TRINIDAD AND TOBAGO

MINISTRY OF PETROLEUM AND MINES

ANNUAL REPORT

FOR THE YEAR

1973

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FOREWORD

Trinidad and Tobago's total crude oil production of 60.7 million barrels in 1973 was the country's largest output since the industry attained a peak of 66.9 million barrels in 1968 and subsequently declined to 47.2 million barrels in 1971.

The country's oil industry owes its buoyancy to the far-sighted licensing policy of the Government particularly with respect to the East Coast offshore area which, in 1973 after one year's operation, produced one-third of the industry's total production. The success of Government's policies on the East Coast has stimulated a series of seismic surveys by interested oil companies in new licensed areas off the North and East Coasts. While the results of these surveys are not available there is reasonable expectation of a favourable outcome.

During the year bids were invited for six blocks in the marine areas, one in the Gulf of Paria and five off the East Coast of Trinidad. These bids were in respect of the grant of Exploration and Production (Public Petroleum Rights) Licences or proposals by companies for Production Sharing Contracts with Government. The concept of production sharing is new to Trinidad and Tobago, but it is intended that such contractual agreements will provide a more equitable share of the fruits of exploration and exploitation of our petroleum resources to the Government of Trinidad and Tobago. On 28th December, 1973, a licence was granted to a consortium of companies comprising Shell Trinidad Limited, Texaco Trinidad Inc., and Trinidad-Tesoro Petroleum Company Limited, to carry on Exploration and Production Operations in an area consisting of approximately 187,400 acres in a submarine area off the South-East Coast of Trinidad—the so-called reversed L-Shaped Block.

The Arab Oil embargo at the latter part of 1973 had an overall favourable impact on the domestic oil industry. OPEC countries and Trinidad and Tobago were able to increase the price of oil in keeping with the real value of this important natural resource in terms of alternative fuels, thereby increasing revenues from oil. The embargo, however, had an adverse effect on Trinidad and Tobago, as it resulted in a reduction in the imports of oil for processing and export of petroleum products to the United States of America.

I wish to take this opportunity to express my appreciation of the work done during the year by all workers in the industry and by the entire staff of my Ministry, whose devotion to duty has helped in promoting a more efficient management of the petroleum sector in the economy.

Minister of Petroleum and Mines

SUMMARY OF HIGHLIGHTS OF THE OIL INDUSTRY

Trinidad and Tobago's crude oil production continued its upward trend in 1973 largely as a result of Amoco's aggressive drilling activity off the East Coast in the face of numerous difficulties encountered during the year. In January, this company produced 43,922 b.o.p.d.; in May it became the country's largest producer with 55,553 b.o.p.d., and in December it attained a peak output of 67,908 b.o.p.d.

As a result of Amoco's performance Trinidad and Tobago's total crude oil output rose by 9,459 barrels or by 18.5 per cent to a total of 60,669,960 barrels for 1973. This total production has only been exceeded by the record production attained in 1967 and 1968 when the combined effect of Texaco's Guayaguayare fields and Trinmar's Soldado fields resulted in production levels of 64.9 and 66.9 million barrels respectively.

The unending quest for additional oil in Trinidad and Tobago in 1973 was clearly reflected in the 14.2 per cent increase in cumulative footage drilled for the year in comparison with 1972. The respective figures being 955,185 feet and 836,047 feet.

In the refining sector of the industry, refinery throughout decreased by 1.8 per cent to 141.6 million bbls. This resulted mainly from the shortfall in crude supplies to Texaco Trinidad Inc. arising from the Arab oil Embargo in the latter months of 1973.

Table I summarizes and compares overall production drilling activity for the years 1970, 1971, 1972 and 1973. Figures II and III also vividly illustrate annual drilling and production statistics.

TABLE I

Summary of Statistics for the Trinidad and Tobago Petroleum Industry, 1970–1973

	1970	1971	1972	1973
Annual Crude Oil Production (bbls)	51,046,893	47,204,819	51,210,809	60,669,960
Annual Natural Gas Production (mscf) ...	121,059,606	109,813,825	104,338,218	119,979,353
Average GOR (scf/bbl)	2,372	2,326	2,037	1,978
Annual CHPS (Natural Gasoline Production) (bbls)	168,460	141,285	137,238	79,043
Daily Refinery Capacity (bbls/day)	436,000	436,000	450,000	450,000
Annual Refinery throughput (bbls/yr)	154,860,261	145,547,960	144,273,516	141,686,784
Total wells completed during the year	135	220	188	212
Average depth of completed wells (feet) ...	4,917	4,269	4,462	4,508
Total footage drilled during the year	663,743	939,259	838,842	955,185
Oil and Gas Wells completed during the year ...	108	175	165	181
Drilling success-ratio (per cent)	80.0	70.5	87.8	85.4
Average Rigs running	7.0	11.7	10.8	11.4

GEOLOGICAL AND GEOPHYSICAL ACTIVITY

Geophysical activity by oil companies during 1973 was restricted to the marine areas surrounding Trinidad and Tobago. Deminex carried out a detailed seismic survey over its licensed area (Blocks JJ5, KK9 and LL9) on the North Coast. A total of 293.4 line miles was shot. The survey was performed by Geophysical Surveys Incorporated.

Amoco Trinidad Oil Co. also carried out a seismic survey over its licensed area off the East Coast of Trinidad. A total of 307.3 line miles was shot. The programme also involved evaluation of the Samaan structure and the continuation of its gas reserves studies. The survey was performed by Western Geophysical.

No surface geological work was conducted during the year.

TABLE II

Party months of Geophysical Exploration in 1973

Company	*Seismograph*	*Total*
Deminex	0.17	0.17
Amoco Trinidad Oil Co.	0.30	0.30
TOTAL	0.47	0.47

Drilling

The total footage for 1973 increased some 14.2 per cent from the 1972 figure of 836,047 feet to 955,185 feet. This increase was brought about by changes in total footage drilled by several producing companies—a 16.8 per cent increase for Trinidad Tesoro; a 47.9 per cent increase recorded by Amoco Trinidad Oil Company; a 49.6 per cent increase by Trinidad Northern Areas, together with 22.6 per cent decrease in footage drilled by Texaco Trinidad Inc. There was a complete termination of drilling activities by Tricentrol Ltd. and Deminex-Agip during 1973.

The year also saw an increase in the cumulative rig months per year from 130.1 for 1972 to 137.0 for 1973. During the year however, decreases were experienced in the daily average footage drilled and the daily average footage drilled per rig, which fell from 2,458.7 feet and 241.1 feet respectively in January, to 2,064.7 feet and 215.1 feet in December.

A total of 211 wells were drilled in 1973, 23 more than in the previous year. Of this total, 60 wells or 28.4 per cent were drilled in the offshore marine areas as compared with 34 per cent in 1972.

Exploratory Drilling

Marine

Fifteen (15) exploratory wells were drilled during the year, nine (9) by Amoco Trinidad Oil Company, four (4) by Texaco Trinidad Inc. and one (1) each by Trinidad-Tesoro Petroleum Co. Ltd. and Trinidad Northern Areas.

Of the nine (9) wells drilled by Amoco Trinidad Oil Co. seven (7) were successfully tested and abandoned. The Company's efforts were mainly directed towards the delineation and appraisal of gas reservoirs and the investigation of sands that were untested in the previous OPR wells. These activities were abruptly terminated in December by a blowout on SG3 location which resulted in a fire on the drillship MARINER 1.

Texaco Trinidad Inc. exploratory drilling programme was carried out on the South Coast of Trinidad from the CHRIS SEGER, a jack up barge, and was terminated in the first half of the year after drilling two wells in the Canari Marine Prospect which found the objective sands well developed but wet. The programme included drilling from the GBM–2 which failed to locate the extension of the hydrocarbon-bearing sands that were found in GBM–1.

TNA's Soldado lone wildcat was abandoned after extreme hole conditions and severe gas cutting was experienced.

Land

Only two (2) inland exploratory wells were drilled during 1973 one by Texaco Trinidad Inc.—BP479 was successfully completed—and one by Trinidad Tesoro Petroleum Company Limited, a semi-appraisal well, Mck 9, which was abandoned short of its programmed depth the hole being deemed uneconomical.

Table III summarizes exploratory drilling activity for 1973.

TABLE III

Summary of Wildcat Drilling in 1973

Operator	Well Name	Location	Basis for Location	Lahee Exploratory Classification	Completion Date	Total Depth (Feet)	Name and/or Age of Deepest Formation	Results/Remarks
*Amoco Trinidad Oil Co. Ltd.	OPR—17	K-32	S&SSG	B_2c	6-2-73	10,944	Pliocene/Miocene	Abandoned—Oil and gas
	OPR—18	H—32	do.	C_3	15-2-73	5,500	do.	do.
	OPR—19	G—32	do.	B_3	9-3-73	10,508	do.	Abandoned—gas
	EM—2	F—40	do.	B_2c	13-9-73	13,478	do.	do.
	EMZ—3	N—37	do.	C_2c	11-4-73	1,241	do.	Abandoned—Mechanical reasons
	EMZ—4	N—37	do.	B_2c	29-5-73	10,086	do.	Abandoned—gas
	SG—3	C—28	do.	C_3	6-12-73	1,260	do.	Abandoned—Mechanical reasons
	SEG—8	D—36	do.	B_2c	27-7-73	13,411	do.	Abandoned—Oil and gas
	SEG—9	B—36	do.	B_3	21-12-73	13,808	Seg Pay Sand	Abandoned—gas
Texaco Trinidad Inc.	BP—479	G—9 LD—2	do.	B_2c	26-1-73	6,500	Top Cipero	Oil and Gas Producer
	GBM—2	H—19 JE—15	do.	C_3	15-3-73	6,509	Gros Morne	Abandoned
	CM—1	H—22 IJ—11	do.	C_3	22-1-73	11,120	do.	do.
	CM—1X	H—22 IJ—11	do.	C_3	12-2-73	8,237	do.	do.
Trinidad Tesoro Petroleum Co. Ltd.	MCK—9	F—15 NI—17	do.	C_1	27-8-73	8,628	Top Cruse	do.
Trinidad Northern Areas	S—357	F—7 OB—10	do.	C_2c	29-10-73	5,555	Lower Cruse	do.

*Amoco's exploratory wells are drilled as expendable holes and are abandoned after testing.

Development Drilling

In 1973, 177 development wells were completed as producers which represented a 6.9% increase over the 1972 figure of 173.

Trinidad-Tesoro alone, due to its continuing and vigorous infill drilling programme, accounted for ninety-seven (97) of these wells, a figure which was influenced by the commencement and continuation of drilling activities in the newly acquired Central Los Bajos block. This block was acquired by Trinidad-Tesoro from Shell Trinidad Ltd. in mid-1973 and seventeen (17) wells had been drilled by year end.

Texaco Trinidad Inc. completed thirty-seven (37) development wells as producers. The company successfully introduced the technique of using foam as the drilling fluid in the Old Beach Field in Guayaguayare.

Trinidad Northern Areas was responsible for completing twenty-one (21) wells as producers in 1973, a year which featured the completion of drilling from platform 17 and the start of drilling from platform 18.

Offshore on the East Coast, Amoco Trinidad Oil Company completed twenty (20) development wells as producers in 1973. The year saw the completion of drilling activity on the Samaan 'A' platform, the continuation of drilling on Teak B platform and the start-up of drilling on Teak C.

After about two years of dormancy, Shell Trinidad Ltd. resumed drilling activities, and drilled and completed two replacement wells as producers in 1973. These were, however, not as successful as anticipated and resulted in yet another temporary shut down of drilling operations by this company. In all twenty (20) other development wells were drilled in 1973, three (3) of which were completed as injection wells, while seventeen (17) were abandoned.

Table IV summarizes by areas the development drilling activity in Trinidad and Tobago during 1973.

TABLE IV

Summary of Development Drilling in Trinidad and Tobago—1973

Area	Producers Completed	Dry Holes Completed	Total Completion	Footage Drilled	Rigs Active at 31st December, 1973
1	21	3	24	108,251	1
2	35	—	35	68,602	—
3	—	—	—	—	—
4	61	1	62	272,462	3
5	12*	1	13*	41,277*	1
6	—	—	—	—	—
7	15	4	19	52,900	2
8	2	1	3	33,323	2
9	—	—	—	—	—
10	14	3	17	33,759	—
11	20	4	24	231,188	2
12	—	—	—	—	—
13	—	—	—	—	—
14	—	—	—	—	—
15	—	—	—	—	—
TOTAL	180*	17	197*	841,762*	11

For definition of areas, *see* Table IVA following.

*Includes 3 injection wells—footage 12,064.

TABLE IVA

Key to Area—Numbers on Map (Figure II) on Table IV and in Text

Area Number	*Description*
1	Soldado, North Marine, Couva Marine
2	Pt. Ligoure, F.O.S., Area IV and Guapo, Point Fortin West and Central, Parrylands, Cruse
3	Brighton (Land and Marine) Vessigny, Merrimac
4	Palo Seco, Los Bajos, Erin
5	Forest Reserve, Fyzabad, Point Fortin East, New Dome, San Francique
6	Quarry, Coora, Quinam, Morne Diablo
7	Oropouche
8	Penal, Barrackpore, Wilson, Siparia
9	Moruga North and West, Rock Dome, Innis, Trinity, Catshill, Balata, Bovallius
10	Guayaguayare, Moruga East
11	Galeota, Teak, Samaan (East Coast)
12	South Marine (South Coast)
13	Tabaquite, Pointe-a-Pierre
14	Icacos
15	North Coast

PRODUCTION

Trinidad and Tobago's crude oil output increased to 60,669,960 bbls. in 1973 which represented an increase of 18.5 per cent from 1972's total of 51,210,809 bbls.

Amoco Trinidad Oil Company's East Coast offshore development programme continued to make steady progress, and despite numerous difficulties experienced during the year, the Company became the country's largest producer in May, and by year end had attained a daily average rate of production of 67,908 b.o.p.d. As a result, the company's total output during 1973 was 20,584 million barrels at a daily average rate of 56,400 b.o.p.d. which represents more than twice the volume produced in 1972.

The other major offshore oil company, Trinidad Northern Areas, registered its most successful year since 1969. After declines of 4,000, 6,000 and 7,000 b.o.p.d. in 1970, 1971 and 1972 respectively, Trinidad Northern Areas registered a slight increase of 192 b.o.p.d. in 1973. This resulted from a year of steady production as evidenced by January's production of 51,658 b.o.p.d. rising to 52,735 b.o.p.d. in December. The cumulative oil production of T.N.A. crossed the 256 million barrel mark in December 1973 with the company maintaining its production rate above the 50,000 b.o.p.d. level over the past seven years.

The annual crude oil production from offshore fields amounted to over 40 million barrels and accounted for two-thirds of this country's total crude oil output.

In 1972, the Trinidad-Tesoro Petroleum Company Ltd. was the only company to register a crude oil production increase. The 1973 increase of 0.9 per cent, modest as it may be, continued the upward trend which started after the take-over of the assets of British Petroleum in 1968.

On the other hand, a portion of the increase won by Amoco and maintained by Trinidad Northern Areas and Trinidad-Tesoro was lost by Texaco Trinidad Inc. Early 1973 was encouraging as production from Texaco's fields levelled off at around the 28,000 b.o.p.d. mark. However, by year end output fell to under 25,000 b.o.p.d. As a result, Texaco's production in 1973 averaged 27,360 b.o.p.d. which was 11.6 per cent lower than 1972. This follows decreases of 18 per cent and 20 per cent in the previous years.

All other operating companies showed decreases as very little work or drilling was done by these Companies. The largest of these, Shell Trinidad Ltd., fell 18.8 per cent to 7,100 b.o.p.d. in 1973 while Premier Consolidated Oilfields Ltd., and Tricentrol Ltd. dropped by 13.2 per cent and 15.9 per cent respectively.

Figure IV illustrates graphically the contribution of new and recompleted wells to the country's total crude oil production. Table V gives a detailed comparison by fields of production for the years 1972 and 1973.

TABLE V

Oil Production—Trinidad and Tobago—1973

Company Field	Area No.	Discovery Year	Total Wells drilled	Age of Producing Formation	Annual Production		Cumulative Production through December 1973 ('000) bbls.
					1972 bbls.	1973 bbls.	
SHELL TRINIDAD LTD.							
Balata East and West	9	1952	48	Miocene	43,477	29,409	2,032
Catshill	9	1950	117	do.	454,767	356,453	20,101
Innis	9	1956	33	do.	69,786	65,293	5,492
Rock Dome	9	1962	3	do.	—	—	16
Penal	8	1936	258	do.	1,062,472	786,838	55,511
New Dome	5	1928	31	do.	11,870	7,752	3,040
Point Fortin East	5	1929	131	do.	809,086	660,385	21,061
San Francique	5	1929	27	do.	15,667	16,403	5,800
Area IV and Guapo	2	1963	156	do.	189,463	167,779	32,681
Parrylands 1–5	2	1913–18	345	do.	290,556	262,364	33,668
Point Fortin Central	2	1916	94	do.	121,320	134,063	11,904
Point Fortin West	2	1907	204	do.	112,150	94,439	17,802
Los Bajos	4	1918	29	do.	—	—	546
Erin	4	1963	4	do.	—	—	710
TOTAL			1,480		3,180.614	2,581,178	210,364
TRINIDAD NORTHERN AREAS							
Fos–Ft–	2	1954	30	Miocene	342,267	326,499	2,689
Soldado	1	1955	368	do.	18,481,328	18,567,149	253,530
TOTAL			398		18,823,595	18,893,648	256,219
AMOCO TRINIDAD OIL CO.							
Teak	11	1971	38	Miocene	9,071,998	14,975,557	24,048
Samaan	11	1971	13	do.	208,105	5,608,281	5,816
TOTAL			51		9,280,103	20,583,838	29,864
TRICENTROL LTD.							
Wilson	8	1936	74	Miocene	191,386	161,791	18,653
Cruse	2	1913	150	do.	99,090	87,704	25,231
Tabaquite	13	1911	225	do.	66,765	52,468	1,466
Balata Central	9	1949	6	do.	—	—	371
TOTAL			455		357,241	301,963	45,721
TEXACO TRINIDAD INC. ...							
Guayaguayare	10	1902	670	Miocene	2,637,188	2,424,205	71,920
Trinity	9	1956	94	do.	266,446	204,973	12,903
Barrackpore	8	1911	306	do.	657,247	673,418	23,025
Oropouche	7	1944	76	do.	278,988	564,008	3,557
Morne Diablo/Quinam	6	1926	—	do.	77,104	57,527	7,170
Forest Reserve	5	1913	1,844	do.	3,333,384	3,030,715	229,498
Palo Seco	4	1929	—	do.	2,294,788	1,642,012	77,737
Brighton	3	1908	611	do.	1,500,620	1,196,743	66,020
Erin	4	1963	21	do.	249,522	191,529	1,600
Johnson Road	8	1972	2	do.	24	—	—
TOTAL			3,624		11,295,311	9,985,130	493,430

TABLE V—*Continued*

Oil Production—Trinidad and Tobago—1973—*Continued*

Company Field	Area No.	Discovery Year	Total Wells drilled	Age of Producing Formation	Annual Production 1972 bbls.	Annual Production 1973 bbls.	Cumulative Production through December 1973 ('000) bbls.
BELPETCO							
Couva Marine (1)		1963	6	Miocene	—	577	179
PREMIER CONSOLIDATED OILFIELDS LTD.							
Siparia	8	1957	5	do.	14,206	11,948	760
San Francique	5	1929	75	do.	49,817	44,145	2,747
Fyzabad	5	1918	252	do.	58,856	53,809	12,612
Palo Seco	4	1915	83	do.	9,611	8,546	1,579
Icacos	14	1965	13	do.	26,560	20,518	398
Barrackpore	8	1970	3	do.	15,234	12,572	60
Rock Dome	9	1955	11	do.	—	—	134
Bovallius	9	1954	6	do.	—	—	189
TOTAL			448		174,284	151,538	18,479
TRINIDAD TESORO PETROLEUM CO. LTD.							
Fyzabad	5/6	1920–38	829	Miocene	1,836,833	1,566,013	150,481
Guapo	2	1922	491	do.	607,165	816,443	34,806
Moruga East	10	1953	62	do.	55,951	50,150	1,940
Moruga North	9	1956	18	do.	24,082	16,251	872
Moruga West	9	1957	129	do.	111,890	103,823	8,283
Coora/Quarry	6	1936	597	do.	1,237,934	1,185,122	78,377
Palo Seco/Erin	4	1926	1,062	do.	3,714,244	3,810,926	75,189
North Marine	1	1956	15	do.	59,927	45,229	1,203
Galeota	11	1972	19	do.	451,635	538,051	990
Central Los Bajos	4	1973	17	do.	—	40,080	40
TOTAL			3,239		8,099,661	8,172,088	352,180
					51,210,809	60,669,960	1,406,436

(1) Taken over by Texaco, December 1973.

SURVEY OF FLUID INJECTION OPERATIONS IN TRINIDAD AND TOBAGO DURING 1973

The total volume of fluids—gas, water (with additives) and steam injected in 1973 was roughly equivalent to that injected in 1972. However, due to a considerable change-over of types of projects, the total oil recovered from all project areas showed a considerable decrease of 25 per cent over that recovered in 1972. The daily average yield of 13,140 barrels represents a 7.9 per cent of Trinidad and Tobago's total crude oil production.

Gas Injection

As predicted in 1972, the unavailability of natural gas for gas injection caused a substantial decrease in the number of gas injection projects which fell from 22 to 13 and the corresponding decrease in the total volume of gas injected was 23.3 mmcf/day in 1972 to 18 mmcf/day in 1973. In 1973, a 66 per cent drop brought the oil production to 811,100 barrels which could be attributed to the natural decline in production as well as the decrease in gas injection projects.

Texaco Trinidad Inc. phased out four schemes bringing their gas projects down to two. Gas was injected into the Forest Reserve and Guayaguayare areas while in the other areas, the projects were converted into water or a mixture of water and Co_2. The average gas injection rate fell by almost 20 per cent from 16 mmcf/day to 13.3 mmcf/day with the producing gas oil ratio almost steady at

7,180 scf/bbl. The total oil recovered dropped by 42 per cent when compared with 1972. The oil recovered was derived entirely from the Forest Reserve area as the Brighton Area project was phased out entirely and a mixture of gas and water has replaced the gas injected in the project at Guayaguayare.

Although no area was completely phased out at Trinidad-Tesoro, three (3) gas projects were converted to water, making the number of projects 11. There were drastic reductions in the gas injected in Coora, a decrease of 90 per cent. At Fyzabad, there was a decrease of 45 per cent. However, there was a slight increase in gas injected in Palo Seco. Overall, the average daily injection rate dropped by 27 per cent from 6.5 mmcf/day in 1972 to 4.7 mmcf/day in 1973, with secondary oil production at 930 barrels/day and the producing GOR at 6,200 scf/barrel.

Gas injection schemes in Trinmar were phased out altogether.

Water Injection

Water injection schemes rose from 14 in 1972 to 16 in 1973, the increase in number was caused by the conversion of gas projects into water injection projects.

There was a rise of 23 per cent in the volume of fluid injected, the daily average injection rate of 42,600 barrels produced a total of 2,085,380 barrels oil with an average water cut of 59.2 per cent.

Texaco had 12 water injection projects, one of which was hot water, another using sodium hydroxide as an additive and one in Guayaguayare, a mixture of gas and water. The average injection was 42,000 barrels/day with oil recovered at 7,470 barrels daily.

The El Blanco "410" waterflood in Guayaguayare has continued to be Texaco's most successful waterflood, and the experimental water flood project initiated in October, 1973, in Herrera Sands in Trinity has also proven to be very successful.

Trinidad-Tesoro converted its Coora Upper Cruse gas project to water in July, 1973. Since water was injected only in July and August, the results are still pending. However, the previous Coora Upper Forest scheme performed even better than it did in 1972. For the 82,800 barrels water injected, 1,470 barrels of oil—almost 3 times that of 1972—were recovered, with an accompanying water cut of 34.8 per cent.

Shell's Catshill waterflood project had 25 per cent increase in injection producing a daily average of 350 barrels oil. The 25 per cent drop in oil recovered from all water injection projects when compared with that of 1972 may be due to the natural decline of the reservoirs being flooded.

Steam Injection

Texaco's injection fell by 24 per cent but the oil recovered was three per cent more than 1972. The daily average steam injected was 38,730 barrels with a recovery of 1,220 barrels oil per day. The accompanying average water cut was very high at 62.7 per cent.

Tesoro, however, had an increase of 47 per cent in steam injection at 22,870 barrels per day. The rate of oil recovery was 2,940 barrels per day with a water cut of 31.7 per cent, this being much higher than that of 1972 which was 22.4 per cent.

An increase from .63 to .71 barrel of oil produced per barrel of steam injected was registered in 1973, when compared with 1972. Overall, there was a slight drop in total volume of steam injected in 1973 with a corresponding drop in oil production. The daily average rate of injection was 61,600 barrels with a recovery of 4,150 barrels oil per day.

Summaries of Trinidad and Tobago Fluid Injection and Production Statistics are included for the period 1969–1973 in Table VI; Statistics by Company, for each type of fluid-injection are presented in Table VII. Water-injection Statistics, Steam Injection Statistics by projects, and Statistics for Gas Injection, by areas, are shown under separate cover in Tables VIII; IX and X respectively.

TABLE VI

Summary of Fluid Injection Operations in Trinidad and Tobago—1969-1973

Year	Projects				Injection Statistics			Crude Oil Production Statistics					
	Number of projects in operation at end of year				Gas (mscf.)	Water and Other Fluids (bbls.)	Steam (bbls.)	Total oil recovered from wells under project influence (in bbls.)					Oil expressed as a percentage of total oil production
	Gas	Water	Steam	Others				Gas Injection Projects	Water Injection Projects	Thermal recovery Projects	Other recovery Projects	All Projects	
1969	31	7	12	—	24,672	2,926,657	1,090,657	5,200,333	661,768	878,734	—	6,740,835	11.7
1970	32	8	6	—	18,293	13,563,248	1,254,454	4,126,963	2,071,061	863,174	—	7,061,198	13.8
1971	32	8	7	—	10,826	12,123,572	1,969,720	3,568,723	2,357,145	1,367,721	—	7,293,589	15.5
1972	22	13	4	—	8,555	15,548,166	2,432,077	2,372,841	2,447,627	1,540,530	—	6,360,198	12.4
1973	13	18	6	1	6,573	19,063,428*	2,248,606	811,100	2,088,992*	1,593,344	304,003	4,797,439	7.9

*Includes injection and production from sodium hydroxide flood and carbon dioxide.

TABLE VII

Fluid Injection Operations—1973

GAS INJECTION

Company	Number of Active Projects	Gas Injected (mscf.)	Oil Produced (bbls.)	Water Produced (bbls.)	Gas Produced (mscf.)	Gas-Oil Ratio (scf./bbl.)
T.T.I.	2	4,864,493	472,317	230,610	3,391,484	7,180
S.T.L.	—	—	—	—	—	—
T.T.P.C.L.	11	1,708,733	338,783	37,183	2,108,405	6,223
TRICENTROL	—	—	—	—	—	—
TRINMAR	—	—	—	—	—	—
TOTAL	13	6,573,226	811,100	267,793	5,499,889	6,781

WATER INJECTION

Company	Number of Active Projects	Water Injected (bbls.)	Oil Produced (bbls.)	Water Produced (bbls.)	Gas Produced (mscf.)	% Water
T.T.I.	13	18,748,290	2,038,951	3,025,718	3,632,058	59.7
T.T.P.C.L.	2	154,660	2,722	1,005	11,211	27.0
S.T.L.	1	160,478	43,704	592	30,022	1.3
TOTAL	16	19,063,428	2,085,377	3,027,315	3,673,291	59.2

STEAM INJECTION

Company	Number of Active Projects	Steam Injected (bbls.)	Oil Produced (bbls.)	Water Produced (bbls.)	Gas Produced (mscf.)	% Water
T.T.I.	2	1,413,888	444,040	745,271	149,198	62.7
T.T.P.C.L.	4	834,718	1,071,300	496,411	324,737	31.7
S.T.L.	—	—	—	—	—	—
TOTAL	6	2,248,606	1,515,340	1,241,682	473,935	45.0

OTHER INJECTION PROJECTS

Company	Field	Project	Fluid Injected			Oil Produced (bbls.)	Water Produced (bbls.)	Gas Produced (mscf.)	G.O.R.	% Water
			Gas (mscf.)	Water (bbls.)	Steam (bbls.)					
T.T.I. ...	Guaya-guayare	Lower Gros Morne (Carbon Dioxide)	1,764,392	446,077	—	304,003	20,246	1,652,498	5,804	6.2
	Forest Reserve	Zone 9 Hot Water	—	62,513	148,050	78,004	19,803	24,794	—	20.2
		L. Forest (Sodium Hydroxide)	—	77,928	—	3,615	2,725	1,125	—	43.0

TABLE VIII

Water Injection Summary by Projects—1973

Company	Field	Project	Water Injected (Bbls.)	Oil Produced (Bbls.)	Water Produced (Bbls.)	Gas Produced (Mscf.)	% Water
T.T.I.	Forest Reserve	Zone 9	210,563				
		Zone 4	7,297	66,734	155,530	19,759	70.0
		U.C. 645	2,714,240	199,172	160,161	819,655	44.6
		Bernstein UM Cruse	1,411,867	49,645	31,348	76,634	38.7
		L. Forest Sds	77,928				
		M.C. Zone 9 '002' Flood	66,533	8,346	1,797	5,733	17.7
		Forest Sds	32,519	1,549	285	1,518	15.5
	Guayaguayare	410 Waterflood	3,109,663	812,147	1,638,332	1,063,561	66.8
		El Blanco Extension	1,660,845	185,533	264,966	231,707	58.8
		307 Waterflood	3,233,329	441,636	632,369	530,937	58.9
		307 Extension (North Block)	943,643	84,473	74,143	111,839	46.7
		L. G. Morne	446,077				
	Brighton	AS 10 Fault block	436,933	56,828	9,718	438,714	14.6
		Platform 1	3,521,144	55,135	1,964	217,830	5.3
	Trinity	Shallow Herrera	305,333	19,039	24,113	17,883	55.9
	Palo Seco	L. Forest '234' Sds.	570,376	58,714	30,992	96,288	34.5
T.T.I.	All fields	All projects	18,748,290	2,038,951	3,025,718	3,632,058	59.7
T.T.P.C.L.	Coora	CO/UF/71/1	80,802	1,466	783	1,202	34.8
		CO/UC/317/11	73,858	1,256	222	10,009	15.0
T.T.P.C.L.	All fields	All projects	154,660	2,722	1,005	11,211	27.0
S.T.L.	Catshill	CO 30 Sands	160,478	43,704	592	30,022	1.3
All Companies	All fields	All projects	19,063,428	2,085,377	3,027,315	3,673,291	59.2

TABLE IX

Steam Injection Summary by Projects—1973

Company	Field	Project	Steam Injected (Bbls.)	Oil Produced (Bbls.)	Water Produced (Bbls.)	Gas Produced (Mscf.)	% Water
T.T.I.	Forest Reserve	Forest Sands Zones 5 and 6	995,077	404,657	690,637	133,501	63.0
		Upper Cruse	418,811	39,383	54,634	15,697	58.1
T.T.I.	All fields	All projects	1,413,888	444,040	745,271	149,198	62.7
T.T.P.C.L.	Fyzabad	Pilot Project	13,462	25,291	2,644	6,215	9.5
	Palo Seco	Main Project UF/L'Mle	438,558	631,575	339,659	9,671	35.0
	Guapo	Experimental Gen. 3	369,158	392,450	150,751	293,998	27.7
		Other than 3	13,540	21,984	3,357	14,853	13.2
T.T.P.C.L.	All Fields	All Projects	834,718	1,071,300	496,411	324,737	31.7
All Companies ...	All Fields	All Projects	2,248,606	1,515,340	1,241,682	473,935	45.0

TABLE X

Gas Injection Summary by Areas—1973

Company	Field	Gas Injected (Msef.)	Oil Produced (Bbls.)	Water Produced (Bbls.)	Gas Produced (Mscf.)	Gas Oil Ratio (Scf./Bbl.)
T.T.I.	Guayaguayare	1,764,392				
	Forest Reserve	3,100,101	472,317	230,610	3,391,484	7,180
	All Fields	4,864,493	472,317	230,610	3,391,484	7,180
T.T.P.C.L.	Coora	17,806	28,076	2,319	51,614	1,838
	Quarry	713,614	123,782	8,301	508,673	4,109
	Apex—Quarry	68,596	6,909	1,289	10,782	1,560
	Palo Seco	161,703	11,742	451	22,675	1,931
	Fyzabad	747,014	168,274	24,823	1,514,661	9,001
	All Fields	1,708,733	338,783	37,183	2,108,405	6,223
All Companies	All Fields	6,573,226	811,100	267,793	5,499,889	6,781

NATURAL GAS PRODUCTION AND UTILIZATION

Natural gas produced in Trinidad and Tobago in 1973 amounted to 119,979 mmscf, an average of 329 mmscf per day. This represents an increase of 14.9 per cent over that produced in 1972 and it puts an end to the steady decline for the past four years. The main contributor to this increase was Amoco Trinidad Oil Company which increased its own gas production bv 365 per cent to 79.7 mmscfd as a result of its increased oil production. The average G.O.R. (gas oil ratio) was 1,978 scf/bbl. a drop of 59 scf./bbl. below last year's figure.

Natural gas, consumed as fuel in refineries and other industries, during 1973, accounted for 38.6 per cent of the total gas produced compared with 55 per cent in 1972. The main reason for this decrease was that the associated gas produced on the East coast could not be piped ashore on account of unavailability of gas-transmission facilities. Non-Oil Industries increased their gas consumption by 4.5 per cent to 65.7 mmscfd; whereas refineries utilised 61.1 mmscfd, 13.4 per cent less than last year. The continuing decrease in gas production on land has prompted the switch from natural gas to fuel oil for use as fuel in the refineries. Federation Chemicals Ltd. maintained its position among the non-oil industries as being the biggest consumer with its daily average consumption at 49.4 mmscf; 53.0 per cent of its total consumption was utilized as process raw material in the manufacture of liquid ammonia, ammonium sulphate and urea.

Natural gas injected into the formation for secondary oil recovery averaged 17.5 mmscfd this represented a decrease of 30.8 per cent below the amount injected in 1972. The increasing unavailability of gas on land is directly responsible for this situation. During the year, 79,000 bbls. of casing head petroleum spirits (CHPS) were produced from 6.4 mmscf of gas in the gasoline recovery plants operated by Trinidad-Tesoro. Most of the C.H.P.S. was blended back into crude oil.

Natural gas vented, after use was made of its pneumatic energy, averaged 17.7 mmscfd and accounted for 5.3 per cent of gas produced. Corresponding figures for gas vented without use were 92.7 mmscfd and 28.2 per cent of gas produced.

Of Amoco's total offshore natural gas production. 99.97 per cent was vented without utilisation.

The trend of gas production over the past five years is given in Table XI.

TABLE XI

Annual Statistics for Natural Gas Production and Utilization 1969-1973

	1969		1970		1971		1972		1973	
	Millions of S.C.F.*	%	Millions of S.C.F.*	%	Millions of S.C.F.*	%	Millions of S.C.F.*	%	Millions of S.C.F.*	%
Production ...	137,499	100.0	121,060	100.0	109,814	100.0	104,338	100.0	119,979	100.0
G.O.R. (S.C.F./bbl.)	2,394		2,371		2,326		2,037		1,978	
A. Used as Fuel:										
In Refineries ...	29,383	21.4	27,403	22.6	27,117	24.7	25,776	24.7	22,506	18.7
In Fields ...	8,313	6.0	8,785	7.3	8,091	7.4	8,415	8.1	8,224	6.9
Other Industries ...	20,652	15.0	20,302	16.8	20,658	18.8	22,940	21.9	23,970	20.0
Sub Total ...	58,348	42.4	56,490	46.7	55,866	50.9	57,131	54.7	54.700	45.6
B. Other Complete Utilization:										
Used as process Gas ...	10,803	7.9	10,054	8.3	8,931	8.1	9,858	9.5	9,625	8.0
Injected into Formation ...	24,727	18.0	19,017	15.7	12,112	11.0	9,230	8.9	6,381	5.3
Converted into C.H.P.S. ...	158	0.1	143	0.1	112	0.1	95	0.1	61	0.1
Sub Total ...	35,688	26.6	29,214	24.1	21,155	19.2	19,183	18.5	16.067	13.4
C. Vented:										
After use of Pneumatic Energy ...	19,748	14.4	13,253	10.9	11,033	10.1	6,345	6.1	6,439	5.4
Without Use ...	23,715	17.2	22,103	18.3	21,760	19.8	21,678	20.7	42,775	35.6
Sub Total ...	43,463	31.6	35,356	29.2	32,793	29.9	28,023	26.8	49,214	41.0

*S.C.F.—Standard Cubic Feet.

%—Per cent of Total Natural Gas Produced.

REFINING AND PETROCHEMICAL MANUFACTURE

Refining

During the year 1973, a total of 141,686,784 barrels of crude oil, corresponding to a daily average throughput of 388,183 barrels per calendar day, was refined in Trinidad and Tobago. This represents a decrease of 1.8 per cent in the volume of crude processed compared with 1972, and resulted mainly from the short-fall in crude supplies to Texaco Trinidad Inc. arising from the Arab oil embargo in the later months of 1973.

The severe drought experienced in 1973 also had adverse effects on throughput in the various refineries since it resulted in a shortage of good quality boiler feed and cooling water, which led to operational problems and a shortage of utilities.

Although the debottle-necking of Shell's Point Fortin refinery was completed in January, their daily average throughput was 66,492 barrels per day, far below the rated capacity of 100,000 barrels per day. A boiler explosion occurred at the Point Fortin refinery in March, 1973 and the consequent reduction in steam and power generation capacity affected its throughput.

The Desulphurization Unit at Texaco's Pointe-a-Pierre refinery came on-stream in mid-January and this led to increased imports of high sulphur Saudi Arabian crudes and a consequent reduction in imports of low sulphur Nigerian and Indonesian crude. The Single Buoy Mooring was commissioned in October, 1973, and this allowed for a quicker turn-around time for V.L.C.C.'s bringing crude oil supplies to Trinidad.

Crude oil imports totalled 103,623,751 barrels in 1973 which was 3,526,023 barrels or 3.3 per cent less than the total imports for 1972. The major suppliers of crude were Saudi Arabia (46.5 per cent), Indonesia (15.3%), Ecuador (15.1%), Venezuela (11.1%), Nigeria (4.5%) and Iran (3.5%).

Refinery output amounted to 135,812,215 barrels, a decrease of 3,082,879 barrels or 2.2 per cent compared with the previous year's output. The main products were fuel oils (60.2%), motor gasolines (14.4%), gas/diesel oils (11.3%), aviation fuel (6.2%) and kerosene (5.7%). Fuel oil production for 1973 totalled 81,819,880 barrels, which was 3,532,637 barrels or 4.1 per cent less than production for 1972. Gas/Diesel oil production increased by 11.5 per cent to 15,346,700 barrels, while an increase in Kerosene production of 990,930 barrels was complemented by a similar decrease of 998,356 barrels in the production of Aviation Fuel.

Petrochemicals

Production of petrochemical intermediates amounted to 1,344,203 barrels in 1973 which compared favourably with the production of 1,327,933 barrels in 1972. There were significant differences, however, in the production of individual petrochemicals.

Normal paraffins production increased by 7.8 per cent to total 634,735 barrels. While there was a 75.4 percent increase in production of cyclohexane to 113,700 barrels, benzene production decreased by 53.2 per cent to 106,380 barrels in 1973.

The other significant change was in the production of toluene which amounted to 339,920 barrels, an increase of 30.6 per cent over 1972 production.

Because of major changes in the crude diet of the Texaco refinery at Pointe-a-Pierre its No. 1 Catalytic Reforming Unit was forced to utilize feedstocks which maximised production of toluene at the expense of benzene. This factor, together with the increased production of cyclohexane from benzene, accounted for the large decrease in benzene production and the corresponding increase in toluene production.

Production and Exports of Important Petrochemical Intermediates
Trinidad and Tobago, 1973

(Quantities in barrels)

Petrochemical Intermediates	Year 1973		Year 1972	
	Production	Exports	Production	Exports
Normal Paraffins	634,735	583,164	588,957	588,676
Di-isobutylene	36,969	43,231*	49,911	39,952
Nonene	22,360	22,758*	45,151	49,163*
Tetramer	42,429	45,096*	42,989	39,984
Benzene	106,380	81,921	227,453	223,179
Toluene	339,920	272,748	260,316	291,461*
Xylene	45,421	42,166	39,038	42,173*
Cyclohexane	113,700	97,046	64,813	68,272*
Unrefined Napthenic Acids	7,965	9,184*	11,291	11,193

*Excess of Exports over production made up from Stocks.

Crude Oil Balance

Availability		Million bbls.	Disposal	Million bbls.
Stock at 1st January	3.7		Exports	23.2
Production	60.7		Delivered to Ref.	141.4
Plus Gain	0.3	61.0	Stocks at 31st December	3.7
Imports		103.6		
		168.3		168.3

Refined Products Balance

Availability		Million bbls.	Disposal	Million bbls.
Stock at 1st January	7.4		Shipments	120.5
Imports				
Crude delivered	141.4		Bunkers	10.4
Ref. Gas and Loss	5.0		Local Consumption	5.2
	136.4			
Products obtained		136.4	Stock at 31st December	7.7
		143.8		143.8

The volume of exciseable products amounted to 2,078,432 bbls. The exciseable sale of gasoline amounted to 1,609,146 bbls. an increase of 4.7 per cent compared with 1972. The exciseable duty on these amounted to $18,705,752.00. The exciseable tax on gasoline being 27c. for premium and 18c. for regular.

Sales of bottled propane showed an increase of 12.3 per cent over the 1972 figure and amounted to 42,212,183 lb. on which excise duty at 2c. per lb. was paid.

Details of Petroleum excisable products are listed hereunder:—

Premium Gas bbls.	*Regular Gas* bbls.	*Gas/Diesel* bbls.	*Propane* lb.
902,316	706,830	469,286	42,212,183

Nitrogenous Fertilizers

Ammonia production totalled 270,624 short tons, corresponding to an average production of 741 short tons/day. This represented a 42.6 per cent decrease in production and resulted from the conversion of Federation Chemicals Ltd. Chemico ammonia plant to supply hydrogen to Texaco desulphurization plant at Pointe-a-Pierre. Production of ammonium sulphate and urea increased, however, by 7.3 per cent and 9.3 per cent to 90,796 and 79,746 short tons respectively.

A total of 18,022 mmcf of natural gas was utilized, an increase of 2.26 per cent over last year's figure. Of this amount 9,624 mmcf were used as feedstock for ammonia and nitrogenous fertilizer, and hydrogen, with 8,398 mmcf being consumed as fuel.

Marketing

Petrol Filling Stations—Sales and Marketing Position 1973. In 1973 the number of filling stations in operation in Trinidad and Tobago was 220.

Texaco was granted a licence to reopen a station at Santa Flora which was closed since 1964.

Statistics on sale and retail outlets are distributed among the three Marketing Companies as follows:—

	Texaco	*Shell*	*N.P.*	*Total*
No. of Stations	77	85	58	220
Volume (Mogas IG)	18,612,634	19,267,784	14 665 688	52,546,106
Average per Station	241,723	226,680	252,857	—
Market per cent of Total Sales ...	35.4	36.7	27.9	100.0
Per cent of Total No. of Stations ...	35.0	38.6	26.4	100.0

The total throughput was 4.1 per cent greater than the 1972 total of 50,490,514 I.G. For the five (5) year period 1969–1973 local consumption rose from 42,474,394 to 52,546,106 giving an average growth rate of 4.08 per cent.

Year	*Total Consumption of Mogas I.G.*
1969	42,474,394
1970	45,056,497
1971	47,258,887
1972	50,490,514
1973	52,546,106

SUMMARY OF ACCIDENTS OCCURRING IN THE PETROLEUM INDUSTRY 1973

For the year 1973, accidents occurring in the oilfields numbered 222. This figure represents an increase of about 28.3 per cent in comparison with the 1972 total of 173, and corresponds with the increase in activity during 1973. These accidents were classified as serious and non-serious, depending on the extent of the injury.

Approximately 33 per cent of the accidents were serious consisting principally of eye injuries, crush injuries, deep lacerations, amputation of fingers and toes, compound fractures, severe burns and internal injuries. Most of the injuries in this category were by workers who fell, or who normally performed hazardous jobs. The remaining 67 per cent were considered minor, but nevertheless time was lost for medi-care. These accidents comprised of bruises to the body, sprains, squeezed limbs and fingers, superficial injuries and strained muscles resulting from strenuous manual jobs.

Several accidents caused both destruction to equipment and loss of lives. In all, there were seven (7) fatal accidents, the largest number recorded to date for any one year. At Texaco's Barrackpore field—Well No. 482—the Derrickman was struck off the finger of the middleboard of the derrick by the drill pipe. He died as a result of a fractured skull.

At Trinmar, off Platform 18—Soldado, while a labourer was transferring to a barge which was alongside the Platform, he fell between launch and barge and drowned. After an interval of no fatalities being reported, there were two accidents at Amoco on Mariner I—offshore East Coast, Trinidad occurring about three weeks apart. In the first instance, a man fell from the derrick which he was painting; death was due to a fractured skull. Secondly, while drilling operations were in progress on the Exploratory well—South Galeota 3, the well blew out and caught fire. Three persons were found dead with their life jackets on. Taking into consideration the number of persons (71) being on board at the time of the blow out, it was fortunate that the toll was only three. Extensive damage was also done to the Mariner 1.

At Trinidad-Tesoro Petroleum Company Ltd. in the Quarry area, well No. 268 became lively while the production floorman was running tubing, the well caught afire and the workman was burnt to death.

At Trinmar-East Soldado—Well No. 327 blew out of control during perforation washing. No injuries were sustained but damage was done to our coastal regions. Also at well site—Palo Seco No. 482—Trinidad-Tesoro Petroleum Company Limited—Santana's Rig 2 was engaged on a liner recovery job when the mast with drill pipes toppled on its left side. This accident was due to a failure at a weld.

Apart from those accidents mentioned and shown on the Accident Statistics Table, there were several others, which although not falling under the jurisdiction of the Ministry of Petroleum and Mines, were brought to our attention and investigations were carried out. Fortunately though, no fatalities occurred.

A summary of Accident Statistics is given in Table XII.

TABLE XII

Accident Statistics—1973

Company	Field	Total Accidents	Fatalities	SERIOUS				MINOR			
				D.	P.	E.	O.	D.	P.	E.	O.
Texaco	Barrackpore	20	1	2	—	—	—	12	6	—	—
	Brighton	5	—	—	1	—	—	1	3	—	—
	Guayaguayare	16	—	3	5	—	—	2	6	—	—
	Forest Reserve	32	—	—	8	—	—	1	23	—	—
	Oropouche	1	—	1	—	—	—	—	—	—	—
	TOTAL—TEXACO ...	74	1	6	14	—	—	16	38	—	—
Shell Trinidad Ltd. ...	All	2	—	—	—	—	—	—	2	—	—
P.C.O.L.	All	1	—	—	—	—	—	—	1	—	—
Trinmar	All	27	1	2	5	2	—	2	7	9	—
Amoco	All	82	4	30	4	—	2	42	3	1	—
Trinidad-Tesoro	All	36	1	2	3	3	—	2	23	3	—
INDUSTRY—TOTAL ...	—	222	7	40	26	5	2	62	74	13	—

D.=Drilling P.=Production E.=Engineering O.=Others

ROYALTY ASSESSMENT

Appendix VIII presents a summary of Crude Oil Assessed for Crown Royalty by Company, showing average prices per barrel and analyses for the half-yearly periods ending 30th June, 1973 to 31st December, 1973.

Net Royalty production increased from 23,162,867 barrels and 24,976,414 barrels in the first and second half of 1972 to 27,180,270 barrels and 30,304,816 barrels respectively in 1973. The reason for this rise is the Amoco Trinidad Oil Company Ltd.'s production which continued its upward trend throughout 1973.

Prices of Petroleum Products rose steadily from January, 1973 and continued rising to the end of the year. In the latter half of 1973 the U.S. dollar appreciated considerably, and both these effects were instrumental in increasing Royalty value. Total Royalty on Crude for the year was therefore $74,843,071 as compared with $28,148,153 for 1972 and $25,244,802 for 1971 (*See* Appendix IX average price in T.T. currency per barrel).

Appendix IX presents a summary of Royalty assessed for Crude Oil, Natural Gasoline and Natural Gas produced, and Minimum Rents on Crown Oil Mining Leases/Licences for the half yearly periods 1971, 1972 and 1973.

Total Royalty in 1973 of $76,941,614 is higher than 1972 and 1971 respectively at $30,316,730 and $27,427,945. Greater production in 1973 is therefore mainly responsible for this increase as well as the higher rate of Royalty on 12½ per cent applicable to Amoco Trinidad Oil Co. and Trinidad Tesoro Petroleum Company Ltd. (Galeota field).

LEASES AND LICENCES

Total acreage under Licence increased from 3,862,564 acres at the end of 1972 to 4,446,084 acres at the end of 1973.

During the year Belpetco assigned its marine acreage of 18,680 acres to Texaco in December, Amoco Trinidad Oil Co. acquired 311,102 acres under its marine licence and the Consortium comprising Texaco, Shell and Trinidad-Tesoro acquired marine acreage off the south-eastern coast of Trinidad of 187,400 acres.

The following is an outline of the situation in the Territory as at 31st December, 1973.

Crown Oilrights	Acres	Roods	Perches
Public Petroleum Rights	227,466	0	38
Private Petroleum Rights (Encroachments)...	48,412	3	7
Exploration and production Licences (Public Petroleum Rights) ...	3,371,793	0	0
Marine Licences	704,328	0	0
Total Crown Oilrights	4,352,000	0	5
Private Oilrights			
Private Leases	94,084	2	33
Total acreage of all lands under Licence	4,446,084	2	38

A detailed survey of Crown and Private Leases and Licences is set out on a company basis in Table XIII.

TABLE XIII

Oil Rights under Lease and Licence as at 31st December, 1973 in Trinidad and Tobago

Company	Crown																					Private			Total Crown and Private		
	Land Leases									Submarine																	
	Public Petroleum Rights			Private Petroleum Rights			Total			High Seas			Territorial Waters			Exploration Licence			Total								
	A	R	P	A	R	P	A	R	P	A	R	P	A	R	P	A	R	P	A	R	P	A	R	P	A	R	P
Trinidad Northern Areas	32	3	33	—	—	—	32	3	33	83,434	0	00	100,213	0	00	—	—	—	183,647	0	00	—	—	—	183,679	3	33
Texaco Trinidad Inc.	127,482	3	35	33,495	3	32	160,978	3	27	411,805	0	00	15,344	0	00	18,680	0	00	445,830	0	00	81,866	0	09	688,674	3	36
Trinidad Tesoro Petroleum Co., Ltd. ...	15,660	2	01	8,767	3	09	24,428	1	10	50,700	0	00	42,831	0	00	78,929	0	00	172,460	0	00	5,606	1	39	202,494	3	09
Shell Trinidad Ltd.	66,574	2	09	3,499	0	21	70,073	2	30	—	—	—	—	—	—	—	—	—	—	—	—	938	0	08	71,061	2	38
Premier Consolidated Oilfields Ltd. ...	10,718	2	09	2,640	1	13	13,358	3	22	—	—	—	—	—	—	—	—	—	—	—	—	5,624	0	17	18,982	3	39
Tricentrol Ltd.	6,996	2	31	—	—	—	6,996	2	31	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6,996	2	31
Estate of Timothy Roodal	—	—	—	9	2	12	9	2	12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9	2	12
Amoco Trinidad Oil Co., Ltd.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,680,097	0	00	1,680,097	0	00	—	—	—	1,680,097	0	00
Phillips Petroleum Co., Ltd.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	165,840	0	00	165,840	0	00	—	—	—	165,840	0	00
Deminex Agip	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	517,767	0	00	517,767	0	00	—	—	—	517,767	0	00
Occidental																313,680	0	00	313,680	0	00	—	—	—	313,680	0	00
Amerada Hess—565 Corp.																248,760	0	00	248,760	0	00	—	—	—	248,760	0	00
Oceanic—Corporation of Trinidad																160,640	0	00	160,640	0	00	—	—	—	160,640	0	00
Santa Fe																187,400	0	00	187,400	0	00	—	—	—	187,400	0	00
Consortium (Texaco/Shell/TTPCL)																											
TOTAL	227,466	0	38	48,412	3	07	275,879	0	05	545,940	0	00	158,388	0	00	3,371,793	0	00	4,076,121	0	00	94,084	2	33	4,446,084	2	38

A—Acres R—Roods P—Perches

LEGAL DEVELOPMENTS 1973

A considerable part of the year 1973 was spent on the problems arising out of the administration of the petroleum legislation and the grant of the various licences thereunder and matters connected and problems related to the administration of Section 49A of the Customs Ordinance, Ch. 32 No. 2 and Aliens Landholding Licences under the aliens landholding Ordinance Ch. 21. No. 2.

Special matters which occupied the attention of the Legal Section were:—

1. GRANT OF LICENCES

(*a*) On February 17, 1973 Amoco Trinidad Oil Company was granted 57 Exploration and Production (Public Petroleum Rights) Licences off the East Coast of Trinidad. These licences were granted pursuant to the terms of an Exploration Licence granted to the Company in 1970, as a result of commercial discovery in Well West Tourmaline 1, and together covers approximately 311,102 acres.

(*b*) On December 28, 1973 a consortium comprising of Shell Trinidad Limited, Texaco Trinidad Inc. and Trinidad Tesoro Petroleum Company Ltd. was granted a licence to carry on Exploration and Production operations over an area comprising approximately 187,400 acres off the South-East Coast of Trinidad. Under the terms of the agreement reached with the consortium, Government has an option to acquire a participating interest of 20 per cent in the licence on the establishment of commercial production.

(*c*) Annual renewals of Retail Marketing Licences were granted to operators of petrol filling stations in the country and legal advice was necessary in a number of cases.

2. ASSIGNMENTS

(*a*) On 4th December, 1973, the Minister of Petroleum and Mines gave his consent to the absolute assignment from Dominion Oil Limited to Trinidad Tesoro Petroleum Company Limited of the rights and interest in the remainder of certain acreages granted in the fifties by virtue of Deed registered as Nos. 500 of 1953, 3397 of 1954 and 10656 of 1954. The remaining acreage under the three Deeds together amounts to approximately 41,867 acres.

(*b*) On December 12, 1973 consent was given to the absolute assignment from Panoil Trinidad Limited and Belpetco Trinidad Ltd. of the rights over approximately 18,680 acres being the remainder of acreage granted under Deed registered as No. 4056 of 1952.

(*c*) By Deed dated 14th May, 1973 Shell Trinidad Ltd. assigned Oil Mining Lease No. 11662 of 1954 to Trinidad Tesoro Petroleum Company Limited. The acreage assigned was approximately 599 acres in the Ward of Erin and La Brea.

These matters posed difficult administrative and legal problems as the Oil Mining Licences and Leases mentioned were granted under the terms of the old petroleum legislation and have not as yet been converted under Section 37 of the Petroleum Act 1969—although the deadline date for conversion expired in 1971.

3. DETERMINATION OF LICENCES

Considerable time was spent on the preparation of legal documents in respect of the determination and partial determination of two Exploration and Production (Public Petroleum Rights) Licences, *viz*, a licence registered as No. 9720 of 1970 over Block HH7, and a Licence registered as No. 9683 of 1970 over blocks HH10, HH11, JJ10, and JJ11. Blocks HH7, JJ10, and parts of Blocks JJ11 and HH10 were surrendered in December, 1972. This necessitated the preparation of legal documents to give effect to the releases and partial releases of the guarantees under Regulation 45 and 78 by four (4) companies holding interest in the Licence. The Deeds of surrender are yet to be executed.

4. THE PETROLEUM REGULATIONS (COMPETITIVE BIDDING) ORDER, 1973

By virtue of the above-mentioned Order published in the *Trinidad and Tobago Gazette*, Bids were invited for the grant of acreage (comprised in six Blocks, one in the Gulf of Paria and five off the East Coast of Trinidad) on one of the two bases which were specified in the Order, that is to say, either on the minimum bases set out in the Order for the grant of Exploration and Production (Public Petroleum Rights) Licences, or based on specific proposals by Companies for Production Sharing Contracts with Government. At year end the Bids were still being analysed by the Minister and his advisers.

5. APPLICATION FOR PIPELINE LICENCES

Three (3) applications for pipeline licences were received—two (2) from Texaco Trinidad Inc. and one (1) from Trinidad Tesoro Petroleum Company Limited. The Licences in respect of the above applications are yet to be issued.

STAFF

The year 1973 was one of considerable activity and involvements in international matters for the Ministry. There were several new additions to the Staff and two (2) new appointments.

Mr. George H. Legall was appointed Permanent Secretary, Ministry of Petroleum and Mines with effect from 20th February, 1973. Following the resignation of Mr. R. Thomas in 1970, Mr. Fernandes acted in the post of Permanent Secretary until his appointment as Special Adviser to the Minister of Petroleum and Mines which took effect from February, 1973.

Additional Staff

The Ministry recruited a number of engineers during 1973 as part of its general expansion programme, and officers on study leave returned to take various posts in the Ministry. They were as follows:—

Dr. AKIN YOUNG HOON	...Ph.D., Birmingham, as Chemical Engineer II with effect from March, 1973.
Mr. BASHARAT ALI ...	...B.Sc., Manchester, as Chemical Engineering Specialist with effect from 12th June, 1973.
Mr. GEORGE LUM HEE	...B.Sc., University of the West Indies, as Chemical Engineer I with effect from 30th July, 1973.
Mr. GODFREY RANSOME and Mr. CHARLES ELLIOT	both Government Scholars, graduated with their B.Sc. degrees in Petroleum Engineering from the University of Zulia, Venezuela, where they were on study leave. They were appointed with effect from March, 1973 to the Ministry as Petroleum Engineers I.
Mr. MCNICHOLS HERBERT	...who was also on study leave graduated from the University of the West Indies, Trinidad with a B.Sc. degree in Chemical Engineering and returned with effect from 17th May, 1973 as a Chemical Engineer I.
Mr. STEPHEN DAVIS ...	...Government Scholar who obtained his B.Sc. degree in Petroleum Engineering at the University of Tulsa, Oklahoma, returned to the Ministry with effect from 12th June, 1973 as Petroleum Engineer I.
Mr. TAZIMUDIN ALI and Mr. JOEL BROWN	both Government Scholars graduated from the University of the West Indies with a Bachelor of Science degree in Chemical Engineering, and assumed duties in the Ministry of Petroleum and Mines, on 22nd September, 1973.

The Geological Section of the Ministry also had additions of staff.

Mr. Kenrick Haynes, a graduate of University of the West Indies, Trinidad, with a Bachelor of Science degree was appointed as Geologist I with effect from May, 1973, while Mr. C. Alexander, *graduate of Acadia University, Canada was employed in December* 1973 as Geologist I.

In addition, five (5) Petroleum Inspectors, all having refining experience, were recruited and appointed to the Development Section in San Fernando during May, 1973.

CONFERENCES, TRAINING AND OTHER ACTIVITIES

Seminars

Mr. Malcolm Jones, Chemical Engineer in the Ministry of Petroleum and Mines was the country's representative at a *U.N. Interregional Seminar on Petroleum Refining in Developing Countries* held in new Delhi from 22nd January–3rd February, 1973. He also served in a similar capacity at the 3rd session of *the Committee on Natural Resources from* 6th–17th February, 1973.

Mr. Uriel B. Davidson, Economist I/II represented Trinidad and Tobago at the *United Nations Preparatory meeting of the Sea Bed Committee* held in Washington from March 5–April 6, 1973.

Mr. Appleton also attended the Caribbean Inter-ministerial *Conference on the Law of the Sea and on the World Energy Crisis* which was held in Georgetown, Guyana from 19th–23rd November, 1973.

The Ministry also welcomed back Mr. Rodney Appleton, Senior Economist, who attended a one-year post graduate course in the Economics of Natural Resource Development at Wolfson College, Cambridge.

Conferences

The Ministry was represented at a number of important conferences abroad:—

A ministerial delegation headed by the Minister of Petroleum and Mines, Mr. Francis C. Prevatt, attended the *Second Consultative meeting of the Latin American Ministers of Petroleum and Energy*

Resources which was hosted by the Government of Ecuador in the Capital Quito from 2nd–6th April, 1973. Other members of the delegation comprised Trinidad and Tobago's Ambassador in Caracas, His Excellency Mr. Solomon Lutchman and Mr. O. Fernandes, Special Adviser to the Minister of Petroleum and Mines.

Mr. Ovid Fernandes also formed part of the Trinidad and Tobago delegation to the preparatory meeting of Ministers on Latin American Ministers of Petroleum and energy Organization held in Quito from 17th–20th September, 1973.

The meeting discussed the basis for the Organization of the *Latin American Organization for the development of Energy* (OLADE) to meet Latin American needs in view of the Energy crisis and its resulting problems.

As a direct result of these meetings, the Government of Trinidad and Tobago signed an agreement in Lima, Peru, on the 2nd November, 1973 for the establishment of the above-mentioned organization, OLADE. His Excellency Mr. Wilfred Naimool, Ambassador for Trinidad and Tobago in Caracas signed on behalf of the Government of Trinidad and Tobago. Mr. Ovid Fernandes was delegated Advisor to the Ambassador.

The agreement established a regional body which includes South and Central America and the Caribbean, which will have its headquarters in Quito, Ecuador. The Organization is declared an instrument for co-operation, co-ordination and consultation with its own juridical identity, whose fundamental purpose is the integration, protection, conservation, rational utilization, marketing and defence of the energy resources of the region.

Arpel

Mr. Rupert Mends, Petroleum Engineer II in the Ministry of Petroleum and Mines attended the XVI Experts Meeting of ARPEL on "Field Evaluation Studies" in La Paz, Bolivia from 23rd–27th July, 1973.

Mr. Rodney Appleton, Senior Economist and Mr. Frank Look Kin, Petroleum Engineer I attended the *IXth General Assembly of ARPEL* held in Caracas, Venezuela from 12th—17th November, 1973. The ARPEL Assembly is an association of National Petroleum Companies of Latin America and the discussions were, *inter alia*, the possibilities of carrying out OLADE's (Organization Latino Americana De Energia) objective of a common energy policy for the region.

Mr. Frank Look Kin, Petroleum Engineer and Mr. O. Fernandes, Special Adviser to the Minister attended a meeting between U.S. consultants Ryder Scott, appointed by Amoco Trinidad Oil Company and Natural Gas Pipeline Co. of America in Chicago, U.S.A., in March, 1973 to review the natural gas reserve position off the East Coast of Trinidad with respect to the L.N.G. Project.

Mr. George Legall, Permanent Secretary, Ministry of Petroleum and Mines attended a meeting on L.N.G. in Washington D.C. from 14th–19th May, 1973. Mr. Legall was joined in Washington by Mr. Sam Martin of the Ministry of Finance.

Mr. Frank Look Kin and Mr. Trevor Boopsingh both Petroleum Engineers of this Ministry visited Houston, Texas for the period of one week from 25th May, 1973. The purpose of this visit was to hold further discussions with officials of Amoco, Natural Gas Pipeline Co. and Ryder Scott in connection with the Evaluation of Amoco's Natural Gas Reserves.

In Mid-1973 a cost estimate of the proposed joint venture ammonia plant between the Government of Trinidad and Tobago and W. R. Grace and Co. was completed by the Kellogg Company. The contract for the design and construction of the plant was awarded to Fluor Engineering Contractors of Los Angeles, California, U.S.A. in December.

Training

The Ministry maintained its internal and external training programme in an effort to upgrade the skills of technical personnel. This has been found to be absolutely necessary in order to match changing technology employed by the oil companies in the efficient exploration and development of the petroleum resources of the country.

A major feature for 1973 was the co-sponsoring of a one week course in Thermal Oil Recovery Methods by Dr. S. M. Farouq Ali of the Pennsylvania State University. Trinidad-Tesoro offered their facilities and shared the sponsorship with the Ministry. The course which took place in July, 1973 was attended by Mr. Look Kin, Mr. Elliot, Mr. Boopsingh and Mr. Davis, all petroleum engineers in the Ministry.

Both Mr. Look Kin and Mr. Elliot also attending a two-week course at Texaco Pointe-a-Pierre on General Reservoir Engineering and its Application to Waterflooding by Prof. S. Slider.

Mr. Rupert Mends, Petroleum Engineer II, was granted one year study leave with effect from September, 1973 to enable him to pursue studies towards the Master of Engineering Degree in Mineral Engineering Management at the Pennsylvania State University in the United States of America.

APPENDIX 1

ANNUAL STATISTICS OF PRODUCTION, DRILLING, REFINING—EXPORTS AND IMPORTS—1973-1962

Item	Unit	Percentage Difference 1973–1972	1973	1972	1971	1970	1969	1968	1967	1966	1965	1964	1963	1962
1. Crude Oil	'000 bbls	+18.5	60,670	51,211	47,148	51,047	57,418	66,904	64,995	55,603	48,859	49,731	48,678	48,867
2. Casing head gasoline (C.H.P.S)	'000 bbls	—42.3	79	137	141	168	150	164	192	188	197	200	170	194
3. Total Crude Oil and Natural Gasoline (1+2)	'000 bbls	+18.3	60,749	51,348	47,289	51,215	57,668	67,068	65,187	55,791	49,056	49,931	48,848	49,070
4. Crude Oil Production—Crown Oil Rights	'000 bbls	+19.7	57,736	48,246	43,929	47,594	54,014	63,345	60,961	51,648	45,274	46,100	45,013	44,302
5. Crude Oil Production—Private Oil Rights	'000 bbls	—1.0	2,934	2,965	3,219	3,452	3,405	3,559	4,034	3,955	3,585	3,631	3,665	4,574
6. Total Imports	'000 bbls	—3.4	103,977	107,662	107,567	115,445	105,418	93,380	84,146	93,508	94,050	83,682	74,758	65,409
7. Imports of Refined Products	'000 bbls	—72.3	21	76	75	69	43	49	43	—	2	54	47	—
8. Imports of Crude Oil for Refining	'000 bbls	—3.3	103,624	107,150	106,867	113,275	103,762	91,447	80,437	93,228	93,398	83,223	74,131	65,168
9. Imports of Other Oils for Refining and Blending	'000 bbls	—23.8	332	436	625	2,101	1,613	1,884	3,666	280	650	405	580	241
10. Total Exports	'000 bbls	+4.0	155,998	149,992	146,663	154,974	147,878	142,076	141,779	135,678	132,440	118,596	106,771	93,927
11. Exports of Crude Oil	'000 bbls	+68.4	23,614	14,005	6,998	8,669	6,139	6,983	5,801	4,705	4,452	3,442	3,773	4,047
12. Exports of Refined Products	'000 bbls	—2.6	132,384	135,972	139,665	146,305	141,648	135,093	135,978	130,973	127,988	115,154	102,998	89,880
13. Runs to Stills	'000 bbls	—1.8	141,687	144,274	145,547	154,860	154,077	151,282	138,925	144,193	137,165	127,548	119,692	109,256
14. Number of Wells Started	As stated	+11.4	205	184	248	140	127	176	213	273	225	192	226	282
15. Total Number of Wells Completed	As stated	+12.2	212	189	220	135	130	176	221	275	224	194	232	280
16. Number of Drilling Wells Completed as Oil Wells	As stated	+11.7	181	162	175	107	99	151	197	244	201	170	199	255
17. Number of Drilling Wells Abandoned, etc	As stated	+14.8	31	27	45	28	31	25	24	31	23	24	33	25
18. Total Footage Drilled (All Wells)	Feet	+13.5	955,185	841,742	939,259	663,743	690,671	942,686	928,210	1,187,202	1,058,736	1,056,337	1,246,248	1,506,187
19. Footage Drilled on Crown Oil Rights	Feet	+15.0	874,867	760,769	809,954	614,719	666,975	928,915	880,839	1,078,133	1,012,922	1,006,636	1,214,166	1,360,450
20. Footage Drilled on Private Oil Rights	Feet	—0.8	80,318	80,973	129,305	49,024	23,696	13,771	47,371	109,069	45,814	49,701	32,082	145,737
21. Average Depth of Completed Drilling Wells (15)	Feet	+4.9	4,505	4,294	4,273*	4,917	5,313	5,396	4,328	4,318	4,823	5,513	5,601	5,093
22. Total Number of Wells Producing (Average during year) ...	As stated	—1.3	2,894	2,932	3,035	3,123	3,257	3,381	3,427	3,377	3,227	3,206	3,128	3,273
23. Number of Wells Produced by Flowing (Average during year)	As stated	—3.6	506	525	569	626	708	795	891	934	920	1,010	1,007	1,026
24. Number of Wells Produced Artificial Lift (Average during year)	As stated	—0.8	2,388	2,407	2,476	2,497	2,549	2,586	2,536	2,443	2,307	2,196	2,121	2,247
25. Average Daily Production per Producing Well	Barrel	+20.3	57.4	47.7	42.6	44.8	48.3	54.1	52.0	45.1	41.5	42.4	42.6	40.9
26. Average Daily Production Flowing Well	Barrel	+39.2	204.4	146.8	114.4	119.9	125.2	137.3	117.6	96.3	88.9	92.3	93.5	93.4
27. Average Daily Production per Artificial Lift Well	Barrel	+0.8	26.3	26.1	26.4	26.0	26.9	28.5	28.9	25.6	22.6	19.4	18.5	33.0
28. Total Value of Domestic Exports	$'000	—	1,052,476	1,050,023	1,000,940	944,131	934,658	910,636	755,100	717,170	678,313	686,254	627,717	579,658
29. Total Value of Petroleum Products (Item 28)	$'000	—	831,496	830,993	804,831	668,439	644,676	725,430	593,653	580,947	563,319	573,903	525,690	494,343
30. Total Value of Lake Asphalt Products	$'000	—	3,876	3,299	3,561	3,991	2,764	3,209	3,368	3,570	3,139	4,086	3,276	3,024
31. Total Natural Gas Produced	MMCF	+15.0	119,979	104,338	109,814	121,060	137,500	151,445	140,338	118,927	111,503	110,732	99,386	99,948
32. Used as Fuel	MMCF	—4.2	54,700	57,131	55,866	56,490	58,348	56,410	53,846	48,692	41,517	37,892	28,623	23,814
33. Replaced in Formation	MMCF	—30.9	6,381	9,230	12,112	19,018	24,728	21,324	22,625	19,841	13,866	14,688	15,824	13,177
34. Losses, Not Collected	MMCF	+75.7	49,213	28,016	32,793	35,356	43,464	62,916	54,355	50,394	56,120	58,152	54,939	62,957

*revised data

APPENDIX II

MINISTRY OF PETROLEUM AND MINES

MONTHLY ANALYSIS OF DRILLING AND WORKOVER WELLS, 1973

Company—All Companies (Trinidad and Tobago)

MONTH	Rig/ Month	New Wells started	Drilling Wells Completed											Closed In		Monthly Footage Drilled			Average Footage Drilled		Old Wells	
			Oil and Gas Producers		Injection and Observation Wells		Abandoned				Total	Aggregate Depth	Average Depth									
							Dry Holes		Technical Causes													
			No.	Aggregate Depth	No.	Aggregate Depth	No.	Aggregate Depth	No	Aggregate Depth				No.	Aggregate Depth	Crown	Private	Total	/Day	/Rig /Day	Recompleted	Abandoned
JANUARY	10.2	12	11	62,323	—	—	1	11,120	—	—	12	73,443	6,120	—	—	64,634	6,586	76,220	2,458.7	241.1	18	—
FEBRUARY	12.3	21	11	43,335	—	—	4	25,574	(a)1	(a)10,944	16	79,853	4,991	—	—	62,111	5,460	67,571	2,413.2	196.2	26	—
MARCH	10.9	17	21	85,711	—	—	1	6,509	(a)1	(a)10,508	23	102,728	4,466	—	—	65,488	8,419	73,907	2,384.1	218.7	13	—
APRIL	11.0	20	16	74,085	—	—	2	15,599	1	1,241	19	90,925	4,785	—	—	95,713	5,444	101,157	3,371.9	306.5	17	—
MAY	13.8	22	20	96,007	1	3,464	1	4,500	(a)1 1	(a)10,086 6,407	24	120,464	5,019	—	—	97,772	9,260	107,032	3,452.6	250.1	26	2
JUNE	12.1	17	21	85,736	—	—	1	6,250	—	—	22	91,986	4,181	—	—	85,132	5,400	90,532	3,017.7	249.4	15	—
JULY	11.9	17	12	63,732	—	—	3	9,060	(a)1 1	(a)13,411 4,966	17	91,169	5,364	—	—	63,129	4,755	67,884	2,189.8	184.0	24	—
AUGUST	11.6	17	15	49,478	—	—	3	15,146	—	—	18	64,624	3,590	—	—	92,916	2,910	95,826	3,091.2	266.5	20	3
SEPTEMBER	10.8	17	10	45,427	—	—	2	17,816	(a)1	(a)13,478	13	76,721	5,902	—	—	78,089	5,874	83,963	2,798.7	259.1	17	—
OCTOBER	11.6	17	15	65,055	—	—	2	6,705	—	—	17	71,760	4,221	—	—	61,999	11,350	73,349	2,366.1	204.0	26	2
NOVEMBER	11.2	11	12	61,723	2	8,600	—	—	1	1,300	15	71,623	4,775	—	—	43,553	10,185	53,738	1,791.3	159.9	17	1
DECEMBER	9.6	17	14	66,586	—	—	—	—	(a)1 1	(a)13,808 1,260	16	81,654	5,103	—	—	59,331	4,675	64,006	2,064.7	215.1	18	1
TOTAL—1973	137.0	205	178	799,198	3	12,064	20	118,279	(a)6 5	(a)72,235 15,174	212	1,016,950	4,797	—	—	874,867	80,318	955,185	2,616.9	272.6	237	9
TOTAL—1972	130.8	184	158	633,637	4	16,494	21	149,068	(a)4 2	(a)37,976 2,283	189	839,458	4,441	—	—	755,074	80,973	836,047	2,284.3	190.3	158	—
PERCENTAGE INCREASE—1973-1972	6.2	21	20	165,561	−1	−4,430	−1	−30,789	(a)2 3	(a)34,259 12,891	23	177,492	373	—	—	119,793	−655	119,138	332.6	82.3	79	9
AVERAGES—1973	11.4	17.1	14.8	4,489.9	0.2	4,021.3	1.7	5,913.9	(a)0.5 0.4	(a)12,039.2 3,034.8	17.7	4,796.9	—	—	—	72,905	6,693	79,598	—	—	19.8	0.7
AVERAGES—1972	10.9	15.3	13.2	4,010.4	0.3	4,123.5	1.7	7,098.5	(a)0.3 0.2	(a)9,404 1,141.5	15.7	4,441.6	—	—	—	62,923	6,748	69,671	—	—	13.2	—

(a) Abandoned include Amoco Wells which were drilled for information and abandoned after testing.

APPENDIX IIA

MONTHLY ANALYSIS OF FOOTAGE DRILLED

Land and Marine—1973

(feet)

	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Land	35,753	32,754	44,672	54,466	57,206	45,213	35,918	48,188	38,392	39,611	38,418	45,843	516,434
Marine	40,467	34,817	29,235	46,691	49,826	45,319	31,966	47,638	45,571	33,738	15,320	18,163	438,751
TOTAL	76,220	67,571	73,907	101,157	107,032	90,532	67,884	95,826	83,963	73,349	53,738	64,006	955,185
Daily Av. Ft.	2458.7	2413.2	2384.1	3371.9	3452.6	3017.7	2189.8	3091.2	2798.7	2366.1	1791.3	2064.7	2616.9
Daily Av. Rig	241.1	196.2	218.7	306.5	250.1	249.4	184.0	266.5	259.1	204.0	159.9	215.1	272.6
Marine % Total	53.1	51.5	39.6	46.2	46.6	50.1	47.1	49.7	54.3	46.0	28.5	28.4	45.9

APPENDIX III

ANALYSIS OF MONTHLY PRODUCTION FOR THE YEAR ENDING 31ST DECEMBER, 1973

MONTH	FLOWING				GAS/AIR LIFT				PUMPING				PLUNGER LIFT				OTHER METHODS				SALT WATER				No. of Wells Produced	No. of Idle Wells	No. of Wells Abandoned	No. of Wells Drilling at Month End	Total No. of Wells started	Daily Av. per Producing Well	Total Oil Production	BREAKDOWN OF TOTAL PRODUCTION						Average B.O.P.D.	Crown CHPS	Private CHPS	Total
																																CROWN			PRIVATE						
	No. of Wells	Quantity bbls	% of Total Oil	Daily Av. per Well bbls	No. of Wells	Quantity bbls	% of Total Oil	Daily Av. per Well bbls	No. of Wells	Quantity bbls	% of Total Oil	Daily Av. per Well bbls	No. of Wells	Quantity bbls	% of Total Oil	Daily Av. per Well bbls	No. of Wells	Quantity bbls	% of Total Oil	Daily Av. per Well bbls	No. of Wells	Quantity bbls	% of Total Oil	Daily Av. per Well bbls								Daily Av. per Well	No. of Wells	Quantity Produced bbls	Daily Av. per Well	No. of Wells	Quantity Produced bbls				
JANUARY	523	2,874,007	60 0	177 3	833	888,354	18 4	34.4	1,538	1,012,338	21.0	21.2	62	33,418	0 6	17.4	3	49	—	0 5	1,589	1,334,908	21.7	27.1	2,959	7,023	1	9	9,992	52 4	4,808,168	60.5	2,436	4,565,206	15 0	523	242,960	155,102	6,052	910	6,962
FEBRUARY	505	2,535,162	59.3	170.3	801	786,316	18.4	35.1	1,546	928,899	21.6	21.3	64	32,259	0.7	18.0	2	33	—	0 6	1,582	1,250,576	22.6	28 2	2,018	7,081	4	10	10,013	52.4	4,277,669	60 5	2,391	4,051,030	15 4	527	226,639	152,774	4,817	191	5,008
MARCH	507	2,804,055	59.0	178 4	797	918,175	19.0	37.1	1,560	1,020,596	21 4	21.1	67	30,522	0.6	15 0	3	35	—	0 3	1,644	1,305,067	21.5	25 6	2,934	7,084	4	9	10,031	52.4	4,773,383	60 8	2,403	4,527,023	15.0	531	246,360	153,980	4,474	23	4,497
APRIL	501	2,852,455	60 1	189 9	821	896,127	18.9	36 4	1,562	967,136	20.4	20.6	68	28,085	0.6	13.8	3	30	—	0 3	1,621	1,272,802	21 2	26 2	2,955	7,083	4	10	10,052	53.5	4,743,833	62 1	2,421	4,508,413	14 7	534	235,420	158,128	4,933	24	4,957
MAY	505	3,189,366	61 8	202.9	793	902,207	17.6	36.7	1,570	1,033,456	20.0	21.2	62	32,049	0.6	16 7	2	30	—	0 3	1,672	1,353,235	20.8	26 1	2,932	7,125	3	14	10,074	56 7	5,157,108	65 9	2,395	4,893,676	15 8	537	263,432	166,358	4,606	24	4,630
JUNE	504	3,095,569	62.2	204 7	778	862,322	17 3	36 9	1,536	998,080	20.0	21.7	56	26,565	0.5	16.8	3	31	—	0 3	1,593	1,286,937	20 5	26.9	2,877	7,202	1	13	10,093	57.8	4,982,567	67 0	2,357	4,736,496	15.8	520	246,071	166,086	5,240	31	5,271
PRODUCTION TOTAL 1ST JANUARY–30TH JUNE	507	17,350,614	60 4	189.1	804	5,253,501	18.3	36 1	1,552	5,955,505	20.7	21.2	63	182,898	0.6	16.0	3	208	—	0.4	1,617	7,803,525	21 4	26 7	2,929	—	—	—	10,093	54 2	28,742,726	62.8	2,400	27,281,844	15.3	529	1,460,882	158,800	30,122	1,208	31,825
JULY	510	3,332,121	63 2	210 4	792	881,601	16 7	35.9	1,554	1,036,174	19.6	21.5	46	26,172	0.5	18.4	3	59	—	0 6	1,632	1,400,398	21.0	27 7	2,905	7,190	4	11	10,110	58.6	5,276,127	68.2	2,378	5,023,848	15 1	527	247,279	170,198	5,473	27	5,500
AUGUST	515	3,569,252	64 4	223 6	743	914,411	16.5	39.7	1,542	1,031,654	18 6	21.6	43	25,390	0 5	19.0	3	39	—	0 4	1,601	1,327,939	19 3	26 8	2,846	7,266	4	11	10,127	62.8	5,540,746	73.2	2,338	5,302,600	14.7	508	238,146	178,734	4,814	217	5,031
SEPTEMBER	496	3,261,893	63 1	219 2	763	878,627	17.0	39 4	1,523	1,006,606	19 5	22.0	40	20,540	0.4	17.1	1	33	—	1.1	1,613	1,237,260	19 3	25 6	2,823	7,306	3	12	10,144	61.0	5,167,699	71.1	2,314	4,935,564	15 2	509	232,135	172,257	4,654	130	4,784
OCTOBER	487	3,374,711	63 3	223 1	780	890,847	16 8	36.8	1,547	1,030,634	19.3	21.4	31	16,272	0.3	16.5	3	32	—	0 3	1,632	1,314,238	19.8	26.0	2,848	7,298	2	13	10,161	60.0	5,312,596	69.8	2,339	5,061 854	15.9	509	250,742	171,374	4,236	113	4,349
NOVEMBER	498	3,324,574	64 2	222 5	754	854,919	16.5	37.8	1,557	979,388	18.9	20.2	36	18,235	0.4	16.9	3	34	—	0 3	1,639	1,346,272	20 6	27.4	2,848	7,314	1	9	10,172	60 6	5,177,150	70.7	2,322	4,926,552	15.9	526	250,598	172,572	3,982	111	4,093
DECEMBER	524	3,541,005	64 9	217 8	760	870,674	15 9	36 9	1,578	1,029,651	18.9	21.0	28	11,533	0.3	13.3	3	53	—	0 5	1,656	1,394,302	20.4	27 2	2,893	7,284	1	11	10,189	55.3	5,452,916	70 7	2,373	5,198,612	15.8	520	254,304	175,901	3,889	94	3,983
PRODUCTION TOTAL 1ST JULY–31ST DECEMBER	505	20,403,556	63 9	219 6	765	5,291,079	16 6	37.6	1,550	6,114,107	19.1	21.4	37	118,242	0.4	17.4	3	250	—	0 5	1,629	8,020,409	20 1	26.8	2,860	—	—	—	10,189	60.7	31,927,234	70 6	2,344	30,454,030	15.5	516	1,473,204	173,518	26,998	692	27,690
YEARS PRODUCTION TOTAL	—	37,754,170	62 2	—	—	10,544,580	17.4	—	—	12,069,612	19.9	—	—	301,140	0.5	—	—	458	—	—	—	15,823,934	20.7	—	—	—	—	—	—	—	60,669,960	—		57,735,874	—	—	2,934,086	166,219	57,120	1,895	59,015
DAILY AVERAGES	—	103,436	—	—	—	28,889	—	—	—	33,068	—	—	—	825	—	—	—	1	—	—	—	43,353	—	—	—	—	—	—	—	—	166,219	—	—	158,180	—	—	8,039	—	157	5	162
AVERAGES DURING YEAR	506	—	—	204.4	783	—	—	36.9	1,551	—	—	21.3	50	—	—	16.5	3	—	—	0 4	1,623	—	—	26.7	2,893	—	—	—	—	57 4	—	66.5	2,372		15.4	521	—	—	—	—	—

APPENDIX IIIA

ANALYSIS OF PRODUCTION BY OPERATING COMPANIES—1973

	FLOWING				GAS LIFT				PUMPING				PLUNGER LIFT				SALT WATER				Av No of Wells Produced	Daily Av per Producing Well	Total Oil Produced bbls	Company's Production as per cent of Total Production	OIL RIGHTS		OIL RIGHTS	
	No of Wells	Quantity bbls	Per cent of Total Oil	Daily Av per Well bbls	No of Wells	Quantity bbls	Per cent of Total Oil	Daily Av. per Well bbls	No of Wells	Quantity bbls	Per cent of Total Oil	Daily Av per Well bbls	No of Wells	Quantity bbls	Per cent of Total Oil	Daily Av. per Well bbls	No of Wells	Quantity bbls	Per cent of Total Liquid	Daily Av per Well					Crown Production bbls	Per cent of Total	Private Production bbls	Per cent of Total
Trinidad Tesoro Petroleum Company Ltd.	153	2,087,279	25 5	37.4	150	1,486,288	18 2	27.1	661	4,297,381	52 6	17 8	50	301,140	3.7	16.5	586	2,002,116	19 7	9.4	1014	22.1	8,172,088	13.5	6,700,603	82 0	1,471,485	18.0
Texaco Trinidad Inc.	101	1,965,744	19 7	53.3	527	4,330,317	43.4	22.5	458	3,689,646	36.9	22 1	—	—	—	—	627	7,077,446	41 5	30.9	1086	25 2	9,985,707	16.4	8,886,873	89 0	1,098,834	11 0
Shell Trinidad Ltd	69	679 890	26 3	27.0	22	196,187	7.6	24 4	254	1,705,101	66 1	18 4	—	—	—	—	157	1,093,763	29.8	19.1	345	20.5	2,581,178	4.3	2,333,238	90 4	247,940	9.6
Premier Consolidated Oilfields Ltd.	5	12,143	8 0	6 7	1	1,268	0 8	3.5	99	138,127	91.2	3 8	—	—	—	—	38	59,133	28.1	4.3	105	3 9	151,538	0 3	35,711	23 6	115,827	76.4
Tricentrol Ltd	6	35,481	11 7	16.2	5	53,066	17.6	29 1	60	213,416	70 7	9.8	—	—	—	—	39	164,671	35 3	11.6	71	11.6	301,963	0 5	301,963	100 0	—	—
Trinidad Northern Areas	146	12,389,795	65 6	232 5	78	4,477,454	23.7	157.3	22	2,026,399	10 7	252.4	—	—	—	—	165	4,198,886	18.2	69.7	246	210 4	18,893,648	31.1	18,893,648	100 0	—	—
Amoco Trinidad Oil Company	26	20,583,838	100 0	2169 0	—	—	—	—	—	—	—	—	—	—	—	—	11	1,227,919	5.6	305 8	26	2169.0	20,583,838	33 9	20,583,838	100 0	—	—
TOTAL	506	37,754,170	62 2	204.4	783	10,544,580	17.4	36.9	1554	12,070,070	19 9	21 6	50	301,140	0 5	16 5	1,623	15,823,934	20.7	26 7	2893	57 4	60,669,960	100 0	57,735,874	95 2	2,934,086	4.8
TOTAL 1972	525	28,209,005	55.1	146 8	882	11,757,683	22.9	36.4	1446	10,785,032	21.1	20.4	79	459,089	0.9	15 9	161	15,404,390	23.1	26 1	2932	47.7	51,210,809	100 0	48,246,117	94 2	2,964,692	5 8

Natural Gasoline C.H.P.S. Production

Company	Crown Oil Right bbls	Private Oil Right bbls	TOTAL bbls
Trinidad Tesoro Pet. Co. Ltd.	57,120	1,895	59,015
TOTAL 1972	72,872	19,451	92,323

APPENDIX 111B

DAILY AVERAGE PRODUCTION BY MONTHS FOR ALL COMPANIES—1973

(All quantities in bbls)

COMPANY	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	GRAND TOTAL	
													CRUDE	B.O.P.D.
T.T.P.C.L.	699,940	635,828	706,346	680,385	710,512	693,232	685,707	696,857	638,676	659,230	666,145	699,230	8,172,088	
B.O.P.D.	22,579	22,708	22,785	22,680	22,920	23,108	22,120	22,479	21,289	21,266	22,205	22,556		22,389
S.T.L.	235,075	208,334	228,320	219,804	232,157	203,950	212,489	214,776	208,499	212,176	198,914	206,684	2,581,178	
B.O.P.D.	7,583	7,440	7,365	7,327	7,489	6,798	6,855	6,928	6,950	6,844	6,630	6,667		7,072
T.T.I.	866,385	799,727	878,397	832,713	871,668	841,802	871,991	859,784	806,347	813,216	772,317	771,360	9,985,707	
B.O.P.D.	27,948	28,562	28,335	27,757	28,118	28,060	28,129	27,735	26,878	26,233	25,744	248,826		273,588
T.C.O.	29,341	25,879	25,884	25,406	26,711	25,447	25,754	22,472	22,290	24,772	24,879	23,128	301,963	
B.O.P.D.	946	924	835	847	862	848	831	725	743	799	829	746		8,273
P.C.O.L.	14,446	12,535	12,648	12,363	12,823	12,653	13,162	13,261	11,525	11,747	11,811	12,564	151,538	
B.O.P.D.	466	448	408	412	414	422	425	428	384	379	394	405		415
T.N.A.	1,601,384	1,429,267	1,612,654	1,512,674	1,581,109	1,524,305	1,624,476	1,640,717	1,576,049	1,600,363	1,555,864	1,634,786	18,893,648	
B.O.P.D.	51,657	51,045	52,021	50,422	51,004	50,810	52,403	52,926	52,535	51,625	51,862	52,735		51,763
AMOCO	1,361,595	1,166,099	1,309,134	1,460,488	1,722,128	1,681,178	1,842,548	2,092,879	1,904,313	1,991,092	1,947,220	2,105,164	20,583,838	
B.O.P.D.	43,922	41,646	42,230	48,683	55,553	56,039	59,437	67,512	63,477	64,229	64,907	67,909		57,394
TOTAL 1973	4,808,166	4,277,669	4,773,383	4,743,833	5,157,108	4,982,567	5,276,127	5,540,746	5,167,699	5,312,596	5,177,150	5,452,916	60,669,960	
B.O.P.D.	155,102	152,774	153,980	158,128	166,358	166,086	170,198	178,734	172,257	171,374	172,571	175,901		166,219
TOTAL 1972	3,868,246	3,730,869	4,151,648	4,239,185	4,438,193	4,327,632	4,352,093	4,523,162	4,321,398	4,317,418	4,224,860	4,716,105	51,210,809	
B.O.P.D.	124,779	128,647	133,920	141,303	143,162	144,252	140,388	155,905	144,048	139,271	140,829	152,132		139,920

APPENDIX IIIc

MARINE OFFSHORE LAND PRODUCTION—1973

(All quantities in bbls)

Type of Well	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE		JANUARY TO JUNE		JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER		JULY TO DECEMBER		GRAND TOTAL	
	Wells	Production	Wells	Production	Wells	Production	Wells	Production	Wells	Production	Wells	Production	Wells	Production	Wells	Production	Wells	Production	Wells	Production	Wells	Production	Wells	Production	Wells	Production	Wells	Production	Wells	Production
Marine																														
TNA—Soldado	229	1,574,264	225	1,404,988	226	1,582,732	222	1,486,673	225	1,554,414	227	1,498,003	226	9,101,074	229	1,591,455	236	1,610,656	239	1,548,764	236	1,574,167	238	1,530,154	236	1,610,879	235	9,466,075	231	18,567,149
Texaco—ABM	85	75,248	74	60,068	75	67,585	80	67,686	76	68,327	78	60,104	78	399,117	80	58,153	67	53,270	72	50,258	69	53,350	74	54,625	71	48,592	72	318,248	75	717,365
Texaco—ALM	2	3,198	2	4,381	2	3,141	2	4,170	2	4,071	2	3,732	2	22,693	2	4,291	1	5,348	1	5,150	1	3,661	1	3,459	1	3,516	1	25,425	1	48,118
Texaco—Couva Marine	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	577	1	577	1	577
TTPCL—North Marine	1	4,239	1	3,844	1	3,859	1	3,992	1	3,950	1	3,852	1	23,736	1	2,806	1	2,563	1	3,552	1	4,321	1	4,190	1	4,061	1	21,493	1	45,229
Galeota	17	57,849	17	46,844	16	54,600	16	49,691	14	42,250	15	51,386	16	302,620	16	50,626	16	45,048	15	29,235	15	37,723	15	33,007	16	39,792	16	235,431	16	538,051
Texaco—GBM	1	2,399	1	2,977	1	2,348	1	1,733	1	1,424	1	303	1	11,184	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	11,184
Amoco—All Fields	18	1,361,595	18	1,166,099	20	1,309,134	22	1,460,488	28	1,722,128	28	1,681,178	22	8,700,622	28	1,842,548	29	2,092,879	29	1,904,313	32	1,991,092	31	1,947,220	37	2,105,164	31	11,883,216	26	20,583,838
SUB-TOTAL	353	3,078,792	338	2,689,201	341	3,023,498	244	3,074,433	347	3,396,564	352	3,298,558	346	18,561,046	356	3,549,879	350	3,809,764	357	3,541,272	354	3,664,314	360	3,572,655	363	3,812,581	357	21,950,465	351	40,511,511
Deviated from Shore																														
TNA—F.O.S.	18	27,120	18	24,279	17	20,922	17	26,001	16	26,695	15	26,302	17	160,319	15	33,021	13	30,061	13	27,285	13	26,196	13	25,710	13	23,907	13	166,180	15	326,499
Texaco—AS	45	19,504	39	15,148	40	15,884	40	18,395	38	15,883	45	15,818	41	100,632	43	16,282	30	12,784	33	11,166	36	17,244	27	13,184	33	12,306	34	82,966	38	183,598
ALS	4	7,298	3	7,733	3	7,296	3	6,512	3	5,923	3	6,287	3	41,089	3	7,119	3	6,357	3	5,895	3	2,314	3	5,041	3	5,719	3	32,445	3	73,534
TTPCL—M Wells ...	4	542	4	652	4	899	4	1,177	5	1,116	6	1,101	4	5,487	4	1,000	5	1,075	5	654	8	711	5	716	6	650	5	4,806	5	10,293
SUB TOTAL	71	54,464	64	47,852	64	54,001	64	52,085	62	49,617	69	49,508	66	307,527	65	57,422	51	50,277	54	45,000	60	46,465	48	44,651	55	42,582	56	286,397	61	593,924
Marine and Deviated . ..	424	3,133,256	402	2,737,053	405	3,077,499	408	3,126,518	409	3,446,181	421	3,348,066	411	18,868,573	421	3,607,301	401	3,860,041	411	3,586,272	414	3,710,779	408	3,617,306	418	3,855,163	412	22,236,862	413	41,105,435
Land . .	2,536	1,674,910	2,517	1,540,616	2,529	1,695,884	2,547	1,617,315	2,525	1,710,927	2,456	1,634,501	2,518	9,874,153	2,485	1,668,826	2,446	1,680,705	2,412	1,581,427	2,434	1,601,817	2,440	1,559,844	2,475	1,597,753	2,447	9,690,372	2,483	19,564,525
TOTAL PRODUCTION	2,960	4,808,166	2,919	4,277,669	2,934	4,773,383	2,955	4,743,833	2,934	5,157,108	2,877	4,982,567	2,930	28,742,726	2,906	5,276,127	2,847	5,540,746	2,823	5,167,699	2,848	5,312,596	2,848	5,177,150	2,893	5 452,916	2,860	31,927,234	2,895	60,669,960

APPENDIX IV

PRODUCTION AND DISPOSAL OF NATURAL GAS—1973

(All Figures of Gas Production in MSCF)

M—1,000 Standard Cubic Feet

Half-yearly Totals	Crude Oil Production bbls.	Average GOR Cu. Ft./bbls	Natural Gas Production	NATURAL GAS DISPOSAL									NATURAL GAS RECOVERY			Inter Oil Company Sales	Used for the Manufacture of Petro-chemicals
				Sales to Other Companies	Replaced into Formation	Converted into C.H.P.S.	USED AS FUEL		VENTED TO ATMOSPHERE			Pipeline Losses and unaccounted for	Not Collected	Natural Gas Treated	Average Plant recovery IG/MCF	Natural gasoline produced bbls		
							In Fields	In Refineries	After Utilisation	Without Utilisation	Total							
JANUARY	4,808,166	1,844	8,865,593	2,538,634	581,905	7,304	676,566	2,084,366	504,542	1,830,808	2,335,350	155,540	485,928	708,725	344	6,962	2,252,480	704,959
FEBRUARY	4,277,669	1,884	8,058,267	2,466,070	600,018	5,462	640,428	1,752,714	388,763	1,624,450	2,013,213	131,572	448,790	586,110	299	5,008	2,080,711	715,703
MARCH	4,773,383	1,930	9,213,840	2,955,522	637,791	4,722	722,873	1,940,493	505,354	1,768,414	2,273,768	196,583	482,088	415,772	378	4,497	2,326,982	892,945
APRIL	4,743,833	1,950	9,243,477	2,693,736	599,423	5,201	700,164	1,824,338	565,432	2,155,685	2,721,117	162,153	537,345	315,945	549	4,957	2,168,625	781,781
MAY	5,157,108	1,965	10,134,741	2,721,418	572,115	4,966	681,795	1,959,668	582,294	2,831,866	3,414,160	193,417	587,202	385,619	420	4,630	2,272,337	750,122
JUNE	4,982,567	2,019	10,057,944	2,909,865	607,473	5,530	686,712	1,763,916	502,106	2,819,904	3,322,010	173,997	588,441	462,239	399	5,271	2,265,798	878,412
HALF-YEAR TOTAL ...	28,742,726		55,573,862	16,285,245	3,598,725	33,185	4,108,538	11,325,495	3,048,491	13,031,127	16,079,618	1,013,262	3,129,794	2,874,410	383	31,325	13,366,933	4,723,922
JULY	5,276,127	2,019	10,652,637	3,100,433	647,965	5,771	671,777	1,816,938	484,588	3,121,139	3,605,727	228,809	575,217	624,120	308	5,500	2,393,643	909,713
AUGUST	5,540,746	2,025	11,220,288	3,096,018	431,393	5,150	662,159	1,917,509	573,704	3,767,363	4,341,067	168,949	598,043	1,961,885	188	10,580	2,360,008	908,119
SEPTEMBER	5,167,699	2,083	10,762,535	2,784,284	443,258	4,734	675,964	1,893,111	586,150	3,670,341	4,256,491	149,560	555,133	1,743,834	197	9,817	2,253,648	722,210
OCTOBER	5,312,596	2,043	10,854,310	2,867,391	313,687	3,949	739,119	1,920,428	555,388	3,646,425	4,201,813	233,148	574,775	1,678,729	174	8,334	2,322,975	795,823
NOVEMBER	5,177,150	1,966	10,178,258	2,795,332	371,309	4,282	651,822	1,760,752	549,979	3,179,444	3,729,423	241,090	624,248	1,437,452	190	7,820	2,179,976	810,226
DECEMBER	5,452,916	1,969	10,737,463	2,665,588	574,600	3,703	714,214	1,871,995	640,672	3,447,313	4,087,985	257,081	562,297	1,100,562	180	5,667	2,202,648	754,495
HALF-YEAR TOTAL ...	31,927,234		64,405,491	17,309,046	2,782,212	27,589	4,115,055	11,180,733	3,390,481	20,832,025	24,222,506	1,278,637	3,489,713	8,546,582	195	47,718	13,712,898	4,900,586
YEAR TOTAL	60,669,960	1,977	119,979,353	33,594,291	6,380,937	60,774	8,223,593	22,506,228	6,438,972	33,863,152	40,302,124	2,291,899	6,619,507	11,420,992	242	79,043	27,079,831	9,624,508
PER CENT DISPOSAL FOR YEAR	—	—	—	28.0	5.3	0.1	6.9	18.7	5.4	28.2	33.6	1.9	5.5	9.5	—	0.1	22.6	8.0

APPENDIX V

DESTINATION OF EXPORTS OF CRUDE AND REFINED PRODUCTS FROM TRINIDAD AND TOBAGO—1973

(All quantities in bbls)

Country	Totals	% of Total Exports	Crude Petroleum Exported	L.P.G.	Aviation Turbine Fuel	Aviation Gasolene	Motor Gasolene	Kerosines	Gas and Diesel Oils	Fuel Oils	Lubes and Greases	Asphaltic Products	Petro-chemicals and other Refined Products (1)
North America													
Canada	1,984,648	1.560	—	—	—	—	—	—	133,520	1,667,660	183,468	—	—
U.S.A.	74,444,537	58.519	19,291,889	—	5,826,577	—	4,847,626	6,516,955	3,934,597	52,823,680	43,059	—	452,043
TOTAL NORTH AMERICA	76,429,185	60.079	19,291,889	—	5,826,577	—	4,847,626	6,516,955	4,068,177	54,491,340	226,527	—	452,043
Central America													
Costa Rica	83,073	0.065	—	—	—	14,608	30,933	6,202	—	—	31,330	—	—
Honduras	35,885	0.028	—	—	—	15,661	—	—	—	—	20,224	—	—
Other C. A. (2)	1,378,810	1.084	—	—	—	14,602	331,648	37,181	218,767	744,502	32,110	—	—
TOTAL CENTRAL AMERICA	1,497,768	1.177	—	—	—	44,871	362,181	43,383	218,767	744,502	83,664	—	—
South America													
Brazil	2,427,178	1.908	—	—	—	—	2,159,214	—	—	—	267,964	—	—
Ecuador	756,140	0.594	—	—	—	—	354,279	84,821	233,504	83,536	—	—	—
French Guiana	430,841	0.339	—	13,818	—	3,466	94,716	17,726	295,290	5,821	4	—	—
Guyana	2,314,993	1.820	—	26,393	—	23,816	367,197	216,078	1,033,944	633,934	9,142	4,487	2
Suriname	1,679,462	1.320	—	8,054	—	10,688	207,510	112,377	846,638	489,193	2,763	2,239	—
Other S. A. (3)	41,878	0.033	—	—	—	5,269	—	—	—	—	36,609	—	—
TOTAL SOUTH AMERICA	7,650,492	6.014	—	48,265	—	43,239	3,182,916	431,002	2,409,376	1,212,484	316,482	6,726	2
West Indian Islands													
British (4)	5,220,800	4.104		67,835	349,804	66,437	540,528	524,962	479,181	3,109,658	66,831	15,308	256
French (5)	262,755	0.207	—	11,675		24,093	54,074	50,599	96,689	7,788	17,542	295	—
Netherlands (6)	1,927,922	1.515	—	—	49,910	7,188	1,697,258	2,199	168,145	—	—	—	3,222
Puerto Rico	3,319,512	2.609	1,655,596	—	—	—	2,690,088	544,500	84,924	—	—	—	—
Virgin Islands	2,321,782	1.825	2,300,633	1,661	—	19,676	235,876	132,146	103,154	1,829,269	—	—	—
Other Islands (7)	101,546	0.080	—	—	3,517	28,407	25,001	27,081	17,540	—	—	—	—
TOTAL WEST INDIAN ISLANDS	13,154,317	10.340	3,956,229	81,171	403,231	145,801	5,242,825	1,281,487	949,633	4,946,715	84,373	15,603	3,478

(1) Total Exports of "Other Refined Products" was 258 bbls. (256) British West Indies (2) French Guiana.

(2) Other Central America—Canal Zone (603,646) El Salvador (17,722) Guatemala (412,939) Nicaragua (64,010) Panama (280,493).

(3) Other South America—Colombia (22,928) Uruguay (18,950).

(4) British—Antigua, Anguilla, Bahamas, Barbados, Bermuda, Dominica, Grand Cayman, Grenada, Jamaica, Montserrat, St. Kitts and St. Vincent.

(5) French—Guadeloupe, Martinique, St. Barbs, St. Maarten.

(6) Netherlands—Curacao, Saba

(7) Other West Indian Islands—Dominican Republic (97,365) Haiti (4,181).

APPENDIX V—*Continued*

DESTINATION OF EXPORTS OF CRUDE AND REFINED PRODUCTS FROM TRINIDAD AND TOBAGO—1973—*Continued*

(All quantities in bbls)

Country	Totals	% of Total Exports	Crude Petroleum Exported	L.P.G.	Aviation Turbine Fuel	Aviation Gasolene	Motor Gasolene	Kerosines	Gas and Diesel Oils	Fuel Oils	Lubes and Greases	Asphaltic Products	Petro-chemicals and other Refined Products (1)
Europe													
Belgium	14,133	0.011	—	—	—	—	—	—	—	—	12,732	—	1,401
Denmark	402,205	0.316	—	—	402,205	—	—	—	—	—	—	—	—
France	147,803	0.116	—	—	147,803	—	—	—	—	—	—	—	—
Federal Republic of Germany	562,091	0.442	—	—	241,877	—	287,832	—	—	—	—	—	32,382
Italy	254,394	0.200	—	—	—	—	—	—	—	—	—	—	254,394
Netherlands	372,624	0.293	—	—	—	—	23,930	—	—	—	—	—	348,694
Spain	147,134	0.115	—	—	147,134	—	—	—	—	—	—	—	—
Sweden	11,738,853	9.228	—	—	—	—	3,146,543	—	5,356,379	3,235,931	—	—	—
United Kingdom	895,575	0.704	—	—	103,717	—	381,562	34,982	224,794	43,975	—	—	106,545
TOTAL EUROPE	14,534,812	11.425	—	—	1,042,736	—	3,839,867	34,982	5,581,173	3,279,906	12,732	—	743,416
Others													
Africa	2,021,258	1.589	—	—	—	10,446	434,830	267,364	907,681	379,326	21,611	—	—
Canary Islands	945,432	0.743	—	—	—	—	—	—	222,522	722,910	—	—	—
Japan	545,792	0.429	—	—	393,383	—	—	—	152,409	—	—	—	—
Phillipines	6,999	0.006	—	—	—	—	—	—	—	—	6,999	—	—
TOTAL OTHERS	3,519,481	2.767	—	—	393,383	10,446	434,830	267,364	1,282,612	1,102,236	28,610	—	—
TOTAL CARGOES	116,786,055	91.802	23,248,118	129,436	7,665,927	244,357	17,910,645	8,575,173	14,509,678	65,777,183	752,388	22,329	1,198,939
FOREIGN BUNKERS	10,428,140	8.198	—	—	225,172	8,986	—	—	1,199,588	8,975,359	19,285	(374)	124
TOTAL EXPORTS	127,214,195	100.000	—	129,436	7,891,099	253,343	17,910,645	8,575,173	15,709,266	74,752,542	771,673	21,955	1,199,063

(8) Africa—Ango Ango, Cameroon, Congo, Dahomey, Gambia, Ghana, Guinea, Ivory Coast, Liberia, Nigeria, Republic of Congo, Senegal, Sierra Leone, Togo, Republic of Zaire.

APPENDIX VI

MOVEMENT OF REFINERY PRODUCTS—1973

(Quantities in Barrels)

Inventory Name	Opening Inventory	Production	Imports	Other Receipts	Total	Purchases from other Petroleum Markets	Sales to other Petroleum Markets	Local Consumption Exports						Gains and Losses	Closing Inventory	Total
								Own Use	Retailer	Local Bunker	Total	Cargoes	Foreign Bunkers			
Liquified Gases	11,051	350,274	54,484	3,273	419,082	288,702	288,702	621	225,468	—	226,089	179,223	—	(7,880)	21,650	419,082
Aviation Gasolenes	22,352	231,142	—	—	253,494	72,920	72,920	—	4,028	10,447	14,475	218,140	8,983	20	11,876	253,494
Motor Gasolenes	907,642	19,600,287	—	81,122	20,589,051	2,377,392	2,386,848	14,267	1,570,672	—	1,584,939	17,581,680	—	(1,217)	1,414,193	20,579,595
Domestic Gasolenes	73	—	—	—	73	9,456	—	—	9,461	—	9,461	5	—	31	32	9,529
Aviation Turbine Fuels	475,004	8,344,212	36,447	—	8,855,663	977,953	1,232,631	36	138,685	192,277	330,998	7,576,177	225,172	452	468,186	8,600,985
Kerosine	319,182	7,765,554	421,502	74,600	8,580,838	667,594	412,916	950	221,243	46	222,239	8,371,431	—	716	241,130	8,835,516
White Spirit	1,860	12,449	—	—	14,309	5,342	5,082	1,796	5,342	—	7,138	3,890	—	—	3,541	14,569
Vapourizing Oil	5	(1)	—	—	4	2	2	—	2	—	2	(1)	—	—	3	4
Gas Oil	(116,460)	14,249,380	—	35,777	14,168,697	2,355,134	2,346,902	84,411	426,787	250,114	761,312	12,352,001	375,122	(5,135)	693,829	14,176,929
Marine Diesel	103,728	961,059	—	—	1,064,787	944,066	938,876	2,533	10,483	8,271	21,287	197,936	778,468	1,156	71,130	1,069,977
Fuel Oils	3,060,973	81,921,922	131,341	1,073,249	86,187,485	6,545,391	6,619,453	1,662,042	193,821	83,071	1,938,934	73,398,068	8,687,345	(114)	2,089,190	86,113,423
Lubes and Greases	139,157	942,257	48,882	39,938	1,170,234	45,734	45,734	12,978	51,423	475	64,876	857,308	19,285	(914)	229,679	1,170,234
Asphaltic Products	10,842	44,987	60,167	—	115,996	84,102	84,145	(1,715)	74,867	—	73,152	22,648	(374)	7,198	13,329	115,953
Unfinished Oils	2,601,839	(405,861)	—	21,777	2,217,755	—	—	2,251	—	—	2,251	—	—	—	2,215,504	2,217,755
Petrochemicals	142,357	1,344,202	—	9,739	1,496,298	6,323	6,323	161	6,961	—	7,122	1,201,968	—	(2)	287,210	1,496,298
Other Finished Products	2,738	14,911	534	4,613	22,796	14,395	14,352	765	12,138	—	12,903	6,730	124	134	2,948	22,839
TOTAL	7,682,343	135,376,774	753,357	1,344,088	145,156,562	14,394,506	14,545,886	1,781,096	2,951,381	544,701	5,277,178	121,967,204	10,094,125	(5,555)	7,763,230	145,096,182

NOTE: ( ) Brackets indicate a negative quantity.

APPENDIX VII

MOVEMENT OF CRUDE AND C.H.P.S. YEAR ENDED 31st DECEMBER, 1973

(All quantities in barrels)

Month	Production	Imports	Decrease in Inventories	Totals	Purchases and Exchanges from other Co.	Sales and Exchanges to other Co.	Own Use	To Refining	Exports	Gains and Losses	Total
January	4,815,123	7,501,549	(55,534)	12,261,138	2,603,025	2,603,025	305	10,812,883	1,465,820	(17,870)	12,261,138
February	4,282,705	9,147,044	(355,099)	13,074,650	2,373,458	2,373,458	482	11,193,342	1,701,655	179,171	13,074,650
March	4,777,079	9,394,246	(531,652)	13,639,673	2,726,466	2,726,466	282	12,687,787	1,083,214	(131,610)	13,639,673
April	4,748,742	8,441,206	793,394	13,983,342	3,035,931	3,035,931	1,017	12,126,263	2,012,626	(156,564)	13,983,342
May	5,161,747	9,136,908	(345,722)	13,952,933	2,691,093	2,691,093	997	12,427,263	1,467,405	57,268	13,952,933
June	4,987,843	9,474,767	104,607	14,567,217	2,195,457	2,195,457	870	12,293,199	2,078,218	194,930	14,567,217
July	5,281,650	9,787,823	(351,132)	14,718,341	2,538,064	2,538,064	624	12,531,020	2,405,562	(218,865)	14,718,341
August	5,545,778	8,776,007	(16,730)	14,305,055	2,758,078	2,758,078	868	12,101,685	2,748,910	(546,408)	14,305,055
September	5,172,501	9,244,115	(1,165,811)	13,250,805	3,187,950	3,187,950	1,032	11,712,756	1,636,121	(99,104)	13,250,805
October	5,316,925	9,331,223	(365,610)	14,282,538	2,678,286	2,678,286	969	11,900,483	2,384,907	(3,821)	14,282,538
November	5,181,251	6,653,778	1,220,798	13,055,827	2,659,959	2,659,959	982	11,060,167	2,107,001	(112,323)	13,055,827
December	5,456,849	6,735,085	993,887	13,185,821	2,775,546	2,775,546	540	10,595,617	2,524,652	65,012	13,185,821
TOTAL	60,728,193	103,623,751	(74,604)	164,277,340	32,223,313	32,223,313	8,968	141,442,465	23,616,091	(790,184)	164,277,340

APPENDIX VIII

SUMMARY OF CRUDE OIL ASSESSED FOR CROWN ROYALTY WITH PRICES AND ANALYSIS—1973

(For half-yearly Assessment Periods ending 30th June and 31st December)

One Barrel=34,9726 I.G.

Company	Net Royalty Production Barrels	ROYALTY		SUB-DIVISION OF (ROYALTY) CRUDE INTO PRODUCTS AS R.L.E.I. ANALYSIS											
					LIGHT FRACTIONS			GAS OIL						FUEL OIL	
		10% Assessed bbls	Value $	Average Price $/ barrels	Quantity bbls	Percentage	Tetra Ethyl Lead to blend to 70/72 Oct. Gas 5/S	53–57 D.I. Barrels	48–52 D.I. Barrels	43.47 D.I. Barrels	No. 2 Fuel Barrels	Total Gas Oil Barrels	Percentage	Quantity bbls	Percentage
T.T.P.C.L.	3,047,105	304,711	2,090,214.49	6.86	32,000	10.50	2,281,431.56	32	382	634	81,432	82,480	27.07	190,231	62.43
P.C.O.L.	18,218	1,822	13,811.73	7.58	403	22.12	85,611.00	—	191	—	351	542	29.75	877	48.13
Estate of Timothy Roodal	284	28	185.87	6.54	1	3.57	—	—	—	—	8	8	28.57	19	67.86
S.T.L.	1,205,076	120,508	859,128.43	7.13	27,614	22.92	6,964,182.63	12,686	—	8,011	2,697	23,394	19.41	69,500	57.67
Tricentrol Limited ...	158,671	15,867	113,580.46	7.16	2,627	16.55	434,479.50	—	2,099	—	2,164	4,263	26.87	8,977	56.58
T.N.A.	9,261,393	926,139	6,030,662.00	6.51	145,819	15.74	43,978,848.48	—	137,976	—	—	137,976	14.90	642,344	69.36
T.T.I.	4,486,281	448,628	3,307,439.78	7.37	64,836	14.45	16,049,181.94	53,859	24,257	2,359	65,484	145,959	32.54	237,833	53.01
T.T.P.C.L.—Galeota ...	302,620	*37,828	320,748.56	8.48	3,973	10.50	—	—	—	—	19,024	19,024	50.29	14,831	39.21
Amoco T.O.C.	8,700,622	*1,087,578	10,552,900.30	9.70	94,378	8.68	—	—	—	811,354	—	811,354	74.60	181,846	16.72
Total and Averages ...	27,180,270	2,943,109	23,288,671.62	7.91	371,651	12.63	69,793,735.11	66,577	164,905	822,358	171,160	1,225,000	41.62	1,346,458	45.75
T.T.P.C.L.	3,056,252	305,625	3,751,156.53	12.27	31,686	10.37	2,535,281.08	—	147	3,184	76,967	80,298	26.27	193,641	63.36
P.C.O.L.	16,973	1,697	24,134.36	14.22	357	21.04	65,163.00	—	174	—	335	509	29.99	831	48.97
Estate of Timothy Roodal	259	26	322.31	12.44	1	3.85	—	—	—	—	8	8	30.77	17	65.38
S.T.L.	1,126,691	112,669	1,390,595.54	12.34	26,508	23.53	6,238,274.59	11,600	—	7,435	2,166	21,201	18.82	64,960	57.65
Tricentrol Limited ...	143,295	14,330	186,790.60	13.04	2,514	17.54	450,242.31	—	2,050	—	1,749	3,799	26.51	8,017	55.95
T.N.A. Limited	9,632,255	963,226	10,529,183.87	10.93	151,315	15.71	46,746,322.56	—	133,747	—	—	133,747	13.88	678,164	70.41
T.T.I.	4,210,444	421,044	5,661,687.29	13.45	61,192	14.53	13,398,180.31	53,844	17,742	2,256	62,740	136,582	32.44	233,270	53.03
T.T.P.C.L.—Galeota ...	235,431	*29,429	471,531.54	16.02	2,825	9.60	—	—	—	—	14,823	14,823	50.37	11,781	40.03
Amoco T.O.C.	11,883,216	*1,485,402	29,538,997.95	19.89	135,034	9.09	—	—	—	1,101,497	—	1,101,497	74.16	248,871	16.75
Totals and Averages ...	30,304,816	3,333,448	51,554,399.99	15.47	411,432	12.34	69,433,463.85	65,444	153,860	1,114,372	158,788	1,492,464	44.77	1,429,552	42.89
Years Totals and Averages	57,485,086	6,276,557	74,843,071.61	11.92	783,083	12.48	139,227,198.96	132,021	318,765	1,936,730	329,948	2,717,464	43.29	2,776,010	44.23

*NOTE—12½% Assessed Royalty.

APPENDIX IX

ROYALTY ASSESSMENT

The Royalty assessed on the crude oil, natural gasoline and natural gas produced on Crown Oil Mining Leases for each half-yearly period during 1971, 1972 and 1973 is shown in the following Table:

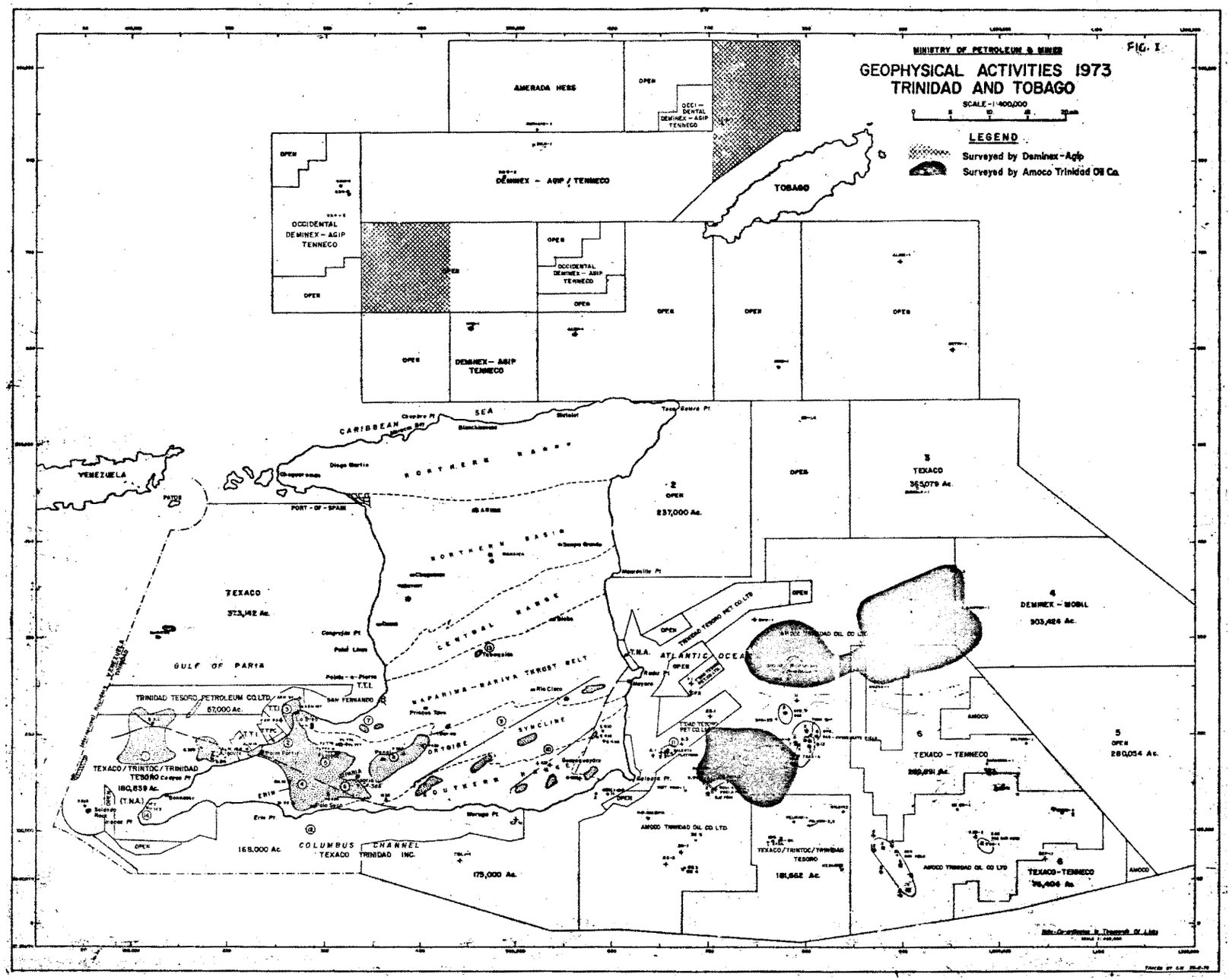
SOURCE OF REVENUE	ASSESSMENT FOR HALF-YEARLY PERIOD ENDING					
	31.12.73	30.6.73	31.12.72	30.6.72	31.12.71	30.6.71
	$	$	$	$	$	$
Royalty on Natural Gas	392,315.46	376,706.46	377,964.00	392,007.00	350,055.00	344,037.00
Royalty on Natural Gasoline	50,558.83	32,944.31	30,299.00	26,038.00	31,927.00	32,462.00
Minimum Rent not Offset by Royalty on Crude Oil	642,190.03	603,828.24	671,135.00	671,134.00	723,661.00	701,001.00
Royalty on Crude Oil	51,554,399.99	23,288,671.62	15,900,086.00	12,248,067.00	11,636,968.00	13,607,834.00
Half-yearly Total	52,639,464.31	24,302,150.63	16,979,484.00	13,337,246.00	12,742,611.00	14,685,334.00
YEARLY TOTALS	76,941,614.94		30,316,730.00		27,427,945.00	

The Volumes upon which the above assessment were made are as follows:—

SUBSTANCE ASSESSED FOR ROYALTY UNIT	HALF-YEARLY PERIOD ENDING					
	31.12.73	30.6.73	31.12.72	30.6.72	31.12.71	30.6.71
Natural Gas M.C.F.	26,154,364	25,113,764	25,187,118	26,133,816	23,337,038	22,935,788
Natural Gasoline I.G.	911,070	1,026,245	1,107,098	1,216,731	1,481,476	1,467,072
Crude Oil—Gross bbls.	33,352,539	29,450,942	26,518,073	24,098,355	21,421,693	22,507,212
Crude Oil Used Free of Royalty bbls	1,806	19,862	19,866	22,999	58,586	76,392
Crude Oil—Net bbls.	33,334,478	29,431,080	26,498,207	24,075,356	21,363,107	22,430,820
Crude Oil Average Royalty Value $T.T.	15.47	7.91	6.00	5.09	5.45	6.07

Net Royalty Production barrels shown at Appendix VIII totals 27,180,270 and 30,304,816 in the first and second half-yearly totals of 1973.

The difference is the additional 2½ per cent Royalty paid by Amoco 2,250,810 bbls in the first half-year and 3,029,662 in the second.


MINISTRY OF PETROLEUM & MINES
FIG. I
GEOPHYSICAL ACTIVITIES 1973
TRINIDAD AND TOBAGO
SCALE - 1:400,000
LEGEND
Surveyed by Deminex-Agip
Surveyed by Amoco Trinidad Oil Co.
AMERADA HESS
OPEN
OCCI-DENTAL DEMINEX-AGIP TENNECO
DEMINEX - AGIP / TENNECO
TOBAGO
OCCIDENTAL DEMINEX-AGIP TENNECO
DEMINEX-AGIP TENNECO
CARIBBEAN SEA
VENEZUELA
PORT-OF-SPAIN
NORTHERN RANGE
NORTHERN BASIN
CENTRAL RANGE
MAPARIMA-MARIVA THRUST BELT
ORTOIRE SYNCLINE
SOUTHERN RANGE
GULF OF PARIA
T.N.A.
ATLANTIC OCEAN
COLUMBUS CHANNEL
TEXACO
365,079 Ac.
2
OPER
237,000 Ac.
3
TEXACO
365,079 Ac.
4
DEMINEX - MOBIL
303,424 Ac.
5
OPEN
280,054 Ac.
6
TEXACO - TENNECO
TRINIDAD TESORO PETROLEUM CO. LTD.
67,000 Ac.
TEXACO / TRINTOC / TRINIDAD TESORO
180,839 Ac.
(T.N.A.)
165,000 Ac.
TEXACO TRINIDAD INC.
175,000 Ac.
AMOCO TRINIDAD OIL CO. LTD.
TEXACO / TRINTOC / TRINIDAD TESORO
181,862 Ac.
AMOCO TRINIDAD OIL CO LTD
TEXACO-TENNECO
75,404 Ac.
AMOCO
TRINIDAD TESORO PET CO LTD

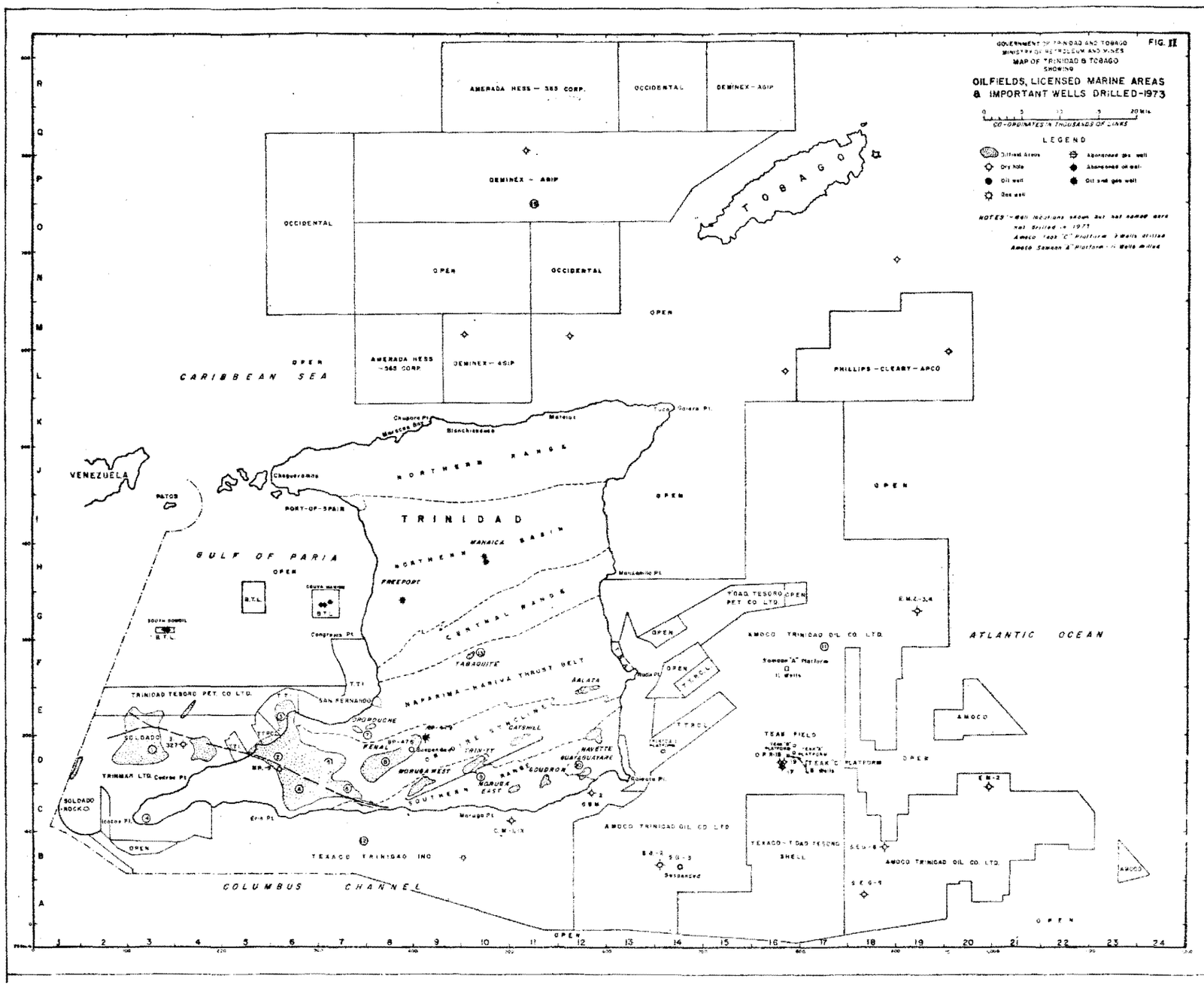

GOVERNMENT OF TRINIDAD AND TOBAGO
MINISTRY OF PETROLEUM AND MINES
FIG. II
MAP OF TRINIDAD & TOBAGO
SHOWING
OILFIELDS, LICENSED MARINE AREAS
& IMPORTANT WELLS DRILLED-1973
CO-ORDINATES IN THOUSANDS OF LINKS
LEGEND
Oilfield Areas
Dry hole
Oil well
Gas well
Abandoned gas well
Abandoned oil well
Oil and gas well
NOTES:- Well locations shown but not named were not Spudded in 1973
Amoco 1605 "C" Platform - 9 Wells drilled
Amoco Samaan "A" Platform - 11 Wells drilled
AMERADA HESS – 365 CORP.
OCCIDENTAL
DEMINEX – AGIP
TOBAGO
OPEN
PHILLIPS – CLEARY – APCO
CARIBBEAN SEA
VENEZUELA
PATOS
PORT-OF-SPAIN
NORTHERN RANGE
TRINIDAD
GULF OF PARIA
NORTHERN MANICA BASIN
FREEPORT
CENTRAL RANGE
NAPARIMA – NARIVA THRUST BELT
TABAQUITE
SAN FERNANDO
TRINIDAD TESOBO PET. CO. LTD.
TRINMAR LTD.
TEXACO TRINIDAD INC.
COLUMBUS CHANNEL
TOBAGO TESORO PET CO LTD
AMOCO TRINIDAD OIL CO. LTD.
ATLANTIC OCEAN
TEAK FIELD
TEAK 'C' PLATFORM
AMOCO
TEXACO – TOBAGO TESORO
SHELL
Samaan "A" Platform
11 Wells
Suspended

FIG. III

MINISTRY OF PETROLEUM AND MINES

CRUDE OIL PRODUCTION RATE BY MONTHS JULY 1970 - DECEMBER 1973

(BARRELS PER DAY)

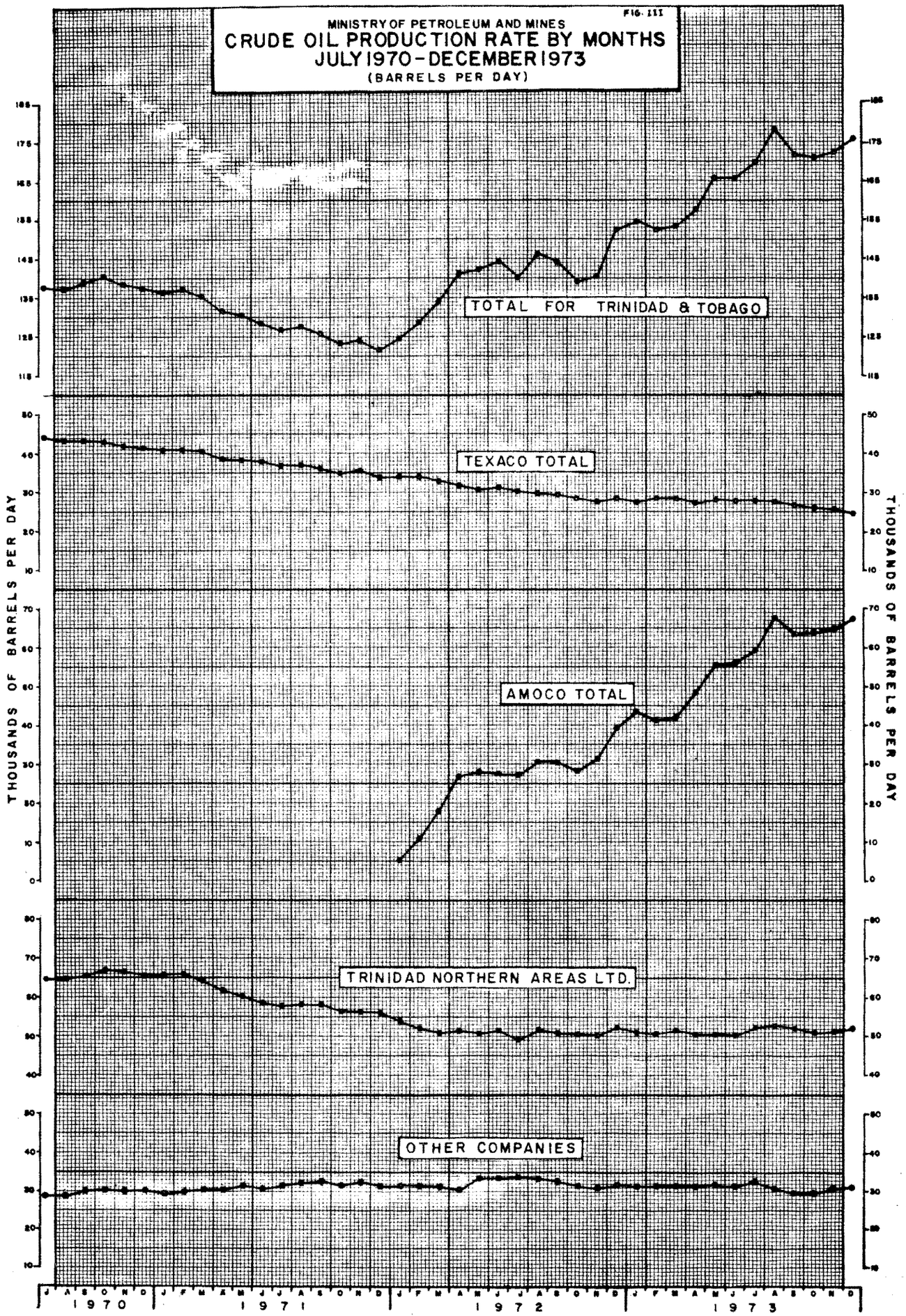


FIG. IV

MINISTRY OF PETROLEUM AND MINES

TRINIDAD AND TOBAGO CRUDE OIL PRODUCTION, 1973

DAILY AVERAGE BY MONTHS

COMPLETIONS, RECOMPLETIONS AND OTHER WELLS

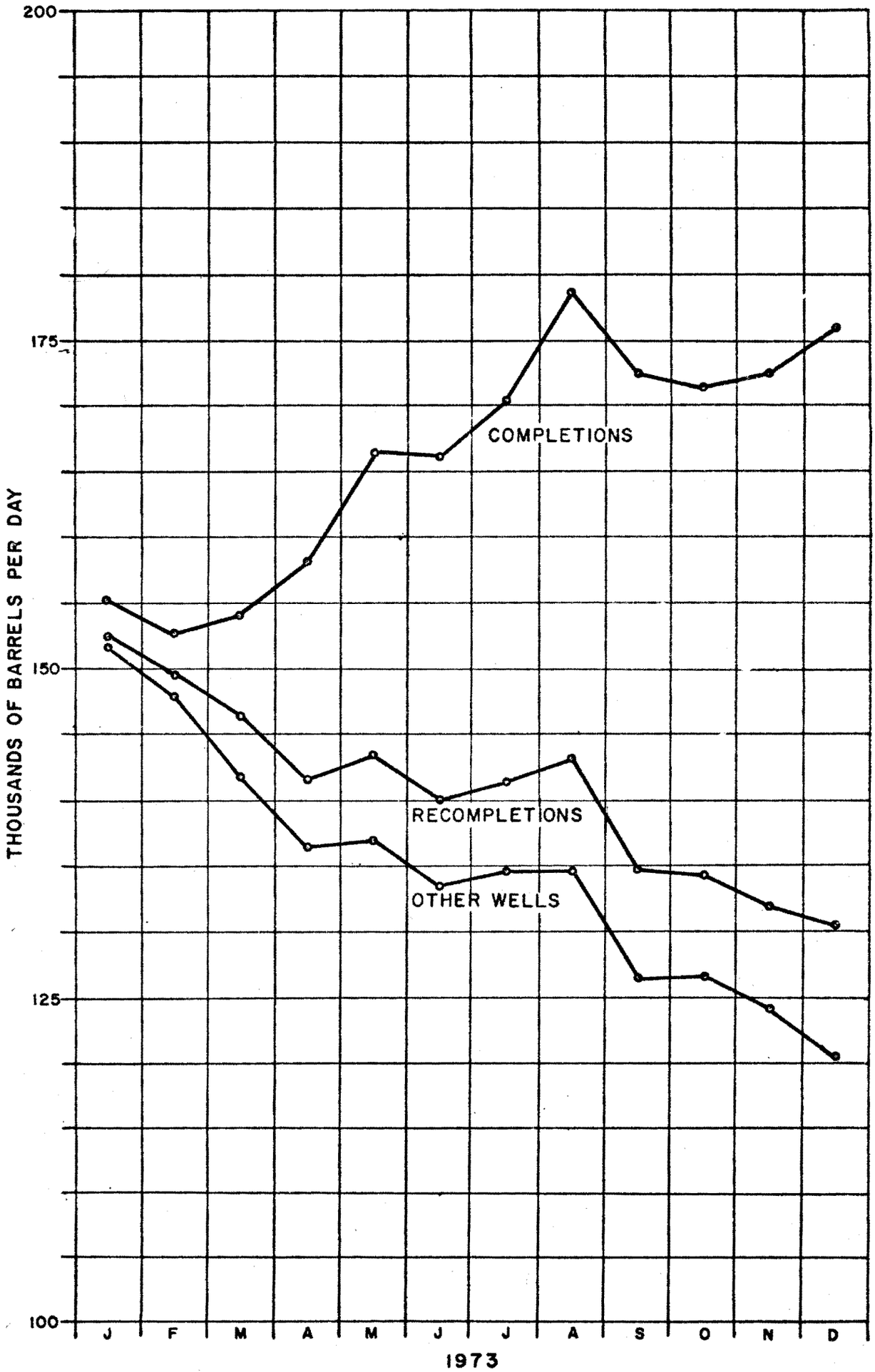
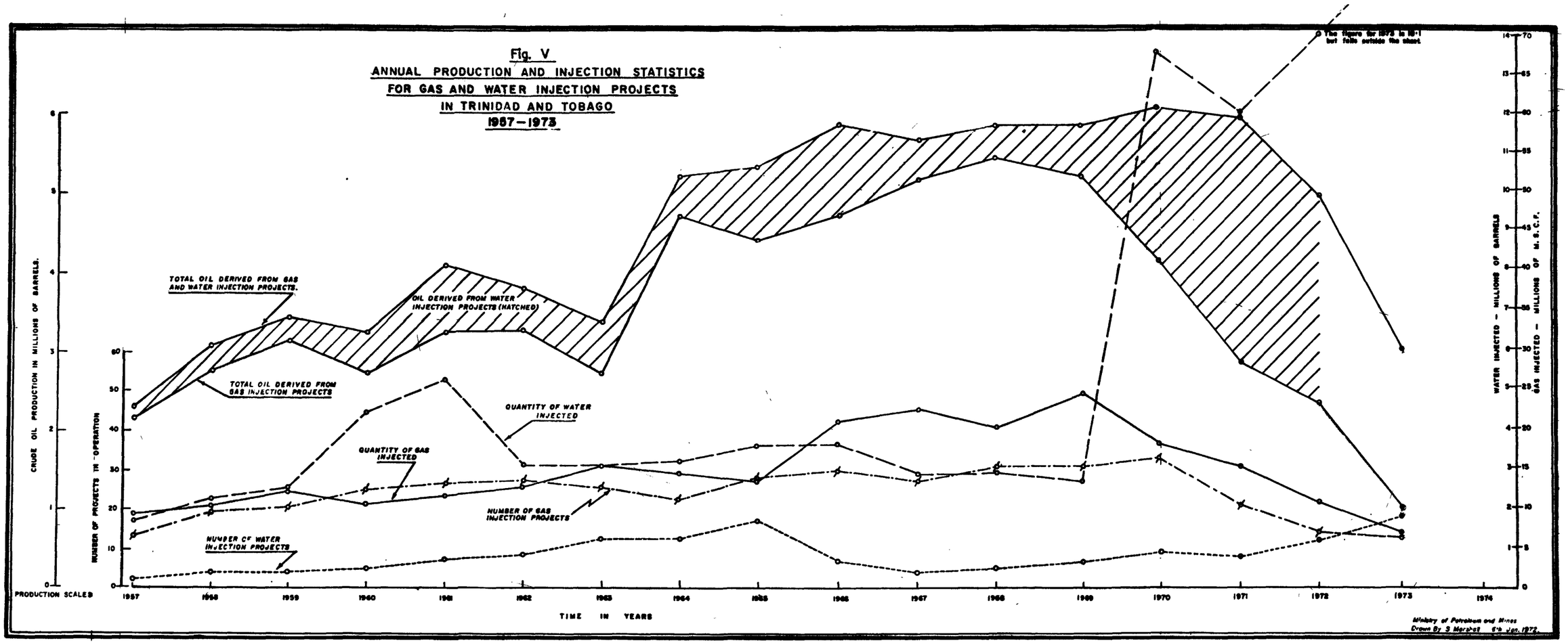


Fig. V

ANNUAL PRODUCTION AND INJECTION STATISTICS
FOR GAS AND WATER INJECTION PROJECTS
IN TRINIDAD AND TOBAGO
1957–1973



Ministry of Petroleum and Mines
Drawn By S Marshall 5th Jan. 1972.

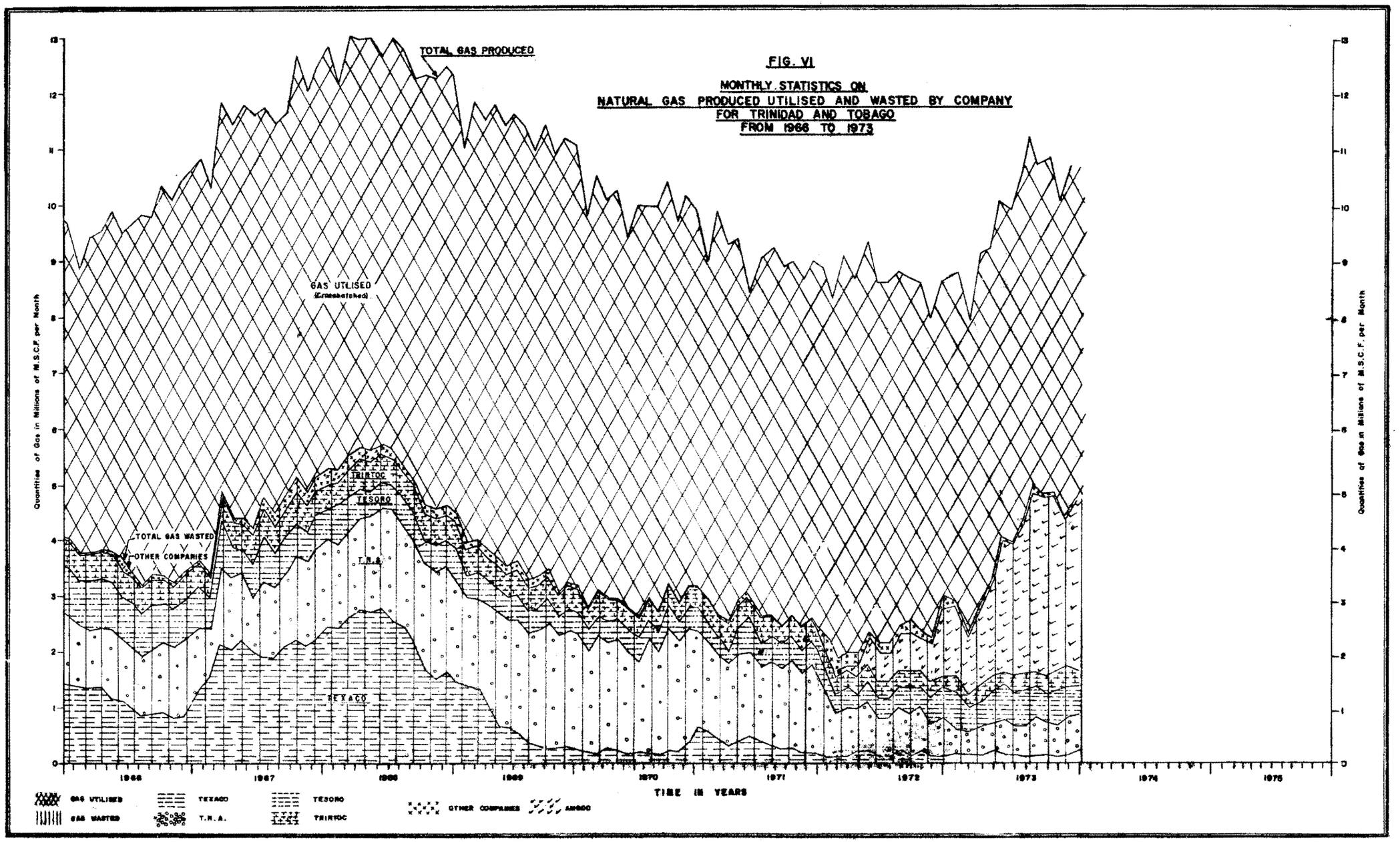
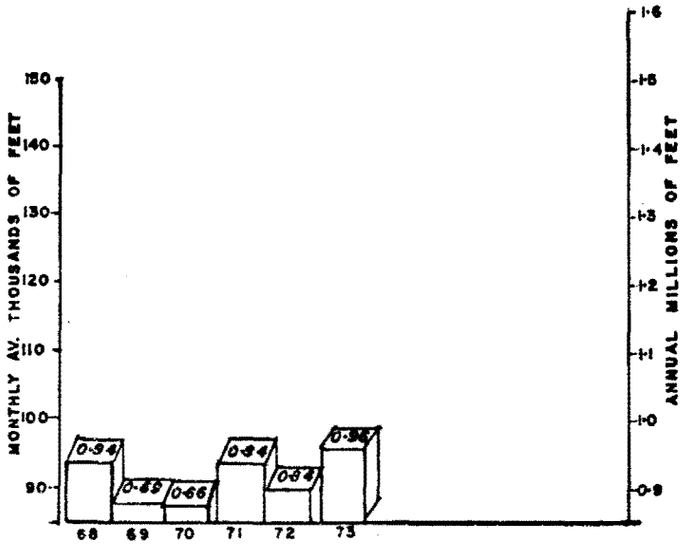


FIG. VI
MONTHLY STATISTICS ON
NATURAL GAS PRODUCED UTILISED AND WASTED BY COMPANY
FOR TRINIDAD AND TOBAGO
FROM 1966 TO 1973
TOTAL GAS PRODUCED
GAS UTILISED
(Cross-hatched)
TOTAL GAS WASTED
OTHER COMPANIES
TRINTOC
TESORO
T.N.A.
TEXACO
Quantities of Gas in Millions of M.S.C.F. per Month
TIME IN YEARS
1966
1967
1968
1969
1970
1971
1972
1973
1974
1975
GAS UTILISED
GAS WASTED
TEXACO
T.N.A.
TESORO
TRINTOC
OTHER COMPANIES
AMOCO

FIG. VII

STATISTICS ON THE PETROLEUM INDUSTRY OF TRINIDAD & TOBAGO

DRILLING



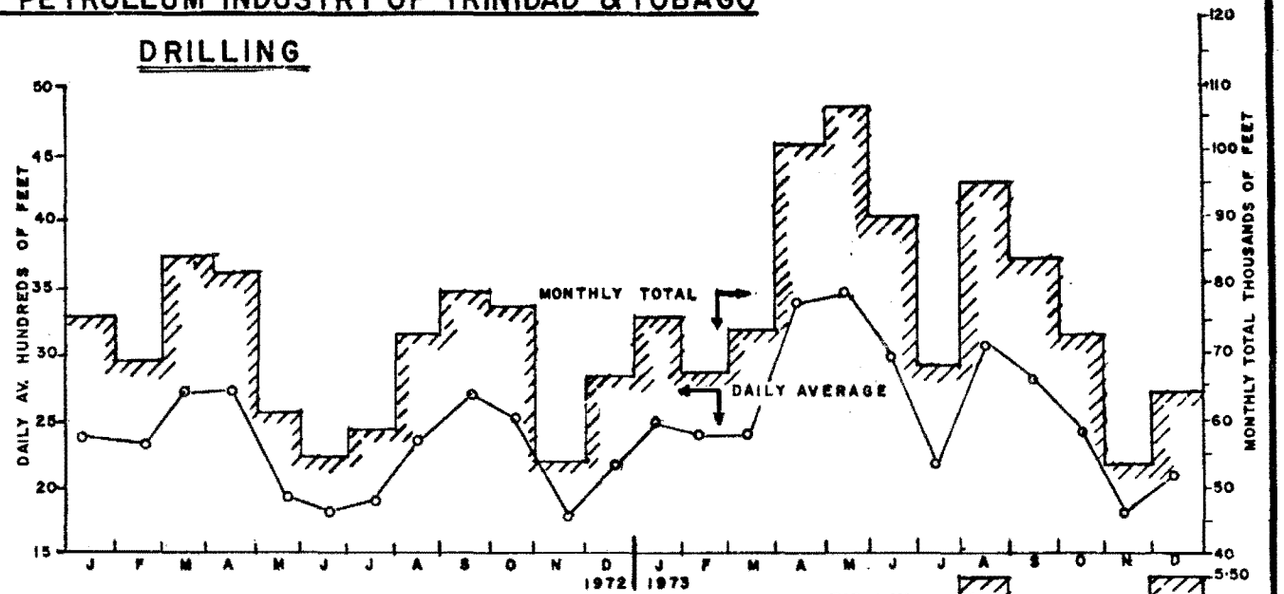
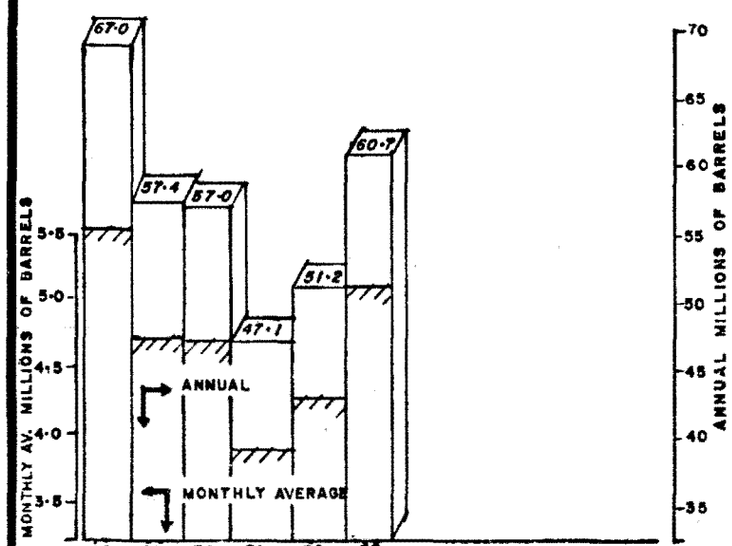
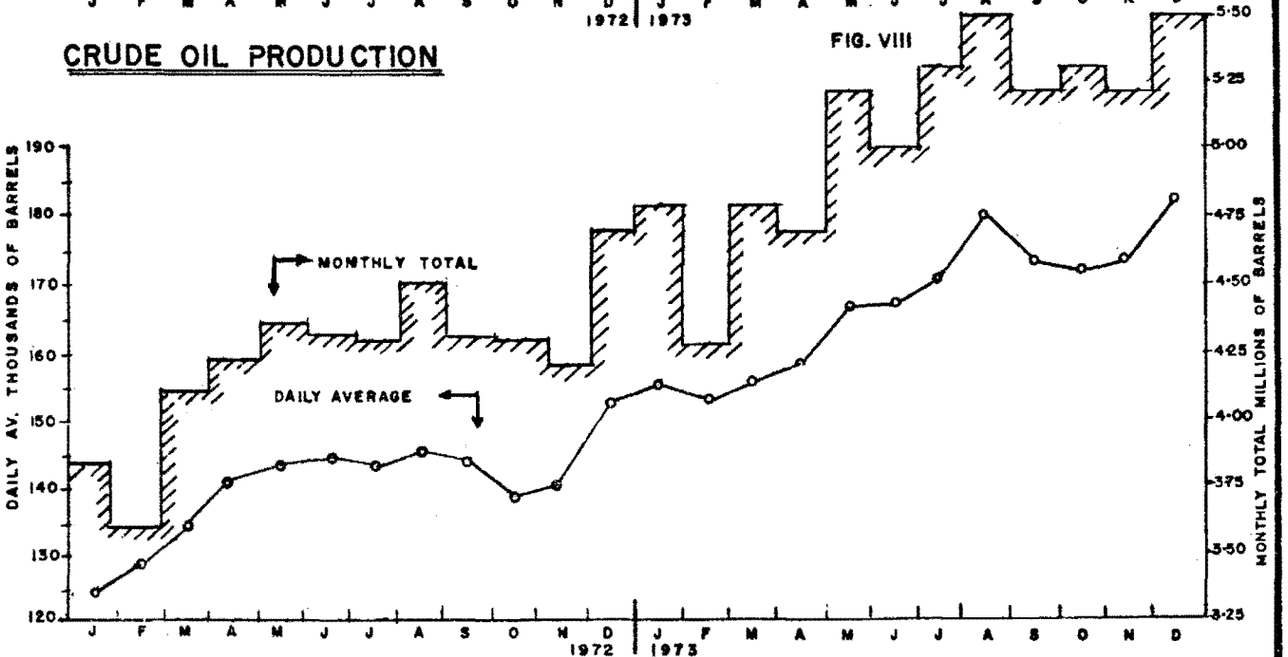


FIG. VIII

CRUDE OIL PRODUCTION





STATISTICS ON THE PETROLEUM INDUSTRY OF TRINIDAD & TOBAGO

FIG: IX

REFINERY THROUGHPUT

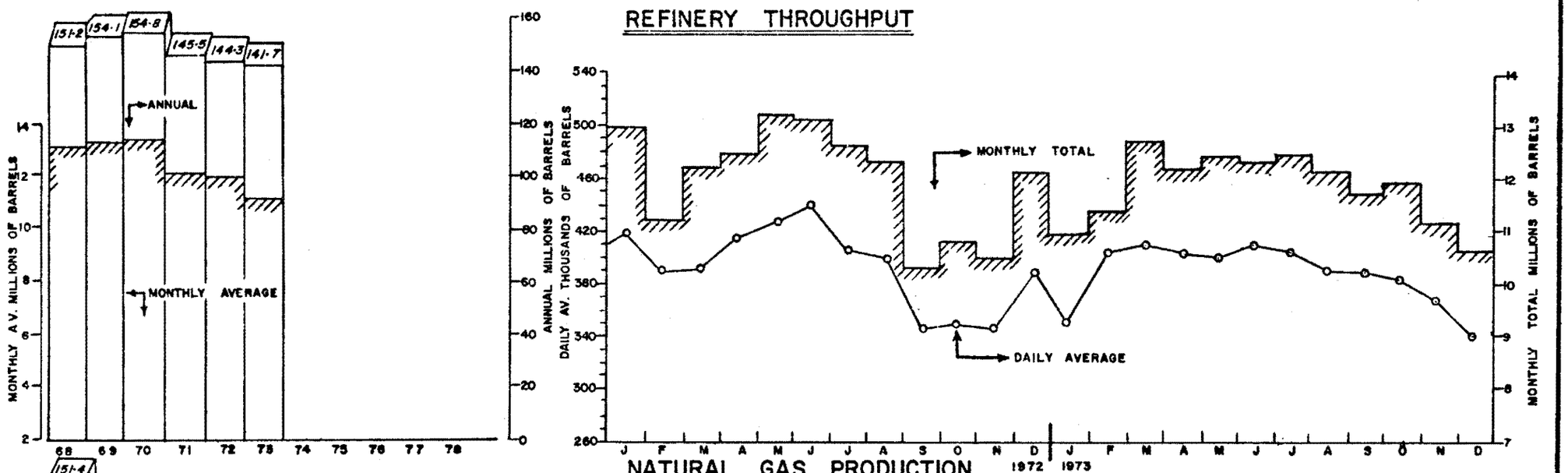
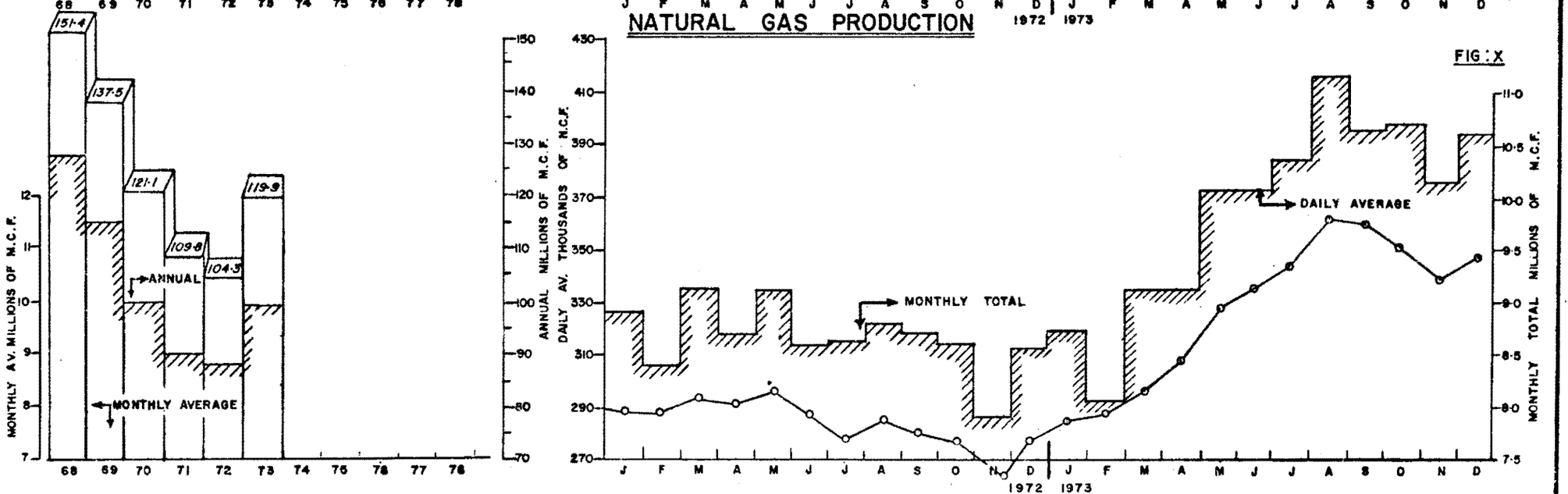


FIG: X

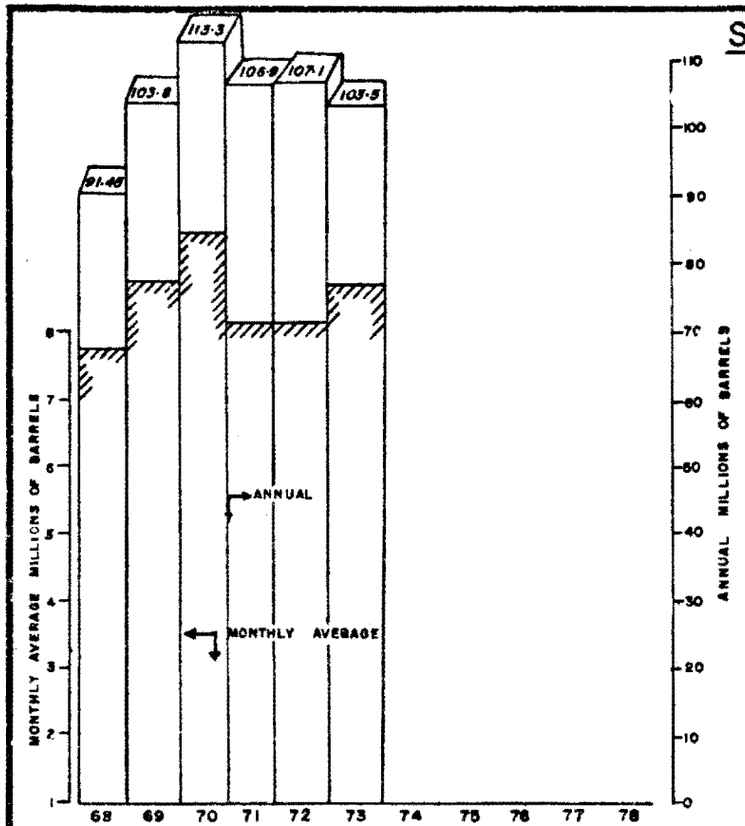
NATURAL GAS PRODUCTION



STATISTICS ON THE PETROLEUM INDUSTRY OF TRINIDAD & TOBAGO

FIG: XI

CRUDE OIL IMPORTS



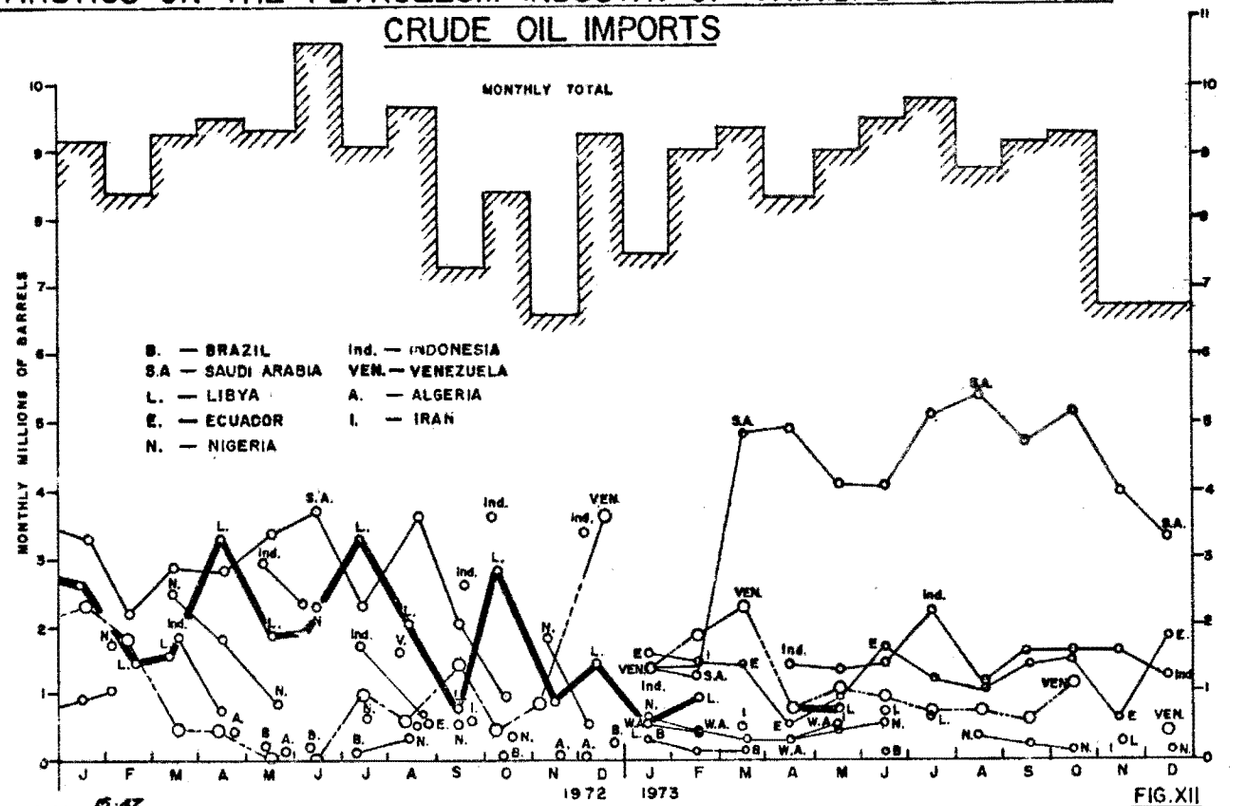
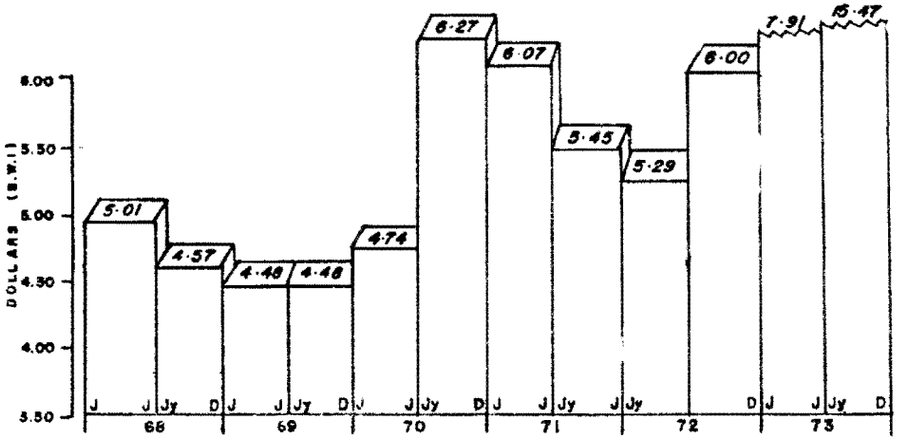


FIG.XII



AVERAGE VALUE* (For Royalty Evaluation) OF A BARREL OF CRUDE OIL

*AS DETERMINED BY THE METHOD OUTLINED IN THE LAND (OIL MINING)(AMENDMENT) REGULATIONS, 1955