)-5 percent minimum.

Crystalline-Fully Refined Wax. A light-colored paraffin wax having the following characteristics: Viscosity at 210 F (D88)-59.9 SUS (10.18 centistokes) maximum. Oil content (D721)-0.5 percent maximum. Other +20 color, Saybolt minimum.

Crystalline-Other Wax. A paraffin wax having the following characteristics: Viscosity at 210 F (D88)-59.9 SUS (10.18 centistokes) maximum. Oil content (D721)-0.51 percent minimum to 15 percent maximum.

Working Storage Capacity. The difference in volume between the maximum safe fill capacity and the quantity below which pump suction is ineffective (bottoms).

Xylene. An aromatic hydrocarbon, (C₆H₄(CH₃)₂), produced in petroleum refining (cracking) processes. One important use is as a solvent in the manufacture of paints. Along with toluene, it is a key ingredient in unleaded gasoline.

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