

TRINIDAD AND TOBAGO



MINISTRY OF PETROLEUM AND MINES

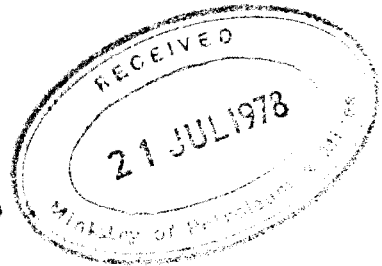
# ANNUAL REPORT

FOR THE YEAR

**1972**

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## FOREWORD

The resurgence of the Petroleum Industry which was evident in 1971 continued during 1972, mainly as a result of the development of commercial offshore production by AMOCO Trinidad Oil Co. Marine production accounted for 57.1 per cent of the total production for the year.

A major development during the year was the marine geophysical survey during April and May, 1972, conducted in the northern half of the Gulf of Paria and the open acreage off the east coast of Trinidad. This survey was a joint-venture between the Delta Exploration Company of Houston, Texas, and the Ministry of Petroleum and Mines, in which some 1,300 miles were surveyed. It is hoped that this survey will form the basis for new exploration and production in the near future.

A significant milestone in the direction of national ownership and control of the indigenous petroleum resources was the acquisition of the domestic marketing outlets of BP Trinidad, and the formation of the Trinidad and Tobago National Petroleum Marketing Company Limited. The formal launching of the new marketing company took place on 14th December, 1972.

Construction of a \$160 million (TT) desulphurisation plant at Texaco, Pointe-a-Pierre, was essentially completed at the end of the year. The plant is intended to produce low-sulphur fuel oil mainly for exports to the United States markets where stringent anti-pollution legislation has been enforced. This plant will ensure that our exports of fuel to the United States meet the required standards.

The developments in the industry which took place in 1972 are expected to stimulate further activities in the future, and to ensure that the Petroleum Industry plays an even more vital role in the transformation of the economy. To this end, the establishment of a basic petrochemical industry is being examined so as to facilitate the development of down-stream spin off industries which can have a more pronounced impact upon the economy in the years ahead.

I wish to take this opportunity to express my deepest appreciation for the fine achievements by all the workers in the industry. Without their co-operation, progress could not have been achieved. In addition, I wish to thank the entire staff of the Ministry of Petroleum and Mines for their unstinting effort in helping to ensure the progressive development and growth of the Petroleum Industry in Trinidad and Tobago.

Minister of Petroleum and Mines

## SUMMARY AND HIGHLIGHTS OF THE OIL INDUSTRY

Trinidad and Tobago's Petroleum Industry received a welcome and long awaited boost in its Crude Oil Production during 1972, when Amoco Trinidad Oil Company began commercial oil production from licences which it had obtained on the East Coast in 1961. The decline in crude oil production which had begun in February, 1968 was consequently arrested and at the end of the year crude oil production had crossed the 150,000 b/d level.

On the drilling scene, there was a decrease in footage drilled compared to the 1971 figures which was due mainly to the decrease in activity on the North Coast.

In the refining sector of the Industry, refinery throughput decreased by 1.13% to 144.2 million bbls. Table 1 summarises and compares overall production and drilling activity in Trinidad and Tobago for the years 1969, 1970, 1971 and 1972. Figures II and III also vividly illustrate annual drilling and production statistics.

Highlights of the Petroleum Industry during 1972 include the following:-

1. Amoco Trinidad Oil Company commenced commercial oil production operations off the east coast of Trinidad in January, 1972. In March, the company exported the first barrel of crude from its Teak 'A' platform via its onshore Point Galeota facilities and the Single Buoy Mooring which is located off the south eastern end of the Island. Amoco also discovered its third oil field, Poui, located in the West Tourmaline Area, which is expected to commence production in early 1974.
2. In March 1972, the Government of Trinidad and Tobago began detailed discussions with Amoco Trinidad Oil Company and People's Gas Company of Chicago on the establishment of a liquefied Natural Gas Plant in which about 450 million cubic feet per day of natural gas will be liquefied for export to the U.S. over a 20-year period, at a total estimated cost of about \$1.20 billion (TT).
3. The construction of Texaco's \$160 million (TT) desulphurization plant at Pointe-a-Pierre, which commenced in February, 1971 was essentially completed by the end of 1972. This plant, which was designed to produce low-sulphur

**TABLE I. SUMMARY OF STATISTICS FOR THE TRINIDAD AND TOBAGO  
PETROLEUM INDUSTRY 1969-1972**

	1969	1970	1971	1972
	(1)	(2)	(3)	(4)
Annual crude oil production (bbls.)	57,418,493	51,046,893	47,204,819	51,210,809
Annual natural gas production (mscf.)	137,502,590	121,059,606	109,813,825	104,338,218
Average GOR (scf/bbl.) ... ..	2,394	2,372	2,326	2,037
Annual CHPS (natural gasoline production (bbls.) ... ..	150,466	168,460	141,285	137,238
Daily refinery capacity (bbls./day) ...	433,000	436,000	436,000	450,000
Annual refinery throughput (bbls./yr.)	154,076,702	154,860,261	145,547,960	144,273,516
Total wells completed during the year	130	135	220	188
Average depth of completed wells (feet)	5,468	4,917	4,269	4,462
Total footage drilled during the year	690,671	663,743	939,259	838,842
Oil and gas wells completed during the year ... ..	99	108	175	165
Drilling success-ratio (percent) ...	76.2	80.0	79.5	87.8
Average rigs running ... ..	7.0	7.0	11.7	10.8

fuel oil, is vital in maintaining the level of fuel oil exports to the U.S. markets in order to conform to the stringent anti-pollution regulations currently in force in that country.

4. Delta Exploration Company of Houston, Texas conducted a 1,300 mile marine geophysical survey in the northern half of the Gulf of Paria and some of the open acreage on the Eastern Continental Shelf of Trinidad, in a joint venture with the Ministry of Petroleum and Mines. The 1.8 million acre coverage area also included a portion of the continental slope where water-depths range from 600 to 2,000 feet.
5. In 1972, Trinidad and Tobago National Petroleum Marketing Company, a subsidiary of the National Petroleum Company was created to acquire, in the first place, the entire domestic marketing outlets of BP Caribbean Ltd. Later in the year 33 of the 56 Esso retail outlets in Trinidad and Tobago were purchased and assigned to N.P.M.C. The venture allowed the Government to further increase its active participation in the oil industry.

### GEOLOGICAL AND GEOPHYSICAL ACTIVITY

Geophysical activity by Oil Companies during 1972 was restricted to the Marine Areas surrounding Trinidad and Tobago. Delta Exploration Company Inc. in a joint-venture with the Ministry of Petroleum and Mines conducted a 1,300 line-mile marine geophysical survey off the coasts of Trinidad and Tobago during the months of April and May, 1972.

The programme covered approximately 1,800,000 acres located in the unlicensed portions of the Northern half of the Gulf of Paria and on the East Coast of Trinidad. The coverage included a portion of the Continental Slope where water-depths range from 600 to 2,000 feet. Ministry Engineers and Geologists were assigned to the project at all stages from its initiation in Trinidad to its completion in Houston.

A total of 743,328 line miles was shot in 3.46 party months. See Table II and Figure II (Hatched Area).

All interested parties who had signed Agreements to purchase the package, received the Seismic, Magnetic and Gravi-metric data resulting from the Survey. Interpretations of this data were also completed by the end of August 1972 and were made available from Delta at the additional cost which was stipulated in the contracts.

By December 1972, no less than twenty-four (24) companies had purchased the data and several others had also committed themselves to purchase.

By year end, the data was being evaluated by the Ministry prior to declaring a deadline for the submission of Competitive Bids which was scheduled for early 1973. Government indicated that it will publicly announce the terms and conditions of the Exploration and Production (Public Petroleum Rights) Licences for these blocks which have now generated considerable interest among the purchasers of the data.

No surface geological work was conducted during the year.

TABLE II. PARTY MONTHS OF GEOPHYSICAL EXPLORATION IN 1972

Company	Seismograph				Total
	(1)	(2)	(3)	(4)	(5)
Amoco Trinidad Oil Co. ... ..	1.6				1.6
Texaco Trinidad Inc. ... ..	0.8				0.8
Trinmar Ltd. ... ..	0.86				0.86
Phillips Petroleum Caribbean Ltd. ... ..	0.07				0.07
Deminex ... ..	0.07				0.07
Occidental of Trinidad Inc. ... ..	0.03				0.03
Trinidad Tesoro Petroleum Co. Ltd. ... ..	0.03				0.03
<b>Total</b> ... ..	<b>3.46</b>				<b>3.46</b>

## DRILLING

The total footage drilled for 1972 fell some 11.0 percent from 1971's figure of 939,259 feet to 836,047 feet. A substantial portion of this drop being due to the fall off of activity on the North Coast as most companies had met their contractual obligations and did no further drilling in their licensed areas. Amoco Trinidad Oil Company increased their footage by 62 percent in 1972 as more platforms were commissioned, and with two more due in 1973, a similar increase can be anticipated. A total of 189 wells were drilled, 135 on land and 54 in the marine areas compared to 184 on land and 35 in the marine areas in 1971, which demonstrates the country's rapidly increasing dependence on offshore oil. Nine of the land wells were abandoned while the number of wells abandoned in the marine areas was nineteen, the majority of these being exploratory wells drilled by Amoco's Mariner 1.

### Exploratory Drilling:

#### *Marine*

Almost all of the marine exploratory drilling was done by Amoco Trinidad Oil Company as they moved the Mariner 1 around the East Coast, testing completely new structures from as far south as South Galeota 2, to the locations EMZ 1 and 2, on the North Eastern side of their acreage. Out-stepping from the platform areas was carried out through Well OPR 16. The major success of the company was West Tourmaline 2, a follow-up to West Tourmaline 1, which justified the erection of a development platform in this area which will be designated the Poui platform.

Early in the year, the Bluewater 111, drilling barge, after drilling and abandoning HH 6-1 for Deminex-Agip, left Trinidad after almost four years of continuous operations in these waters. Towards year-end, Texaco Trinidad Inc., was utilizing Reading and Bates' jack-up barge the 'Chris Seger' off the south coast in the search of new oil. In the Gulf of Paria, the only real attempt at wildcatting was made by Trinidad Northern Areas as they ventured to explore an area closer to the Western boundary of their Licensed Area. The exploratory test S-323, however, did not meet with any success. Later in the year, S-328, another T.N.A. well to the north of the Los Bajos fault and the East Soldado field, also proved fruitless.

#### *Land*

Almost all of the inland exploratory efforts were made by Texaco Trinidad Inc.; Trinidad-Tesoro Petroleum Co. Ltd., the only other company that engaged in such activities, only managed to drill two wells that could be considered exploratory – Neither of these however was a success, Texaco's drilling efforts took them as far north as the Tabaquite field and down to the south-east in Guayaguayare. In March, they started well No. BP 476, a well designed to investigate the Deep Herrera Sands in East Barrackpore which at the year's end was temporarily suspended after consuming almost five months of valuable rig-time. The Tabaquite area was thoroughly tested as wells were drilled in and around it, from Cardiff 1, in April, to Johnson Road No. 3, in August. In November, T.T.I. moved one of their rigs to Guayaguayare and drilled what was called the East Beach Field prospect which unfortunately provided borehole information alone.

Table III summarizes exploratory drilling activity for 1972.

### Development Drilling

One hundred and seventy-three (173) development wells were drilled during 1972, resulting in a 6.5 percent decrease from the total of 185 of 1971. Trinidad-Tesoro Petroleum Company Limited accounted for over 100 of these as they operated two rigs all year round, moving between the Palo Seco and Guapo fields for most of the time. A large percentage of these were infill and/or replacement wells for their successful steam injection projects in these areas, but they did complete a successful infill drilling scheme that pursued Upper-Cruise Channel-Sands in Palo Seco. Texaco Trinidad Inc. started off the year with almost all development drilling being confined to their Western District with one rig operating in Forest Reserve and another just south of the former, in Palo Seco. By mid year the emphasis had swung over to the Eastern District, where 5 rigs were in operation. Partly responsible for this change was the success of the programme in Oropouche which was initiated in April. The erection of Platform 9 in Brighton, during the month of May, saw the commencement of a 5-well drilling programme that terminated with the completion of ABM 146 in late November.



TABLE III. SUMMARY OF WILDCAT DRILLING IN 1972

Operator	Well Name	Index map reference	Basis for location	Lahee exploratory classification	Completion date	Total depth (ft.)	Name and/or age of deepest formation	Results/Remarks
+Amoco Trinidad Oil Co. Ltd.	West Tourmaline 1	C - 15	S + SSG	B <sub>3</sub>	24. 1.72	9,794	Gros Morne	Abandoned—Oil
	West Tourmaline 2	C - 14	" "	B <sub>3</sub>	15. 9.72	9,693	Gros Morne	Abandoned—Oil
	OPR - 16	D - 16	" "	B <sub>1</sub>	28. 2.72	8,482	Gros Morne	Abandoned—Gas
	South West Darien 1	G - 15	" "	C <sub>3</sub>	1. 4.72	9,248	Miocene	Abandoned
	EMZ - 1	G - 19	" "	B <sub>3</sub>	8. 5.72	10,007	Pliocene/Miocene	Abandoned—Gas
	EMZ - 2	G - 19	" "	C <sub>3</sub>	6. 6.72	9,440	Pliocene/Miocene	Abandoned
	SEEM - 1	C - 22	" "	C <sub>3</sub>	15. 6.72	756	Miocene	Abd.—Mechanical
	SEEM - 2	C - 22	" "	C <sub>3</sub>	28. 7.72	12,818	Miocene	Abandoned
	SG - 2	B - 14	" "	C <sub>2c</sub>	30.10.72	10,095	Gros Morne	Abandoned
Agip—Deminex	HH6 - 1	M - 10	" "	C <sub>3</sub>	7. 2.72	12,351	Igneous Basement	Abandoned
T.N.A.	S - 323	D - 2	SSG	C <sub>1</sub>	15. 2.72	6,300	Lower Cruse	Abandoned
	S - 328	E - 4	"	C <sub>1</sub>	12. 4.72	6,110	Manzanilla	Abandoned
T.T.I.	BP - 476	D - 4	S + SSG	A <sub>2c</sub>	—	—	Herrera Sands	Suspended
	BP - 479	D - 9	" "	A <sub>2c</sub>	—	—	Herrera Sands	Drilling at year end (3,999)
	AO - 47	E - 8	SSG	C <sub>1</sub>	25. 4.72	4,500	Lower Cruse Sands	Abandoned
	Cardiff 1	F - 9	"	C <sub>2c</sub>	8. 5.72	3,500	Nariva Sands	Abandoned
	CM - 1	C - 11	S + SSG	C <sub>3</sub>	—	—	Gros Morne	Drilling at year end (7,237)
	GBM - 1	C - 12	" "	C <sub>3</sub>	14.11.72	10,000	Gros Morne	Abandoned
	GBM - 1X	C - 12	" "	B <sub>3</sub>	4.12.72	6,150	Gros Morne	Oil Producer
	GY - 621	E - 12	" "	B <sub>3</sub>	2. 2.72	4,799	Gros Morne	Oil Producer
	GY - 625	D - 12	" "	C <sub>2c</sub>	18.12.72	5,200	Gros Morne	Abandoned
Trincentrol	T - 223 Rd.	F - 9	SSG	B <sub>2c</sub>	28. 4.72	2,873	Nariva Sands	Gas Producer

+All exploratory wells are abandoned after testing.

Trinidad Northern Areas Limited started off the year with the drilling of the first of the wells on Platform 17 in the East field, S-324, which was re-drilled due to mechanical difficulties. At the end of the year, they were drilling another difficult hole S-328 after having completed six other reasonably trouble-free wells, four of which were very successful. Skinner Marine Contractors Limited's jack-up barge, the Skilco - 145 was utilized for infill drilling on their other structures, as well as outstepping Platform 17 itself.

Offshore on the east coast, Amoco Trinidad Oil Company commenced the year's drilling activities with the drilling of Teak A-10, which by year-end, was one of the four one million barrel producers in that area. Drilling was also initiated on the disappointing Teak 'B' platform where five wells, which did not come up to expectations, were drilled. Three very successful development wells were also completed on platform Samaan 'A' located on a structure 14 miles North of Teak Fields. At the end of the year, drilling operations were being transferred from the Teak 'A' to the Teak 'C' platform.

Table IV summarizes by areas the development drilling activity in Trinidad and Tobago during 1972.

TABLE IV

Summary of Development Drilling in  
Trinidad and Tobago – 1972

Area No.	Producers completed	Dry holes completed	Total completion	Footage drilled	Rigs active at 31.12.72
1	13	—	13	63,650	1
2	9	—	9	41,091	—
3	5	1	6	26,448	—
4	58	2	60	257,398	1
5	15	3	18	46,777	—
6	1	—	1	4,800	—
7	9	1	10	33,988	—
8	3	—	3	35,188	1
9	—	—	—	—	—
10	6	—	6	26,635	1
11	35	5	40	139,360	1
12	—	—	—	—	—
13	6	1	7	18,254	—
14	—	—	—	—	—
15	—	—	—	—	—
Total	160	13	173	693,589	5

For definition of areas, see Table IVa following.

TABLE IVA

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

Area No.	Description
1	Soldado, North Marine, Couva Marine
2	Pt. Ligoure, Fortin Offshore, Area IV and Guapo, Pt. Fortin West and Central, Parrylands, Cruse
3	Brighton (Land & Marine), Vessigny, Merrimac, Rousillac
4	Palo Seco, Los Bajos, Erin
5	Forest Reserve, Fyzabad, Pt. Fortin East, New Dome, San Francique
6	Quarry, Coora, Quinam, Morne Diablo
7	Oropouche
8	Penal, Barrackpore, Wilson, Siparia, Mandingo
9	Moruga West & North, Rock Dome, Innis, Trinity, Catshill Balata, Bovallius
10	Guayaguayare, Lizard Springs, Moruga East
11	Palmiste, Galeota, East Coast, Teak, Samaan
12	South Marine (south coast)
13	Tabaquite, Johnson Road
14	Icacos

## PRODUCTION

December 1972 saw the average daily crude oil production rate, on a monthly basis, rise above the 150,000 b/d level, for the first time since September 1969, and brought the year's total crude oil production to 51,210,809 barrels. Thus the average daily rate increased by 8.6 percent from 1971's 129,200 b/d to 139,920 b/d in 1972, a rate which almost approaches that of 1970. Of this volume, Amoco Trinidad Oil Company in the first year of production, contributed an average of 25,400 b/d. The continuing decline which exists for the country's older fields was evident throughout the year.

Amoco, during the course of the year, completed its drilling programme on the Teak 'A' platform after adding two more wells to the original twelve which were slated for this platform. By the end of the year, crude oil production reached 40,000 b.o.p.d; of which, over a million barrels was produced in December from the Teak field. Teak 'B' platform, another development platform situated about 2 miles North of Teak 'A' has unfortunately been plagued by numerous difficulties, but results at the end of the year provided some encouraging signs that the solution to these problems were in sight. Early in 1973 drilling is scheduled to begin from the Teak 'C' platform which has been positioned about one mile away and almost due west of Teak 'A'. During mid-August, the company also initiated drilling in their second major oil-field from their Samaan 'A' platform, which is situated some fourteen miles due North of the Teak field, and by December, 3 wells were producing at comparatively high rates, by Trinidad standards.

During this past year, Amoco has invested considerable time and effort in order to cope with the severe sand-problems which she has been experiencing and intensive and continuing research at their centre in Tulsa, Oklahoma has led to a variety of techniques and treatments which are being tried in the field in an effort to curtail sand incursion problems. While some success has been obtained, a lowering of producing rates has been the natural consequence in the conquering of this problem.

The country's largest productive field at year end, was still Trinidad Northern Areas Limited Soldado field equally owned by Texaco, Shell and Trinidad-Tesoro. While they suffered a substantial reduction in production as rates fell from 60,200 b/d., in 1971, to 51,400 for 1972, they did manage to hold the decline to the level of 3.3% from January to December, 1972.

During 1972, Trinidad-Tesoro Petroleum Company Limited brought their 17-well Galeota platform onto production. This, was not a great success due to both sand and water entry, but together with a concentrated effort on their steam injection projects in North East Palo Seco and in Guapo the Company witnessed a production rise from 20,880 b/d to 22,810 b/d resulting in a 7.5 percent increase for the year. With a 4.7 percent increase in production rates in 1970-71, and being the only company to register an increase in 1972, Trinidad Tesoro will be hard put to continue their success since they took over from B.P. in 1969.

Texaco Trinidad Inc., in spite of intensive exploration efforts, both inland and offshore, and the continuation of an aggressive secondary oil recovery policy, showed the largest drop in production as their annual daily rate fell 17.9 percent from 37,700 b/d to 30,920 b/d in 1972, with a low of 27,969 b/d being registered during the month of November. The chief reason propounded for the failure of the waterflood projects to respond as anticipated, was mechanical problems in the field, and this, together with the relative rapid rate of the natural decline of the solution gas drive reservoirs in the main productive areas in Forest Reserve and in Guayaguayare led to the continuation of the aforementioned decline. Nonetheless, some measure of success was had by the company as production from both the Brighton and Oropouche fields took upturns, the former, partially as a result of five new completions on Platform 9 and the latter, due to more accurate geological predictions and, as a result, more successful infill drilling.

Of the remaining companies, Shell Trinidad Limited produced a 1972 cumulative of 3,180,614 barrels of oil showing a 2.8 percent decrease while Premier Consolidated Oilfields Ltd. and Tricentrol Ltd. showed 8 and 9.3 percent declines, respectively, when compared with their 1971 outputs.

Figure IV illustrates graphically the contribution of new and recompleted wells to the country's total crude oil production and Table V gives a detailed comparison by Fields, of production for the years 1971 and 1972.

TABLE V.  
Oil Production – Trinidad and Tobago 1972

Company Field	Area No.	Discovery year	Total wells drilled	Age of producing formation	Annual Production		Cumulative production through December, 1972 ('000') bbls.
					1971 bbls.	1972 bbls.	
<b>SHELL TRINIDAD LTD.</b>							
Balata E. & W. ...	9	1952	48	Miocene	45,329	43,477	2,003
Catshill ...	9	1950	117	"	498,022	454,767	19,744
Inniss ...	9	1956	33	"	80,896	69,786	5,427
Rock Dome ...	9	1962	3	"	—	—	16
Penal ...	8	1936	258	"	1,111,820	1,062,472	54,724
New Dome ...	5	1928	31	"	14,374	11,870	3,032
Point Fortin East ...	5	1929	131	"	937,255	809,086	20,401
San Francique ...	5	1929	27	"	17,926	15,667	5,784
Area IV Guapo ...	2	1963	156	"	127,787	189,463	32,513
Parrylands 1-5 ...	2	1918/1913	343	"	267,391	290,556	33,406
Point Fortin Central	2	1916	94	"	79,570	121,320	11,770
Point Fortin West ...	2	1907	204	"	108,069	112,150	17,707
Los Bajos ...	4	1918	29	"	—	—	546
Erin ...	4	1963	4	"	—	—	710
TOTAL ...			1,478		3,288,439	3,180,614	207,783
<b>TRINIDAD NORTH-ERN AREAS</b>							
FOS – Ft. ...	2	1954	30	Miocene	404,830	342,267	2,362
Soldado ...	1	1955	343	"	21,595,103	18,481,328	234,963
TOTAL ...			373		21,999,933	18,823,595	237,325
<b>AMOCO TRINIDAD OIL CO.</b>							
Teak ...	11	1971	22	Miocene	—	9,071,998	9,072
Samaan ...	11	1971	3	"	—	208,105	208
TOTAL ...			25		—	9,280,103	9,280
<b>TRICENTROL LTD.</b>							
Wilson ...	8	1936	74	Miocene	250,178	191,386	18,491
Cruse ...	2	1913	150	"	126,855	99,090	25,143
Tabaquite ...	13	1911	225	"	11,785	66,765	1,414
Balata Central ...	9	1949	6	"	—	—	371
TOTAL ...			455		388,818	357,241	45,419

**TABLE V**  
**Oil Production – Trinidad and Tobago 1972 – Continued**

Company Field	Area No.	Discovery year	Total wells drilled	Age of producing formation	Annual Production		Cumulative production through December, 1972 ('000') bbls.
					1971 bbls.	1972 bbls.	
<b>TEXACO TRINIDAD INC.</b>							
Guayaguayare ...	10	1902	652	Miocene	3,321,284	2,637,188	69,496
Trinity ...	9	1956	94	"	344,454	266,446	12,698
Barrackpore ...	8	1911	302	"	745,459	657,247	22,352
Oropouche ...	7	1944	56	"	107,660	278,988	2,993
M/Diablo/Quinam ...	6	1926	—	"	81,768	77,104	7,113
Forest Reserve ...	5	1913	1,833	"	3,867,508	3,333,384	226,466
Palo Seco ...	4	1929	—	"	3,009,901	2,294,788	76,095
Brighton ...	3	1908	611	"	1,910,751	1,500,620	64,823
Erin ...	4	1963	21	"	374,363	249,522	1,409
Johnson Road ...	8	1972	2	"	—	24	—
TOTAL ...			3,571	"	13,763,148	11,295,311	483,445
<b>PREMIER CONSOLIDATED OILFIELDS LTD.</b>							
Rock Dome ...	9	1955	11	Miocene	—	—	134
Bovallius ...	9	1954	6	"	—	—	189
Siparia ...	8	1957	5	"	13,627	14,206	748
San Francique ...	5	1929	75	"	54,443	49,817	2,703
Fyzabad ...	5	1918	252	"	61,082	58,856	12,558
Palo Seco ...	4	1915	83	"	9,515	9,611	1,570
Icacos ...	14	1965	13	"	31,354	26,560	378
Barrackpore ...	8	1970	3	"	19,673	15,234	47
TOTAL ...			448	"	189,694	174,284	18,327
<b>TRINIDAD- TESORO PETROLEUM CO. LTD.</b>							
Fyzabad ...	5/6	1920/1938	825	Miocene	2,081,180	1,836,833	148,915
Guapo ...	2	1922	461	"	588,231	607,165	33,989
Moruga East ...	10	1953	62	"	39,945	55,951	1,890
Moruga North ...	9	1956	18	"	16,576	24,082	856
Moruga West ...	9	1957	129	"	109,659	111,890	8,179
Coora/Quarry ...	6	1936	597	"	1,250,736	1,237,934	77,192
Palo Seco/Erin ...	4	1926	1,021	"	3,361,901	3,714,244	71,378
North Marine ...	1	1956	15	"	69,471	59,927	1,158
Galeota ...	11	1972	19	"	—	451,635	452
TOTAL ...			3,147	"	7,517,699	8,099,661	344,009
<b>BELPETCO</b>							
Couva Marine ...	1	1963	6	Miocene	—	—	178
					47,147,731	51,210,809	1,345,766

## SURVEY OF FLUID INJECTION OPERATIONS DURING 1972

In 1972, there was an increase in the total volume of fluids – gas, water and steam injected although the number of secondary oil recovery projects dropped from 47 in 1971 to 39 in 1972. A 13 percent drop in the total oil recovered from all project areas was registered in 1972 with an average daily production of 17,425 barrels. This quantity represents 12.4 percent of Trinidad's total crude oil production.

### Gas Injection:

During 1972, there was a substantial reduction in the use of gas injection for pressure maintenance and as a form of temporary gas storage due to a decrease in the availability of natural gas. This resulted from the declining natural gas production in all of the land based and also the Soldado oil fields. The total number of gas injection projects fell from 32 in 1971 to 22 in 1972 with a corresponding decrease in the total volume of gas injected from 29.7 mmcf/day in 1971 to 23.3 mmcf/day in 1972. The total oil produced from all projects in 1972 is 2,372,641 which is a 34 percent reduction when compared to 1971's figure.

Texaco Trinidad Inc. reduced the number of their gas injection projects from 10 to 7 in 1972 by phasing out several schemes in the Forest Reserve area. It is expected that with the current gas shortage, Texaco would be injecting gas into areas exhibiting maximum recovery efficiency and turn to the use of water injection for their secondary recovery projects. The average gas injection rate decreased by 20 percent to 16 mmcf/day in 1972 while the producing gas-oil ratios increased from 6,243 scf/bbl. in 1971 to 7,130 scf/bbl. in 1972. The total oil recovered from gas injection projects dropped by 38 percent to an average daily production of 3,168 barrels.

Trinidad-Tesoro Petroleum Co. Ltd. experienced a similar reduction in the number of gas injection projects with a 33 percent drop from 21 to 14 in 1972. The average daily injection rate fell by 22 percent to 6.5 mmcf/day with the secondary oil production at 1,257 barrels per day, and the producing GOR at 7,246 scf/bbl. In 1972, Trinidad-Tesoro decreased its gas injection into the Coora and Quarry fields by 60 percent to 2.2 mmcf/day while it increased its injection rate into the Palo Seco and Fyzabad fields by 45 percent to 4.27 mmcf/day.

Trinidad Northern Areas reduced their rate of gas injection into the Soldado Main Field by 48 percent to an average of 0.7 mmcf/day. This gas injection project is gradually being phased out pending the implementation of a water-injection scheme in 1974.

### Water Injection:

Water injection schemes in 1972 rose from 8 to 14 active projects with a 20 percent increase in the volume of fluid injected. The average daily water injection rate of 41,685 barrels produced a total of 2,447,627 barrels of oil with a 57.3 percent water cut. The average volume of oil produced per barrel of water injected is 0.16 barrels.

Of the 11 active water injection projects operated by Texaco Trinidad Inc. in 1972, seven (7) were of the conventional sea-water injection schemes while the other 4 projects used either hot water or water with a chemical additive or simultaneous water and gas injection. In the Forest Reserve area, FR 420 fault block, an experimental Sodium Hydroxide flood was initiated in May 1972 using a very dilute solution of Sodium Hydroxide in water as the injection fluid. The injection of Sodium Hydroxide causes the formation of an oil-in-water emulsion which has a lower viscosity than the original crude oil thereby enhancing the mobility ratio and postulating much better sweep efficiencies and consequently, oil recovery.

Two of the other unconventional water-floods were thermal oil recovery projects, with a hot water-flood in project IV; and a combination hot water and steam-flood in the FR zone 9 project. Both schemes showed limited success. The fourth scheme involved both gas and water injection in the '007' project in Guayaguayare.

Among the conventional water-floods, four new schemes were started in 1972 in an attempt to stabilize Texaco's declining oil production rates. Two of these projects were extensions to existing schemes in the Guayaguayare area while one was initiated in the Bernstein U.M. Cruse in Forest Reserve and the other was the first offshore water-flood – Brighton Platform 1 using treated sea water from a shore based treatment plant.

The average daily water injection rate was 41,088 barrels with the oil recovery in the project areas at slightly above 6,500 barrels per day. Of this quantity of oil produced, about 50 percent could be considered as secondary oil due to the injection of water, while the remainder is primary oil. Many of the water-floods have been affected by surface break-outs, operational problems in the water supply and by premature water breakthrough in the reservoirs. The most successful of Texaco's water-floods has been the EL Blanco or '410' water-flood in Guayaguayare.

Trinidad-Tesoro Petroleum Co. Ltd. operated one water-flood in the Coora Field with an average injection rate of 244 barrels per day. This pilot cyclic-type water-flood which was initiated in October, 1971 has not yet had any secondary oil production due to water injection; this could be regarded as a good omen for future reservoir performance under this type of flooding.

Shell Trinidad Limited continued their pilot Catshill water-flood with an average injection rate of 352 barrels per day during 1972. In view of the good response in the project area, the company would be implementing a full scale water-flood in 1973 by adding three injection wells.

### Steam Injection

In 1972, Trinidad-Tesoro Petroleum Co. Ltd. operated two (2) cyclic or push-pull type steam injection projects in the Guapo and Palo Seco fields. Both projects continue to give very good oil recovery per steam injection cycle with an average of 1.95 bbls. of oil per barrel of steam injected. In March, 1972 a 25 million Btu/hour Thermotics steam generator was commissioned in the Guapo field bringing the total number of steam generators belonging to TTPCL to three. The average water cut during 1972 was 22.4 percent with the Guapo field having a higher water cut than the Palo Seco field.

Texaco Trinidad Inc. continued their steam flood projects in project III and IV areas of Forest Reserve with a 20 percent increase in the volume of steam injected. In view of the different oil recovery mechanism operating in a steam-flood a lower initial recovery efficiency is expected. A drop from 0.31 to 0.23 bbl. of oil produced per barrel of steam injected was registered in 1972 when compared to 1971 figures. There was also an accompanying rise in water cut level from 49.6 percent to 62.3 percent in 1972. Efforts are now being made to improve the operating efficiencies of both projects.

Overall, there was a 25.9 percent rise in amount of steam injected in the 4 thermal recovery projects to a total of 2,481,413 barrels with an oil recovery of 0.62 barrels of oil per barrel of steam injected. The average water cut in both cyclic and continuous steam injection projects was 40.1 percent in 1972 compared with 34.9 percent in 1971.

Summaries of Trinidad and Tobago Fluid Injection and Production Statistics are included for the period 1968–1972 in Table VI. Statistics, by Company, for each type of fluid-injection project, 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 for Period 1968 – 1972

Year	Projects			Injection Statistics			Crude Oil Production Statistics						
	Number of projects in operation at the end of year			Gas (mmcf)	Water (bbls.)	Steam (bbls.)	Total oil recovered from wells under project influence in Bbls.				Oil expressed as a % of Trinidad's total oil production		
	Gas	Water	Steam				Gas injection projects	Water injection projects	Steam injection projects	All projects			
1968	...	...	31	5	11	21,323	2,926,657	1,090,699	5,402,241	396,823	969,741	6,768,805	10.1
1969	...	...	31	7	12	24,672	2,741,938	989,773	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	2,033,841	2,785,827	1,538,296	6,357,964	12.4



**TABLE VII**  
**Fluid – Injection Operations – 1972**

**GAS INJECTION:**

Name of Company	No. of active projects	Gas injected (mscf)	Oil produced (bbls.)	Water produced (bbls.)	Gas produced (mscf)	SCF/bbl. G.O.R.
Texaco ... ..	6	*5,999,041	818,306	286,632	5,941,612	7,261
S.T.L. ... ..	—	—	—	—	—	—
T.T.P.C.L. ...	14	2,297,569	003,841	69,182	3,325,097	7,246
T.C.O. ... ..	—	—	—	—	—	—
Trinmar ... ..	1	255,052	756,619	579	2,542,492	3,360
Total ... ..	21	8,555,419	2,033,841	354,932	11,809,201	5,806

\*Includes gas injected in one water flood project – 1,756 MMcf.

**WATER INJECTION:**

Name of Company	No. of active projects	Gas injected (mscf)	Oil produced (bbls.)	Water produced (bbls.)	Gas produced (mscf)	% water cut
Texaco ... ..	12	15,330,469	2,726,181	3,292,582	6,865,260	54.7
T.T.P.C.L. ...	1	89,200	540	1,553	18,102	74.2
Shell ... ..	1	128,497	59,106	1,979	43,695	3.2
Total ... ..	14	15,548,166	2,785,827	3,296,114	6,927,057	54.2

**STEAM INJECTION:**

Name of Company	No. of active projects	Steam injected	Oil produced (bbls.)	Water produced (bbls.)	Gas produced (mscf)	% water cut
Texaco ... ..	2	1,863,417	429,105	712,023	140,730	62.4
T.T.P.C.L. ...	2	568,660	1,109,191	320,085	346,362	22.4
Total ... ..	4	2,432,077	1,538,296	1,032,108	487,092	40.1

TABLE VIII

## Water Injection Summary by Projects – Year 1972

Company	Field	Project	Water injected (bbls.)	Oil produced (bbls.)	Water produced (bbls.)	Gas produced (mscf.)	Percentage water
Texaco	Forest Reserve	Zone 9 (hot water)	276,615	79,234	19,023	26,073	19.4
		F/S Zone 4	352,220	89,363	227,495	26,969	71.8
		u.c. 645	2,860,002	184,047	86,972	1,089,548	32.1
		L. Forest (Sodium Hydroxide)	348,363	4,045	3,082	1,329	43.2
		Bernstein U.M. Cruse	653,800	58,960	33,514	93,925	36.2
	Guayaguayare	410 Water Flood	4,578,429	905,105	1,794,838	1,103,440	66.5
		El Blanco Ext.	412,801	143,213	108,429	206,669	43.3
		307 Water Flood	3,176,318	628,723	833,136	770,971	57.0
		307 Ext. (North Block)	406,721	102,549	18,375	128,180	15.2
	Brighton	a) 007 Water Flood	604,865	338,200	9,756	2,304,481	2.8
		b) AS 10 Fault Block	1,657,482	95,140	157,462	732,753	62.3
Platform 1		2,853	97,602	500	380,922	0.5	
Texaco	All Fields	All Projects	15,330,469	2,726,181	3,292,582	6,865,260	54.7
T.T.P.C.L.	Coora	CO/UF/71/1	89,200	540	1,553	18,102	74.2
S.T.L.	Catshill	CO. 30 Sands	128,497	59,106	1,979	43,695	3.2
All Companies	All Fields	All Fields	15,548,166	2,785,827	3,296,114	6,927,057	54.4

a) 1756 mmcf of gas were also injected in this project.

b) This project is a CO<sub>2</sub> Flood, 171 mmcf of CO<sub>2</sub> was also injected.

TABLE IX

## Steam Injection Summary by Projects – Year 1972

Company	Field	Project	Steam injected (bbls.)	Oil produced (bbls.)	Water produced (bbls.)	Gas produced (mscf.)	Percentage water
Texaco	Forest Reserve	Upper Cruse – IV	393,943	34,353	22,458	14,066	39.5
		Forest Sands 5+6	1,469,474	394,752	689,565	126,664	63.6
Texaco	All Fields	All Projects	1,863,417	429,105	712,023	140,730	62.4
Trinidad Tesoro	Palo Seco Guapo	Pilot Project	364,161	959,414	257,173	209,083	21.7
		Experimental Injection	204,499	149,777	62,912	137,279	29.6
T.T.P.C.L.	All Fields	All Projects	568,660	1,109,191	320,085	346,362	22.4
All Companies	All Fields	All Projects	2,432,077	1,538,296	1,032,108	487,092	40.1

TABLE X

## Gas Injection Summary by Areas – Year 1972

Company	Field	Gas injected (mscf.)	Oil produced (bbls.)	Water produced (bbls.)	Gas produced (mscf.)	Gas oil ratio scf/bbl
Texaco	Forest Reserve	3,744,438	799,175	285,996	5,843,939	7,312
	Brighton	497,686	19,131	636	97,673	5,105
	Guayaguayare	1,756,917	—	—	—	—
	All Fields	5,999,041	818,306	286,632	5,941,612	7,261
Trinidad – Tesoro	Coora	168,736	54,933	23,823	459,850	8,147
	Quarry	646,808	140,197	5,225	698,076	4,979
	Palo Seco	104,574	7,615	449	24,066	3,160
	Fyzabad	1,377,451	256,171	38,224	2,143,105	16,095
	All Fields	2,297,569	458,916	67,721	3,325,097	7,246
T.N.A.	Soldado	258,809	756,619	579	2,542,492	3,360
All Companies	All Fields	8,555,419	2,033,841	354,932	11,809,201	5,806

## NATURAL GAS PRODUCTION AND UTILIZATION

The natural gas production in Trinidad & Tobago averaged 286 mmscf per day during 1972, attaining a total annual production of 104,338 mmscf. This represents a 4.6 percent drop in annual gas production when compared with 1971 and a flattening of the 10 percent average decline rate experienced over the past three (3) years since peak gas production was obtained in 1968. The average G.O.R. (gas-oil ratio) dropped by 13 percent to 2,037 scf/bbl. This resulted from the Amoco's contribution of relatively low G.O.R. production from the new Teak and Samaan oilfields which provided 18 percent of the total crude oil production.

During 1972, 55 percent of the natural gas produced was utilized as fuel in the refineries, fields and other industries. Of this quantity, the refineries consumed 70.6 mmscf/day, a ten percent drop when compared with previous years. This is as a result of the diminution of the gas production and the increasing use of fuel oil as a substitute energy-source by the oil companies. Gas utilization by non-oil companies increased by 11 percent to 62.8 mmscf/day, and an average of 23 mmcf/day was consumed as fuel in the fields.

Natural gas injection into secondary oil recovery projects continued to fall off as a consequence of declining gas production. Reviewing the past two years, the volumes injected decreased by 35 percent per year to the present level in 1972 of 25.3 mmscf/day. Another 27 mmcf/day was utilized by Federation Chemicals Ltd., as a process raw material in the manufacture of liquid ammonia, ammonium sulphate and urea. A relatively small quantity of 0.26 mmcf/day was used for the extraction of CHPS casing head petroleum at the 3 gasoline recovery plants operated by Trinidad Tesoro Petroleum Co. Ltd.

The quantity of natural gas vented after use of its pneumatic energy dropped by 43 percent to 17.4 mmcf/day whereas that vented without use remained at about the same level in 1971 of 59.4 mmcf/day. The total gas vented during 1972 was 28,016 mmcf or 26.8 percent of the gas produced.

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

## REFINING AND PETROCHEMICAL MANUFACTURE

During the year 1972, a total of 144,273,516 barrels of crude oil or 394,190 B.P.C.D. were refined in Trinidad and Tobago. This represents a drop of 1.13% when compared with the volume refined in 1971 amounting to 145,547,960 barrels.

Of the crude oil refined locally in 1972, some 25.7 percent was indigenous crude while, of the remainder, 25.6 percent was imported from Saudi Arabia, 23.6 percent from Indonesia, and 22.4 percent from Libya. Of the refined products 14.5% was motor gasoline, while 62.9% was fuel oil.

TABLE XI

Annual Statistics for Natural Gas Production and Utilization 1968-1972

	1968		1969		1970		1971		1972	
	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 ... ..	151,445	100.0	137,499	100.0	121,060	100.0	109,814	100.0	104,338	100.0
G. O. R. (S.C.F./bbl.) ... ..	2,264		2,394		2,371		2,326		2,037	
A. USED AS FUEL:										
In refineries ... ..	29,257	19.3	29,383	21.4	27,403	22.6	27,117	24.7	25,776	24.7
In fields ... ..	7,848	5.2	8,313	6.0	8,785	7.3	8,091	7.4	8,415	8.1
Other industries ... ..	19,294	12.8	20,652	15.0	20,302	16.8	20,658	18.8	22,940	21.9
SUB TOTAL ... ..	56,399	37.3	58,348	42.4	56,490	46.7	55,866	50.9	57,131	54.7
B. OTHER COMPLETE UTILIZATION:										
Used as process gas ... ..	10,603	7.0	10,803	7.9	10,054	8.3	8,931	8.1	9,858	9.5
Injected into formation ... ..	21,323	14.1	24,727	18.0	19,017	15.7	12,112	11.0	9,230	8.9
Converted into C.H.P.S. ... ..	173	0.1	158	0.1	143	0.1	112	0.1	95	0.1
SUB TOTAL ... ..	32,099	21.2	35,688	26.6	29,214	24.1	21,155	19.2	19,183	18.5
C. VENTED:										
After use of pneumatic energy ... ..	31,257	20.6	19,748	14.4	13,253	10.9	11,033	10.1	6,345	6.1
Without use ... ..	31,690	20.9	23,715	17.2	22,103	18.3	21,760	19.8	21,678	20.7
SUB TOTAL ... ..	62,947	41.5	43,463	31.6	35,356	29.2	32,793	29.9	28,023	26.8

S.C.F.\* - Standard Cubic Feet.

% - Percent of total Natural Gas Produced.

Throughout 1972, construction work was carried out on the Desulphurization Unit at Texaco's refinery at Pointe-a-Pierre. The Utilities section of the complex was commissioned in early December, while the vacuum Tower, designed to handle reduced crude at the rate of 108,000 bbl/day, produced good quality Hydrotreater gas-oil feed stock. At the end of December, problems on the Hydrotreater section were being ironed out before the official start up of the first of four reactors. This plant is certain to play an increasingly important role in the pollution-conscious world of the major oil-consuming countries.

Shell Trinidad Limited almost completed the debottle-necking and modernisation work on their Point Fortin Refinery, and the throughput was scheduled to be increased by 22,000 B.P.C.D. to 100,000 B.P.C.D., by the end of February, 1973.

Total Crude Oil imported in 1972 was 107,149,774 bbls. This reflects a very small increase of 0.26% over the amount imported for 1971 of 106,868,559 bbls. The major suppliers were Saudi Arabia, Indonesia and Libya. The remainder was supplied by Venezuela (13.2%), Nigeria (12.3%), Brazil (1.2%), Algeria (0.6%), Ecuador (0.6%) and Iran (0.5%).

Primary refined products experienced a fall in 1972 with total output decreasing to 138,895,094 bbls. or a percentage of 1.8. Fuel Oils increasing by 6,080,045 bbls. to 85,352,517 bbls. which amounted to approximately 61.4% of total production. Aviation Turbine Fuel continued to fall showing a total of 9,451,409 bbls. for 1972 as compared with 11,526,543 bbls. in 1971. Motor Gasoline and Gasoil also showed decreases of approximately 12.1% and 26.5% respectively over their production levels for 1971.

In respect to other refined products there were only slight variations when compared with production figures for 1971.

#### *Petrochemicals:*

In 1972, petrochemical production increased by 10% over 1971's production to total 1,321,273 barrels produced in the country's two major refineries. Of this total, 44.5% was produced as normal paraffins. As in the past, 96% of Trinidad and Tobago's Refinery Products were exported to world markets.

#### Production and Exports of Important Petrochemical Intermediates Trinidad and Tobago – 1972 (Quantities in Barrels)

Petrochemical Intermediates	Year 1972		Year 1971	
	Production	Exports	Production	Exports
Normal Paraffins ... ..	588,957	588,676	603,669	741,688*
Di-isobutylene ... ..	48,057	39,952	56,730	59,637*
Nonene ... ..	45,151	49,163*	42,460	38,879
Tetramer ... ..	42,989	39,984	74,013	70,357
Benzene ... ..	227,453	223,175	147,179	169,371*
Toluene ... ..	260,316	291,868*	161,408	138,855
Xylene ... ..	39,038	41,790*	37,659	32,009
Cyclohexane ... ..	64,813	68,272*	68,022	75,891*
Unrefined Napthenic Acids ... ..	4,499	5,206*	19,058	19,259*

\*Excess of Exports over Production made up from Stocks.

The volume of excisable products amounted to 2,056,702 bbls. The excisable sale of gasoline amounted to 1,536,946 bbls. an increase of 5.2% compared to 1971. The excisable duty on these amounted to \$14,117,230.39. The excisable tax on gasoline being 27¢ for premium and 18¢ for regular.

Sales of bottled propane showed an increase of 16.0% over the 1971 figure amounting to 37,593,079 lbs. on which excise duty at 2¢ per lb. was paid.

Details of Petroleum excisable products are listed hereunder:—

Premium Gas bbls.	Regular Gas bbls.	Gas/Diesel bbls.	Propane lbs.
764,202	772,744	519,756	37,593,079

#### NITROGENOUS FERTILIZERS

Average ammonia production in Trinidad & Tobago was approximately 1,289 short tons per day. Total annual production of 471,868 short tons was 4.9% more than the last year's total of 449,730 short tons. Consequently, both Ammonium Sulphate and Urea showed increases and totalled 84,848 and 72,941 short tons respectively as compared with 56,804 and 62,076 short tons respectively for 1971. A total volume of 17,624 mmcf of natural gas was used in the ammonia and nitrogenous fertilizer industry during 1972. This reflected an increase of 5.99% above the quantity used in 1971; of this quantity, 9,865 mmcf were actually used in the process, and 7,759 mmcf being consumed mainly as fuel.

The Government of Trinidad & Tobago indicated its proposals to enter into a joint venture with the Grace organisation of the U.S.A. in order to increase the country's ammonia production.

#### CRUDE OIL BALANCE

Availability	Million bbls.	Disposal	Million bbls.
Stock at 1st January	3.3	Exports	14.0
Production	51.3	Delivered to Refinery	144.1
Plus Gain	0.1	Stock at 31 st December	3.7
Imports	107.1		
	<u>161.8</u>		<u>161.8</u>

#### REFINED PRODUCTS BALANCE

Stock at 1st January	8.1	Shipments	127.2
Imports		Bunkers	8.7
Crude delivered	144.1	Local Consumption	3.7
Refinery gas & loss	5.2		
	<u>138.9</u>		
Products obtained	138.9	Stock at 31st December	7.4
	<u>147.0</u>		<u>147.0</u>

#### MARKETING

##### *Petrol Filling Stations — Sales and Marketing Position 1972*

In 1972, Trinidad and Tobago National Petroleum Marketing Company, a subsidiary of the National Petroleum Company was created to acquire in the first place the entire domestic Marketing outlets of PB Caribbean Limited. Afterwards it acquired 33 of the 56 Esso retail outlets in Trinidad and Tobago the remaining 23 being purchased by Shell Trinidad Marketing Company.

The number of petrol filling stations in operation at the end of 1972 is 219. Only one new Station was completed on the Beetham Highway by Texaco.

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

	Texaco	Shell	N.P.	Total
No. of Stations	76	85	58	219
Volume (Mogas Ig)	17,580,769	19,314,894	13,594,851	50,490,514
Average per Station	231,326	227,234	234,394	—
Market % of Total Sales	34.8	38.3	26.9	100.0
% of Total number of stations	34.7	38.8	26.5	100.0

The total throughput was 6.8% greater than the 1971 total of 47,258,887 I.G. For the five (5) year period 1968 to 1972 local consumption rose from 40,934,685 to 50,490,514 giving an average growth rate of 4.7%.

Year	Total Consumption of Mogas I.G.
1968	40,934,685
1969	42,474,394
1970	45,056,497
1971	47,258,887*
1972	50,490,514

\*Revised data

#### SUMMARY OF ACCIDENTS OCCURRING IN THE PETROLEUM INDUSTRY 1972

In the Petroleum Industry, the total number of serious and lost-time accidents reported for 1972 was 173. This figure represents an increase of about 53.5% in comparison with the number of accidents reported in 1971. This significant increase as can be seen from the attached chart was due to the increased drilling and construction operations by Amoco Trinidad Oil Company off the East Coast. Approximately 42% of the accidents were classified as serious, consisting of falls, contact with machinery in motion, amputations of fingers, toes, broken bones, eye injuries, crush injuries, deep lacerations and strains. The remaining 58% were minor accidents, including bruises, sprains, muscular pains, small cuts and contusions to various parts of the body.

Of the total number of accidents three were fatal. One occurred at Barrackport Field, Well Number 395, where a part of a platform collapsed and the derrickman fell to the ground and sustained fatal injuries.

TABLE XII

Accident Statistics – 1972

Companies	Fields	Total accidents	Fatalities	Serious				Minor			
				D	P	E	O	D	P	E	O
Amoco Trinidad Oil Company	All	77	1	22	11	2	—	22	7	13	
Texaco Trinidad Inc.	Barrackpore	12	1	4	3	—	—	3	2	—	—
” ”	Forest Reserve	25		4	7	—	—	6	8	—	—
” ”	Guayaguayare	15		1	5	—	—	3	6	—	—
” ”	Oropouche	1		—	—	—	—	1	—	—	—
” ”	Brighton	11		3	3	—	—	4	1	—	—
	Texaco Total	64	1	12	18	—	—	17	17	—	—
Trinidad Tesoro	All	24	1	2	3	1		7	8	2	1
Shell Trinidad Ltd.	All	1		—	—	—	—	—	1	—	—
Trinidad Northern Areas	All	2		—	—	—	—	2	—	—	—
Premier Consolidated Oilfields Ltd.	All	2		—	—	—	—	—	2	—	—
Total		170	3	36	32	3	—	48	35	15	1

D – Drilling

P – Production

E – Engineering

O – Others

The second occurred in Fyzabad Tank Battery #1 where due to the improper placing of a bleed line, an employee sustained a fatal head injury when the line whipped back striking him. The other fatal accident occurred at a Single Port Mooring Construction project approximately three (3) miles off Galeota Point at bearing 192° from North of the Galeota Point Lighthouse. The victim, a diver employed by the Paria Underwater Services (a company employed by Amoco Trinidad Oil Company) died either from drowning or from unknown causes. The victim's body was never recovered.

Accidents that occur in plants and factories within oil companies' compounds fall under the Jurisdiction of the Industrial Safety Division of the Ministry of Labour. Since these accidents are associated with the oil industry, some of the serious and fatal accidents are investigated by officers of the Ministry of Petroleum and Mines. Amongst these were three (3) fatal accidents. The first occurred at the Main mud plant in Forest Reserve. It was reported that a truck with a Loader was despatched to transport a load of Water Base Mud, from Forest Reserve to Well 451, in the Barrackpore Field. After filling for about ten minutes, an explosion occurred which threw the loader who was checking the fluid level to the ground. It was stated that he died from haemorrhagic shock. Another occurred at the Chaguaramas jetty where a worker drowned while assisting fellow workers to land a sling load of casing unto a truck. A joint of pipe slipped from the sling and struck him on the upper part of the body knocking him into the water. The other fatal accident occurred at Well Number 174, Fyzabad, where an employee was killed after being struck to the ground while dismantling a section of a derrick.

### 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, 1972 and 31st December, 1972.

Net Royalty production increased from 22,430,820 barrels and 21,363,114 barrels in the first and second half of 1971 to 23,162,867 barrels and 24,976,414 barrels respectively in 1972. The reason for this rise is that the Amoco Trinidad Oil Company started producing in January 1972; the Galeota fields of Trinidad Tesoro Petroleum Co. Ltd. also contributed a small portion to this increase as from May 1972, and thus augmented the natural decline in production which occurred on the land operations.

Prices of Petroleum products rose steadily from the second quarter of 1972, and continued rising to the end of the year. In the latter half of 1972 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 \$28,148,153 as compared with \$25,244,802 for 1971, and \$25,957,714 in 1970. (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 1970, 1971 and 1972.

Total Royalty in 1972 of \$30,316,730 is higher than 1971 and 1970 at respectively \$27,427,945 and \$27,902,347. Greater production in 1972 is therefore mainly responsible for this increase, as well as the higher rate of Royalty of 12½% applicable to Amoco Trinidad Oil Company and Trinidad Tesoro Petroleum Co. Ltd. (Galeota Fields).

### LEASES AND LICENCES

Total acreage under Licence decreased from 3,968,552 acres at the end of 1971 to 3,862,564 acres at the end of 1972.

During the year Amoco acquired 172,239 acres under their Marine Licence: Trinidad-Tesoro surrendered 47,215 acres and Phillips Petroleum surrendered 248,760 acres in their North Coast Marine Licence.



The following is an outline of the situation in the Territory as at 31st December, 1972.

Crown Oilrights	A	R	P
Public Petroleum Rights ... ..	227,466	0	38
Private Petroleum Rights (Encroachments) ...	48,412	3	07
Exploration and Production Licences (Public Petroleum Rights ... ..)	2,788,124	0	00
Marine Licences ... ..	704,328	0	00
<b>Total Crown Oilrights ... ..</b>	<b>3,768,331</b>	<b>0</b>	<b>05</b>
Private Oilrights			
Private Leases ... ..	94,233	2	33
<b>Total acreage of all lands under Licence ...</b>	<b>3,862,564</b>	<b>2</b>	<b>38</b>

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

### LEGAL DEVELOPMENTS IN 1972

In the year 1972, the Ministry was involved in advisory, practical and policy matters and other functions related therewith. Special matters which occupied the attention of the Legal Section were:—

#### *Dispute between Port Authority and Amoco Trinidad Oil Co.:—*

Officials of the Ministry were involved in time consuming problems in February/March, between the Port Authority and Amoco Trinidad Oil Co. concerning the consent of the Port Authority under S.42 of the Port Authority Ordinance (No. 39/61) to load crude oil on Amoco's tankers for export and certain charges levied by the Port Authority as a condition to such loading. This matter involved several meetings between officials of Government and the Company, and the subsequent preparation of the reports thereon by the Ministry of Petroleum and Mines.

#### **Section 37 of the Petroleum Act 1969:—**

Certain peculiar legal and administrative problems arising out of the administration of Section 37 of the Petroleum Act were encountered with Shell, Texaco and Trinidad-Tesoro.

The status of Oil Mining and licences existing at the time of promulgation of the Petroleum Act was considered in the context of the expiration of the time limit prescribed by Section 37 of the Act for conversion of Licences, and a legal opinion was given by a leading Queen's Counsel in the country.

This matter entailed the preparation by this Ministry of a lengthy back-ground paper on the administration of Section 37 of the Petroleum Act for presentation to the Finance and Economics Committee — a Sub-Committee of Cabinet, and attendance at several meetings at the Attorney General's Chambers and at Whitehall.

Very little progress was made in the area of conversion of Licences under S.37 of the Petroleum Act.

Certain Administrative problems encountered thereunder in 1971 were resolved with respect to Trinidad-Tesoro, but the backlog of work in this area from 1971 is yet to be completed.

#### **Licence for Consortium over East Coast Acreage:—**

The Draft Licence and Participating Agreement between Government and the consortium comprising of Shell, Texaco and Trinidad-Tesoro with respect to the reversed 'L' shaped block off the South East Coast of Trinidad submitted to the Companies towards the end of 1971 were discussed on a continuing basis through 1972. There were protracted negotiations on the fiscal clauses of the Agreement which are yet to be finalised. The Operating Agreement and the Licence were also discussed and a few points are yet to be finalised. Discussions on the Sixth Draft of the Participating Agreement; (Several redrafts of the clauses with fiscal implications have been prepared, but are still outstanding. Although considerable time and effort have been spent on this matter, it appears that we are no nearer finalisation than we were at the beginning of last year, as the broad principles,

**TABLE XIII**  
Oil Rights under Lease and Licence as at 31st December 1972 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 licences			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			
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	411,806	0	00	15,344	0	00	—	—	—	427,150	0	00	81,866	0	09	669,994	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	—	—	—	—	—	—	—	—	—	—	—	—	988	0	08	71,061	2	38
Premier Consolidated Oilfields Ltd. ...	10,718	2	09	2,640	1	13	13,358	3	22	—	—	—	—	—	—	—	—	—	—	—	—	5,773	0	17	19,131	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. ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,368,995	0	00	1,368,995	0	00	—	—	—	1,368,995	0	00
Belpetco ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	18,680	0	00	18,680	0	00	—	—	—	18,680	0	00
Phillips Petroleum Co. Ltd. ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	165,840	0	00	165,840	0	00	—	—	—	165,840	0	00
Deminex ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	414,600	0	00	414,600	0	00	—	—	—	414,600	0	00
Occidental ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	331,680	0	00	331,680	0	00	—	—	—	331,680	0	00
Amerada Hess - 565 Corp ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	248,760	0	00	248,760	0	00	—	—	—	248,760	0	00
Oceanic - Corporation of Trinidad Santa Fe Int. Corp. Texas Trinidad ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	160,640	0	00	160,640	0	00	—	—	—	160,640	0	00
<b>Total ...</b>	<b>227,466</b>	<b>0</b>	<b>38</b>	<b>48,412</b>	<b>3</b>	<b>07</b>	<b>275,879</b>	<b>0</b>	<b>5</b>	<b>545,940</b>	<b>0</b>	<b>00</b>	<b>158,388</b>	<b>0</b>	<b>00</b>	<b>2,788,124</b>	<b>0</b>	<b>00</b>	<b>3,492,452</b>	<b>0</b>	<b>00</b>	<b>94,233</b>	<b>2</b>	<b>33</b>	<b>3,862,564</b>	<b>2</b>	<b>38</b>

A - Acres      R - Rods      P - Perches

originally agreed upon and signed in August 1971, have been extended to fill certain gaps within the context of the principles which were clearly set out in the Heads of Agreement. Moreover, certain new provisions have been introduced to accommodate the parties. Thus, finalisations of this matter are still pending.

#### **Bidding Conditions for Open Acreage:**

The terms and conditions for Exploration and Production (Public Petroleum Rights) Licences to be granted later this year pursuant to a procedure of Competitive Bidding over a certain Submarine Area off the East Coast of Trinidad, and the criteria for the analysis of such bids were submitted to Cabinet for approval. The matter was referred to the Ministry of Finance and at year end was yet to be finalised.

#### **Special Matters:**

##### *Grant of Licences:*

Amoco Trinidad Oil Company was granted 48 Exploration and Production (Public Petroleum Rights) Licences pursuant to their Exploration Licence dated 17th day of July, 1970 and registered 9052/70 on 19th May, 1972 over the Submarine Area off the East Coast of Trinidad.

#### **Applications for Licences:**

In November, 1972, Amoco Trinidad Oil Company again applied for 57 Exploration and Production (Public Petroleum Rights) Licences as a result of having obtained a commercial discovery in their Exploration Licence 9052/1970.

Several applications for Pipeline Licences were received from Shell and Texaco and Draft Licences were prepared and discussed. However, Pipeline Licences for all Companies including a few in respect of 1970 applications are yet to be formalised.

### **STAFF**

1972 was a year of considerable activity and involvements in International matters for the Ministry. There was one resignation, Mr. James Harms – U.N. Expert-Chief Geologist in the Ministry of Petroleum & Mines, resigned his post to take up an appointment with the Triton Oil & Gas Corporation in Dallas, Texas. The Ministry would like to place on record its sincere thanks to Mr. Harms who has made a very valuable contribution to the work of the Ministry especially during the formative years of the Geological section. The Ministry was represented at a number of important conferences abroad, namely:—

- (i) ARPEL meetings on various technical aspects of the Petroleum Industry held in Caracas, Venezuela and at Cochabamba in Bolivia.
- (ii) At Caracas, representation was by a ministerial delegation at the first meeting of OLADE the Latin American Ministers of Petroleum Energy during August 1972. At that meeting, it was agreed that there was need for the establishment of a Latin American Regional Organisation which would seek to achieve three main objectives:—
  - (a) The achievement of regional self-sufficiency in energy by promoting state-to-state-trade agreements, thereby minimising multi-national corporation as intermediaries;
  - (b) The creation of a financial agency to facilitate the development of energy import/export policies; and
  - (c) The promotion of a policy geared to improve the terms of trade among the net importers and exporters of petroleum in all Latin American Countries.
- (iii) The International Conferences on LNG at Washington D.C.
- (iv) World Petroleum Development in Quito, Ecuador.
- (v) The 29th International Geological Congress in Montreal.
- (vi) Environmental Conferences in Stockholm.
- (vii) The law of the sea conference in Geneva.
- (viii) A special delegation which visited Nigeria, Romania and Algeria for discussions on matters relating to oil and LNG development.

#### **Conferences:**

In June, 1972 Mr. Hugh C. Hinds Ag. Chief Petroleum Engineer formed part of the delegation from Trinidad & Tobago headed by Mr. Francis Prevatt Minister of Health to attend the *United Nations Conference on the Human Environment* in Sweden.

Matters that were of particular relevance to the Trinidad & Tobago situation were those concerned with agriculture, fisheries, water resources and energy.

Other members of the delegation consisted of Mr. K. Snaggs Director of Town and Country Planning, Mr. R. Williams, Engineer, Trintoplan, Trinidad & Tobago High Commissioner in London (His Excellency Dr. Patrick Solomon) and Mr. D. Issacs, Director of Public Health Engineering Unit.

Mr. Rodney Appleton, Senior Economist was the representative from the Ministry of Petroleum & Mines in a delegation headed by the Hon. Minister of External Affairs, Hon. K. Mohammed at a meeting in Santa Domingo of Foreign Ministers of fifteen (15) Caribbean States to discuss problems of the sea and to formulate a Latin American approval for the 1975 Law of the Sea Conference.

Mr. Appleton also attended the *Law of the Sea Conference* in London later the same year as a member of the Trinidad and Tobago Delegation.

He was appointed to attend the Summer Session of the United Nation's Sea bed Committee dealing with the *Peaceful Uses of the Sea bed and Ocean Floor beyond the limits of National Jurisdiction* held in Geneva from 27th July, to 19th August, 1972. The Trinidad & Tobago delegation was headed by Mr. K. Hudson-Phillip the Attorney General and Minister for Legal Affairs.

Mr. Hugh Hinds Ag. Chief Petroleum Engineer of the Ministry formed part of the delegation from Trinidad & Tobago at the *Third International Conference and Exhibition of L.N.G.* in Washington D.C. from 24th – 28th September, 1972. Other members of the delegation were Mr. D. Alleyne, Permanent Secretary to the Prime Minister. Mr. G. Legall, Ag. Director Finance and Economics, Ministry of Finance, Mr. E. Moore Permanent Secretary, Ministry of Planning and Development, Mr. H. Fraser Commissioner of Inland Revenue and Mr. E. Warner General Manager Industrial Development Corporation.

Mr. Overand Padmore, Minister of Petroleum and Mines headed the Trinidad and Tobago delegation which attended the *Latin American Advisory Meeting of Energy and Petroleum* held in Caracas, Venezuela from August 21st to 25th 1972.

The purpose of the meeting was to exchange views on matters related to energy in general and petroleum and natural gas in particular and to consider the need for joint action to ensure the future supply, price conservation, and utilization of energy for the economic and social development of Latin America.

Mr. R. Appleton Senior Economist in the Ministry also formed part of this delegation.

Mr. David Lee Ying, Petroleum Engineer II of the Ministry of Petroleum & Mines attended the meeting of ARPEL on Exploration, drilling and offshore production in Maracaibo over the period 4th – 13th September, 1972.

ARPEL is a Latin American Association for Reciprocal Assistance to National Petroleum Companies and Corporations.

#### Visits

A Trinidad & Tobago delegation headed by the Trinidad & Tobago Ambassador to Washington, Sir Ellis Clarke, extensively toured a number of countries in the Middle East, Africa and Europe including Algeria, Nigeria, Saudi Arabia, Kuwait, Iran and Austria.

Other members of the delegation were Mr. D. Alleyne, Permanent Secretary to the Prime Minister, Mr. H. Fraser Commissioner of Inland Revenue and Mr. O.O. Fernandes Ag. Permanent Secretary, Ministry of Petroleum and Mines.

#### World Symposium of Petroleum

Mr. O.O. Fernandez, Ag. Permanent Secretary, Mr. R.A. Mends, Ag. Development Engineer, and Mrs. K. Bhoelai, Ag. State Counsel II, all of the Ministry of Petroleum and Mines represented Trinidad & Tobago along with Messrs. H. Fraser Commissioner of Inland Revenue and S. Martin, Economist II, Ministry of Finance at the World's Symposium of Petroleum held in Quito Ecuador from 22nd – 31st October, 1972. This programme embraced a wide range of subjects most of which were considered to be of paramount importance to Trinidad & Tobago at this particular stage of development of our Petroleum Industry.

#### International Geological Congress

Mr. Hugh C. Hinds Ag. Chief Petroleum Engineer and Mr. R. Mends Ag. Development Engineer both of the Ministry of Petroleum and Mines represented Trinidad & Tobago at the 24th Session of the International Geological Congress held in Montreal, Canada from August, 20th – 30th 1972.

Sessions of this Congress are held every four years and the Agenda is for the exchange of scientific information and work experience between some five thousand geologists from more than one hundred (100) countries participating in the Congress.

## LNG Project

Mr. Rodney Appleton was a member of the Trinidad & Tobago delegation who visited Chicago to attend a meeting of the L.N.G. Tanker Sub-committee consisting of representatives from Amoco, Natural Gas Pipe Line Company of America and the Government of Trinidad & Tobago concerning the shipment of Trinidad East Coast Natural Gas as L.N.G. to the United States of America.

Officials from Amoco and the Natural Gas Pipe Line Company presented their comprehensive plans for the development of a L.N.G. project to a full cross section of Government officials and consultants, representative from the University of the West Indies and the Trinidad & Tobago Electricity Commission. Amoco's presentation indicated that the natural gas produced in Trinidad could be delivered to the United States of America as Liquefied Natural Gas (LNG) at a price competitive with other suppliers of gas to the United States.

Amoco negotiated with the Natural Gas Pipe Line Co. of America for a long-term (20yrs.), sale of gas to them, subject to the approval of the Government of Trinidad & Tobago.

The Government of Trinidad & Tobago have always expressed keen interest in participating in Amoco's plans for developing and marketing this gas and have indicated its desire to participate in the implementation of any plan to export the gas and to participate in the ownership of the facilities in Trinidad.

Among other matters covered by Amoco were the preliminary estimates of the project including capital costs, assumptions for financing the project, fiscal data and projected revenue to the Trinidad & Tobago Government over the twenty-year life of the project. Government is at present considering these proposals.

## Technical Assistance

Mr. Rodney Appleton, Senior Economist in the Ministry of Petroleum & Mines, was awarded United Kingdom Technical Assistance which enabled him to pursue a course of the Economics of Natural Resource Development for the period of one year commencing 1st October, 1972.

## Training

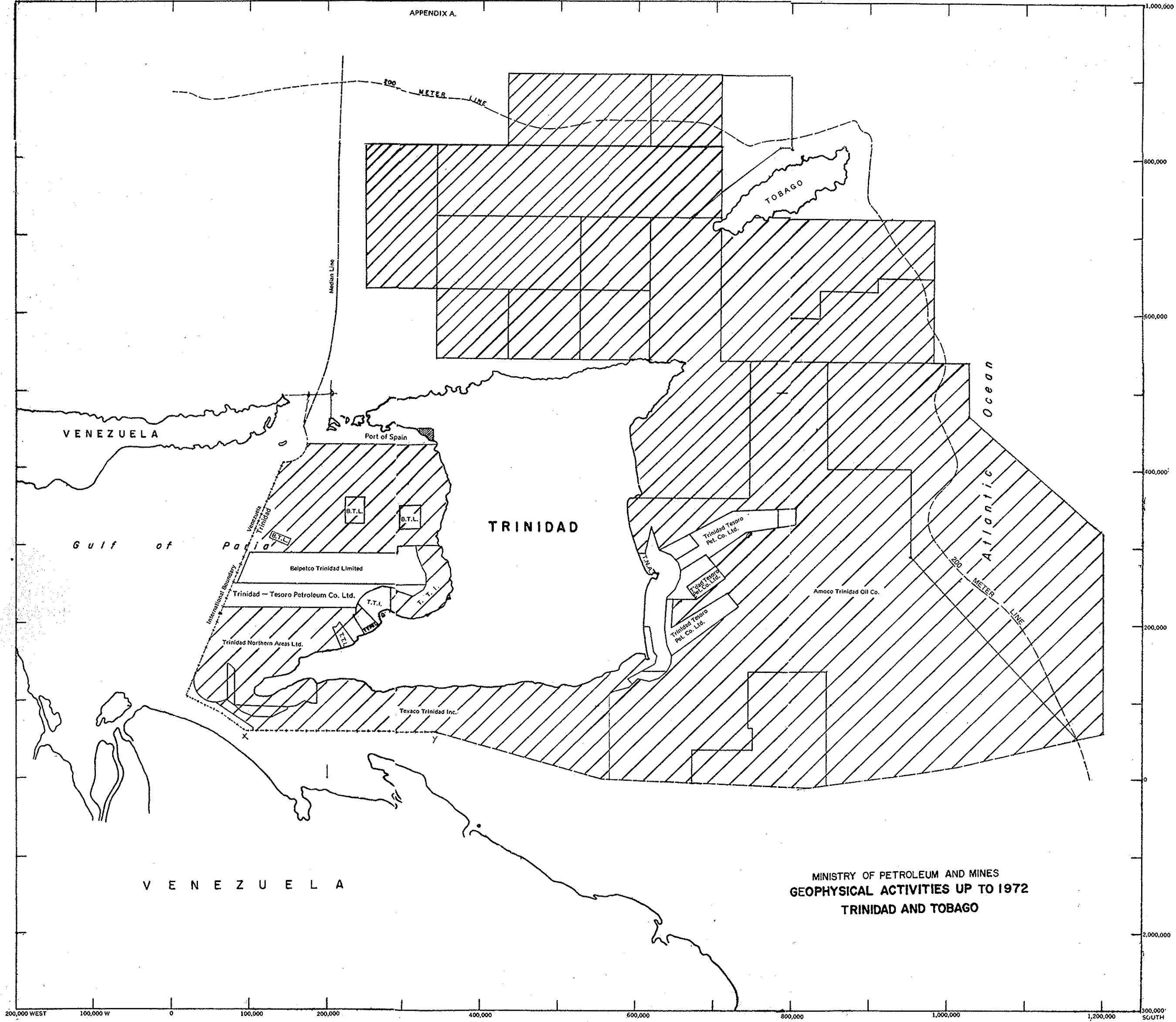
The Ministry maintained its internal and external training programmes in an effort to upgrade the skills of technical personnel. This has been found to be absolutely necessary in order to match changing technology employed by the oil companies in the efficient exploration and development of the petroleum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

Mr. Rupert Mends and Mr. David Lee Ying attended a Course in L.N.G. Fundamentals conducted at the Institute of Gas Technology, Chicago over the period July, 17th – 28th, 1972.

The course was specially designed to meet the needs of engineers whose responsibilities demanded their thorough understanding of both engineering fundamentals and the current technology of L.N.G. production including storage, transport and applications.

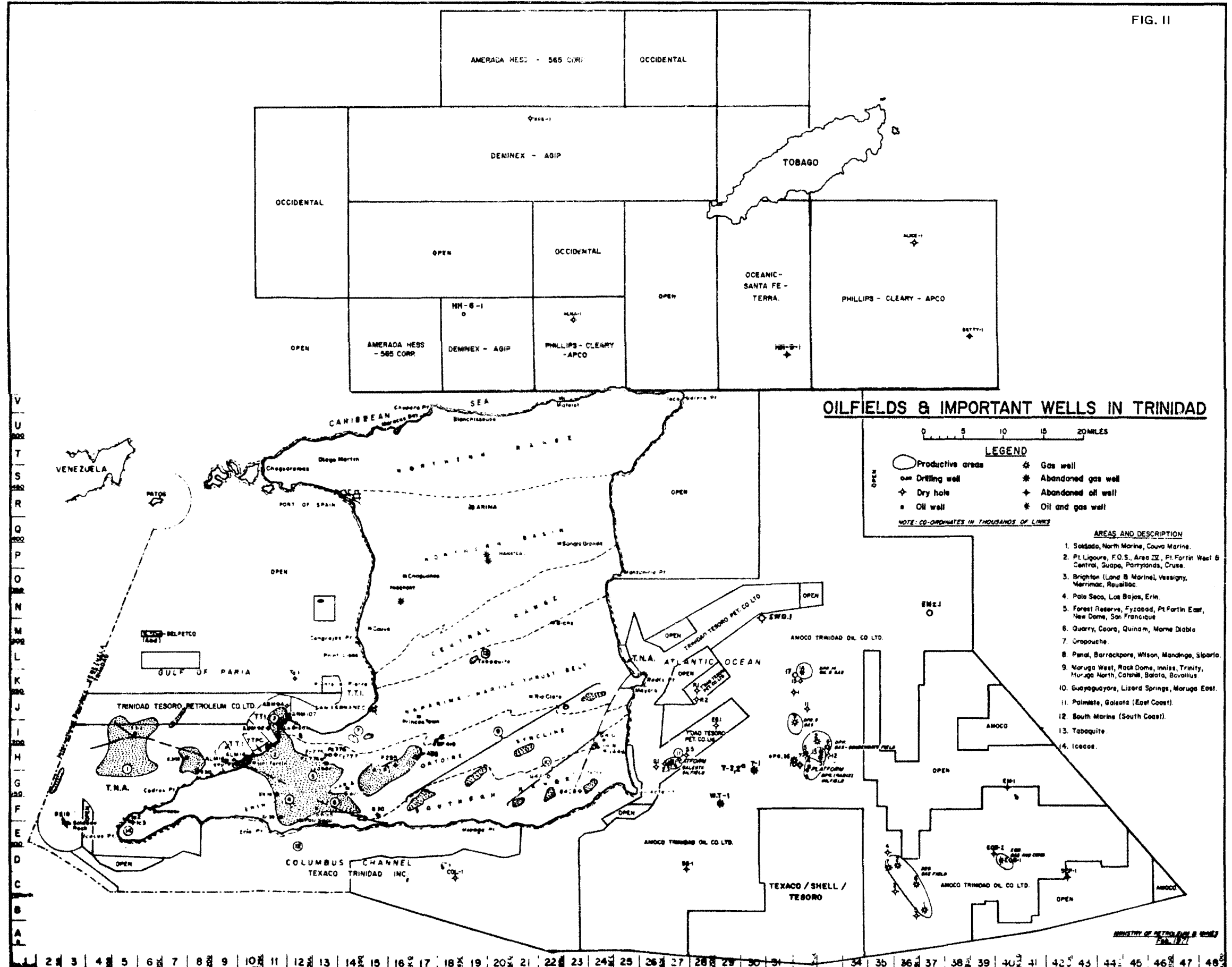
A bi-weekly technical seminar series was initiated in mid-1972 with lectures drawn from the service companies, the Ministry of Petroleum and Mines and the Oil Audit Section of Ministry of Finance. Engineers from the Ministry of Petroleum and Mines attended training courses sponsored by various oil companies in Reservoir Engineering, Pressure Control during drilling and economic evaluation. In addition, two engineers attended a course on L.N.G. project in Trinidad while another attended a one-week seminar on computer applications in Geology, which was held in Canada.

One engineer, Mr. Frank Look Kin, was on attachment to Delta Exploration Company, which conducted a joint geophysical survey in Trinidad, for training in seismic data acquisition, processing and interpretation in Houston, Texas. Another engineer Mr. Malcolm Jones was placed on a one-month attachment to the Refining Section of the Ministry of Mines and Hydrocarbons in Venezuela for familiarization with the regulations and procedures followed by the Venezuelan Government in their relationship with the oil companies.



MINISTRY OF PETROLEUM AND MINES  
GEOPHYSICAL ACTIVITIES UP TO 1972  
TRINIDAD AND TOBAGO

FIG. II



**OILFIELDS & IMPORTANT WELLS IN TRINIDAD**

0 5 10 15 20 MILES

**LEGEND**

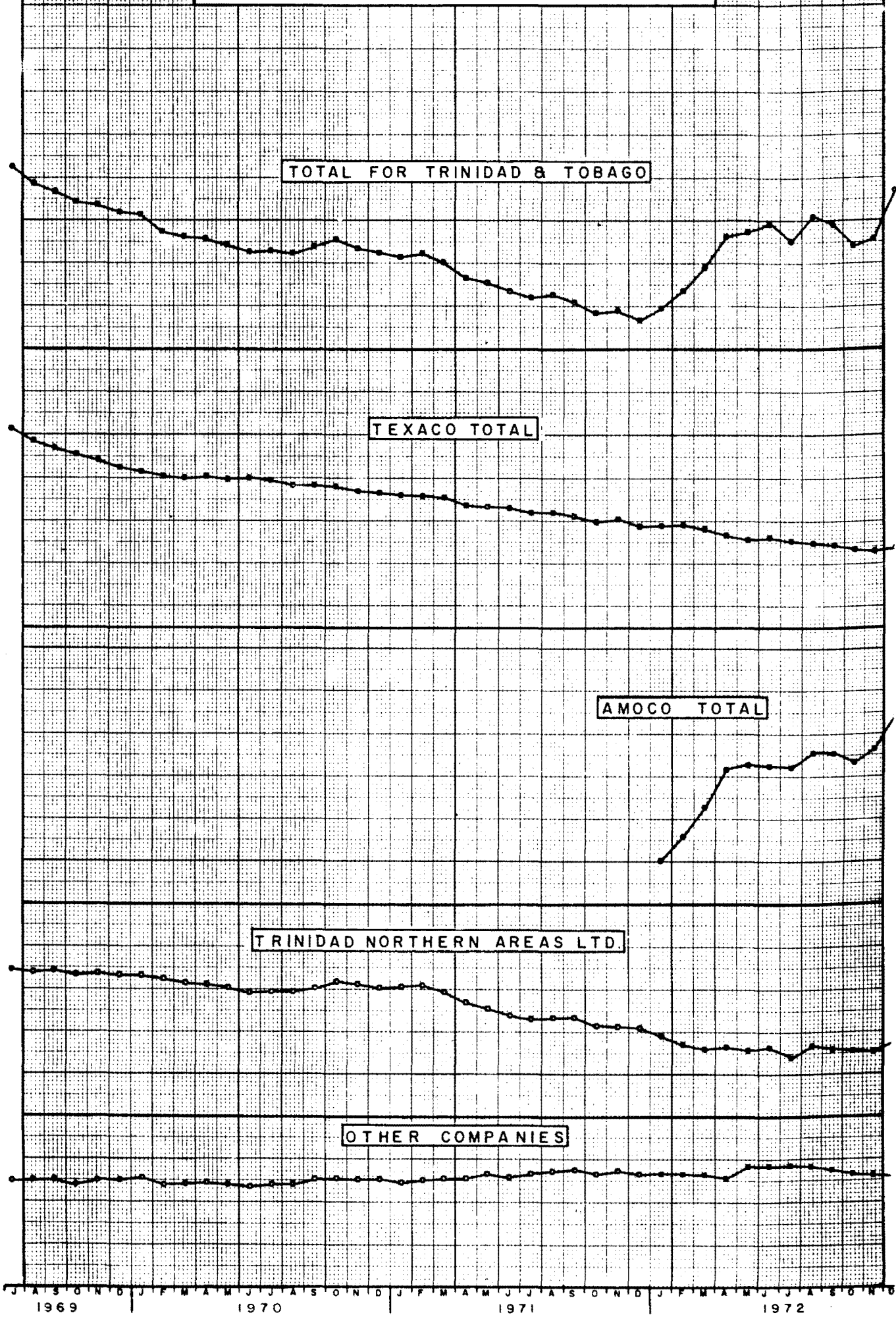
○ Productive areas	* Gas well
○ Drilling well	* Abandoned gas well
◇ Dry hole	◇ Abandoned oil well
● Oil well	* Oil and gas well

NOTE: CO-ORDINATES IN THOUSANDS OF FEET

- AREAS AND DESCRIPTION**
1. Soldado, North Marine, Caura Marine.
  2. Pt. Ligoure, F.O.S., Area IX, Pt. Fortin West & Central, Guape, Parrylands, Cruise.
  3. Brighton (Land & Marine), Vessigny, Merrimac, Roussilac.
  4. Palo Saco, Los Bajos, Erin.
  5. Forest Reserve, Fyzabad, Pt. Fortin East, New Dome, San Franquise.
  6. Quarry, Coana, Quinam, Mame Diablo.
  7. Croupache.
  8. Panel, Barrockpore, Wilson, Mandinga, Siparia.
  9. Moruga West, Rock Dome, Inniss, Trinity, Moruga North, Catesh, Balata, Bovallius.
  10. Guayaguayare, Lizard Springs, Moruga East.
  11. Palmiste, Gaisora (East Coast).
  12. South Marine (South Coast).
  13. Tabaquite.
  14. Iccoo.

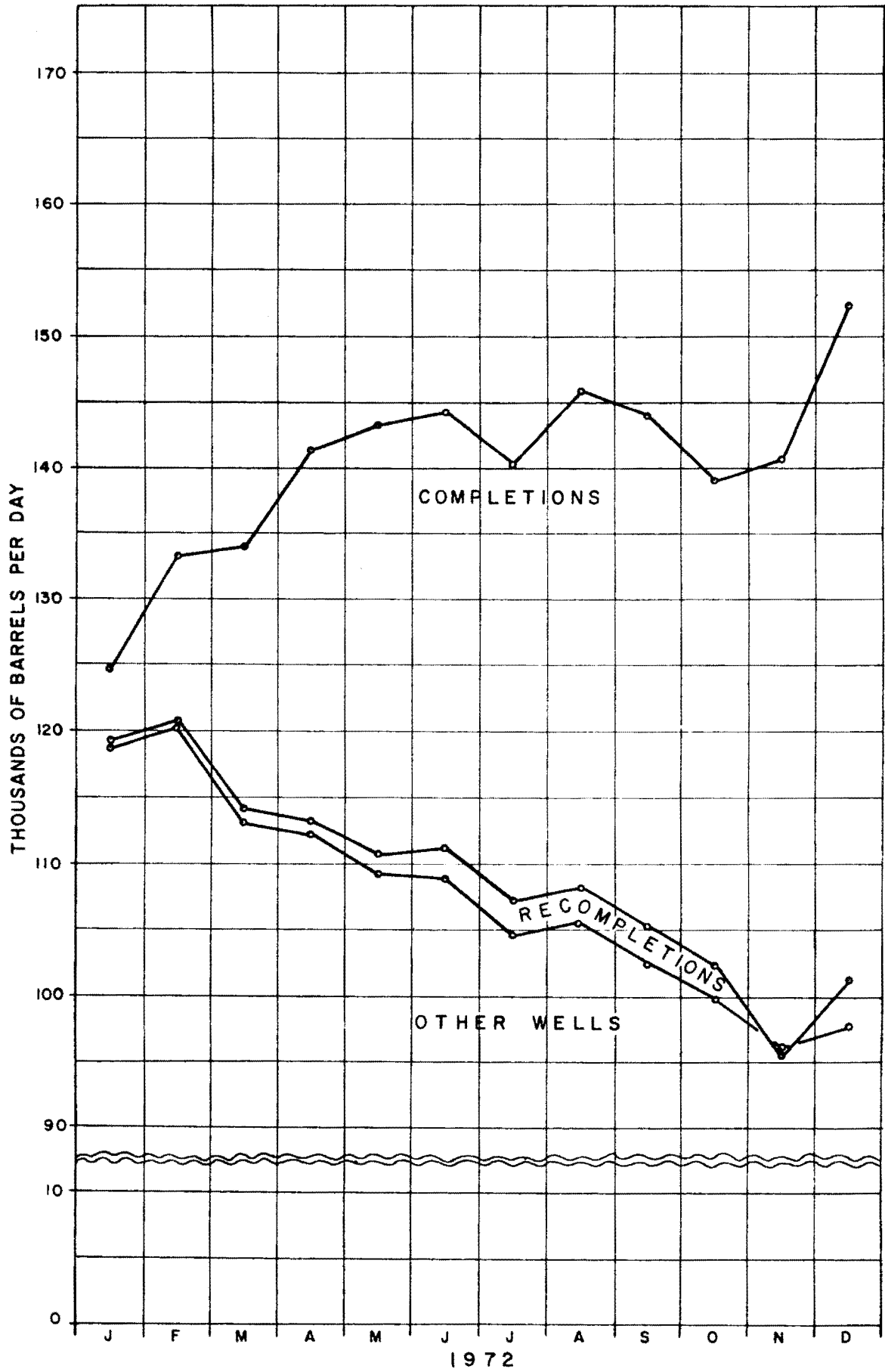
MINISTRY OF PETROLEUM & MINES  
1977

MINISTRY OF PETROLEUM AND MINES FIG. III  
**CRUDE OIL PRODUCTION RATE BY MONTHS**  
**JULY 1969 - DECEMBER 1972**  
 (BARRELS PER DAY)

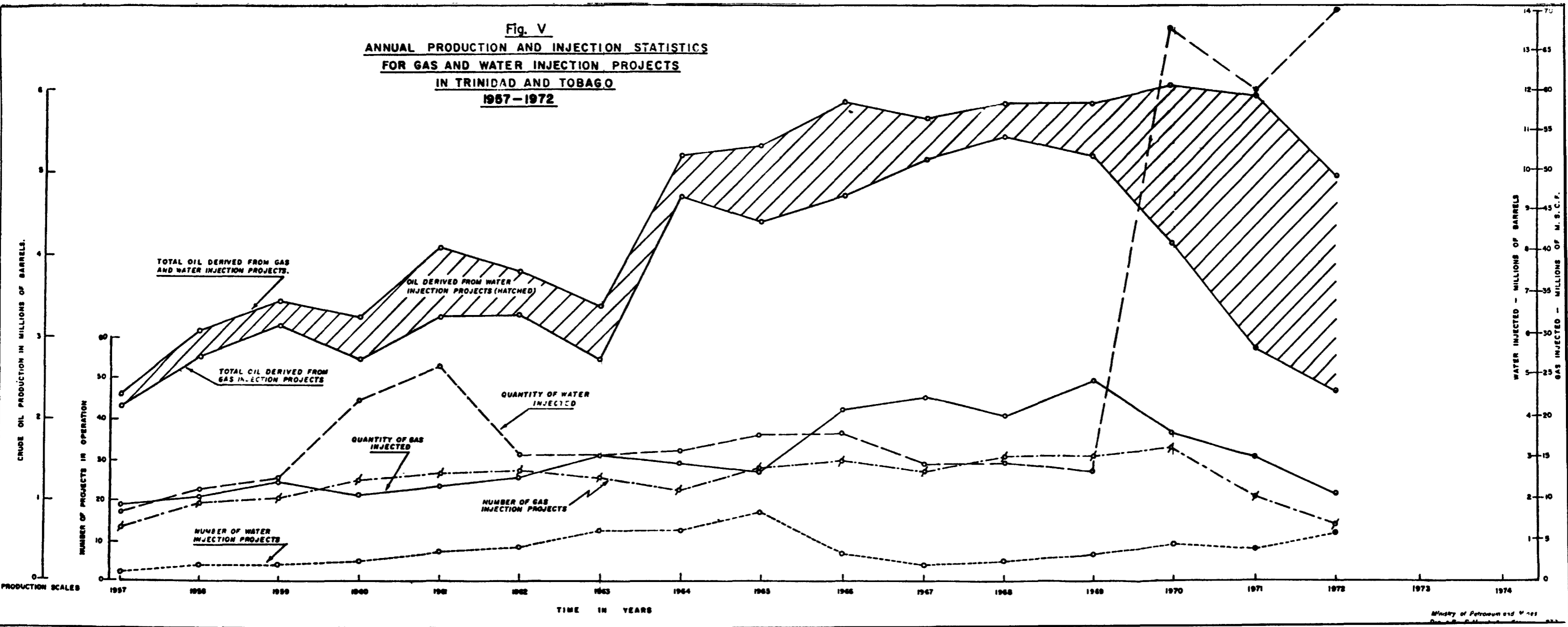




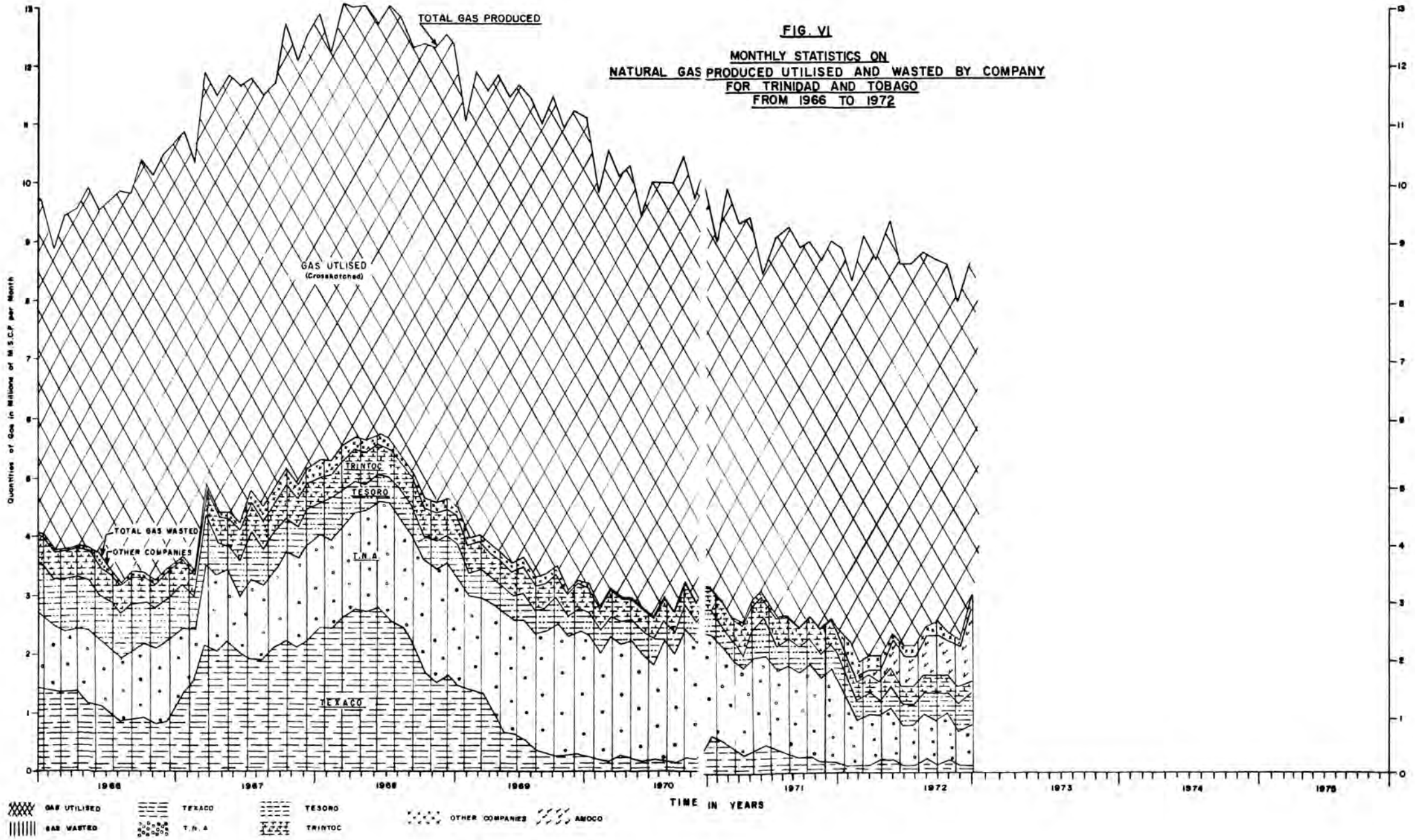
MINISTRY OF PETROLEUM AND MINES  
TRINIDAD AND TOBAGO CRUDE OIL PRODUCTION, 1972  
DAILY AVERAGE BY MONTHS  
COMPLETIONS, RECOMPLETIONS AND OTHER WELLS



**Fig. V**  
**ANNUAL PRODUCTION AND INJECTION STATISTICS**  
**FOR GAS AND WATER INJECTION PROJECTS**  
**IN TRINIDAD AND TOBAGO**  
**1957-1972**



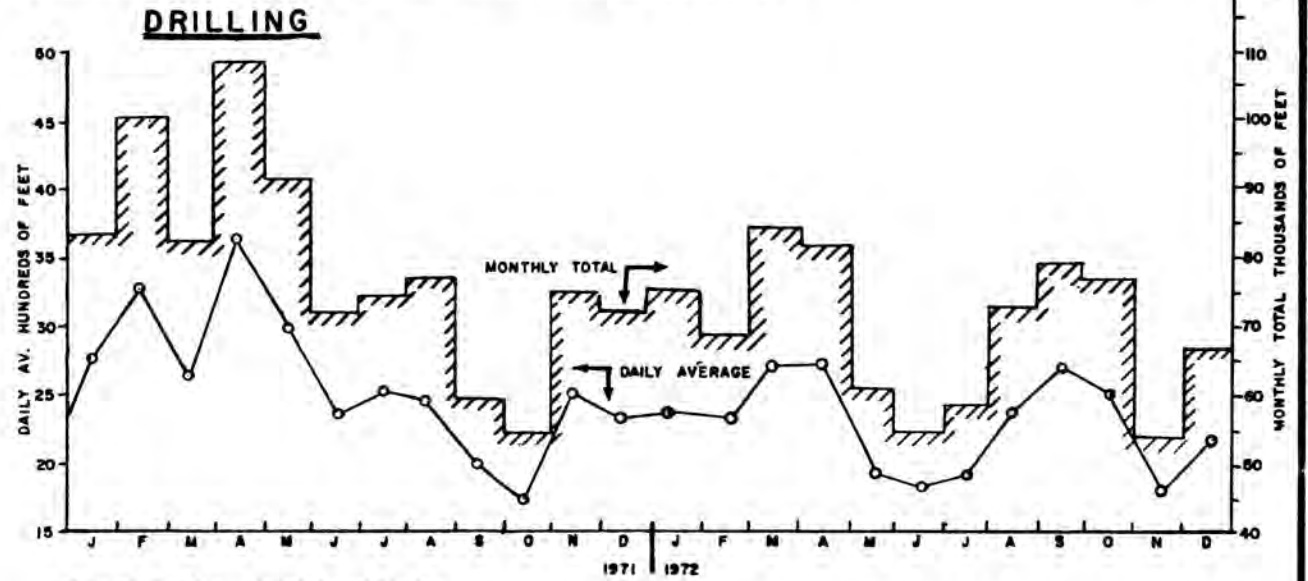
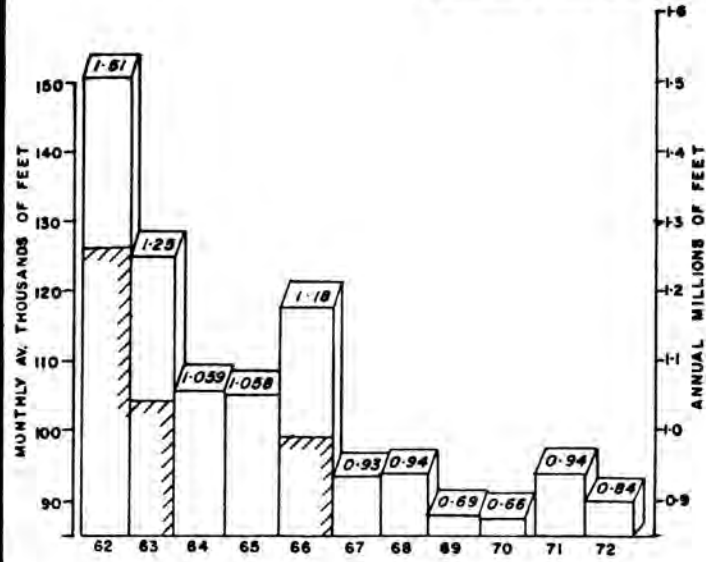
**FIG. VI**  
**MONTHLY STATISTICS ON**  
**NATURAL GAS PRODUCED UTILISED AND WASTED BY COMPANY**  
**FOR TRINIDAD AND TOBAGO**  
**FROM 1966 TO 1972**



[Cross-hatched] GAS UTILISED    [Vertically striped] GAS WASTED  
 [Horizontal lines] TEXACO    [Dotted] OTHER COMPANIES  
 [Vertical lines] T.N.A.    [Diagonal lines] AMOCO  
 [Wavy lines] TESORO    [Horizontal dashed lines] TRINTOC

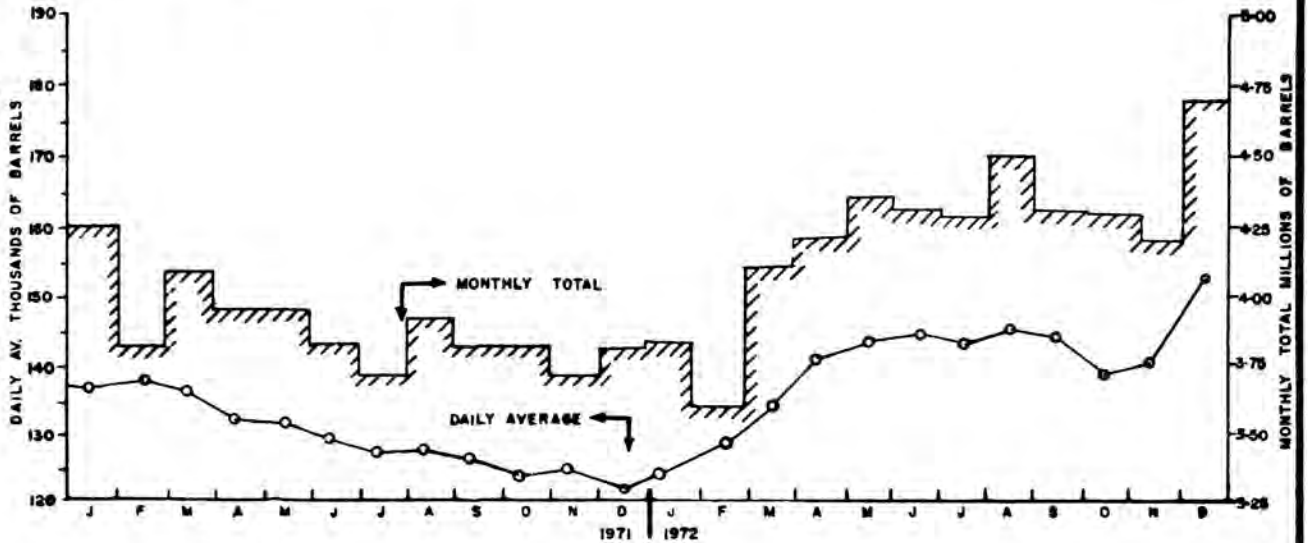
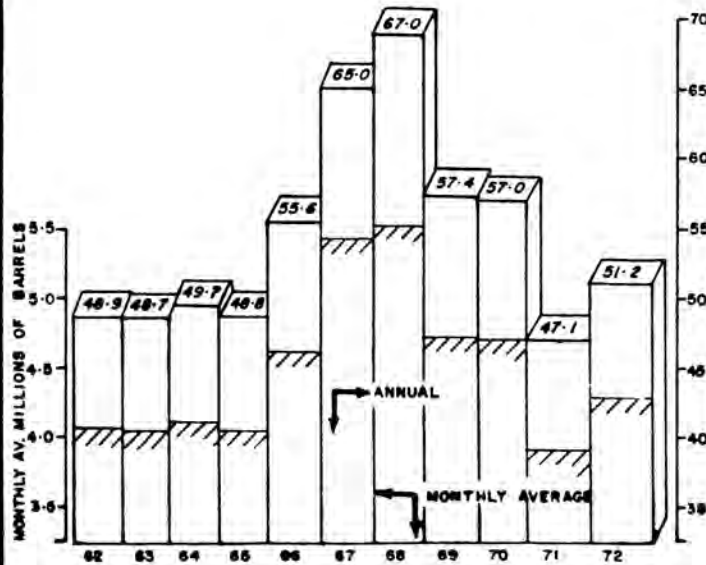
# STATISTICS ON THE PETROLEUM INDUSTRY OF TRINIDAD & TOBAGO

FIG: VII



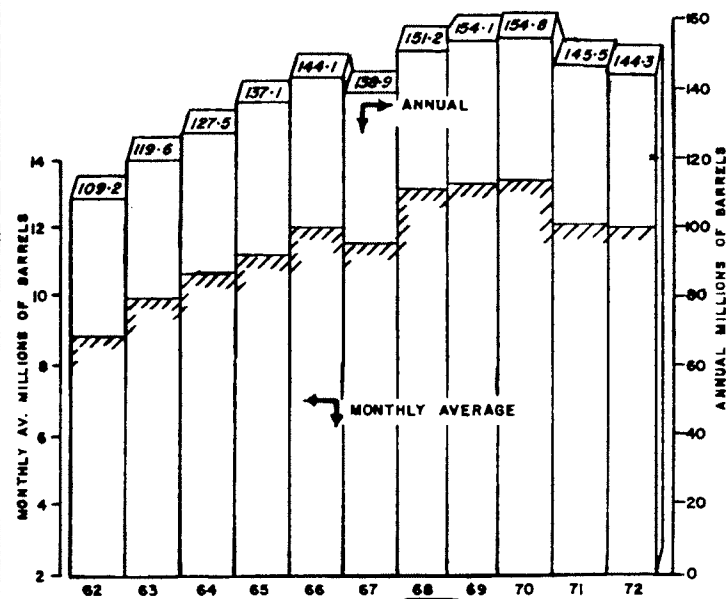
# CRUDE OIL PRODUCTION

FIG: VIII

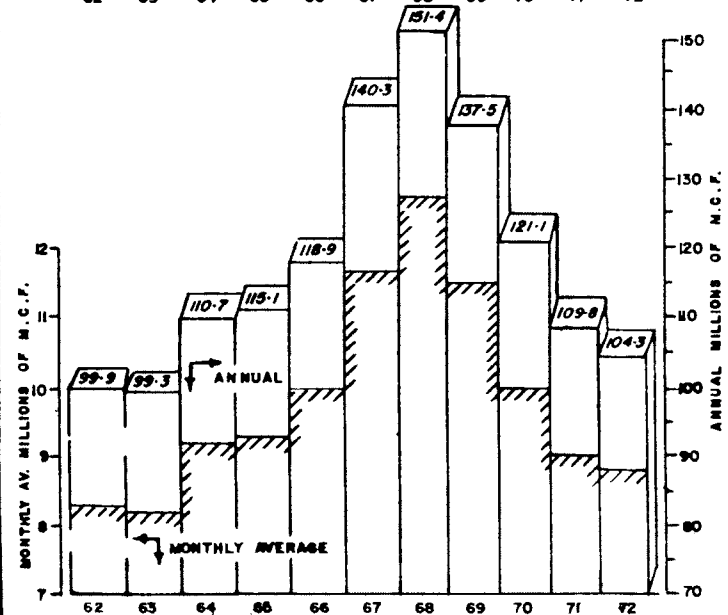
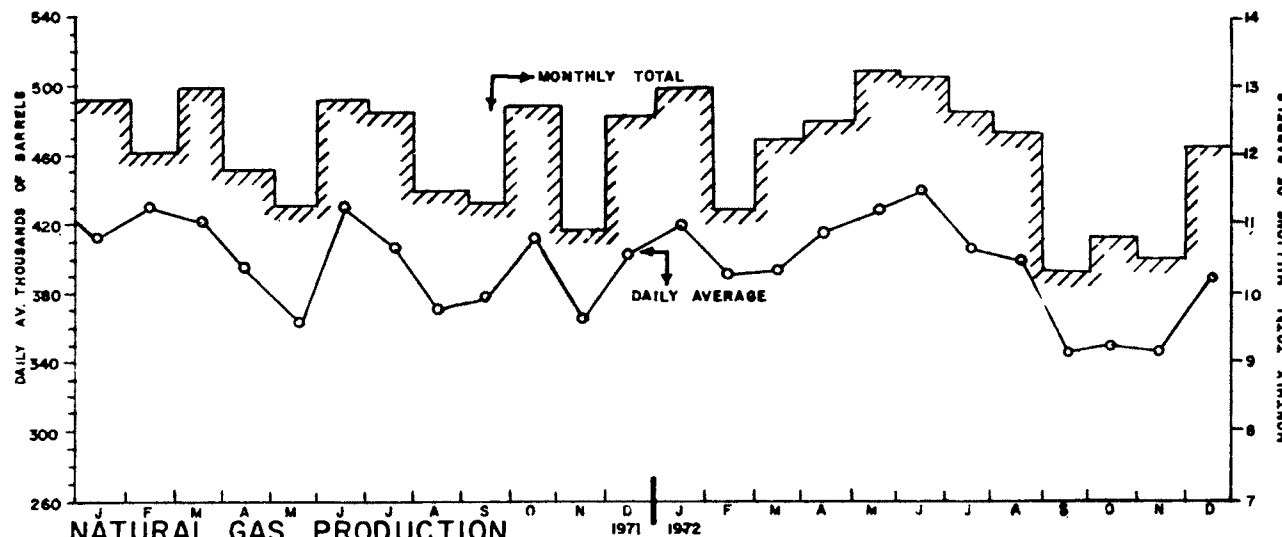


# STATISTICS ON THE PETROLEUM INDUSTRY OF TRINIDAD & TOBAGO

FIG: IX



## REFINERY THROUGHPUT



## NATURAL GAS PRODUCTION

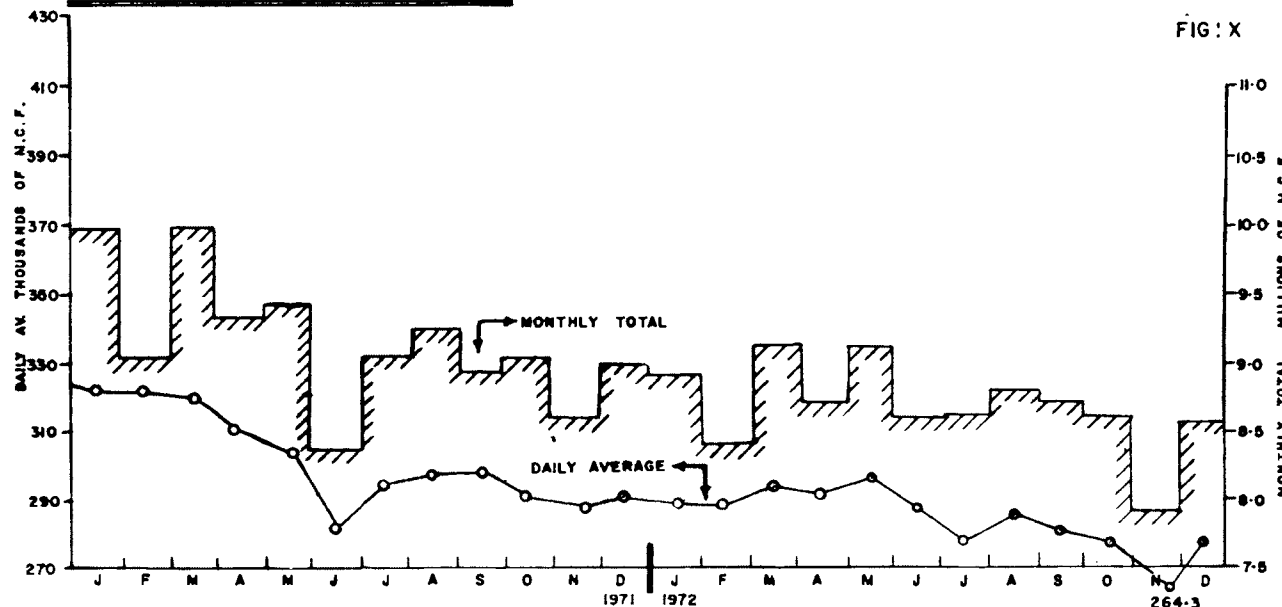
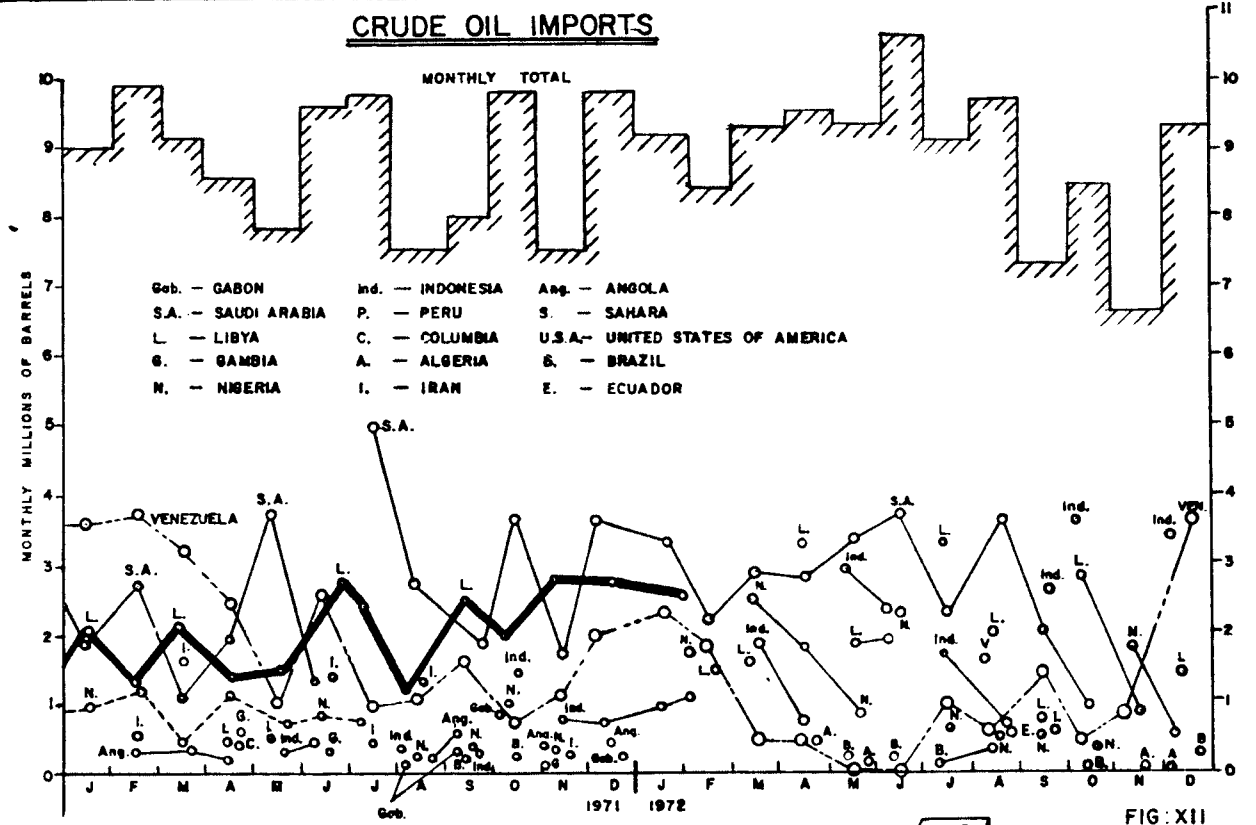
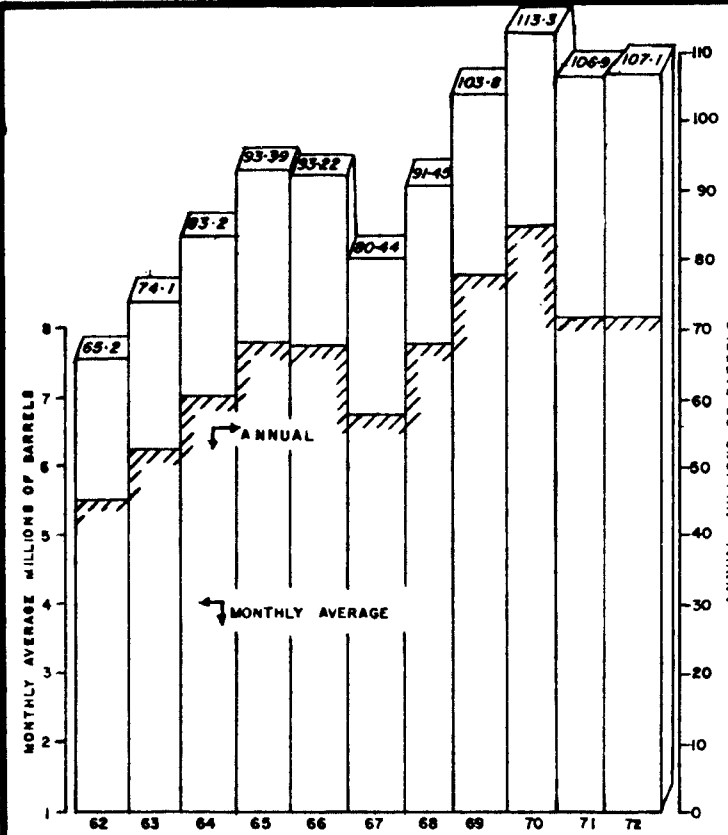


FIG: X

264.3

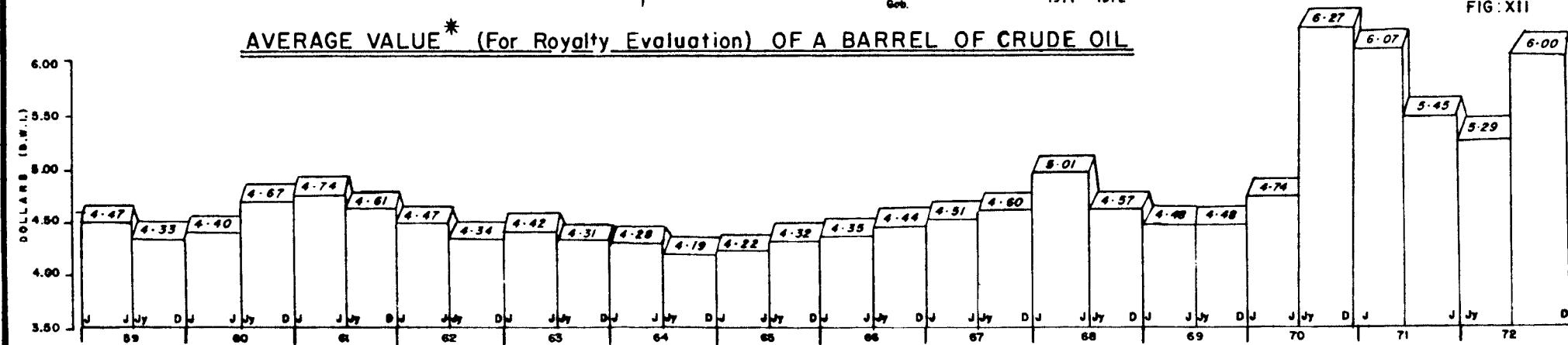
# STATISTICS ON THE PETROLEUM INDUSTRY OF TRINIDAD & TOBAGO

FIG: XI



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

FIG: XII



\* AS DETERMINED BY THE METHOD OUTLINED IN THE LAND (OIL MINING) (AMENDMENT) REGULATIONS, 1963

**APPENDIX I**  
**Annual Statistics of Production, Drilling, Refining – Exports and Imports 1962–1972**

Item	Unit	Percentage Difference 1972–1971	1972	1971	1970	1969	1968	1967	1966	1965	1964	1963	1962
1. Crude Oil ... ..	'000 bbls	+ 8.6	51,211	47,148	51,047	57,418	66,904	64,995	55,603	48,859	49,731	48,678	48,876
2. Casting Head Gasoline (C.H.P.S.) ... ..	'000 bbls	– 2.8	137	141	168	150	164	192	188	197	200	170	194
3. Total Crude Oil and Natural Gasoline (1 + 2) ... ..	'000 bbls	+ 8.6	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	+ 9.8	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	– 7.9	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	+ 0.09	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	+ 1.3	76	75	69	43	49	43	–	2	54	47	–
8. Imports of Crude Oil for Refining ... ..	'000 bbls	+ 0.03	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	– 0.3	436	625	2,101	1,613	1,884	3,666	280	650	405	580	241
10. Total Exports ... ..	'000 bbls	+ 2.3	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	+ 100.1	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	135,972	139,665	146,305	141,648	135,093	135,978	130,973	127,988	115,154	102,998	89,880
13. Rums to Stills ... ..	'000 bbls	– 0.9	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	– 23.0	191	248	140	127	176	213	273	225	192	226	282
15. Total Number of Wells Completed ... ..	As stated	– 10.9	195	220	135	130	176	221	275	224	194	232	280
16. Number of Drilling Wells Completed as Oil Wells ... ..	As stated	– 5.7	166	175	107	99	151	197	244	201	170	199	255
17. Number of Drilling Wells Abandoned, & c ... ..	As stated	– 42.2	30	45	28	31	25	24	31	23	24	33	25
18. Total Footage Drilled (All Wells) ... ..	Feet	– 10.8	841,742	939,259	662,977	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	– 2.1	760,769	743,784	566,078	677,974	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	– 65.3	80,973	195,475	96,899	12,697	13,771	47,371	109,069	45,814	49,701	32,082	145,737
21. Average Depth of Completed Drilling Wells (15) ... ..	Feet	+ 0.02	4,294	4,269	4,911	5,313	5,356	4,328	4,318	4,823	5,513	5,601	5,093
22. Total Number of Wells Producing (Average during year) ... ..	As stated	– 3.4	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	– 6.1	525	559	626	708	795	891	934	920	1,010	1,007	1,026
24. Number of Wells Produced Artificial Lift (Average during year) ... ..	As stated	– 2.8	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	+ 12.0	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	+ 28.3	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	– 1.1	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	+ 4.9	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	+ 3.3	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	– 7.4	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	– 5.0	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	+ 2.3	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	– 23.8	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	– 14.5	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**  
**Monthly Analysis of Drilling and Workover Wells, 1972**

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	No.	Aggregate depth	Crown	Private	Total	/Day	/Rig /Day	Recom- pleted	Aban- doned
							Dry holes		Technical causes													
			No.	Aggregate depth	No.	Aggregate depth	No.	Aggregate depth	No.	Aggregate depth												
January ...	11.1	22	8	30,430	—	—	2	9,156	<sup>a1</sup>	<sup>a9</sup> 7,794	11	49,380	4,489	—	—	69,757	5,488	75,245	2,427.3	218.6	7	
February ...	12.1	14	10	33,007	2	9,274	2	18,651	<sup>a1</sup>	<sup>a8</sup> 4,482	15	69,414	4,628	—	—	61,710	6,947	68,657	2,367.5	195.7	16	
March ...	12.1	22	25	130,933	—	—	2	7,930	—	—	27	138,863	5,143	—	—	79,723	4,322	84,045	2,711.1	224.1	13	
April ...	12.3	18	23	67,228	—	—	4	26,958	1	1,527	28	95,713	3,418	—	—	76,859	5,026	81,885	2,729.5	221.9	15	
May ...	10.6	15	13	40,650	—	—	1	3,500	<sup>a1</sup>	<sup>a10</sup> 0,007	15	54,157	3,610	—	—	55,684	7,739	63,423	2,045.9	193.0	16	
June ...	9.7	13	11	48,933	—	—	2	13,440	1	756	14	63,129	4,509	—	—	48,320	6,083	54,403	1,813.4	186.9	24	
July ...	9.7	15	14	36,246	1	4,300	2	15,678	—	—	17	56,224	3,307	—	—	46,843	12,140	58,983	1,902.7	196.1	16	
August ...	10.9	13	15	45,379	—	—	—	—	—	—	15	45,379	3,025	—	—	68,982	4,000	72,982	2,354.3	216.0	8	
September ...	12.0	16	13	49,881	—	—	1	4,218	<sup>a1</sup>	<sup>a9</sup> 6,693	15	63,792	4,253	—	—	77,097	2,000	79,097	2,636.6	219.6	10	
October ...	12.4	15	10	62,746	1	2,920	2	23,332	—	—	13	88,998	6,846	—	—	76,701	785	77,486	2,499.5	201.6	6	
November ...	9.2	10	9	48,205	—	—	2	21,005	—	—	11	69,210	6,292	—	—	43,763	11,137	54,900	1,830.0	198.9	11	
December ...	8.7	11	7	39,999	—	—	1	5,200	—	—	8	45,199	5,650	—	—	49,635	15,306	64,941	2,094.9	240.8	16	
Total 1972 ...	130.8	184	158	633,637	4	16,494	21	149,068	<sup>a4</sup>	<sup>a37</sup> 976 <sup>2</sup> 2,283	189	839,458	4,441	—	—	755,074 760,769	80,973	836,047 <sup>1</sup> 841,742	2,284.3	190.3	158	
Total 1971 ...	140.98	247	171	622,421	2	4,425	42	193,270	3	6,282	218	826,398	3,791	25*	117,884	743,784	195,475	939,259	2,573	219.9	217	3
% increase 1972-1971	-10.8	-63	-13	11,216	2	12,069	-21	-44,202	<sup>a4</sup>	<sup>a37</sup> 976 <sup>1</sup> - 3,999	-29	13,060	65	—	—	11,290	-114,502	-103,212	-288.7	-28.4	-59	—
Averages 1972 ...	10.9	15.3	13.2	4,010.4	0.3	4,123.5	1.7	7,098.5	<sup>a0.3</sup> <sup>0.2</sup>	<sup>a9</sup> 494 <sup>1,141.5</sup>	15.7	4,441.6	—	—	—	62,923	6,748	69,671	—	—	13.2	—
Averages 1971 ...	11.7	20.6	14.2	3,639.9	—	2,212.5	3.5	4,601.7	—	209.4	18.2	3,790.8	—	—	4,715.4	61,982	16,289.6	78,271.6	—	—	18.1	—

\*Closed in wells.

<sup>1</sup>Total footage for 1972 is 841,742. The difference being incorrect sidetrack depths recorded by Amoco Co. of 2,298 of redrilled footage and Tite Hole drilled by the same company of 7,993 drilled not recorded on the Dr. 4's submitted.



**APPENDIX II A**  
**Land and Marine Footage Drilled, 1972**

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Land ... ..	50,878	49,313	52,924	56,101	42,480	34,111	36,815	40,147	35,687	35,833	37,163	39,569	511,021
Marine ... ..	24,367	19,344	31,121	25,784	20,943	20,292	22,168	32,835	43,410	41,653	17,737	25,372	325,026
Total ... ..	75,245	68,657	84,045	81,885	63,423	54,403	58,983	72,982	79,097	77,486	54,900	64,941	836,047
Daily average feet ...	2,427.3	2,367.5	2,711.1	2,729.5	2,045.9	1,813.4	1,902.7	2,354.3	2,636.6	2,499.5	1,830.0	2,094.9	2,284.3
Daily average rig ...	218.6	195.7	224.1	221.9	193.0	186.9	196.1	216.0	219.6	201.6	198.9	240.8	190.3
Marine % Total ...	32.3	28.2	37.0	31.5	33.0	37.3	37.6	44.9	54.9	53.7	32.3	39.1	38.9

**APPENDIX III**  
**Analysis of Monthly Production for the Year Ending 31st December, 1972**

Month	Flowing				Gas/Air lift				Pumping				Plunger lift				Other methods				Salt water				No. of wells produced	No. of idle wells	No. of wells abd.	No. of wells drilled	Total wells started	D/Av. per P/well	Total oil production	Breakdown of total production						C.H.P.S.			
	No. of wells	Quantity	% of total oil	D/Av./ well Bbl.	No. of wells	Quantity	%	D/Av.	No. of wells	Quantity	%	D/Av.	No. of wells	Quantity	%	D/Av.	No. of wells	Quantity	%	D/Av.	No. of wells	Quantity	%	D/Av.								No. of wells	Quantity	Crown		Private		Average B.O.P.D.	Crown	Private	Total
																																		D/Av./ well	No. of wells	Quantity	D/Av./ well				
January ... ..	534	1,953,756	50.5	118.0	931	1,030,455	26.6	35.7	1,360	842,934	21.8	19.9	88	41,087	1.1	15.0	3	14	—	0.2	1,595	1,310,064	25.1	26.3	2,916	4,441	2,442	12	9,811	42.8	3,868,246	48.7	2,382	3,598,115	16.3	534	270,131	124,782	6,740	1,556	8,296
February ... ..	541	1,909,952	51.2	121.7	911	962,067	25.8	36.4	1,379	817,868	21.9	20.5	89	40,958	1.1	15.8	2	24	—	0.4	1,720	1,211,739	24.5	24.3	2,922	4,446	2,445	12	9,825	44.0	3,730,869	50.1	2,394	3,477,672	16.5	528	253,197	120,350	6,036	1,301	7,337
March ... ..	514	2,207,377	53.1	138.5	917	1,004,975	24.2	35.4	1,415	895,745	21.6	20.4	89	43,373	1.0	15.7	5	178	0.1	1.1	1,620	1,311,466	24.0	26.1	2,940	4,449	2,447	11	9,847	45.6	4,151,648	52.0	2,408	3,885,281	16.2	532	266,367	133,924	6,668	1,334	8,002
April ... ..	507	2,364,229	55.8	155.4	884	999,155	23.6	37.7	1,395	836,645	19.7	19.9	80	39,111	0.9	16.3	3	45	—	0.5	1,567	1,207,120	22.2	25.7	2,869	4,538	2,454	11	9,872	49.3	4,239,185	56.6	2,351	3,995,235	15.7	518	243,950	141,306	6,302	1,485	7,787
May ... ..	529	2,467,782	55.6	150.4	892	1,017,239	22.9	36.8	1,419	914,286	20.6	20.8	79	38,854	0.9	15.9	3	32	—	0.3	1,642	1,346,107	23.3	26.4	2,922	4,498	2,457	8	9,885	48.9	4,438,193	56.1	2,405	4,183,819	15.9	517	254,374	143,167	5,689	1,486	7,175
June ... ..	540	2,395,892	55.5	148.1	887	992,315	22.9	37.3	1,449	903,001	20.8	20.7	80	36,409	0.8	15.2	2	15	—	0.1	1,660	1,251,731	22.4	25.1	2,958	4,472	2,461	10	9,901	48.8	4,327,632	55.8	2,437	4,080,091	15.8	521	247,541	144,254	6,109	1,815	7,924
Production total January—June ...	527	13,298,988	53.7	138.7	904	6,006,206	24.3	36.5	1,403	5,210,479	21.0	20.4	84	239,792	1.0	15.7	3	308	—	0.6	1,634	7,638,227	23.6	25.7	2,921	4,519	2,461	—	9,901	46.6	24,755,773	53.2	2,396	23,220,213	16.1	525	1,535,560	134,631	37,544	8,977	46,521
July ... ..	542	2,409,783	55.4	143.4	893	1,009,179	23.2	36.5	1,458	897,486	20.0	19.9	77	35,616	0.8	14.9	3	29	—	0.3	1,625	1,257,105	19.5	21.1	2,973	4,469	2,466	8	9,916	47.2	4,352,093	54.2	2,450	4,118,295	14.4	523	233,798	140,390	6,873	2,123	8,996
August ... ..	524	2,559,666	56.6	157.6	869	1,003,230	22.2	37.2	1,446	922,456	20.4	20.6	77	37,762	0.8	15.8	4	48	—	0.4	1,615	1,361,063	23.1	27.2	2,920	4,527	2,471	11	9,929	50.0	4,523,162	57.6	2,398	4,282,645	14.9	522	240,517	145,908	4,497	2,164	6,661
September ... ..	523	2,438,074	56.4	155.3	873	969,251	22.4	37.0	1,463	876,324	20.3	20.0	77	37,700	0.9	16.3	5	49	—	0.3	1,593	1,301,207	30.1	27.2	2,941	4,514	2,475	13	9,943	49.0	4,321,398	56.2	2,418	4,077,766	15.5	523	243,632	144,046	5,352	1,720	7,072
October ... ..	526	2,416,104	56.0	148.2	859	953,239	22.1	35.8	1,502	910,244	21.1	19.5	68	37,787	0.8	17.9	3	44	—	0.5	1,624	1,273,841	22.7	25.3	2,958	4,509	2,480	11	9,958	47.1	4,317,418	54.1	2,432	4,078,645	14.6	526	238,773	139,271	5,680	1,551	7,231
November ... ..	499	2,341,237	55.4	156.4	847	904,447	21.4	35.6	1,511	944,474	22.4	20.8	68	34,688	0.8	17.0	3	14	—	0.2	1,552	1,255,452	22.9	27.0	2,928	4,548	2,485	7	9,968	48.1	4,224,860	55.5	2,399	3,994,782	14.5	529	230,078	140,829	6,203	1,506	7,709
December ... ..	529	2,745,153	58.2	167.3	826	912,131	19.3	35.6	1,525	1,023,004	21.7	21.6	65	35,744	0.8	17.7	3	73	—	0.7	1,568	1,317,052	21.8	27.0	2,948	4,538	2,486	8	9,980	51.5	4,716,105	59.0	2,445	4,473,771	15.5	503	242,334	152,132	6,723	1,410	8,133
Production total July—December	524	14,910,017	56.4	154.6	861	5,751,477	21.7	36.3	1,484	5,573,988	21.1	20.4	72	219,297	0.8	16.6	3	257	—	0.5	1,596	7,765,720	22.7	26.4	2,944	4,550	2,486	—	9,980	48.8	26,455,036	56.1	2,423	25,025,904	14.9	521	1,429,132	143,763	35,328	10,474	45,802
Years production total	—	28,209,005	55.1	—	—	11,757,683	23.0	—	—	10,784,467	21.0	—	—	459,089	0.9	—	—	565	—	—	—	15,403,947	23.1	—	—	—	2,486	—	9,980	—	51,210,809	—	—	48,246,117	—	—	2,964,692	139,197	72,872	19,451	92,323
Daily averages ...	—	77,074	—	—	—	32,125	—	—	—	29,466	—	—	—	1,254	—	—	—	1	—	—	—	42,087	—	—	—	—	—	—	—	139,920	—	—	131,820	—	—	8,100	—	199	53	252	
Averages during year	525	—	—	146.8	882	—	—	36.4	1,443	—	—	20.4	79	—	—	15.9	3	—	—	0.5	1,611	—	—	26.1	2,932	—	—	—	47.7	—	54.7	2,409	—	15.5	523	—	—	—	—	—	—

**APPENDIX III A**  
**Analysis of Production by Operating Companies 1972**

	Flowing				Gas Lift				Pumping				Plunger Lift				Salt Water				Av. No. of wells prod.	Daily av. per producing well	Total oil produced (barrels)	Coy's Prod. as % of total production	Crown Production		Private Production	
	Av. No. of wells	Quantity (barrels)	% of total	Daily av. per well	Av. No. of wells	Quantity (barrels)	% of total	Daily av. per well	Av. No. of wells	Quantity (barrels)	% of total	Daily av. per well	Av. No. of wells	Quantity (barrels)	% of total	Daily av. per well	Av. No. of wells	Quantity (barrels)	% of total	Daily av. per well					Production barrel	% of total	Production (barrels)	% of total
Trinidad Tesoro Petroleum Co. Ltd.	159	1,995,156	24.1	33.6	184	1,661,607	20.5	24.7	552	4,023,833	49.7	19.9	78	459,065	5.7	16.1	535	1,897,033	19.0	9.7	973	22.7	8,099,661	15.8	6,492,956	80.2	1,606,705	19.8
Texaco Trinidad Inc.	119	2,332,206	20.7	53.5	595	5,380,523	47.6	24.7	459	3,582,582	31.7	21.3	-	-	-	-	663	7,346,657	39.4	30.3	1,173	26.3	11,295,311	22.1	10,376,682	91.9	918,629	8.1
Shell Trinidad Ltd. ...	74	947,752	29.8	35.0	24	241,841	7.6	27.5	264	1,991,021	62.6	20.6	-	-	-	-	186	1,296,033	28.9	19.0	362	24.0	3,180,614	6.2	2,874,791	90.4	305,823	9.6
Premier Consolidated Oil Fields Ltd. ...	4	14,286	8.2	9.7	1	1,432	0.8	3.9	101	158,542	91.0	4.3	1	24	-	0.1	37	58,709	25.2	4.3	107	4.4	174,284	0.3	40,749	23.4	133,535	76.6
Tricentrol Ltd. ...	7	50,156	14.1	19.6	5	61,526	17.2	33.6	58	245,559	68.7	11.6	-	-	-	-	36	213,758	37.4	16.2	70	13.9	357,241	0.7	357,241	100.0	-	-
Trinidad Northern Areas Ltd. ...	150	13,629,346	72.4	248.2	73	4,410,754	23.4	165.1	12	783,495	4.2	178.4	-	-	-	-	151	4,217,929	18.3	76.3	235	218.9	18,823,595	36.8	18,823,595	100.0	-	-
Amoco Trinidad Oil Co. ...	12	9,280,103	100.0	2,112.9	-	-	-	-	-	-	-	-	-	-	-	-	3	374,271	3.9	340.9	12	2,112.9	9,280,103	18.1	9,280,103	100.0	-	-
<b>Total ...</b>	<b>525</b>	<b>28,209,005</b>	<b>55.1</b>	<b>146.8</b>	<b>882</b>	<b>11,757,683</b>	<b>22.9</b>	<b>36.4</b>	<b>1,446</b>	<b>10,785,032</b>	<b>21.1</b>	<b>20.4</b>	<b>79</b>	<b>459,089</b>	<b>0.9</b>	<b>15.9</b>	<b>1,611</b>	<b>15,404,390</b>	<b>23.1</b>	<b>26.1</b>	<b>2,932</b>	<b>47.7</b>	<b>51,210,809</b>	<b>100.0</b>	<b>48,246,117</b>	<b>94.2</b>	<b>2,964,692</b>	<b>5.8</b>
<b>Total 1971 ...</b>	<b>559</b>	<b>23,333,297</b>	<b>49.5</b>	<b>114.3</b>	<b>991</b>	<b>13,842,927</b>	<b>29.4</b>	<b>38.3</b>	<b>1,380</b>	<b>9,469,210</b>	<b>20.1</b>	<b>18.8</b>	<b>105</b>	<b>502,297</b>	<b>1.0</b>	<b>13.1</b>	<b>1,725</b>	<b>14,543,256</b>	<b>23.6</b>	<b>22.9</b>	<b>3,035</b>	<b>42.5</b>	<b>47,147,731</b>	<b>100.0</b>	<b>43,928,905</b>	<b>93.2</b>	<b>3,218,826</b>	<b>5.8</b>

**Natural Gasoline C.H.P.S. Production**

Company	Crown Oil Rights	Private Oil Rights	Total
	Barrels		
Trinidad Tesoro Petroleum Co. Ltd. ...	72,872	19,451	92,323
<b>Total 1971 ...</b>	<b>86,568</b>	<b>20,157</b>	<b>106,725</b>

**APPENDIX IIIB**

**DAILY AVERAGE PRODUCTION BY MONTHS FOR ALL COMPANIES - 1972**  
*(All Quantities in barrels)*

Company	January	February	March	April	May	June	July	August	September	October	November	December	Total Crude	Total B.O.P.D.
T.T.P.C.L. ...	650,737	606,077	644,125	606,288	707,477	706,714	721,991	712,636	678,366	683,960	673,677	707,613	8,099,661	
B.O.P.D. ...	20,991	20,899	20,778	20,209	22,821	23,557	23,290	22,988	22,613	22,063	22,456	22,826		22,130
S.T.L. ...	283,703	262,416	282,740	274,200	281,138	266,791	279,110	273,364	257,125	260,269	225,342	234,416	3,180,614	
B.O.P.D. ...	9,151	9,048	9,120	9,140	9,068	8,893	9,003	8,818	8,571	8,396	7,511	7,562		8,690
T.T.I. ...	1,051,214	989,312	1,033,453	957,274	958,911	938,800	943,164	928,384	887,299	882,206	839,071	886,223	11,295,311	
B.O.P.D. ...	33,910	34,114	33,337	31,909	30,932	31,293	30,424	39,947	29,577	28,458	27,969	28,588		30,862
TRICENTROL	31,108	30,086	32,474	31,490	31,269	28,893	29,768	29,031	26,741	29,264	27,478	29,639	357,241	
B.O.P.D. ...	1,003	1,037	1,047	1,049	1,008	963	960	936	891	944	916	956		976
P.C.O.L. ...	14,542	14,325	15,373	14,628	14,961	14,584	14,543	14,596	13,845	14,087	14,121	14,679	174,284	
B.O.P.D. ...	469	493	495	487	482	486	469	470	462	454	471	473		476
T.N.A. ...	1,677,827	1,513,991	1,586,205	1,551,169	1,581,774	1,543,588	1,523,411	1,610,730	1,532,640	1,570,136	1,505,194	1,626,930	18,823,595	
B.O.P.D. ...	54,123	52,206	51,167	51,705	51,024	51,452	49,142	51,959	51,088	50,650	50,173	52,482		51,431
AMOCO ...	159,115	314,662	557,278	804,136	862,663	828,262	840,106	954,421	925,382	877,496	939,977	1,216,605	9,280,103	
B.O.P.D. ...	5,132	10,850	17,976	26,804	27,827	27,608	27,100	30,787	30,846	28,306	31,333	39,245		25,355
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
TOTAL 1971	4,235,069	3,843,094	4,192,307	3,950,343	4,052,112	3,854,843	3,939,901	3,962,659	3,781,692	3,829,128	3,727,201	3,779,382	47,147,731	
B.O.P.D. ...	136,615	137,253	135,235	131,678	130,713	128,494	127,093	127,827	126,056	123,520	124,240	121,915		129,172

**APPENDIX III C**  
**Marine Offshore and Land Production 1972**  
*(All quantities in Barrels)*

Type of Well	January		February		March		April		May		June		January-June Sub-Totals		July		August		September		October		November		December		July-December Sub-Totals		Grand total			
	Wells	Production	Wells	Production	Wells	Production	Wells	Production	Wells	Production	Wells	Production	Av. No. of wells	Production	Wells	Production	Wells	Production	Wells	Production	Wells	Production	Wells	Production	Wells	Production	Av. No. of wells	Production	Av. No. of wells	Production		
<b>Marine</b>																																
T.N.A. Soldado ...	219	1,647,480	218	1,486,251	217	1,554,927	214	1,521,940	217	1,554,297	217	1,518,974	217	9,283,869	218	1,495,140	218	1,582,312	220	1,504,933	218	1,538,888	223	1,476,477	228	1,599,709	221	9,197,459	219	18,481,328		
Ft-1: Ft-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Texaco ABM ...	94	91,394	96	88,224	98	89,161	95	80,028	99	81,233	97	76,451	96	506,491	95	83,283	89	78,506	86	74,619	84	72,993	81	72,183	79	80,102	86	461,686	91	968,177		
ALM ...	2	3,165	2	3,336	2	3,186	2	2,910	2	3,208	2	3,206	2	19,011	2	3,206	2	4,279	2	3,975	2	4,061	2	3,970	2	3,738	2	23,229	2	42,240		
Belpecto Couva Marine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tesoro North Marine Wells ...	1	5,849	1	5,223	1	5,530	1	4,910	1	4,102	1	4,914	1	30,528	1	5,331	1	5,681	1	5,247	1	5,073	1	4,342	1	3,725	1	29,399	1	59,927		
" G. Wells ...	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
" Galeota ...	-	-	-	-	-	-	-	-	16	59,244	17	59,206	16*	118,450	15	59,767	14	54,340	14	49,016	16	54,771	16	55,275	17	60,016	15	333,185	16	451,635		
Amoco Teak Wells	4	159,115	6	314,662	11	557,278	12	804,136	11	862,663	11	828,262	9	3,526,116	13	840,106	14	954,421	14	925,382	14	877,496	15	939,977	17	1,216,605	14	5,753,987	11	9,280,103		
Sub Total	320	1,907,003	323	1,897,696	329	2,210,082	324	2,413,924	346	2,564,747	345	2,491,013	341	13,484,465	344	2,486,833	338	2,679,539	337	2,563,172	335	2,553,282	338	2,552,224	344	2,963,895	339	15,798,945	340	29,283,410		
<b>Deviated from Shore</b>																																
T.N.A. Fos ...	13	30,347	15	27,740	15	31,278	14	29,229	14	27,477	15	24,614	14	170,685	17	28,271	19	28,418	18	27,707	19	31,248	19	28,717	17	27,221	18	171,582	16	342,267		
Texaco AS ...	47	21,841	47	18,653	46	15,507	48	18,467	53	22,527	54	22,133	49	119,128	54	22,133	43	20,495	40	20,144	39	16,576	38	12,997	37	14,602	42	106,947	45	226,075		
" ALS ...	3	6,184	3	7,769	3	6,828	3	6,435	3	5,920	3	5,680	3	38,816	3	5,680	3	6,629	3	6,921	3	6,866	3	6,410	4	7,906	3	40,412	3	79,228		
Tesoro M. Wells (11551/53)	5	1,861	4	1,977	5	2,078	5	2,230	5	1,647	4	849	4	10,642	5	941	3	691	7	827	4	725	5	864	5	647	5	4,695	5	15,337		
Sub Total	68	60,233	69	56,139	69	55,691	70	56,361	75	57,571	76	53,276	71	339,271	79	57,025	68	56,233	68	55,599	65	55,415	65	48,988	63	50,376	68	323,636	69	662,907		
Marine and Deviated ...	388	1,967,236	392	1,953,835	398	2,265,773	394	2,470,285	421	2,622,318	421	2,544,289	402	13,823,736	423	2,543,858	406	2,735,772	405	2,618,771	400	2,608,697	403	2,601,212	407	3,014,271	407	16,122,581	404	29,946,317		
Land ...	2,528	1,901,010	2,530	1,777,034	2,542	1,885,875	2,475	1,768,900	2,501	1,815,875	2,537	1,783,343	2,519	10,932,037	2,550	1,808,235	2,514	1,787,390	2,536	1,702,627	2,558	1,708,721	2,525	1,623,648	2,541	1,701,834	2,537	10,332,455	2,528	21,264,492		
<b>Total Production</b>	<b>2,916</b>	<b>3,868,246</b>	<b>2,922</b>	<b>3,730,869</b>	<b>2,940</b>	<b>4,151,648</b>	<b>2,869</b>	<b>4,239,185</b>	<b>2,922</b>	<b>4,438,193</b>	<b>2,958</b>	<b>4,327,632</b>	<b>2,921</b>	<b>24,755,773</b>	<b>2,973</b>	<b>4,352,093</b>	<b>2,920</b>	<b>4,523,162</b>	<b>2,941</b>	<b>4,321,398</b>	<b>2,958</b>	<b>4,317,418</b>	<b>2,928</b>	<b>4,224,860</b>	<b>2,948</b>	<b>4,716,105</b>	<b>2,944</b>	<b>26,455,038</b>		<b>51,210,809</b>		

**APPENDIX IV**  
**Production and Disposal of Natural Gas - 1972**  
*(All figures of Gas Production in MCF)*  
*(M = 1,000 Standard Cubic Ft.)*

Half Yearly Totals	Crude Oil Production barrels	Average G.O.R. Cu. ft.	Natural Gas Production	Natural Gas Disposal													Inter Oil Company Sales	Used for the manufacture of Petro/Chem.
				Sales to other Non-Oil Companies	Replaced into formation	Converted to CHPS	Used as Fuel		Vented to Atmosphere			Pipe line Loses and un-accounted for	Not Collected	Natural Gas Recovery				
							In Fields	In Refineries	After Use	Without Use	Total			Natural Gas treated	Average Plant Recovery IG/MCF	Natural Gasoline Produced barrels		
January ...	3,868,246	2,312	8,975,947	2,820,355	834,546	8,704	685,281	2,272,865	512,170	1,164,029	1,676,199	124,550	553,447	1,828,226	236	12,333	2,029,278	963,229
February ...	3,730,869	2,242	8,365,709	2,400,081	1,111,918	7,697	702,123	2,225,159	526,063	597,232	1,123,295	171,974	623,462	1,602,289	220	10,070	2,128,394	724,247
March ...	4,151,648	2,192	9,103,450	2,846,781	1,090,827	8,396	780,102	2,344,380	527,345	568,518	1,095,863	162,908	774,193	2,063,743	206	12,115	2,319,690	904,861
April ...	4,239,185	2,058	8,724,629	2,887,978	780,922	8,170	744,562	2,285,847	450,158	525,862	976,020	195,703	845,427	2,063,460	202	11,936	2,248,670	959,736
May ...	4,438,193	2,075	9,211,549	3,065,699	699,007	7,526	700,452	2,288,569	722,676	508,849	1,231,525	106,812	1,111,959	1,893,094	203	11,010	2,277,495	964,008
June ...	4,327,632	1,985	8,619,511	2,922,922	590,928	8,314	674,047	2,239,671	602,406	433,973	1,036,379	152,724	994,526	1,413,579	246	9,940	2,223,625	934,882
Half Year Total	24,755,773	2,141	53,000,795	16,943,816	5,108,148	48,807	4,286,567	13,656,491	3,340,818	3,798,463	7,139,281	914,671	4,903,014	10,864,391	218	67,404	13,227,152	5,450,963
July ...	4,352,093	1,981	8,620,278	2,790,406	905,165	9,439	682,373	2,075,246	438,673	627,405	1,066,078	89,281	1,002,290	2,027,904	263	15,235	2,261,411	864,212
August ...	4,523,162	1,963	8,879,312	2,379,407	1,080,763	6,988	709,160	2,153,594	456,723	763,768	1,220,491	99,050	1,229,859	1,634,175	284	13,255	2,262,526	611,891
September ...	4,321,398	2,012	8,695,565	2,958,039	524,302	5,852	658,596	1,971,556	460,040	654,089	1,114,129	205,259	1,257,832	1,796,241	257	13,222	2,217,252	899,388
October ...	4,317,418	1,995	8,613,861	3,117,514	455,422	7,587	681,320	1,914,636	561,227	579,674	1,140,901	114,990	1,181,491	1,583,272	271	12,275	2,246,512	878,770
November ...	4,224,860	1,877	7,928,963	2,448,068	558,257	8,087	689,120	1,885,451	554,446	400,301	954,747	154,156	1,237,864	763,201	353	7,715	2,242,139	630,458
December ...	4,716,105	1,823	8,599,444	2,167,923	598,214	8,531	707,647	2,119,423	532,814	618,595	1,151,409	129,259	1,717,038	737,437	386	8,132	2,266,420	522,526
Half Year Total	26,455,036	1,941	51,337,423	15,861,357	4,122,123	46,484	4,128,216	12,119,906	3,003,923	3,643,832	6,647,755	791,995	7,626,374	8,542,230	286	69,834	13,496,260	4,407,245
Year Total ...	51,210,809	2,037	104,338,218	32,805,173	9,230,271	95,291	8,414,783	25,776,397	6,344,741	7,442,295	13,787,036	1,706,666	12,529,388	19,406,621	247	137,238	26,723,412	9,858,208
Percentage Disposal for year ...	-	-	-	31.5	8.9	0.1	8.1	24.7	6.1	7.1	13.2	1.6	12.0	18.6	-	0.1	25.6	9.4

**APPENDIX V**  
**Destination of Exports of Crude and Refined Products from Trinidad and Tobago – 1972**  
*(All Quantities in bbls.)*

	Total	% of total exports	Crude petroleum exported	L.P.G.	Aviation turbine fuel	Aviation gasoline	Motor gasoline	Kerosines	Gas and diesel oils	Fuel oils	Lubes and greases	Asphaltic products	Petrochemicals and other refined products <sup>1</sup>
<b>North America</b>													
Canada ... ..	2,976,225	2.177	907,153						449,658	2,186,245	340,158		164
U.S.A. ... ..	73,230,145	53.577	9,801,690		6,085,233		3,012,539	3,686,797	893,406	58,845,563	29,627		676,980
Total N.A. ... ..	76,206,370	55.754	10,708,843		6,085,233		3,012,539	3,686,797	1,343,064	61,031,808	369,785		677,144
<b>Central America</b>													
Costa Rica ... ..	62,232	0.045						16,858	6,956		38,418		
Honduras ... ..	34,252	0.025				3,810					30,442		
Other C.A. <sup>2</sup> ... ..	534,633	0.391			91,560	11,686	5,911	2,066	128,782	253,912	40,716		
Total C.A. ... ..	631,117	0.461			91,560	15,496	5,911	18,924	135,738	253,912	109,576		
<b>South America</b>													
Brazil ... ..	3,113,539	2.278					2,666,641				446,898		
French Guiana ... ..	497,931	0.364		12,444		10,184	123,897	20,100	315,934	12,534	2,774		64
Guyana ... ..	4,042,221	2.957		36,250		22,935	319,476	213,211	1,014,713	2,422,712	6,648	4,353	1,923
Surinam ... ..	2,515,165	1.840		30,144		19,564	247,947	124,001	1,267,313	797,601	8,735	18,646	1,214
Uruguay ... ..	17,473	0.013									17,473		
Other S.A. <sup>3</sup> ... ..	315,234	0.231				9,351	287,129				18,754		
Total S.A. ... ..	10,501,563	7.683		78,838		62,034	3,645,090	357,312	2,597,960	3,232,847	501,282	22,999	3,201
<b>West Indian Islands</b>													
British <sup>4</sup> ... ..	3,919,490	2.867		43,093	96,718	39,850	395,758	544,163	430,613	2,237,667	100,647	28,034	2,947
French <sup>5</sup> ... ..	536,991	0.393		30,449		44,332	157,688	148,079	99,814	9,383	21,805	24,919	522
Netherlands <sup>6</sup> ... ..	2,276,145	1.665	228,530				2,274,500	367	1,278				
Puerto Rico ... ..	3,388,453	2.479	1,562,846				2,625,180	763,273					
Virgin Islands ... ..	3,733,658	2.732	1,505,015	141		22,376	235,865	199,720	225,665	3,048,371	8	1,512	
Other W.I. Islands <sup>7</sup> ... ..	1,645,272	1.204				2,251	127,691	34,336	175,454	1,287,215	18,325		
Total W.I. Islands ... ..	15,500,009	11.340	3,296,391	73,683	96,718	108,809	5,816,682	1,689,938	932,824	6,582,636	140,785	54,465	3,469
<b>Europe</b>													
Belgium ... ..	14,460	0.011									14,460		
Denmark ... ..	25,478	0.019					25,478						
France ... ..	764,602	0.559			764,602								
Fed. Rep. of Germany ... ..	832,503	0.609					816,148				136		16,219
Italy ... ..	294,049	0.215											294,049
Netherlands ... ..	1,546,676	1.132			42,999		52,134		293,333	849,857			308,353
Norway ... ..	72,292	0.053					72,292						
Portugal ... ..	80,546	0.059			31,477				49,069				
Spain ... ..	300,184	0.220			231,135				69,049				
Sweden ... ..	12,183,218	8.913			137,099		3,318,141		5,265,348	3,447,367	15,263		55,211
United Kingdom ... ..	3,972,347	2.906			826,263		1,775,966	41,658	453,843	788,368	31,038		
Total Europe ... ..	20,086,355	14.696			2,033,575		6,060,159	41,658	6,130,642	5,085,592	60,897		673,832
<b>Others</b>													
Africa ... ..	3,438,535	2.516			260,837	1,686	670,803	702,278	1,087,448	634,668	80,815		
Azores ... ..	125,891	0.092			125,891								
Canary Islands ... ..	541,528	0.396							217,929	323,599			
Cape Verde Islands ... ..	11,537	0.008							11,537				
Conakery ... ..	81,317	0.060						9,637		71,680			
Guam ... ..	183,112	0.134			183,112								
Total Others ... ..	4,381,920	3.206			569,840	1,686	670,803	711,915	1,316,914	1,029,947	80,815		
Total Cargoes ... ..	127,307,334	93.140	14,005,234	152,521	8,876,926	188,025	19,211,184	6,506,544	12,457,142	77,216,742	1,263,140	77,464	1,357,646
Foreign Bunkers ... ..	9,375,790	6.860			135,227	2,165			1,188,384	8,031,392	18,554		68
Total Exports ... ..	136,683,124	100.000	14,005,234	152,521	9,012,153	190,190	19,211,184	6,506,544	13,645,526	85,248,134	1,281,694	77,464	1,357,714

Tucupita Fuel (Fuel Oils) Transhipped to Surinam

<sup>1</sup>Total Exports of "Other Refined Products" was 4,769 bbls. (64) French Guiana, (1,923) Guyana, (1,189) Surinam, (1,071) British West Indies, (522) French West Indies.

<sup>2</sup>Other Central America – El Salvador (29,159), Panama (456,095), Nicaragua (34,543).

<sup>3</sup>Other South America – Colombia (164,346), Paraguay (7) Peru (150,881).

<sup>4</sup>British Antigua, Anguilla, Bahamas, Barbados, Bermuda, Dominica, Grand Cayman, Grenada, Jamaica, Montserrat, St. Kitts, St. Lucia and St. Vincent.

<sup>5</sup>French – Guadeloupe, Martinique, St. Barths, St. Maarten.

<sup>6</sup>Netherlands – Curacao, Saba.

<sup>7</sup>Other West Indian Islands – Cuba (753,900), Dominican Republic (866,815), Haiti (24,557).

<sup>8</sup>Africa – Ango Ango Cameroon, Congo, Dahomey, Gambia, Ghana, Guinea, Ivory Coast, Liberia, Nigeria, Republic of Congo, Senegal, Sierre Leone, Tojo, Republic of Zaire.

**APPENDIX VI**  
**Movement of Refinery Products – 1972**  
*(Quantities in Barrels)*

Inventory Name	Opening Inventory	Production	Imports	Total	Purchases etc. from other Petroleum Markets	Sales etc. to other Petroleum Markets	Local Consumption				Cargoes	Foreign Bunkers	Gains and Losses	Closing Inventory	Total
							Own Use	Retails etc.	Local Bunkers	Total					
Liquified Gases	5,917	363,443	5,214	374,574	279,616	279,616	565	213,207		213,772	152,521		(2,770)	11,051	374,574
Aviation Gasolines	15,894	227,043		242,937	115,824	115,824		9,102	21,202	30,304	188,025	2,165	91	22,352	242,937
Motor Gasolines	1,379,131	20,147,982	111,854	21,638,967	2,441,391	2,454,138	13,703	1,493,910		1,507,613	19,210,814		151	907,642	21,626,220
Domestic Gasolines	35	40		75	12,747		3	12,348		12,351	370		28	73	12,822
Aviation Turbine Fuels	386,114	9,451,378	134,482	9,971,974	1,004,924	1,056,349		252,086	181,487	433,573	8,876,926	135,227	(181)	475,004	9,920,549
Kerosine	113,002	6,765,999	98,566	6,977,567	874,457	823,032	516	246,483		246,999	6,462,320		491	319,182	7,028,992
White Spirit	3,082	9,193		12,275	4,456	4,456	3,383	4,466		7,849	2,566			1,860	12,275
Vaporising Oil	9	41,656	2,314*	41,665	2	2		2		2	41,658			5	41,665
Gas Oil	1,274,465	12,863,111	339	14,140,229	3,212,438	3,207,539	81,993	425,369	225,253	732,615	12,383,033	403,079	3,018	623,383	14,145,128
Marine Diesel	149,555	829,813	690,263*	979,368	671,899	669,127	50	18,436	4,139	22,625	73,839	785,305	(4,648)	105,019	982,140
Fuel Oils	3,613,460	85,421,981	73,227	89,798,931	6,171,006	6,167,040	134,693	181,181		315,874	77,216,742	8,031,392	(1,590)	4,240,479	89,802,897
Tucupita Fuels	10,674**		807,784**	818,458**							104,987**		641,037**	72,434**	818,458**
Lubes & Greases	179,583	1,237,914	1,758*	1,493,650	36,939	36,939	12,602	58,023	803	71,428	1,263,140	18,554	470	140,058	1,493,650
Asphalt Products	16,021	184,738	569	201,328	176,351	176,351	1,428	110,227		111,655	77,464		1,367	10,842	201,328
Unfinished Oils	838,251	(153,562)		684,689			2,199			2,199				682,490	684,689
Petrochemicals	165,082	1,327,932	9,733	1,502,747	6,873	6,873	1	7,512		7,513	1,352,877			142,357	1,502,747
Other Finished Prod.	3,376	19,530	141*	24,749	14,145	14,145	1,101	15,665		16,766	4,769	68	362	2,784	24,749
<b>TOTALS</b>	<b>8,142,977</b>	<b>138,738,191</b>	<b>694,476*</b> <b>510,081</b>	<b>148,085,725</b>	<b>15,023,068</b>	<b>15,011,431</b>	<b>252,237</b>	<b>3,048,017</b>	<b>432,884</b>	<b>3,733,138</b>	<b>127,307,064</b>	<b>9,375,790</b>	<b>(3,211)</b>	<b>7,684,581</b>	<b>148,097,362</b>

\*These amounts represent "Other Receipts" due to either the transfer of products on the return of products from abroad.

\*\*Not included in any Total.



APPENDIX VII

Movement of Crude and C.H.P.S. Year Ended 31st December, 1972

(All quantities in barrels)

Month	Production	Imports	Decrease in Inven- tories	Totals	Purchases & Exchanges from Other Companies	Sales & Exchanges to Other Companies	Own Use	To Refining	Exports	Gain & Losses	Total
January	3,876,528	9,199,443	123,471	13,199,442	2,717,541	2,717,541	307	13,025,441	158,668	15,026	13,199,442
February	3,738,241	8,472,922	(173,092)	12,038,071	2,166,529	2,166,529	331	11,298,867	772,906	(34,033)	12,038,071
March	4,159,639	9,328,306	199,641	13,687,586	2,361,411	2,316,411	306	12,208,546	1,348,050	130,684	13,687,586
April	4,246,952	9,491,594	(567,583)	13,170,963	2,399,383	2,399,383	294	12,470,753	743,698	(43,782)	13,170,963
May	4,445,529	9,387,349	989,981	14,822,859	2,439,576	2,439,576	308	13,257,790	1,625,914	(61,153)	14,822,859
June	4,334,807	10,609,098	(678,521)	14,265,384	2,624,196	2,624,196	291	13,180,363	939,537	145,193	14,265,384
July	4,361,105	9,147,897	161,366	13,670,368	2,446,715	2,446,715	328	12,619,589	1,239,371	(188,920)	13,670,368
August	4,529,830	9,717,637	(898,953)	13,348,514	2,680,426	2,680,426	302	12,363,836	952,017	32,359	13,348,514
September	4,328,493	7,381,560	(250,627)	11,459,426	2,367,571	2,367,571	293	10,377,706	1,244,348	(162,921)	11,459,426
October	4,324,613	8,393,267	(512,442)	12,205,438	2,421,615	2,421,615	673	10,886,264	1,226,025	92,476	12,205,438
November	4,232,573	6,660,275	916,198	11,809,046	2,311,205	2,311,205	281	10,512,660	1,422,348	(126,243)	11,809,046
December	4,724,270	9,360,426	267,301	14,351,997	2,666,790	2,666,790	499	11,916,703	2,332,352	102,443	14,351,997
Total	51,302,580	107,149,774	(423,260)	158,029,094	29,602,958	29,602,958	4,213	144,118,518	14,005,234	( 98,871)	158,029,094

APPENDIX VIII

Summary of Crude Oil Assessed for Crown Royalty with Prices and Analysis, 1972  
 (For half-yearly Assessment Periods Ending 30th June and 31st December)  
 1 Barrel = 34 9726 I.G.

Company	Net Royalty production barrels	Royalty		Sub Division of (Royalty) Crude into Products as R.L.E.I. Analysis											
		10% assessed bbls.	Value \$	Average price barrels \$/Bbls.	Light Fraction			Gas Oil						Fuel Oil	
					Quantity bbls.	Percentage	Tetre-Ethyl lead to blend to 70/72 Oct. Gas M/S	53-57 D.I. barrels	48-52 D.I. barrels	43-47 D.I. barrels	No. 2 fuel barrels	Total gas oils barrels	Percentage	Quantity bbls.	Percentage
T.T.P.C.L. ...	2,928,406	292,841	1,345,401	4.63	27,359	9.34	1,212,847.00	173	143	1,798	72,092	74,206	25.34	191,276	65.32
P.C.O.L. ...	20,455	2,046	10,526	5.14	494	24.15	107,525.60	-	194	-	364	558	27.27	994	48.58
Estate of Timothy Roodal ...	302	30	138	4.60	1	3.33	-	-	-	-	9	9	30.09	20	66.67
S.T.L. ...	1,488,372	148,837	739,964	4.97	40,588	27.27	10,120,459.85	16,042	-	8,908	4,313	29,263	19.66	78,986	53.07
Tricentrol Ltd. ...	185,347	18,535	92,201	4.97	3,468	18.71	663,440.97	-	236	2,578	2,219	5,033	27.15	10,034	54.14
T.N.A. ...	9,454,554	945,455	4,197,804	4.44	156,221	16.52	-	66,818	69,714	-	-	136,532	14.44	652,702	69.04
T.T.I. ...	5,440,865	544,087	2,748,895	5.05	81,794	15.03	21,706,045.03	-	91,457	3,125	82,871	177,453	32.62	284,840	52.35
T.T.P.C.L. - Galeota	118,450	14,806	96,759	6.54	1,156	7.81	-	-	-	-	7,931	7,931	53.56	5,719	38.63
Amoco T.O.C. ...	3,526,116	440,764	3,007,379	6.82	33,608	7.63	-	-	-	-	314,642	314,641	71.38	92,515	20.99
Total and Averages ...	23,162,867	2,407,401	12,248,067	5.09	344,689	14.32	33,810,318.45	83,033	161,744	16,409	484,441	745,626	30.97	1,317,086	54.71
T.T.P.C.L. ...	3,043,690	304,369	1,594,398	5.24	27,728	9.11	837,957.93	109	150	1,414	77,290	78,963	25.94	197,678	64.95
P.C.O.L. ...	19,704	1,970	11,905	6.04	500	25.38	108,012.87	-	100	110	390	600	30.46	870	44.16
Estate of Timothy Roodal ...	285	29	146	5.03	1	3.45	-	-	-	-	8	8	27.59	20	68.96
S.T.L. ...	1,383,999	138,400	784,665	5.67	34,807	25.15	8,233,556.15	13,940	-	8,801	4,500	27,241	19.68	76,352	55.17
Tricentrol Ltd. ...	171,924	17,192	97,708	5.68	32.33	18.81	521,970.30	-	342	2,046	2,211	4,599	26.75	9,360	54.44
T.N.A. Ltd. ...	9,369,041	936,904	4,741,006	5.06	147,754	15.77	45,950,769.00	-	137,392	-	-	137,392	14.66	651,758	69.57
T.T.I. ...	4,900,599	490,060	2,821,943	5.76	73,780	15.06	16,700,511.96	-	84,002	-	75,461	159,463	32.54	256,817	52.40
T.T.P.C.L. - Galeota	333,185	41,648	299,763	7.20	3,625	8.70	-	-	-	-	22,238	22,238	53.40	15,785	37.90
Amoco T.O.C. ...	5,753,987	719,249	5,548,552	7.71	54,339	7.55	-	-	-	-	552,434	552,434	76.81	112,476	15.64
Totals and Averages ...	24,976,414	2,649,821	15,900,086	6.00	345,767	13.05	72,352,778.21	14,049	221,986	12,371	734,532	982,938	37.09	1,321,116	49.86
Years, Totals and Averages ...	48,139,281	5,057,222	28,148,153	5.57	690,456	13.65	106,163,096.66	97,082	383,730	28,780	1,218,973	1,728,564	34.18	2,638,202	52.17

**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 1970, 1971 and 1972 is shown in the following Table:—

Source of revenue	Assessment for Half Yearly Periods Ending					
	31.12.72	30.6.72	31.12.71	30.6.71	31.12.70	30.6.70
	\$ ¢					
Royalty on Natural Gas ...	377,964.00	392,007.00	350,055.00	344,037.00	287,358.00	284,309.00
Royalty on Natural Gasoline	30,299.00	26,038.00	31,927.00	32,462.00	32,002.00	33,552.00
Minimum Rent not Off set by Royalty on Crude Oil ...	671,135.00	671,134.00	723,661.00	701,001.00	801,885.00	505,527.00
Royalty on Crude Oil ...	15,900,086.00	12,248,067.00	11,636,968.00	13,607,834.00	14,733,503.00	11,224,211.00
Half Yearly Total ...	16,979,484.00	13,337,246.00	12,742,611.00	14,685,334.00	15,854,748.00	12,047,599.00
Yearly Totals ...	30,316,730.00		27,427,945.00		27,902,347.00	

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

Substance assessed for royalty	Unit	Half Yearly Period Ending					
		31.12.72	30.6.72	31.12.71	30.6.71	31.12.70	30.6.70
Natural Gas ... ..	M.C.F.	25,187,118	26,133,816	23,337,038	22,935,788	19,157,183	18,953,950
Natural Gasoline ... ..	I.G.	1,107,098	1,216,731	1,481,476	1,467,072	1,769,967	1,878,133
Crude Oil – Gross ... ..	bbl	*26,518,073	24,098,355	21,421,693	22,507,212	23,686,131	23,878,410
Crude Oil Used Free of Royalty	bbl	19,866	22,999	58,586	76,392	200,060	216,177
Crude Oil – Net ... ..	bbl	26,498,207	24,075,356	21,363,107	22,430,820	23,486,071	23,662,233
Crude Oil Average Royalty Value	\$T.T.	6.00	5.09	5.45	6.07	6.10	4.72

\*Net Royalty Production barrels shown at Appendix VIII totals 23,162,867 and 24,804,490 in the first and second half yearly totals. The difference is the additional 2½% royalty paid by Amoco: 911,141 barrels in the first half year and 1,521,793 in the second.

The data used to evaluate crude oil for Crown Royalty Assessment for each of the last six half-yearly periods together with the royalty rates on. Casing Head Petroleum Spirit for each of these periods are shown in the following Tables:—

Product	Average Price in T \$ T Currency per Barrel of 34.9726 I.G. for Half Year Ended					
	31.12.72	30.6.72	31.12.71	30.6.71	31.12.70	30.6.70
Bunker C. Grade Fuel ... ..	4.166310	3.734406	4.863252	5.815735	6.236736	3.55913
No. 2 Fuel ... ..	8.629480	7.739545	7.987711	8.253590	7.984711	7.904080
43–47 D.I. Gas Oil ... ..	8.703890	7.739545	7.987711	8.311493	8.094081	8.019716
48–52 D.I. Gas Oil ... ..	8.703890	7.739545	7.987711	8.311493	8.129755	8.124895
53–57 D.I. Gas Oil ... ..	8.782321	7.836905	8.090118	8.361869	8.164854	8.230074
70–72 Oct M. Leaded Motor Gas ...	8.934064	7.263406	7.664908	7.872583	7.510376	7.411376
Average Middle rate for sight draft on N.Y. & T \$ T currency for U.S. \$1.00 ... ..	2.003266	1.854476	1.950601	1.996298	2.017465	2.003416
Value of Tetra-Ethyl Lead in T.T. cents per millimetre ... ..	0.45357	0.45314	0.430055	0.408039	0.406388	0.399139
Royalty in T.T. cents per gallon on natural Gasoline (C.H.P.S.) ... ..	2.516096	2.041251	2.154208	2.212712	2.108736	2.080698

The half-yearly volume of products to which the above prices for 1972 were applied respectively in calculating royalty on Crude Oil will be found in Appendix VII.

**APPENDIX X**  
**The Asphalt Industry**

The following table shows, for the year 1970, 1971 and 1972, the quantity of Asphalt extracted from the Pitch Lake and the quantities of derived products which were exported and consumed locally.

NATURAL ASPHALT					Tons		
					1970	1971	1972
Extracted by Ministry of Works for local use	...	...	...	...	47,595	36,160	42,200
Extracted by the Trinidad Lake Asphalt Company	...	...	...	...	80,723	85,743	71,427
Total	...	...	...	...	128,318	121,903	113,627
<b>Derived Products Manufactured by the Company</b>							
<i>Exported</i>	—	Crude Asphalt	...	...	—	—	—
	—	Dried Asphalt	...	...	61,511	54,179	50,643
	—	Cement Asphalt	...	...	1,199	1,015	941
Total	...	...	...	...	62,710	55,194	51,584
<i>Local Sales</i>	—	Crude Asphalt	...	...	1,102	636	512
	—	Dried Asphalt	...	...	567	518	241
	—	Cement Asphalt	...	...	108	234	182
Total	...	...	...	...	1,777	1,388	935

Note: The above tabulation 1 long ton = 2,240 lbs.

*Central Statistical Office Printing Unit  
Trinidad and Tobago*