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REPORT ON CRUDE OIL
PRODUCTION AND GASOLINE DISTRIBUTION
SEPTEMBER 1973

Joint Legislative Audit Committee

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California Legislature

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November 16, 1973

Honorable Ken Meade, Chairman
Assembly Transportation Committee
Room 3146, State Capitol
Sacramento, California 95814

Dear Ken:

Transmitted herewith is a report which brings up-to-date information previously submitted in June 1973 regarding changes in crude oil production and gasoline distribution in California.

The nine major oil companies have integrated operations from crude oil production to retail stations while the independents have not. As the gasoline supply problem evolved, these major companies increased the amounts of gasoline they distributed while the amounts distributed by independent companies decreased.

Although their refinery output was reduced, the major oil companies were able to increase the amount of gasoline distributed through their own outlets by reducing the amount they marketed through independent oil companies. A primary cause of the gasoline supply problem was the reduced refinery output of four major oil companies, which collectively reduced production by 121 million gallons during March and April 1973 below the same period of 1972. This reduction in production had little effect on the volumes of gasoline distributed by these companies, which collectively increased their distribution by 21 million gallons.

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Those independent distributors which had a high degree of self-sufficiency increased both refinery output and distributions. However, the independent companies, which historically have marketed more than they have produced, distributed 75 million gallons less in March and April 1973 than during the same months of 1972, even though the refinery output of this group of companies had increased by six million gallons.

At a current rate of extraction, the state's proven and undiscovered crude oil reserves identified by the California Resources Agency represent more than a hundred year supply. California crude oil prices remain below other domestic prices. This reduces tidelands oil revenue and increases dependency on outside sources because of the reduced incentive to develop new internal supply.

With my warm best wishes,

Sincerely,

A handwritten signature in cursive script that reads "Vince".

VINCENT THOMAS, Chairman
Joint Legislative Audit Committee

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SCOPE

This report brings up-to-date information previously submitted in June 1973 regarding changes in crude oil production and gasoline distribution in the State of California.

We reviewed information obtained from the oil industry and state and federal agencies. An audit was not performed, but comparisons were made of the same or similar information provided from different sources.

REPORT SUMMARY

- COMPARISON OF THE FIRST SIX MONTHS OF 1973 WITH THE FIRST SIX MONTHS OF 1972 INDICATES THAT CONCURRENTLY AS THE GASOLINE SUPPLY PROBLEM EVOLVED THE AMOUNTS DISTRIBUTED BY THE MAJOR OIL COMPANIES WITHIN CALIFORNIA INCREASED WHILE THE AMOUNTS DISTRIBUTED BY THE INDEPENDENT COMPANIES DECREASED.

- COMPARISON OF MARCH AND APRIL 1973 WITH MARCH AND APRIL 1972 INDICATES THAT:
 - THE MAJOR OIL COMPANIES, AS A GROUP, CONCURRENTLY REDUCED THE GASOLINE OUTPUT OF THEIR REFINERIES WITHIN CALIFORNIA WHILE INCREASING THEIR PROPORTION OF TOTAL GASOLINE DISTRIBUTIONS.

 - THE REDUCED REFINERY OUTPUT OF FOUR OF THE NINE MAJOR OIL COMPANIES WAS A PRIMARY CAUSE OF THE GASOLINE SUPPLY PROBLEM.

 - FOR THE MAJOR OIL COMPANIES, CHANGES IN THE AMOUNTS OF THEIR REFINERY OUTPUT HAD LITTLE EFFECT ON THE AMOUNTS OF GASOLINE DISTRIBUTED BY THEM.

 - AN INDEPENDENT OIL COMPANY'S DEGREE OF SELF-SUFFICIENCY WAS THE PRIMARY FACTOR IN THE EFFECT THAT THE GASOLINE SUPPLY PROBLEM HAD ON THAT COMPANY.

- CALIFORNIA'S PROVEN AND UNDISCOVERED CRUDE OIL RESERVES IDENTIFIED BY THE CALIFORNIA RESOURCES AGENCY REPRESENT MORE THAN A HUNDRED YEARS' SUPPLY AT THE CURRENT RATE OF EXTRACTION.

- THE RETENTION OF THE LOWER CALIFORNIA CRUDE OIL PRICE COMPARED TO PRICES IN OTHER AREAS CREATES TWO IMPACTS ON THE STATE:
 1. A REDUCTION IN STATE TIDELANDS OIL REVENUE, AND
 2. AN INCREASE IN DEPENDENCY ON OUTSIDE SOURCES BECAUSE OF THE REDUCED INCENTIVE TO DEVELOP NEW SUPPLY.

REFINING AND DISTRIBUTION

Nine major oil companies that have integrated operations from crude oil production to retail sales operate 85 percent of the crude oil refinery capacity within the state. These companies, together with 18 independent refining companies, are reported to be currently operating at near capacity. However, during the transition period from the federal limitation on foreign imports to the policy announced April 18, 1973 to encourage imports, there were substantial reductions in the amounts of gasoline manufactured as compared with the prior year.

For most industrial products, a reduction in the amount of production by a member of the industry would be accompanied by a corresponding reduction in sales by that company. However, gasoline has no distinguishing characteristics by manufacturer. Changes, therefore, in the refinery production volume of a particular company will affect the total available supply, but not necessarily the sales volume of that oil company.

The absence of product identification by manufacturer and the significance of transportation costs fosters internal trades, sales and production agreements among the companies. No useful purpose would be served by a major oil company with its refinery in southern California supplying its northern California stations while another major oil company with its refinery in northern California transports gasoline to its southern stations. Internal trades, sales and production agreements lower costs, but also provide the mechanism by which the independent distributors suffered the results of the major oil companies' output reductions.

The most significant retail price difference is not between name brands. Rather, the major difference has been between the name brands collectively and the independent stations for which price consciousness is the primary appeal. The likelihood that the gasoline sold at an independent station is from an independent refinery is no greater than the likelihood that the gasoline sold at a brand name station is from the refinery of the same name.

GASOLINE DISTRIBUTIONS

Retail sales of gasoline are not reported to the state. Rather, gasoline is subject to tax at the time it is made available for retail sale by a licenses distributor. An analysis of taxable distributions, as reported by the oil companies on their gas tax returns, indicates that concurrent with the development of the gasoline supply problem, significant changes occurred in the proportions of total distributions reported by the various gasoline distributors.

Finding

- COMPARISON OF THE FIRST SIX MONTHS OF 1973 WITH THE FIRST SIX MONTHS OF 1972 INDICATES THAT CONCURRENTLY AS THE GASOLINE SUPPLY PROBLEM EVOLVED THE AMOUNTS DISTRIBUTED BY THE MAJOR OIL COMPANIES WITHIN CALIFORNIA INCREASED WHILE THE AMOUNTS DISTRIBUTED BY THE INDEPENDENT COMPANIES DECREASED.

Table 1 compares the taxable gallons of gasoline distributed by the nine major oil companies and that distributed by the independent companies during the first six months of 1973 and 1972.

Table 1

Taxable Gallons of Gasoline Distributed
First Six Months of 1973 and 1972

	<u>Millions of Gallons</u>		
	<u>January through June</u>		<u>Increase</u>
	<u>1973</u>	<u>1972</u>	<u>(Decrease)</u>
Nine major oil companies	4,275	4,024	251
Independent companies	<u>821</u>	<u>892</u>	<u>(71)</u>
Total	<u>5,096</u>	<u>4,916</u>	<u>180</u>

Table 2 shows the changes in the gallons distributed by month.

Table 2

Changes In Gallons of Gasoline Distributed
First Six Months of 1973 and 1972

	<u>Millions of Gallons - Increase (Decrease)</u>		
	<u>Nine Major Oil Companies</u>	<u>Independent Companies</u>	<u>Total</u>
January	33	6	39
February	(4)	6	2
March	47	(14)	33
April	75	(25)	50
May	79	(28)	51
June	<u>21</u>	<u>(16)</u>	<u>5</u>
Total	<u>251</u>	<u>(71)</u>	<u>180</u>

The source of information in Tables 1 and 2 is reports of the Board of Equalization.

Finding

- COMPARISON OF MARCH AND APRIL OF 1973 WITH MARCH AND APRIL OF 1972 INDICATES THAT THE MAJOR OIL COMPANIES, AS A GROUP, CONCURRENTLY REDUCED GASOLINE OUTPUT OF THEIR REFINERIES WITHIN CALIFORNIA WHILE INCREASING THEIR PROPORTION OF TOTAL GASOLINE DISTRIBUTIONS.

The crude oil and refinery production inventories in the seven western states began to decline in July 1972, according to the U. S. Department of the Interior. Inventories declined as demand continued to exceed supply. By the end of February 1973, inventories were ten percent below that of a year earlier. Until this date, there was little change in the proportions of total gasoline distributions reported by the major and independent companies operating within the state. However, as indicated in Table 2 above, in March and April of this year, the gasoline distributions made by the independent companies decreased by 39 million gallons, while the distributions made by the major oil companies increased by 122 million gallons.

This change was not accompanied by a similar change in production, that is, a reduction in independent refinery production and an increase in the output of the major oil companies. Rather, as indicated in Table 3, the output of the independent refineries increased by one million gallons, while the refinery output of the major oil companies was reduced by 78 million gallons.

Table 3

Gasoline Output and Distribution
March and April 1973 and 1972

	<u>Millions of Gallons</u>		<u>Increase (Decrease)</u>
	<u>March and April 1973</u>	<u>1972</u>	
Refinery output:			
Nine major oil companies	1,470	1,548	(78)
Independent companies	<u>276</u>	<u>275</u>	<u>1</u>
Total	<u>1,746</u>	<u>1,823</u>	<u>(77)</u>
Taxable distributions:			
Nine major oil companies	1,467	1,345	122
Independent companies	<u>275</u>	<u>314</u>	<u>(39)</u>
Total	<u>1,742</u>	<u>1,659</u>	<u>83</u>

The source of information in Table 3 is motor vehicle fuel tax returns filed with the Board of Equalization.

EFFECTS OF REDUCED PRODUCTION

Gasoline taxpayers report all production and transactions, including both taxable and nontaxable sales and exchanges with other distributors.

Finding

- COMPARISON OF MARCH AND APRIL OF 1973 WITH MARCH AND APRIL OF 1972 INDICATES THAT:
 - THE REDUCED REFINERY OUTPUT OF FOUR OF THE NINE MAJOR OIL COMPANIES WAS A PRIMARY CAUSE OF THE GASOLINE SUPPLY PROBLEM.
 - FOR THE MAJOR OIL COMPANIES, CHANGES IN THE AMOUNTS OF THEIR REFINERY OUTPUT HAD LITTLE EFFECT ON THE AMOUNTS OF GASOLINE DISTRIBUTED BY THEM.

Table 4 summarizes the changes in refinery output and taxable gasoline distributions for the nine major oil companies and independents for March and April of 1973 and 1972. The nine major oil companies are grouped according to the change in the amounts of refinery output.

Table 4

Changes in Gasoline Refinery Output and Distributions
March and April 1973 and 1972

	Increase (Decrease) Millions of Gallons		Refinery Output Over (Under) <u>Distributions</u>
	<u>Refinery Output</u>	<u>Taxable Distributions</u>	
Three major companies which increased refinery output	49	68	(19)
Two major companies which reduced refinery output by small amounts	(6)	33	(39)
Four major companies which reduced refinery output by large amounts	<u>(121)</u>	<u>21</u>	<u>(142)</u>
Total major oil companies	(78)	122	(200)
Independent companies	<u>1</u>	<u>(39)</u>	<u>40</u>
Total	<u>(77)</u>	<u>83</u>	<u>(160)</u>

The source of information in Table 4 is motor vehicle fuel tax returns filed with the Board of Equalization.

Two of the four major oil companies which materially reduced production had small reductions in taxable distributions. These two companies reduced production by 43 million gallons and reduced distributions by 3 million gallons. The other two companies reduced production by 78 million gallons while increasing distributions by 24 million gallons.

Finding

- COMPARISON OF MARCH AND APRIL OF 1973 WITH MARCH AND APRIL OF 1972 INDICATES THAT AN INDEPENDENT OIL COMPANY'S DEGREE OF SELF-SUFFICIENCY WAS THE PRIMARY FACTOR IN THE EFFECT THAT THE GASOLINE SUPPLY PROBLEM HAD ON THAT COMPANY.

The major oil companies are all distinguished from the independent companies in that they all are fully integrated, having their own sources of crude oils, transportation, manufacturing and marketing facilities including retail sales by name brand. None of the so-called independents have this degree of integration.

The following two inconsistent events occurred with the change in the supply-demand relation:

- Among the nine major oil companies, there were significant changes in the proportionate amount of the total gasoline manufactured by the individual companies, but little change in the proportionate amount of the total distributed by the individual companies, while
- Among the independent companies, there was little change in the proportionate amount of the total gasoline manufactured by the individual companies, but major changes in the proportionate amount of the total distributed by the individual companies.

Table 5 summarizes the changes in the amounts of production and distribution for the independent companies which are grouped according to the change in amounts of gasoline distributed. This table reveals that the independents with the highest degree of self-sufficiency (high ratio of manufacture to distribution amounts) gained 36 million gallons in distributions while increasing output by only 4 million gallons, while the independents with a low degree of self-sufficiency lost 75 million gallons in distributions, even though output was increased by 6 million gallons.

Table 5

Independent Companies Gasoline
Output and Distribution

	Millions of Gallons					
	Output			Distributions		
	<u>April and May</u> <u>1973</u>	<u>1972</u>	Increase (Decrease)	<u>April and May</u> <u>1973</u>	<u>1972</u>	Increase (Decrease)
Companies which increased distributions	120	116	4	156	120	36
Companies which decreased distributions	41	35	6	118	193	(75)
Companies which market through others	<u>98</u>	<u>107</u>	(9)	-	-	-
Total	<u>259</u>	<u>258</u>	<u>1</u>	<u>274</u>	<u>313</u>	<u>(39)</u>

The source of information in Table 5 is motor vehicle fuel tax returns filed with the Board of Equalization.

CRUDE OIL SUPPLY

In 1945, with only five percent of the U.S. wells, California provided 19 percent of the domestic crude oil supply. In 1972, with almost eight percent of the domestic wells, the state production was only 10.6 percent of the U. S. total. The deficit, caused by the steady increase in the demand for refinery products and the reduction in state crude oil production, has been supplied by imports from other states and countries. Table 6 shows the changes in the three sources of crude oil for the first four months of 1973 and 1972 for the 35 California refineries.

Table 6

<u>Source</u>	<u>Thousands of Barrels</u>		<u>Increase (Decrease)</u>	<u>Percent Increase (Decrease)</u>
	<u>January through April 1973</u>	<u>1972</u>		
State production	114,051	117,198	(3,147)	(3%)
Imports of other states	19,500	22,273	(2,773)	(12%)
Foreign imports	<u>49,143</u>	<u>38,269</u>	<u>10,874</u>	28%
Total	<u>182,694</u>	<u>177,740</u>	<u>4,954</u>	3%

The source of information in Table 6 is the U. S. Department of the Interior.

CRUDE OIL PRODUCTION AND RESERVES

The cumulative state crude oil production to December 31, 1972 was 15.9 percent of the domestic total, while the state's proven reserves as of the same date were 9.8 percent of the U.S. total. In 1945, when the state provided 19 percent of the domestic crude oil with only five percent of the producing wells, the proven reserves per well were three times greater within the state than the national average. Last year the proven reserves per well were only 26 percent above the national average.

Finding

- CALIFORNIA'S PROVEN AND UNDISCOVERED CRUDE OIL RESERVES IDENTIFIED BY THE CALIFORNIA RESOURCES AGENCY REPRESENT MORE THAN A HUNDRED YEARS' SUPPLY AT THE CURRENT RATE OF EXTRACTION.

The reserves recoverable under current active oil production operations identified by the California Resources Agency are equal to a 15-year supply at the current rate of extraction. Additional amounts recoverable by the application of known stimulation methods to proven fields are equal to almost a three-year supply at the current rate of extraction. The undiscovered recoverable reserves presumed to exist due to favorable geology are equal to an 88-year supply at the current rate of extraction.

Less than two percent of the amounts recoverable from current active operations are in federal offshore areas, while two-thirds of the potential recoverable reserves are in such areas. Therefore, the future rate of California crude oil production will be determined to a greater extent in the future by federal policy.

EFFECT OF PRICE ON SUPPLY

The significance of price on the development of new supply is evident from the new federal policy whereby the price of both crude oil and natural gas from existing wells remains under regulation while production from new wells is subject to no control.

Finding

- THE RETENTION OF THE LOWER CALIFORNIA CRUDE OIL PRICE COMPARED TO PRICES IN OTHER AREAS CREATES TWO IMPACTS ON THE STATE:
 1. A REDUCTION IN STATE TIDELANDS OIL REVENUE, AND
 2. AN INCREASE IN DEPENDENCY ON OUTSIDE SOURCES BECAUSE OF THE REDUCED INCENTIVE TO DEVELOP NEW SUPPLY.

Under phase four price rules, production from new wells can be priced at the free market price, while oil produced from existing wells cannot be priced higher than 35 cents above the May 15, 1973 level. On August 1, 1973, the posted price was increased 35 cents per barrel for crude oil from the Wilmington Field, the state's largest field from which most tidelands oil revenue is derived. The current price is \$3.21 per barrel for 18^o gravity. Unofficially, state-owned oil is exempt from the phase four limitation.

A recently reported posted price for "new" crude oil in several Wyoming fields is \$5.36 per barrel. This is \$1.05 over the posted price of \$4.31 per barrel from "old" wells in these fields. The price of crude oil from the old wells is \$1.10 per barrel above the Wilmington price, while

production from the new wells is \$2.15 per barrel over the Wilmington price. California prices remain lower even with recent higher bids received, such as 66 cents above the posted price by the City of Long Beach and 77 cents above the posted price by the State Lands Commission for oil to be taken in lieu of cash payment for tidelands oil.

The lower prices in California may encourage producers to develop new supplies of oil in other areas where prices are higher.



Walter J. Quinn
Chief Deputy Auditor General

September 19, 1973

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