

LOUISIANA CRUDE OIL REFINERY SURVEY REPORT

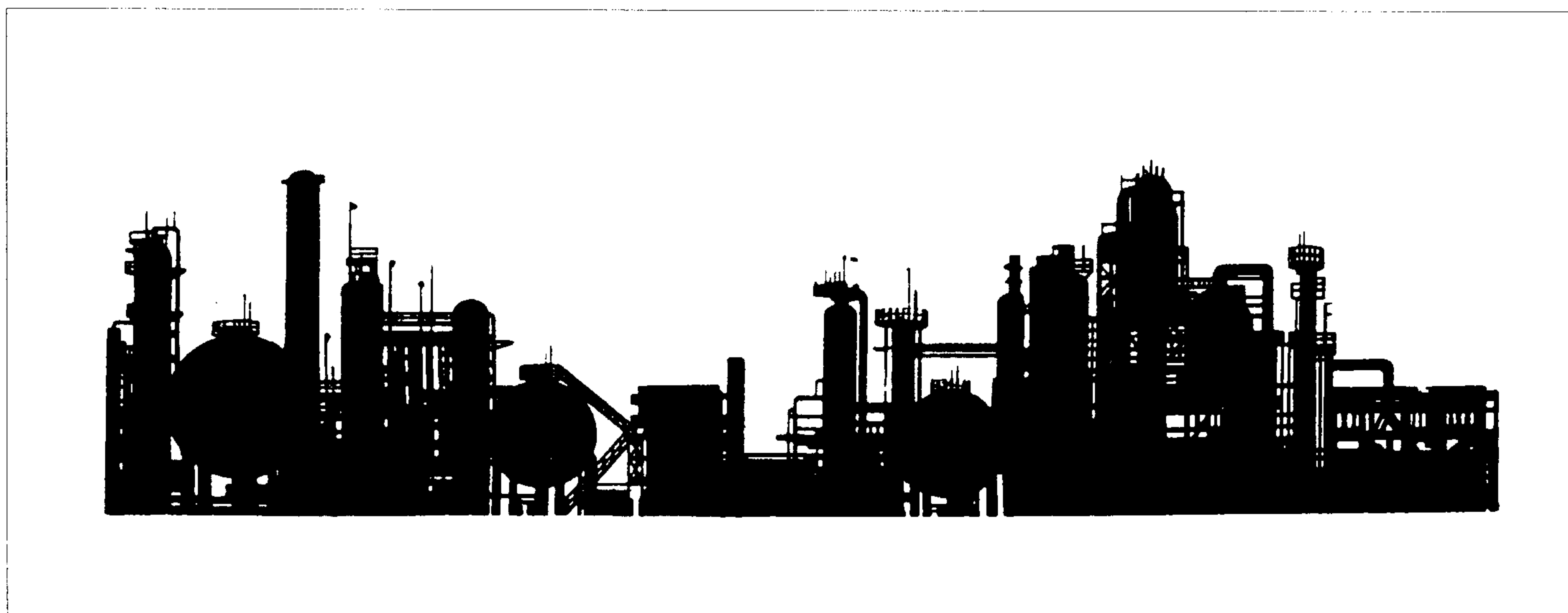
Eighth Edition

October 1996 Survey

By

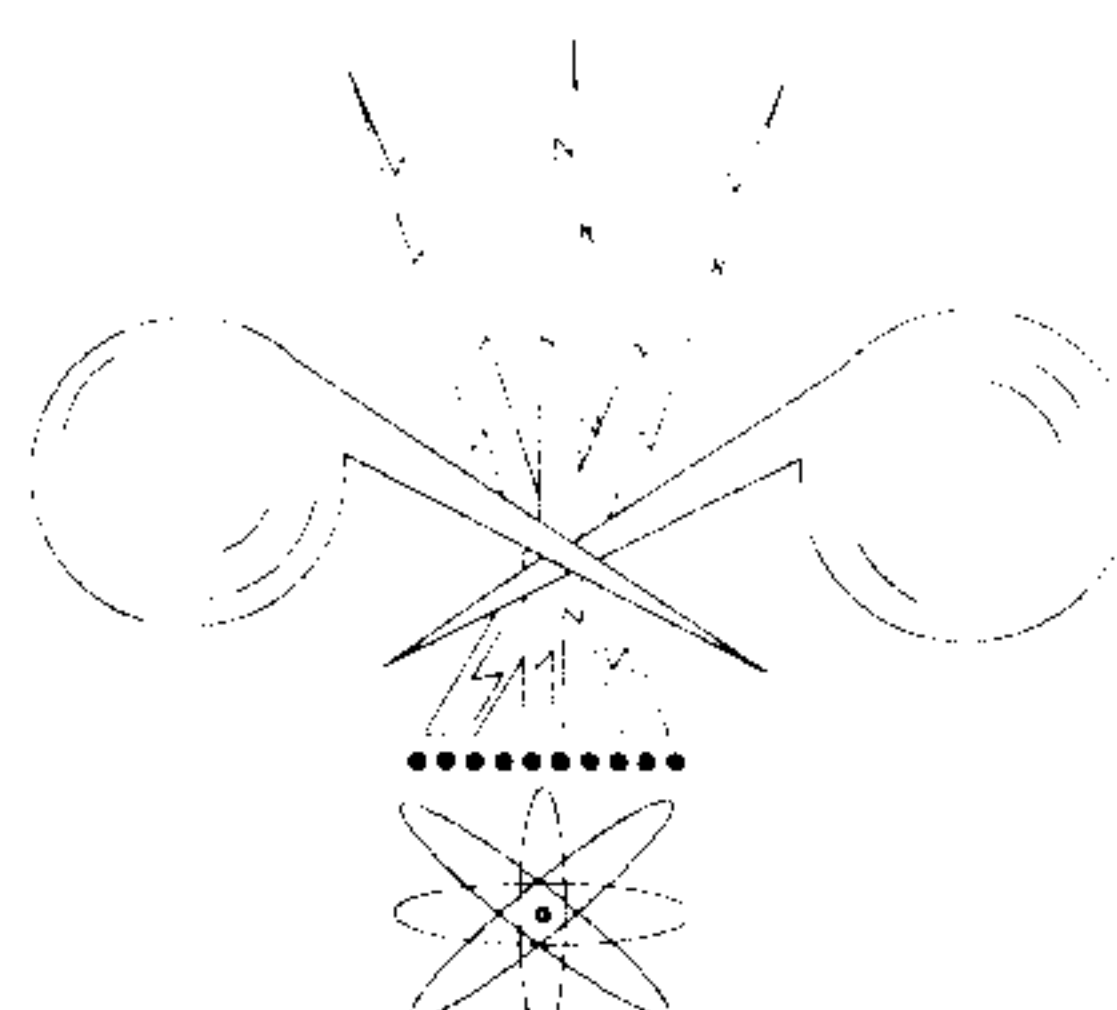
Billy P. Ramagost, P.E.
Senior Energy Engineer

Refining, Alternative Energy & Power Systems Program



Technology Assessment Division

T. Michael French, P.E.
Director



LOUISIANA DEPARTMENT OF NATURAL RESOURCES

Jack C. Caldwell
Secretary of Natural Resources

Baton Rouge
October 30, 1996

This edition of **Louisiana Crude Oil Refinery Survey Report** is funded 100% (\$472.15) with Petroleum Violation Escrow funds as part of the State Energy Conservation Program as approved by the U.S. Department of Energy and the Department of Natural Resources.

This public document was published at a total cost of \$472.15. 300 copies of this public document were published in this first printing at a total cost of \$212.46. The total cost of all printings of this document, including reprints, is \$472.15. This document was published by the Department of Natural Resources, P.O. Box 94396, Baton Rouge, LA 70804-9396, to promulgate the State Energy Conservation Plan developed under authority of P.L. 94-163. This material was printed in accordance with the standards for printing by State agencies established pursuant to R.S. 43:31.

TABLE OF CONTENTS

	<u>PAGE</u>
FOREWORD	1
DISCUSSION	3

FIGURES

1 Location Map of Louisiana Refineries	2
2 Operating Rates of Louisiana, Texas Gulf Coast, and all U.S. Refineries 1989-1995	11
3 Operating Capacity of Louisiana and U.S. Refineries 1947-1995	12
4 Louisiana Oil Production and Refinery Operating Capacity 1900-1995	13
5 Historical Refinery Input by Source 1981-1995	14
6 1995 Refinery Crude Oil Input Percentage by Source by Company	15
7 Gulf Coast Refinery Margins Regional Average Cash Operating Margin 1976- July 1996	16

TABLES

OPERATING REFINERIES

1 Crude Capacity, Operating Rate, and Product Slate of Louisiana Refineries for 12 month period ending June 30, 1996	7
2 U.S. Department of Energy Capacity of Operable Louisiana Refineries as of January 1, 1995	8
3 U.S. Department of Energy Production Capacity of Operable Louisiana Refineries as of January 1, 1995	10
4 Mailing Addresses and Contacts	17
5 Physical Locations	18
6 Operating Refinery Name History	19

NON-OPERATING REFINERIES

7 Mailing Addresses and Contacts	20
8 Physical Locations, Last Known Capacity, Date Last Operated, Previous Name(s), and Present Status	21
9 Non-Operating Refinery Name History	22



As part of the refining process, a catalytic cracking unit is used to increase the yield of gasoline from crude oil.

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 previous survey was taken in October 1995, and the report was published in November 1995.

The information contained in this 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 usually published in late May or early June of each year for the previous calendar year. Generally, the period covered by DNR is the twelve months ending June 30, so this report is countercyclical to the DOE/EIA report.

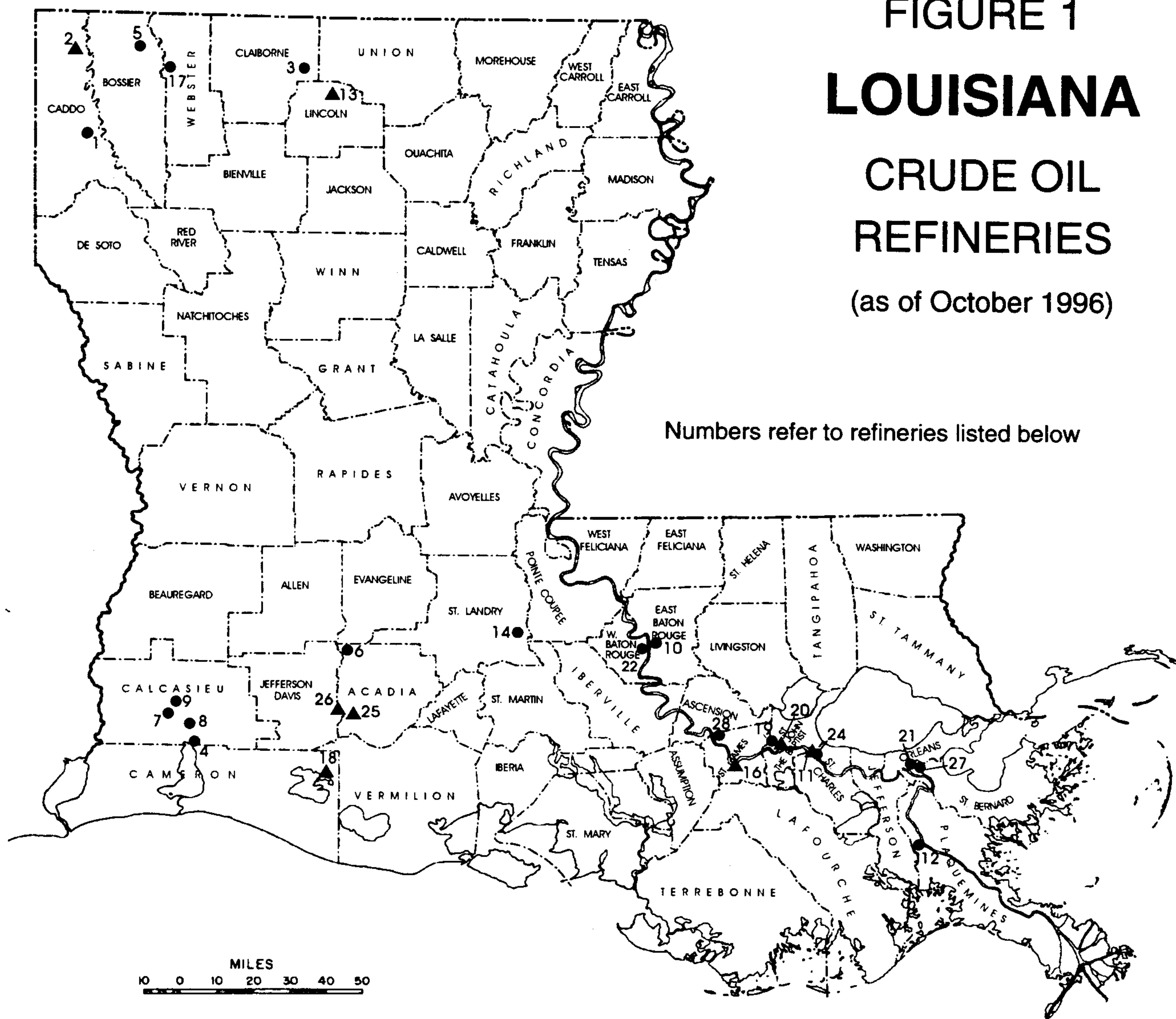
Note :

Annual (DOE / EIA) U. S. refinery capacity data in Table #2 and Table #3 is now being reported by EIA on a Biennial Schedule (every other year). Data reported in Table #2 and Table #3 is for January 1, 1994 and DOE's next update will be for 1996.

The operating refining 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
 (as of October 1996)



Technology Assessment Division

OPERATING REFINERIES ●

- 1 Atlas Processing Co. (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
- 11 TransAmerican Refining Co./Norco
- 12 B.P. Oil Co./Belle Chasse
- 14 Basis Petroleum, Inc./Krotz Springs
- 17 Calumet Lubricants Co., L.P./Cotton Valley
- 19 Marathon Oil Co./Garyville
- 21 Murphy Oil U.S.A., Inc./Meraux
- 22 Placid Refining Co./Port Allen
- 24 Norco Refining Co. (Shell Oil Co.)/Norco
- 27 Mobil Oil Corp./Chalmette
- 28 Star Enterprise/Convent

NON-OPERATING REFINERIES ▲

- 2 Bayou State Oil Corp./Hosston
- 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 U.S. Refining Co./Egan
- 26 Gold Line Refining, Ltd./Jennings

Note: Refineries 15, 23, and 29 have been intentionally removed from this listing because they no longer produce finished refinery products (#15) or have been dismantled (#23 & 29).

DISCUSSION

Overview

With major capital expenditures to comply with environmental and safety regulations behind them, Louisiana refineries continued to focus primarily on projects to improve profitability. These included major process reconfigurations to improve efficiency or alter the product mix to include more higher value products. Since June 1995, these projects have resulted in a total crude capacity increase of almost 10,100 bcd.

Of the twenty refineries that operated during the year ending June 30, 1996, seven produced reformulated gasoline (RFG) for sale in those markets where the EPA had mandated its use effective January 1, 1995. None of these areas are in Louisiana. RFG accounted for nearly 12.6% of all gasoline production by Louisiana refineries. However, RFG production came at the expense of the other grades as total gasoline production remained virtually the same as the previous twelve month period. Some refineries have reduced or eliminated RFG production altogether because they felt the market for it was too uncertain in that the EPA had granted waivers to certain areas allowing them to "opt out" of the program.

For the twelve month period ending June 30, 1996, total Louisiana refinery operating rates decreased slightly. While there were some changes in the product mix of individual refineries, the overall mix remained about the same. The trend to less mid-grade gasoline production continued into its fifth year. 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.

Note: Tables 2 and 3 are for 1994 because this data is now collected by DOE on a biennial (every other year) basis.

As of April 1, 1996, Phibro Energy has changed names and is now Basis Petroleum.

TransAmerican Refining Company is back on production but only refines on a limited basis.

Arcadia refinery at Lisbon was shut down in January 1996.

No non-operating refineries changed hands during the period from June 1995 to October 1996.

Operating Refineries

The total operating capacity of 2,524,300 barrels per calendar day (bcd) reported as of June 30, 1996, is about 4.7% higher than the 2,410,341 bcd reported in our October 1995 survey. TransAmerica's refinery added 100,000 barrels to the operating capacity. The overall operating rate declined to 91.2% from 91.6%. This compares with the national rate of 93.4% for 1994. 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 1947-1995.

Through June 30, 1996, five refineries reported capacity changes, with a net increase totaling 10,100 bcd.

A list of the refineries with increased or decreased capacity are as follows:

<u>Company / Refinery</u>	<u>Previous Capacity (bcd)</u>	<u>New Capacity (bcd)</u>	<u>Increase / Decrease (bcd)</u>
Arcadia Ref. / Lisbon	12,500	12,000	(500)
Calumet Lubr. / Princeton	9,000	8,000	(1,000)
Calumet Lubr. / Cotton Valley	7,800	8,900	1,100
CITGO / Lake Charles	300,000	310,000	10,000
Placid / Port Allen	47,000	47,500	500
		Total Increase 10,100

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 15% 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 58%, the OCS is next at 22%, and other states at 5%. Figure 5 shows the historical sources of crude oil for Louisiana refineries for the period 1981-1995. 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 1995.

Since the beginning of the year through May, the monthly Gulf Coast Refinery Margin has been increasing. The margin was \$+ 0.47/bbl in January and reached a maximum of \$+ 1.73/bbl in March and decreased to +\$ 0.94/bbl in May. Figure 7 shows the yearly average cash margins for the period 1976-1995, and monthly for 1996 through May.

The identity and location of each of Louisiana's eighteen refineries that were operating as of November 30, 1996, are shown on the map of Figure 1. Mailing addresses and contacts are listed in Table 4. A description of the physical location of each refinery is given in Table 5. Operating Refinery Name History can be found in Table 6 and Non-Operating Refinery Name History can be found in Table 9.

Shell and Texaco Plan Joint Venture (October 7, 1996) :

Shell and Texaco are proposing to form a joint venture that would combine their refining and marketing operations in the United States. The talks include Star Enterprise (Texaco's joint venture with the Saudi state owned Saudi Aramco). Future oil supplies would be guaranteed since Saudi Arabia is the world's largest oil producer.

Excess capacity and rising crude oil prices have driven profits down and refineries are looking to reverse the trend. The U.S. industry spent \$10.6 billion in 1994 for refinery improvements to comply with environmental regulations. Similar amounts were spent in 1992 and 1993.

The merger would create the largest refining and marketing business in the United States. The merger would combine \$17 billion of assets and bring together Shell's 8,700 outlets with Texaco / Star's 14,000 service stations in the U. S. Shell operates five refineries while Star

and Texaco operate seven refineries. The companies are projected to save a billion dollars a year in cost savings.

The Federal Trade Commission of the Department of Justice will review the proposal for antitrust implications. It could be months before an agreement is signed.

**Mobil and Lagoven sign a joint venture to process Venezuela Crude :
(September 17, 1996)**

Mobil signed an agreement with Lagoven, a subsidiary of Venezuela's state-owned oil company, in which Lagoven will purchase a 50% interest in the Chalmette refinery. The joint interest agreement involves the production of extra-heavy crude oil in Venezuela's Orinoco Oil Belt and processing this crude in Mobil's Chalmette refinery.

The Chalmette refinery is suited to handle extra heavy crude oil from Venezuela because it has the equipment in place to process the crude oil into gasoline and distillate products. Currently the Chalmette refinery can handle 191,000 BPD of crude.

Initial production of the extra-heavy crude is scheduled to begin in 1999. The Chalmette refinery will process 50,000 BPD and increase to 100,000 BPD by the year 2002.

Other Mergers :

Phillips Petroleum and Enco were negotiating a merger in June, but talks are stalled.

Atlantic Richfield Company and Unocal Corporation wanted to expand their operations on the West Coast.

Ultramar Corporation and Diamond Shamrock Inc. have announced a merger that would create a \$7.3 billion dollar company.

Gasoline Additive :

(Methylcyclopentadienyl Manganese Tricarbonyl , MMT)

A newly approved gasoline additive, Methylcyclopentadienyl Manganese Tricarbonyl (MMT), produced by Ethyl Corporation has been approved for sale in the U.S. MMT improves the burning efficiency and octane of gasoline. Ethyl predicts the MMT market could reach \$80 million. Ethyl claims that the new additive will reduce millions of pounds of smog-related pollutants per year from the environment. The additive will reduce carbon monoxide and nitrogen oxide emissions.

The Environmental Protection Agency (EPA) considers MMT a possible health risk because it contains the metal, manganese. EPA points out that exposure to manganese dust has been found to cause neurological and respiratory damage. Ethyl claims that tailpipe emissions are low and would not pose a health hazard. MMT was approved by a federal appeals court because the federal government has no authority under the Clean Air Act to block the sale of MMT.

Ethyl has been supplying MMT to refineries. Environmental groups have contacted refineries asking that they not use the additive until there are further tests to determine if chronic, low

dosages of MMT are toxic. Refineries are using caution in deciding to use MMT because of the controversy surrounding its health risks.

Automaker General Motors said that the 1997 owner's manuals will recommend that drivers not use gasoline that contains MMT in their new autos. Automakers contend that the antiknock compound could cause premature spark plug wear and damage catalytic converters. Although MMT has been used in Canada for the last nineteen years, automakers are backing a bill in Canada that would ban the sale and importation of MMT. Some petroleum interests are fighting the ban claiming that it would force smaller refiners out of business from the cost of refitting and retooling necessary to produce higher octane gasoline without MMT.

Non-Operating Refineries

Arcadia Refining has two plants, one at Lisbon and the other at Dubach. The Lisbon plant operated until January, 1996 and is currently shut-in. The Dubach plant stopped taking crude as of July 1, 1993, and was reclassified by DNR as a non-operating refinery. Arcadia plans to sell both of these refineries.

Gold Line's Jennings refinery is still shut-in although it was reported last year that it might be back on production in 1996.

The TransAmerica Refinery has been moved from shut-in to active status.

The identity and location of each of Louisiana's seven non-operating refineries is shown on the map of Figure 1. Mailing addresses and contacts are listed in Table 7. Physical locations, last known crude capacity, date last operated, and present status are described in Table 8.

The resources of the industry continue to be redirected from projects mandated by government regulations toward more potentially profitable ventures in the private marketplace. Restructuring and redeployment of assets continues as each company strives toward maximum efficiency and profits. The industry has proved to be remarkably resilient in coping with government regulations and volatile markets 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
October 1996 DNR Technology Assessment Division Survey**

REFINERY NAME	OPERATING CAPACITY As of June 30, 1996	IDLE CAPACITY	OPERATING RATE (%)	% OF TOTAL PRODUCT SLATE														
				GASOLINE				OTHER FUELS			MISCELLANEOUS			OTHER PRODUCTS			ALL OTHER	
				REG	MID- GRADE	ALL PREM	RFG	DIESEL	KERO	FUEL OIL	LPG's	NAPTH	COKE/ RESID	PRODUCT 1	PRODUCT 2	PRODUCT 3		
Arcadia Refng & Mktg. / Lisbon Ref.	12,000	0	45.2	0.0	0.0	0.0	0.0	12.0	10.0	25.0	0.0	53.0	0.0	0.0	0.0	0.0	0.0	
Atlas Processing Co. (Pennzoll)	46,200	0	72.9	11.4	2.1	1.1	0.0	15.8	19.0	0.0	0.0	5.4	7.3	19.9	7.7	2.0	8.3	
Basis Petroleum Inc. (Phibro Energy)	60,000	0	95.4	35.5	0.0	5.0	0.0	26.0	17.1	0.0	9.7	2.5	2.0	Lubes/Motor Oil 1.0	Catfeed 0.2	Waxes 0.8	0.2	
B. P. Oil Co. / Alliance Refinery	250,000	0	99.9	34.0	0.0	14.0	0.0	26.0	15.0	2.0	2.0	0.0	2.0	Catfeed 5.0	Lt.St. Run Gas 0.0	MTBE 0.0	0.0	
Calcasieu Refining Company	13,300	0	96.9	0.0	0.0	0.0	0.0	33.5	22.1	0.0	4.7	17.7	0.0	Petrochemicals 22.0	0.0	0.0	0.0	
Calumet Lubricants / Princeton Refinery	8,000	300	98.5	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	Catfeed 70.0	20.0	0.0	0.0	
Calumet Lubricants / Cotton Valley	8,900	0	65.8	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	50.0	0.0	Lube Oil 27.0	Asphalt 22.0	0.0	0.0	
Canal Refining Co.	8,000	2,000	83.8	12.0	0.0	7.0	0.0	52.0	0.0	0.0	2.0	0.0	27.0	Gas Oil 0.0	Light Straight Ru 0.0	0.0	0.0	
Citgo Petroleum Corp.	310,000	0	88.9	25.5	0.0	11.8	10.8	8.2	18.0	3.0	2.4	0.0	7.3	Petrochemicals 2.9	Lubes 1.7	0.0	8.4	
Conoco Inc. / Lake Charles Refinery	195,500	0	90.5	17.0	0.0	7.0	9.0	30.0	11.0	2.0	3.0	4.0	10.0	Gas Oil 6.0	0.0	0.0	1.0	
Exxon Co. U.S.A.	424,000	0	96.9	21.3	1.9	9.2	7.1	15.9	13.3	3.9	1.8	1.2	4.5	12.5	3.9	2.9	0.6	
Gold Line Refining, Ltd. / Lake Charles	17,500	2,500	63.6	0.0	0.0	0.0	19.9	37.0	0.0	0.0	1.3	25.3	0.0	Exxon Chemicals 16.5	Internal Fuels 0.0	Lubes / Wax 0.0	0.0	
Marathon Oil Co.	255,000	0	82.7	43.3	0.0	9.2	0.0	0.0	1.8	30.6	5.0	0.7	9.1	Gas Oil 0.3	0.0	0.0	0.0	
Mobil Oil Corp. / Chalmette Refinery	191,000	0	79.1	18.0	0.0	9.9	11.8	8.3	11.2	11.4	5.7	1.5	8.7	Sulfur 6.6	0.0	0.0	0.5	
Murphy Oil U.S.A. Inc. / Meraux Ref.	100,000	0	89.0	37.7	0.0	10.6	0.0	25.4	8.1	13.9	3.5	0.2	0.0	Refinery Fuel 0.5	Aromatics 0.1	Gas Oil 0.0	0.0	
Norco Refining Co. (Shell Oil Co.)	220,000	0	97.4	41.3	1.3	13.1	4.7	14.0	12.1	4.5	5.2	0.0	2.9	Gas Oil 0.9	Asphaltenes 0.0	0.0	0.0	
Placid Refining Co.	47,500	0	97.7	28.1	0.0	7.3	0.0	25.7	11.6	6.5	0.6	0.9	0.0	Catfeed 10.9	2.5	3.0	2.9	
St. Rose Refinery, Inc. * (Shell Chemical)	32,400	7,600	89.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Subgrade 50.0	Gas Oil 50.0	Propylene 0.0	0.0	
Star Enterprise	225,000	0	96.9	34.5	1.0	1.7	7.4	23.3	11.8	12.5	2.5	0.0	0.0	Light Ends 1.0	Heavy Ends 0.0	0.1	4.2	
Trans. American Refining Corp. **	100,000	100,000	41.1	0.0	0.0	0.0	0.0	0.0	0.0	35.0	0.0	0.0	0.0	Sulfur 0.0	65.0	0.0	0.0	
WEIGHTED STATE AVERAGE (%)			91.2	28.3	0.6	9.1	5.5	16.6	12.0	7.6	3.2	1.4	4.8	Sulfur 6.2	Gas Oil 2.2	MTBE 0.8	1.9	
TOTAL LA OPERATING CAPACITY	2,524,300	112,400																

Note : All data are for the twelve month period ending June 30, 1996. 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.

- * St. Rose Refinery makes Light and Heavy components which are used as feedstock to Shell's Olefins Units to produce Ethylene and Propylene for use in their chemical plant.
- ** Transamerican Refining Data was not used to calculate Operating Rate and Weighted Average Percent of product slate because of limited use of the refinery throughout the year.

TABLE 2

**U. S. DEPARTMENT OF ENERGY
CAPACITY OF LOUISIANA OPERABLE PETROLEUM REFINERIES AS OF JANUARY 1, 1995
(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)	231,500	0	235,000	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	8,200	0	8,700	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	191,000	0	199,000	0	87,800	65,000	0	0	12,000
Exxon Co. U.S.A. Baton Rouge	424,000	0	441,000	0	190,500	95,000	0	0	0
Gold Line Refining Ltd. Lake Charles	0	27,600	0	30,000	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	100,000	0	105,000	0	50,000	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
Transamerican Refining Co.** Good Hope (Norco)	0	0	0	0	240,000	0	0	0	0
1994 LOUISIANA TOTALS	2,356,550	27,600	2,457,500	30,000	1,233,300	332,000	0	12,000	120,000

*Estimated capacities

** Refinery was reactivated during 1994

Source: Energy Information Administration/Petroleum Supply Annual 1994, Volume 1, Table 38 [DOE/EIA-0340(94)/1]

Location	Downstream Charge Capacity (Continued)									
	Catalytic Cracking		Catalytic Hydro-Cracking	Catalytic Reforming		Catalytic Hydrotreating			Fuel Solvent Deasphltg	
	Fresh	Recycled		Low Pressure	High Pressure	Heavy Gas Oil	Naptha/Ref. Feeds	Distillate		Other/Residual
Lisbon	0	0	0	0	2,500	0	4,200	0	0	0
Belle Chasse (Alliance)	96,300	2,000	0	0	42,000	0	42,000	55,000	0	0
Lake Charles	0	0	0	0	0	0	0	0	0	0
Princeton	0	0	0	0	0	0	0	0	7,000	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	51,000	0	0	13,000	17,000	0	33,000	125,500	13,000	0
Baton Rouge	205,000	0	24,000	60,000	30,000	0	95,000	89,000	64,500	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	18,500	0	33,000	26,000	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	14,000	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	16,000	70,000	29,000	0	28,000	0
Convent	85,000	0	50,000	0	40,000	0	42,000	95,500	32,500	0
Good Hope	0	0	0	0	0	0	0	0	0	0
	903,300	4,000	175,000	298,900	209,500	217,000	516,200	489,000	178,200	35,000

TABLE 3

**U. S. DEPARTMENT OF ENERGY
PRODUCTION CAPACITY OF LOUISIANA OPERABLE PETROLEUM REFINERIES
AS OF JANUARY 1, 1995
(Barrels per Stream Day, Except Where Noted)**

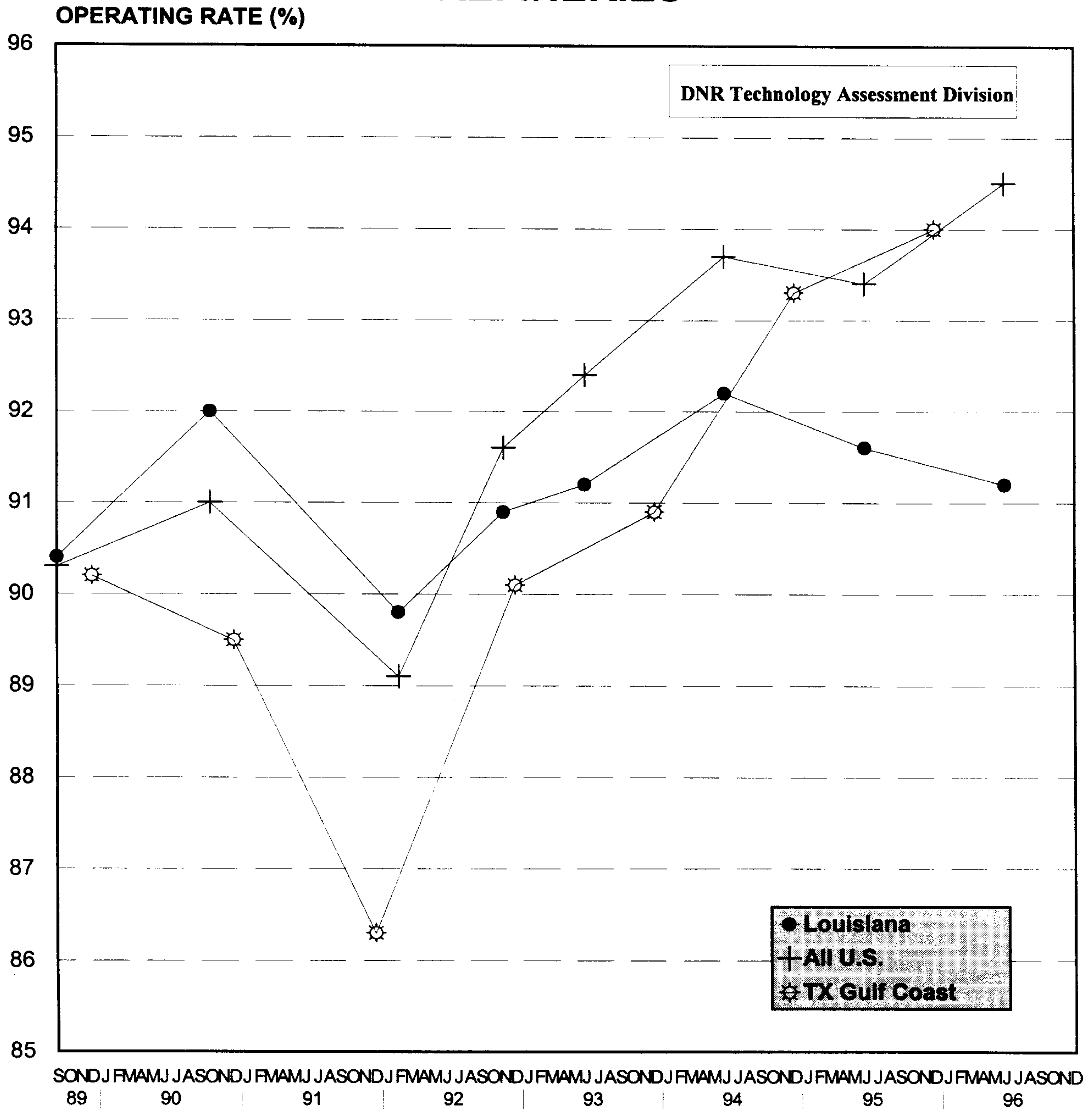
Refiner/Location	Production Capacity								
	Alkylates	Aromatics	Asphalt and Road Oil	Isomers		Lubricants	Marketable Petroleum Coke	Hydrogen (MMcfd)	Sulfur (short tons per day)
				Isobutane	Isopentane and Isohexane				
Arcadia Ref. & Mktg. Co. Lisbon	0	950	0	0	1,600	0	0	0	0
BP Oil Corp. Belle Chasse (Alliance)	36,000	8,000	0	0	0	0	3,500	40	125
Calcasieu Refining Co. Lake Charles	0	0	0	0	0	0	0	0	0
Calumet Lubricants Co. L.P. Princeton	0	0	1,700	0	0	6,600	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	9,600	22,500	0	690
Conoco Inc. Westlake	8,000	0	0	0	0	0	18,250	0	430
Exxon Co. U.S.A. Baton Rouge	35,800	0	12,000	0	0	15,800	24,900	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	18,000	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
1994 LOUISIANA TOTALS	192,300	19,950	72,300	14,700	52,900	40,000	82,625	227	3,649

MMcfd = Million cubic feet per day

Source: Energy Information Administration/Petroleum Supply Annual 1994, Volume 1, Table 39 [DOE/EIA-0340(94)/1]

FIGURE 2

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

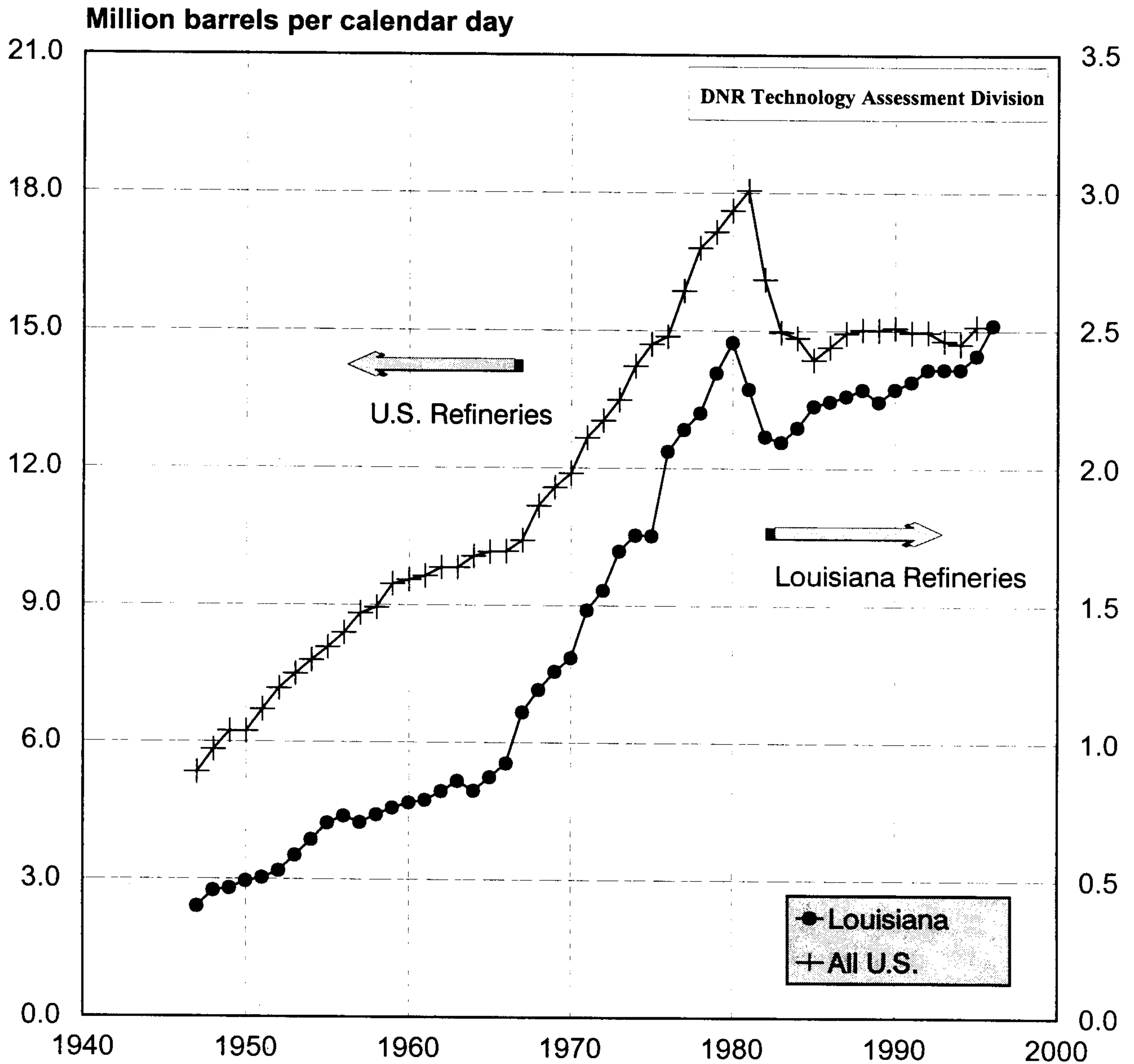


Source: LA Refineries-DNR Refinery Survey
 TX Refineries-EIA Petroleum Supply Annuals,
 1989-1995, Table 16
 U.S. Refineries-EIA Petroleum Supply Monthly,
 Vol. 1, 12/89 12/91, 1/93, 9/93, 94, 95, 96 Table H2

*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, Wilacy, and Cameron

FIGURE 3

OPERATING CAPACITY OF LOUISIANA AND U.S. REFINERIES

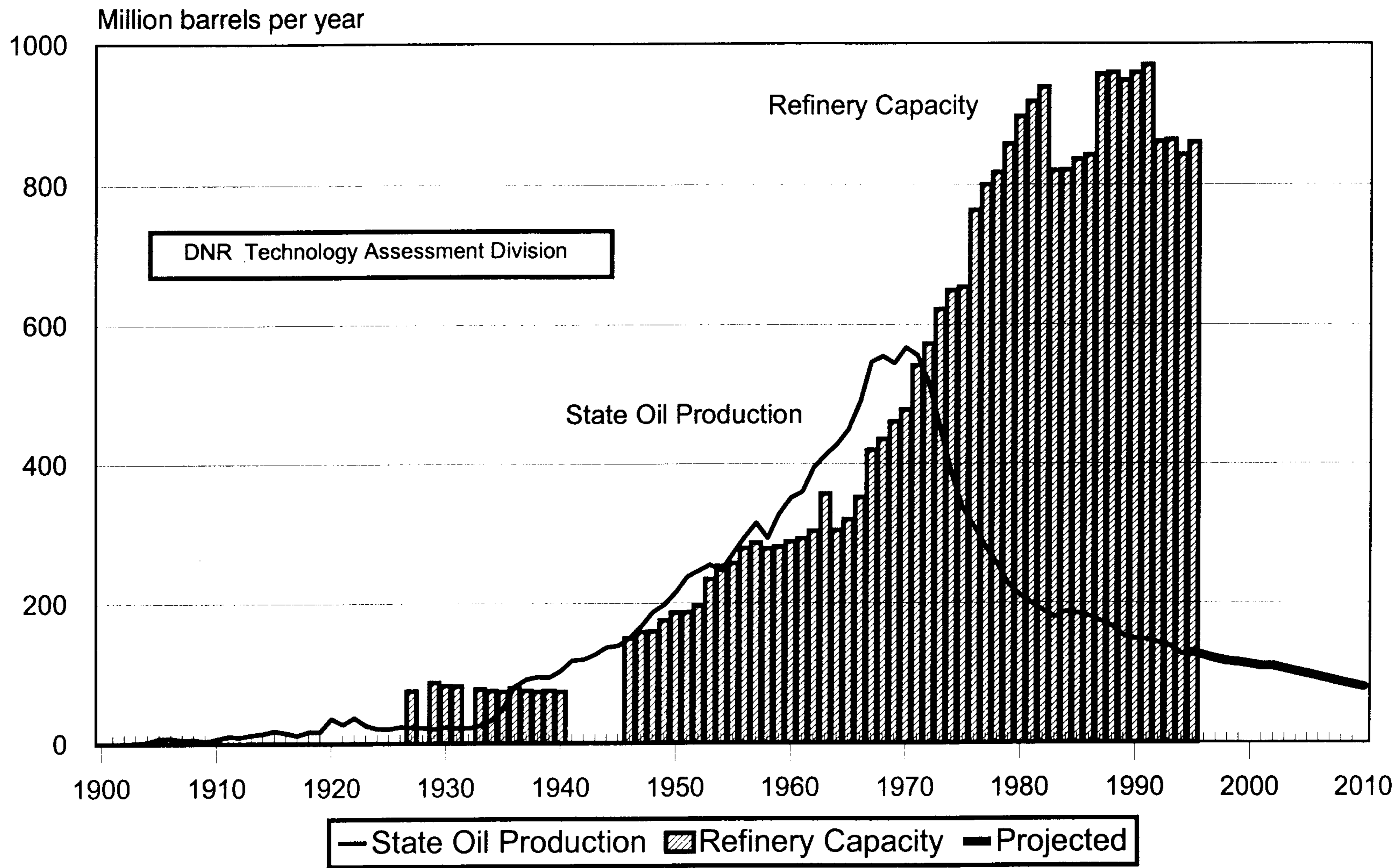


Source : LA. Refinery Capacity - DNR Energy Database and DOE, EIA Petroleum Supply Annuals, Volume I, Table 38

Source : U.S. Refinery Capacity - Basic Petroleum Data Book, Petroleum Industry Statistics, American Petroleum Institute, Volume XV, No. 3, July 1995, Section VIII, Table 4

FIGURE 4

LOUISIANA OIL PRODUCTION AND REFINERY OPERABLE CAPACITY



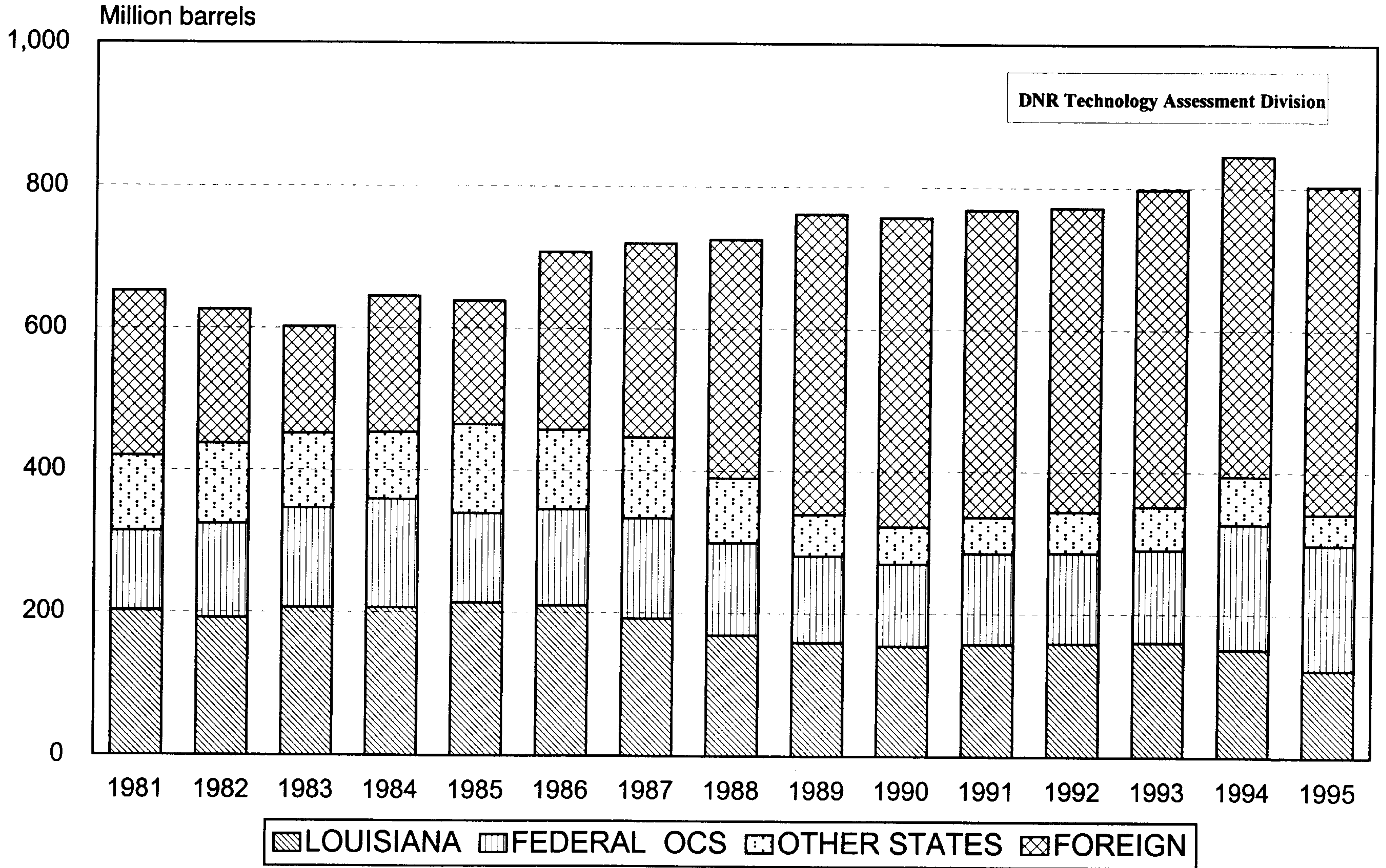
Source : Oil Production DNR Database

Source : Refinery Capacity - DNR Energy Database and DOE, EIA Petroleum Supply Annual, Volume I, Table 38

Note : 1979 Capacity is estimated

FIGURE 5

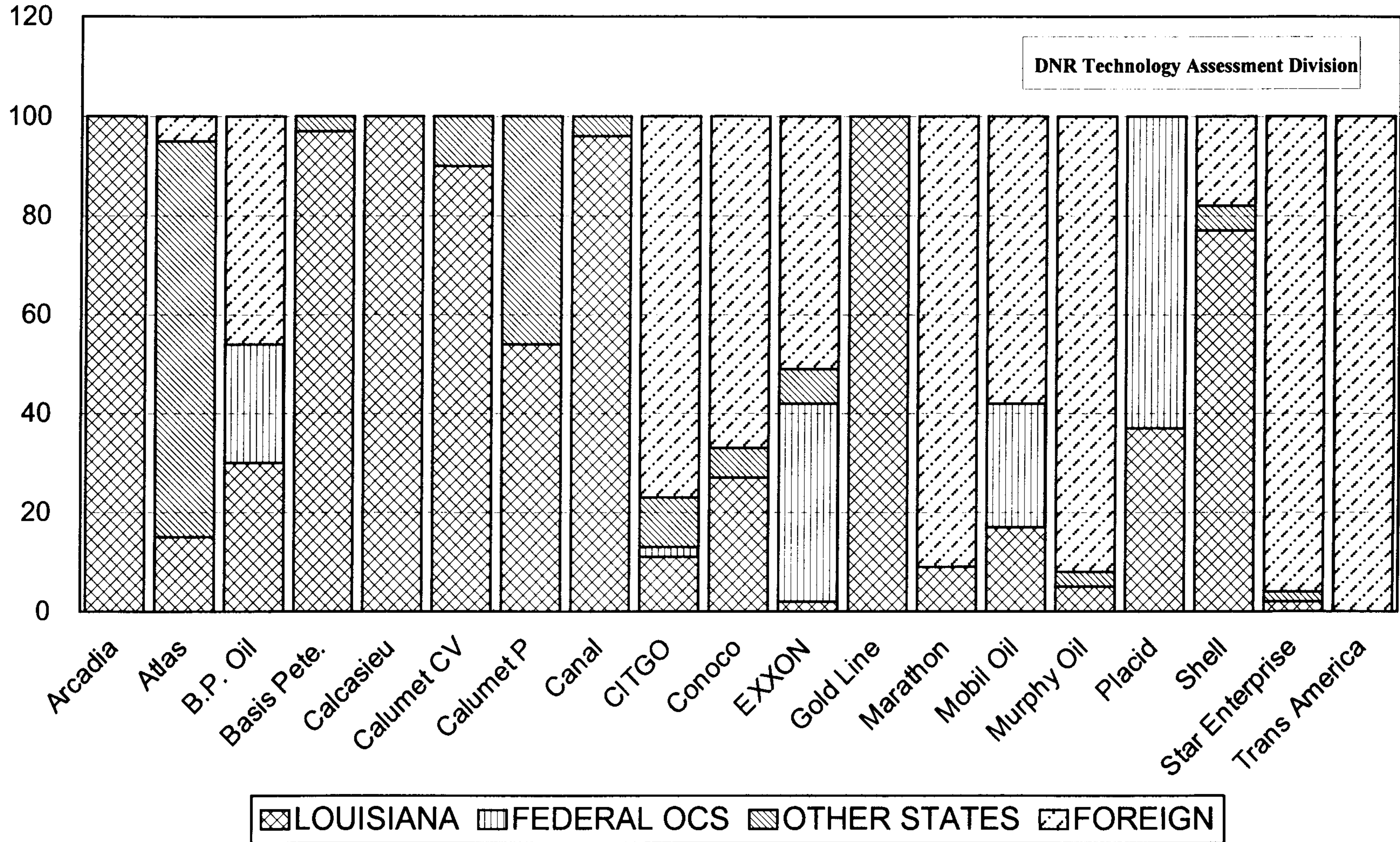
HISTORICAL LOUISIANA REFINERY INPUT BY SOURCE



Data from DNR Database

FIGURE 6

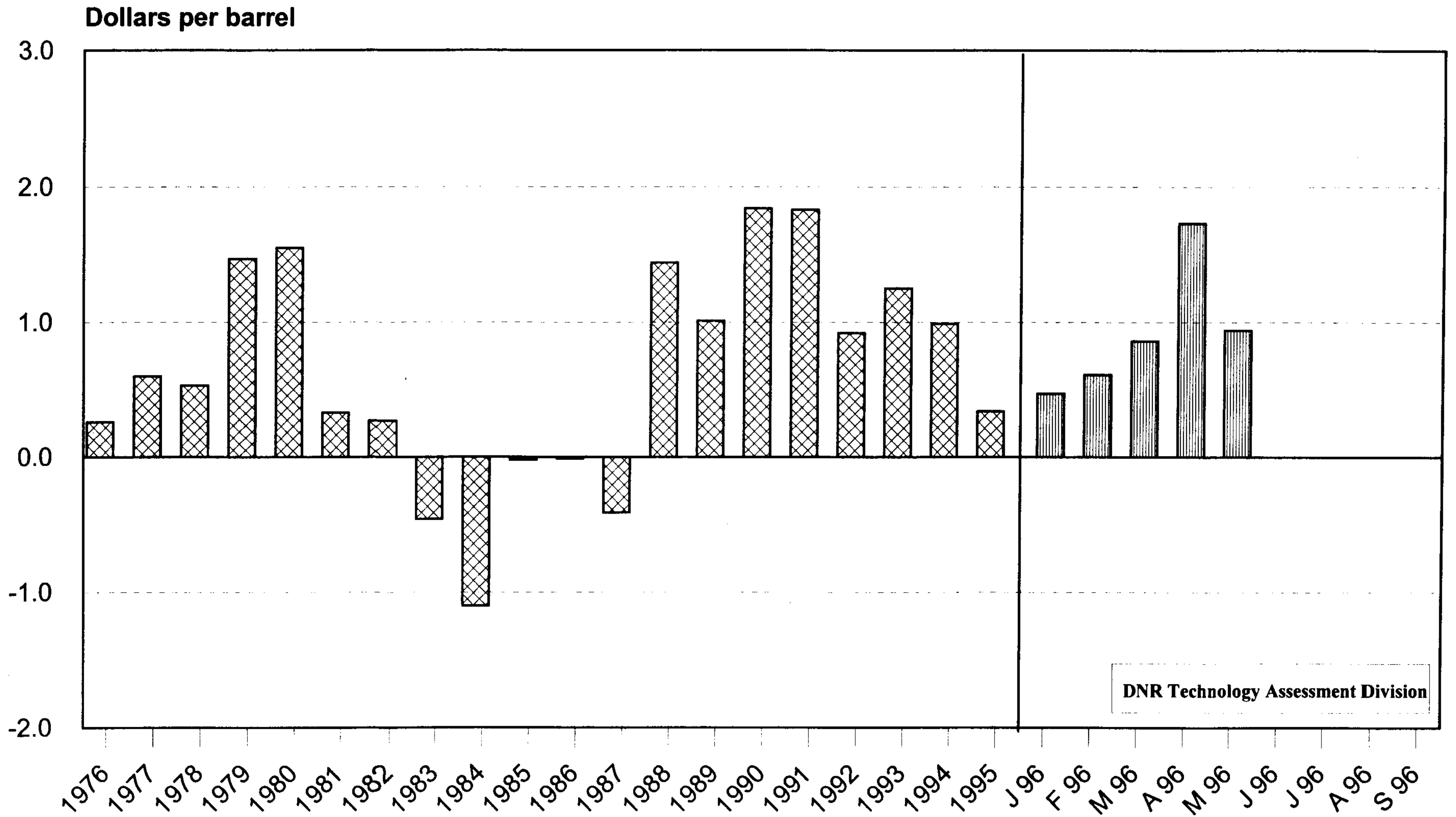
1995 LOUISIANA REFINERY CRUDE OIL INPUT PERCENTAGE BY SOURCE BY COMPANY



Data from DNR Database

FIGURE 7

GULF COAST REFINERY MARGINS REGIONAL AVERAGE CASH OPERATING MARGIN



Sources: 1976-March 1996: Wright Killen & Co., from Oil & Gas Journal's "Energy Statistics Sourcebook," Tenth Edition page 201.
May 1996 - Sept. 1996: Wright Killen & Co., from Oil & Gas Journal magazine.

TABLE 4

LOUISIANA OPERATING REFINERIES
MAILING ADDRESSES & CONTACT LIST

NAME	MAILING ADDRESS	CONTACTS	TELEPHONE
Arcadia Refining & Marketing Co. L.P. Lisbon Refinery	Box 170 Lisbon, LA 71048	Jim Nichols, (Pres. & Ch. Opr. Ofcr.) W. A. Scriber, (Interim Manager)	(214) 922-9094 (318) 352-2283
Atlas Processing Co.- Div. Pennzoil	Box 3099 Shreveport, LA 71113	Mike Wion, (Plt. Mgr.) John Short, (Accounting Mgr.)	(318) 636-2711
Basis Petroleum (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
B. P. Oil Co. Alliance Refinery	Box 395 Belle Chasse, LA 70037	Flex Strater, (Plt. Mgr.) Larry Hable, (Chief Eng.)	(504) 656-7711
Calcasieu Refining Company	Box 6028 Lake Charles, LA 70606	Hank Gossen, (Plt. Mgr.) Tom Prudhomme, (Tech. Supt.)	(318) 478-2130
Calumet Lubricants Co. L.P. Cotton Valley Facility	Box 97 Cotton Valley, LA 71018	M.R. Sheets, (Plt. Mgr.) Rodney G. Butts, (Sr. Process Eng.)	(318) 832-4236 (318) 832-4236
Calumet Lubricants Co. L.P. Princeton Refinery	10234 Hwy. 157 Princeton, LA 71067	Jerry Arnold, (V.P.) Jerry Tollafsen, (Chief Eng.)	(318) 949-2421
Canal Refining Co.	Box 8 Church Point, LA 70525	Hubert Vidrine Jr., (Plt. Mgr.) Mike Fruge, (Chief Eng.)	(318) 684-5421
Citgo Petroleum Corp.	Box 1562 Lake Charles, LA 70602	Adolph Lechtenberger, (Plt. Mgr.) George Frondorf, (Mgr. Eng.)	(318) 497-8130
Conoco Inc. Lake Charles Refinery	Box 37 Westlake, LA 70669	Robert J. Hassler, (Plt. Mgr.) Nick D. Spencer, (Operations)	(318) 491-5211
Exxon Co. U.S.A.	Box 551 Baton Rouge, LA 70821	Gary W. Pruessing, (Plt. Mgr.) Keith Baugher, (Chief Eng.)	(504) 359-7711
Gold Line Refining, Ltd. Lake Charles Refinery	P. O. Drawer 18190 Lake Charles, LA 70616	Robert Batey, (Plt. Mgr.) James Dautenhahn, (Chief Eng.)	(318) 436-4185
Marathon Oil Co.	Box AC Garyville, LA 70051	Larry Echelberger, (Div. Mgr.) Tracy Case, (Chief Eng.)	(504) 535-2241
Mobil Oil Corp. Chalmette Refinery	Box 1007 Chalmette, LA 70044	Donald J. Michael, (Ref. Mgr.) Tim Davis, (Opr. Mgr.)	(504) 942-1591
Murphy Oil U.S.A. Inc. Meraux Refinery	Box 100 Mereaux, LA 70075	Ernie Cagle, (Plt. Mgr.) David Podratz, (Chief Eng.)	(504) 271-4141
Placid Refining Co.	1940 La. Hwy. #1 N. Port Allen, LA 70767	Larry Doty, (V. P. & Gen. Mgr.) Gary Fuller, (Ref. Mgr.)	(504) 387-0278
Norco Refining Co. (Shell Oil Co.)	Box 10 Norco, LA 70079	T.A. Kirkley, (Norco Site Mgr.) R. H. Planzo, (Business Mgr.)	(504) 465-7810 (504) 465-7336
Star Enterprise	Box 37 Convent, LA 70723	Ron Anderson, (Plt. Mgr.) Jerry Price, (Supervisor)	(504) 562-7681
TransAmerican Refining Corp. (Administrative Office)	P. O. Box 537 Norco, LA. 70079-0537	Gary Karr, (V. P. Ref.) Steve Richards, (Chief Eng.)	(504) 764-8611

TABLE 5

LOUISIANA OPERATING REFINERY LOCATIONS

NAME	PHYSICAL LOCATION
Arcadia Ref. & Mktg. Co. L.P. / Lisbon Refinery	Lisbon, 3 mi. east on south side of La. 2.
Atlas Processing Co (Pennzoll)	Shreveport, 3333 Midway Ave., Across I-20 from State fairgrounds.
B. P. Oil Co. / Alliance Refinery	Belle Chasse, 12 mi. south on east side of La. 23.
Calcasieu Refining Company	Lake Charles, 3 mi. south at west end of Old Tank Farm Road on Ship Canal.
Calumet Lubricants Co. L.P. / Cotton Valley Facility	Cotton Valley, east side of La. 7 South at city limits.
Calumet Lubricants Co. L.P. / Princeton Refinery	Princeton, 5 mi. north of I-20 on east side of La. 157.
Canal Refining Co.	Church Point, 2 mi. north on left side of La. 178.
CITGO Petroleum Corp.	Lake Charles, I-10 exit 23, then 2 mi. 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.
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.
Norco Refining Co. (Shell Oil Co.)	Norco River Road in Norco.
Phibro Energy U.S.A. / Krotz Springs Refinery	Krotz Springs La. 105 South in town.
Placid Refining Co.	Port Allen 1940 La. 1 North.
Star Enterprise	Convent, on La. 44 at east bank foot of Sunshine bridge.
TransAmerican Refining Co.	Norco, 257 Prospect Ave.

TABLE 6

Operating Refineries Name History (1980 - 96)			Operating Refineries Name History (1980 - 96)		
Refinery Name	Date	Location	Refinery Name	Date	Location
Exxon Co. U.S.A.	1980-96	Baton Rouge	Citgo Petroleum Corp.	1984-96	Lake Charles
B. P. Oil Corp.	1989-96	Belle Chasse	Cities Service Co.	1980-83	Lake Charles
Standard Oil Co.	1986-88	Belle Chasse	Conoco Inc.	1982-96	Lake Charles
Gulf Refining and Marketing Co.	1985-85	Belle Chasse	Conoco	1980-81	Lake Charles
Gulf Oil Corp.	1981-84	Belle Chasse	Continental Oil Co.	1979	Lake Charles
Gulf Oil Co. U.S.	1979-80	Belle Chasse			
Canal Refining Co.	1980-96	Church Point	Gold Line Refining Ltd.	1992-96	Lake Charles
			American International Refining Inc.	1989-91	Lake Charles
Mobil Oil Corp.	1989-96	Chalmette	Lake Charles Refining Co.	1980-88	Lake Charles
Tenneco Oil Co.	1980-88	Chalmette	Aweco	1979-79	Lake Charles
Star Enterprise	1989-96	Convent	Arcadia Refining and Marketing Co.	1995-96	Lisbon
Texaco Refining & Marketing Inc.	1985-88	Convent	Dubach Gas Co.	1992-94	Lisbon
Texaco Inc.	1980-84	Convent	Clalborne Gasoline Co.	1980-91	Lisbon
Calumet Lubricants Co. L.P.	1996-96	Cotton Valley			
Kerr-McGee Refining Corp.	1985-95	Cotton Valley	Murphy Oil U.S.A. Inc.	1984-96	Meraux
Kerr-McGee Corp.	1983-84	Cotton Valley	Murphy Oil Corp.	1980-83	Meraux
Cotton Valley Solvents Co.	1980-82	Cotton Valey			
Marathon Oil Co.	1992-96	Garyville	Shell Oil Co.	1980-96	Norco
Marathon Petroleum Co.	1985-91	Garyville			
Marathon Oil Co.	1980-84	Garyville	Calumet Lubricants Co. L.P.	1991-96	Princeton
			Calumet Refining Co.	1980-90	Princeton
TransAmerican Refining Co.	1992-96	Good Hope			
TransAmerica Refining Co.	1988-91	Good Hope	Placid Refining Co.	1980-96	Port Allen
GHR Energy Corp.	1982-87	Good Hope			
Good Hope Refineries Inc.	1981-81	Good Hope	Pennzoil Producing Co.	1992-96	Shreveport
Good Hope Industries Inc.	1980-80	Good Hope	Pennzoil Products Co.	1986-91	Shreveport
			Pennzoil Co. Inc	1985-85	Shreveport
Basis Petroleum Inc.	1996-96	Krotz Springs	Atlas Processing Co.	1980-84	Shreveport
Phibro Energy U.S.A. Inc.	1993-95	Krotz Springs			
Phibro Refining Inc.	1992-92	Krotz Springs	Shell Chemical Co.	1996-96	St. Rose
Hill Petroleum Co.	1980-91	Krotz Springs	St. Rose Refinery Inc.	1994-95	St. Rose
			Phibro Energy U.S.A. Inc.	1993-93	St. Rose
Calcasieu Refining Co.	1985-96	Lake Charles	Phibro Refining Inc..	1992-92	St. Rose
CPI Oil and Refining Inc.	1982-84	Lake Charles	Hill Petroleum Co.	1987-91	St. Rose
Calcasieu Refining Ltd.	1980-81	Lake Charles	International Processors	1981-86	St. Rose

TABLE 7

LOUISIANA NON-OPERATING REFINERIES
MAILING ADDRESSES & CONTACT LIST

NAME	MAILING ADDRESS	CONTACTS	TELEPHONE
Arcadia Refining & Marketing Co. L.P. Dubach Location	Box 170 Lisbon, LA 71048	W. A. Scriber (Acting Mgr.) Arcadia's Lisbon Plant	(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. Jennings Plant	P. O. Drawer 1050 11499 Plant Road Jennings, LA 70546	Robert Batey, (Plt. Mgr.) Peyton Smith, (Opr. Supt.)	(318) 824-2766
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	Jack Pender, (Bkrptcy. Trste.)	(504) 581-2024
Tina Resources, Inc.	207 Firestone Drive Marble Falls, TX 78654	Leslie Vance, (President)	(210) 693-6923
U.S. Refining Co. (Administrative Office)	C / O Jade Petroleum P.O. Box 136 Newton, TX 75966	James Hughes, (Owner)	(409) 397-4221
U. S. Refining Co. (REFINERY)	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 8.

TABLE 8

LOUISIANA NON-OPERATING REFINERIES
PHYSICAL LOCATIONS, LAST KNOWN CRUDE CAPACITY (barrels/calendar day), DATE LAST OPERATED, AND STATUS

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 Natural Gas Co., formerly known as Endevco)	Facility consists of a crude oil refinery and gas liquids fractionating plant. Refining assets sold by Cornerstone to Arcadia, which has no immediate plans to utilize refining assets. Cornerstone presently operating gas plant.
Gold Line Refining Co. Ltd. Jennings Refinery	3-1/2 mi. east of jct. U.S. 90E & La. 102 in Jennings. On Mermentau River 1mi. north of U.S. 90E at end of gravel road.	14,800	8/90	Celeron; Slapco; CAS Refining	Refinery to reopen by second quarter 1996 if financing is obtained. Refinery manager and operations supt. of Lake Charles plant will manage this facility as well.
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. Actively pursuing the sale of all refinery process equipment so site can be used 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	In bankruptcy since 1987. Orderly cleanup of refinery site proceeding, including demolition of steel. One lawsuit left to determine responsibility for cleanup of two aeration ponds. Eight tanks and mothballed units still on site.
Tina Resources, Inc.	Cameron Parish. Talen's landing on Intracoastal Waterway 9mi. south of jct. La. 14 & 26 in Lake Arthur via La. 14	7,400	2/86	Mallard Resources, Inc.; Cameron Resources, Inc.	Refinery still for sale.
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.	Negotiations for sale of refinery in progress.

TABLE 9

Non-Operating Refineries Name History (1980 - 96)			Non-Operating Refineries Name History (1980 - 96)		
Refinery Name	Data	Location	Refinery Name	Data	Location
Sooner Refining Co.	1980-82	Darrow	Lake Charles Refining Co.	1980-82	Lake Charles
Conoco Inc.	1982-89	Egan	Aweco	1979	Lake Charles
Conoco	1980-81	Egan	Gold Line Refining Co. Ltd.	1994-96	Mermanteau
Continental Oil Co.	1979	Egan	CAS Refining	1991-93	Mermanteau
U.S. Refining, Inc.	1994-96	Egan	Celeron Oil and Gas Co.	1983-90	Mermanteau
Britt Processing & Refining Co.	1992-93	Egan	Slapco	1980-82	Mermanteau
Crystal Refining, Inc.	1989-91	Egan	South Louisiana Production Co.	1979	Mermanteau
OGC Corp.	1988-88	Egan	Petroleum Fuel & Terminal Co.	1992-96	Mt. Airy
Louisiana Oil Refining Co. of Egan	1987-87	Egan	Clark Oil and Refining Corp.	1983-91	Mt. Airy
Arcadia Refining	1995-96	Dubach	Mt. Airy Refining	1980-82	Mt. Airy
Endevco Inc.	1989-94	Dubach	Texas NAPCO Inc.	1983-88	St. James
Kerr-McGee Refining Corp.	1985-88	Dubach	La. Jet Inc.	1980-82	St. James
Kerr-McGee Corp.	1980-84	Dubach	Texas NAPCO Inc.	1984-96	St. James
Tina Resources, Inc.	1993-96	Gueydon	McTan Refining Corp.	1983-83	St. James
Cameron Oil Refining Co., Inc.	1992-92	Gueydon	McTan Corp.	1982-82	St. James
Cameron Resources	1990-91	Gueydon	Bruin Refining Co.	1980-81	St. James
Mallard Resources Inc.	1980-89	Gueydon	Sabine Resources Group	1990-92	Stonewall
Bayou State Oil Corp.	1980-96	Hosston	Port Petroleum Inc.	1980-89	Stonewall
Evangeline Refining Co.	1980-92	Jennings	Schulze Processing Inc.	1980-82	Tallulah
Shepard Oil Co.	1980-82	Jennings	Gulf Oil Co. U.S.A.	1981-81	Venice
Laidlaw Environmental Systems	1992-92	Jennings	Gulf Oil Corp.	1980-80	Venice
GSX Recovery Systems	1983-91	Jennings			
T&S Refining Co.	1980-82	Jennings			