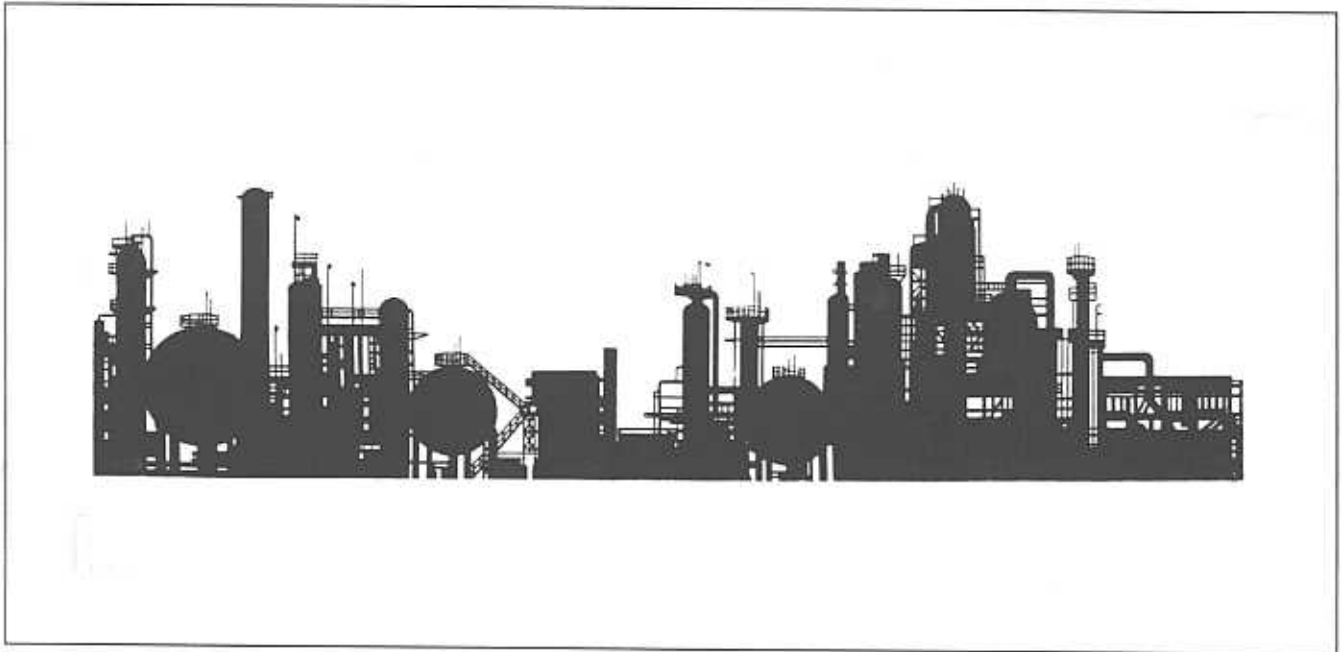


LOUISIANA CRUDE OIL REFINERY SURVEY REPORT

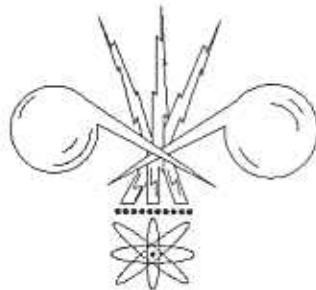
Sixth Edition

November 1994 Survey

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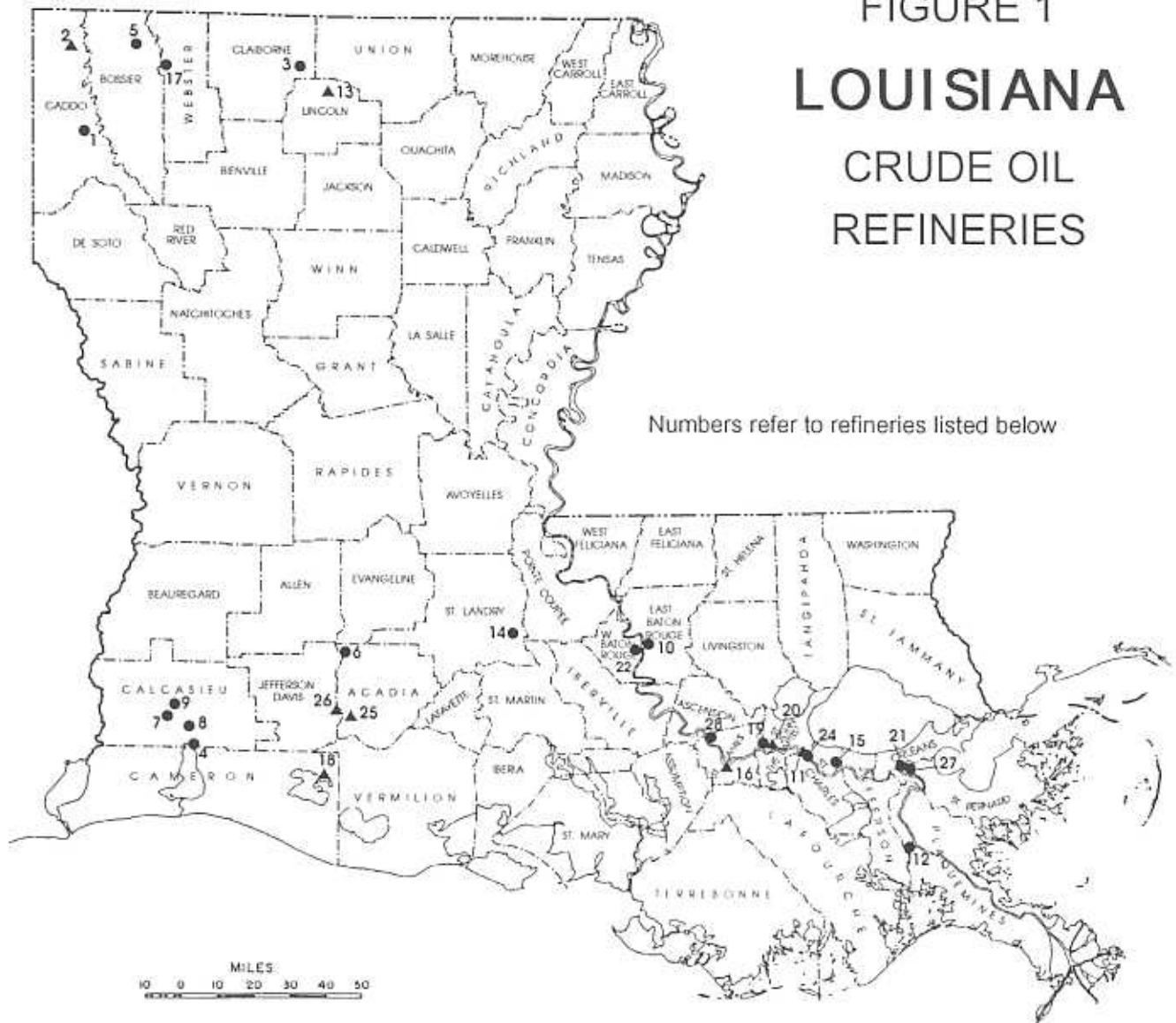
FOREWORD

Since 1989 the Technology Assessment Division of the Louisiana Department of Natural Resources (DNR) has periodically conducted a survey of Louisiana crude oil refineries. The results of the survey are compiled into a report focusing on developments that have occurred since the previous survey. These include an overview of the general direction of the industry and updated information on the current status of refinery ownership, mailing addresses, operating status and key personnel. Tabulated statistical data, charts, and graphs relating to oil production, refinery crude oil sources, refinery margins, capacities, operating rates, and product slate are also presented. Information on both operating and non-operating refineries that are still intact is included. The last survey was taken in October 1993, and the report was published in November 1993.

The information contained in the annual Technology Assessment Division report is designed to complement the information presented in the refinery section of the Department of Energy/Energy Information Administration (DOE/EIA) Petroleum Supply Annual published in late May or early June of each year for the previous calendar year. The period covered by DNR is the twelve months ending June 30, so this report is countercyclical to the DOE/EIA report. The operating refineries capacities, operating rates, and product slate statistics presented in this report are prepared from data supplied by survey respondents. The information on the non-operating refineries is obtained from their owners, trustees, and management personnel and is current within a few weeks of publication. The data used to construct the charts and graphs on oil production, refinery margins, and crude oil sources is obtained from DNR's database.

The Department of Natural Resources uses the information in the report to enhance the economic development efforts of the State by developing information on State and Federal energy policies that affect the oil and gas production and refining industries located in the State, helping crude suppliers locate refining sources and refined petroleum product buyers locate sources of supply, assisting new industries desiring to site facilities near refineries, and providing information to parties evaluating refineries for possible purchase.

FIGURE 1
LOUISIANA
 CRUDE OIL
 REFINERIES



Technology Assessment Division

OPERATING REFINERIES ●

- 1 Atlas Processing Co./Div. Pennzoil/Shreveport
- 3 Arcadia Refining & Marketing Co. L.P./Lisbon
- 4 Calcasieu Refining Company/Lake Charles
- 5 Calumet Lubricants Co., L.P./Princeton
- 6 Canal Refining Co./Church Point
- 7 Gold Line Refining, Ltd./Lake Charles
- 8 CITGO Petroleum Corp./Lake Charles
- 9 Conoco Inc./Lake Charles
- 10 Exxon Co., U.S.A./Baton Rouge
- 12 B.P. Oil Co./Belle Chasse
- 14 Phibro Energy U.S.A./Krotz Springs
- 15 St. Rose Refining Co./St. Rose
- 17 Kerr-McGee Refining Corp./Colton Valley
- 19 Marathon Oil Co./Garyville
- 21 Murphy Oil U.S.A., Inc./Meraux
- 22 Placid Refining Co./Port Allen
- 24 Shell Oil Co./Norco
- 27 Mobil Oil Corp./Chalmette
- 28 Star Enterprise/Convent

NON-OPERATING REFINERIES ▲

- 2 Bayou State Oil Corp./Hosston
- 11 TransAmerican Refining Co./Norco
- 13 Arcadia Refining & Marketing Co. L.P./Dubach
- 16 Texas NAPCO, Inc./St. James
- 18 Tina Resources, Inc./Talen's Landing
- 20 Petroleum Fuel & Terminal Co./Mt. Airy
- 25 Britt Processing & Refining Co./Egan
- 26 Gold Line Refining, Ltd./Jennings

Note: Numbers 23 and 29 have been intentionally removed from the non-operating refinery list because they have been dismantled and the process equipment removed from the site.

DISCUSSION

While the burden of environmental and safety regulations was again a major concern voiced by survey respondents, they indicated that their primary focus now is more toward strategies to improve profitability. Some refineries are increasing crude capacity, and others are undertaking major process reconfigurations to improve efficiency or alter their product mix to include more higher value products.

Major projects geared to the deadlines imposed by the Clean Air Act Amendments of 1990 have been completed. Ten of Louisiana's 19 operating refineries are producing reformulated gasoline (RFG) for sale in those markets where the EPA has mandated its use on January 1, 1995. None of these areas are in Louisiana. Some refineries are making only one grade of RFG until they see how the market materializes. Others are making more grades, up to 20, out of a total possible of 24. This is creating a formidable logistical challenge for the refineries and pipelines that must store and transport up to twice as many grades of gasoline under the new regulations.

For the twelve month period ending June 30, 1994, total Louisiana refinery operating capacity and operating rates increased slightly. While there were some changes in the product mix of individual refineries, the overall mix remained about the same. There is a clear trend toward less mid-grade gasoline production over the past four years. Depending on how the market for RFG develops, the percentage of each grade of gasoline could change considerably. Crude capacity, operating rates, and product slate for each operating refinery are shown in Table 1. Tables 2 and 3 provide additional complementary information on downstream charge and production capacity.

Two operating and two non-operating refineries changed ownership during the period. The new owners are evaluating their options to best utilize these assets. One refinery ceased operation, and two non-operating refineries were dismantled and their equipment sold and removed from the site.

Operating Refineries

The total operating capacity of 2,345,664 barrels per calendar day (bcd) reported is slightly higher than the 2,328,264 bcd reported in our October 1993 survey. The overall operating rate improved from 91.2% to 92.2%. This compares with the Texas Gulf Coast rate of 90.9% and the national rate of 93.7%. The graph of Figure 2 plots the overall operating rates of Louisiana refineries as compared to Texas Gulf Coast refineries and U.S. refineries beginning with the first DNR survey in September 1989. Figure 3 shows the trend of Louisiana and U.S. operating capacity from 1947-1993.

Louisiana refineries continue to obtain most of their crude supply from outside the state as oil production within the state continues to decline. Only about 21% comes from Louisiana. This trend is depicted in the graph of Figure 4, which shows Louisiana refinery operable capacity and oil production since 1900. Of the outside sources supplying crude to Louisiana refineries, foreign countries provide the most at 56%, the OCS is next at 16%, and other states at 7%. Figure 5 shows the historical sources of crude oil for Louisiana refineries for the period 1981-1993. Generally, the smaller refineries use a greater percentage of Louisiana crude than the large refineries to satisfy their total requirements. Figure 6 shows the percentage crude source for each Louisiana refinery for 1993.

Through August of 1994 the Gulf Coast Refinery Margin reached its peak of \$2.77/bbl in February, and then steadily declined to a low of -\$0.14/bbl in July. However, in

August it rebounded to \$1.51/bbl. Figure 7 shows the yearly margins for the period 1976-1993, and monthly for 1994 through August.

In May, Dallas-based Arcadia Refining and Marketing Co. purchased the Dubach Gas Company refinery at Lisbon from Dubach's parent company, Cornerstone Natural Gas Company, also of Dallas. If financing can be secured, Arcadia plans to increase the capacity of the 8,500 bcd refinery to 12,500 bcd by mid-1995. Arcadia also purchased the refining assets of Dubach's Dubach plant, but has no immediate plans to utilize them. The Dubach plant also consists of a gas liquids fractionating plant, which is presently owned and operated by Cornerstone as Dubach Gas Co. The plant stopped taking crude as of July 1, 1993, and has been reclassified by DNR as a non-operating refinery.

In February, Phibro sold its St. Rose refinery to Enjet of Houston, an oil trading company like Phibro. The refinery is a subsidiary of Enjet doing business as St. Rose Refinery, Inc. If economic conditions are favorable, the 40,000 bcd refinery may be expanded to 50,000 bcd. Enjet has no other refineries.

With major environmental and safety projects mandated by regulations now complete, a number of refineries are turning their attention to projects that can contribute to profits. Atlas Processing, a wholly owned subsidiary of Pennzoil Products Co., has announced plans to construct a \$200 million complex to convert the Shreveport refinery's lube oil by-products into clean burning gasoline and diesel fuels. The project will not result in an increase in crude capacity; nor will the refinery produce RFG. Work is to begin in the spring of 1995.

The crude capacity of the Princeton refinery of Calumet Lubricants Co. L.P. will be expanded from 7000 bcd to 8000 bcd in 1995. In 1991 it was expanded from 4200 bcd to 6000 bcd, and in 1993 it was expanded again to 7000 bcd.

While CITGO has no large expansions scheduled for its Lake Charles refinery in 1995, an increase in capacity from 295,000 bcd to 333,000 bcd is in the conceptual stage for the 1997-1998 time frame. If implemented, the increased capacity would enable the refinery to run a heavier crude for feedstock.

Conoco has increased the capacity of its Westlake refinery from 178,000 bcd to 195,500 bcd, and is participating in a 50-50 joint venture with Pennzoil Products Co. to build a \$500 million lube oil plant adjacent to Conoco's refinery. Separately, Conoco will spend another \$250-\$300 million to boost the refinery's crude processing capability. The projects should be completed in 1997.

Other refineries that increased their operating capacities since our last survey are: Exxon—from 421,000 bcd to 424,000 bcd; Gold Line/Lake Charles—from 15,000 bcd to 17,500 bcd; Mobil Oil—from 160,000 bcd to 170,000 bcd; and Murphy Oil—from 95,000 bcd to 100,000 bcd (as of November 1994).

Two refineries reduced their operating capacities: Calcasieu—from 13,500 bcd to 12,500 bcd and St. Rose—from 37,000 bcd to 32,400 bcd.

Kerr-McGee is still trying to get out of the refining business and concentrate on its historical core business of oil and gas exploration and production. Initially, the intent was to sell its refineries as a package, but now the company will consider selling them individually, including its 7,800 bcd refinery at Cotton Valley.

In November, Occidental Petroleum Corp. announced that it will purchase Placid Oil Co. of Dallas by the end of 1994. The Placid Refining Company is a subsidiary of Placid Oil, but its Port Allen refinery is not affected by the sale. Placid Refining is itself looking for a merger partner, or to sell the company, to improve liquidity.

Non-Operating Refineries

The four closed refineries that reported their intentions to reopen when the last survey was taken failed to do so. These were the 300,000 bcd TransAmerican Refining Co. refinery at Norco, the 14,800 bcd CAS refinery near Jennings, the 10,000 bcd Sabine Gas Operators refinery at Stonewall, and the 10,000 bcd U.S. Refining Co. refinery at Egan (Note: In previous reports the refinery in Egan was incorrectly referred to as Britt Processing & Refining Co. The correct name then should have been Crystal Refining Co. According to the owner, all permits are now in the name of U.S. Refining Inc., and serious negotiations for the sale of the refinery are under way with several parties.).

The TransAmerican refinery did start producing gas oil in March, but has not yet taken in any crude. A completed 13,000 bcd MTBE unit was not put on line because of unfavorable market conditions. The company intends to begin crude refining in the first quarter of 1995 at 100,000 bcd and then gradually increase throughput to 200,000 bcd. However, this schedule may be postponed if a \$575 million offering of junk bonds is not sold by the end of the year. Moody's Investors Service has given the bonds a very low rating. The proceeds from the sale of the bonds are to be used to refurbish the refinery, which presently employs about 1200 construction and production workers. TransAmerican Refining Corp. is owned by TransAmerican Natural Gas, whose sole shareholder is John R. Stanley.

The CAS refinery was purchased by Gold Line Refining in June of 1994. The refinery is under review to reopen. A wastewater injection well at the site is now in use to dispose of wastewater from Gold Line's Lake Charles refinery.

The Stonewall refinery of Sabine Gas Operators was sold as a package and sent to Russia. Another closed refinery, the 15,000 bcd Laidlaw Environmental refinery near Jennings, was dismantled and the equipment sold and removed from the site. These two refineries have been removed from our list of non-operating refineries.

As stated earlier, the Dubach refinery now owned by Arcadia Refining & Marketing Co. L.P., has not taken any crude since 1993 so we have reclassified it as a non-operating refinery.

The resources of the industry appear to be in the initial stages of being redirected from projects mandated by government regulations toward more potentially profitable ventures largely unfettered by government interference in strategic planning and day-to-day operations. While some companies are shedding their refining assets, others are adding to them. New entrants are entering the business by picking up some of these unwanted assets at a discounted price as the industry continues to restructure. New projects are designed to efficiently produce more and better products with success or failure dictated by the marketplace as it has evolved under the present air pollution regulatory scene. The industry has proved to be resilient in adjusting to the steady stream of new regulations it has absorbed the past several years and appears to be capable of overcoming new challenges as well. We will continue to follow the industry and report on new developments in the next edition of this report.

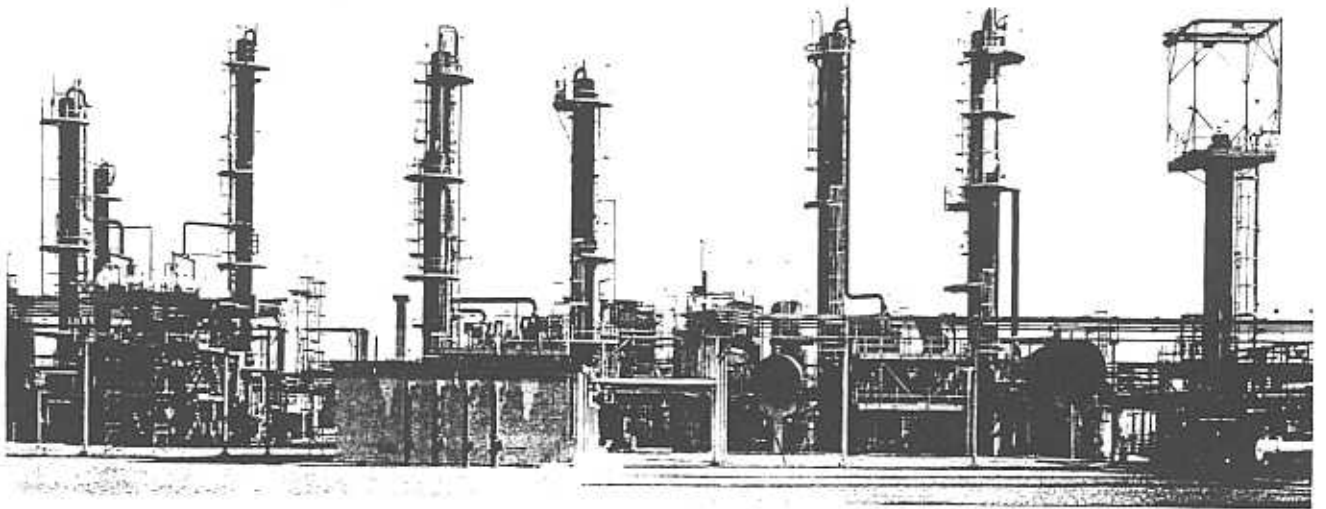


TABLE 1
LOUISIANA OPERATING REFINERIES
CRUDE CAPACITY (barrels/calendar day) AND PERCENT PRODUCT SLATE
November 1994 DNR Technology Assessment Division Survey

NAME	OPERATING CAPACITY As of June 30, 1994	IDLE CPCTY	OPR RATE %	% OF TOTAL PRODUCT SLATE													
				GASOLINE			OTHER FUELS			MISCELLANEOUS			OTHER PRODUCTS				
				MID- REG GRADE	ALL PREM	ALL RFG	DIESEL	JET/ KERO	FUEL OIL	LPG's	NAPTH	COKE/ RESID	PRODUCT 1	PRODUCT 2	PRODUCT 3	ALL OTHER	
Arcadia Refng & Mktg/ Lisbon Ref. (Formerly Dubach Gas Co.)	8,500	0	83.8	31.0	0.0	0.0	0.0	11.0	0.0	19.0	8.0	8.0	0.0	23.0	0.0	0.0	0.0
Atlas Processing Co. - Div. Pennzoil	46,200	0	78.3	14.2	0.6	2.9	0.0	20.4	16.2	0.0	0.0	3.3	8.7	Solvents			
B. P. Oil Co./Alliance Refinery	222,764	7,236	88.6	21.5	2.4	15.4	0.0	34.1	9.4	0.0	1.6	0.0	1.5	18.4	7.4	2.0	6.0
Calcasieu Refining Company	12,500	0	99.8	0.0	0.0	0.0	0.0	25.4	56.4	0.0	4.7	2.7	0.0	Lubes/Motor Oil	Catfeed	Waxes	
Calumet Lubricants Co., L.P.	6,500	500	100.1	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	1.8	3.1	2.7	6.5
Canal Refining Co.	10,000	0	88.5	18.0	0.0	5.0	0.0	53.0	0.0	0.0	1.5	0.0	20.0	Carbon Black	Aromatics	Intermediates	
CITGO Petroleum Corp.	295,000	0	94.5	29.3	0.6	21.4	0.0	15.2	14.0	0.0	2.6	0.0	6.7	13.5	0.0	0.0	0.0
Conoco Inc./Lake Charles Refinery	195,500	0	90.0	22.8	0.0	7.5	0.0	32.2	8.4	1.2	3.2	4.0	9.6	Catfeed			
Exxon Co. U.S.A.	424,000	0	98.6	22.2	5.5	11.6	0.0	19.4	12.1	3.3	1.7	0.8	0.4	75.0	22.0	0.0	0.0
Gold Line Refining, Ltd./Lake Charles	17,500	2,500	73.6	0.0	0.0	0.0	0.0	23.0	36.0	0.0	0.5	22.5	0.0	Lube Oil	Asphalt		
Kerr-McGee Refining Corp.	7,800	0	63.0	0.0	0.0	0.0	0.0	6.9	0.0	0.0	0.0	39.3	0.0	0.0	0.0	0.0	2.5
Marathon Oil Co.	255,000	0	79.9	46.4	1.9	8.0	0.0	0.0	1.2	29.7	4.1	0.5	7.9	0.0	0.0	0.0	0.0
Mobil Oil Corp./Chalmette Refinery	170,000	0	95.2	26.5	0.7	18.0	0.0	0.0	9.5	22.2	2.9	0.4	9.2	0.0	0.0	0.0	0.0
Murphy Oil U.S.A. Inc./Meraux Ref.	95,000	0	86.4	36.4	2.2	11.5	0.0	23.6	11.1	11.2	2.8	0.2	0.0	3.5	2.3	0.0	4.4
Phibro Energy U.S.A./Krotz Springs	60,000	0	106.4	27.6	0.2	3.0	0.0	14.4	14.8	0.0	1.4	13.5	0.0	8.7	0.0	0.0	2.4
Placid Refining Co.	47,000	0	98.5	22.3	0.0	6.4	0.0	22.1	10.6	8.0	4.0	0.0	6.1	Gas Oil			
St. Rose Refinery, Inc. (Formerly Phibro Energy U.S.A.)	32,400	7,600	81.0	0.0	0.0	0.0	0.0	3.8	12.4	0.0	0.0	14.6	40.7	12.6	3.9	3.1	3.4
Shell Oil Co.	215,000	0	98.9	38.2	7.2	21.6	0.0	0.0	17.3	0.0	8.5	0.8	5.6	Chem. Fdstck	Internal Fuels	Lube Oil	
Star Enterprise	225,000	0	92.7	40.1	1.1	2.3	0.0	30.5	6.0	10.8	3.2	0.9	1.1	18.0	0.0	0.0	0.0
WEIGHTED STATE AVERAGE %*			92.2	28.9	2.5	12.2	0.0	17.1	10.8	6.9	3.1	1.6	4.8	29.3	0.6	21.4	0.0
TOTAL LA OPERATING CAPACITY	2,345,664													Gas Oil			

NOTE: All data are for the twelve month period ending June 30, 1994. It may differ slightly from data reported elsewhere for a different time frame.

Operating rates are computed by dividing the daily average crude input by the operating capacity provided by survey respondents.

* Individual product percentage components may not total 100% because of independent rounding.

TABLE 2

U. S. DEPARTMENT OF ENERGY
 CAPACITY OF LOUISIANA OPERABLE PETROLEUM REFINERIES
 AS OF JANUARY 1, 1994
 (Barrels per Stream Day, Except Where Noted)

Refiner/Location	Atmospheric Crude Oil Distillation Capacity				Downstream Charge Capacity				
	Barrels per Calendar Day		Barrels per Stream Day		Vacuum Distillation	Thermal Cracking			
	Operating	Idle	Operating	Idle		Delayed Coking	Fluid Coking	Vis-breaking	Other/Gas Oil
Arcadia Ref. & Mktg. Co. Lisbon	7,350	0	7,500	0	0	0	0	0	0
BP Oil Corp. Belle Chasse (Alliance)	223,300	0	230,000	0	89,000	24,000	0	0	0
Calcasieu Refining Co. Lake Charles	12,500	0	13,500	0	0	0	0	0	0
Calumet Lubricants Co. L.P. Princeton	6,000	0	6,443	0	6,000	0	0	0	0
Canal Refining Co. Church Point	9,500	0	10,000	0	0	0	0	0	0
Citgo Petroleum Corp. Lake Charles	305,000	0	320,000	0	83,000	94,000	0	0	0
Conoco Inc. Westlake	182,000	0	189,000	0	87,800	65,000	0	0	11,500
Exxon Co. U.S.A. Baton Rouge	424,000	0	441,000	0	186,000	90,000	0	0	0
Gold Line Refining Ltd. Lake Charles	27,600	0	30,000	0	10,000	0	0	0	0
Kerr-McGee Refining Corp. Cotton Valley	7,800	0	8,500	0	0	0	0	0	0
Marathon Oil Co. Garyville	255,000	0	263,000	0	125,000	0	0	0	0
Mobil Oil Corp. Chalmette	170,000	0	177,800	0	92,500	33,000	0	0	0
Murphy Oil U.S.A. Inc. Meraux	95,000	0	100,000	0	40,000	0	0	0	0
Pennzoil Producing Co. Shreveport	46,200	0	50,000	0	23,000	0	0	0	0
Phibro Energy U.S.A. Inc. Krotz Springs	60,000	0	61,500	0	22,000	0	0	0	0
Placid Refining Co. Port Allen	48,500	0	49,500	0	20,000	0	0	0	0
St. Rose Refining Inc. St. Rose	40,000	0	45,000	0	18,000	0	0	0	0
Shell Oil Co. Norco	215,000	0	220,000	0	78,000	21,000	0	0	108,000
Star Enterprise Convent	225,000	0	242,500	0	98,500	0	0	12,000	0
1993 LOUISIANA TOTALS	2,359,750	0	2,465,243	0	978,800	327,000	0	12,000	119,500

Source: Energy Information Administration/Petroleum Supply Annual 1993, Volume 1, Table 38 [DOE/EIA-0340(93)/1]
 (Released for Printing May 27, 1994)

Location	Downstream Charge Capacity (Continued)									
	Catalytic Cracking		Catalytic Hydro-Cracking	Catalytic Reforming		Heavy Gas Oil	Catalytic Hydrotreating			Fuel Solvent Deasphltg
	Fresh	Recycled		Low Pressure	High Pressure		Naptha/Ref. Feeds	Distillate	Other/Residual	
Usbon	0	0	0	0	2,500	0	4,200	0	0	0
Belle Chasse (Alliance)	94,300	2,000	0	0	42,000	0	43,000	47,000	0	0
Lake Charles	0	0	0	0	0	0	0	0	0	0
Princeton	0	0	0	0	0	0	0	0	6,000	0
Church Point	0	0	0	1,900	0	0	0	0	0	0
Lake Charles	130,000	0	45,000	86,000	20,000	0	116,000	30,000	23,000	0
Westlake	50,000	0	0	13,000	17,000	0	33,000	123,500	12,500	0
Baton Rouge	188,000	0	24,000	60,000	30,000	0	95,000	89,000	21,500	0
Lake Charles	0	0	0	0	0	0	0	0	0	0
Cotton Valley	0	0	0	0	0	0	0	0	0	0
Garyville	95,000	0	0	45,000	0	71,000	50,000	45,000	0	30,000
Chalmette	64,000	0	18,000	19,000	28,000	43,000	45,000	24,000	0	0
Meraux	40,000	0	0	23,000	0	27,500	29,000	15,000	0	0
Shreveport	0	0	0	6,500	0	0	10,000	10,000	10,200	0
Krotz Springs	28,000	0	0	0	12,000	0	14,000	0	0	0
Port Allen	19,000	2,000	0	10,000	0	0	10,000	0	0	5,000
St. Rose	0	0	0	0	0	0	0	0	0	0
Norco	90,000	0	38,000	39,000	0	70,000	29,000	0	28,000	0
Convent	85,000	0	50,000	0	40,000	0	40,000	95,500	32,500	0
	883,300	4,000	175,000	303,400	191,500	211,500	518,200	479,000	133,700	35,000

TABLE 3

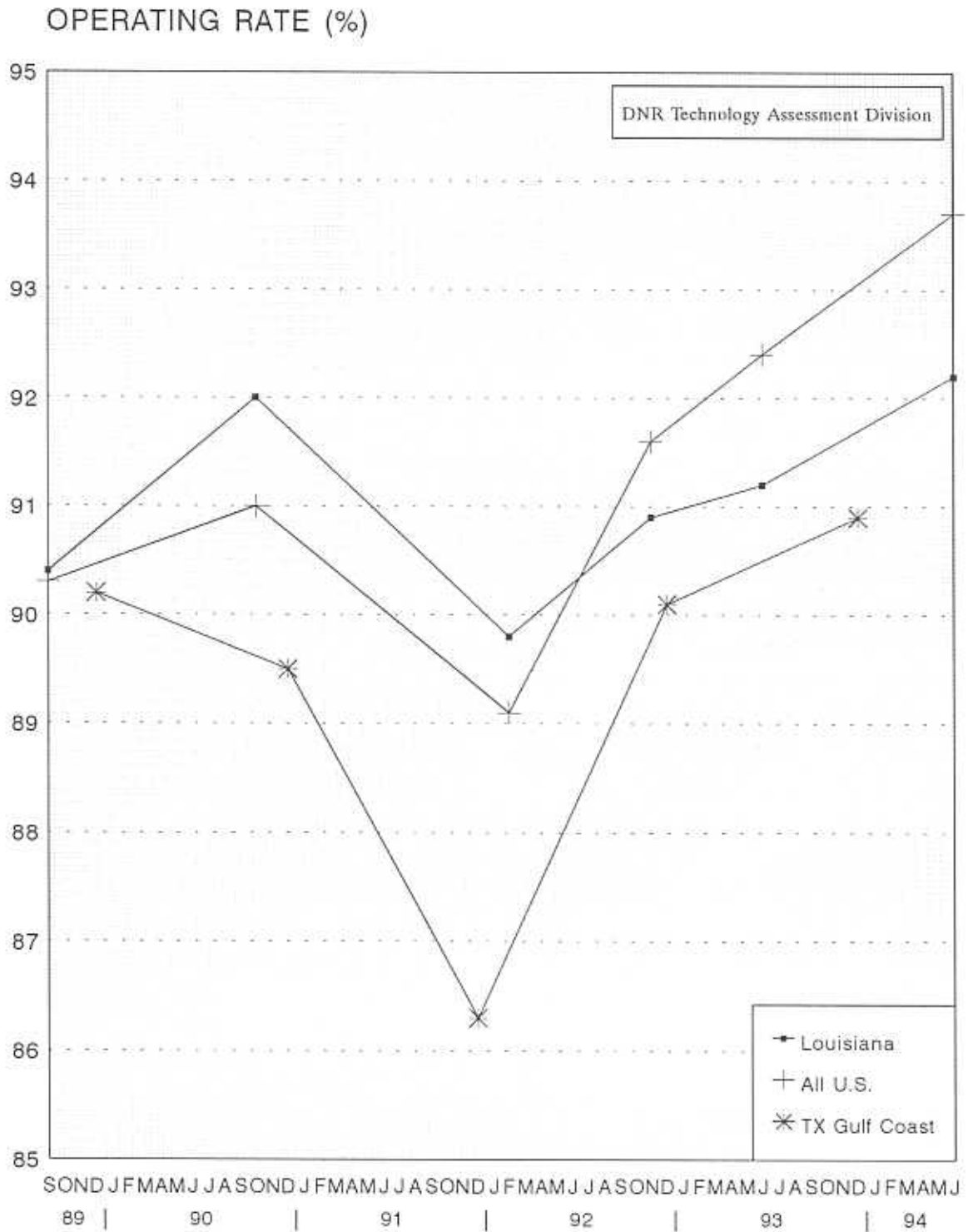
U. S. DEPARTMENT OF ENERGY
 PRODUCTION CAPACITY OF LOUISIANA OPERABLE PETROLEUM REFINERIES
 AS OF JANUARY 1, 1994
 (Barrels per Stream Day, Except Where Noted)

Refiner/Location	Production Capacity								
	Alkylates	Aromatics	Asphalt and Road Oil	Isomers		Lubricants	Marketable Petroleum Coke	Hydrogen (MMcfd)	Sulfur (short tons per day)
				Isobutane	Isopentane and Isohexane				
Arcadia Ref. & Mktg. Co. Lisbon	0	950	0	0	1,600	0	0	0	0
BP Oil Corp. Belle Chasse (Alliance)	38,000	12,000	0	0	0	0	4,600	40	50
Calcasieu Refining Co. Lake Charles	0	0	0	0	0	0	0	0	0
Calumet Lubricants Co. L.P. Princeton	0	0	960	0	0	5,000	0	5	2
Canal Refining Co. Church Point	0	0	0	0	0	0	0	0	0
Citgo Petroleum Corp. Lake Charles	23,000	4,000	0	0	28,000	9,000	22,500	0	690
Conoco Inc. Westlake	7,500	0	0	0	0	0	18,250	0	430
Exxon Co. U.S.A. Baton Rouge	33,200	0	12,000	0	12,500	15,500	24,400	19	661
Gold Line Refining Ltd. Lake Charles	0	0	0	0	0	0	0	0	0
Kerr-McGee Refining Corp. Cotton Valley	0	0	0	0	0	0	0	0	0
Marathon Oil Co. Garyville	27,000	0	40,000	12,000	10,000	0	0	0	504
Mobil Oil Corp. Chalmette	19,000	7,000	0	0	0	0	7,750	24	198
Murphy Oil U.S.A. Inc. Meraux	9,500	0	15,000	0	0	0	0	0	0
Pennzoil Producing Co. Shreveport	0	0	600	0	0	8,000	0	6	13
Phibro Energy U.S.A. Inc. Krotz Springs	0	0	0	2,700	800	0	0	0	10
Placid Refining Co. Port Allen	4,000	0	0	0	0	0	0	0	8
St. Rose Refining Inc. St. Rose	0	0	0	0	0	0	0	0	0
Shell Oil Co. Norco	15,500	0	0	0	0	0	5,725	70	280
Star Enterprise Convent	14,500	0	0	0	12,500	0	0	63	728
1993 LOUISIANA TOTALS	191,200	23,950	68,560	14,700	65,400	37,500	83,225	227	3,574

MMcfd = Million cubic feet per day

Source: Energy Information Administration/Petroleum Supply Annual 1993, Volume 1, Table 39 [DOE/EIA-0340(93)/1]
 (Released for Printing May 27, 1994)

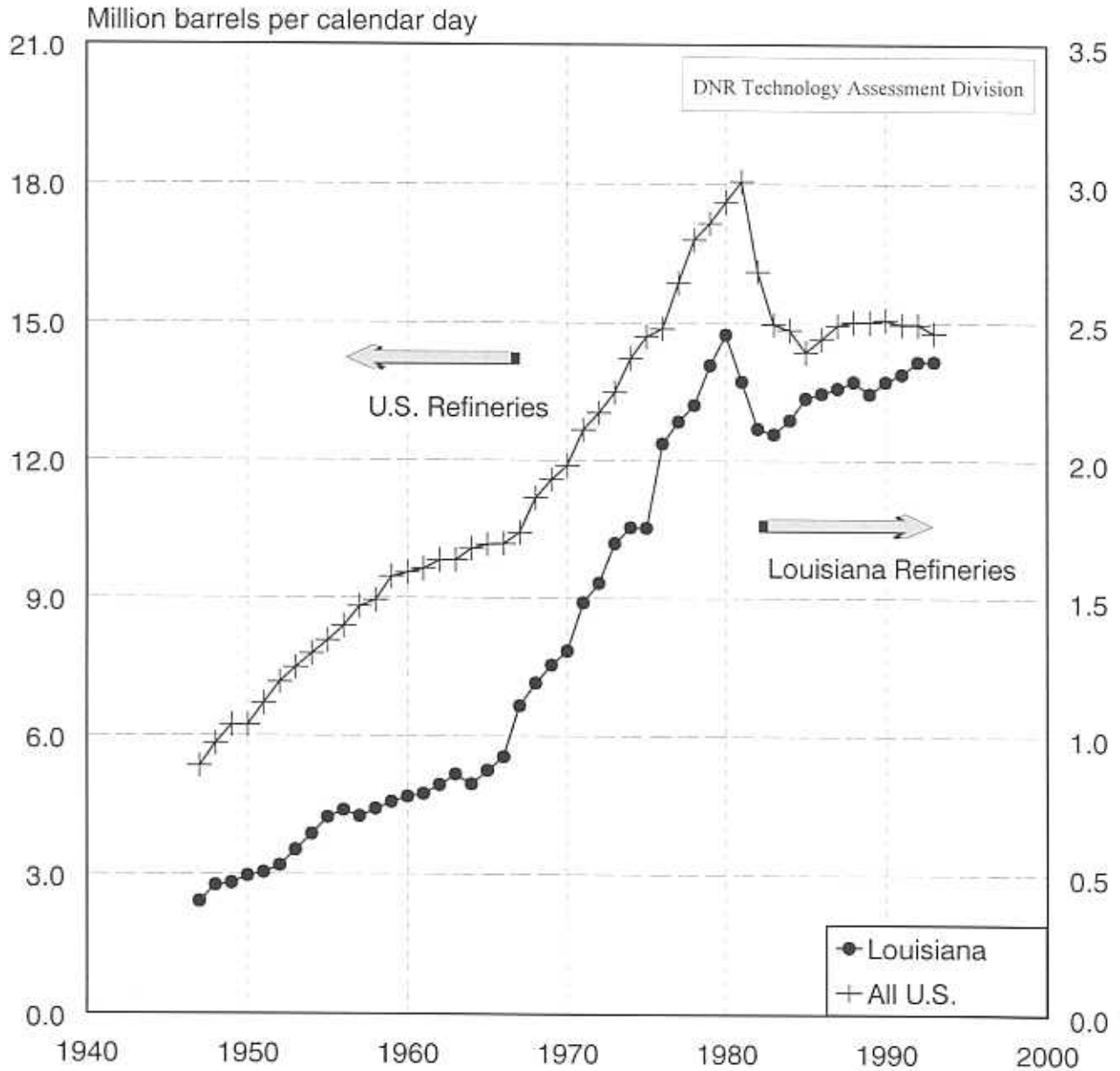
FIGURE 2
OPERATING RATES (%)
OF LOUISIANA, TEXAS GULF COAST*, AND ALL U.S. REFINERIES



Source: LA Refineries-DNR Refinery Survey Reports
 TX Refineries-EIA Petroleum Supply Annuals, 1989-1993, Table 16
 U.S. Refineries-EIA Petroleum Supply Monthly, 12/89, 12/91, 1/93, 9/93, 9/94; Table H2

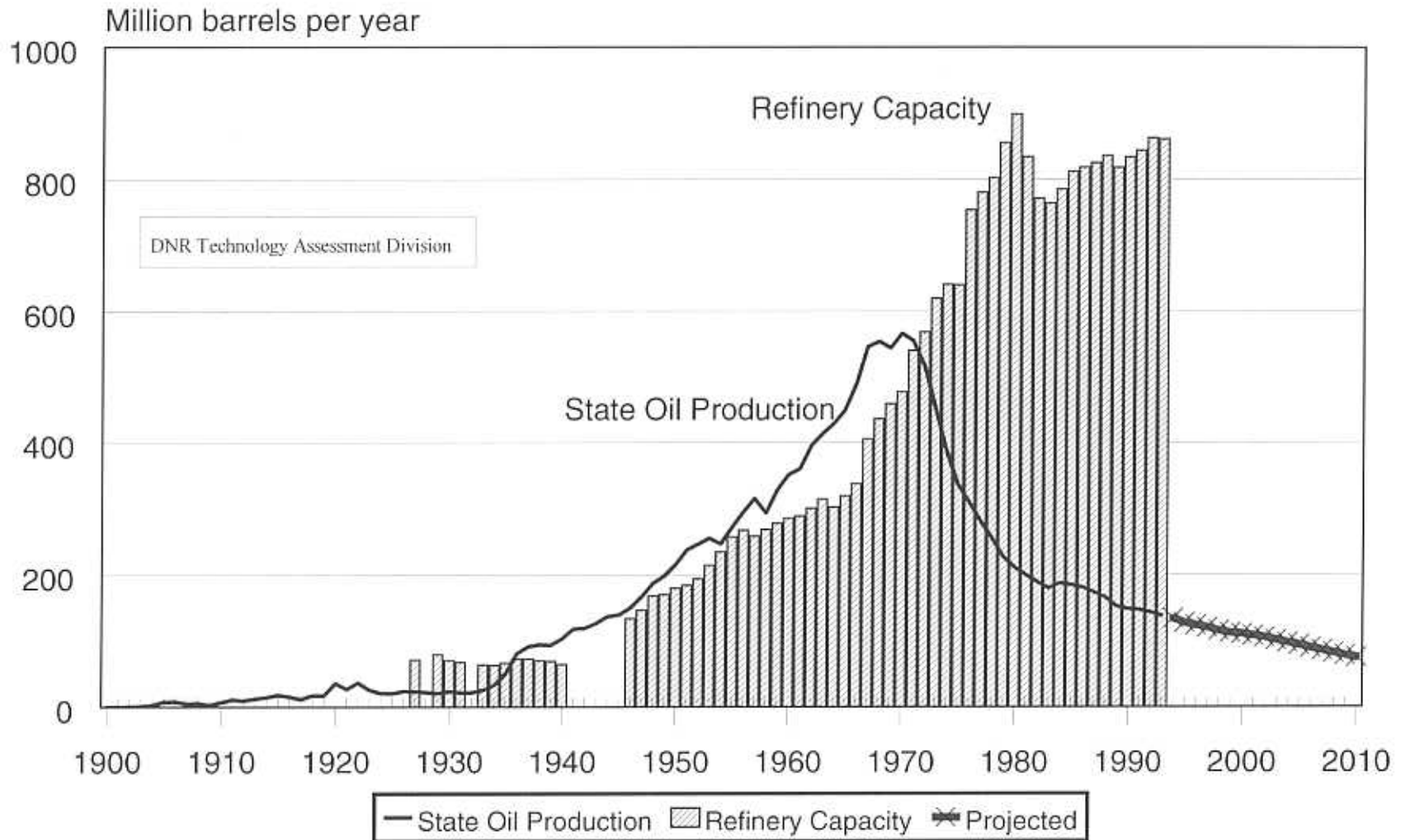
*Texas Gulf Coast: The following counties of the State of Texas: Newton, Orange, Jefferson, Jasper, Tyler, Hardin, Liberty, Chambers, Polk, San Jacinto, Montgomery, Harris, Galveston, Waller, Fort Bend, Brazoria, Wharton, Matagorda, Jackson, Victoria, Calhoun, Refugio, Arkansas, San Petricio, Nueces,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

FIGURE 3
**OPERATING CAPACITY
 OF LOUISIANA AND U.S. REFINERIES**



Source: LA Refinery Capacity - DNR Energy Database and DOE, EIA Petroleum Supply Annuals
 U.S. Refinery Capacity - Basic Petroleum Data Book, Petroleum Industry Statistics,
 American Petroleum Institute, Volume XIV, No. 3, Sept 1994

FIGURE 4
**LOUISIANA OIL PRODUCTION AND
 REFINERY OPERATING CAPACITY**



Source: Oil Production - DNR Database

Refinery Capacity - DNR Energy Database and DOE/EIA Petroleum Supply Annual

NOTE: 1979 Capacity is estimated

FIGURE 5

HISTORICAL REFINERY INPUT BY SOURCE

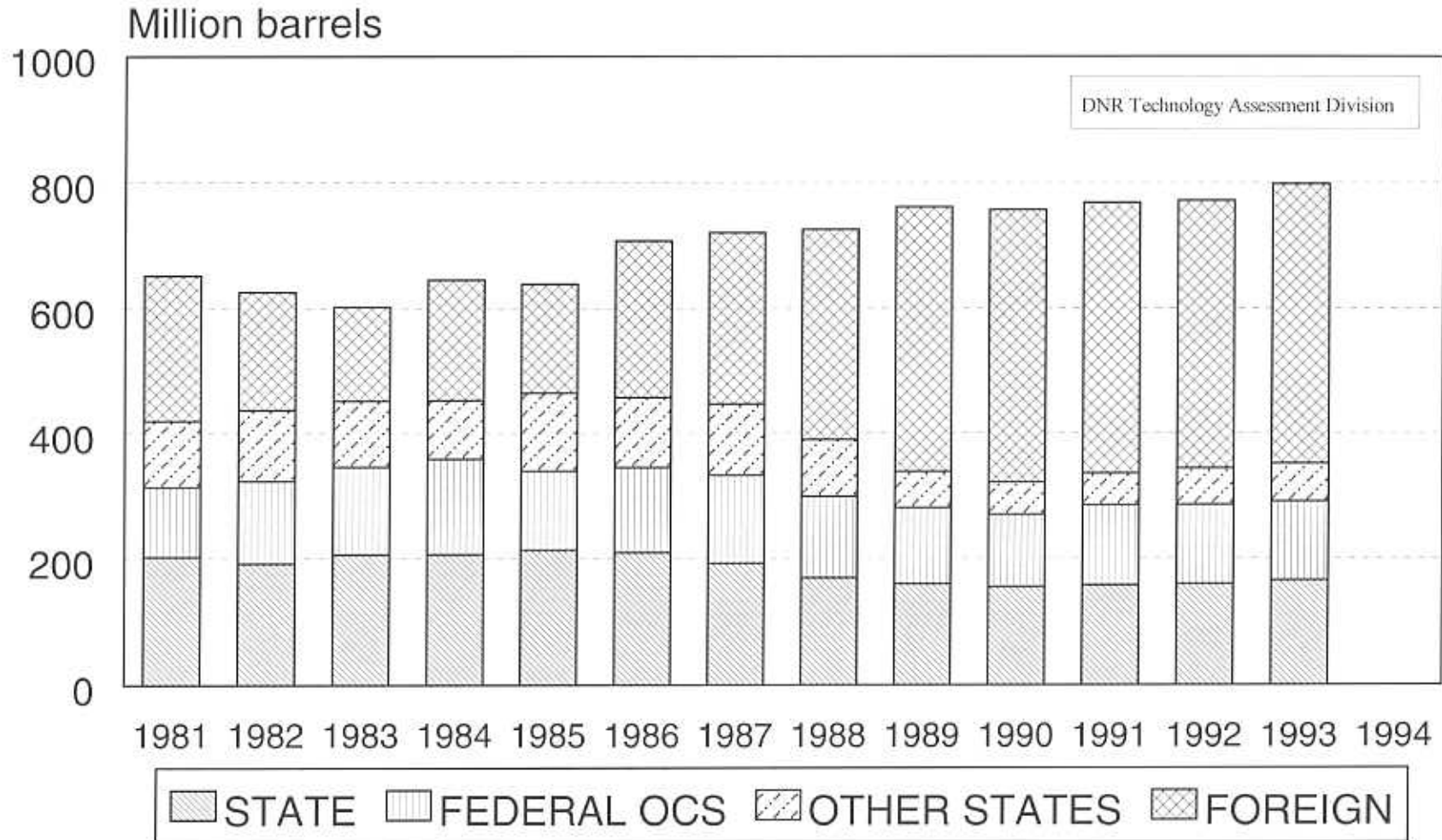


FIGURE 6

1993 REFINERY CRUDE OIL INPUT PERCENTAGE BY SOURCE BY COMPANY

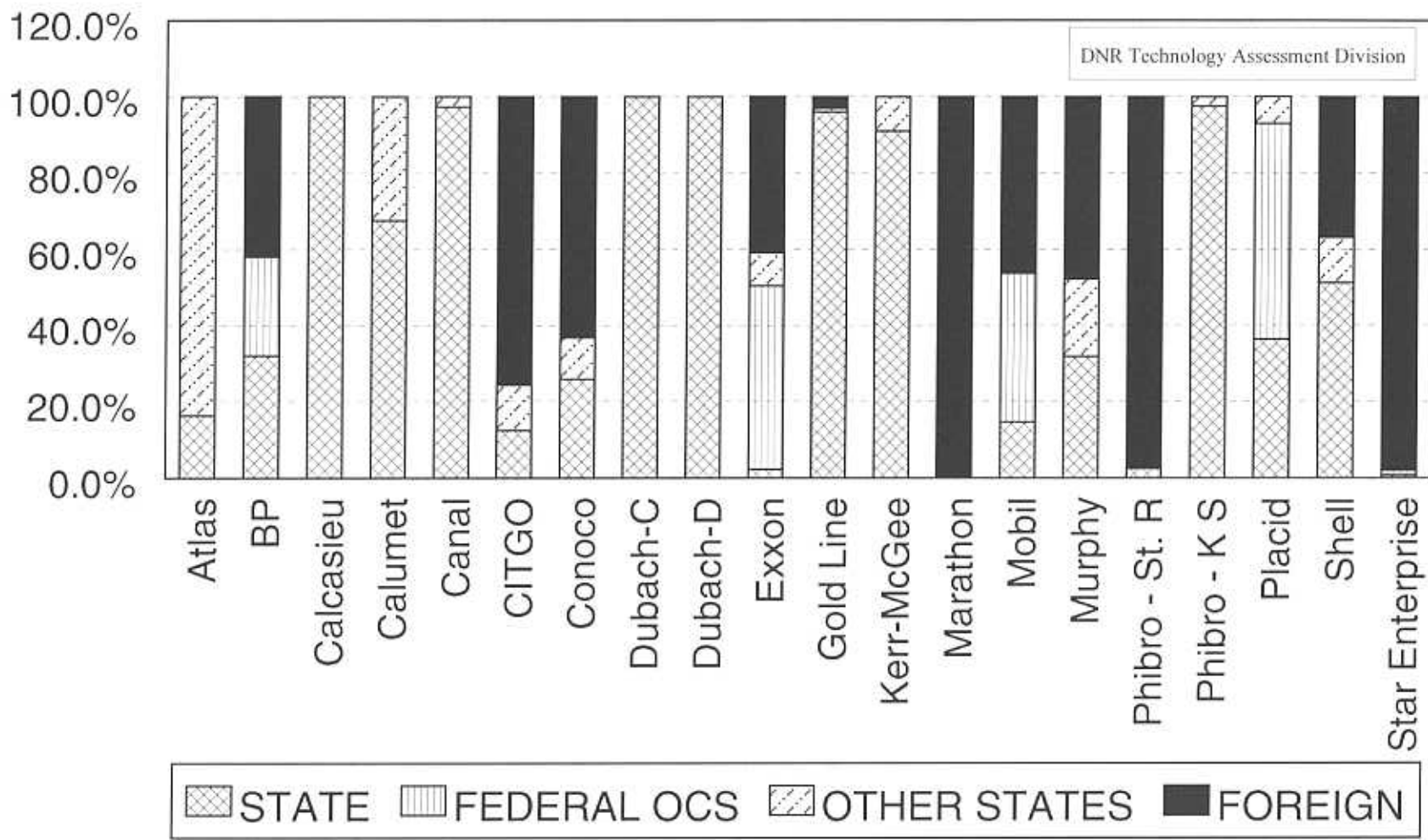
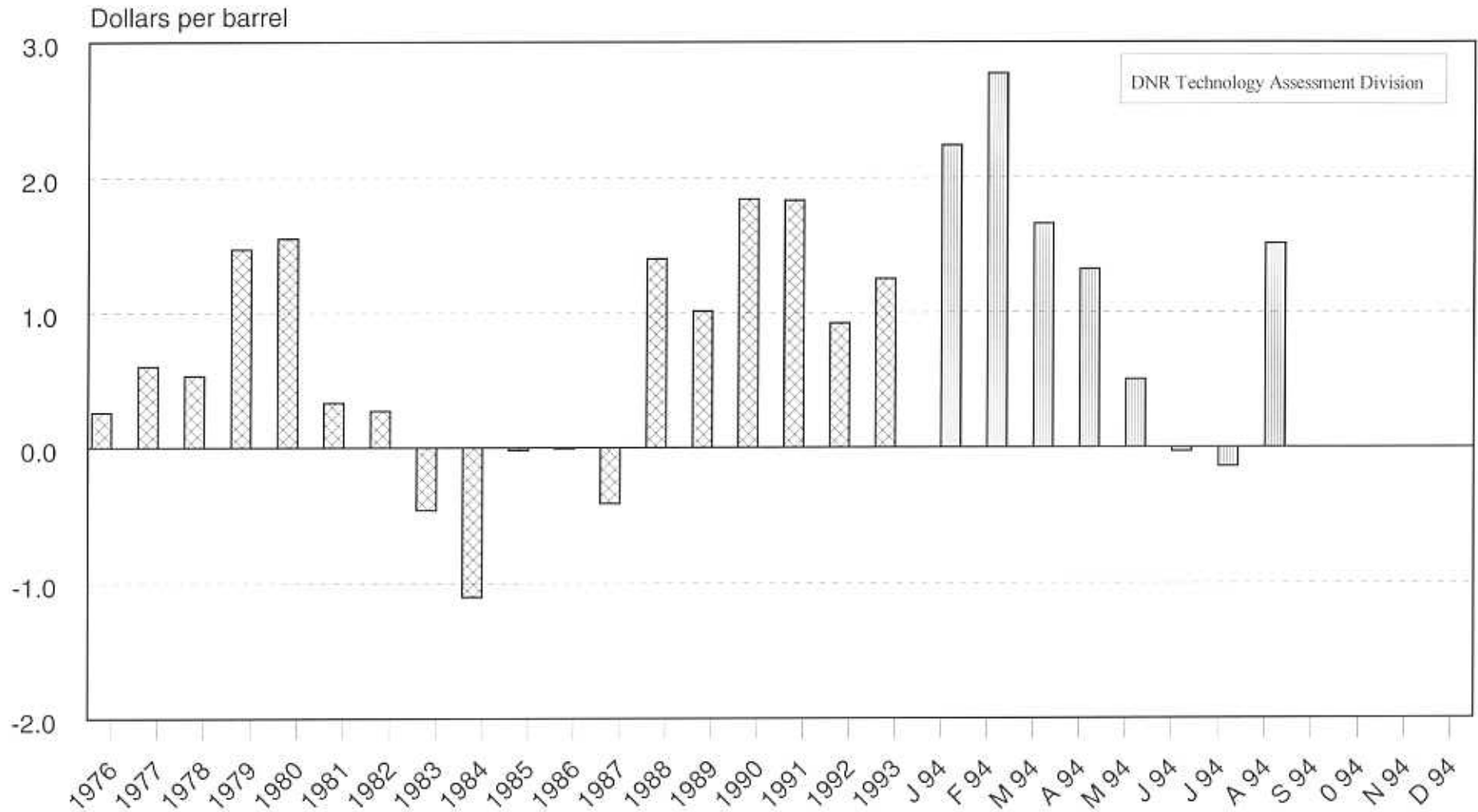


FIGURE 7

GULF COAST REFINERY MARGINS REGIONAL AVERAGE CASH OPERATING MARGIN



Source: Wright Killen & Co., from Oil & Gas Journal

TABLE 4
LOUISIANA OPERATING REFINERIES
MAILING ADDRESSES & CONTACT LIST
November 1994 DNR Technology Assessment Division Survey

NAME	MAILING ADDRESS	CONTACTS	TELEPHONE
Arcadia Refining & Marketing Co. L.P. (Formerly Dubach Gas Co.) Lisbon Refinery	Box 170 Lisbon, LA 70148	Jim Nichols, Pres. & Ch. Opr. Ofcr. Jim Haynes, Ref. Mgr.	(318) 353-2283
Atlas Processing Co. - Div. Pennzoil	Box 3099 Shreveport, LA 71113	Mike Wion, Plt. Mgr. John Short, Accounting Mgr.	(318) 636-2711
B. P. Oil Co. Alliance Refinery	Box 395 Belle Chasse, LA 70037	Susan Caito, Ref. Mgr. Lou McLean, Opr. Mgr.	(504) 656-7711
Calcasieu Refining Company	Box 6028 Lake Charles, LA 70606	Philip Nelson, Plt. Mgr. Tom Prudhomme, Tech. Supt.	(318) 478-2130
Calumet Lubricants Co. L.P.	10234 La. Hwy. 157 Princeton, LA 71067	Jerry Arnold, V.P. Jeff Lang, Ref. Engrn.	(318) 949-2421
Canal Refining Co.	Box 8 Church Point, LA 70525	Arron Hornsby, Ref. Mgr. Hubert Vidrine, Qual. Contr. Mgr.	(318) 684-5421
CITGO Petroleum Corp.	Box 1562 Lake Charles, LA 70601	Fred Foster, V.P. Charles Schumate, Engrng. Mgr.	(318) 497-6165
Conoco Inc. Lake Charles Refinery	Box 37 Westlake, LA 70669	Jim Leigh, Plt. Mgr. Dennis Stephen, Optim. Mgr.	(318) 491-5211
Exxon Co. U.S.A.	Box 551 Baton Rouge, LA 70821	William B. Rainey, Plt. Mgr. Keith Baugher, Process Mgr.	(504) 359-7711
Gold Line Refining, Ltd. Lake Charles Refinery	P. O. Drawer 18190 Lake Charles, LA 70616	Sam Gueringer, Plt. Mgr. Learnard Dickerson, Env. Coord.	(318) 436-4185
Kerr-McGee Refining Corp. Cotton Valley Refinery	Box 97 Cotton Valley, LA 71018	M.R. Sheets, Mgr. LA Opr. D.D. Parker, Mgr. Plt. Opr.	(318) 832-4236
Marathon Oil Co.	Box AC Garyville, LA 70051	George Lowe, Div. Mgr. Richard Bedell, Tech. Svcs. Mgr.	(504) 535-2241
Mobil Oil Corp. Chalmette Refinery	Box 1007 Chalmette, LA 70044	Donald J. Michael, Ref. Mgr. Tim Davis, Ch. Engrn.	(504) 279-9481
Murphy Oil U.S.A. Inc. Meraux Refinery	Box 100 Meraux, LA 70075	Ernie Cagle, Plt. Mgr. Joey Hagmann, Mgr. Tech. Svcs.	(504) 271-4141
Phibro Energy U.S.A. Krotz Springs Refinery	Box 453 Krotz Springs, LA 70750	Ralph Youngblood, V.P. Opr. John Edmunds, Mgr. Tech. Svcs.	(318) 566-2301
Placid Refining Co.	1940 La. Hwy. #1 N. Port Allen, LA 70767	Larry Doty, Gen. Mgr. Gary Fuller, Ref. Mgr.	(504) 387-0278
St. Rose Refinery, Inc. (Formerly Phibro Energy U.S.A.)	Box 630 St. Rose, LA 70087	Leroy Kendrick, Ref. Mgr. Gary Louque, Plt. Mgr.	(713) 940-4402 (504) 465-0044
Shell Oil Co.	Box 10 Norco, LA 70079	P.B. Schwin, Plt. Mgr. T.A. Kirkley, Supt. Refng.	(504) 465-7111
Star Enterprise	Box 37 Convent, LA 70723	Ron Anderson, Plt. Mgr. Jeff Grant, Spvsr. Plnng. & Econ.	(504) 562-7681

TABLE 5
LOUISIANA OPERATING REFINERY LOCATIONS
November 1994 DNR Technology Assessment Division Survey

NAME	PHYSICAL LOCATION
Arcadia Ref. & Mktg. Co. L.P./Lisbon Refinery (Formerly Dubach Gas Co.)	Lisbon, 3mi. east on south side of La. 2.
Atlas Processing Co. – Div. Pennzoil	Shreveport, 3333 Midway Ave., Across I-20 from State fairgrounds.
B. P. Oil Co./Alliance Refinery	Belle Chasse, 12mi. south on east side of La.23.
Calcasieu Refining Company	Lake Charles, 3mi. south at west end of Old Tank Farm Road on Ship Canal.
Calumet Lubricants Co. L.P.	Princeton, 5mi. north of I-20 on east side of La. 157.
Canal Refining Co.	Church Point, 2mi. north on left side of La. 178.
CITGO Petroleum Corp.	Lake Charles, I-10 exit 23, then 2mi. south on La, 108.
Conoco Inc./Lake Charles Refinery	Westlake, I-10 Sampson Rd. exit; north to Old Spanish Trail.
Exxon Co. U.S.A.	Baton Rouge, 4045 Scenic Hwy.
Gold Line Refining, Ltd./Lake Charles Refinery	Lake Charles, I-10 exit 36, north to La. 3059, left 3/4 mi.
Kerr-McGee Ref. Corp./Cotton Valley Refinery	Cotton Valley, east side of La. 7 South at city limits.
Marathon Oil Co.	Garyville, 2 mi. toward Reserve off of U.S. 61.
Mobil Oil Corp./Chalmette Refinery	Chalmette 500 W. St. Bernard Hwy.
Murphy Oil U.S.A. Inc./Meraux Refinery	Meraux 2500 St. Bernard Hwy.
Phibro Energy U.S.A./Krotz Springs Refinery	Krotz Springs La. 105 South in town.
St. Rose Refinery, Inc. (Formerly Phibro Energy U.S.A.)	St. Rose, 11842 River Rd. Right 2 mi. at La. 626/River Rd. jct.
Placid Refining Co.	Port Allen 1940 La. 1 North.
Shell Oil Co.	Norco River Road in Norco.
Star Enterprise	Convent, on La. 44 at east bank foot of Sunshine bridge.

TABLE 6
LOUISIANA NON-OPERATING REFINERIES
MAILING ADDRESSES & CONTACT LIST
 November 1994 DNR Technology Assessment Division Survey

NAME	MAILING ADDRESS	CONTACTS	TELEPHONE
Arcadia Refining & Marketing Co. L.P. (Formerly Dubach Gas Co.) Dubach Location	Box 170 Lisbon, LA 70148	Jim Nichols, President & Chief Operating Officer	(318) 353-2283
Bayou State Oil Corp.	Box 7886 Shreveport, LA 71137	Charles Brown, Pres. Ellis Brown, V.P. Oper.	(318) 222-0737
Gold Line Refining, Ltd. (Formerly CAS Refining) Jennings Plant	Suite 600 7324 Southwest Freeway Houston, TX 77074	Earl Thomas, CEO & General Partner	(713) 271-3550
Petroleum Fuel & Terminal	Box T Garyville, LA 70051	Claude Phelps, Plt. Mgr. Will Louque, Term. Spvsr.	(504) 535-6256
Texas NAPCO, Inc.	228 St. Charles Ave. Suite 1435 New Orleans, LA 70130	John Pender, Bkrptcy. Trste.	(504) 581-2024
Tina Resources, Inc.	Box 711 Eastland, TX 76448	Leslie Vance, President	(817) 629-3662
TransAmerican Refining Co.	Box 537 Norco, LA 70079	Gary Karr, V.P. Refining Gary Sorrells, Asst. Ref. Mgr.	(504) 764-8611
	TransAmerican Natural Gas Corp. 363 N. Sam Houston Pkwy, East Suite 1900 Houston, TX 77060	Jack Stanley, CEO	(713) 447-3111
U.S. Refining Co. (Formerly Crystal Refining, Inc.) Egan Refinery	c/o Jade Petroleum P.O. Box 136 Newton, TX 75966	James Hughes, Owner	(409) 397-4221
	101 Old Ferry Road Egan, LA 70531	Elmer Lord, Caretaker	(318) 788-1300

Note: Directions to the physical locations of each non-operating refinery are given in Table 7.

TABLE 7
 LOUISIANA NON-OPERATING REFINERIES
 PHYSICAL LOCATIONS, LAST KNOWN CRUDE CAPACITY (barrels/calendar day), DATE LAST OPERATED, AND STATUS
 November 1994 DNR Technology Assessment Division Survey

NAME	PHYSICAL LOCATION	LAST KNOWN OPERATING CAPACITY	DATE LAST OPERATED	PREVIOUS NAME(S)	STATUS
Bayou State Oil Corp.	Hosston, U.S.71 North at jct. La.2 West.	3,000	2/87	NONE	No plans to reopen. Some equipment sold, but process eqpt remains operable.
Arcadia Refining & Marketing Co. L.P. Dubach Location	Dubach, 1/4 mi. west of U.S. 167 at south city limits.	10,000	6/93	Kerr-McGee Refining Co.; Dubach Gas Co. (Owned by Cornerstone Natrual Gas Co., formerly known as Endeveco)	Facility consists of a refinery and gas liquids fractionating plant. Refining assets sold by Cornerstone to Arcadia, which has no immediate plans to utilize refining assets. Arcadia is negotiating with Cornerstone to purchase the liquids fractionating portion, which is presently being operated by Cornerstone.
Gold Line Refining Co. Ltd. Jennings Refinery	3-1/2 mi. east of jct. U.S. 90E & La. 102 in Jennings. On Mermentau River 1 mi. north of U.S. 90E at end of gravel road.	14,800	8/90	Celeron; Slapco; CAS Refining	CAS purchased by Gold Line in June 1994. Refinery under review to reopen. Wastewater disposal injection well in operation.
Petroleum Fuel & Terminal Co.	Mt. Airy, exit Gramercy on La.20 to La.44(River Rd.)jct. Left 2mi.	23,000	12/86	Clark Oil & Refining/ Mt. Airy Refinery	Terminal only in use. Would like to sell all refinery process equipment and use site to expand terminal.
Texas NAPCO, Inc.	St. James, 7-1/2mi. south of Sunshine Bridge on La.18.	20,000	8/83	McTan Refining Co.; LaJet	No prospects to purchase refinery. After asbestos removed, units will be scrapped. In bankruptcy since 1987. Two active lawsuits could take several years to resolve.
Tina Resources, Inc.	Cameron Parish. Talen's landing on Intracoastal Waterway 9mi. south of jct. La. 14 & 26 in Lake Arthur via La. 14 & Parish roads 104 & 109.	7,400	2/86	Mallard Resources, Inc.; Cameron Resources, Inc.	Refinery being evaluated by prospective purchaser.
TransAmerican Refining Co.	Norco, 257 Prospect Ave.	300,000	7/82	GHR Energy Corp./ Good Hope Refinery	Plant reopened in March 1994 making gas oil. Crude refining to begin 1st quarter 1995 @ 100,000 bcd and increase to 200,000 bcd. Company trying to sell \$575 million of junk bonds to refurbish plant. MTBE units not put on line due to unfavorable market conditions.
U.S. Refining, Inc. Egan Refinery	Egan, 101 Old Ferry Road. Take I-10 exit 72; then 2mi. south on Old Ferry Road.	10,000	9/87	La. Oil & Rerefining Crystal Refining, Inc.	Owner negotiating with several prospects for sale of refinery. All permits now in the name of "U.S. Refining, Inc."