

TRINIDAD AND TOBAGO



MINISTRY OF ENERGY AND NATURAL RESOURCES

ANNUAL REPORT

FOR THE YEAR

1985

354:665.6
(729.87)

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OVERVIEW

Nineteen eighty five gave little indication of the dramatic events that were to unfold in the international petroleum market as the year closed, since for much of the latter half of the year the international petroleum market tightened and crude oil prices were to rise. As a consequence, the levels of activity, investment, production and refinery product output, all showed positive growth over those of the previous year, making this year the best for the domestic petroleum industry in recent times.

The Government successfully concluded two major purchases, the first of which involved the acquisition of certain assets of Texaco Trinidad Incorporated, including all land producing areas, extensive real estate and the refinery at Point-a-Pierre. The second, which was completed in November 1985, saw the purchase by Government of the "B" shares held by the minority partner, Tesoro Petroleum Corporation, in Trinidad-Tesoro Petroleum Company. By year end, the new, nationally owned company was re-named Trinidad and Tobago Petroleum Company Limited (TRINTOPEC) and efforts to rationalize land producing operations between TRINTOC and TRINTOPEC were underway.

Nineteen eighty five also saw field visits of a team of technical experts under the aegis of the United Nations Development Programme/Inter-American Development Bank. The team of experts were reviewing, together with the government and its agencies, the entire energy sector in Trinidad and Tobago, with the objective of assessing the current level of development and likely areas for priority attention in the near and medium term future.

During the course of this year, the Ministry took an active role in assisting a special appointed Task Force, under the chairmanship of Mr. F.B. Rampersad, President of the National Institute of Higher Education, Research, Science and Technology, and which involved several other Government Ministries and State Enterprises, to review the many issues involved in natural gas development, and evolve strategies and programmes that would ensure the continuing efficient development of the natural gas industry in Trinidad and Tobago. Towards this end, the Ministry commissioned an update of the Gas Reserves Study of Trinidad and Tobago, using the firm of consulting engineers, of Ryder Scott Company, Petroleum Engineers, Houston, U.S.A.

In summary therefore, 1985 was one of the best years for the petroleum industry in terms of activity and output. Major structural changes also took place which would require much detailed study, review and follow-up, if the industry is to enter the next decade in as healthy a condition as is possible.

GEOLOGICAL SECTION

The Geological Section divided administratively into three sub-sections is as follows:-

- i) Petroleum Geology
- ii) Geophysics
- iii) Industrial Minerals and Engineering Geology

The activities of these sub-sections during 1985 are outlined below.

Petroleum Geology

The major routine function of the Petroleum Geology Section is the evaluation of all proposals submitted by the oil companies for the drilling of exploratory and "semi-exploratory" wells. This involves the classification of the wells, monitoring of their progress while drilling, the analysis of the results obtained and the witnessing of exploration well tests.

The Petroleum Geology Section also participated in several projects in association with the Ministry's engineers. These were as follows:-

- (a) Estimation of gas reserves in the Ibis/Pelican area of the South-East Coast Consortium.
- (b) Evaluation of the two-phase drilling programme proposed by Amoco for the development of the Mora field.
- (c) Investigation of the steam breakouts in TTPCL's Palo Seco Thermal Scheme.
- (d) Preliminary study of the South-west Soldado Field.

Geophysics

During 1985, the Geophysics Section continued to be actively involved in the re-interpretation of seismic data in open and under-explored areas, and in the routine evaluation of proposals from oil companies for conducting seismic surveys, well site surveys and the drilling of exploratory wells.

Re-interpretation of seismic data continued in Block S-7b and in blocks off the north coast of Trinidad as well as in the Galeota Ridge, Cassia and Columbus Channel areas. Stratigraphic interpretation of the seismic data is being applied wherever the conditions for such interpretation are applicable. Reprocessing of the seismic data in Block S-7b for stratigraphic interpretation purposes was carried out in early 1985 in Houston, Texas, at a cost of approximately TT \$93,000.00. Ministry geophysicists were on site to monitor the processing of the data.

During 1985, all preparatory work for the Northern Basin Vibroseis Reconnaissance Seismic Survey (approximately 350 km) was completed, and preliminary time and cost estimates were obtained from selected overseas contractors. The project is expected to be implemented in 1987.

The section also assisted in the evaluation of 10 of the proposals for exploratory drilling submitted by oil companies, of which 6 were actually drilled during 1985. (TTPCL - 3, Amoco - 2, Trintoc - 1).

The section evaluated 13 proposals for well site surveys, all of which were submitted by Amoco Trinidad Oil Company (ATOC). Evaluation of proposals for the subsequent monitoring of more than 10 000 km of seismic surveys submitted by three oil companies was undertaken. Trinmar Limited concluded its DIGISEIS 3-D seismic operations in the South-west Soldado area during the first quarter of 1985, achieving a total of some 114 sq. km of subsurface coverage. Trintoc carried out an experimental seismic survey in the Emerald Shoals area (Block 3) off the East Coast of Trinidad, and Amoco engaged in an intensive 3-D programme which covered many of its major

producing fields off the south-east coast of Trinidad. The programmes were as follows:

Trinmar Ltd.	:	S.W. Soldado	3-D	—	70 sq km
Trintoc Ltd.	:	Block 3	2-D	—	83 km
Amoco Ltd.	:	East Coast	3-D	—	9 300 km in South Galeota Ridge, Cacao, Poui areas.
			2-D	—	1 500 km in SEG - Cassia - EQB, Omega and North Samaan areas

At the end of 1985, Amoco had completed approximately 10% of a 2 300 km 3-D programme in the Samaan area, and nearly 40% of a 300 km 2-D programme in the North Galeota Ridge area.

During the latter part of 1985, the Geophysical Section was involved in the preparation of the 1986 Competitive Bidding Order for the deepwater blocks off the north and east coasts of Trinidad and Tobago.

Industrial Minerals and Engineering Geology

Industrial Minerals

Through this sub-section, the Geological section undertakes the majority of the work of the Development Programme (Research and Development). In 1985, projects intended to identify and quantify the mineral resources of the country were continued. These projects have been implemented by the Quarry Unit, which is also required to monitor quarry operations on a routine basis and to investigate complaints relating to the quarry industry.

In the light of the present economic situation, attempts were made to reduce costs without sacrificing production levels or quality control and without reducing employment levels. The strategies adopted were relatively successful in that approximately \$850,000.00 were spent on the various projects as opposed to approximately \$950,000.00 during the previous year. Approximately 185 hectares of land were investigated for sand and gravel, with 292 holes of a cumulative depth of 1 806 metres being drilled to evaluate the lithology. This represented an increase of 21.6% in the number of holes drilled and 15.1% in depth penetrated over the figures for 1984. There was also an increase of 98% in the number of survey lines run with 51 252 metres being recorded in 1985, constituting Phases I and II of the Tapania sand and gravel survey. In addition, Phase III was investigated and evaluated. A total of 2 220 915 cu. metres of reserves, with an estimated value of approximately \$45,000,000 have been identified.

Royalties collected in 1985 have amounted to \$1,540,117.45 while a sum amounting to \$637,373.62 was outstanding.

No new quarry lands were allocated in 1985 but 32.4 hectares of abandoned quarry lands were re-allocated to various operators.

Preparatory investigations of the site and of the logistics of a survey to evaluate 60 hectares of land in the Oropouche/Turure area for clays suitable for ceramics, were undertaken in 1985. This survey, which will involve laboratory analyses of the samples, will begin in 1986.

Sixteen investigations were undertaken by Inspectors of the Quarry Unit. The subjects of these inquiries varied from unauthorised quarry operations and encroachment on state lands by bona fide operators, to the pollution of rivers by quarry effluent.

In the study of pollution originating from quarries, an attempt was made to quantify the amount of particulate mineral wastes produced by the quarries located along the Oropouche river. An attempt was also made to design sedimentation ponds of adequate dimensions to remove such wastes from suspension. Both the field and laboratory aspects of this investigation were carried out towards the end of 1985. The draft report indicated the existence of severe limitations of space available for sedimentation pond systems at the smaller quarries. Alternative methods of sediment removal, such as filtration devices, were recommended for quarries where space constraints exist.

This project revealed the general lack of expertise available locally for dealing with this type of pollution. In addition, the absence of local standards regarding the allowable sediment levels which can be tolerated by streams, increases the difficulty of arrival at a suitable solution to the problem.

Production of sand and gravel was estimated to be approximately 159 058 cubic metres (actual figures not available) with an approximate value of \$4,222,695. A total of 31 daily paid workers have been employed on a continuous basis by the Ministry of Energy and Natural Resources, and it is estimated that over 500 persons find employment in the quarries which are operational, while many more people are employed transporting the material to the consumer.

Twenty-eight scheduled visits were made to the quarrying areas located in the counties of St. George, St. Andrew/St. David, Victoria, Caroni and St. Patrick. On these visits, quarries on both state and private lands were monitored to ensure that the terms and conditions of the quarry agreements were being adhered to.

The first phase of a project to produce an inventory of the non-petroleum mineral resources of the country was completed in August 1985. This document is being edited at present and will be published shortly.

Quarry Laws

The Attorney General's office completed a first draft of an Act to amend the Mines, Borings and Quarries Act Chap. 61.01, in consultation with officers of this Ministry. The idea behind this amendment is to bring the direct control of mining activity in the country under this Ministry. The amendment is expected to be laid in Parliament by early 1987.

Engineering Geology

A project to map all landslide activity in Trinidad, with the aim of producing a Landslide Susceptibility Map of the island, was continued in 1985. The project entails the mapping of the locations of all major landslides and will attempt to correlate slide occurrence with slope characteristics, soil and rock types, degree of weathering, rainfall and other factors. The project was redesigned in keeping with the present availability of personnel and at year's end approximately 70% of the Northern Range had been covered.

General

In-house training in the Geological Section was continued in 1985 and members of staff were also exposed to courses conducted by the Central Training Unit and other local bodies both in technical and administrative areas. Field trips were also organised for members of staff as part of the internal training programme.

Four members of the section presented technical papers at the 1st Annual Conference of Trinidad and Tobago organised by the Geological Society of Trinidad and Tobago in 1985.

CRUDE OIL PRODUCTION

Trinidad and Tobago's crude oil production averaged 176,052 b.o.p.d. an increase of 3.6% when compared to the 1984 figure. All companies recorded production increases, the largest being shown by P.C.O.L., whose production increased by 61.3%. Total marine production averaged 136,501 b.o.p.d. an increase of 3.1% when compared to the figure for last year. This accounted for 77.5% of the country's total production as compared to 77.9% for 1984.

Amoco Trinidad Oil Company registered an average daily production of 93,511 barrels up 3.7% from the previous year's average. Production varied from a high of 98,561 b.o.p.d. in July to a low of 82,820 b.o.p.d. in December. Production for the first three quarters of the year averaged 95,396, 96,531 and 96,890 b.o.p.d. respectively. During the last quarter of the year, however, production fell drastically to an average of 85,302 b.o.p.d. This decrease in production was due mainly to the low success experienced in initial completions and workovers. When compared with 1984, production increased in the Teak, Poui and Cassia fields, but declined in the Samaan field by 20.7%.

Trinidad Northern Areas (Trinmar) had an average daily output of 38,993 barrels, a 2.3% rise over the production for the previous year. The increase was due mainly to greater workover activity, better gas lift supply and new oil from drilling. Production increases occurred only in the fields where drilling activity was concentrated, namely South West Soldado and Main Soldado. At South West Soldado, production increased by 192% from 843 b.o.p.d. in 1984 to 2,458 b.o.p.d. in 1985, whilst at the Main Soldado field production rose by 20.8% from 9,082 b.o.p.d. in 1984 to 10,970 b.o.p.d. in 1985. Gas lift compressor problems which had adversely affected production in 1984 showed a marked decrease in 1985. Compressor running efficiency increased from the 1984 level of 62% to 73.7% during 1985.

Trinidad and Tobago Petroleum Company formerly Trinidad-Tesoro produced a daily average of 23,442 barrels, a 3.5% increase over 1984's production. The increased production was due to successful initial completions in the Palo Seco High GOR area, Central Los Bajos and North Erin, recompletions in Palo Seco and more efficient usage of steam in the thermal projects. Thermal and non-thermal land production registered increases of 4% and 6%, respectively, over last year's production, while Galeota's production declined by 0.8%. Land Fields contributed 83% of the company's total production. Oil from thermal schemes, accounted for 37.5% of the company's total crude output.

Trinidad and Tobago Oil Company Limited produced 7,107,145 barrels of crude in 1985 at an average rate of 19,472 b.o.p.d. This represents an increase of 6.2% over the corresponding consolidated 1984 production total of Trintoc and Texaco Trinidad Inc. The increased production was due to the reactivation of workover and drilling activities in leases which were formerly owned by Texaco Trinidad Inc. but were operated by Trintoc from March, 1985.

Premier Consolidated Oilfields Limited produced at an average of 634 b.o.p.d., a 61.3% increase from 1984's average of 393 b.o.p.d. The increased production was due to the successful development wells drilled in the San Francique East and San Francique West fields.

DRILLING AND COMPLETIONS

Drilling activity in Trinidad and Tobago decreased during 1985 from the levels recorded in 1984. Total depth penetrated for the year was 199 402 metres, 3.6% less than that for previous year. Exploratory and semi-exploratory drilling accounted for 30 440 metres or 15.3% of total depth penetrated; development thermal drilling contributed 40 783 metres or 20.5% and the remaining 128 179 metres represented non-thermal development drilling. Rig utilization for the year totalled 112.4% rig-months, 14.2% higher than in 1984.

A total of 197 wells were completed during 1985, 7.5% less than the number achieved during 1984. In the marine areas, 32 wells were completed consisting of 27 oil producers and 5 abandonments. On land, 165 wells were completed consisting of 129 oil producers and 20 injectors, 9 abandonments and 7 completed other. Overall completion in 1985 consisted of 156 oil producers, 20 injectors, 14 abandonments and 7 wells other.

Of the 169 development wells spudded in 1985, 126 were completed as oil producers, 13 were injectors, 4 were abandoned and 7 were completed other. Thirteen exploratory/semi-exploratory wells were spudded in 1985, of which 4 were completed as oil producers, 8 were abandoned and one was being tested at year's end.

Drilling activity at Amoco Trinidad Oil Company decreased during 1985, as shown by a 14.7% fall in the rig months recorded. Rig-months achieved, totalled 16.2, while total depth drilled was 16 793 metres representing a 34% decrease from the figure for the previous year. This drop in drilling activity was due to the utilization of 2 of the 3 drilling units available, DT 130 and SK VI, in the workover rather than the drilling mode for most of the year. Two semi-exploratory wells were drilled for the year, one was abandoned after testing and the other was being tested at year's end.

Trinidad Northern Areas (Trinmar) drilled 27,689 metres in 1985, 32.2% less than the depth achieved during 1984. The decrease was due to the operation of 1 rig during 1985 as compared to 2 for most of 1984. Eighteen wells were completed in 1985, 16 less than the number achieved in the previous year. Seventeen wells were completed as oil producers, the other was abandoned. Drilling was confined to the Main Soldado and South West Soldado fields, where 10 and 8 wells respectively, were drilled. There was no exploratory/semi-exploratory drilling by this company during the year.

Trinidad and Tobago Petroleum Company registered a 6.1% decrease in depth penetrated when it recorded 77 415 metres in 1985. Rig usage totalled 34.7 rig-months, a 39.9% increase when compared to the corresponding figure for 1984. Of the 75 wells drilled, 67 were development and 8 were exploratory/semi-exploratory.

Trinidad and Tobago Oil Company drilled a total of 70 250 metres, a 29.3% increase over the corresponding consolidated 1984 total of Trintoc and Texaco Trinidad Inc. Rig usage totalled 45.6 rig months, a 36.1% increase from last year's figure. The number of wells completed increased by 21.4% totalling 68 for the year. This overall increase in all aspects of drilling activity is due to increased drilling in leases which were formerly owned by Texaco Trinidad Inc. The land assets of Texaco Trinidad Inc. were acquired in March, 1985 by the Government of Trinidad and Tobago and operated by Trinidad and Tobago Oil Company.

Premier Consolidated Oil Fields Ltd, completed 18 wells in 1985, one less than the number recorded in 1984. Sixteen were development and the other two were semi-exploratory. Drilling was concentrated in the San Francique area where 5 wells were drilled in the East field and 3 in the West field. Nine thermal wells were drilled in Fyzabad. Total depth penetrated was 7 255 metres, almost double 1984's total. Rig months achieved 4.62 an increase of 64% over the 1984 total.

TABLE 1
SUMMARY OF STATISTICS FOR THE TRINIDAD AND TOBAGO PETROLEUM INDUSTRY: 1985 - 1982.

	UNIT	1985	1984	1983	1982
ANNUAL CRUDE OIL PRODUCTION	BARRELS	64,258,862	62,041,934	58,343,594	64,618,787
ANNUAL NATURAL GAS PRODUCTION	CU. METRES	7 496 422 244	7 227 955 536	6 318 586 981	5 480 386 335
AVERAGE G.O.R.	BARRELS/M ³	117	117	108	85
ANNUAL C.H.P.S. (NATURAL GASOLINE) PROD.	BARRELS	23,222	28,999	33,731	28,260
DAILY REFINERY CAPACITY	BARRELS/DAY	305,000	305,000	305,000	305,000
ANNUAL REFINERY THROUGHPUT	BARRELS	29,672,826	28,143,204	27,170,600	55,099,670
TOTAL WELLS COMPLETED DURING THE YEAR	NO.	197	213	180	215
AVERAGE DEPTH OF COMPLETED WELLS	METRES	1 100	1 153	1 051	1 083
TOTAL DEPTH DRILLED DURING THE YEAR	METRES	199 402	206 829	183 797	252 937
OIL AND GAS WELLS COMPL. DURING THE YEAR	NO.	156	172	162	174
DRILLING SUCCESS RATIO	PERCENT	79.2	80.8	90.5	80.9
AVERAGE RIGS RUNNING	NO.	9.4	8.2	9.5	12.8

TABLE II
SUMMARY OF EXPLORATORY AND SEMI-EXPLORATORY DRILLING IN 1985

OPERATOR	WELL NAME	LOCATION	BASIS FOR LOCATION	LAHEE EXPLORATORY CLASSIFICATION	DATE SPUDDED	DATE COMPLETED	TOTAL DEPTH IN METRES	GEOLOGICAL OBJECTIVE	RESULT/REMARKS
AMOCO TRINIDAD OIL COMPANY LIMITED	S/WEST NARIVA 1	SWN - 1	S & SSG	C2b	85.08.08	85.11.07	3 767	18-2, 19-0 20-0 SANDS	ABANDONED - AFTER TESTING
	GALEOTA RIDGE 4	GR - 4	S & SSG	A1	85.11.08		2 813	2700' & 3200' SANDS	TESTING
TRINIDAD AND TOBAGO PETROLEUM CO. LTD.	EAST GALEOTA 5	P. 3 IJ-14	S & SSG	C1	85.01.14	85.03.15	2 323	PLIOCENE & MIOCENE	ABANDONED - AFTER TESTING
	EAST GALEOTA 6	P. 7 ME 15	S & SSG	C1	85.04.21	85.07.12	2 952	PLIOCENE & MIOCENE	ABANDONED - DRY
	COCOS 1	P. 7 DE-8	S & SSG	C3	85.03.16	85.04.19	2 325	PLIOCENE & MIOCENE	ADANDONED - MECH-ANICAL REASONS
	GALEOTA D-16	P. 11 FK-13	S & SSG	B2b	83.03.28	85.04.26	2 137	UPPER MIOCENE 2	COMPLETED - OIL
	ERIN 53	F. 20 BI-18	S & SSG	B1	85.02.16	85.04.30	2 726	LOWER FOREST SANDS	COMPLETED - OIL
	ERIN 75	F. 20 BI-18/ BH-15	S & SSG	C2b	85.09.26	85.10.30	1 864	CRUSE SANDS	ABANDONED - MECH-ANICAL REASONS
	PALO SECO 1281	GB-16 GA-16	S & SSG	C1	85.02.24	85.03.12	1 542	CRUSE SANDS	ABANDONED - MECH-ANICAL REASONS
	MACKENZIE 76	F. 15.00 - 2/ NE-18	S & SSG	C1	85.10.16	85.11.17	2 856	FOREST SANDS	ABANDONED - DRY
	FYZABAD 1015	G. 17 AN-18	S & SSG	B1	85.07.11	85.09.24	3 178	INTERMEDIATE HERRERA SDS.	COMPLETED - OIL
TRINIDAD AND TOBAGO OIL COMPANY LIMITED	P/FORTIN C'TRL 331	F. 15/NN-8	S & SSG	B2b	84.10.29	85.03.08	3 163	173' D' CRUSE SANDS	COMPLETED - OIL
	PENAL 287	G. 12/PJ-10 (4)	S & SSG	B1	85.05.08	85.06.27	2 825	OVERTHRUST HERRERA	COMPLETED - OIL
PREMIER CONSOLIDATED OILFIELDS LIMITED	SAN FRANCIQUE 42	G. 12 FG-1	S & SSG	B1	85.03.18	85.03.31	537	MIDDLE CRUSE SANDS	COMPLETED - OIL
	SAN FRANCIQUE 46	G. 12 FI-8	S & SSG	C1	85.11.13	85.11.21	732	MIDDLE CRUSE SANDS	ABANDONED - DRY

TABLE III

SUMMARY OF DEVELOPMENT DRILLING IN TRINIDAD AND TOBAGO - 1985

FIELD, AREA OR DISTRICT	NUMBER OF OIL PRODUCERS COMPLETED	NUMBER OF ABANDONED WELLS	TOTAL COMPLETION	TOTAL DEPTH DRILLED IN METRES	NUMBER OF RIGS ACTIVELY DRILLING DEVELOPMENT WELLS ON 31st. DECEMBER, 1985
1	17	1	18	27 689	-
2	43 (a)	-	43 (a)	29 304 (a)	-
4	70 (b)	2	72 (b)	59 956 (b)	2
5	27 (c)	1	28 (c)	14 478 (c)	2
8	10	2	12	25 926	3
9	1	-	1	1 396	-
11	9	-	9	10 213	-
TOTAL	177	6	183	168 962	7

- (a) INCLUDES 2 WELLS COMPLETED OTHER
- (b) INCLUDES 20 STEAM INJECTORS - DEPTH 5 976 METRES
- (c) INCLUDES 5 WELLS COMPLETED OTHER

TABLE III A 1985
KEY TO AREA – NUMBER ON TABLE III

AREA NUMBER	DESCRIPTION
1	SOLOA00, NORTH MARINE, COUVA MARINE, MANICOU, (GULF OF PARIA BLOCK 1)
2	PT. LIGOURE, F.O.S., AREA IV AND GUAPO, POINT FORTIN WEST AND CENTRAL, PARRYLANDS, CRUSE, GUAPO, BOODOOSINGH
3	BRIGHTON (LAND AND MARINE), VESSIGNY, MERRIMAC
4	PALO SECO, LOS BAJOS, ERIN, CENTRAL LOS BAJOS, MACKENZIE
5	FOREST RESERVE, FYZABAD, POINT FORTIN EAST, NEW DOME, SAN FRANCIQUE, APEX QUARRY
6	QUARRY, COORA, QUINAM, MORNE DIABLO
7	OROPOUCHE
8	PENAL, BARRACKPORE, WILSON, SIPARIA
9	MORUGA NORTH AND WEST, ROCK DOME, INNISS, TRINITY, CATSHILL, BALATA, BOVALLIUS
10	GUAYAGUAYARE, MORUGA EAST
11	GALEOTA, TEAK, SAMAAAN, POUI, DOLPHIN (BLOCK 6) DIAMOND PROSPECT, EAST COAST, REVERSE 'L' EAST, REVERSE 'L' WEST
12	SOUTH MARINE (SOUTH COAST)
13	TABAQUITE, POINTE-A-PIERRE
14	ICACOS, SOUTH WEST PENINSULA
15	NORTH COAST MARINE AREA

**TABLE IV
OIL PRODUCTION BY FIELDS, AREAS OR DISTRICTS - 1985**

COMPANY, FIELDS AREAS OR DISTRICTS	DISCOVERY YEAR	TOTAL WELLS COMPLETED	ANNUAL PRODUCTION		CUMULATIVE PRODUCTION THROUGH DECEMBER, 1985
			1985	1984	'000 BARRELS
			BARRELS	BARRELS	
TRINIDAD & TOBAGO OIL CO. LTD.					
BALATA EAST AND WEST	1952	73	134,028	145,889	2,953
CATSHILL	1950	134	133,320	153,220	22,766
INNISS	1956	41	43,952	51,149	6,133
ROCK DOME	1962	3	-	-	16
PENAL	1936	289	481,836	479,247	61,293
NEW DOME	1928	31	6,422	7,657	3,127
POINT FORTIN EAST	1929	168	369,065	405,459	26,078
SAN FRANCIQUE	1929	27	9,407	9,437	5,962
AREA IV AND GUAPO	1963	192	433,952	465,578	37,725
PARRYLANDS 1 - 5	1913 - 1918	493	654,565	610,615	38,916
POINT FORTIN CENTRAL	1916	227	820,282	645,829	18,883
POINT FORTIN WEST	1907	316	178,013	177,353	20,041
LOS BAJOS	1918	29	-	-	546
ERIN	1963	4	-	-	710
MAHAICA	1954	6	-	-	-
GUAYAGUAYARE	1902	698	534,466	507,511	85,280
TRINITY	1956	95	88,511	108,780	14,974
BARRACKPORE	1911	341	531,308	375,085	29,172
OROPOUCHE	1944	128	76,766	94,137	6,510
MORNE DIABLO/QUINAM	1926	91	17,791	22,640	7,643
FOREST RESERVE	1913	2,038	1,559,703	1,499,302	255,733
PALO SECO	1929	39	719,250	680,970	91,523
BRIGHTON	1903	615	196,972	141,618	72,148
ERIN	1963	23	-	1,285	2,305
COUVA MARINE	1963	6	-	-	301
CRUSE	1913	150	25,740	34,282	25,874
WILSON	1936	82	76,973	62,514	19,845
TABAQUITE	1911	226	14,823	14,946	1,744
BALATA CENTRAL	1949	6	-	-	371
MAYARO		9	-	-	-
TOTAL		6,579	7,107,145	6,694,503	858,571
TRINIDAD & TOBAGO PETROLEUM CO. LTD					
FYZABAD/APEX QUARRY	1920 - 1938	1,022	1,428,982	1,552,934	167,655
GUAPO/BOODOOSINGH	1922	643	797,462	816,781	44,693
MORUGA EAST	1953	77	47,740	42,264	2,640
MORUGA NORTH	1956	23	5,429	5,250	1,033
MORUGA WEST	1957	129	53,607	55,495	9,135
COORA/QUARRY	1936	712	868,833	837,646	89,724
PALO SECO/ERIN/MC KENZIE	1926	1,493	3,107,875	2,884,615	110,570
NORTH MARINE	1956	19	-	-	1,269
GALEOTA	1963	105	1,443,075	1,454,241	12,935
CENTRAL LOS BAJOS	1973	192	784,913	596,494	6,611
OROPOUCHE	1975	3	10,408	10,224	256
BARRACKPORE	1977	4	8,112	9,538	103
TOTAL		4,422	8,556,436	9,265,482	446,624
PREMIER CONSOLIDATED OILFIELDS LIMITED					
SIPARIA	1957	5	8,021	5,911	851
SAN FRANCIQUE	1929	99	120,426	51,986	3,261
FYZABAD/ROODAL	1918	265	53,432	54,630	13,273
PALO SECO	1915	83	1,572	3,130	1,639
BARRACKPORE	1970	8	43,424	22,610	219
ICACOS	1955	11	4,463	5,597	480
DEFUNCT FIELDS	1954	19	-	-	323
TOTAL		490	231,338	43,864	20,046
TRINIDAD NORTHERN AREAS					
FOS/FT	1954	35	116,847	152,556	6,797
SOLDADO	1955	628	14,115,498	13,796,755	435,479
TOTAL		663	14,232,345	13,949,311	442,276
AMOCO TRINIDAD OIL CO. LTD.					
TEAK	1971	89	15,883,227	15,647,633	201,915
SAMAAN	1971	46	6,483,785	8,174,973	164,624
POUI	1974	46	8,693,414	6,977,442	131,788
CASSIA	1973	7	3,071,172	2,188,726	5,884
TOTAL		188	34,131,598	32,988,774	504,211
GRAND TOTAL		12,342	64,258,862	62,041,934	2,271,728

FLUID INJECTION

Secondary oil recovery operations in Trinidad and Tobago produced approximately 8.54 million barrels of oil at an average rate of 23,384 barrels per day. This figure represents 13.3% of the country's total oil production during 1985 of 64.2 million barrels.

Although 6 new schemes were initiated this year, the total number of active projects remained at 34. This was due to the termination of 6 other projects which were deemed as having reached their economic limit.

The performance of thermal recovery projects continued to improve and production from these reached an all time high of 11,483 barrels of oil per day in 1985. Water-flood production, on the other hand, showed little change from the level of the previous year. Fluid injection operations for the period 1981 - 1985 are summarized in Table V.

WATER INJECTION

There were 22 water injection schemes in operation in 1985, and a total of 11.69 million barrels of water was injected. This represented a decrease of 22.5% from the volume injected during the previous year. This decrease was co-incident with the interruption of injection in Trinmar's 8011 and Amoco's Teak ACE water-flood projects to effect necessary repairs to their injection systems. Notwithstanding these setbacks, these companies continued to be responsible for most of the secondary oil produced in the country.

Amoco Trinidad Oil Company operated the country's largest water-flood scheme, injecting just over 8.26 million barrels of water into 5 injectors in its Teak ACE water-flood project. This was 21.7% less than in 1984, reflecting the reduction in the volume of water injected as a result of defective lift pumps and impaired sand bed filters. Repairs to these were done during August.

Oil production from the 12 producing wells averaged 8,923 bopd, 2.9% below last year's figure. An improved sweep performance brought about by the establishment of an additional offtake location in the MM01 L horizon assisted in averting a rapid decline in production.

This year also saw a further expansion of the project when the MM 1/2 sand was incorporated into the scheme. A single well is currently being used for injection into this horizon.

Trinidad Northern Areas Limited continued operating the 8011 water-flood project as a line drive project. A total of 1.11 million barrels of water was injected this year to the Cruse sand, representing a decrease of 68% from last year's figure. During the period May to December when the injection system was being overhauled, the production rate showed a 34% increase to 1,099 barrels of oil per day; field watercut averaged 41%.

Trintopex operated 10 water injection schemes in 1985, 5 of which were at Coora, 2 at Fyzabad, and one each at Galeota, Mackenzie and Palo Seco. There were 2 new projects initiated this year. The Galeota Platform C waterflood, during October; and the Coora 170 waterflood, during November. High downtime of injection equipment was experienced at the Galeota project.

Oil production from waterflood operations remained at last year's average of 578 barrels per day, but field watercuts increased to 37%. There was incremental oil production at all the schemes except at the Mackenzie and Palo Seco/UF/500 waterfloods. Waterflood oil production in both of those schemes was affected when some offtake wells were taken off production for repairs.

The total volume of water injected fell by 21% to 0.59 million barrels. There was no injection into the FM/UF/169 and FM/UF/172/1 reservoirs, where low injectivity was reported. The shortage of water also contributed to the overall reduction in the amount of water injected.

Trintoc injected water into 5 of its 10 waterflood schemes during 1985. Severe corrosion at pumping station B in the Eastern district was reported as being responsible for the lack of injection at the Guayaguayare and Navette projects. At year's end, an economic feasibility study of recommencing injection was being evaluated.

The volume of water injected was 1.73 million barrels while oil production averaged 1,248 bopd, at an average watercut of 67%. During April, a new scheme, the Area IV Cruse G waterflood, was commissioned.

THERMAL INJECTION

In 1985, 10 thermal injection projects were in operation, one more than in 1984. Overall injection of steam increased by 26% to 15.79 million barrels. At the same time, overall production from the schemes climbed by 6.3% to 11,483 barrels of oil per day.

Trintopex expanded its thermal operations in 1985 when it initiated a continuous steam injection project at Bennett Village during October. The company now operates 7 steam injection projects. The total volume of steam injected this year increased by 22.7% to 11.86 million barrels and was a reflection of a more reliable gas supply to the generators. Oil production rate correspondingly increased by 9.8% to 9,501 bopd. All projects except the Fyzabad thermal project showed increases in production.

The Palo Seco thermal project continued to be the largest producer of thermal oil in averaging 3,001 bopd. This scheme was expanded to the west by the addition of 4 new patterns. At year's end, an eastward expansion phase was still in progress. This scheme experienced a major setback during August when 8 injectors in the mature areas of the project developed casing leaks.

The Apex Quarry thermal project had a 4.5% increase in production and averaged 1,964 bopd, thereby reflecting a favourable response to the increased heating of the Lower Morn L 'Enfer 'D', 'E' and 'F' sands.

At Central Los Bajos, 12 infill oftakes and 9 injectors were drilled in an effort to improve the sweep performance of the LMLE reservoir. As a result of this, oil production increased by 48% to 1,617 bopd.

Unlike the schemes reviewed above, the Fyzabad thermal project experienced severe operational problems characterized by surface breakouts. This necessitated the temporary cessation of injection to relieve pressures from the Forest 'A' sands.

Trintoc injected steam at an average rate of 10,682 bopd. Three thermal schemes were operated - a continuous steam injection project at Forest Reserve and 2 pilot schemes at Parrylands.

At the Forest Reserve Project III, the volume of steam injected was 3.3 million barrels at an average rate of 9,134 bopd, thereby meeting the design requirement. Oil production averaged 1,483 bopd resulting in an oil steam ratio of 0.16 for the project.

Cyclic injection continued at the Parrylands 'E' pilot project and almost all wells have undergone a fourth cycle of injection. A first phase expansion of this pilot project was carried out in May.

CARBON DIOXIDE

Two immiscible carbon dioxide projects were operated and oil production rate from these schemes was 53 barrels per day. Volume of carbon dioxide injected was 1 752 548 cubic metres.

TABLE V
SUMMARY OF FLUID INJECTION IN TRINIDAD AND TOBAGO 1981 - 1985

NO. OF PROJECTS IN OPERATION AT END OF YEAR			INJECTION VOLUMES				CRUDE OIL PRODUCTION				OIL EXPRESSED AS A PERCENTAGE OF COUNTRY'S TOTAL PRODUCTION
YEAR	WATER	STEAM	CARBON DIOXIDE	CARBON DIOXIDE (M ³)	WATER AND OTHER FLUIDS (BBLS)	STEAM (BBLS)	OIL PRODUCED BY WELLS UNDER PROJECT INFLUENCE (BARRELS)				
							WATER INJECTION PROJECTS	THERMAL RECOVERY	CARBON DIOXIDE PROJECTS	ALL PROJECTS	
1981	19	12	2		19,873,027	8,735,400	5,621,353	3,356,973	26,656	9,004,982	13.0
1982	19	9	2	16 866 840	10,520,099	9,694,176	4,991,716	3,729,827	13,756	8,735,299	13.5
1983	22	9	2	8 142 789	10,104,461	11,856,630	3,834,666	3,923,088	12,580	7,770,333	13.3
1984	23	9	2	34 285 196	15,205,143	12,445,527	4,339,531	3,953,109	27,738	8,320,378	13.4
1985	22	10	2	1 753 607	11,694,141	15,759,473	4,324,372	4,191,334	19,432	8,535,138	13.3

TABLE VI
FLUID INJECTION OPERATIONS - 1985

WATER INJECTION

COMPANY	NO. OF ACTIVE PROJECTS	WATER INJECTED (bbbls)	OIL PRODUCED (bbbls)	WATER PRODUCED (bbbls)	GAS PRODUCED (M ³)	WATER CUT %
AMOCO	1	8,264,118	3,257,158	788,108	94 059 807	19.48
TRINMAR	1	1,108,114	401,024	278,254	34 233 642	40.96
TTPCL	10	593,024	210,790	120,965	4 255 340	36.50
TRINTOC	10	1,728,885	455,400	917,619	22 591 886	67.00
TOTAL	22	11,694,141	4,324,372	2,104,946	155 140 675	32.74

STEAM INJECTION

COMPANY	NO. OF ACTIVE PROJECTS	WATER INJECTED (bbbls)	OIL PRODUCED (bbbls)	WATER PRODUCED (bbbls)	GAS PRODUCED (M ³)	OIL/STEAM RATIO
TTPCL	7	11,860,417	3,467,831	3,934,855	6 340 729	0.29
TRINTOC	3	3,899,056	723,503	2,785,854	11 322 632	0.18
TOTAL	10	15,759,473	4,191,334	6,720,709	17 663 361	0.27

CARBON DIOXIDE INJECTION

COMPANY	NO. OF ACTIVE PROJECTS	GAS INJECTED (M ³)	OIL PRODUCED (bbbls)	WATER PRODUCED (bbbls)	GAS PRODUCED (M ³)	GAS/OIL RATIO (M ³ /bbbl)
TTOC	2	1 753 607	19,432	369	2 449 586	126.00
TOTAL	2	1 753 607	19,432	369	2 449 586	126.00

**TABLE VII
WATER INJECTION SUMMARY BY PROJECTS - 1985**

COMPANY	FIELD	PROJECT	WATER INJECTION (bbl)	OIL PRODUCED (bbl)	WATER PRODUCED (bbl)	GAS PRODUCED (M ³)	WATER CUT %
ATOC	TEAK	A/C/E WATERFLOOD	8,264,118	3,257,158	788,108	94 059 807	19.48
	ALL	ALL	8,264,118	3,257,158	788,108	94 059 807	19.48
TNA	SOLDADO	8011 WATERFLOOD	1,108,014	401,024	278,254	34 233 642	40.96
	ALL	ALL	1,108,014	401,024	278,254	34 233 642	40.96
TTOC	CATSHILL	CO-24	376,032	28,521	12,888	194 472	31.12
		N SAND	259,324	35,266	19,419	393 435	35.51
		CO-30. BLK 38	161,743	10,958	561	76 831	4.87
	PT. FORTIN	AREA IV. CRUSE G.	503,650	7,568	790	53 607	9.452
	G'YARE	NAVETTE 007	0	75,760	136,704	14 495 717	64.34
		NAVETTE 410	0	77,250	373,983	2 553 422	82.88
		NAVETTE 307	0	94,834	179,094	3 148 286	65.37
		307 EXT	0	9,707	2,465	318 294	20.25
		410 EXT	0	27,025	58,562	883 891	68.42
	TRINITY	SHALLOW HERRERA	428,136	88,511	133,153	472 873	60.06
TTOC	TTOC	ALL	1,728,885	455,400	917,619	22 591 828	66.83
TTPCL	COORA	CO/UC/100/1	247,397	10,456	4,509	207 299	30.13
		CO/UC/110/1	22,568	0	0	0	
		CO/UC/314/1	50,700	2,833	552	61 797	16.30
		CO/UC/317/1	0	7,905	10,783	242 293	57.70
		CO/UC/170/1	44,130	620	200	6 987	24.39
	PALO SECO	PS/UF/500/1	2,794	6,613	532	91 321	7.445
	FYZABAD	FM/UF/172/1	0	36,457	17,015	727 049	31.82
		FM/UF/169/1	0	33,212	42,590	612 962	56.18
	MACKENZIE	MACKENZIE	180,903	88,886	42,780	1 780 669	32.49
	GALEOTA	GL/HF/15/11	44,532	23,808	2,004	524 962	7.763
TTPCL	ALL	ALL	593,024	210,790	120,965	4 255 339	36.46
TOTAL	ALL	ALL	11,694,041	4,324,372	2,104,946	155 140 616	32.73

**TABLE VIII
STEAM INJECTION SUMMARY BY PROJECTS - 1985**

COMPANY	FIELD	PROJECTS	STEAM INJECTED (bbt)	OIL PRODUCED (bbt)	WATER PRODUCED (bbt)	GAS PRODUCED (M ³)	OIL/ST. RATIO (bbt/bbl)
TTPCL	APEX QUARRY		4,076,071	716,967	844,894	2 311 244	0.18
	FYZABAD		1,162,819	497,401	564,479	226 170	0.43
	GUAPO		2,118,213	548,803	614,089	1 416 843	0.26
	CENTRAL LOS BAJOS		1,118,022	590,204	403,469	929 137	0.53
	PALO SECO		3,183,442	1,095,456	1,509,199	2 603 936	0.34
	BENNET VILLAGE		188,666	19,000	2,725	0	0.10
	MACKENZIE		13,188	0	0	0	0.00
TTPCL	ALL	ALL	11,860,421	3,467,831	3,938,855	7 487 330	0.29
TTOC	FOREST RESERVE	PROJECT 111	3,334,076	541,247	2,644,344	10 060 168	0.16
	PARRYLANDS 'E'		310,498	157,252	122,864	1 085 692	0.51
	PHASE 1 EXPANSION		254,482	25,004	18,646	176 773	0.10
TTOC	ALL		3,899,056	723,503	2,785,854	11 332 633	0.19
ALL COMPANIES	ALL		15,759,477	4,191,334	6,724,709	18 809 963	0.26

CARBON DIOXIDE INJECTION

COMPANY	FIELD	PROJECTS	INJECTION (M ³)	OIL (bbt)	WATER (bbt)	GAS (M ³)	G ₃ O.R. (M ³ /bbt)
TTOC	FOREST RESERVE	ZONE 5 SANDS	1 753 607	19,432	369	2 449 300	126
		FOREST SANDS	0	0	0	0	0
		ALL	1 753 607	19,432	369	2 449 300	126

REFINING AND PETROCHEMICAL INDUSTRY

REFINING

March 30, 1985, marked a significant event in the history of the refining industry of Trinidad and Tobago when Government finalized the purchase of the majority of certain assets and interests of Texaco Trinidad Inc. This purchase included the Point-a-Pierre refinery together with its shipping and harbour facilities. The acquired assets were then placed under the management of Trintoc which, as a result, became the sole operator of both refineries in Trinidad and Tobago, viz. the Pointe-a-Pierre refinery with a capacity of 220,000 bbl and the Point Fortin refinery with a capacity of 85,000 bbl.

Overall crude throughput of the refineries increased by 5.9% over the figure for 1984, to a daily average of 81,460 bbl. In the latter half of the year, Trintoc imported a total of 556,883 bbl of Algerian condensate for blending with crude oil chargestock to the Pointe-a-Pierre refinery, in order to satisfy their market requirements for light products. In addition, the company imported fuel oil derived from Alaskan (708,535 bbl) and Venezuelan crudes (677,756 bbl) for downstream processing at Point-a-Pierre. The latter consisted of 339,021 bbl of Lago Medio vacuum residuum which was to be used as chargestock for the lube oil plant.

The following table gives the average daily throughputs for the Pointe-a-Pierre and Point Fortin refineries over the last decade.

AVERAGE DAILY THROUGHPUT

<u>YEAR</u>	<u>POINT FORTIN</u> <u>BBL/DAY</u>	<u>POINTE-A-PIERRE</u> <u>BBL/DAY</u>	<u>TOTAL</u> <u>BBL/DAY</u>
1976	54,994	266,274	321,268
1977	55,124	217,555	272,679
1978	51,398	183,866	235,264
1979	51,638	175,367	277,005
1980	50,325	163,703	214,028
1981	39,628	133,917	173,545
1982	50,061	100,897	150,975
1983	12,550	61,890	74,440
1984	16,943	59,952	76,907
1985	25,450	56,010	81,460

The average daily throughput at the Point-a-Pierre refinery was 56,010 bbl which represents a total crude charge of 20,443,650 bbl. This throughput decreased by 6.6% from the figure for 1984.

Prior to the change of ownership of the Pointe-a-Pierre refinery, there was a continuation of the Trintoc/ Texaco processing arrangement which commenced in January, 1983. Following the changeover, Trintoc decided to continue the transfer of crude and products between the two refineries. Wide-range naphtha was sent from Pointe-a-Pierre to Point Fortin and fuel oil from Point Fortin to Pointe-a-Pierre, thereby enabling optimal use of the various units at both locations.

The Point Fortin refinery processed a total of 9,289,250 bbl of crude averaging 25,450 bbl; this was an increase of 50.2% over the figure for the previous year.

A comparison of the total output of the main refinery products for 1984 and 1985 is shown in the following table.

REFINERY OUTPUT

<u>PRODUCTS</u>	<u>1985</u>	<u>1984</u>	<u>%CHANGE FROM 1984 TO 1985</u>
	<u>MILLION BBL</u>	<u>MILLION BBL</u>	
Fuel Oil	17.87	14.62	22.2
Motor Gasolene	7.47	5.97	25.1
Gas/Diesel Oil	4.22	4.24	-0.5
Av. Turb. Fuel	1.89	1.91	-1.0
Kerosene	0.89	1.17	-23.9
L.P.G.	0.75	0.59	27.1
Petrochemicals	0.07	0.34	-79.4

In 1985, the following products (both finished and unfinished) were imported by the refining industry.

IMPORTS OF REFINED PRODUCTS

<u>PRODUCTS</u>	<u>BBL</u>
Kerosene	80,336
Gas/Diesel Oil	983,215
Lubricants	26,758
Fuel Oil	1,047,270
Vacuum Residuuum	337,021
Slops	4,729
TOTAL	2,479,329

PETROCHEMICALS

Gross petrochemical production at the Pointe-a-Pierre refinery for the year totalled 63,316 bbl which represents a decline of 80.9% from the figure for 1984. Of this total approximately 87% was manufactured during the first quarter of the year.

Low crude throughput, together with the downtime of No. 4 Vacuum Distillation Unit and the shutdown of No. 8 Crude Distillation Unit resulted in low charge-stock for the petrochemical units. In addition, the new operator of the Point-a-Pierre refinery, Trintoc, had to concentrate its resources during the latter half of the year on the maintenance and refurbishing of various units.

The table below compares the petrochemical production and exports for the years 1984 and 1985. During 1985, Trintoc manufactured 3,987 bbl of BTX, the intermediate product from which benzene, toluene and xylene are extracted; the company, however produced none of these products during the year.

PRODUCTION AND EXPORTS OF PETROCHEMICALS
(All quantities in barrels)

Product	1985		1984	
	Production	Export	Production	Export
Benzene	Nil	Nil	17,486	17,574
Toluene	Nil	Nil	72,144	71,270
Xylene	Nil	Nil	26,990	31,770
Nonene	6,705	Nil	7,208	9,749
Tetramer	Nil	Nil	1,497	2,560
Normal Paraffins	54,029	44,727	205,803	225,115
Naph. Oil	2,579	Nil	5,862	7,655

NITROGENOUS FERTILIZERS AND METHANOL

Total production of anhydrous ammonia for 1985 was 1 322 916 tonnes, an increase of 1.0% over the figure for the previous year. Total exports, however, declined by 5.8% to 1 120 229 tonnes mainly because Fertrin sold more ammonia to the Urea Plant in 1985.

At Federation Chemicals Limited, the Braun Plant produced a total of 211 312 tonnes of ammonia, a decrease of 6.9% from their 1984 production. During September/October, there was a six-week shutdown of the plant for annual maintenance operations. The Chemico Hydrogen Plant remained shut down during 1985 pending the outcome of discussions with the new operator of the Pointe-a-Pierre refinery, Trintoc.

Tringen's production of ammonia for 1985 decreased by 5.0% from the previous year's total of 326 938 tonnes. A major turnaround in February/March and compressor problems during the year were the chief causes of downtime.

At Fertrin the "01" unit produced a total of 394 619 tonnes of ammonia, representing an increase of 9.6% over the production for 1984. The "02" unit produced 390 047 tonnes, an increase of 2.9% over the figure for the previous year. The latter unit was shut down twice during the year for maintenance operations in January and December. During 1985, Fertrin sold a total of 798 077 tonnes of ammonia, comprising 589 126 tonnes to ship and 208 952 tonnes to the Urea Plant.

The Urea Plant produced a total of 340 955 tonnes of urea, an increase of 109.4% over the figure for 1984. This large increase was due to the fact that the plant only operated for half of 1984 because of market problems. The actual production for 1985 was 31.8% below the budgeted figure because of technical problems. In addition, there were prolonged shutdowns for repairs to the high pressure carbamate condenser.

The Methanol Plant produced a total of 360 104 tonnes of methanol, an increase of 49.7% over the figure for the previous year. This increase arose mainly because production from this plant only began in March, 1984. In November, 1985 the plant was shut down for repairs and a decision was made to carry out a turnaround at the same time.

TABLE IX
PRODUCTION AND EXPORTS OF NITROGENOUS FERTILIZERS
AND METHANOL

TONNES

COMPANY	YEAR		ANHYDROUS AMMONIA	
FEDCHEM	1984	PRODUCTION EXPORT	226 961 216 246	
	1985	PRODUCTION EXPORT	211 312 223 174	
TRINGEN	1984	PRODUCTION EXPORT	344 247 344 049	
	1985	PRODUCTION EXPORT	326 938 307 929	
FERTRIN	1984	PRODUCTION EXPORT	739 032 638 405	
	1985	PRODUCTION EXPORT	784 666 589 126	
TOTAL	1984	PRODUCTION EXPORT	1 310 240 1 188 700	
	1985	PRODUCTION EXPORT	1 322 916 1 120 229	
COMPANY	YEAR		UREA	METHANOL
NATIONAL ENERGY CORPORATION	1984	PRODUCTION EXPORT	162 803 121 981	240 438 197 492
	1985	PRODUCTION EXPORT	340 955 352 796	360 104 334 845

NATURAL GAS

INTRODUCTION:

Natural gas production has doubled over the last decade, increasing from 9.8 million cubic metres per day in 1975 to 20.6 million cubic metres per day in 1985. This has been a direct result of greater demand for natural gas both in the oil industry as well as the energy-based industrial sector.

Gas-lift needs have also grown considerably in this period as the oil companies have sought to maintain their production rates while the oil reservoirs become depleted. In addition to gas-lift requirements, the rapid expansion of the energy-based industries at the Point Lisas Industrial Estate and elsewhere has contributed significantly to the increased demand for natural gas. The last decade has seen new ammonia, methanol and urea plants at Point Lisas where, at year's end, construction of another ammonia plant has begun. As demand for natural gas in the non-oil sector continues to grow production will be increased to satisfy the needs of the market.

PRODUCTION

A 4.9% increase in natural gas production in Trinidad and Tobago from the 1984 figure resulted in an average production of 20.6 million cubic metres per day during 1985. Offshore companies accounted for 92.9% of this figure.

Amoco Trinidad Oil Company continued to be the largest natural gas producer accounting for 84.5% of the country's total production. The company's average production was 17 million cubic metres per day during 1985, which was an increase of 6.6% over the 1984 average. Apart from associated gas production Amoco operated two gas fields - Teak and Cassia. Since the Teak gas field came on stream in 1975 over 11.4 billion cubic metres of gas have been produced for sales and gas-lifting. At present, production in this field is restricted to meeting the company's gas-lift operations.

With the completion of the first drilling phase on the Cassia platform in 1984, this field has become the major supplier of natural gas to consumers. Six wells have been completed to date and the second phase of development is expected to commence in 1987 to satisfy increases in demand, as well as to offset anticipated natural production decline.

The other wholly marine producer, Trinmar Limited, was responsible for 8.4% of the country's total gas production at a rate of 1.7 million cubic metres per day. This company uses a portion of its associated gas for gas-lifting and also supplies gas to its parent companies. Trintoc, Trintopoc and PCOL produced the remaining 7%.

CONSERVATION:

During 1985, the National Gas Company's gas compressor platforms at Teak and Poui fields compressed 803 million cubic metres of low pressure gas at a rate of 2.2 million cubic metres per day. This was an increase of 26.9% over the 1984 average.

UTILIZATION:

The overall natural gas utilization rate for 1985 was 16.1 million cubic metres per day, about the same as the previous year. It is note-worthy that this figure includes the volumes supplied by the compressor platforms operated by the National Gas Company.

During 1985, oil companies consumed gas at a rate of 7.0 million cubic metres per day or 43.5% of all gas utilized. The largest gas-lift operator, Amoco, increased its gas-lift take by 6% to average 4.5 million cubic metres per day. On the other hand, due to continued decline in refinery activity worldwide, natural gas used as fuel at the country's two refineries fell by 16% to 1.2 million cubic metres per day.

Apart from natural gas used by oil companies in production operations, this natural resource is used extensively in power generation, in the manufacture of fertilizers, methanol, steel, cement and in a multitude of smaller industries. Because of the ready availability and favourable price of natural gas in Trinidad, many small industries have converted to natural gas as their source of fuel.

Power Generation:

The Trinidad and Tobago Electricity Commission uses natural gas at its three power stations located at Port-of-Spain, Point Lisas and Penal. It is the largest non-oil company consumer of natural gas, accounting for 17.4% of total gas utilized. This was 2.8 million cubic metres per day which was 2% lower than the consumption level of 1984. This drop in consumption was partly due to decreased on-stream time of the Iron and Steel Company (ISCOTT) which requires electricity for its furnaces as well as the Commission's increased efficiency of operations.

Fertilizer Manufacture:

During 1985, natural gas was used for the manufacture of fertilizers at a rate of 4.75 million cubic metres per day which was a negligible increase from the previous year's figure. Fertilizers accounted for 29.5% of all gas utilized. The following is a summary of gas usage by company:-

<u>COMPANY</u>	<u>GAS UTILIZATION RATE</u> (Million cu. metres per day)
Federation Chemicals (FEDCHEM)	0.77
Fertilizers of Trinidad (FERTRIN)	2.54
Trinidad Nitrogen (TRINGEN)	1.20
Urea of Trinidad (UREA)	<u>0.24</u>
<u>TOTAL</u>	<u>4.75</u>

At year's end, construction had begun on another ammonia plant at Point Lisas. This will be the second Tringen plant owned jointly by the Government and W.R. Grace; the plant which will increase Tringen's output to 900,000 tons per year, is planned to come on stream in 1988.

Methanol:

The methanol plant which started operations in 1984, is located at Point Lisas and is operated by the National Energy Corporation. Daily average gas consumption by this plant in 1985 was a near-capacity figure of 0.92 million cubic metres per day.

Iron and Steel:

The Iron and Steel Company experienced a 10% decrease in the utilization rate. The daily average gas consumption was 0.26 million cubic metres per day.

Cement Manufacture:

Trinidad Cement Limited experienced a 28.6% decrease in gas utilization during 1985. This was a direct result of the downturn in the construction industry. Gas sales to the company averaged 0.15 million cubic metres per day.

Small Consumers:

Small consumers are those companies using gas at relatively low rates. Sugar mills, flour mills, hospitals, asphalt paving companies, etc. fall in this category. During 1985, there were several new small consumers, which resulted in a 33% increase in gas consumption, averaging 0.22 million cubic metres per day.

NATURAL GAS PRODUCTION BY COMPANIES
(Thousand Cubic Metres Per Day)

COMPANY	1981	1982	1983	1984	1985
AMOCO	11 479	12 210	13 828	16 445	17 332
TRINMAR	1 827	1 698	1 637	1 749	1 735
T.T.P.C.L.	781	746	705	604	588
TRINTOC (P-A-P)	838	895	643	493	460
TRINTOC (Point Fortin)	426	450	494	457	423
P.C.O.L.	3	3	4	2	3
TOTAL	15 354	16 002	17 311	19 750	20 541

GAS UTILIZED BY NON-OIL COMPANIES

(1981 - 1985)

(Thousand Cubic Metres per Day)

COMPANY	1981	1982	1983	1984	1985
T.T.E.C.	2 407 (85)	2 832 (100)	3 001 (106)	2 832 (100)	2 775 (98)
FERTRIN	481 (17)	1 670 (59)	2 492 (88)	2 492 (88)	2 520 (89)
TRINGEN	1 189 (42)	1 132 (40)	1 132 (42)	1 189 (42)	1 189 (42)
METHANOL	0	0	0	623 (22)	906 (32)
FEDCHEM	736 (26)	1 076 (38)	1 104 (39)	793 (28)	767 (27)
ISCOTT	226 (8)	283 (10)	340 (12)	283 (10)	255 (9)
UREA	0	0	0	0	226 (8)
T.C.L.	85 (3)	85 (3)	85 (3)	198 (7)	141 (5)
OTHERS	170 (6)	170 (6)	170 (6)	170 (6)	226 (8)
TOTAL	5 295 (187)	7 249 (256)	8 382 (296)	8 750 (309)	9 005 (318)

N.B. FIGURES IN PARENTHESIS ARE IN MMSCF/ DAY

NATURAL GAS UTILIZATION (1981 - 1985)
(M³ 10⁹/DAY)

	COMPANY	1981	1982	1983	1984	1985
REFINERY (AS FUEL)	TRINTOC (P.A-P)	1.55	1.35	1.26	1.20	0.93
	TRINTOC (P. FT.)	0.29	0.29	0.26	0.26	0.28
	REFINERY SUB - TOTAL	1.83	1.63	1.52	1.46	1.22
FIELD USE (AS FUEL)		0.74	0.83	1.00	0.97	0.96
PRODUCTION USE		2.89	2.63	3.06	4.70	4.76
TOTAL OIL COMPANY UTILIZATION	SUB - TOTAL	5.47	5.10	5.58	7.13	6.94
FERTILIZER MANUFACTURE	FEDCHEM	0.74	1.09	1.12	0.80	0.76
	FERTRIN	0.49	1.69	2.52	2.52	2.52
	TRINGEN	1.20	1.15	1.20	1.20	1.19
	UREA	-	-	-	0.17	0.25
	FERTILIZER SUB - TOTAL	2.43	3.92	4.84	4.70	4.70
POWER GENERATION	T & TEC	2.43	2.86	3.04	2.86	3.00
CEMENT MANUFACTURE	TRINIDAD CEMENT LTD.	0.09	0.09	0.09	0.20	0.14
OTHER LARGE CONSUMERS	METHANOL	-	-	-	0.63	0.91
	ISCOTT	0.23	0.29	0.34	0.29	0.26
SMALL CONSUMERS		0.17	0.17	0.17	0.17	0.22
TOTAL		10.82	12.43	14.06	15.98	16.20
% UTILIZATION		71.00	78.00	81.00	81.00	80.00

OVERALL GAS UTILIZATION - 1985
(Cubic Metres Per Day)

OIL COMPANIES	JAN. - JUN.	JULY - DEC.	YEAR AV.
(i) REFINERY	1 215	1 220	1 218
(ii) FIELD USE	949	980	966
(iii) PRODUCTION USE	4 902	4 644	4 771
SUB-TOTAL	7 065	6 844	6 955
NON-OIL COMPANIES			
(i) POWER GENERATION	2 699	2 846	2 772
(ii) FERTILIZER MANUFACTURE	4 536	4 845	4 692
(iii) IRON AND STEEL MANUFACTURE	314	207	261
(iv) CEMENT MANUFACTURE	147	142	144
(v) SMALL USERS	280	153	215
(vi) METHANOL	1 034	793	912
SUB-TOTAL	9 010	8 985	8 996
GRAND TOTAL	16 075	15 829	15 942
% UTILIZATION	78.5	77.2	77.8

TABLE X
ANNUAL STATISTICS FOR NATURAL GAS PRODUCTION AND UTILIZATION 1981 - 1985

	1981		1982		1983		1984		1985	
	MILLION M ³	%	MILLION M ³	%	MILLION M ³	%	MILLION M ³	%	MILLION M ³	%
PRODUCTION	5 604	100	5 841	100	6 319	100	7 229	100	7 413	100
GOR (M ³ /M ³)	510	-	569	-	681	-	733	-	741	-
A. USED AS FUEL IN FIELDS	273	4.9	301	5.2	360	5.7	355	4.9	352	4.7
IN REFINERIES	667	11.9	595	10.1	552	8.7	534	7.4	440	5.9
IN OTHER INDUSTRIES	1 579	28.2	1 947	33.2	2 171	34.4	1 663	23.0	2 165	29.3
SUB TOTAL	2 519	45.0	2 843	48.5	3 083	48.8	2 552	35.3	2 961	39.9
B. OTHER COMPLETE UTILIZATION :										
USED AS PROCESS GAS	454	8.0	689	11.9	919	14.5	1 105	15.3	1 120	15.1
INJECTED INTO FORMATION										
CONVERTED TO C.H.P.S.	1	-	-	-	1	-	1	-	1	-
SUB TOTAL	455	8.0	689	11.9	920	14.5	1 106	15.3	1 121	15.1
C. VENTED										
AFTER USE OF PNEUMATIC ENERGY	1 056	18.8	958	16.4	1 121	17.7	1 715	23.7	1 731	23.0
WITHOUT USE	1 682	30.1	1 350	23.2	1 195	19.0	1 857	25.7	1 601	21.6
SUB TOTAL	2 738	48.9	2 308	39.6	2 316	36.7	3 572	49.4	3 332	44.6

POLLUTION

Reported Pollution Incidents

In 1985, 90 reported incidents of pollution resulted in the escape of 13,737 barrels of crude oil; of this amount 12,435 barrels (90.5%) were recovered, while the remaining 1,302 barrels (9.5%) were lost.

Trintoc, with 64 reported incidents, experienced the greatest number of physical losses. This company recovered 6,334 barrels (89.6%) of the estimated 7,070 barrels of crude oil which escaped during the year. The majority of the incidents were due to pipe-line leaks, and they occurred in the company's Eastern District Fields - Morne Diablo, Trinity, Barrackpore, Wilson, Oropouche and Guayaguayare.

Amoco Trinidad Oil Company reported 11 oil spill incidents offshore Point Galeota, resulting in an estimated net loss of 321 barrels of crude oil. Trinmar, in the marine areas offshore Point Fortin, experienced 2 oil spill incidents, with a net loss of 107 barrels of crude oil.

Trintopec achieved the greatest success in recovering escaped oil during the year. Of the estimated 6,239 barrels spilled, 6,101 barrels (97.8%) were recovered.

POLLUTION CONTROL ACTIVITIES

The National Oil Spill Contingency Plan (NOSCP) which is the major pollution control programme co-ordinated by the Ministry held one meeting in 1985. At the meeting a review of the previous year's accomplishments was given and new strategies to further improve contingency planning against oil and hazardous materials spills were formulated.

The Controller of the NOSCP, Mr. Hugh C. Hinds and other Ministry's personnel held a long and fruitful discussion with the IMO Secretary General, Mr. Chandrica P. Shrivastava during his official visit to Trinidad and Tobago in 1985. The discussion focused on matters which included Trinidad and Tobago's anticipated participation in Marpol 73/78 provisions, and Hazardous Materials Contingency Planning.

The Ministry also upgraded some of its communications and photographic equipment which are used in the NOSCP programme for monitoring and recording oil spills, respectively.

During 1985, fourteen new chemicals were added to the list of oil production chemicals, approved by this Ministry, which can be used in the marine areas provided that the Ministry's effluent level guidelines are adhered to.

The Petroleum Testing Laboratory continued its activities in 1985 of analysing the concentration levels of residual chemicals in effluent streams of the oil companies.

TABLE XI
POLLUTION STATISTICS

COMPANY	NO. OF INCIDENTS	ESTIMATED QUANTITY SPILLED (bbls)	ESTIMATED RECOVERY (bbls)	ESTIMATED NET LOSS (bbls)	PERCENT RECOVERY
AMOCO	11	321	-	321	-
TRINMAR	2	107	-	107	-
TRINTOPEC	13	6,239	6,101	138	97.8
TRINTOC	64	7,070	6,334	736	89.6
P.C.O.L.	-	-	-	-	-
TOTAL	90	13,737	12,435	1,302	90.52

ACCIDENT REPORT

In the Petroleum Industry the number of accidents reported for the year 1985 totalled 572, showing a marked increase of 117 over last year's figure of 445.

Refinery accidents which do not fall under the jurisdiction of the Ministry of Energy and Natural Resources numbered 230, an increase of 8 over last year's figure.

Accidents which occurred during drilling and producing operations totalled 257 and showed an increase of 100 over last year's figure. Trinmar accounted for the highest number of these accidents.

Accidents were classified as "serious" and "non-serious" depending on the extent of the injuries sustained. Serious accidents totalling 235, showed a grave increase of 145 over 1984's figure of 90. These accidents consisted mainly of dislocations, low back injuries, deep cuts and lacerations, muscular strains and orthopaedic problems.

Non-serious accidents, which amounted to 104, showed a decrease of 39 from last year's figure of 143. Non-serious accidents consisted mainly of bruises, abrasions, soft tissue injuries and superficial burns.

Of the total number of accidents reported, 17 were fatal, showing a marked increase of 16 over 1984's figure of 1. Of these fatalities 1 occurred at Trintoc, Point Fortin, 2 at Amoco and 14 at Trintoc, Pointe-a-Pierre.

On the 5th. November 1985, a worker employed with Spectrum Engineering, was painting pipelines about 1 1/2 miles out at sea at Berth No. 4 - Trintoc Jetty, Point Fortin when his paintbrush fell into the sea. He dived into the sea to retrieve the brush and apparently found himself in difficulties. Attempts made by his co-workers to save him proved futile.

On the 10th February 1985, at Amoco's Teak 'E' Platform, a casual roustabout was engaged in back-loading a motor vessel when he was struck on the head by the drill collars which were being loaded and subsequently died.

On the 17th November 1985, another casual labourer who was involved in loading operations at Atoc's Point Galeota Jetty died after being struck on the chest by a load of drillpipe which he was attempting to steady.

By far the worst oilfield tragedy to have taken place since December 8, 1928 was that which occurred on the October 17, 1985 at Berth No. 5 Trintoc, Pointe-a-Pierre. Workers were engaged in the removal of a slipblank from a pipeline when a fire occurred, resulting in the tragic and untimely death of 14 workers.

A summary of accident statistics is given in Table XII.

A ten year review (1976 - 1985) of all lost time accidents (except refinery accidents) is shown in Fig. 5. The increased number of accidents in 1985 can be attributed to the fact that the companies are now reporting to this Ministry more of the accidents that occur within their licensed areas.

Figure 5 shows a review of all accidents by company from 1980 to 1985. It can be seen that Amoco had the greatest reduction in accidents during the period. The number of accidents which took place in Amoco's oilfields and associated production facilities during 1985 is the lowest in 6 years and is 73% less than the company's 1980 figure. This reduction can be directly attributed to the dynamic role that the company's management is playing in enhancing the awareness of safety by the company's workers.

Relatively small variations are noted in the number of accidents reported by Trintoc, Texaco and Trintoc during the period under review; Trinmar's accidents, however, showed a 25% increase over their 1980 figure. PCOL did not report any lost time accidents to this Ministry.

Management of all companies are being encouraged by this Ministry to make safety a way of life for all persons within the petroleum industry.

**TABLE XII
ACCIDENT STATISTICS 1985**

COMPANY	FIELD	TOTAL	FATALITY	SERIOUS				NON-SERIOUS			
				D	P	E	O	D	P	E	O
TRINTOC	GUA'YARE	5	—	—	5	—	—	—	—	—	—
	B'PORE	22	—	7	15	—	—	—	—	—	—
	FOREST RESERVE	27	—	—	12	11	2	1	1	—	—
	BRIGHTON	1	—	—	—	1	—	—	—	—	—
	CONTRACTORS	23	—	11	4	—	—	6	2	—	—
	P-A-P	216*	14*	—	—	—	—	—	—	—	—
	P/FORTIN	14*	—	—	—	—	—	—	—	—	—
	SUB - TOTAL	78	—	18	36	12	2	7	3	—	—
TRINTOC (PENAL)	ALL	44	1	5	22	4	5	3	4	—	—
TRINTOPEC	ALL	67	—	14	22	2	8	2	9	—	10
AMOCO	ALL	67	2	26	14	—	7	8	8	—	2
PCOL	—	—	—	—	—	—	—	—	—	—	—
TRINMAR	ALL	74	—	12	11	2	7	11	11	9	11
NGC	ALL	12	—	6	—	—	—	5	—	—	1
	TOTAL	342	3	81	105	20	29	36	35	9	24

D = DRILLING

P = PRODUCTION

E = ENGINEERING

O = OTHERS

* Refinery Accidents Under the Jurisdiction of The
Factory Inspectorate Division.
(not included in totals)

SUBSIDY ON LOCAL PETROLEUM PRODUCTS

During 1985 the controlled prices of petroleum products in the domestic market remained at the 1984 level. The wholesale and retail prices for these products are outlined in Table (A).

Total subsidy for the period January to November 1985 was \$26,898,987. Due to fluctuations in the ex-refinery prices of products during the period, "Surplus Income" of \$23,492,484 accrued to the Treasury.

The 1985 subsidy (January - November) was the lowest for the past ten years as noted in Table (B). The subsidy was primarily on the sale of auto-diesel sold to fishermen through the National Fisheries Company, and on the sale of liquified petroleum gases (LPG); the latter product accounted for approximately 55% and auto-diesel 43% respectively, of the total subsidy.

Total subsidy levied against the oil producing companies during the period January - November 1985 is outlined in Table (C).

During 1985, certain changes in the international market affected the pricing mechanism in respect of the local market. At the end of March 1985, the Exxon refinery in Aruba ceased operations; this was followed by the sale of the Shell refinery in Curacao in September 1985. Since, legally, the prices quoted out of these refineries formed the basis for the determination of the ex-refinery prices for the local market, appropriate legal amendments had to be made in order to ensure the efficient operation of the system. With the rationalization of the local refining industry during 1985, officials of the Ministry of Finance and Planning, and of the Ministry of Energy and Natural Resources were exploring the development of an alternative method for arriving at ex-refinery prices which would take into account local refining costs.

TABLE (A)
PRICE OF PETROLEUM PRODUCTS
(Domestic Market)

<u>PRODUCT</u>	<u>WHOLESALE PRICE</u> (Cents/Litre)	<u>RETAIL PRICE</u> (Cents/Litre)
Marine Diesel	70.0	70.0
Domestic Gasolene	73.0	80.0
Kerosene	71.0	77.0
Auto Diesel (Other than National Fisheries)	69.0	75.0
Premium Gasolene	77.0	85.0
Regular Gasolene	73.0	80.0
L.P.G. (Cents/Lb)	52.0	75.0

TABLE (B)

<u>YEAR</u>	<u>TOTAL SUBSIDY</u>	<u>CENTS/BARREL</u>
1985 * (January - November)	\$26,898,987	45.166
1984	\$31,807,121	52.000
1983	\$155,616,925	265.830
1982	\$345,694,251	533.150
1981	\$327,286,922	469.480
1980	\$286,628,408	368.840
1979	\$178,674,425	227.850
1978	\$93,636,718	111.420
1977	\$87,341,068	105.000
1976	\$68,320,677	88.310

* December's subsidy was \$9,289,083.74. This increase resulted from the devaluation of TT dollar.

TABLE (C)
PETROLEUM PRODUCTS SUBSIDY
 (January - November, 1985)
 Levy Paid by Oil Producing Companies

MONTH	AMOCO	TEXACO	TESORO/ TRINTOPEC	TRINTOC PT. FORTIN	TRINTOC POINTE-A-PIERRE	TOTAL
JANUARY	\$1,031,149.99	\$224,431.23	\$362,710.69	\$224,436.53	—	\$1,842,728.44
FEBRUARY	\$1,586,641.57	\$365,974.35	\$582,458.96	\$359,664.10	—	\$2,894,738.98
MARCH	\$1,140,557.07	\$181,511.56	\$525,883.39	\$311,675.21	\$151,479.99	\$2,581,107.22
APRIL	\$1,126,861.33	\$155,761.19	\$435,012.05	\$263,331.55	\$125,865.80	\$2,106,831.92
MAY	\$1,296,315.09	\$171,662.54	\$494,800.80	\$289,371.06	\$140,685.81	\$2,392,835.30
JUNE	\$1,379,072.89	\$187,243.29	\$534,375.57	\$314,232.76	\$148,978.87	\$2,563,903.38
JULY	\$1,328,668.38	\$173,651.71	\$511,564.76	\$296,795.30	\$143,951.80	\$2,454,631.95
AUGUST	\$962,787.54	\$126,875.10	\$369,025.75	\$212,330.42	\$105,571.38	\$1,776,590.19
SEPTEMBER	\$1,038,344.42	\$142,995.85	\$404,407.89	\$238,748.39	\$113,754.96	\$1,938,251.51
OCTOBER	\$2,077,844.77	\$289,730.46	\$787,910.16	\$488,932.34	\$229,944.65	\$3,874,362.38
NOVEMBER	\$1,279,822.72	\$192,518.41	* \$517,123.21	\$323,471.04	\$160,070.30	\$2,473,005.68
TOTAL	\$14,518,065.77	\$2,212,355.69	\$5,525,273.23	\$3,322,988.70	\$1,320,303.56	\$26,898,986.95

* TRINTOPEC

LEGAL

The year 1985 was a very exacting year in respect of the legal matters which had to be handled by the legal officers in the Ministry.

Apart from the performance of routine duties such as the giving of advice on miscellaneous matters relating to the petroleum industry, vetting of contracts, attendance at meetings and serving on committees, the Legal Section was involved in the following specific matters.

1. Application for the grant of ancillary rights under Part 11 of the Petroleum Act Chapter 62:01

The Trinidad and Tobago Oil Company Limited (Trintoc) applied to the Minister for the grant of ancillary rights under Part II of the Petroleum Act Ch. 62:01 in respect of approximately twenty acres of land at Penal. In this instance, the Minister was advised, that on the facts, this was not a proper case for the exercise of his powers under the Act and the application was not approved.

2. Surrender of Exploration and Production (Public Petroleum) Rights Licences

- (a) Tenneco Oil, as Operator for itself and on behalf of Agip and Deminex, surrendered the remaining portions of the Blocks HH6 and JJ7 situated off the North Coast Marine Area on the 1st. January, 1985.
- (b) Tenneco Oil, as Operator for itself and on behalf of Deminex, Agip and Occidental partially surrendered the Submarine area under licence No. 9684 of 1970 known as Blocks KK4, KK5, and KK7 with effect from 1st. October, 1985.
- (c) Tenneco on behalf of itself, Deminex and Agip partially surrendered the Submarine area under Licence No. 6992 of 1970 known as Blocks KK8, KK9 and LL9 with effect from 1st. October, 1985.

3. LNG Project Agreements

The Seventh Amendment to the LNG Project Agreements was executed. This Amendment extended the Agreements to June 1985. In the interim, it was decided that it was not feasible to proceed with the development of the LNG Project in the context of circumstances existing in Trinidad and Tobago and in the U.S.A. As a result the Agreements were not extended further, and thus they terminated on 30th. June, 1985. However, since the parties did not wish to abandon the project entirely, a Draft Memorandum of Understanding between the parties is presently being evaluated by the relevant authority.

4. Legislation

(a) The Price of Petroleum Products (Amendment) Order, 1985

This amendment was deemed to take effect from the 15th. to 31st. October, 1985. It sought to define the expression "average daily price" with reference to the formula used to arrive at the ex-refinery price for petroleum products.

(b) Drafting of Quarry Laws and Compressed Natural Gas Regulations

Discussions were held with the Chief Parliamentary Counsel with respect to the Quarry Laws and the Compressed Natural Gas Regulations. A Draft Bill seeking to amend the Mines, Borings and Quarries Act was submitted to the Ministry for comments. The Ministry has responded to the queries raised by the Chief Parliamentary Counsel. The Ministry is awaiting a copy of the Draft CNG Regulations in order to comment on the same.

5. Committees

The Legal Section was involved in the work of two Cabinet appointed Committees, namely, (i) the Committee appointed to review the existing method for evaluating royalty on crude; and (ii) the Committee appointed to recommend the minimum requirements to be met by Operators on new offshore areas surveyed in 1980/1981.

ENERGY PLANNING DIVISION

During 1985, the Energy Planning Division (EPD) completed several major tasks, some of which were handled internally and others which were done in joint consultation with other sections within the Ministry and/or involved other government organisations. Included in these major tasks were the following:-

1. World Bank/UNDP Energy Sector Assessment Study.

In February 1985, a team of 12 World Bank officials and consultants conducted a review of the Energy Sector in Trinidad and Tobago. This study covered the following topics:

- a) exploration and development of petroleum resources;
- b) refining and marketing of petroleum products;
- c) natural gas supply and utilization;
- d) electric power;
- e) domestic consumption of petroleum products and transportation;
- f) institutional framework; and,
- g) macro-economic implication of the energy sector developments.

The Ministry of Energy acted as the lead agency in co-ordinating and assisting the team during their 2-month visit. A draft report from the World Bank was submitted in December 1985 for review by the Ministries/ Agencies involved in Energy.

2. Second National Energy Conference.

Three papers were presented at the Second National Energy Conference by the Ministry of Energy and Natural Resources. Officers from the Energy Planning Division contributed to the preparation and presentation of two of these papers which were entitled:

- a) "The Use of Compressed Natural Gas as an Alternative Vehicular Fuel" by - Messrs Hinds, Gellineau and Patrick.
- b) "A Case for Institutionalised Energy Management in Trinidad and Tobago" by - Messrs Look Kin and Maharaj.

3. Annual Reports and Monthly Bulletins.

The Annual Report for 1984 was prepared and published during the year under review. An improved system was developed to publish the monthly bulletins on a timely basis.

4. Fiscal Policy

The EPD carried out various reviews of fiscal matters relating to the petroleum industry viz,

- a. The effect of the introduction of Stamp Duty on imported items for the Petroleum Sector.
- b. Amendments to the petroleum tax regime with respect to the Supplemental Petroleum Tax (SPT) rate. The changes include the following:
 - i) SPT Allowances relating to tangible and intangible investments;
 - ii) The inclusion of royalty as a deduction in the computation of SPT;
 - iii) A new Production Allowance of 30% of the value of marine production up to a limit of two million barrels per field.

With the exception of the new rates applicable to tangible and intangible investment allowances, all other amendments were retroactive to 1st. January, 1984.

- c. The use of fair market values for crude in a new and simplified method for the determination of crude oil royalty as compared to the existing Royalty Lease Evaluation (RLE1) Method which has been in use for about thirty-five years.
- d. Evaluation of an alternative pricing mechanism for use in the determination of this country's crudes, given the deteriorating oil market conditions and falling oil prices.
- e. The introduction of an alternative pricing mechanism to be used in computing the ex-refinery prices of petroleum products for the domestic market.

5. Natural Gas Matters.

The Ministry participated in the negotiation of new natural gas supply arrangements with Amoco Trinidad Oil Company and the South East Coast Consortium and the forecast of future supply/demand requirements of natural gas for major gas consumers.

6. National Energy Balances.

- a. The 1984 National Energy Balance has been completed and work is in progress on the analysis of energy trends. This analysis is useful as a planning tool in the formulation of future energy policies.

7. Other Matters.

- a. Re-assessment and compilation of this country's energy policies.
- b. Participation on the ministerial appointed committee to study and make proposals on all aspects of the domestic marketing of L.P.G.
- c. Revision of the procedure and terms of retail marketing licences to petroleum dealers.
- d. Completion of the report on the rationalisation of marine bunkering operations in Trinidad and Tobago.
- e. Review of a proposal to construct an ethanol plant, with the objective of establishing a gasohol industry as an adjunct to the existing gasoline industry.
- f. Examination of the Common External Tariff (CET) for petroleum, its derivatives and fertilizers.
- g. Participation in a study of the economic assessment of the quarry industry in Trinidad and Tobago.

DOMESTIC PETROLEUM PRODUCT MARKETING

Motor gasoline sales for 1985 rose by 1.5% over the 1984 figure of 535.8 million litres. There were similar increasing trends for the other petroleum products, such as L.P.G. and aviation turbo fuel which increased by 5.7% and 46.5% respectively. Despite these increases, the decrease in sales of the other petroleum products resulted in a net fall of 1.0% on gross domestic sales. Detailed figures are given in the Table below.

In 1985, motor gasolines comprised 65%, auto diesel - 20% and L.P.G. - 9% of gross domestic petroleum product sales. Kerosines, aviation gasolines, aviation turbo fuels, fuel oils, lubes, greases and bitumen made up the remaining percentage.

Domestic Petroleum Product Sales
(Million Litres)

<u>Product</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
Motor Gasoline	459.4	497.8	523.1	535.8	543.8
Kerosines	29.3	27.3	19.1	15.8	13.3
Auto Diesel	202.1	223.6	206.8	187.2	180.4
Marine Diesel	5.3	5.4	4.6	2.9	0.3
L.P.G.	73.3	76.8	84.4	80.5	85.1
Av. Gasoline	1.2	1.1	1.0	1.0	0.9
Av. Turbo Fuel	31.5	38.0	37.0	31.6	46.3
Fuel Oil	49.8	41.3	35.6	27.6	7.6
Lubes & Greases	11.0	11.6	11.2	10.3	10.3
Bitumen	50.2	54.3	24.0	21.5	17.2
Total	913.1	977.2	946.8	914.3	905.2

FINAL ENERGY CONSUMPTION

The major energy sources in Trinidad and Tobago comprise natural gas, petroleum products and electricity. Of these energy forms consumed in 1985, natural gas used directly for final consumption accounted for 62.9%, while petroleum products accounted for 29.5% and electricity 7.6%.

Final energy consumption of natural gas averaged 1697 MTOE (thousand tonnes of oil equivalent) and excluded 994 MTOE of natural gas which were used in the generation of 259 MTOE of electricity. Of the latter 86.5% was used as final energy consumption. When compared to the previous year's data, the final energy consumption of natural gas and electricity reflected decline rates of 7.2% and 5.5% respectively. While the sales of the National Gas Company did rise overall by 2.9%; this increase reflected the greater demand for feedstock, particularly in the Methonal Plant, as opposed to the falling demand for natural gas used as fuel.

Local consumption of petroleum products, with the exclusion of lubes, greases and bitumen, was approximately 2085 TOE/D in 1981, increasing thereafter to an average of 2224 TOE/D for the next four years.

Final Energy Consumption
Per Capita

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
Tons of Oil Equivalent (TOE)	2.06	2.23	2.27	2.38	2.25
Barrels of Oil Equivalent (BOE)	14.83	16.05	16.34	17.12	16.19

Overall final energy consumption per capita increased at a rate of 2.2% per annum between 1981 and 1985. See Table above. A decrease of 5.5% to 16.2 BOE over 1984 rate was realised in 1985.

It must be noted that unlike previous published documents that were based on the OLADE format and definitions, the data given above is in accordance with a revised new methodology which was introduced in 1984. This new format includes the fuels used by the energy sector i.e. refineries and power generation plants as part of the final energy consumption. Consequently, the definition of final energy consumption has been expanded to include the Energy Sector, and not only those economic activities grouped as follows:-

- i) Residential, Commercial and Public Sector
- ii) Transportation Sector
- iii) Agricultural/Livestock Sector, and
- iv) Industrial Sector, as defined by the OLADE format.

TRAINING

During 1985, training effort in the Ministry of Energy and Natural Resources was maintained at a high level, but because of restrictions on personnel resources, not all the training that was planned for the year was achieved. Nevertheless all levels of staff received training in-house, locally and overseas.

The training programmes covered a wide area of expertise and included courses in writing and communication skills, registry procedure and records management, leadership, motivation, management, decision making, report writing, information technology, research and marketing, project formulation, evaluation and implementation, financial and economic analysis, petroleum engineering, geology and geophysics.

This training was offered by various agencies such as the Government Central Training Unit (C.T.U.), the Management Development Centre (M.D.C.), the National Institute of Higher Education, Research, Science and Technology (N.I.H.E.R.S.T.), oil companies, through visiting personnel, the National Computer Agency (N.C.A.), Organisation and Management Division (O & M), computer agencies and overseas institutions.

In-house training activities commenced early in the year when in mid-January, the first course in computer programming (Basic Language) got underway. Simultaneously, a short training programme in the use of a popular word processing package took place. In mid-March, a three month course in Conversational Spanish for senior officers and senior secretaries began.

At the beginning of April, an induction course designed to introduce new staff, both technical and clerical, to the Ministry's operations commenced in the Ministry's San Fernando Office (Development Section). This course continued until early July, 1985. In mid-May, a short course in the use of the Library was conducted by the Chief Librarian. The objective of the course was to encourage staff to use the facilities of the library with minimum assistance from library personnel.

A short course entitled "Introduction to Spread Sheets" was conducted in May. This course lasted approximately two weeks.

Finally, an in-house orientation seminar was held on 28th and 29th October, 1985. The purpose of this seminar was to acquaint new staff (in particular clerical staff) with the operations of the Ministry.

A second course in Conversational Spanish, a follow-up to the first course, was held from the last week in September to mid-December.

Courses put on by local institutions were attended by all levels of staff - engineers, chemical engineers, geologists, geo-physicists, clerical, administrative and cleaners.

Local training also took the form of attachments of technical officers to oil companies and petrochemical and fertilizer plants for on-the-field training in various areas in the industry. Some seven officers were so trained during 1985.

The Senior Energy Analyst attended an overseas course on "International Supply and Pricing of Natural Gas," in London in the latter part of June, 1985.

Three Geophysicists attended a course on the Processing of Seismic Data in Houston, Texas.

Other overseas training included attendance at a workshop entitled Basic Elements of Quantitative Methods for Energy and Economic Analysis and Planning which was held in Barbados in late April. This course was attended by a Research Officer of this Ministry.

Ninety-five officers were trained in the Ministry during 1985. Of this number five were trained overseas.

Overall, the Ministry's Training programme for 1985 could be considered as being worthwhile and successful.

The Ministry proposes to continue with its training efforts in 1986, and while some of the courses which were conducted in 1985 will be repeated, additional courses, especially in-house courses, will be introduced in 1986.

COMPUTERIZATION

The acquisition by the Ministry of Energy and Natural Resources of two micro-computers and associated peripherals at the end of 1984 more than doubled the computer resources available to the Ministry and has resulted in the acceleration of its computerization drive during 1985. The new equipment has provided greater processing power, additional storage capacity and enhanced printing capabilities which have been translated into an increase in the number of staff who have acquired practical knowledge and experience in the use of the hardware and software.

Several new software packages were also purchased; these included electronic spreadsheet, word processing, data base and engineering and geological programmes.

Since the acquisition of computers by the Ministry, the monthly and daily paid staff payroll have been computerized by programmes written by the Ministry personnel.

The spread-sheet and data base packages have been used extensively by the Reservoir Engineering and Development Departments for the preparation of engineering reports and the analysis of statistics concerning drilling, production, refining and petrochemical activities of the local oil industry.

In the Energy Planning Section, computerized studies were performed for the Petroleum Product Pricing Committee. The computers were also used in the compilation of data on all the petrol service stations, petroleum taxation studies, the national energy balances and sub-balances over the period 1970 - 1985.

The Ministry's Library recently acquired software for the development of a bibliographic data base. This is the first step towards the creation of a fully-integrated storage and retrieval system.

The Databank Section continued with the transfer of information from the mainframe system to the micro computer and hard disk system. Additionally, systems were being developed for the storage and retrieval of leave data for the Ministry's staff and in information on Cabinet Notes submitted by the Ministry.

In general much progress was made during 1985 in the computerization efforts of the Ministry; this is expected to continue during 1986.

APPENDIX 1

ANNUAL STATISTICS OF PRODUCTION, DRILLING, REFINING - EXPORTS AND IMPORTS 1985-1975

ITEM	UNIT (1)	DIFFERENCE 1985-1984	1985	1984	1983	1982	1981	1980	1979	1978	1977	1976	1975	unit (2)
1. CRUDE OIL	'000 M ³	- 3.6	64,259	9 860	9 276	10 274	10 987	77,613	78,249	83,778	83,619	77,673	78,621	'000 bbls
2. CASING HEAD GASOLINE (C.H.P.S.)	'000 M ³	-19.9	23	4	6	4	6	37	44	60	61	53	61	'000 bbls
3. TOTAL CRUDE OIL AND NATURAL GASOLINE (1+2)	'000 M ³	3.6	64,282	9 864	9 282	10 278	10 993	77,650	78,293	83,838	83,680	77,726	78,682	'000 bbls
4. CRUDE OIL PRODUCTION - STATE OIL RIGHTS	'000 M ³	3.5	61,845	9 497	8 901	9 891	10 589	74,879	75,399	80,701	80,612	74,704	76,018	'000 bbls
5. CRUDE OIL PRODUCTION - PRIVATE OIL RIGHTS	'000 M ³	4.6	2,414	367	375	383	398	2,734	2,850	3,077	3,007	2,969	2,603	'000 bbls
6. TOTAL IMPORTS	'000 M ³	-43.2	3,852	1 077	1 293	4 300	6 208	55,309	51,631	56,817	67,441	87,459	58,796	'000 bbls
7. IMPORTS OF REFINED PRODUCTS	'000 M ³	-43.8	3,609	1 022	1 293	581	70	-	-	-	1,681	2,503	260	'000 bbls
8. IMPORTS OF CRUDE OIL FOR REFINING	'000 M ³	-29.1	243	55	-	3 719	6 138	55,309	51,631	56,817	65,760	84,784	58,144	'000 bbls
9. IMPORTS OF OTHER OILS FOR REFINING AND BLENDING	'000 M ³	-	-	-	-	-	-	-	-	-	-	172	392	'000 bbls
10. TOTAL EXPORTS	'000 M ³	-1.3	60,345	9 725	9 176	13 938	15 185	113,493	113,105	126,604	140,753	147,896	139,714	'000 bbls
11. EXPORT OF CRUDE OIL	'000 M ³	8.7	33,358	5 170	4 939	5 956	6 760	46,075	46,282	54,008	50,936	44,408	48,307	'000 bbls
12. EXPORTS OF REFINED PRODUCTS	'000 M ³	-13.2	24,987	4 575	4 237	7 982	8 425	67,418	66,823	72,596	89,817	103,488	91,407	'000 bbls
13. RUNS TO STILL	'000 M ³	5.4	29,673	4 475	4 321	8 761	10 071	78,343	82,857	85,882	99,536	177,595	85,660	'000 bbls
14. NUMBER OF WELLS STARTED	AS STATED	-8.1	182	198	174	232	206	156	190	236	235	224	182	as stated
15. TOTAL NUMBER OF WELLS COMPLETED	AS STATED	-7.5	197	213	179	215	206	183	184	215	217	207	189	as stated
16. NUMBER OF DRILLING WELLS COMPLETED AS OIL WELLS	AS STATED	-5.5	156	165	162	169	161	140	144	170	170	153	150	as stated
17. NUMBER OF DRILLING WELLS ABANDONED	AS STATED	-17.6	14	17	13	26	14	19	40	45	47	54	24	as stated
18. TOTAL DEPTH DRILLED (ALL WELLS)	METRE	-3.6	199 402	206 830	183 797	252 936	239 609	670,928	787,132	895,098	922,295	919,705	839,649	feet
19. DEPTH DRILLED ON STATE OIL RIGHTS	METRE	-4.1	192 149	200 438	163 539	220 747	220 806	623,384	1,228,181	863,989	882,023	879,132	772,279	feet
20. DEPTH DRILLED ON PRIVATE OIL RIGHTS	METRE	13.5	7 253	6 392	20 258	32 189	51,258	51,258	20,479	31,109	40,272	40,573	67,370	feet
21. AVERAGE DEPTH OF COMPLETED WELLS (15)	METRE	-4.6	1 100	1 153	1 051	1 083	1 132	3,557	6,786	3,868	4,196	4,443	4,442	feet
22. TOTAL NUMBER OF WELLS PRODUCING (AV. DURING YEAR)	AS STATED	0.8	3 167	3 142	3 140	3 372	3 408	3,351	3,399	3,275	3,148	2,997	2,777	as stated
23. NO. OF WELLS PRODUCED BY FLOWING (AV. DURING YEAR)	AS STATED	1.9	325	319	344	392	392	397	516	507	428	438	438	as stated
24. NO. OF WELLS PRODUCED BY ARTIFICIAL LIFT (AV. DURING YEAR)	AS STATED	0.7	2 842	2 823	2 796	2 980	3 016	2,954	2,883	2,768	2,720	2,559	2,339	as stated
25. AVERAGE DAILY PRODUCTION PER PRODUCING WELL	M ³	2.3	55.6	8.6	8.1	8.3	8.8	63.3	63.0	70.1	72.8	71.0	77.6	barrel
26. AVERAGE DAILY PRODUCTION PER FLOWING WELL	M ³	-	139.7	22.2	19.3	23.7	28.9	248.9	215.4	271.4	335.7	328.5	358.7	barrel
27. AVERAGE DAILY PRODUCTION PER ARTIFICIAL LIFT WELL	M ³	4.3	46.0	7.0	6.7	6.3	6.2	42.1	35.8	33.2	31.4	25.5	24.9	barrel
28. TOTAL VALUE OF DOMESTIC EXPORTS	'000 \$	1.5	5,120,719	5,044,400	5,431,684	7,118,368	9,025,898	9,715,719	6,175,213	4,810,025	5,188,987	5,331,557	3,939,370	'000\$
29. TOTAL VALUE OF PETROLEUM PRODUCTS (ITEM 28)	'000 \$	0.5	4,191,329	4,168,910	4,692,967	6,491,617	8,051,501	9,127,773	5,715,496	4,379,188	4,787,280	4,960,604	1,925,785	'000\$
30. TOTAL VALUE OF LAKE ASPHALT PRODUCTS	'000 \$	43.1	15,925	11,130	6 737	6 782	1,134	3,253	3,355	360	3,051	4,426	4,240	'000\$
31. TOTAL NATURAL GAS PRODUCED	MILLION M ³	3.7	7 496	7 228	6 318	5 841	5 604	197,811	169,740	157,920	149,589	137,959	126,434	mmcf
32. USED AS FUEL	MILLION M ³	16.2	2 966	2 552	3 102	2 842	941	80,624	71,990	69,209	62,968	52,931	46,618	mmcf
33. REPLACED IN FORMATION	MILLION M ³	-	-	-	-	-	-	4	19	114	333	1,699	2,017	mmcf
34. LOSSES, NOT COLLECTED	MILLION M ³	4.8	261	249	214	297	356	12,607	82,236	73,381	8,518	76,095	70,890	mmcf

Unit (i) 1981 - 1985
 In 1985 items 1 - 13 and 25 - 27 in barrels
 Unit (2) 1975 - 1980

**APPENDIX II
MONTHLY ANALYSIS OF DRILLING AND WORKOVER WELLS - 1985
DEPTH DRILLED IN METRES**

MONTH	RIG-MONTHS	NEW WELLS STARTED	DRILLING WELLS COMPLETED														AVERAGE DEPTH DRILLED						OLD WELLS	
			OIL PRODUCERS		INJECTION WELLS		ABANDONED						COMPLETED OTHER		TOTAL WELLS	TOTAL AGGREGATE DEPTH	AGGREGATE DEPTH PER WELL	MONTHLY DEPTH DRILLED			RE-COMPLETED	ABANDONED		
			NO.	AGGREGATE DEPTH	NO.	AGGREGATE DEPTH	AFTER TESTING		DRY HOLES		TECHNICAL CAUSES		NO.	AGGREGATE DEPTH				NO.	AGGREGATE DEPTH	STATE			PRIVATE	TOTAL
							NO.	AGGREGATE DEPTH	NO.	AGGREGATE DEPTH	NO.	AGGREGATE DEPTH			NO.	AGGREGATE DEPTH								
JANUARY	8.49	19	14	12 040	3	1 676	-	-	1	777	-	-	-	-	18	14 493	805	14 345	-	14 345	463	55	13	-
FEBRUARY	8.39	18	18	13 239	1	457	-	-	-	-	-	-	-	-	19	13 696	721	16 190	399	16 589	593	71	4	-
MARCH	9.24	17	16	15 918	4	1 882	1	2 323	-	-	1	1 542	-	-	22	21 665	985	16 024	1 217	17 241	556	60	23	2
APRIL	9.55	19	22	20 044	-	-	-	-	-	-	2	2 597	-	-	24	22 641	943	15 680	1 736	17 416	581	61	17	2
MAY	8.89	10	12	13 807	-	-	-	-	-	-	-	-	-	-	12	13 807	1 151	17 553	592	18 145	585	66	12	-
JUNE	9.87	13	13	20 588	-	-	-	-	-	-	-	-	1	696	14	21 284	1 520	14 752	716	15 468	516	52	18	-
JULY	9.17	14	12	17 961	-	-	-	-	11	2 952	1	2 744	-	-	14	23 657	1 690	14 267	527	14 794	477	52	14	1
AUGUST	10.26	14	12	9 821	1	427	-	-	-	-	-	-	-	-	13	10 248	788	20 102	-	20 102	648	63	18	-
SEPTEMBER	10.90	15	10	14 982	7	3 278	-	-	1	1 859	-	-	1	975	19	21 094	1 110	17 185	-	17 185	573	53	12	6
OCTOBER	11.23	13	9	16 026	2	667	-	-	-	-	1	1 864	-	-	12	18 557	1 547	15 491	1 332	16 823	543	48	6	1
NOVEMBER	8.40	15	12	13 876	-	-	1	3 767	2	3 588	1	652	2	771	18	22 654	1 259	14 427	734	15 161	505	60	10	2
DECEMBER	8.00	15	6	9 199	2	700	-	-	-	-	1	2 040	3	1 061	12	13 000	1 083	16 133	-	16 133	520	65	14	3
TOTAL 1985	112.39	182	156	177 501	20	9 087	2	6 090	5	9 176	7	11 439	7	3 503	197	216 796	1 100	192 149	7 253	199 402	546	58	161	17
TOTAL 1984	98.58	198	172	196 682	15	11 307	-	-	6	10 349	11	12 553	9	14 761	213	24 652	1 153	200 438	6 392	206 830	565	69	130	4

APPENDIX IIA
LAND AND MARINE DEPTH DRILLED - 1985
DEPTH DRILLED IN METRES

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTAL
LAND	9 976	11 501	12 852	10 487	14 066	12 219	11 776	15 855	11 657	12 502	11 759	12 672	147 322
MARINE	4 369	5 088	4 389	6 929	4 079	3 249	3 018	4 247	5 528	4 321	3 402	3 461	52 080
TOTAL	14 345	16 589	17 241	17 416	18 145	15 468	14 794	20 102	17 185	16 823	15 161	16 133	199 402
DAILY AV. DEPTH	463	593	556	581	585	516	477	648	573	543	505	520	546
DAILY AV. DEPTH/RIG	55	71	60	61	66	52	52	63	53	48	60	65	58
MARINE % OF TOTAL	30	31	25	40	22	21	20	21	32	26	22	21	26

**APPENDIX III
MONTHLY ANALYSIS OF OIL PRODUCTION - 1985
(All Quantities in Barrels)**

MONTH	FLOWING				GAS LIFT				PUMPING				PLUNGER LIFT				OTHER METHODS				SALT WATER				NO. OF WELLS ABANDONED	NO. OF WELLS DRILLING AT MONTH END	NO. OF WELLS PRODUCING	DAILY AV. PER PRODUCING WELL	TOTAL OIL PRODUCTION	BREAKDOWN OF TOTAL PRODUCTION						AVERAGE B.O.P.D.	STATE C.H.P.S.	PRIVATE C.H.P.S.	TOTAL C.H.P.S.
	NO. OF WELLS	PRODUCTION	% OF TOTAL OIL	DAILY AV. PER WELL	NO. OF WELLS	PRODUCTION	% OF TOTAL OIL	DAILY AV. PER WELL	NO. OF WELLS	PRODUCTION	% OF TOTAL OIL	DAILY AV. PER WELL	NO. OF WELLS	PRODUCTION	% OF TOTAL OIL	DAILY AV. PER WELL	NO. OF WELLS	PRODUCTION	% OF TOTAL FLUID	DAILY AV. PER WELL	STATE			PRIVATE															
																					NO. OF WELLS	PRODUCTION	DAILY AV. PER WELL	NO. OF WELLS						PRODUCTION	DAILY AV. PER WELL								
JANUARY	329	1,177,329	21.4	115.4	456	3,174,878	57.8	224.6	2,358	1,145,102	20.8	15.7	-	-	-	-	9	153	-	0.5	2,187	4,117,824	42.8	60.7	1	7	3,152	56.3	5,497,462	2,515	5,310,813	68.1	637	186,849	9.5	177,337	1,591	26	1,617
FEBRUARY	306	1,134,091	23.4	132.8	456	2,645,372	54.5	207.2	2,335	1,074,130	22.1	16.4	-	-	-	-	6	114	-	0.7	2,105	3,748,005	43.6	63.6	-	8	3,102	55.9	4,853,707	2,479	4,676,428	67.4	623	177,279	10.2	173,347	631	7	638
MARCH	313	1,200,619	22.0	123.7	479	3,061,293	56.0	206.2	2,399	1,205,558	22.0	16.2	-	-	-	-	5	92	-	0.6	2,192	4,262,811	43.8	62.7	4	7	3,196	55.2	5,467,562	2,566	5,272,138	66.3	630	195,424	10.0	176,373	1,397	14	1,411
APRIL	317	1,343,538	24.9	141.3	451	2,855,524	53.0	211.1	2,384	1,186,717	22.1	16.6	-	-	-	-	7	231	-	1.1	2,225	4,179,170	43.7	62.6	4	7	3,159	56.9	5,388,010	2,524	5,192,426	68.6	635	195,584	10.3	179,600	621	4	625
MAY	323	1,400,067	25.4	139.8	451	2,901,120	52.5	207.5	2,403	1,221,216	22.1	16.4	-	-	-	-	2	38	-	0.6	2,261	4,495,871	44.9	64.1	-	7	3,179	56.0	5,522,441	2,548	5,306,500	67.2	631	215,941	11.0	178,143	1,715	37	1,752
JUNE	326	1,451,657	26.9	148.4	462	2,788,188	51.6	201.2	2,404	1,164,769	21.5	16.2	-	-	-	-	4	65	-	0.5	2,275	4,562,098	45.8	66.8	-	10	3,196	56.4	5,404,679	2,565	5,187,048	67.4	631	217,631	11.5	180,156	1,800	13	1,813
JANUARY-JUNE	319	7,707,301	24.0	133.5	459	17,426,375	54.2	209.8	2,381	6,999,492	21.8	16.2	-	-	-	-	6	693	-	0.6	2,208	25,365,579	44.1	63.5	9	46	3,165	56.1	32,133,861	2,533	30,945,153	67.5	631	1,188,708	10.4	177,535	7,755	101	7,856
JULY	321	1,541,642	27.2	154.9	471	2,920,720	51.6	200.0	2,390	1,197,034	21.2	16.2	-	-	-	-	6	161	-	0.9	2,223	4,810,071	45.9	69.8	3	6	3,188	57.3	5,659,557	2,566	5,434,893	68.3	622	224,664	11.7	182,566	2,661	14	2,675
AUGUST	332	1,637,623	29.1	159.1	467	2,795,841	49.7	193.1	2,368	1,191,424	21.2	16.2	1	1,132	-	36.5	5	73	-	0.5	2,229	4,569,165	44.8	66.1	-	7	3,173	57.2	5,626,093	2,549	5,411,237	68.5	624	214,856	11.1	181,487	3,145	20	3,165
SEPTEMBER	343	1,463,547	27.4	142.2	477	2,795,339	52.3	195.3	2,353	1,084,299	20.3	15.4	1	1,065	-	35.5	9	200	-	0.7	2,232	4,347,523	44.9	64.9	7	10	3,183	56.0	5,344,450	2,564	5,144,683	68.9	619	199,767	10.8	178,148	1,126	5	1,131
OCTOBER	339	1,445,255	27.0	137.5	467	2,753,127	51.4	190.2	2,352	1,159,517	21.6	15.9	1	993	-	32.0	9	152	-	0.5	2,252	4,362,273	44.9	62.5	2	6	3,168	54.6	5,359,044	2,546	5,151,838	65.3	622	207,206	10.7	172,872	2,083	11	2,094
NOVEMBER	326	1,347,430	27.0	137.8	457	2,571,533	51.6	187.6	2,368	1,068,914	21.4	15.0	1	491	-	16.4	6	111	-	0.6	2,257	4,469,416	47.3	66.0	6	6	3,158	52.7	4,986,479	2,515	4,801,674	63.6	643	186,805	9.7	166,283	2,767	17	2,784
DECEMBER	321	1,432,923	27.9	144.0	461	2,575,320	50.0	180.2	2,352	1,138,361	22.1	15.6	1	532	-	17.2	8	242	-	1.0	2,244	4,523,747	46.8	65.0	4	7	3,143	52.8	5,147,378	2,506	4,955,495	63.8	637	191,883	9.7	166,044	3,503	14	3,517
JULY-DECEMBER	330	8,868,420	27.6	146.1	467	16,411,890	51.1	191.0	2,364	6,839,549	21.3	15.7	1	4,213	-	27.5	7	939	-	0.7	2,240	27,082,195	45.7	65.7	22	42	3,169	55.1	32,125,001	2,541	30,895,820	66.1	628	1,225,181	10.6	174,592	15,285	81	15,366
TOTAL 1985	325	16,575,721	25.8	139.7	463	33,838,255	52.7	200.2	2,372	13,839,041	21.5	16.0	-	4,213	-	27.5	6	1,632	-	0.7	2,224	52,447,774	44.9	64.6	31	88	3,167	55.6	64,258,862	2,537	61,844,973	66.8	630	2,413,899	10.5	176,052	23,040	182	23,222
AVERAGE 1985	-	45,413	-	-	-	92,708	-	-	-	37,915	-	-	-	28	-	-	-	4	-	-	-	143,693	-	-	-	-	-	176,052	-	166,438	-	-	6,614	-	176,052	63	-	63	

**APPENDIX IIIA
ANALYSIS OF PRODUCTION BY OPERATING COMPANIES - 1985**

(All quantities in barrels)

COMPANY	FLOWING				GAS LIFTING				PUMPING				PLUNGER LIFT				OTHER METHODS				SALT WATER				AV. NO. OF WELLS PRODUCED	DAILY AV. PRODUCING WELL	TOTAL OIL PRODUCED	COY'S PROD'N AS A % OF TOTAL PROD'N	STATE PRODUCTION		PRIVATE PRODUCTION	
	AV. NO. OF WELLS	PRODUCTION	% OF TOTAL	DAILY AV. PER WELL	AV. NO. OF WELLS	PRODUCTION	% OF TOTAL	DAILY AV. PER WELL	AV. OF OF WELLS	PRODUCTION	% OF TOTAL	DAILY AV. PER WELL	AV. NO. OF WELLS	PRODUCTION	% OF TOTAL OIL	DAILY AV. PER WELL	AV. NO. OF WELLS	PROD.	% OF TOTAL OIL	DAILY AV. PER WELL	AV. NO. OF WELLS	PRODUCTION	% OF TOTAL FLUID	DAILY AV. PER WELL					PRODUCTION	% OF TOTAL PRODUCTION	PRODUCTION	% OF TOTAL PRODUCTION
TRINIDAD AND TOBAGO PETROLEUM COMPANY LIMITED	75	854,569	10.0	31.2	4	15,707	0.2	10.8	1,351	7,686,160	89.8	15.6	-	-	-	-	-	-	-	-	1,325	4,702,897	35.5	9.7	1,430	16.4	8,556,436	13.3	7,082,200	82.8	1,474,236	17.2
PREMIER CONSOLIDATED OILFIELDS LIMITED	5	76,025	32.9	41.7	-	-	-	-	80	153,681	66.4	5.3	-	-	-	-	6	1,632	0.7	0.7	28	55,533	19.4	5.4	91	7.0	231,338	0.4	23,400	10.1	207,938	89.9
TRINIDAD NORTHERN AREAS	66	3,425,323	24.1	142.2	218	9,077,214	63.8	114.1	52	1,729,808	12.1	91.1	-	-	-	-	-	-	-	-	232	2,551,340	15.2	30.1	336	116.0	14,232,345	22.1	14,232,345	100.0	-	-
AMOCO TRINIDAD OIL CO.	38	10,228,270	30.0	737.4	83	23,903,328	70.0	789.0	-	-	-	-	-	-	-	-	-	-	-	-	94	39,391,604	53.6	1,148.1	121	772.8	34,131,598	53.1	34,131,598	100.0	-	-
TRINIDAD AND TOBAGO OIL CO.	142	1,991,534	28.0	38.4	158	842,006	11.8	14.6	889	4,269,392	60.1	13.2	-	4,213	0.1	-	-	-	-	-	545	5,746,400	44.7	28.9	1,189	16.4	7,107,145	11.1	6,375,430	89.7	731,715	10.3
TOTAL 1985	325	16,575,721	25.8	139.7	463	33,838,255	52.7	200.2	2,372	13,839,041	21.5	16.0	-	4,213	-	-	6	1,632	0.7	0.7	2,224	52,447,774	44.9	64.6	3,167	55.6	64,268,862	100.0	61,844,973	96.2	2,413,889	3.8
TOTAL 1984	319	16,303,353	26.3	139.6	464	32,009,050	51.6	188.5	2,351	13,727,642	22.1	16.0	-	-	-	-	7	1,889	0.7	0.7	2,186	51,807,054	45.5	64.8	3,141	54.0	62,041,934	100.0	59,733,908	96.3	2,308,026	3.7

**NATURAL GASOLINE C.H.P.S. PRODUCTION
(ALL QUANTITIES IN BARRELS)**

COMPANY	STATE OIL RIGHTS	PRIVATE OIL RIGHTS	TOTAL
TRINIDAD AND TOBAGO PETROLEUM CO. LTD. - 1985	23,040	182	23,222
TOTAL 1984	28,478	521	28,999

APPENDIX III B
DAILY AVERAGE PRODUCTION BY MONTHS FOR ALL COMPANIES - 1985
 (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'DAD & TOBAGO PETROLEUM CO. LTD	706,377	649,578	723,315	725,572	745,172	741,562	768,889	756,275	684,930	701,132	649,938	703,896	8,556,436	
B.O.P.D.	22,786	23,199	23,333	24,186	24,038	24,719	24,796	24,396	22,831	22,617	21,665	22,706		23,442
PREMIER CONSOLIDATED OILFIELDS	13,233	11,664	11,990	16,960	20,470	19,774	21,657	21,103	20,053	20,098	26,559	27,777	231,338	
B.O.P.D.	427	417	387	565	660	659	699	681	668	648	885	896		634
TRINIDAD & TOBAGO OIL COMPANY	578,838	531,118	604,224	579,499	591,858	585,554	605,912	605,274	589,240	627,419	606,588	601,621	7,107,145	
B.O.P.D.	18,672	18,968	19,491	19,317	19,092	19,518	19,546	19,525	18,641	20,239	20,220	19,407		19,472
TRINIDAD NORTHERN AREAS	1,188,285	1,004,459	1,210,030	1,156,034	1,205,466	1,142,896	1,207,909	1,240,807	1,194,563	1,247,040	1,188,403	1,246,653	14,232,345	
B.O.P.D.	38,332	35,874	39,033	38,534	38,886	38,097	38,965	40,020	39,819	40,227	39,613	40,215		38,993
AMOCO TRINIDAD OIL COMPANY	3,010,729	2,656,888	2,918,003	2,909,945	2,959,475	2,914,893	3,055,390	3,002,834	2,855,664	2,763,355	2,516,991	2,567,431	34,131,598	
B.O.P.D.	97,120	94,889	94,129	96,998	95,467	97,163	98,561	96,866	95,189	89,140	83,900	82,820		93,511
	197,462	4,853,707	5,467,562	5,388,010	5,522,441	5,404,679	5,659,557	5,626,093	5,344,450	5,359,044	4,988,479	5,147,378	64,258,862	
B.O.P.D.	177,337	173,347	176,373	179,600	178,143	180,156	182,566	181,487	178,148	172,872	166,283	166,044		176,052
TOTAL - 1984	4,964,708	4,638,524	4,947,507	4,897,223	5,123,032	5,052,882	5,238,719	5,396,005	5,296,884	5,520,540	5,382,211	5,583,699	62,041,934	
B.O.P.D.	160,152	159,949	159,597	163,241	165,259	168,429	168,991	174,065	176,563	178,082	179,407	180,119		169,513

**APPENDIX - IIIC
LAND AND MARINE PRODUCTION 1985
(All quantities in Barrels)**

	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE		JAN - JUNE		JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER		JULY - DEC.		JAN - DECEMBER	
	WELLS	PROD.	WELLS	PROD.	WELLS	PROD.	WELLS	PROD.	WELLS	PROD.	WELLS	PROD.	AV. NO. OF WELLS	PROD.	WELLS	PROD.	WELLS	PROD.	WELLS	PROD.	WELLS	PROD.	WELLS	PROD.	WELLS	PROD.	AV. NO. OF WELLS	PROD.	AV. NO. OF WELLS	PROD.
MARINE																														
TNA:SOLDADO	308	1,177,498	304	994,636	319	1,199,678	319	1,145,328	319	1,196,041	315	1,133,395	314	6,846,576	319	1,198,084	331	1,231,829	328	1,184,930	340	1,237,725	342	1,178,968	339	1,237,386	333	7,268,922	324	14,115,498
TRINTOC: A.B.M.	20	4,717	22	3,265	31	10,800	27	10,620	25	9,332	31	10,362	26	49,096	34	13,922	33	15,821	37	15,453	33	13,200	34	12,960	32	12,100	34	83,456	30	132,552
TRINTOPEC: GALEOTA	45	125,745	44	121,397	45	130,510	50	126,280	51	128,970	51	127,142	48	760,044	50	124,329	50	121,718	50	116,625	50	111,899	50	102,540	51	105,920	50	683,031	49	1,443,075
AMOCO	118	3,010,729	118	2,656,888	122	2,918,003	122	2,909,945	123	2,959,475	129	2,914,893	122	17,369,933	122	3,055,390	122	3,002,834	122	2,855,664	119	2,763,355	115	2,516,991	113	2,567,431	119	16,761,665	121	34,131,598
SUB-TOTAL	491	4,318,689	488	3,776,186	517	4,258,991	518	4,192,173	518	4,293,818	526	4,185,792	510	25,025,649	525	4,391,725	536	4,372,202	537	4,172,672	542	4,126,179	541	3,811,459	535	3,922,837	536	24,797,074	523	49,822,723
DEVIATED FROM SHORE . . .																														
TNA - F.O.S.	13	10,787	14	9,823	13	10,352	13	10,706	14	9,425	13	9,501	13	60,594	15	9,825	13	8,778	12	9,633	12	9,315	12	9,435	12	9,267	13	56,253	13	116,847
TRINTOC - A.S.	16	940	15	743	17	2,460	16	1,856	16	1,654	16	1,624	16	9,277	17	1,605	15	1,623	14	1,303	14	1,208	8	1,003	13	1,370	14	8,112	15	17,389
TRINTOPEC - GUAPO M 1151/53	9	2,897	8	2,706	9	2,790	9	2,623	9	3,277	9	2,151	9	16,444	8	2,794	8	2,635	8	2,164	9	2,754	8	2,208	8	2,270	8	14,825	8	31,289
SUB-TOTAL	38	14,624	37	13,272	39	15,602	38	15,185	39	14,356	38	13,276	38	86,315	40	14,224	36	13,036	34	13,100	35	13,277	28	12,646	33	12,907	34	79,190	36	165,506
MARINE & DEVIATED	529	4,333,313	525	3,789,458	556	4,274,593	556	4,207,358	557	4,308,174	564	4,199,068	548	25,111,964	565	4,405,949	572	4,385,238	571	4,185,772	577	4,139,456	569	3,824,105	568	3,935,744	570	24,876,264	569	49,988,228
LAND	2,623	1,164,149	2,577	1,064,249	2,640	1,192,969	2,603	1,180,652	2,622	1,214,267	2,632	1,205,611	2,616	7,021,897	2,623	1,253,608	2,601	1,240,855	2,612	1,158,678	2,591	1,219,588	2,589	1,164,374	2,575	1,211,634	2,599	7,248,737	2,607	14,270,634
TOTAL PRODUCTION	3,152	5,497,462	3,102	4,853,707	3,196	5,467,562	3,159	5,388,010	3,179	5,522,441	3,196	5,404,679	3,164	32,133,861	3,188	5,659,557	3,173	5,626,093	3,183	5,344,450	3,168	5,359,044	3,158	4,988,479	3,143	5,147,378	3,169	32,126,001	3,167	64,258,862

APPENDIX IV
PRODUCTION AND DISPOSAL OF NATURAL GAS - 1985
(IN CUBIC METRES)

MONTH	NATURAL GAS PRODUCTION	SALES TO OTHER COMPANIES	CONVERTED TO C.H.P.S.	NATURAL GAS DISPOSAL						NATURAL GAS RECOVERY			INTER-OIL COMPANY SALES	USED FOR THE MANUFACTURE OF PETROCHEMICAL	
				USED AS FUEL		VENTED TO ATMOSPHERE			PIPELINE LOSSES	NOT COLLECTED	NATURAL GAS TREATED	AVERAGE PLANT RECOVERY (L/M ³)			NATURAL GASOLINE PRODUCED (BARRELS)
				IN FIELDS	IN REFINERY	AFTER UTILIZ.	WITHOUT UTILIZ.	TOTAL							
JANUARY	620 941 826	270 853 247	48 054	30 054 995	41 907 607	161 645 379	93 103 453	254 748 832	7 349 638	15 922 820	8 183 966	0.0314	1 617	288 920 049	90 193 783
FEBRUARY	555 540 493	249 997 802	18 972	26 047 509	32 366 103	143 090 083	83 369 932	226 460 015	6 055 530	14 594 561	8 174 848	0.0124	638	268 761 340	89 318 934
MARCH	607 467 961	256 949 560	41 937	29 285 060	37 332 765	151 895 208	111 553 664	263 448 872	7 471 712	12 938 054	8 546 393	0.0262	1 411	266 702 365	90 050 301
APRIL	625 605 385	281 831 945	18 548	27 073 202	32 878 864	145 682 236	116 020 449	261 702 685	8 504 258	13 595 882	8 202 938	0.0121	625	289 260 191	99 330 866
MAY	647 573 455	293 633 360	52 046	29 073 674	35 437 858	144 318 893	122 839 939	267 158 833	8 675 490	13 542 194	8 426 641	0.0331	1 752	298 210 043	105 400 158
JUNE	640 427 500	286 058 150	53 859	30 306 477	39 965 354	140 758 219	122 358 921	263 117 140	8 836 103	12 090 417	8 093 607	0.0356	1 813	301 284 516	98 095 798
HALF-YEARLY TOTAL	3 697 556 620	1 639 324 064	233 416	171 840 917	219 888 552	887 390 019	649 246 358	1 536 636 377	46 892 732	82 683 928	49 628 394	0.0252	7 856	1 713 138 503	572 389 840
JULY	645 716 408	285 036 025	79 287	31 232 551	39 318 598	147 522 124	125 194 259	272 716 383	4 923 083	12 410 482	7 624 963	0.0558	2 678	301 777 145	99 572 522
AUGUST	638 450 842	279 583 785	94 040	31 156 237	40 906 606	148 299 449	121 611 498	269 910 947	5 318 018	11 481 208	7 671 997	0.0656	3 165	287 172 219	90 109 852
SEPTEMBER	642 728 980	282 722 028	33 612	28 243 651	38 250 939	136 877 905	137 239 426	274 117 330	8 115 383	11 246 037	8 245 725	0.0218	1 131	305 824 245	98 887 452
OCTOBER	618 313 796	280 094 281	62 212	29 640 521	31 046 793	144 121 553	114 073 807	258 195 360	7 142 048	12 132 581	8 130 362	0.0409	2 094	288 717 498	94 088 397
NOVEMBER	606 658 325	271 534 805	82 714	29 925 587	31 217 741	135 996 571	119 729 192	255 725 763	6 150 901	12 020 814	7 799 650	0.0567	2 784	281 633 047	82 854 169
DECEMBER	563 345 608	246 401 959	104 517	31 332 085	38 064 189	131 250 780	95 963 143	227 213 923	8 583 404	11 645 531	6 885 667	0.0812	3 517	256 118 603	82 195 689
HALF-YEARLY TOTAL	3 715 213 960	1 645 372 883	456 383	181 530 632	218 804 866	844 068 382	713 811 325	1 557 879 706	40 232 835	70 936 654	46 358 365	0.0527	15 369	1 721 242 757	547 708 081
YEAR TOTAL	7 412 770 580	3 284 696 947	689 798	353 371 550	438 693 418	1 731 458 401	1 363 057 683	3 094 516 083	87 125 567	153 620 582	95 986 759	0.0385	23 225	3 434 381 260	1 120 097 921
% DISPOSAL FOR YEAR		44.3		4.8	5.9	23.3	18.4	41.7	1.2	2.1					

APPENDIX V
DESTINATION OF EXPORTS OF CRUDE AND REFINED PRODUCTS FROM TRINIDAD AND TOBAGO - 1985
 (All quantities in barrels)

COUNTRY	TOTAL REFINED PRODUCTS	% OF TOTAL EXPORTS	CRUDE PETROLEUM EXPORTS	L.P.G.	AVIATION GASOLENE	MOTOR GASOLENE	KEROSENE	GAS & DIESEL OILS	FUEL OILS	LUBES & GREASES	PETRO-CHEMICALS	OTHER REFINED PRODUCTS
NORTH AMERICA - CANADA U.S.A.	169,686 3,233,119	0.70 13.29	- 35,357,878	- -	- -	- 219,752	- -	169,686 517,353	- 2,465,965	- 11,889	- 18,160	- -
TOTAL N.A.	3,402,805	13.99	35,357,878	-	-	219,752	-	687,039	2,465,965	11,889	18,160	-
CENTRAL AMERICA - REPUBLIC OF PANAMA GUATEMALA HONDURAS OTHER C.A. (a)	161,565 5,969 21,556 3,918	0.66 0.02 0.09 0.02	- - - -	6,714 - - -	8,646 - - -	136,386 - 20,000 -	- - - -	9,819 - - -	- - - -	- - - -	- - - -	5,969 1,556 3,918 -
TOTAL C.A.	193,008	0.79	-	6,714	8,646	156,386	-	9,819	-	-	-	11,443
SOUTH AMERICA - GUYANA SURINAME FRENCH GUIANA OTHER S.A. (b)	1,704,492 1,478,393 958,063 28,951	7.00 6.08 3.94 0.12	- - - -	52,644 - 16,680 -	11,121 13,516 - -	390,184 398,515 183,299 -	173,985 113,620 101,568 -	536,330 403,693 398,773 -	530,901 543,909 254,994 -	- - - -	- - - 26,571	9,327 5,140 2,749 2,380
TOTAL S.A.	4,169,899	17.14	-	69,324	24,637	971,998	389,173	1,338,796	1,329,804	-	26,571	19,596
WEST INDIES - BRITISH (c) FRENCH (d) NETHERLANDS (e) VIRGIN ISLANDS HAITI OTHER W.I. ISLANDS (f)	4,476,739 1,242,611 130,383 11,749 76,923 87,215	18.40 5.11 0.53 0.05 0.32 0.36	- - - - - -	92,528 36,613 - - - 1,396	87,864 5,924 - 4,713 - -	724,930 461,836 5,005 - 14,813 41,026	1,452,255 258,608 - - - -	666,176 399,054 4,709 - - 44,793	1,138,802 46,907 120,669 - 61,610 -	- - - - - -	- - - - - -	314,184 33,669 - - 7,036 500
TOTAL W.I.	6,025,620	24.77	-	130,537	98,501	1,247,610	1,710,863	1,114,732	1,367,988	-	-	355,389
EUROPE - ITALY ENGLAND OTHER EUROPE (g)	2,673,689 1,548,422 1,430,010	10.99 6.36 5.88	- - -	- - -	- - -	- - -	- - -	- - -	2,673,689 1,548,422 1,430,010	- - -	- - -	- - -
TOTAL EUROPE	5,652,121	23.23	-	-	-	-	-	-	5,652,121	-	-	-
OTHERS - JAPAN OTHERS *	3,173 3,977,561	0.01 16.35	- -	- -	- -	- -	- 172,597	- 343,516	- 3,321,873	- -	3,173 6,618	- 132,957
TOTAL OTHERS	3,980,734	16.36	-	-	-	-	172,597	343,516	3,321,873	-	9,791	132,957
TOTAL CARGOES	23,424,187	96.28	35,357,878	206,575	131,784	2,595,746	2,272,633	3,493,902	14,137,751	11,889	54,522	519,385
FOREIGN BUNKERS	906,499	3.72	-	-	88	-	225,532	177,897	502,982	-	-	-
TOTAL EXPORT	24,330,686	100	35,357,878	206,575	131,872	2,595,746	2,498,165	3,671,799	14,640,733	11,889	54,522	519,385

Countries Not Detailed

(a) Other Central America : Belize
 (b) Other South America : Brazil, Columbia.
 (c) British : Antigua, Anguilla, Barbados, Bahamas, Bequia, Carriacou, Dominica,
 Grand Cayman, Grenada, Jamaica, Montserrat, Nevis, St. Kitts,
 St. Lucia, St. Vincent.

(d) French : Guadeloupe, Martinique, St. Barthelemy,
 St. Barths, St. Maarten.
 (e) Netherlands : Saba, St. Eustatius.
 (f) Other W.I. Is : Tortola, Virgin Gorda.
 (g) Other Europe : Rotterdam, Denmark.
 * Other : Canary Islands, Japan.

**APPENDIX VI
MOVEMENT OF REFINED PRODUCTS - 1985
(All Quantities in Barrels)**

PRODUCT	OPENING INVENTORY	PRODUCTION	IMPORTS	TRANSFERS	REC. FROM LOCAL COMPANIES	TOTAL OPEN. INVENTORY & RECEIPTS	DISBURSE TO LOCAL COMPANIES	LOCAL CONSUMPTION			EXPORTS		(GAIN)/LOSS	CLOSING INVENTORY	TOTAL CLOSING INVENTORY & DISBURSEMENT	STATISTICAL ADJUSTMENT	
								OWN USE	RET. & CON. SALES	LOCAL BUNKERS	TOTAL	CARGOES					FOREIGN BUNKERS
L.P.G.	41,069	747,771	-	-	536,457	1,325,297	536,446	346	544,988	-	545,334	213,190	-	11,932	18,395	1,325,297	-
MOGAS - PREMIUM	230,296	4,290,024	-	(994)	3,219,644	7,738,970	3,219,696	7,196	3,257,403	-	3,264,599	1,125,911	-	(34,633)	163,466	7,739,039	(69)
MOGAS - REGULAR	86,445	1,589,431	-	711	160,215	1,836,802	158,862	-	162,649	-	162,649	1,470,756	-	69	45,051	1,837,387	(585)
MOGAS - UNFINISHED	206,718	533,396	-	-	-	740,114	1,352	-	63	-	63	400,340	-	-	338,359	740,114	-
NAPHTHA	343,228	164,120	132	-	1,609,238	2,116,718	1,612,454	44	811	-	855	254,152	-	-	249,256	2,116,718	-
AVIATION GASOLINE	18,147	49,742	-	(226)	4,359	72,022	3,592	-	4,378	-	4,453	59,448	88	170	4,271	72,022	-
AVIATION TURBINE FUEL	410,556	1,906,503	-	(45,591)	642,068	2,913,537	134,951	158	291,483	75	368,475	2,074,833	225,532	1,547	108,199	2,913,537	-
KEROSINE	74,594	899,451	403	46,283	34,463	1,055,194	541,608	2,075	83,633	76,834	85,708	382,929	-	(3,158)	48,144	1,055,232	(38)
WHITE SPIRIT	5,609	10,649	-	-	9,586	25,844	9,596	-	9,209	-	9,209	13	-	434	6,593	25,844	-
GAS OIL	482,125	4,019,613	978,677	1,893	1,141,049	6,623,357	1,123,629	30,594	1,014,675	-	1,186,287	3,740,234	108,347	(252)	465,111	6,623,357	-
MARINE DIESEL	22,108	199,934	4,787	(8,341)	13,033	231,521	16,764	-	3,139	141,018	4,680	112,928	69,550	5,359	22,240	231,521	-
FUEL OIL	898,320	17,610,823	5,611	(1,892,550)	71,135	16,693,338	75,413	811	36,476	1,541	50,025	14,477,675	502,982	2,453	1,580,695	16,689,243	4,095
LUBES AND GREASES	68,424	868	78,419	-	6,114	153,824	3,365	5,391	94,484	12,737	99,874	24,494	-	(302)	27,431	154,862	(1,038)
ASPHALTIC PRODUCTS	32,071	232,915	-	-	108,202	373,188	108,194	-	135,906	-	135,906	93,636	-	415	35,037	373,188	-
PETROCHEMICALS	23,393	70,680	-	-	-	94,073	642	8,196	3,070	-	11,266	54,523	-	-	276,242	94,054	19
OTHER FINISHED PRODUCTS	19,657	44	-	-	-	19,701	6	-	239	-	239	82	-	-	18,493	18,820	881
UNFINISHED OILS	891,780	(3,405,209)	4,369,732	-	-	1,856,304	-	55,508	-	-	55,508	96,855	-	-	1,687,779	1,840,141	16,162
TOTAL	3,854,540	28,920,755	5,437,759	(1,898,815)	7,555,564	43,869,804	7,546,571	110,319	5,642,607	232,205	5,985,131	24,581,999	906,498	(15,965)	4,846,144	43,850,377	19,427

APPENDIX VII
MOVEMENTS OF CRUDE AND C.H.P.S. – YEAR ENDING 31st. DECEMBER 1985
 (All quantities in barrels)

MONTH	PRODUCTION	IMPORTS	CHANGE IN INVENTORIES	TOTAL	OWN USE	TO REFINERY	EXPORTS	GAINS AND LOSSES	TOTAL
JANUARY	5,497,462	-	(151,641)	5,345,821	1,400	2,524,939	2,820,425	(943)	5,345,821
FEBRUARY	4,853,707	-	259,381	5,113,088	878	1,916,516	3,181,888	13,806	5,113,088
MARCH	5,467,562	-	(141,460)	5,326,102	1,585	2,529,588	2,774,051	20,878	5,326,102
APRIL	5,388,010	-	(3,959)	5,384,051	1,747	2,902,319	2,479,312	673	5,384,051
MAY	5,522,441	-	512,061	6,034,502	2,069	2,455,932	3,569,869	6,632	6,034,502
JUNE	5,404,679	-	(394,789)	5,009,890	1,360	2,191,617	2,822,424	(5,511)	5,009,890
JULY	5,659,557	243,288	(228,031)	5,674,814	2,182	2,324,935	3,295,255	52,442	5,674,814
AUGUST	5,626,093	-	454,817	6,080,910	1,809	2,566,604	3,299,878	212,619	6,080,910
SEPTEMBER	5,344,450	-	(351,260)	4,993,190	1,821	2,508,010	2,827,136	(343,777)	4,993,190
OCTOBER	5,359,044	-	85,540	5,424,584	1,899	2,730,710	2,711,927	19,952	5,424,584
NOVEMBER	4,988,479	-	954,702	5,943,181	1,880	2,547,993	3,293,459	99,849	5,943,181
DECEMBER	5,147,378	-	(431,116)	4,716,262	1,453	2,619,004	2,282,254	(186,449)	4,716,262
TOTAL	64,258,862	243,288	544,245	65,046,395	20,083	29,818,167	35,357,878	(149,733)	65,046,395

APPENDIX VIII

SUMMARY OF CRUDE OIL ASSESSED FOR CROWN ROYALTY WITH PRICES AND ANALYSES - 1985.
(FOR HALF YEARLY ASSESSMENTS PERIODS ENDING 30th JUNE & 31st DECEMBER)

COMPANY	NET ROYALTY PRODUCTION (BARRELS)	FIELD STORAGE VALUE \$		ROYALTY PAYABLE \$	SUB-DIVISION OF ROYALTY CRUDE INTO PRODUCTS AS PER R.L.E. 1 ANALYSIS											CRUDE OIL WEIGHTED API GRAVITY
		TOTAL	PER BARREL		LIGHT FRACTIONS			GAS OIL					FUEL OIL			
					QUANTITY BARRELS	%	TETRA-ETHYL LEAD 70-72 OCT. GAS M/S (MLS).	53-57 DI BARREL	48-52 DI BARREL	43-47 DI BARREL	NO. 2 FUEL OIL BARREL	TOTAL GAS OIL BARREL	%	QUANTITY BARREL	%	
TRINIDAD & TOBAGO PETROLEUM CO. LTD	2,780,577	153,578,810.68	55.23	15,357,881.04	195,510	7.03	1,747,247.29	4,582	-	47,542	451,787	503,911	18.12	2,081,156	74.85	19.2
TRINTOPEC - GALEOTA	760,044	46,596,675.24	61.31	5,824,584.40	130,937	17.23	-	-	-	-	376,579	376,579	49.55	252,528	33.22	27.0
PREMIER CONSOLIDATED OILFIELDS LTD	9,639	544,491.74	56.49	54,448.17	323	3.35	4,536.00	-	1,061	-	1,828	2,889	29.97	6,427	66.68	21.0
ESTATE OF TIMOTHY ROODAL	25	1,446.49	57.86	144.65	2	8.00	-	-	-	-	7	7	28.00	16	64.00	-
TRINIDAD & TOBAGO OIL CO. LTD																
POINT FORTIN	1,481,307	83,495,280.53	56.37	8,349,528.06	168,750	11.39	5,185,227.15	80,957	-	193,892	37,600	312,449	21.09	1,000,108	67.52	22.3
TRINIDAD NORTHERN AREAS LTD	6,907,170	274,506,234.08	39.74	27,450,623.41	920,510	13.33	29,656,242.84	-	910,950	-	-	910,950	13.19	5,075,710	73.48	22.3
TRINIDAD & TOBAGO OIL CO. LTD																
POINTE-A-PIERRE	1,635,987	92,101,267.77	56.68	9,210,126.80	170,351	10.34	1,766,875.60	20,930	109,052	113,857	174,853	418,692	25.62	1,046,943	63.54	23.5
AMOCO TRINIDAD OIL CO. LTD	17,369,933	1,109,195,846.60	63.86	138,649,480.82	1,981,195	11.41	22,502,885.16	-	13,067,719	-	-	13,067,719	75.23	2,321,019	13.36	33.2
TOTAL: JANUARY - JUNE	30,944,682	1,760,020,043.10	56.88	204,896,817.35	3,567,578	11.53	60,863,014.04	106,469	14,088,782	355,291	1,042,654	15,593,196	50.39	11,783,908	38.08	-
TRINIDAD & TOBAGO PETROLEUM CO. LTD	2,887,569	154,929,602.60	53.65	15,492,960.28	221,838	7.68	2,367,404.76	-	-	22,175	476,595	498,770	17.27	2,166,961	75.05	19.3
TRINTOPEC - GALEOTA	683,031	43,807,963.68	64.14	5,475,995.46	114,859	16.82	-	-	-	-	332,441	332,441	48.67	235,731	34.51	26.6
PREMIER CONSOLIDATED OILFIELDS LTD	13,548	775,424.73	57.24	77,542.48	1,078	7.96	14,182.56	-	-	1,657	2,251	3,908	28.84	8,562	63.20	22.0
ESTATE OF TIMOTHY ROODAL	149	8,359.37	56.10	835.94	3	2.01	-	-	-	-	44	44	29.53	102	68.46	-
TRINIDAD & TOBAGO OIL CO. LTD																
POINT FORTIN	1,522,768	85,174,967.38	55.93	8,517,496.74	162,224	10.65	5,051,938.86	83,283	-	222,840	47,928	354,051	23.25	1,006,493	66.10	23.6
TRINIDAD NORTHERN AREAS LTD.	7,325,175	407,083,570.07	55.57	40,708,357.01	952,844	13.01	36,490,383.30	-	-	1,499,772	-	1,499,772	20.47	4,872,559	66.52	22.3
TRINIDAD & TOBAGO OIL CO. LTD																
POINTE-A-PIERRE	1,717,950	98,207,985.70	57.17	9,820,798.57	204,334	11.90	2,325,720.31	-	143,057	-	322,053	465,110	27.07	1,048,506	61.03	22.3
AMOCO TRINIDAD OIL CO. LTD	16,761,665	1,134,325,750.40	67.67	141,790,718.79	2,234,496	13.33	29,164,343.40	-	11,112,480	-	-	11,112,480	66.30	3,414,689	20.37	33.2
TOTAL: JULY - DECEMBER	30,911,855	1,924,313,623.90	62.25	221,884,705.27	3,891,676	12.59	75,413,973.19	83,283	11,255,537	1,746,444	1,181,312	14,266,576	46.15	12,753,603	41.26	-
TOTAL 1985	61,856,537	3,684,333,667.04	59.56	426,781,522.62	7,459,254	12.06	136,276,987.23	189,752	25,344,319	2,101,735	2,223,966	29,859,772	48.27	24,537,511	39.67	-

**APPENDIX IX
ROYALTY ASSESSMENT**

**THE ROYALTY ASSESSMENT ON THE CRUDE OIL, NATURAL GASOLINE AND NATURAL GAS PRODUCED ON STATE
OIL MINING LEASES FOR EACH HALF YEARLY PERIOD DURING 1983 - 85 IS SHOWN BELOW.**

SOURCE OF REVENUE	ASSESSMENT OF HALF YEARLY PERIODS ENDING:					
	31-12-85	30-6-85	31-12-84	30-06-84	31-12-83	30-06-83
ROYALTY ON NATURAL GAS	\$856,580	\$ 840,016	\$857,192	\$ 857,193	\$828,007	\$ 743,815
ROYALTY ON NATURAL GASOLINE	\$110,722	\$ 52,381	\$70,588	\$ 131,402	\$ 143,895	\$ 102,278
MINIMUM RENT NET OFFSET BY ROYALTY ON CRUDE OIL	\$3,102,544	\$ 3,212,216	\$ 3,512,648	\$ 3,275,313	\$ 3,288,315	\$ 3,057,532
ROYALTY ON CRUDE OIL	\$ 221,884,705	\$ 204,896,817	\$ 233,863,140	\$ 218,608,196	\$ 211,576,346	\$ 202,276,586
HALF YEARLY TOTAL	\$ 225,954,551	\$ 209,001,430	\$ 238,303,568	\$ 222,854,104	C \$ 215,836,563	\$ 206,180,211
YEARLY TOTAL	\$ 434,955,981		\$ 461,157,672		\$ 422,016,774	

THE VOLUMES UPON WHICH THE ABOVE ASSESSMENTS WERE MADE ARE AS FOLLOWS:

SUBSTANCE ASSESSED FOR ROYALTY	UNIT	HALF YEARLY PERIODS ENDING :-					
		31-12-85	30-6-85	31-12-84	30-06-84	31-12-83	30-06-83
NATURAL GAS	M.C.F.	57 105 334	56 001 081	57 146 150	57 146 224	55 200 504	49 587 690
NATURAL GASOLINE	I.G.	506,928	251,282	353,467	603,103	642,902	441,041
CRUDE OIL NET	BARRELS	30,911,855	30,944,682	31,274, 221	28,440,715	27,875,204	27,947,641
FIELD STORAGE VALUE PER BARREL	\$ TT	\$62.25	\$56.88	\$84.62	\$56.76	\$66.12	\$65.10
ROYALTY PAYABLE PER BARREL		\$6.22	\$ 5.69	\$ 6.46	\$ 6.68	\$ 6.61	\$ 6.51

THE DATA USED TO EVALUATE CRUDE OIL FOR CROWN ROYALTY ASSESSMENTS 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 TABLE:

PRODUCT	31-12-85	30-6-85	31-12-84	30-06-84	31-12-83	30-06-83
BUNKER C GRADE FUEL	52,584 921	57,104 978	63,058 192	63,760 406	61,123 137	55,613 890
NO. 2 FUEL	79,539 180	71,636 449	75,564 570	80,009 839	79,800 023	76,768 345
43-47 D.I. GAS OIL	79,964 520	72,046 220	75, 974 341	80,419 609	80,209 794	77,178 116
48-52 D.I. GAS OIL	80,095 804	72,172 692	76,100 813	80,546 082	80,336 266	77,304 588
53-57 D.I. GAS OIL	80,358 372	72,425 637	76,353 759	80,799 027	80,589 211	77,557 533
70-72 OCT. M HEADED MOTOR GAS	76,093 305	72,544 658	69,705 593	76,128 106	78,733 255	81,020 368
AVERAGE MIDDLE RATE FOR SIGHT DRAFT ON N.Y./T.T. CURRENCY FOR U.S. \$1.00	2.409	2.409	2.409	2.409	2.409	2.409
	**3.6135					
VALUE OF TETRA ETHYL LEAD IN TT CENTS PER MILLILITRE	1.6419888	1.6593067	1.6562623	1.5927033	1.610931	1.783142
ROYALTY IN TT CENTS PER GALLON ON NATURAL GASOLINE (C.H.P.S.)	21.772564	20.771953	19.952216	21.772703	22.51411	23.191681

THE HALF YEARLY VOLUME OF PRODUCTS TO WHICH THE ABOVE PRICES FOR 1985 WERE APPLIED
RESPECTIVELY IN CALCULATOR ROYALTY ON CRUDE OIL WILL BE FOUND IN APPENDIX VIII
** RATE INCREASE WITH EFFECT FROM 18/12/85 DUE TO DEVALUATION OF TT DOLLAR.

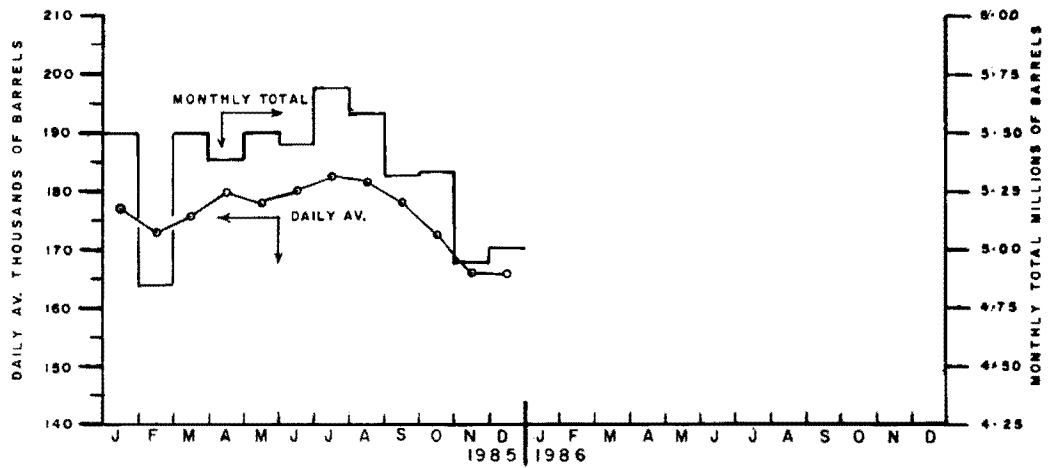
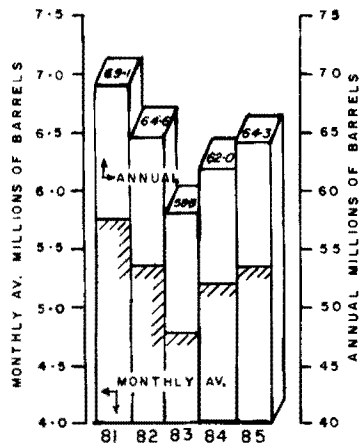
APPENDIX X

THE FOLLOWING TABLE SHOWS FOR THE YEARS 1983, 1984, 1985 THE QUANTITY OF ASPHALT EXTRACTED FROM THE PITCH LAKE AND THE QUANTITY OF DERIVED PRODUCTS WHICH WERE EXPORTED AND CONSUMED LOCALLY

NATURAL ASPHALT	METRIC TONS		
	1983	1984	1985
...EXTRACTED BY MINISTRY OF WORKS FOR LOCAL USE	6 218	9 332	11 926
...EXTRACTED BY TRINIDAD LAKE ASPHALT COMPANY	36 980	31 187	21 349
TOTAL	43 198	40 519	33 274
DERIVED PRODUCTS MANUFACTURED BY THE COMPANY			
EXPORTS :-			
CRUDE ASPHALT	—	—	—
DRIED ASPHALT	22 424	23 573	20 258
CEMENT ASPHALT	1 649	246	228
TOTAL	24 073	23 819	20 486
LOCAL SALES :-			
CRUDE ASPHALT	3	1	2
DRIED ASPHALT	955	455	429
CEMENT ASPHALT	10 556	6 848	3 998
TOTAL	11 514	7 304	4 429

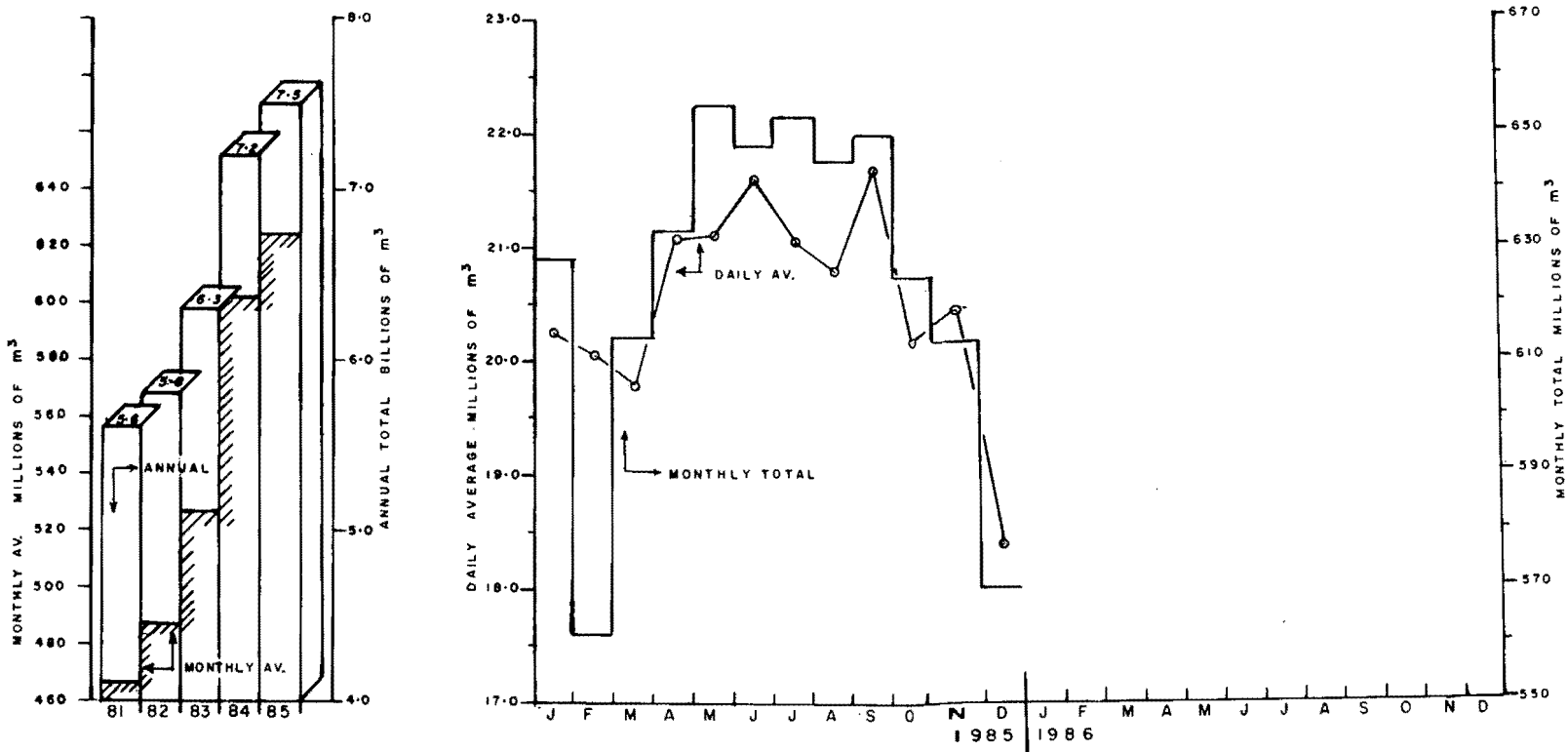
STATISTICS ON THE PETROLEUM INDUSTRY OF TRINIDAD & TOBAGO

CRUDE OIL PRODUCTION



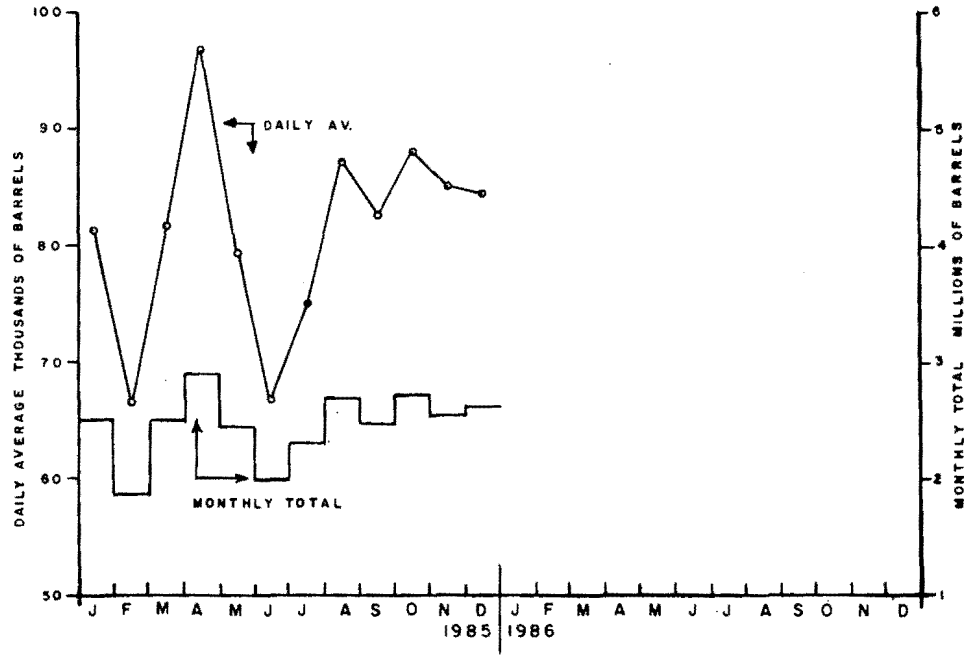
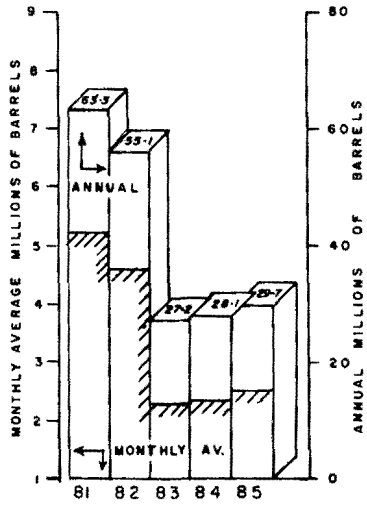
STATISTICS ON THE PETROLEUM INDUSTRY OF TRINIDAD & TOBAGO

NATURAL GAS PRODUCTION



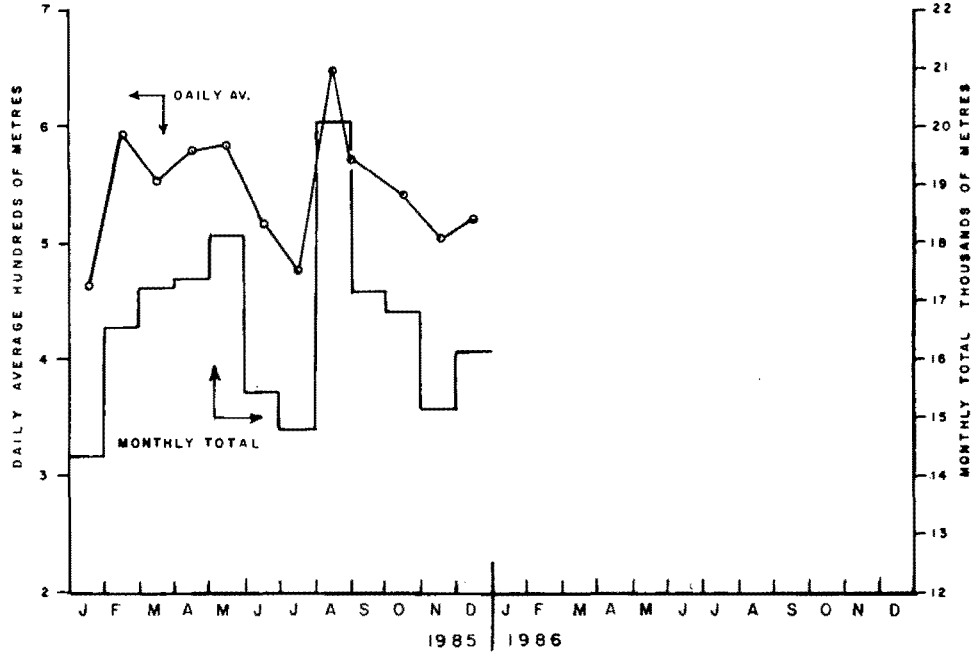
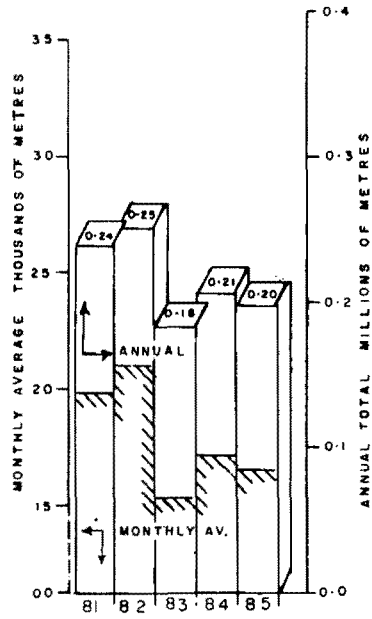
STATISTICS ON THE PETROLEUM INDUSTRY OF TRINIDAD & TOBAGO

REFINERY THROUGHPUT

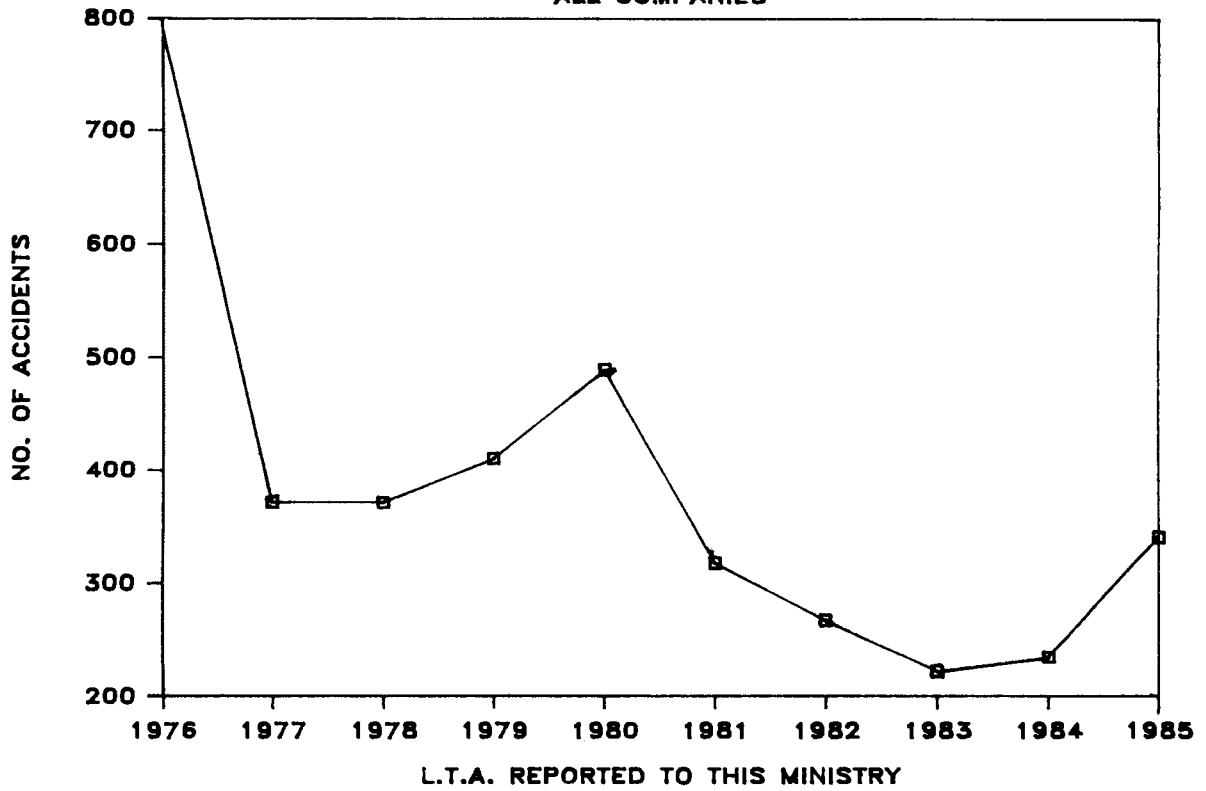


STATISTICS ON THE PETROLEUM INDUSTRY OF TRINIDAD & TOBAGO

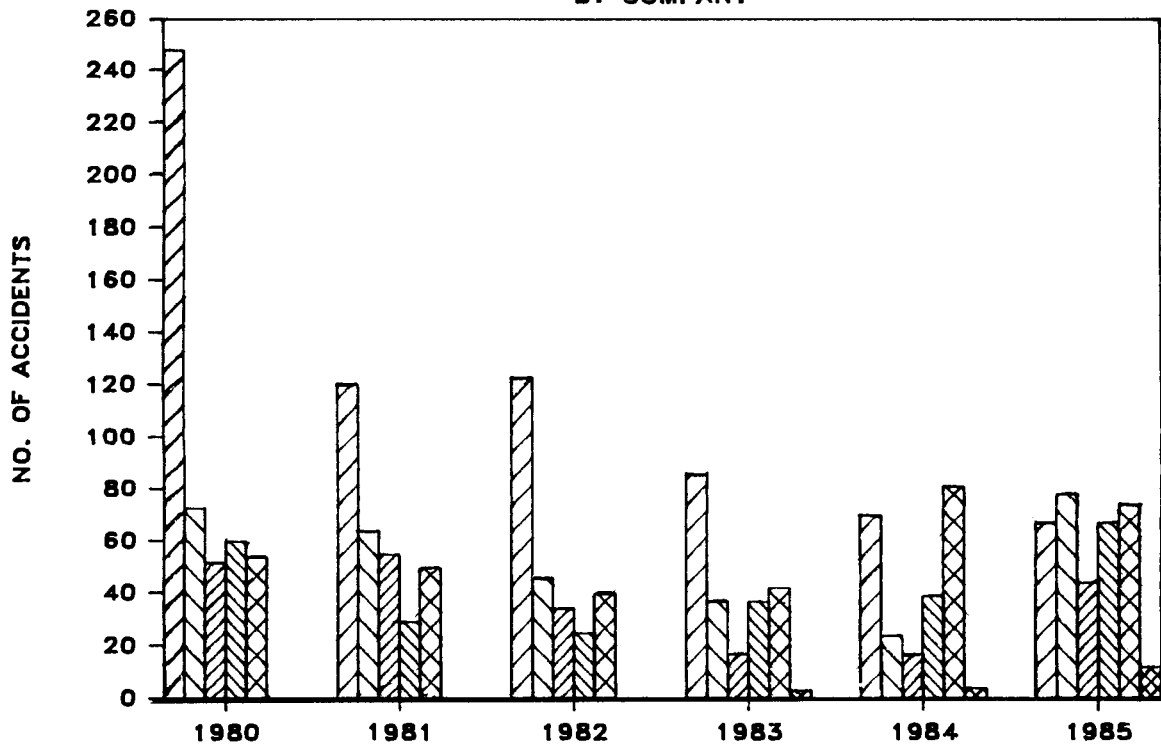
DRILLING



**TEN YEAR REVIEW - LOST TIME ACCIDENTS
ALL COMPANIES**



**LOST TIME ACCIDENT REVIEW
-- BY COMPANY --**



L.T.A. REPORTED TO THIS MINISTRY

ATOC
 TTI
 TTOC
 TTPCL
 TNA
 NGC