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THE COMMONWEALTH OF MASSACHUSETTS
DIVISION OF ENERGY RESOURCES

FINAL REPORT
NO. 2 HEATING OIL/PROPANE PROGRAM
1992/93

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Prepared by:

Joanne McBrien
Senior Policy Analyst
May, 1993

William F. Weld
Governor

Stephen J. Remen
Commissioner

MASTER

JP

INTRODUC

During the 1992-93 heating season, the Massachusetts Division of Energy Resources (DOER) participated in a joint data collection program between several state energy offices and the federal Department of Energy's (DOE) Energy Information Administration (EIA). The purpose of the program was to collect and monitor retail and wholesale heating oil and propane prices and inventories from October, 1992 through March, 1993.

This program augmented the existing Massachusetts data collection system and served several important functions. The information helped the federal and state governments respond to consumer, congressional and media inquiries regarding No. 2 oil and propane. The information also provided policy decision-makers with timely, accurate and consistent data to monitor current heating oil and propane markets and develop appropriate state responses when necessary. In addition, the communication network between states and the DOE was strengthened through this program.

This final report begins with an overview of the unique events which had an impact on the petroleum markets prior to and during the reporting period. Next, the report summarizes the results from residential heating oil and propane price surveys conducted by DOER over the 1992-93 heating season. The report also incorporates the wholesale heating oil and propane prices and inventories collected by the EIA and distributed to the states. Finally, the report outlines DOER's use of the data.

OVERVIEW

In retrospect, the 1992-1993 heating season was rather stable in terms of crude oil and petroleum product supplies and prices. To understand why, one must look at events which occurred prior to the 1992-93 heating season which set the stage for crude oil and petroleum product prices and inventories for the beginning of the 1992-93 heating season. In some cases, these events continued to affect the markets throughout the winter. In addition, one must consider other events which happened during the heating season such as, changes in winter weather, that also affected oil prices and supplies.

Some of the major events that influenced local and world oil markets before and during this past heating season were: Hurricane Andrew; world oil supply and demand; OPEC's production accords; and colder-than-normal winter weather.

As for propane supplies and prices, the Midwest experienced volatile swings. These changes were prompted mostly by surges in demand competing for crop drying and home heating. New England and Massachusetts propane inventories, demand, and prices, however, were quite stable.

I. Hurricane Andrew

This heating season could have ended in disaster before it even began. On Monday, August 24, 1992, Hurricane Andrew hit southern Florida and was predicted to sweep northward through the Gulf of Mexico and strike Louisiana and eastern Texas on August 25th or 26th. As a precautionary measure, many offshore gas and oil producers shut down operations and

evacuated workers from oil rigs and platforms in the Gulf of Mexico.

Minerals and Management Service officials in Washington, DC estimated that 37,500 offshore workers were evacuated from 700 oil and gas installations on the Gulf's Outer Continental Shelf. Gulf oil and gas wells there account for about 800,000 barrels per day (b/d) of oil and one fourth of total U.S. gas production.

In the wake of Hurricane Andrew, oil and gas refineries along the Gulf Coast were essentially spared major damage. Electrical power outages did hit a number of facilities; however, and electricity had to be restored before plant operations could resume. Gulf Coast refineries operated at only 82.7% of capacity the week after Hurricane Andrew. This was down 8% from the previous week when refinery utilization was at 89.3%.

The federal Department of Energy's assessment of the refinery industry damage was that interruptions of Gulf oil and gas production would be short term. Calvin Kent, Administrator of DOE's EIA, cautioned that warnings of possible winter fuel shortages because of damage Andrew inflicted on Gulf oil and gas facilities were "unjustifiably alarmist. "Even in the short term, there is additional onshore capacity that can be brought on line to help alleviate temporary problems." Kent said.

Overall, the oil markets reacted calmly to the situation because refineries in other parts of the U.S. could make up the difference in lost output. The markets also anticipated that

Fall refinery maintenance, which generally occurs in October, might just happen earlier.

By mid-October, the Mineral Management Service Agency's estimates placed production volumes still curtailed by Andrew at only 850-900 million cubic feet per day (MMcfd) of gas and 50,000-90,000 b/d of oil. Refinery utilization rates were back up to about 89%.

Although the Hurricane had a little affect on oil prices throughout this heating season, it somewhat influenced oil and natural gas markets in September. Thus, it was one of the underlying reasons why U.S. crude oil prices were at \$22 per barrel at the beginning of the heating season.

II. World Oil Supply and Demand

A major reason why the 1992-93 heating season was rather stable in terms of crude oil and petroleum product supplies and prices was that world oil supplies were adequate to meet demand.

Total world oil supply for 1992 averaged 66.89 million barrels per day (mb/d), a slight advance (.2%) above the 1991 average of 66.76 mb/d. World oil demand from 1991 to 1992 increased only .5% from an average of 66.56 mb/d to 66.89 mb/d.

Even though the 1992 total world oil supply/demand picture was balanced, it is interesting to note the changes in the supply mix over the past few years.

A. Decrease in C.I.S. Oil Production

One such change that continued from past years into the 1992-93 heating season was the decrease in the Commonwealth of Independent States' (C.I.S.) oil production.

Between 1991 and 1992, the former Soviet Union

politically disintegrated into separate republics, each wanting to control its own oil production. The lack of central control over oil production combined with a need to invest in upgrading and modernizing the aging oil infrastructure in those republics led to a considerable decline in oil production for the C.I.S.

Oil production which had averaged 12.14 mb/d in 1989 decreased to 11.40 mb/d in 1990 and 10.41 mb/d in 1991. Throughout 1992, production fell steadily with the first three quarters averaging 9.37 mb/d, 9.16 mb/d, and 8.69 mb/d, respectively. Basically, the decline eliminated approximately 1-2 mb/d of crude oil from world markets.

B. Boycott on Iraqi Oil Sales

Another event that shifted world oil supplies among the oil producing countries was the United Nations (U.N.) boycott of Iraqi oil sales.

The August 1990 Iraqi invasion of Kuwait led the U.N. to issue a resolution to boycott and block the sale of Iraqi oil into world oil markets. Prior to the war, Iraq was producing about 4.3 mb/d.

After the war, Iraq petitioned the U.N. to allow Iraq to export oil to get money for food and medical aid. The U.N. proposed plans which would have allowed Iraq to sell about \$1.6 billion worth of oil (approximately 500,000 b/d for six months). The U.N. wanted to establish an escrow account for reparations to countries and individuals damaged by Iraqi's invasion of Kuwait; payments for the U.N. to destroy Iraqi war weapons; and, money distribution to Iraq for food and other emergency items. The U.N. also wanted to name a special team

to monitor all aspects of Iraq's oil sales.

Iraq criticized these U.N. requirements as a violation of its sovereignty and rejected the proposed plans. Iraq, therefore, was banned from selling oil in world markets.

Despite Iraq's initial rejections, Iraq and the U.N. throughout 1991 and 1992 would periodically resume their discussions of terms under which Iraq would be permitted to restart oil exports. For example, Iraq and U.N. officials met in June, 1992 to discuss the situation. By that August, Iraq informed the U.N. verbally that oil export negotiations would never be resumed.

In 1992, Iraq was producing only about 400,000 b/d for its own internal needs and to supply neighboring Jordan. (Iraq's refinery capacity is about 590,000 b/d.)

C. Increases in Saudi Arabian Oil Production

Offsetting the declines in world oil supply was an increase in OPEC oil production. OPEC average production in 1989 was 23.53 mb/d. By 1992, that figure had increased to 26.30 mb/d. The approximate 3 mb/d increase made a substantial contribution toward the declines in oil from the former Soviet Union and Iraq.

Saudi Arabia, in particular, led OPEC into making up for lost oil supplies. In 1989, Saudi Arabia was producing about 5.06 mb/d. By 1992, Saudi production had increased to 8.44 mb/d.

In a similar move, though to a lesser degree, Iran also increased oil production during this period from 2.81 mb/d to 3.43 mb/d, an increase of 22%.

III. OPEC's Production Accords

In addition to adequate world oil supplies, a second reason why oil prices were not volatile this past winter was that oil markets did not over-react to OPEC's production accords.

A. The September 1992 Accord

In mid-September, OPEC reached a vague new agreement on oil production for the fourth quarter of 1992 that did not set a specific ceiling or individual country quotas. Instead, OPEC said it would keep OPEC production at 24.2 mb/d for "market share". Members with surplus capacity could provide more oil if markets needed it. OPEC's strategy considered that world oil markets would likely need 25.2 mb/d of OPEC oil during the fourth quarter. OPEC hoped the pact would help OPEC achieve a reference price of \$21 a barrel (based on a basket of crude oils) during the fourth quarter of 1992.

The oil markets tended to reject this accord as reports estimated that OPEC's actual output was already around 25 mb/d and that major cuts in OPEC production were needed to shore up oil prices.

B. Ecuador's Withdrawal from OPEC

Meanwhile, Ecuador announced in September that it would leave OPEC because the country was not gaining any benefits from its membership, and Ecuador's membership dues were \$2-3 million per year. In addition, Ecuador wanted to increase its oil exports free of OPEC production confines and quotas. With production at 32,000 b/d, Ecuador was one of the smallest of the 13 oil producing member countries. (By comparison, Saudi

Arabia produces about 8 mb/d.)

In October, however, Ecuador's president said no final decision had been made to pull out of OPEC. Later in November, the Energy Minister said Ecuador would leave in March, 1993. Ecuador did leave as of December 31, 1992. However, the markets did not react to this move as it reinforced to the markets that OPEC was not acting as a cohesive unit and probably was overproducing oil.

D. OPEC's November 1992 Meeting

Since oil markets had not responded to OPEC's September accord, OPEC ministers met again in November, 1992 to review the oil markets and make production cuts. The group agreed to a new ceiling for January - March, but made only minor cuts to their oil output.

Excluding Ecuador which was leaving the group at year end, OPEC's new ceiling was 24.582 mb/d as opposed to the 24.718 mb/d which the same group had produced in October.

Nevertheless, oil markets continued to doubt the strength of the production accord as reports circulated that Saudi Arabia was still opposing cuts. In addition, Iran stated that Iran was working toward its own production target of 5 mb/d by March of 1994. This would be an increase from its current 3.2 mb/d.

E. OPEC's February 1993 Production Accord

Throughout December and January, OPEC countries talked about wanting and needing production cuts aimed at shoring up sagging crude oil prices. At their February, 1993 meeting, OPEC countries voted to cut second quarter 1993 production

quotas to 23.582 mb/d. This was down 859,000 mb/d from the first quarter in 1993. In addition, the new quotas would start May 1, 1993 instead of June 1st. Even so, markets reacted negatively to this accord as there was disbelief that OPEC production would actually be cut.

IV. Winter Weather

Heating fuel demand is typically a function of supply, price, and the weather. Unlike the warmer-than-normal heating seasons of the past few years, the 1992-93 heating season was cold.

As measured in heating degree days, Boston, Massachusetts, for example, started out 50% colder than the previous year's and 51% colder than the 30-year normal average. Throughout the winter, Massachusetts experienced above normal temperatures. (See Table I.)

These events influenced the price and supplies of crude oil and petroleum products for the beginning of the 1992-93 heating season. The next section describes prices and supplies in October and how they changed over the heating season.

OIL SURVEY RESULTS

I. World Crude Oil Prices

World crude oil prices averaged about \$19 per barrel in October, as the heating season began. By November, prices slipped \$1 per barrel to \$18. The decrease was mainly due to the oversupply of crude oil on world markets and sluggish demand. (This scenario remained throughout most of the winter.)

Prices continued to slide downward throughout November as Iraq requested to speak to the U.N. again about resuming oil exports. Such exports would have contributed even more oil onto the already oversupplied world oil markets. However, Iraq did not start exporting oil. Even OPEC's November agreement to make minor production cuts could not halt the decline in world oil prices.

By January, prices were about \$16.50 per barrel. In fact, oil markets failed to react to the U.S. and allied bombing of missile sites in southern Iraq in mid-January. (The allied bombing had followed weeks of provocations and cease-fire violations by Iraq.) The bombing was over quickly and Iraq backed off.

In February, prices rebounded slightly because of the anticipation of significant OPEC production cuts which OPEC was suppose to announce at its February meeting. Although cuts were proposed, prices increased only to \$17-17.50 per barrel and remained there throughout February and March. (See Table II.)

II. West Texas Intermediate Crude Oil Prices

U.S. crude oil prices, as measured by West Texas

Intermediate oil, followed the same trends as the world crude oil prices.

Prices started out at \$22 per barrel in October and fell to \$20 per barrel in November. In December, prices hovered around \$19 per barrel. In January, after the allied bombing of Iraq, prices actually declined to \$18.63 per barrel, but rebounded the next week to \$20.26 per barrel. By the end of the survey, prices were about \$20 per barrel. (See Table II.)

III. U.S. Crude Oil Inventories

At approximately 324 million barrels the first week of October, U.S. crude oil inventories were low compared to more typical October levels of 340 million barrels. In fact, crude oil inventories were at historic lower levels until February when levels were about the normal February level of 340 million barrels.

U.S. Crude Oil Inventories monthly average (millions of barrels)

	<u>1991-92</u>	<u>1992-93</u>
October	342.2	332.5
November	343.5	324.8
December	324.6	318.0
January	341.2	325.6
February	346.3	332.4
March	338.6	340.4

IV. U.S. Crude Oil Imports

One reason why lower crude oil supplies were maintained was that crude oil imports were high and made up the difference for crude oil inventories. In October, crude oil imports averaged 6.6 mb/d, an increase of 16% over the 5.5 mb/d in 1992 and up 29.4% over the 5.1 mb/d of October 1991. Throughout the

1992-93 winter, crude oil imports were higher than in the previous winter.

U.S. Crude Oil Imports
monthly average
(million barrels)

	<u>1991-92</u>	<u>1992-93</u>
October	5.7	6.6
November	5.5	6.1
December	5.6	5.9
January	5.9	6.3
February	5.0	6.3
March	5.3	6.3

V. U.S. Distillate Inventories

Although crude oil inventories were lower than the previous year, U.S. distillate inventories were adequate. This was because crude oil inputs to refineries were in the normal range.

U.S. Distillate Inventories
monthly average
(millions of barrels)

	<u>1991-92</u>	<u>1992-93</u>
October	138.3	136.7
November	144.5	146.1
December	143.5	140.6
January	126.7	130.2
February	108.5	118.5
March	97.7	100.7

VI. New England Distillate Inventories

Distillate inventories in New England were higher throughout this heating season than they had been during previous years, and remained at higher levels throughout the second half of the winter.

New England Distillate Inventories
monthly average
(millions of barrels)

	<u>1990-91</u>	<u>1991-92</u>	<u>1992-93</u>
October	10.6	11.0	11.9
November	9.7	11.8	11.5
December	8.3	9.9	9.9
January	5.4	7.3	10.0
February	3.6	6.6	9.6
March	3.5	4.5	6.7

VII. No. 2 Fuel Oil Demand

Despite colder weather this heating season, Massachusetts demand for No. 2 fuel oil fell by approximately 12.6% from last year. This same trend occurred in New England and the United States. (See Table III.)

Taking a closer look at Massachusetts sectors that use No. 2 fuel, shows that between 1989 and 1991, the largest drops in demand were in the residential, industrial and electric utility sectors. (DOER expects that this trend continued in 1992.)

Sales of No. 2 Fuel by End Use
(thousands of gallons)

	1989	1990	1991
Residential	990,640	889,342	816,084
Commercial	261,552	219,182	267,306
Industrial	77,423	60,477	19,522
Farm	2,182	3,212	3,633
Electric	20,113	38,007	7,777

VIII. Massachusetts Wholesale Heating Oil Prices

Wholesale and retail heating oil prices are generally determined by the price of crude oil. During this heating season, wholesale heating oil prices followed the same trend as that of crude oil.

Using wholesale prices provided by EIA, one can see that

wholesale heating oil prices were at 67.6¢ per gallon on October 15th. Just as crude oil prices declined, so did wholesale heating oil prices. By November 16th, prices were at 63.7¢ per gallon, a drop of about 4¢ per gallon. West Texas Intermediate crude oil prices dropped about \$2 per barrel during that time period. (For every \$1 per barrel drop in crude prices, wholesale prices drop about 2.5¢ per gallon.)

Wholesale prices rebounded in late December and early January to about 62¢ per gallon. This was due to more localized events such as an increase in demand due to cold winter weather, as opposed to any world market events.

In January, prices fell back to 59¢ per gallon and then started climbing, as did world oil prices, in February and March. The survey period with prices at 62.2¢ per gallon.

IX. Massachusetts Retail Heating Oil Prices

Unlike wholesale heating oil prices which changed slightly as crude oil prices changed, Massachusetts retail heating oil prices remained almost constant throughout this survey period. In fact, Table IV shows that the weighted average of retail heating oil prices was 97-98¢ per gallon throughout the winter, resulting in one of the most stable retail heating oil price periods in years.

PROPANE SURVEY RESULTS

I. U.S. Propane Inventories

Like other heating fuels, propane is used more in the Winter than the Summer. Consequently, inventories are built up during July through September.

This heating season, U.S. propane stocks were at historic high levels in October, averaging about 58 million barrels as compared to 51 million barrels in October, 1991 and 53 million barrels in October, 1990.

By December, propane stocks were dropping sharply and continued to fall to historic low levels throughout the remainder of the survey period. December's monthly average of 38.8 million barrels was down 24% from November's 50.8 million barrel average. January saw an additional decline of 14% from the December average. In March, U.S. propane inventories at 21.7 million barrels were far below the "observed minimum" level of 29.8 million barrels.

II. Midwest Propane Inventories

The decline in U.S. propane inventories resulted from a major drop in propane stocks in the Midwest. Average monthly propane stock figures for the Midwest show a decline of 46% from October to December, 21.5 million barrels down to 11.6 million barrels. The inventory decline continued January - March. Midwest stocks ended up 48% less than the previous year's level. (See Table V.)

According to DOE/EIA reports, the dramatic decline was caused by a large, late, and wet corn harvest, which resulted in unusually high and late demand for propane for crop drying,

combined with colder-than-normal weather.

III. New England Propane Inventories

New England uses far less propane than the Midwest. New England propane stocks in October were .3 million barrels, down slightly from the .4 million barrels in October 1991. Stocks remained at .5 million barrels in November - January. This level was very normal for New England.

IV. Propane Demand

Propane demand in the Midwest increased substantially in October through December. The comparison of this time period with the previous year shows an increase in demand of 42.4%. In fact, December's demand was 40% higher than demand in December 1991. (See Table VI.)

New England and Massachusetts, on the other hand, showed no growth in demand.

V. Propane Wholesale Prices

Propane prices are affected by crude oil prices because propane is produced at refineries along with other petroleum products in addition to being produced at natural gas processing plants. But propane prices are also influenced by markets other than heating fuel markets. For example, propane is used for crop drying in the Midwest.

As previously mentioned, the Midwest experienced a huge demand for propane in December and January for crop drying and as a home heating fuel. The surge in demand led to an increase of about 21¢ per gallon from October to January in Midwest propane wholesale prices. Prices were about 38¢ per gallon in

October and 59¢ per gallon by mid-January. (See Table VII.)

The increases in prices in the Midwest were for spot market product and prompt delivery as well as additional transportation charges for propane from other areas. There was speculation that the high prices in the Midwest would cause propane prices in other parts of the country to increase as markets moved product to meet the surge in demand. The increase did not materialize in New England. And, the sharp rise in demand in the Midwest lasted only a couple of weeks.

On the East Coast, wholesale prices increased only slightly during the same period. This winter, prices fluctuated between 45¢ per gallon, down to 39¢ per gallon, and up again to 43¢ per gallon. (See Table VII.) Prices were stable mainly because most dealers contract with suppliers for propane in the Summer months and can lock in their prices. Also, demand for propane in New England was relatively flat.

IV. Propane Retail Propane Prices

In the Midwest, retail prices followed the wholesale price increases. Retail prices increased from 69.5¢ per gallon in October to 94¢ per gallon in mid-January, a jump of 24.5¢ per gallon. By the end of the survey, prices had declined to 79.2¢ per gallon.

With adequate inventories and stable wholesale prices, Massachusetts' retail propane prices were also stable. Prices started out at \$1.147 in October and increased throughout the heating season to \$1.178 in April, an increase of 3¢ per gallon.

MASSACHUSETTS' ACTIONS

As each heating season begins, DOER receives many consumer requests for a comparison of prices for heating a home with No. 2 heating oil, natural gas and electricity. This heating season was no different. With the information DOER collected through this program, DOER was able in December to send out a press release which showed the cost comparisons. Although DOER's analysis showed that No. 2 oil was the cheapest fuel, DOER stressed in its press release that many factors affect home heating costs and that consumers, when making fuel choices, should consider items such as heating equipment efficiencies, current and future fuel availability, environmental impacts, and appropriate sizing of the heating system. DOER also included a Checklist of Winter Energy Saving Tips.

Over the years that DOER has participated in this program, more and more business people, utility companies, oil co-operatives, etc. have called DOER on a regular basis for the retail oil price information. The information collected through this program has also helped DOER to respond to information requests from the general public and the media. In addition to releasing the data through press releases, DOER has also established a toll free hotline so that consumers can call for current retail heating oil data.

CONCLUSION

The Massachusetts Division of Energy Resources continues to find this joint data collection program to be an integral and important part of DOER's consumer energy awareness program and its energy emergency program. The consistent collection of data provided an "early warning" system to key decision-makers. Monitoring the trends in the heating oil and propane markets also gave DOER the information to assist consumers in making purchasing decisions.

In conclusion, DOER advocates for the continuation of this program.

Table I.

Population Weighted Heating Degree Days

Boston

<u>July 1 -</u>	<u>1992-93</u>	<u>1991-92</u>	<u>Normal</u>	1992-93 vs <u>1991-92</u>	1992-93 vs <u>normal</u>
10/10	249	166	165	+50	+51
10/17	310	249	236	24	31
10/31	549	397	416	38	32
11/14	856	692	652	24	31
12/05	1336	1122	1145	19	17
12/19	1761	1511	1575	17	12
01/02	2208	1946	2050	13	8
01/16	2650	2374	2540	12	4
01/30	3099	2918	3041	6	2
02/13	3632	3461	3537	5	3
02/27	4168	3820	4005	9	4
03/13	4590	4221	4421	9	4
03/20	4848	4474	4605	8	5

Population Weighted Heating Degree Days

United States

<u>July 1 -</u>	<u>1992-93</u>	<u>1991-92</u>	<u>Normal</u>	1992-93 vs <u>1991-92</u>	1992-93 vs <u>normal</u>
10/10	191	159	148	+20	+29
10/17	250	223	203	12	23
10/31	414	350	357	18	16
11/14	660	661	580	0	14
12/05	1112	1068	1032	4	8
12/19	1478	1389	1406	6	5
01/02	2208	1946	2050	13	8
01/16	2241	2107	2253	6	-1
01/30	2624	2517	2688	4	-2
02/13	2985	2892	3100	3	-4
02/27	3445	3165	3478	9	-1
03/13	3780	3406	3808	11	-1
03/20	3973	3568	3954	11	0

Table II.
Crude Oil Prices
(\$ per barrel)

<u>Week Ending</u> <u>1992-1993</u>	<u>World Prices</u>	<u>U.S. Prices</u>
October 9	\$19.11	\$22.36
16	19.44	22.29
23	19.20	21.05
30	18.51	20.68
November 6	18.19	20.30
13	18.19	20.06
20	18.04	20.35
27	17.82	20.22
December 4	17.52	18.96
11	16.99	19.11
18	16.89	19.75
25	17.10	19.88
Janaury 1	16.86	19.47
8	16.38	18.90
15	16.07	18.95
22	15.71	18.63
29	16.52	20.26
February 5	16.99	20.30
12	17.07	19.98
19	16.77	19.67
26	17.30	20.63
March 5	17.58	20.92
12	17.60	20.37
19	17.33	20.07
26	17.11	20.41

Table III.

No. 2 Fuel Oil Demand
(thousands of gallons)

United States

	<u>1989-90</u>	<u>1990-91</u>	<u>1991-92</u>	<u>1992-93</u>
October	1,772,536	1,653,760	1,651,213	1,737,374
November	1,940,293	1,788,683	1,686,136	1,777,831
December	2,870,799	1,934,646	2,126,533	2,275,721
January	2,232,820	2,526,873	2,457,636	2,000,463
February	2,019,891	1,927,664	2,042,114	2,027,481
March	1,926,913	1,897,337	2,028,773	N/A

New England

	<u>1989-90</u>	<u>1990-91</u>	<u>1991-92</u>	<u>1992-93</u>
October	231,432	172,201	207,826	205,525
November	312,579	278,634	264,321	268,541
December	581,451	338,263	409,443	398,034
January	499,158	475,790	496,551	395,647
February	484,996	324,701	380,565	420,998
March	367,287	334,751	408,296	N/A

Massachusetts

	<u>1989-90</u>	<u>1990-91</u>	<u>1991-92</u>	<u>1992-93</u>
October	75,796	71,126	84,989	71,299
November	150,100	115,731	112,131	100,147
December	257,257	130,047	186,888	162,321
January	232,447	182,946	221,950	156,427
February	222,408	136,072	144,198	165,710
March	166,666	145,864	194,709	N/A

Table IV.

Massachusetts Retail and Wholesale
Heating Oil Prices
(\$ per gallon)

Date 1992/93	High	Low	Straight Average	Weighted Average	Wholesale	Margin
<u>DOER's Survey</u>						
07/20/92	\$1.069	.840	.973	N/A	.6333	.3397
08/07/92	1.069	.779	.974	N/A	.6264	.3476
08/31/92	1.069	.779	.973	N/A	.6189	.3541
09/14/92	1.069	.840	.978	N/A	.6499	.3281
09/30/92	1.069	.840	.989	N/A	.6654	.3236
10/19/92	1.069	.870	1.005	N/A	.6834	.3216
11/02/92	1.090	.870	1.007	N/A	.6404	.3666
11/19/92	1.090	.870	1.006	N/A	.6082	.3978
11/30/92	1.090	.870	1.005	N/A	.6035	.4015
12/22/92	1.090	.870	1.005	N/A	.5964	.4086
01/11/93	1.090	.870	1.003	N/A	.5718	.4312
02/08/93	1.090	.870	1.008	N/A	.6041	.4039
02/23/93	1.090	.870	1.008	N/A	.5972	.4108
03/08/93	1.090	.870	1.012	N/A	.6292	.3828

DOER/EIA Survey

10/15/92	1.059	.799	.963	.975	.676	.299
10/19/92	1.059	.799	.986	.989	.697	.292
11/02/92	1.059	.759	.983	.988	.664	.324
11/16/92	1.059	.759	.975	.981	.637	.344
12/07/92	1.059	.749	.969	.973	.599	.374
12/21/92	1.039	.749	.972	.973	.622	.351
01/04/93	.973	.749	.973	.978	.624	.354
01/18/93	.971	.749	.971	.976	.592	.384
02/01/93	.968	.749	.968	.974	.597	.377
02/15/93	.967	.735	.967	.973	.601	.372
03/01/93	.971	.735	.971	.973	.624	.349
03/15/93	.945	.735	.945	.983	.622	.361

DOER/EIA Survey

Weighted
Retail

Wholesale

10/15/92	.975	.676
10/19/92	.989	.697
11/02/92	.988	.664
11/16/92	.981	.637
12/07/92	.973	.599
12/21/92	.973	.622
01/04/93	.978	.624
01/18/93	.976	.592
02/01/93	.974	.597
02/15/93	.973	.601
03/01/93	.973	.624
03/15/93	.983	.622

Table V.

U.S. Propane Inventories
monthly averages
(millions of barrels)

	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>
January	45.1	33.5	34.8	38.9	33.5
February	36.4	33.2	29.9	33.1	29.7
March	32.3	33.1	29.5	32.6	21.7
April	36.7	32.1	29.5	36.2	23.1
May	43.9	36.2	35.0	43.7	
June	49.6	45.0	41.6	50.2	
July	56.5	50.1	48.0	55.7	
August	60.4	54.2	50.4	59.3	
September	59.0	57.2	51.6	60.8	
October	53.9	54.7	51.2	58.1	
November	48.2	53.8	52.0	50.8	
December	31.5	48.9	46.9	38.8	

Midwest (PADD II) Propane Inventories
monthly averages
(millions of barrels)

	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>
January	15.4	11.4	12.9	14.3	10.7
February	10.6	10.6	11.1	12.9	8.3
March	9.1	10.7	11.7	13.4	6.6
April	11.5	11.4	13.8	15.3	7.9
May	14.1	13.6	17.1	18.4	
June	16.6	16.1	20.2	20.9	
July	19.5	18.0	21.8	23.4	
August	20.5	18.4	23.3	24.5	
September	19.6	20.2	22.9	24.6	
October	16.8	18.6	22.6	21.5	
November	14.8	19.2	20.3	16.3	
December	9.5	17.9	17.7	11.6	

New England Propane Inventories
monthly averages
(millions of barrels)

	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>
January	.4	.2	.5	.3	.5
February	.2	.1	.3	.5	.5
March	.3	.3	.3	.4	.2
April	.4	.1	.6	.3	.4
May	.2	.2	.2	.3	
June	.6	.5	.4	.3	
July	.7	.3	.3	.3	
August	.4	.1	.1	.5	
September	.3	.4	.4	.5	
October	.1	.4	.4	.3	
November	.3	.6	.4	.5	
December	*	.5	.5	.5	

Table VI.

Midwest (PADD II) Propane Demand
(thousands of gallons)

	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>
Jan	482,807	407,041	561,167	473,288	488,837
Feb	497,345	371,677	359,063	378,053	458,242
Mar	419,173	326,173	297,179	319,022	
Apr	227,728	232,298	211,039	250,367	
May	185,916	178,024	180,524	202,797	
June	203,650	187,112	177,084	204,399	
July	180,273	215,201	243,588	252,180	
Aug	264,037	304,244	260,984	276,645	
Sept	303,504	282,756	335,080	329,229	
Oct	429,295	409,592	349,804	464,444	
Nov	403,100	377,749	377,266	580,578	
Dec	592,846	463,977	433,424	607,604	

New England Propane Demand
(thousands of gallons)

	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>
Jan	30,390	30,069	36,858	30,247	27,201
Feb	28,807	20,678	26,496	27,397	28,450
Mar	27,083	22,908	21,522	21,959	
Apr	17,538	16,980	16,795	16,985	
May	14,444	12,544	13,765	14,313	
June	11,087	13,117	11,119	N/A	
July	10,705	11,050	11,610	11,778	
Aug	13,576	11,644	12,621	12,102	
Sept	14,745	15,634	13,427	12,644	
Oct	16,772	15,825	15,677	15,326	
Nov	19,662	18,243	18,739	19,095	
Dec	24,315	20,672	25,272	25,317	

Massachusetts Propane Demand
(thousands of gallons)

	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>
Jan	9,134	9,931	10,153	5,408	6,683
Feb	9,902	6,842	8,891	7,175	8,144
Mar	8,801	6,858	6,095	6,104	
Apr	5,381	5,707	4,915	4,901	
May	4,473	2,947	4,318	4,433	
June	3,308	4,980	3,242	N/A	
July	4,310	3,832	3,477	3,758	
Aug	4,229	3,883	3,338	3,760	
Sept	3,970	4,745	3,746	3,559	
Oct	5,180	5,107	4,432	4,453	
Nov	5,416	5,230	5,477	4,944	
Dec	7,183	5,920	6,429	7,093	

Table VII.

Massachusetts Retail Propane Prices
and
East Coast Wholesale Propane Prices
(\$ per gallon)

Massachusetts Retail

East Coast Wholesale

Date
1992-93

	<u>High</u>	<u>Low</u>	<u>Weighted Ave.</u>	
10/05	\$1.49	\$1.03	\$1.147	\$.455
10/19	1.50	.98	1.150	.447
11/02	1.53	.98	1.153	.432
11/16	1.51	.98	1.154	.420
12/07	1.51	.98	1.156	.392
12/21	1.51	.98	1.157	.402
01/04	1.51	.98	1.156	.413
01/11	1.51	.98	1.159	.428
01/18	1.53	1.00	1.168	.431
01/25	1.56	1.00	1.173	.413
02/01	1.56	1.00	1.173	.411
02/15	1.66	1.00	1.174	.404
03/01	1.57	1.00	1.176	.429
03/15	1.57	1.00	1.178	.428
04/05	1.57	1.00	1.178	.437
04/19	1.57	1.00	1.175	.430

East Coast Wholesale

Midwest Wholesale

Date
1992-93

10/05	\$.455	\$.377
10/19	.447	.372
11/02	.432	.371
11/16	.420	.385
12/07	.392	.374
12/21	.402	.418
01/04	.413	.459
01/11	.428	.586
01/18	.431	.541
01/25	.413	.415
02/01	.411	.411
02/15	.404	.365
03/01	.429	.548
03/15	.428	.414
04/05	.437	.392
04/19	.430	.376

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**DATE
FILMED**

9/21/93

END