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ADMINISTRATION REPORT 1960

TAL OIL INDUSTRY

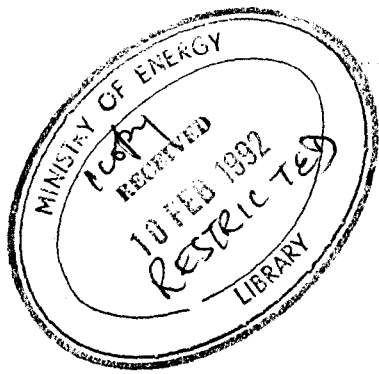
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## ADMINISTRATION REPORT - 1960

### THE OIL INDUSTRY

#### INTRODUCTION:

1. The year 1960 was one of considerable activity in the Oil Industry. Production of crude oil increased by 1.4 million barrels (3.5%) to a level of 42,357,329 barrels or 115,730 barrels per day. A major industrial strike of about 18 days in late June and July reduced the annual production by about 1.7 million barrels and brought to a halt all drilling and refining activities. All of the new production was derived from marine areas, with land production showing a decline of 5 percent. Marine oil averaged 17.8 % of total annual production for 1960.
2. Drilling activity was maintained by the operation of 30 rigs which drilled 312 wells as against 278 for 1959. The average depth per completed well was, however, somewhat shallower, with the result that total footage drilled decreased by 2.8 percent from the 1959 figure. In both years, the success ratio was 88.8%.
3. Refinery crude capacity increased from 190,000 to 290,000 barrels per day with the completion of <sup>a</sup> crude distillation unit by Texaco at Pointe-a-Pierre.
4. Crude oil imports increased by 44% from 31.3 million barrels in 1959 to 45.3 million barrels in 1960. The latter figure exceeds indigenous production of the oil industry by 3 million barrels and it marks the first occasion in the history that crude imports exceeded local crude production.
5. The following are the principal features of oil industry activity for 1960 :-

	<u>1959</u>	<u>1960</u>	<u>% Change</u>
Total Crude oil production, barrels	40,918,786	42,357,329	+3.5
Daily Average crude production, B/day.	112,106	115,730	+3.5
Natural Gasoline Production, bbls.	218,205	202,502	-7.2
Average Number of Rigs Operating	30	30	-
Number of Wells completed	278	312	+12.2
Number of Producers	247	277	+12.1
Success Ratio, %	88.8	88.8	-
Total Footage drilled, ft.	1,446,586	1,406,412	-2.8
Average Depth of Completed Wells, ft.	5,141	4,594	-10.6
Total Gas produced, M.C.F.	91,963,226	97,651,939	+6.2
Average Gas/oil Ratio Cu.ft. per bbl.	2,247	2,305	+2.6
Rated Crude Refining Capacity, bbls/day	190,000	290,000	+52.6
Refinery Runs, barrels	68,061,131	81,955,270	+20.4
Petroleum Imports bbls.	33,805,456	47,224,263	+39.7
Petroleum Exports, bbls.	57,917,430	68,330,845	+18.0

6. A more detailed analysis of industrial activity in relation to the nine previous years is given in Table I of the Appendix.

DRILLING

7. (A) General: 312 Wells were drilled in 1960 of which 277 or 88.8% were successful. This compares with a total of 278 completions in 1959 with the same success ratio. Footage drilled was 1,406,412 ft. some 3% less than in 1959, with the result that the average depth per completed well was lower in 1960 than in 1959. The relative figures for the two years are as follows :-

	<u>1959</u>	<u>1960</u>
Average Depth per completed well (a) All Wells	5141	4594
(b) Producers	4948	4461
(c) Dry Holes	7345	5646

8. Of the total wells drilled, 57 or 18.3% were drilled in marine areas from fixed platforms or mobile drilling barges.



9. One new field was discovered during the year. This was in the T.P.D. marine licence in the Gulf of Paria,  $6\frac{1}{2}$  miles west of the existing NM-1 well. By the end of the year, no development drilling beyond the discovery well had taken place.

10. With the exception of 5 'new-field' wildcat wells, the majority of the drilling effort was directed towards the development and extension of existing fields. Sixty wells - 23 Marine and 37 land - were drilled with the specific purpose of finding new oil. Twenty of these wells were dry holes, 3 found small, uncommercial gas deposits and the remainder, 37, secured new oil. The remaining wells drilled during the year were concerned with the development of existing reserves.

11. The following table gives in summary form an analysis of drilling activity for 1960 :-

DRILLING ACTIVITY 1960 - TABLE I

<u>EXPLORATION AND APPRAISAL WELLS</u>	<u>OIL</u>	<u>GAS</u>	<u>DRY</u>	<u>TOTAL</u>	<u>%SUCCESSFUL</u>
(a) Marine	12	-	11	23	52.2
(b) Land	25	3	9 <sup>(a)</sup>	37	75.7
SUB TOTAL	37	3	20	60	66.7
<u>DEVELOPMENT WELLS</u>					
(a) Marine	33	-	1	34	97.1
(b) Land	204	...	14	218	93.6
SUB TOTAL	274	-	15	252	94.0
GRAND TOTAL	274	3	35	312	88.8

(a) Includes 2 wells left closed in at the end of the year.

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12. (B) Exploratory Drilling: The following table summarizes the results of exploratory and appraisal drilling for 1960:

TABLE 11

	<u>Producer</u>	<u>Dry</u>	<u>Total</u>	<u>%Successful</u>
New Field Wildcat	1	4	5	20.0
New Pool: (a) Shallower Pool	1	-	1	100.0
(b) Deeper Pool	5	1	6	83.3
(c) New pool(outstep)	1	6	7	14.3
Extension of Existing Pools	26	15	41	63.4
TOTALS	37	23	60	61.7

13. (i) New Field Wildcats:

Five of these wells were drilled during the year- three in marine areas and two on land. Only one was successful. This was a well drilled by Trinidad Petroleum Development in their Gulf of Paria marine licence  $6\frac{1}{2}$  miles west of the existing NM-1 well. The well was drilled to a depth of 6293 ft. and completed in the Manzanilla (Miocene) formation. Two other marine wells drilled by Dominion Oil in the Gulf of Paria were dry: Goodrich - 1 located about 3 miles west of Congrejos Point on the Couva Coast was abandoned at 11,039ft. South Boundary - 2 well, about 30 miles due west of the Couva Coast and equidistant from the South Dominion Oil field and the original South Boundary No. 1 well (abandoned), also proved a failure.

14. The unsuccessful land wildcats were: (a) St. John - 1 drilled by Premier Consolidated Oilfields west of the existing Oropouche field to a depth of 6,000 ft. The target horizon was found to be entirely watered. (b) Shell's O.L.-3 well in the Lizard area of the South-eastern sector of the island was drilled to 8,317 feet. The Herrera formation was found to be dry but thin un-commercial gas bearing sections were encountered in the Cruse.



15. (ii) New Pool Tests:

One shallow pool success was obtained by Shell in the Inniss area. This well was drilled north of the central Inniss development and was completed as a poor producer in the Herrera overthrust sands.

16. Six deeper pool tests ~~were~~ completed on land. The most significant was Texaco's Guayaguayare 312 which was a combination new field - deeper pool test. This well was drilled midway between the existing Beach and Goudron Fields and was planned to test the Cretaceous on the north flank of the Gros Morne anticline at a depth of about 9,000 ft. Steeply dipping beds made it exceedingly difficult to pierce the Argilline (upper Cretaceous) so drilling was suspended for further evaluation of the project.

17. Trinidad Petroleum Development completed two producers in the lower Cruse in the eastern area of the Grande Ravine field; Texaco succeeded with two middle Cruse producers westward and down dip of the same field. Texaco also completed a producer in the lower Cruse on the north flank of the Siparia syncline in the Forest Reserve Field.

18. Seven new pool tests were completed during the year each of which outstepped, by several spacings, areas of known commercial production. Only one well was completed as a producer. The relevant wells are :-

(a) T.P.D. MacKenzie -6 was drilled south of the Los Bajos fault and in the region of the Skinner fault, to test all formations down to and including the Lower Cruse. The deeper formations were found to be dry but commercial oil was discovered in some shallow horizons.

(b) Dominion Oil's Domoil -5 well was drilled across a fault traversing the north side of the South Domoil field. No oil was found. This well, taken together with South Domoil-4, drilled earlier in similar geologic circumstances on the west side of the field, proved conclusively the limited size of this field.

(c) Shell's Catshill wells, CO-87 and CO-89 were drilled as part of a series of trans Ortoire stratigraphic tests. A few thin uncommercial gas sands were encountered.

(d) Shell's Inniss -20, drilled to test the formations of Inniss -1, proved a complete failure.

(e) T.P.D.'s Los Bajos -67 was drilled to test the Herrera in this area. No oil was discovered.

(f) Texaco's Trinity AT -36, was drilled to investigate the Herrera formation on the north flank of the Senguineau Anticline. No Herrera Sands were found, but Karamat Sands were penetrated and are still to be tested.

19. (iii) Extensions of Existing Pools:

Twenty-six of the 41 wells drilled in this category were successful. The major successes were achieved in the Soldado, Brighton Marine and Grande Ravine fields.

20. The activity of Apex in this connection was limited to 2 appraisal wells, FZ-696 and 701, which were on a line of outsteps, east of the Siparia Syncline, planned to link the North Quarry and Fyzabad fields. Both were drilled to the lower Cruse but neither found production.

21. Dominion drilled South Domoil 4 as a western outstep of the South Domoil field. No oil was found.

22. Kern Trinidad Oilfield drilled Marine wells off Guapo in an effort to exploit the Nariva Sands which are known to be productive in the Brighton Marine area north of this lease. Five wells were drilled from a floating drilling ship. One well was abandoned for technical reasons and only one of the remaining four found oil.

23. Shell continued their run of ill luck in the Ortoire area. One Catshill and three Inniss wells were failures. However, two Penal wells proved commercial and FE/135 established production in an area north of the Fortin East developed field.

24. Texaco proved up several pool extensions of the Grande Ravine field through the drilling of 8 westerly down dip outsteps. All wells were brought in as producers. In the Brighton marine area, productive acreage was increased considerably by the success of ABM-16 drilled off the 36 well platform and ABM-37, 38 and 39 drilled from a floating barge.

25. Trinidad Petroleum Development proved eastern and southern extensions in the shallow lower Cruse horizon of Quarry 205. The successful wells in this instance were QU-232 and QU-233.

26. Trinidad Northern Areas drilled 7 outstep wells in the Soldado field. Soldado 35, 38 and 41 proved western extensions, Soldado 49 and 52 proved Eastern and South Eastern extensions respectively, but the north western outstep, Soldado 44 and the north eastern outstep, Soldado 47, both proved to be dry.

27. (c) Development-Drilling: 252 wells or 80.7% of the total drilled in 1960, were devoted to the development of proved reserves. Of these, 34 (13%), were drilled in the Gulf of Paria and 218(87%) drilled on land. Only 1 marine and 14 land wells proved unsuccessful.

28. The areas of greatest activity were the Soldado (TNA), Brighton Marine (Texaco) Moruga West (T.P.D.) and Forest Reserve (Texaco). In fact, development drilling took place in 21 fields altogether, from Guayaguayare in the east to Soldado in the west. The Wilson field of T.C.O. was the only incompletely developed area in which no drilling was undertaken during the year.

#### PRODUCTION

29. (A) General: Total oil production from the territory in 1960 amounted to 42,357,329 barrels produced at an average rate of 115,730 barrels per day. This marks a 3.5% increase over the previous year. A major industrial strike for 18 days in late June and July caused a loss of about 1.7 million barrels of oil to the year's production level. A steady rate of increase throughout the year from 114,807 barrels per day in January to 126,294 barrels per day in December suggests that whatever flush production might have been produced from flowing wells on resumption of work was offset by a loss of production from a number of artificial lift wells which remained shut in for remedial work occasioned by the settlement of sand in the bore during the period of the strike.

30. A cursory examination of totals and averages for gross island production during the year, reveals the continuation of several salutary trends which have prevailed for the past decade but which began to accelerate with the emergence of marine oil in 1957.

31. Between 1957 and 1960 the percentage of total oil produced under natural flow increased from 65.2 to 70.2 and, more important, the daily average per flowing well jumped from 69.0 barrels to 83.9 barrels. In the same period, the daily average for all producing wells rose from 30.6 to 36.1 barrels, and by December of this year had reached 39.8 barrels. These figures are tabulated in the following summary:-

TABLE III

YEAR	FLOWING		ARTIFICIAL LIFT		TOTAL	
	% of total production	Daily av. per well, barrels	% of total Production	Daily av. per well, barrels	% of total production	Daily av. per well, bbls.
1957	65.2	69.0	34.8	15.0	100.0	30.6
1958	66.3	73.6	33.7	15.5	100.0	32.6
1959	68.1	80.2	31.9	15.8	100.0	34.9
1960	70.2	83.9	29.8	15.4	100.0	36.1

32. Since 1957 the volume of marine production and the productivity of marine wells have exercised the greatest measure of influence on the status and progress of local oil industry. Marine oil rose from 1.46% of total production in 1957 to 17.8% in 1960. In fact, the relative figures for 1959 and 1960 reveal that the national average increase of 3.5% in total crude production between these two years is a composite of a 5% decline in land production and a 77% increase in marine production. The figures for 1959 and 1960 are as follows :-

TABLE IV

		<u>1959</u>	<u>1960</u>	<u>% Change</u>
<u>(A) Crude Oil Production, bbls:</u>	(a) Land	36,663,232	34,817,724	- 5.0
	(b) Marine	4,255,554	7,539,605	+77.2
	(c) Total	40,918,786	42,357,329	+3.5
<u>(B) Percent of Total Production:</u>	(a) Land	89.6	82.2	-
	(b) Marine	10.4	17.8	-
<u>(C) No. of wells drilled:</u>	(a) Land	244	259	+ 6.1.
	(b) Marine	34	53	+55.9
	(c) Total	278	312	+12.2

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33. The relative productivity of land and marine areas is exemplified in the following study which compares the performance characteristics for the two sources in a twelve month interval :-

TABLE V

	DECEMBER 1959			DECEMBER, 1960		
	Marine	Land	Total	Marine	Land	Total
Crude Oil Production bbls.	538,004	3,051,479	3,589,483	867,991	3,016,123	3,884,114
No. of Wells Produced	54	3,207	3,261	84	3,064	3,148
Daily Av. per well, bbls.	321.4	30.7	35.5	333.3	32.8	39.8

34. From an analysis of the two foregoing tables the following conclusions may be drawn :-

(a) The increase in the volume of marine oil from 1959 to 1960 has been due (i) to a 55% rise in drilling activity and, (ii) an increase in the productivity of the average marine well.

(b) Land production has decreased over the two years despite a 6% increase in drilling activity. The principal reasons for this are :-

(i) No new fields were discovered on land during the year and the majority of exploratory and appraisal wells drilled were relatively poor producers which were able to offset only partially the natural decline of existing wells.

(ii) Loss of oil during the strike. Since 30% of land oil production is derived from artificial lift methods, a disproportionate amount of oil was lost from flush production owing to the sanding up of several of these wells during the strike. The net effect of the strike was to aggravate the extent of loss of production not to cause it.

(c) Despite the fact that in 1960 marine oil accounted for only 17.8% of total production, the rapid increase in marine sources of production between 1959 and 1960 and the relatively high productivity of marine wells were sufficient both to offset a 5% decline in land production and to provide enough additional oil to allow a 3.5% increase in total island production.

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(d) The decrease in land production was accompanied by an increase in the productivity of the average land producer. This was brought about through (i) the shutting in of marginal producers; (ii) the stimulation of production in certain low level producers by the use of such techniques as 'Hydrafrac' etc., and (iii) multiple completions of both old and new wells. Multiple completion and, to a lesser extent, well stimulation were by far the most important contributors. To the extent that these latter measures are purely technical in concept, it may be said that the major cause of increasing land-well productivity over the years is the full and increasing utilization of the latest developments in petroleum production technology.

35. 1960 was the first occasion since 1947 that land production showed a decline over the previous year. Although this provides no basis for optimism it should not be treated with undue pessimism when consideration is taken of the future of land oil in Trinidad. In the first place, the average depth per completed well in Trinidad is not unduly high, and in 1960 the drilling effort on land was, on the whole, directed at rather shallower horizons than in 1959. For example, dry holes (the majority, exploration wells) decreased from an average 7,345 ft. in 1959 to 5,713 feet in 1960, and completed producers from 4,984 ft. to 4,461 ft. This suggests that operators were after the shallow Miocene oil in 1960 but with only a modicum of success as would be expected judging from the density of wells already extant in this horizon. The future of land oil lies, in the main, in the Oligocene and deeper formations, and future drilling in these horizons may well reverse the present trends if sufficiently large volumes of oil are found.

36. (B) Company Production: Only 4 of the 10 operating companies showed production increases in 1960. T.N.A. showed the largest volume increase from the production of its Soldado marine field. This is the first year in more than a decade that Texaco showed a drop in production, due largely to the effects of the strike. This Company accounted for 43% of the annual crude production in the island.

37. The following table lists annual crude oil production by Company:-

TABLE VI

CRUDE OIL PRODUCTION BY COMPANY

1960

(Prod. figures in bbls.)

COMPANY	<u>1959</u>	<u>1960</u>	<u>% CHANGE</u>
Apex Trinidad Oilfields	2,926,805	2,741,897	- 6.3
Jade Petroleum Company	1,964	1,402	-28.6
Dominion Oil	46,594	212,861	+356.8
Kern Trinidad Oilfields	1,146,809	1,028,249	-10.3
Premier Consolidated Oilfields	375,192	387,158	+3.2
Shell Trinidad Limited	7,435,519	7,205,870	- 3.1
Trinidad Central Oilfields	1,468,872	1,307,191	-11.0
Trinidad Northern Areas	3,772,423	6,044,583	+60.2
Texaco Trinidad Inc.,	17,688,517	17,222,518	-2.6
T'dad Pet. Development Co.,	6,056,091	6,205,600	+2.5
TOTALS	40,918,786	42,357,329	+3.5

38. (C) Field Production Activities: Production from most land fields declined in 1960. Three notable exceptions were :-

(i) The Guayaguayare area of Texaco where a 63.5% increase in production yielded just under 800,000 barrels of new oil. This resulted partly from drilling activity in the Beach and Navette fields area and partly from the excellent response of old wells to stimulation by the Hydrafrac technique.

(ii) The Moruga West/Rock Dome area of T.P.D. New production amounted to 680,000 bbls. an increase of 96% over the previous year, and derived solely from the drilling of 40 wells.

(iii) Shell Point Fortin East Field - Grande Ravine area. Production increased by 45% with the provision of 542,000 barrels of additional oil. Twelve wells were drilled and the majority of them were dually completed.

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39. Three other land areas are worthy of mention, not particularly on account of the volume of increased production, but primarily because the higher levels of production were obtained at the expense of considerable drilling and recompletion activity. These areas are :-

(i) the San Francique area of P.C.O.L. where renewed drilling activity after many years of dormancy yielded an additional 96,000 barrels of oil in 1960.

(ii) The Los Bajos and

(iii) the Moruga North fields of T.P.D. where a policy of re-completion into cased off horizons has begun to show encouraging results. The increase in production from these two areas amounted to over 75,000 barrels of oil.

40. Contrary to production trends on land, marine production rose by 77.2% during the period, from 4,255,554 barrels in 1959 to 7,539,605 barrels in 1960. This was accomplished through the drilling of 53 wells of which 11 were abandoned. The majority of the drilling and virtually the whole of the production increase took place in the Soldado field of T.N.A. Production from this field alone increased from 3.77 million barrels in 1959 to 5.82 million barrels in 1960. Marine production, (i.e. production from wells whose surface location is in a marine area) amounted to 17.84% of the total crude production in Trinidad. This compares with 10.4% for 1959 and 1.46% for 1957. The following table outlines the development of marine production in Trinidad.

TABLE V11

TABLE SHOWING GROWTH OF 'SUBMARINE' OIL PRODUCTION, 1955 - 1960

CRUDE OIL PRODUCTION FROM SUBMARINE FIELDS(bbls.)

	1955	1956	1957	1958	1959	1960	NOTES
Brighton and Point Ligorre	-	183,918	117,763	105,033	732,261	1,489,243	Includes <del>Wells</del> , A.L.M., and A.B.M. Wells.
Soldado and Point Fortin Territorial	34,996	53,539	379,410	1,588,745	3,472,786	5,818,683	Includes High Seas and Pt. Fortin Territorial Wells. F.O.S. Wells are omitted.
North Marine	-	-	-	-	15,334	29,980	Consists entirely of T.P.D's High Seas Field Test production from two wells.
South Dominion Oil	-	-	-	-	46,594	212,861	High-Seas-Gas Condensate Field.
GUAPO	-	-	-	-	-	4,008	Represents production from K.T.O. Well G.9, does not include wells deviated from shore and 'M' Wells
Total "Submarine"	34,996	237,457	497,173	1,693,778	4,266,975	7,554,775	(55-60) Grand Totals 14,285,154
Total Land	24,860,809	28,691,311	33,566,774	35,661,281	36,651,811	34,802,554	194,234,540
Total Island	24,895,805	28,928,768	34,063,947	37,355,059	40,918,786	42,357,329	208,519,694
'Submarine Oil expressed as a % of Total Oil	0.14	0.82	1.46	4.53	10.43	17.84	6.85

DEFINITION: Submarine oil is oil derived from Wells Entitled to Submarine Well Allowance.

41. The following study summarises in tabular form the areas from which additional production was gained in 1960:-

TABLE VIII  
AREAS OF INCREASED PRODUCTION -1960  
(production figures in bbls.)

Area	1960	1959	Increase	% Increase	Factors Causing Increase
1. Soldado	5,818,683	3,772,423	2,046,260	54.2	(a) Development Drilling & (b) Dual Completions
2. Moruga/ R.Dome	1,383,733	703,309	680,424	96.7	Development Drilling
3. Guayaguayare	2,051,419	1,254,645	796,774	63.5	(a) Development Drilling (b) Hydrafrac (c) Dual Completions
4. Pt. Fortin East (S.T.L.)	1,750,239	1,207,996	542,243	44.9	(a) Development Drilling (b) Dual Completion
5. Los Bajos (TPD)	147,358	102,260	45,098	44.1	Recompletions
6. Moruga North	152,621	119,069	33,552	28.2	Recompletions
7. South Domoil	212,861	46,594	166,267	353.3	Development Drilling
8. San Francique	191,348	96,771	95,771	98.9	Development Drilling

42. Further details of production for the year 1960 are given at Tables III and IIIA.

NATURAL GAS AND NATURAL GASOLINE

43. The volume of natural gas produced in 1960 amounted to 97,651,939 M.C.F., some 6.2% higher than 1959. Only 45% of production was usefully consumed, the remainder being vented. The Majority of the vented gas was, however, utilized pneumatically, particularly for gas lifting, before blowing to atmosphere. Small volumes of low pressure pumping well gas were not collected.

44. All sources of consumption with the exception of injection gas, showed a volume increase in 1960 over the previous year. This source of consumption suffered a set back when compressors on injection service were temporarily

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transferred to fuel service consequent upon the commencement of operation of the new 100,000 barrels per day crude distillation refinery at Pointe-a-Pierre. Towards the end of the year, new compressor capacity was being installed and it was envisaged that the gas injection programmes affected would be restored to normal and new projects commenced in 1961.

45. Table IX below, gives natural gas production and disposal for the years 1955- 1960. Table IV of the Appendix gives the same data on a month to month basis for the year 1960.

46. The under utilization of natural gas is a problem that has long plagued both the oil industry and the territorial economy. In any associated gas economy such as ours, a market must exist for the gas or else it goes to waste. At present some 61% of the produced gas is flared despite the existence of two large refineries, a cement factory, a power station and a petrochemical plant all of which are gas consumers. The Petroleum Division has been actively concerned with this problem from a conservation viewpoint and several safeguards have been instituted by the Industry to avoid waste. In addition, many large scale injection projects are being studied and plans are now being drawn for the construction of a gas pipeline from Penal to Port of Spain. If these several projects come to fruition, it will not be long before full utilization of Trinidad's annual gas production is assured.

47. Natural gasoline production dropped 7.2% in 1960. This is a continuation of a trend which started several years ago as a result of a weakening of local marketing conditions for this product. There is no local or export market for natural gasoline as such. The decision whether or not to manufacture this product will, therefore, depend on the individual economic position of each company. Trinidad Petroleum Development and Apex have absorption plants which turn out natural gasoline for admixture with crude oil in order to upgrade the quality of the latter. Texaco also possess an absorption plant at Forest Reserve, but this was shut down in 1959 on economic grounds.

TABLE IX

PRODUCTION AND DISPOSAL OF NATURAL GAS 1955-1960

(All volume figures in thousands of cu.ft.)

YEAR	Natural Gas Production	D I S P O S A L									
		Used for Fuel		Injected into the formation		Converted Natural Gasoline		Vented and Not collected		Converted to Petrochemicals	
		Volume	%	Volume	%	Volume	%	Volume	%	Volume	%
1955	40,860,323	17,610,799	43.1	5,434,423	13.3	286,022	0.7	17,529,079	42.9	-	-
1956	51,742,518	19,351,702	37.4	7,399,180	14.3	258,713	0.5	24,732,923	47.8	-	-
1957	65,417,972	21,260,841	32.5	9,551,024	14.6	261,672	0.4	34,344,435	52.5	-	-
1958	79,190,771	23,440,468	29.6	11,165,899	14.1	237,572	0.3	44,346,832	56.0	-	-
1959	91,963,266	25,197,935	27.4	12,415,041	13.5	183,927	0.2	53,890,473	58.6	275,890	0.3
1960	97,651,939	25,682,460	26.3	10,937,017	11.2	195,304	0.2	59,470,031	60.9	1,367,127	1.4
TOTALS	426,826,789	132,544,205	31.1	56,902,584	13.3	1,423,210	0.3	234,313,773	54.9	1,643,017	0.4

SECONDARY RECOVERY

48. General injection and production data on each of the thirty-one Secondary Recovery and Pressure Maintenance operations in Trinidad for the year 1960 are shown in Table X.

49. A summary of these results appears in Table XI which also provides comparable data for the year 1958. The comparison shows that in 1960, although more gas had been injected into underground reservoirs, the total oil derived from these projects declined and, consequently, the ratio, cubic feet of gas injected per barrel of oil recovered, increased adversely from 3,853 to 3,993. This increased ratio reflects some of the abnormal operational difficulties attending the local industry: geological complexities (providing inadequate reservoir delineation with poorly defined permeability and fault barriers), formation sand inhomogeneities, multiple sand lensing, and numerous mechanical problems such as casing collapse and primary-cementation failures in original multizone completions. Despite these serious handicaps, most operators were in fact budgeting for increased gas injection operations on their leases for the coming year. The percentage of the total gas <sup>which was</sup> produced injected into all Secondary Recovery and Pressure Maintenance operations during the year 1960 stood at slightly over 11 per cent and is regarded as being alarmingly low from a conservation viewpoint.

50. In the field of waterflooding, by employing filtered deoxygenated seawater for injection purposes, the quantity of water injected during the year 1960 almost doubled that which was injected during 1958. This was also accompanied by a considerably increased oil recovery from the flooded units. However, the ratio of the quantity of water injected to the oil recovered, showed an increase from 6.9 in 1958 to 8.7 in 1960. This increased index expresses the maturing of the older projects and a certain degree of water by-passing attending the operation of the younger projects. The overall results from water injection into the advanced schemes prompted Texaco's conversion of a pilot 5-spot-pattern flood at Forest Reserve into a full scale injection project covering the entire reservoir, and the Trinidad Petroleum Development Company's initiation of another line-drive project on their Quarry field.

51. The latest Technological advances have made possible a more widespread application of secondary recovery techniques in the production of crude oil. This in turn, has given rise to problems of conservation control especially in the fields of pressure maintenance of reservoirs and the desirability of maximizing the use of natural gas as the injection medium. This matter is now under study in the hope that more effective conservation measures may be incorporated in the projected new legislation.



TABLE XI

SUMMARY OF THE RESULTS OF SECONDARY RECOVERY  
AND PRESSURE MAINTENANCE OPERATIONS IN TRINIDAD FOR THE YEARS 1958 AND 1960

YEAR	No. of Secondary Recovery & Pressure Maintenance Projects in Operation		Volume of Gas injected into all projects during the year expressed in :-		Volume of Water injected into all projects during the year (bbls.)	Quantity of Oil recovered during the year from :-		Total Oil recovered from all projects during the year expressed in :-	
	Gas Injection	Water Injection	M.M.S.C.F.	% of Total Gas Produced		Gas injection Projects (bbls.)	Water Injection Projects (bbls.)	Barrels	% of Island's Total Prod'n.
1958	20	5	10,653	13.5	2,325,402	2,764,484	336,626	3,101,110	8.3
1960	25	6	10,947	11.2	4,489,619	2,741,221	517,974	3,259,195	7.7

M.M.S.C.F. = 1,000,000 Standard Cubic Feet.

Bbls. = Barrels.

REFINING ACTIVITY

52. The crude distillation capacity of the territory increased from 190,000 to 290,000 bbls./day with the commissioning of a new 100,000 bbls./day distillation unit by Texaco at Pointe-a-Pierre. This Company also undertook an extension of its catalytic reforming plant from 8,500 to 24,000 bbls./day. In June the 5,000 bbls./day plant at Brighton was shut down. At the end of the year crude refining capacity in Trinidad stood as follows :-

Texaco:	Pointe-a-Pierre	-	235,000 B/D
	Brighton	-	5,000 B/D (shut down)
Shell:	Point Fortin	-	50,000 B/D
	Total		<u>290,000 B/D</u>

53. The total crude refining capacity of 290,000 B/D compares with an average indigenous production of 115,730 B/D in 1960. The surplus capacity is used for the refining of crude imported from Venezuela, Colombia and the Middle East.

54. For details of refinery throughput for 1960 see Table V of the appendix.

MOVEMENT OF CRUDE OIL AND PRODUCTS

55. Summary balances of crude oil and refined products movements for 1960 are given below. A more detailed account is provided in Table V of the appendix.

TABLE XII

CRUDE OIL BALANCE

<u>AVAILABILITY</u>	<u>MILLION BBLs.</u>	<u>DISPOSAL</u>	<u>MILLION BBLs.</u>
Stock on 1st Jan.	2.33	Exports	5.24
Production	42.56	Local Consumption	0.04
Less Loss*	0.33	Delivered to Refinery	81.96
Imports	<u>45.32</u>	Stock on 31st Dec.	2.64
	<u>89.88</u>		<u>89.88</u>

\* Water reported as oil.

TABLE XIII  
REFINED PRODUCTS BALANCE

<u>AVAILABILITY</u>	<u>MILLION BBLs.</u>	<u>DISPOSAL</u>	<u>MILLION BBLs.</u>
Stock on 1st Jan.	3.62	Exports	64.20
Crude from Fields	81.96	Bunkers	13.83
Less Refinery Loss	<u>1.48</u>	Local consumption	
	80.48	Including Refinery Fuel	2.53*
Products Obtained	80.48	Stock on 31st Dec.	<u>5.48</u>
Imports	<u>1.94*</u>		
	<u>86.04</u>		<u>86.04</u>

\* Includes 43,000 bbls. of lube oils and greases imported by Marketing agents.

56. Trends in the movements of crude oil and refined products in the Territory for the period 1955-1960 are given in the following table.

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TABLE XIV

CRUDE OIL AND REFINED PRODUCTS MOVEMENTS 1955-60

(All figures in bbls.)

	1955	1956	1957	1958	1959	1960
Crude Oil & Nat'l Gasoline Produced	25,169,421	29,186,562	34,329,641	37,586,449	41,136,991	42,559,831
Crude Oil Imported	17,844,603	20,090,228	19,509,016	25,528,914	31,350,553	45,324,136
Disposal : (a) Inland Consumption	61,243	57,314	50,457	46,392	47,348	42,816
(b) Exported	2,865,514	4,001,896	3,272,848	2,100,154	3,353,666	5,243,866
(c) Refined	40,147,088	44,881,944	50,467,062	60,255,937	68,061,131	81,955,270
Stock Change.	-59,821	+335,636	+48,290	+712,880	+1,025,399	+1,759,036
Total Refined Products Produced	38,631,018	43,420,850	49,043,616	59,036,062	67,585,535	80,483,832
Refined Products Imported	909,369	789,277	652,895	1,938,848	2,493,903	1,943,127
Disposal: (a) Inland Consumption	1,825,722	1,809,769	1,917,058	2,034,090	2,251,526	2,467,084
(b) Bunkers	8,664,700	9,013,877	8,979,812	11,201,218	13,453,597	13,827,960
(c) Exports	28,293,165	34,775,039	38,001,178	47,390,080	54,563,764	64,204,000
Stock Change.	+756,800	-1,388,558	+798,463	+349,522	-189,449	+1,927,915

57. The most significant revelation of this study is the trend of crude oil imports. Imported crude increased by 154% from a level of 41.4% of refinery charge in 1955 to 51.5% in 1960, despite a 69% rise in indigenous production. This was made possible through an increase in refinery capacity from 140,000 - 290,000 bbls/day during the period.

58. The disposal of refined products has shown disproportionate rates of increase. Imports rose by 126.9% bunkers by 59.6% and inland consumption by 36.6%. Evidence of the continuing export orientation of the industry is borne out by the fact that the percentage of total refined products exported rose from 73% in 1955 to 80% in 1960. Increases in the bunker trade and inland consumption have not kept pace with refinery throughput.

59. In 1955 Inland consumption represented 7.3% of local crude and natural gasoline production and a 4.5% of the refinery charge. In 1960 the proportions changed to 5.9% and 3.0% respectively. With the completion of refinery extensions at mid year, the 1960 level of inland consumption represents only 2.3% <sup>of a</sup> ~~inst~~ <sup>lled</sup> refinery capacity in the territory. This factor, more than any, emphasises the dependance of the local industry on foreign markets.

60. Crude exports average about 5.6% of total crude availability. The balance of the crude is refined locally and the products disposed of as outlined above. Of the total petroleum exports, refined products account for 94% and raw crude 6%.

THE ASPHALT INDUSTRY

61. The following table shows the quantity of Natural Asphalt extracted from the Pitch Lake and the quantity of derived products exported or sold locally :-

TABLE XV

NATURAL ASPHALT

	Tons <u>1960</u>	Tons <u>1959</u>
Extracted by Works Dept. for local use	70,800	59,397
Extracted by T'bad Lake Asphalt Co.	83,496	86,021
	<u>154,296</u>	<u>145,418</u>

DERIVED PRODUCTS MANUFACTURED BY THE COMPANY

<u>EXPORTED</u>	<u>Tons</u> <u>1960</u>	<u>Tons</u> <u>1959</u>
Crude Asphalt	-	-
Dried Asphalt	55,821	50,985
Cement Asphalt	7,582	16,034
	<u>63,403</u>	<u>67,019</u>
<u>LOCAL SALES</u>		
Crude Asphalt	13	3
Dried Asphalt	100	144
Cement Asphalt	753	2,597
	<u>866</u>	<u>2,744</u>

CONTRIBUTION TO REVENUE AND LOCAL DISBURSEMENTS

62. The sum disbursed by the oil industry in the territory during 1960 amounted to \$170.9 million, an increase of 7.3% over the previous year. The distribution of payments according to source of receipt is as follows :-

	<u>Amount \$</u>	<u>%</u>
Total Contribution to Government Revenue	53,398,687	31.2
Payments to Employees	42,429,050	24.8
Payments to Contractors	41,796,242	24.5
Local Purchases of Materials	14,672,142	8.6
Other Local Expenditure (Rents, Private Royalties etc.)	18,603,539	10.9
	<u>170,899,660</u>	<u>100.0</u>

63. In addition to the above, the industry spent \$42.0 Million on the purchase of materials from overseas sources. This brings the total expenditure to \$212.9 Million, some 3.7% above the previous year.

64. The chief contributor to the increased local expenditure was payments to contractors which rose from \$33.7 million in 1959 to \$41.8 million in 1960. Between 1950 and 1955 payments under this head moved steadily from \$6.1 million to \$10.6 million. In 1956 the figure jumped to \$16.0 million and thereafter accelerated rapidly to the present level of \$41.8 million, representing an increase

of 161.2% during this period. In contrast to this, payments to employees increased from \$18.8 million in 1950 to \$34.6 million in 1955, more or less in direct proportion to the level of industrial activity and crude oil production. In the period 1956 to 1960, however, payments to employees increased by only 18.8% from \$35.7 million to \$42.4 million. The increased wage bill during this latter period represents a rise in the wage rate since the number of company employees dropped from about 16,450 in 1955 to 14,543 in 1960, a total loss of some 1900 persons. On the other hand contractors' labour increased by about 500 persons or 17.2%, from 2900 in 1956 to 3400 in 1960. It is evident, therefore, that the rapid increase in contractor's payments is founded principally on the highly specialist and capital intensive type of services which these firms offer to the oil companies. The shift in labour from the oil company to the contractor has contributed only marginally to the level of contractors' receipts.

65. The trend towards the utilization of contractor services, particularly in the fields of drilling and well remedial work, commenced in 1956 and has grown rapidly ever since. By December 1960, Drilling Contractors were accounting for 44% of the footage drilled per month. In addition, more than two thirds of the wells drilled in the Gulf of Paria were drilled on contract. This tendency has also spread to remedial work on old wells. Specialist services such as well logging, sand exclusion, packer setting and well stimulation techniques are now solely undertaken by contractors.

66. The underlying reason for the shift from company to contractor services is the vital necessity of keeping production costs in Trinidad on a competitive basis in a period of softening prices and superior well productivity in foreign oil-fields. In addition, the cost of finding new oil in Trinidad has been increasing as the weight of industrial activity swings from a land to marine environment.

67. The only other item which has contributed significantly to the increase in local disbursements has been payments to Government. Receipts under this head rose by \$2.6 million in 1960 to the level of \$53.4 million. The items chiefly responsible were an 11.4% increase in royalty on petroleum and a 53.7% increase in harbour dues.



68. The relative disproportionality in rates of increase between royalty (11.4%) and crude production (3.5%) is to be accounted for by an increase in the posted prices of residual fuel and middle distillates at the U.S. Gulf ports and an appreciation in the quality of the crude oil produced. The rise in harbour dues has been due to the intensification of shipping activity consequent upon sharp increases in the levels of Crude Oil imports and product exports.

69. The remaining revenue bearing items showed a drop in 1960, with a few remaining static or showing only marginal increases. Income Tax, in particular, remained steady despite an increase in production, largely due to a combination of such factors as tax allowances on capital projects, a softening of market prices for petroleum products and submarine well allowances on marine oil. Payments for Government services declined by 29.6%, customs dues by 3.9% and excise duty on petroleum spirit by 15.3%. In the majority of these cases, the decline itself, and in others, the degree of loss, has been due primarily to the effects of the strike.

70. For further details of oil Industry Disbursements, see Tables VI and VII of the Appendix

71. The following table shows the contributions of the Oil Industry under each head of revenue listed in the Territory's estimates. Contributions to the Revenue of the Port Services and also of the Railway and Telegraph are shown separately to conform to the present form of presenting the Territory's estimates.

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TABLE XVI

CONTRIBUTIONS BY THE OIL  
INDUSTRY TO THE REVENUE OF THE TERRITORY  
IN 1960

Revenue Head in Territory's Estimates	Revenue Received \$	Oil Industry Contribution \$	% Contributed by Oil Industry
<u>ORDINARY REVENUE</u>			
1. Customs & Excise	43,300,925	2,050,798	4.7
2. Motor Vehicles Licence and other Licences not otherwise classified.	10,113,622	210,961	2.1
3. Taxes on Income	56,644,987	29,761,832	52.5
4. Fees and payments for Specific Services	6,023,810	30,938	0.5
5. Lands & Building Taxes	1,169,474	239,863	20.5
6. Reimbursements	3,073,573	65,341	2.1
7. Earnings of Government Departments	1,239,457	14,980	1.2
8. Post Office	2,952,380	53,850	1.8
9. Rent of Government Property	572,544	7,034	1.2
10. Interest	1,629,861	-	-
11. Miscellaneous	2,863,206	17,897	0.6
12. Forests, Lands & Petroleum	18,555,062	18,357,501	98.9
TOTAL ORDINARY REVENUE	148,138,901	50,810,995	34.3
<u>EXTRAORDINARY REVENUE</u>			
13. Premia on Leases (formerly land sales)	20,830	-	-
14. Repayment of Loans to Public Bodies	277,020	-	-
15. Grants under C.D.&W. Organisation	1,379,389	-	-
16. Loan Receipts	12,428,750	-	-
17. Extraordinary	141,626	-	-
TOTAL AS PER TERRITORY'S STATEMENT 1960.	162,386,516	50,810,995	31.3
<u>SERVICES</u>			
18. Port Services	11,077,843	2,461,672	22.2
19. Railway and Telegraph	1,045,556	126,020	12.1
TOTAL OF GOVERNMENT REVENUE AND SERVICES.	174,509,915	53,398,687	30.6

EXPORTS OF PETROLEUM AND ITS PRODUCTS

72. The values of petroleum exports increased by \$28.9 million in 1960 and constituted 82.4% of all territorial exports. The chief reasons for the upswing were a 17.7% increase in product exports consequent upon a 3.5% increase in indigenous production and a 44.6% rise in imports of crude oil.

73. The following tabulation shows the contribution to the total value of Territorial Exports made by petroleum and other products. The percentage value of these contributions has been graphed in abbreviated form for a number of years in Appendix E.

TABLE XVII

E X P O R T S	1960		1959	
	\$	%	\$	%
Crude Petroleum and Products	392,612,018	82.4	363,753,485	83.6
Sugar, Refined & Unrefined	37,407,628	7.9	32,059,065	7.4
Cocoa Beans	8,716,800	1.8	10,063,769	2.3
Cement	2,944,241	0.6	3,632,592	0.8
Asphalt and Products	2,326,759	0.5	2,122,381	0.5
Rum	1,875,750	0.4	1,910,516	0.4
Coffee, Raw	1,272,322	0.3	2,375,778	0.5
Orange Juice	1,471,789	0.3	801,738	0.2
Grapefruit Juice	2,344,648	0.5	1,672,314	0.4
Bitters	1,085,314	0.2	1,037,080	0.2
Coconut Oil, Refined & unrefined	90,448	-	210,715	0.1
Shirts	428,320	0.1	523,438	0.1
Grapefruit	1,221,040	0.3	503,176	0.1
Oranges	352,761	-	231,400	0.1
Bananas	534,618	0.1	521,378	0.1
All Others	21,751,309	4.6	13,489,891	3.2
<b>TOTAL DOMESTIC EXPORTS</b>	<b>476,435,765</b>	<b>100.0</b>	<b>434,908,716</b>	<b>100.0</b>

ROYALTY ASSESSMENT

74. The Royalty assessed on the crude oil, natural gasoline and natural gas produced on Crown Oil Mining Leases for each half yearly royalty period during 1958, 1959 and 1960 is given hereunder :-

TABLE XVIII

SOURCE OF REVENUE	ASSESSMENT FOR HALF YEARLY PERIOD ENDING					
	31.12.60	30.6.60	31.12.59	30.6.59	31.12.58	30.6.58
Royalty on Natural Gas, \$	90,328.82	92,100.39	81,134.85	63,548.43	69,828.42	61,967.61
Royalty on Natural Gasoline, \$	44,912.88	47,932.46	48,646.09	46,565.79	48,745.47	53,075.55
Minimum Rents not Offset by Royalty on Crude Oil, \$	612,939.29	686,690.30	707,239.44	709,328.54	664,052.17	696,627.49
Royalty on Crude Oil, \$	8,713,467.65	8,559,587.51	8,087,272.06	7,746,331.73	7,503,327.20	6,970,439.58
HALF YEARLY TOTALS, \$	9,461,648.64	9,186,310.66	8,924,292.44	8,565,774.49	8,258,953.26	7,782,110.13
YEARLY TOTALS, \$	18,647,959.30		17,490,066.93		16,068,063.39	
ASSESSMENT TOTALS, \$	18,110,603.10		15,973,913.62			

75. The volumes upon which the above assessments were made are as follows :-

TABLE XIX

Substance Assessed for Royalty	UNIT	HALF YEARLY PERIOD ENDING					
		31.12.60	30.6.60	31.12.59	30.6.59	31.12.58	30.6.58
Natural Gas	M.C.F.	6,021,920	6,140,025	5,408,989	4,236,228	4,600,249	4,131,167
Natural Gasoline	I.Gals.	2,424,090	2,692,551	2,692,561	2,707,924	2,755,939	3,009,391
Crude Oil, Gross	Bbls.	18,724,599	19,059,808	18,733,541	17,394,684	16,812,003	15,440,174
Crude Oil Used, free of Royalty	Bbls.	57,894	62,292	72,025	54,293	52,652	49,866
Crude Oil, net.	Bbls.	18,666,705	18,997,516	18,661,516	17,340,391	16,759,351	15,390,308
Crude Oil Average Royalty Value	\$/Bbl.	4.67	4.40	4.33	4.47	4.48	4.53

76. It will be observed that the growth of royalty payments from 1959 to 1960 has been due partly to an increase in the assessed volume of oil and gas together with an upgrading in the value of the crude oil. Crude values have shown a tendency to rise over the past eighteen months owing to a hardening of middle distillate and residual fuel prices in the U.S.A. in the winter of 1959-1960. The quality of Trinidad crude has also improved, rising from 27.5° API in 1959 to 28.1° API in 1960. The heightened value of the crude has been a combination of both these factors.

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77. The data used to evaluate crude oil for Crown Royalty for each of the last six half yearly royalty periods together with the Royalty on Casingshead Petroleum Spirit for each of these periods are shown in the following table :-

TABLE XX

P R O D U C T S	Average Price in W.I. Currency per Barrel of 34.9726 Imp. Gallons for the half yearly period ended:					
	31.12.60	30.6.60	31.12.59	30.6.59	31.12.58	30.6.58
Bunker 'C& Grade Fuel, \$	3,913,160	3,514,151	3,422,734	3,414,872	3,609,697	3,914,554
No. 2 Fuel, \$	5,934,147	5,850,836	5,811,231	6,647,750	6,218,634	5,965,277
43-47 D.I. Gas Oil, \$	6,023,343	5,941,207	5,885,428	6,726,991	6,307,526	6,958,299
48-52 D.I. Gas Oil, \$	6,111,855	6,031,083	5,976,275	6,816,631	6,307,397	6,147,857
53-57 D.I. Gas Oil, \$	6,202,707	6,120,959	6,066,122	6,906,271	6,458,802	6,237,415
70-72 Oct. M.Ledged Gasoline, \$	6,965,981	6,650,833	6,780,989	6,440,737	6,628,911	6,431,376
Average Middle rate for sight drafts N.Y. Premium in W.I. Cents per U.S. \$1.00	70,823,641	71,192,582	71,136,685	70,743,649	71,181,522	70,587,293
Value of Tetra Ethyl lead in W.I. cents per Millilitre	0.396,810	0.417,361	0.421,770	0.440,115	0,449,219	0,443,456
Royalty in W.I. cents per Imp.Gallon on C.H.P.S.	1,966,753	1,901,726	1,920,024	1,869,195	1,912,706	1,956,618

LOCAL SALES OF EXCISABLE PETROLEUM  
PRODUCTS

78. In 1960, excisable sales of gasoline (all grades) increased by 6.7% and liquified refinery gas (propane) by 41.7% over the figures for the previous year. These rates of increase were higher, (especially for propane) than in the 1958-59 period despite the loss of gasoline sales during the strike period. Premium Gasoline accounted for 6.4% of the total gasoline consumption. Total duty collected amounted to \$3,013,966, about \$0.25 million higher than in 1959.

79. The following table shows relative consumption statistics for the years 1959 and 1960.

	<u>1959</u>	<u>1960</u>	<u>%Change</u>
Gasoline (All Grades) Imp.Galls.	29,158,260	31,121,000	+ 6.7
Liquified Propane, lbs.	3,061,296	4,335,778	+41.7

LEASING ACTIVITY

80. No new Crown leases were taken up during the year. The total acreage of Crown oilrights under lease decreased from 1,288,822 acres at the end of 1959 to 1,219,572 acres at the end of 1960. During the year, Dominion Oil surrendered 35,224 acres of land leases and 27,823 acres of a marine licence off the South east coast of Trinidad.

81. The following is an outline of the leasing situation in the Territory as at 31st December, 1960.

TABLE XXI

<u>CROWN OIL RIGHTS</u>	<u>A</u>	<u>R</u>	<u>P</u>
Crown Leases - Crown surface	293,453	0	20
" " - Private Surface	92,528	2	22
Exploration Licences	-	-	-
Marine Licences	833,590	3	33
<b>TOTAL CROWN OILRIGHTS</b>	<b>1,219,572</b>	<b>2</b>	<b>35</b>
<u>PRIVATE OIL RIGHTS</u>			
Private Leases	128,738	2	19
<b>TOTAL ACREAGE OF ALL LANDS UNDER LEASE</b>	<b>1,348,311</b>	<b>1</b>	<b>14</b>

82. It will be observed that 61.8% of the total crown oilrights under lease is in marine areas. The acreage under lease on land is distributed among 115 principal leases. The marine area is split up among seven licences.

83. A detailed survey of Crown and Private leases and licences, is set out hereunder on a Company Basis.



TABLE XXII

## OIL RIGHTS UNDER LEASE AS AT 31ST DECEMBER, 1960

C O M P A N Y	C R O W N O I L R I G H T S									P R I V A T E O I L R I G H T S			T O T A L A C R E A G E U N D E R L E A S E					
	L A N D L E A S E S						M a r i n e L i c e n c e s											
	C R O W N S U R F A C E		P R I V A T E S U R F A C E			T O T A L			A.	R.	P.	A.	R.	P.	A.	R.	P.	
A.	R.	P.	A.	R.	P.	A.	R.	P.	A.	R.	P.	A.	R.	P.	A.	R.	P.	
Apex(Trinidad)Oilfields	31,324	2	10	22,312	2	00	53,637	0	10	-	-	-	10,645	3	08	64,282	3	18
Dominion Oil Ltd.	8,554	3	01	2,675	2	07	11,230	1	08	356,328	0	00	12,040	0	00	379,598	1	08
Stekoll Panam.	7,210	2	04	3,428	0	36	10,638	3	00	-	-	-	-	-	-	10,638	3	00
Kern (Trinidad)Oilfields	347	2	23	619	1	06	966	3	29	5,760	0	00	3,655	3	15	10,382	3	04
Premier Consol.Oilfields	10,718	2	09	2,640	1	13	13,358	3	22	-	-	-	19,883	1	10	33,242	0	32
Roodal	-	-	-	9	2	12	9	2	12	-	-	-	-	-	-	9	2	12
Trinidad Northern Areas	31	0	00	-	-	-	31	0	00	231,158	3	33	-	-	-	231,189	3	33
Trinidad Central Oilfields	6,996	2	31	-	-	-	6,996	2	31	-	-	-	35	2	00	7,032	0	31
Texaco	124,949	0	03	33,040	1	28	157,989	1	31	15,344	0	00	49,041	1	09	222,374	3	00
Trinidad Pet. Development	26,743	2	18	10,778	1	13	37,521	3	31	225,000	0	00	21,354	3	16	283,876	3	07
Shell Trinidad Ltd.	76,576	3	01	17,024	1	27	93,601	0	28	-	-	-	12,082	0	01	105,683	0	29
TOTALS	293,453	0	20	92,528	2	22	385,981	3	02	833,590	3	33	128,738	2	19	1,348,311	1	14

OIL INDUSTRY STRIKE

84. At 2.30 p.m. on June 29th all field and refinery workers of Texaco went on strike. They were immediately followed by the employees of Trinidad Central Oilfields and Trinidad Northern Areas both of which are operated by Texaco. On the following day the employees of Apex joined the strike after this Company had announced its intention of reducing temporarily its labour force owing to the shut down of the Texaco refinery at Pointe-a-Pierre.

On July 5th the employees of Shell Trinidad Ltd. joined the strike and in so doing shut down the only remaining active refinery in the Territory. Since all of Trinidad's crude oil is refined at Shell and Texaco refineries, the immobilization of these two plants forced a drastic curtailment of production on the part of Trinidad Petroleum Development, Kern Trinidad Oilfields and Premier Consolidated Oilfield none of whom were affected by the strike.

85. By the end of the first week following the shutdown of the Shell Refinery, a serious fuel shortage developed in the Territory and Government was forced to introduce a scheme for fuel rationing.

Both Shell and Texaco negotiated separately with the Oilfield Workers Trade Union and a settlement was eventually arrived at with respect to both Companies and the Union on July 16th.

86. The principal terms of the settlement were :-

(a) A general wage increase of 18% for a duration of twelve months effective from July 5th and 18th, respectively, for Shell and Texaco.

At the end of this period an incremental increase of 2% for a period of 12 months in the case of Texaco and 9 months in the case of Shell, followed by a further 2% incremental increase for the remainder of the term of the contract.

(b) A reduction in working hours from 45 to 44 hours per week for non shift workers and from 48 to an average of 42 hours per week for shift workers.

(c) The Companies agreed to receive back in employment all employees who had gone on strike, and

(d) The introduction of new terms affecting severance pay<sup>a</sup> and contract work.

87. The total duration of the strike was 18 days in the case of Texaco, T.N.A., T.C.O. and Apex and 9 days in the case of Shell.

#### LEGISLATION

88. In February of 1960, Mr. W. Levy, International Oil Economist, and Mr. I.N. McKinnon, Chairman of the Oil and Gas Conservation Board of Alberta, Canada were invited to Trinidad to consult with Government on the provisions of new oil legislation consequent upon the recommendations made by Mr. Levy in his report, "The Trinidad Oil Economy", published a year earlier. Consultations continued for a week and it was finally recommended to Government, that the existing oil legislation ought to be abandoned altogether and replaced by a statute similar in concept and scope to the Alberta legislation. However, the consultants advised that before embarking upon such an exercise, a thorough technical evaluation of the industry should be undertaken by a competent technologist in order to establish the basis and limits of such legislation. Accordingly, Mr. D.R. Craig, Chief Reservoir Engineer of the Alberta Oil and Gas Conservation Board was appointed to carry out this task.

89. Mr. Craig spent one month in Trinidad from July 11th to August 10th during which time he consulted with Government and Company officials on all aspects of petroleum conservation. Mr. Craig's report on "Oil and Gas Conservation in Trinidad" was delivered to Government in late November and is now being studied.

#### STAFF

90. Mr. W.N. Foster C.B.E., Petroleum Technologist, retired from the service on August 21st. He joined Government as Assistant Petroleum Technologist on November 24th 1936. In October 1946 he was appointed Petroleum Technologist in charge of the Government Petroleum Department and remained in this appointment until his retirement. Mr. Foster was honoured by the Queen in 1958 with the award of C.B.E. for Meritorious Service.

91. Mr. R.A. Thomas, Petroleum Engineer, joined the technical staff of the Division on January 1st.

92. Mr. E.L. Bertrand left for the United Kingdom in September to pursue a one year Government Scholarship course in Petroleum Technology at the Imperial College of Science and Technology, London. At the same time Mr. H. Hinds, Inspecting Officer, left for Jamaica to study Chemical Technology at the University College of the West Indies.

93. Mr. G.J. Maingot, Ag. Asst. Petroleum Technologist resumed work on February 1st on return from three months vacation leave.

94. I have much pleasure in recording the very able and willing assistance I have received from all members of the staff.

G. J. MAINGOT.

SUMMARY OF DRILLING AND PRODUCTION ACTIVITY

IN TRINIDAD DURING 1961

Activity in the oil industry in Trinidad continued with satisfactory intensity during 1961. Mainly because of intensive development drilling, the nation's crude oil production increased by 8.05% over the previous year, to 45.77 million bbl., this increase being derived almost entirely from marine areas in the Gulf of Paria. However, while there was commendable perseverance with exploration drilling, none of the twelve new field tests discovered new oil of any commercial value. Table 1 gives a comparison of the 1961 drilling and production data with those of the preceding year.

(Comparative information for 1962 is included where possible)

TABLE 1

	<u>1962</u>	<u>1961</u>	<u>1960</u>
<u>PRODUCTION</u>			
(a) <u>Crude Oil</u>			
Amount produced, bbl	48,876,144	45,767,772	42,357,329
Average daily production, bbl	133,907	125,391	115,730
Average number of producers	3,275	3,244	3,202
Daily Average prod'n/Well, bbl	40.9	38.7	36.1
(b) <u>Gas</u>			
Amount produced, M.C.F.	99,948,968	102,335,312	97,651,939
Average G.O.R. scf/bbl	2,045	2,236	2,305
(c) <u>CHPS (Natural Gasoline)</u>			
Amount produced, bbl	193,807	199,159	202,502
Total gas treated, mcf.	8,844,604	8,773,365	8,889,150
<u>DRILLING</u>			
Average number of rigs operating	23	23	30
Total footage drilled, ft.	1,506,187	1,426,002	1,406,412
Footage, daily average/rig	180	168	131
No. of producers (oil and gas)	255	245	277
No. of wells completed	280	288	312
Success ratio, %	91.1	85.1	88.8
Average depth of completed wells, ft.	5,274	5,041	4,594

The number of rigs operating fell from thirty in 1959 and 1960 to twenty-three in 1961.

Drilling:

With these, 288 new wells were drilled during 1961 to an average depth of 5,041 feet. Two were injection wells. Deepest well drilled was to a depth of 12,723 feet as a Cretaceous test. Success ratio of the 286 wells drilled to find oil was 85.7%. Fifty-one of these wells were drilled in marine areas with a success ratio of 88.2%.

In the search for new oil, two marine wells were drilled as New Field wildcats. One well, the first to be drilled off the east coast of Trinidad, reached a total depth of 10,200 feet while the other, in the Gulf of Paria, was drilled to just over 5,000 feet. Both were dry holes. On land, there were ten new field wildcats drilled to depths ranging from 4,500 to 12,700 feet. Only one of these found a hydrocarbon bearing section which proved to be a small gas reservoir.

Production:

In 1961, crude oil production in Trinidad amounted to 45,767,772 bbl., an average of 125,391 bbl. per day. This 8.05% increase over 1960 production is higher than the world average of 6.7% but is accounted for mainly by the low production during the previous year caused by the industry wide strike.

TABLE 11

A- Crude Oil Production bbl.	1961	1960	1959	% Change		
				59/60	60/61	59/61
(i) Land	34,654,714	34,817,724	36,663,232	- 5.0	- 0.5	- 5.5
(ii) Marine	11,113,058	7,539,605	4,255,554	+77.2	+47.4	+161.1
(iii) Total	45,767,772	42,357,329	40,918,786	+ 3.5	+ 8.0	+ 11.9
B- Percent of total Production						
(i) Land	75.7	82.2	89.6			
(ii) Marine	24.3	17.8	10.4			
C-No. of Wells drilled						
(i) Land	237	259	244	+ 6.1	- 8.5	- 2.9
(ii) Marine	51	53	34	+55.9	- 3.8	+50.0
(iii) Total	288	312	278	+12.2	- 7.7	+ 3.6

As shown in Table 11, this increase in production came entirely from marine areas. To minimise, as far as possible the effect of the strike in 1960, there is included in the table the column "% change '59/61". But even there, the unmistakable decline in production from land areas is clearly shown, despite the 237 new wells drilled on land during 1961. Production from new wells amounted to more than five million bbls. Production from recompletions and other work over jobs amounted to about 7.5 million barrels.

TABLE 111

Analysis of 1961 Crude Production

Total Production (1961), bbl.	45,767,772
Production ex new wells, bbl.	5,255,868
" " " % of total	11.5
Production from old wells, bbl.	40,511,904
Total production (1960), bbl.	42,357,329
Decrease in old well production (60/61), bbl.	1,845,425
" " " " % of 1960 prod'n	4.4
Anticipated old well decline rate, % year	20.0
" " " decrease in prod'n, bbl.	9,318,612
Work over production (1961), bbl.	7,473,187
" " " % of total	16.3

All production was from Miocene beds. Gas production during 1961 was 132,335, mcf. Of this amount 3,773 mcf. was treated for liquid recovery and yielded just under 200,000 bbls. of natural gasoline; 11,811 mcf. was injected into the oil bearing formations in various secondary recovery schemes, and 29,419 mcf. was used as fuel both in and out of the oil industry. In all about 55% of the gas produced was put to some useful application.

REFINING

Refinery Crude capacity at the end of 1961, stood at 510,000 bbls./day. The distribution of these facilities was as follows:-

Company	Location	Crude Capacity Bbls./day
Texaco	Pointe-a-Pierre	235,000
"	Brighton	5,000
Shell	Point Fortin	70,000

The whole range of petroleum products is manufactured in Trinidad with the exception of Lubricating Oils and Greases. Lube Oils will, however, be produced in 1964 with the completion of a 2700 B/D plant by Texaco at Pointe-a-Pierre.

A limited range of intermediate organic and inorganic petrochemicals are produced. Among the most important are benzene - toluene - xylene concentrates, naphthenic oils residue, di-isobutylene, tetramer, nonene and sulphur. A small cyclohexane plant is projected for 1964. Liquid ammonia, urea and ammonium sulphate are produced by Federation Chemicals Ltd., (associate of W.R. Grace).

Crude and refined products movements for the year 1960 - 62 are tabulated below.

TABLE 11  
MOVEMENTS OF CRUDE AND REFINED PRODUCTS  
(All Figures in barrels)

<u>OPENING STOCKS</u>	1960	1961	1962
(a) Crude	2,334,906	2,644,500	2,643,413
(b) Products	3,621,432	5,367,411	5,050,702
Total	5,956,338	8,011,911	7,694,115
<u>CRUDE AND L.P.G. PRODUCTION</u>	42,559,831	45,966,931	49,069,151
<u>IMPORTS</u>			
(a) Crude	15,324,136	62,509,804	65,167,525
(b) Products	1,935,127	240,025	286,457 (a)
Total	17,259,263	62,749,829	67,454,052
<u>RUNS TO STILLS</u>	81,955,270	103,754,713	109,255,918
<u>PRODUCTION OBTAINED</u>	80,483,832	100,971,983	106,134,509
<u>CONSUMPTION</u>			
(a) Inland (i) Crude	12,816	13,517	52,615
(ii) Products	2,459,084	2,667,613	2,126,788 (a)
(b) Bunkers	13,827,960	15,088,349	12,934,538
Total	16,329,860	17,799,479	15,413,941
<u>EXPORTS</u>			
(a) Crude	5,243,366	4,406,195	4,046,570
(b) Products	64,204,000	83,772,759	88,785,756
Total	69,447,866	88,178,954	92,832,306
<u>CLOSING STOCKS</u>			
(a) Crude	2,644,500	2,643,413	3,217,325
(b) Products	5,367,411	5,050,702	6,028,018
Total	8,011,911	7,694,115	9,245,343

1961 TABLES

TABLES

<u>No.</u>	<u>Subject</u>
I	Annual Statistics of Production, Drilling, Exports and Imports.
II	Monthly Analysis of Completed Wells.
III	Analysis of Monthly Production.
III A	Analysis of Production by operating Companies.
IV	Production and Disposal of Natural Gas.
V	Return of Production Stocks and Disposal of Petroleum.
VI	Statement Showing Contribution by the Oil Industry to Territorial Revenue and Government Operated Services.
VII	Statement showing the amount of Money disbursed in the Territory on overseas Purchases and Materials by the Oil Industry.
VIII	Tabulation of important wells drilled (New fields wildcats) (Confidential)
VIIIA	Outstep (A-1) Wells (Confidential)
IX	Summary of Crown (Royalty) Crude Assessed with Prices and Analyses.
X	Data on Secondary Recovery and Pressure Maintenance operation in Trinidad.



TABLE II  
MONTHLY ANALYSIS OF DRILLING AND WORKOVER WELLS FOR YEAR 1962

MONTH	Average No. of Rigs Running	No. of New Wells Started	No. of Old Wells Abandoned	No. of Old Wells Recompleted	DRILLING - WELLS COMPLETED DURING 1962										MONTHLY FOOTAGE DRILLED			AVERAGE FOOTAGE DRILLED PER DAY	AVERAGE FOOTAGE DRILLED PER DAY PER RIG	
					COMPLETED AS OIL & GAS PRODUCERS		COMPLETED AS INJECTION WELLS		ABANDONED WHILE DRILLING		LEFT CLOSED IN AFTER DRILLING		TOTAL NO. OF COMPLETIONS	CROWN OIL RIGHTS FT.	PRIVATE OIL RIGHTS Ft.	TOTAL FT.				
					No.	Aggregate Depth. Ft.	No.	Aggregate Depth Ft.	D R Y HOLES		TECHNICAL CAUSES						No.			Aggregate
									No.	Aggregate Depth. Ft.	No.	Aggregate Depth. Ft.								
JANUARY	24	25	2	23	19	90,714	-	-	4	20,947	-	-	-	-	23	91,940	18,562	110,502	3,565	148
FEBRUARY	23	22	2	29	15	75,789	-	-	1	8,313	-	-	-	-	16	106,194	11,819	118,013	4,215	183
MARCH	23	25	1	23	20	100,100	-	-	2	16,565	-	-	-	-	22	116,500	16,802	133,302	4,300	187
APRIL	23	32	1	15	26	126,065	-	-	2	9,990	-	-	-	-	28	134,461	15,718	150,179	5,006	218
MAY	22	22	2	18	25	128,184	-	-	-	-	-	-	-	-	25	126,106	10,072	136,178	4,393	200
JUNE	23	25	1	21	24	129,641	-	-	2	9,000	-	-	-	-	26	106,087	14,571	120,658	4,022	175
JULY	23	25	3	22	17	81,718	-	-	-	-	2	13,993	-	-	19	126,626	6,983	133,609	4,310	187
AUGUST	22	26	3	26	24	108,518	-	-	3	26,402	-	-	-	-	27	115,513	9,582	125,095	4,035	183
SEPTEMBER	22	18	1	22	15	87,872	-	-	2	17,950	-	-	-	-	17	99,375	5,345	104,720	3,490	159
OCTOBER	23	23	1	31	21	117,827	-	-	-	-	1	2,234	-	-	22	104,621	16,292	120,913	3,900	170
NOVEMBER	22	20	4	29	21	113,188	-	-	-	-	-	-	-	-	21	105,452	11,133	116,585	3,886	177
DECEMBER	23	19	3	27	28	147,997	-	-	3	19,172	1	8,500	2	16,065	34	127,575	8,858	136,433	4,401	191
TOTALS AND AVERAGES 1962	23	282	24	286	255	1,307,613	-	-	19	128,339	4	24,727	2	16,065	280	1,360,450	145,737	1,506,187	4,126	180
TOTALS AND AVERAGES 1961	23.25	286	32	267	245	1,223,299	2	7,300	36	202,569	5	18,666	-	-	288	1,234,023	191,979	1,426,002	3,907	168
% DIFFERENCE 1961 - 1962	-1.07	-1.4	-15	+7.1	+4.1	-	-200	-	-47.1	-	-20.0	-	+200	-	-2.7	+10.2	-24.1	+5.6	+5.6	+7.1

**TABLE IV**  
**PRODUCTION AND DISPOSAL OF NATURAL GAS - 1961.**

(All figures of gas production in thousands of cub feet)

	Crude Oil Production (bbls.) (1)	Average G.O.R. (cu. ft./bbl.) (2)	Natural Gas Production (3)	NATURAL GAS DISPOSAL								NATURAL GAS RECOVERY			
				Sales to other Companies # (4)	Replaced in Formation (5)	Converted to C.M.F.S. (6)	Used as Fuel		Vented as Surplus (9)	Pipeline losses and unaccounted for (10)	Not Collected (11)	Natural Gas Treated (12)	Average Plant Recovery I.C.M.C.F. (13)	Natural Gasoline produced (bbls) (14)	Inter-Oil Company Sales # (15)
							In fields (7)	At Refineries(8)							
JANUARY	3,922,071	2,242	8,795,418	408,428	1,016,460	18,579	509,727	1,385,385	3,328,727	352,540	1,475,572	753,400	0.82	17,705	790,355
FEBRUARY	3,540,086	2,301	8,145,373	312,747	932,470	17,213	632,394	1,294,143	3,310,972	333,153	1,312,372	697,980	0.82	16,408	661,958
MARCH	3,870,564	2,327	9,007,799	359,492	1,053,069	18,794	568,509	1,330,515	3,657,403	516,701	1,503,316	802,980	0.78	17,916	625,470
APRIL	3,709,989	2,297	8,522,568	383,200	913,142	18,338	637,745	1,423,150	3,413,217	480,192	1,247,679	709,525	0.83	17,479	624,504
MAY	3,315,274	2,330	8,891,207	434,705	897,548	18,382	598,092	1,583,773	3,639,503	411,745	1,307,459	738,085	0.83	17,528	690,002
JUNE	3,698,928	2,307	8,537,420	456,343	796,097	17,034	619,480	1,474,240	3,580,162	363,400	1,210,661	757,370	0.75	16,265	718,448
1st Half-Year Totals	22,556,922	2,301	51,899,780	2,354,218	5,603,795	103,340	3,565,947	8,496,506	21,230,484	2,477,731	8,057,059	4,459,340	0.81	103,301	4,115,097
JULY	3,834,468	2,279	8,737,863	497,216	825,433	17,088	566,163	1,553,385	3,552,654	422,732	1,285,692	748,615	0.76	16,262	722,400
AUGUST	3,827,045	2,248	8,603,189	505,556	903,538	15,737	537,924	1,320,842	3,329,445	408,836	1,246,211	670,300	0.79	15,063	750,501
SEPTEMBER	3,738,441	2,193	8,303,380	472,381	1,032,777	18,336	556,568	1,480,588	3,498,342	359,961	1,241,227	693,920	0.90	15,346	703,692
OCTOBER	3,933,931	2,125	8,358,323	379,093	1,223,862	17,274	561,133	1,432,154	3,124,441	367,816	1,202,533	740,440	0.78	16,473	730,784
NOVEMBER	3,832,996	2,113	8,102,427	402,177	1,100,912	16,673	543,330	1,372,119	3,025,358	364,664	1,216,844	711,970	0.79	15,916	634,170
DECEMBER	3,993,969	2,084	8,324,747	444,747	1,110,378	17,099	566,548	1,478,277	3,157,567	387,375	1,162,756	748,780	0.76	16,294	594,812
2nd half-year's Tot.	23,210,850	2,173	50,435,532	2,651,670	6,231,370	100,557	3,361,715	8,987,385	19,428,007	2,312,584	7,355,263	4,314,075	0.78	95,859	4,237,359
Year's Totals	45,767,772	2,239	102,335,312	5,005,888	11,835,165	203,907	6,927,662	17,483,891	40,658,491	4,790,315	15,412,322	8,773,415	0.79	199,160	8,352,456
Percentage Disposal for year	-	-	-	4.9	11.6	0.2	6.9	17.1	39.7	4.7	15.0	-	-	-	-

Note: (a) In order arrive at the figure given in the Publications of the Statistical officer under the heading "Gas used as fuel," it is necessary to sum columns 4,7,8, of Table IV.

(b) About 30-40% of the gas "vented as surplus" (column 9) has been put to use before being vented.

T A B L E III A

Analysis of Production for 1962 by Operating Companies

(All Crude Oil figures are for dry oil)

C O M P A N Y	Flowing		Gas/Air Lift		Pumping		Plunger Lift		Other Methods		SALT WATER				PRODUCTION FROM CROWN OIL RIGHTS			PRODUCTION FROM PRIVATE OIL RIGHTS					
	Av. No. of Wells	Quantity (bbls)	Av. No. of Wells	Quantity (bbls)	Av. No. of Wells	Quantity (bbls)	Av. No. of Wells	Quantity (bbls)	Av. No. of Wells	Quantity (bbls)	Av. No. of Wells	Quantity (bbls)	Daily Av. Per wet Well	% of Total Fluid Prod'n	Av. No. of wells Produced	Daily Av. Per Producing well	Total Oil Produced (bbls)	Av. No. of Wells	Prod'n (bbls)	Daily Average per Producing Well	Av. No. of Wells	Prod'n (bbls)	Daily Av. per producing Well
APEX T'DAD OILFIELD LTD	74	1,422,189	45	327,134	253	1,222,970	21	196,691	-	-	147	795,705	14.8	20.0	393	22.0	3,168,978	151	1,630,059	29.4	242	1,538,919	17.5
JADE PETROLEUM CO.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DOMINION OIL LTD	-	23,380	-	-	-	-	-	-	-	-	-	1,901	5.2	7.5	-	64.1	23,380	-	23,380	64.1	-	-	-
KERN T'DAD OILFIELD LTD	80	630,894	9	52,441	92	215,565	-	-	-	-	44	159,387	9.9	15.0	181	13.6	898,900	57	438,110	21.1	124	460,790	10.2
PREMIER CONSOLIDATED OILFIELD LIMITED	6	71,240	-	-	144	250,497	-	-	2	304	42	150,654	9.8	31.9	152	5.6	322,041	48	112,463	6.4	104	209,578	5.5
SHELL T'DAD LTD	176	3,336,723	34	357,789	282	1,882,132	-	-	1	262	342	1,373,457	11.0	19.8	493	31.0	5,576,966	395	5,030,324	34.9	98	546,642	15.3
STEKOLL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T'DAD CENTRAL OILFIELD	23	831,034	-	1,481	107	393,780	-	-	-	10	72	258,711	9.8	17.4	131	25.7	1,226,305	131	1,226,305	25.7	-	-	-
T'DAD NORTHERN AREAS	92	13,117,092	-	-	-	-	-	-	-	-	31	292,497	17.9	1.5	92	390.6	13,117,092	92	13,117,092	390.6	-	-	-
TEXACO T'DAD INC.	419	12,443,027	205	3,373,677	568	2,558,580	-	-	-	-	738	4,490,979	18.7	19.6	1189	42.4	18,378,284	1031	16,635,336	44.2	157	1,739,868	30.4
T'DAD PET DEV. CO. LTD	139	3,130,472	157	1,294,489	40	367,353	288	1,384,384	-	-	200	1,961,391	26.7	24.1	645	28.2	6,167,193	623	6,089,092	26.7	22	78,106	10.2
TOTAL	1,026	35,006,045	450	5,397,011	1486	6,890,937	309	1,581,575	3	576	1,610	9,399,522	-	-	3275	-	48,876,144	2528	44,302,221	-	747	4,573,923	-
DAILY AVERAGE/WELL		93.4		33.0		12.7		14.0		.5			15.9	16.1		40.9							16.8

NATURAL GASOLINE PRODUCTION 1962

COMPANY	CROWN OIL RIGHTS (bbls)	PRIVATE OIL RIGHTS (bbls)	TOTAL (bbls)
APEX (T'DAD) OILFIELD LTD	40,950	53,087	94,037
T'DAD PET DEV. CO. LTD	99,599	171	99,770
TOTAL	140,549	53,258	193,807

TABLE II

MONTHLY ANALYSIS OF DRILLING AND WORKOVER WELLS 1961

MONTH	Average No. of Rigs Running	Number of Wells Spudded	Number of Existing Wells		DRILLING WELLS COMPLETED DURING 1961								MONTHLY FOOTAGE DRILLED			AVERAGE FOOTAGE DRILLED				
			Abandoned	Recom- pleted	Oil & Gas Prod- ucer		Injection Wells		ABANDONED WHILE DRILLING		Left Closed in After Drilling	Total Number of Com- pletion	Crown Oilrights Ft.	Private Oilrights Ft.	Total Ft.	Per Day	Per Day Per Rig			
					No.	Aggregate depth, ft.	No.	Aggregate depth, ft.	Dry Holes									Technical Causes		
									No.	Aggregate Depth ft									No.	Aggregate Depth, ft
JANUARY	24	23	1	20	23	109,671	-	-	2	7,632	-	-	-	25	112,025	6,226	118,251	3,815	159	
FEBRUARY	25	19	-	17	14	56,776	-	-	2	9,995	1	4,646	-	17	84,212	12,095	96,307	3,440	138	
MARCH	25	21	1	25	19	93,243	-	-	1	3,250	-	-	-	20	86,230	10,190	96,420	3,110	124	
APRIL	23	23	2	13	21	93,747	-	-	3	18,213	-	-	-	24	101,458	15,105	116,563	3,885	169	
MAY	23	28	3	14	21	113,127	-	-	9	43,653	1	590	-	31	101,128	15,448	116,576	3,761	164	
JUNE	23	25	2	28	20	104,234	-	-	2	9,104	2	10,333	-	24	108,260	23,285	131,543	4,385	191	
JULY	24	23	3	31	22	110,911	-	-	1	7,000	-	-	-	23	112,347	17,738	130,085	4,361	182	
AUGUST	24	25	5	24	24	128,780	-	-	1	5,186	-	-	-	25	110,942	21,740	132,682	4,280	178	
SEPTEMBER	22	20	3	25	22	103,915	2	7,300	3	22,304	-	-	-	27	95,997	15,637	111,634	3,721	169	
OCTOBER	22	29	5	23	22	101,382	-	-	5	30,971	-	-	-	27	128,421	14,538	142,959	4,612	210	
NOVEMBER	22	23	3	22	18	101,881	-	-	3	15,926	-	-	-	21	101,515	18,327	119,842	3,866	176	
DECEMBER	22	22	4	25	19	95,792	-	-	4	29,335	1	3,097	-	24	91,488	21,652	113,140	3,650	166	
TOTALS & AVERAGES 1961	23.25	286	32	267	245	1,223,299	2	7,300	36	202,569	5	18,666	-	238	1,234,023	191,979	1,426,002	3,907	168	
TOTALS & AVERAGES 1960	27	298	15	253	277	1,235,755	-	-	32	182,827	1	4,659	2	512	1,320,132	86,280	1,406,412	3,843	142	
% Difference 1961-1960	-13.9	-4.0	+115.3	+5.5	-11.5	-	+200	-	+12.5	-	+400	-	-200	-	-7.7	-6.5	+122.5	+1.4	+1.7	+18.3

T A B L E I V

PRODUCTION AND DISPOSAL OF NATURAL GAS - 1962

(All figures of gas production in thousands of cubic feet)

	Crude Oil Production	Average G.O.R. (cu.ft./bbl.)	Natural Gas Production	NATURAL GAS DISPOSAL								NATURAL GAS RECOVERY			Inter-Oil Company Sales.*
				Sales to other Companies	Replaced in Formation	Converted to C.H.P.S.	Used as Fuel		Vented as Surplus	Pipeline losses and unaccounted for	Not Collected	Natural Gas Treated	Average Plant Recovery I.C/M.C.F	Natural Gasoline produced (bbls)	
							In fields	At Refineries							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
JANUARY	4,030,204	2,108	8,495,461	444,948	1,194,483	1,194,483	556,899	1,320,046	3,640,361	367,762	954,708	709,720	.763	15,475	573,422
FEBRUARY	3,639,417	2,020	7,352,615	408,480	918,975	14,620	523,941	1,288,970	3,137,095	309,138	751,326	658,060	.738	13,894	543,049
MARCH	4,036,348	2,089	8,351,149	479,234	1,169,591	17,592	616,583	1,419,920	3,551,045	310,953	786,231	745,060	.787	16,767	713,675
APRIL	3,973,071	2,009	7,983,711	510,846	1,160,029	16,863	572,582	1,361,624	3,457,469	203,574	700,724	700,025	.801	16,073	677,211
MAY	4,078,091	2,077	8,468,934	525,891	1,003,534	16,847	590,189	1,395,102	4,055,927	221,516	659,928	738,420	.760	16,058	663,428
JUNE	3,879,544	2,039	7,910,221	507,060	957,043	15,453	553,550	1,439,303	3,549,479	304,620	583,713	686,490	.748	14,718	662,034
1st Half-year Totals	23,636,675		48,562,091	2,876,459	6,403,655	97,699	3,413,744	8,224,965	21,391,376	1,717,563	4,436,630	4,237,775	.766	92,985	3,832,819
JULY	4,157,910	2,084	8,667,967	552,944	1,045,759	16,123	558,632	1,590,694	3,820,485	319,126	764,204	691,785	.777	15,366	552,145
AUGUST	4,210,112	2,045	8,611,373	548,659	1,191,188	16,611	559,211	1,367,912	3,692,830	253,126	981,836	739,600	.748	15,819	527,157
SEPTEMBER	4,057,729	2,019	8,191,428	501,912	1,236,379	16,934	528,805	1,379,015	3,682,985	249,352	596,046	735,870	.767	16,139	589,617
OCTOBER	4,296,343	1,996	8,577,328	567,745	1,163,466	18,920	552,115	1,449,755	3,917,381	166,142	741,804	799,144	.788	18,031	585,724
NOVEMBER	4,194,884	2,035	8,537,932	581,397	980,296	18,578	540,515	1,588,955	3,772,863	203,288	852,040	803,030	.771	17,707	618,847
DECEMBER	4,322,491	2,036	8,800,849	575,032	1,156,736	18,631	547,092	1,512,795	3,823,364	301,003	866,196	837,340	.742	17,760	642,594
2nd Half-year's Totals	25,239,469		51,386,877	3,327,689	6,773,824	105,787	3,286,370	8,889,126	22,709,908	1,492,037	4,802,126	4,606,829		100,822	3,516,034
Year's Totals	48,876,144		99,948,968	6,204,148	13,177,479	203,486	6,700,114	17,114,091	44,101,284	3,209,600	9,238,756	8,844,604		193,807	7,348,903
Percentage Disposal for year				6.2	13.1	0.2	6.7	17.1	44.1	3.3	9.3				



TABLE 1

## ANNUAL STATISTICS OF PRODUCTION, DRILLING, EXPORTS AND IMPORTS - 1961

ITEM	UNIT	1961	1960	Difference 1961/1960	1959	1958	1957	1956	1955	1954	1953	1952
<b>PRODUCTION</b>												
1. Crude Oil	1000's bbls.	45,768	42,357	+ 8.1	40,219	37,355	34,064	28,929	24,896	23,629	22,346	21,258
2. Natural Gasoline	do.	199	202	- 1.5	218	231	265	258	274	290	264	204
3. Total Crude Oil and Natural Gasoline	do.	45,967	42,559	+ 8.0	41,137	37,586	34,329	29,187	25,170	23,919	22,610	21,462
4. From Crown Oil Rights	do.	41,102	37,784	+ 8.8	36,128	32,252	28,569	23,462	20,119	18,902	17,899	16,782
5. From Private Oil Rights	do.	4,865	4,775	+ 2.0	4,791	5,103	5,553	5,725	5,051	5,017	4,711	4,680
6. Total Imports	1000's bbls.	62,707	47,267	+32.8	33,826	27,294	20,155	21,041	18,754	17,071	16,860	17,028
7. Imports of Refined Products (Lub. Oil)	do.	46	43		39	34	29	32	35	36	21	32
8. Imports of Crude Oil for Refining	do.	62,510	45,324	+37.9	31,350	25,529	19,509	20,251	17,780	16,670	16,696	16,722
9. Imports of Other Oils for Refining & Blending	do.	197	1,900	-89.6	2,437	1,731	617	758	939	365	143	274
10. Total Exports	1000's bbls.	88,179	68,331	+29.0	57,918	49,490	50,254	47,697	39,824	36,954	36,220	34,778
11. Exports of Crude Oil	do.	4,406	4,127	+ 6.8	3,354	2,100	3,273	4,002	2,866	3,398	1,999	1,844
12. Exports of Refined Products	do.	83,773	64,204	+30.5	54,564	47,390	46,981	43,695	36,958	33,556	34,221	32,934
13. Runs to Stills	1000's bbls.	103,755	81,935	+26.6	68,061	60,256	50,487	44,825	40,147	36,918	37,445	36,041
14. No. of wells started	As Stated	236	298	- 4.0	290	298	321	263	225	202	223	187
15. Total No. of Wells Completed	do.	298	312	- 7.7	278	295	314	262	215	202	224	182
16. No. of Drilling Wells Completed as Oil Wells	do.	245	276	-11.2	247	256	282	224	191	189	211	177
17. No. of Drilling Wells abandoned (etc.)	do.	43	35	+22.9	31	35	22	38	24	13	13	5
18. Total Footage Drilled (All Wells)	Feet	1,423,002	1,406,412	+ 1.4	1,446,586	1,355,129	1,322,483	1,110,745	987,567	911,242	917,894	736,535
19. Footage drilled on Crown Oil Rights	do.	1,234,023	1,320,132	- 6.5	1,357,416	1,233,834	1,071,207	801,716	783,788	684,128	733,401	578,031
20. Footage drilled on Private Oil Rights	do.	191,979	86,280	+122.5	89,170	131,295	251,276	309,029	203,779	227,114	164,493	158,504
21. Average Depth of Completed Drilling Wells(Item 15)	Feet	4,654	4,609	+ 1.0	5,141	4,604	4,151	4,237	4,372	4,544	4,026	4,286
22. Total No. of Well Producing (Av. during year)	As Stated	3,244	3,202	+ 1.3	3,210	3,141	3,048	2,858	2,745	2,674	2,336	2,407
23. No. of Wells Produced by Flowing (Av. during year)	do.	1,047	969	+ 8.0	951	922	882	797	718	692	639	594
24. No. of Wells Produced by Artificial Lift (Av. during year)	do.	2,197	2,233	- 1.6	2,259	2,219	2,166	2,061	2,027	1,982	1,897	1,813
25. Average Daily Production per Producing Well.	Barrels.	387	36.1	+ 7.2	34.9	32.6	30.6	27.7	24.8	24.2	24.1	24.1
26. Average Daily Production Flowing Well	Barrels.	85.8	83.9	+ 2.3	80.2	73.6	69.0	60.7	55.2	51.0	49.8	47.3
27. Average Daily Production per Artificial Lift Well	do.	16.2	15.4	+ 5.2	15.8	15.5	15.0	14.9	14.1	14.8	15.5	16.6
28. Total Value of Domestic Exports	000\$	579,548	476,436	+21.6	434,909	380,933	380,022	322,049	278,985	257,178	251,258	223,331
29. Total Value of Petroleum & Products (In Item 28)	do.	493,918	392,612	+25.8	363,753	304,930	311,741	261,792	212,584	193,240	194,359	173,490
30. Total Value of Lake Asphalt and Products	do.	2,661	2,327	+14.4	2,122	2,838	2,698	2,504	3,044	3,769	4,103	5,981
31. Total Natural Gas Produced	M:M. Cu. Ft.	102,335	97,652	+ 4.8	91,963	79,191	65,418	51,743	40,860	38,494	34,597	31,503
32. Used as Fuel	do.	24,412	22,042	+10.8	21,376	23,403	21,211	21,586	17,590	18,179	17,677	16,870
33. Replaced in Formation	do.	11,841	10,777	+ 9.9	12,500	11,187	9,490	7,406	5,412	3,227	2,532	2,786
34. Losses, Not collected, Vented etc.	do.	66,082	59,833	+10.4	57,587	44,801	34,717	22,750	17,828	17,089	14,388	11,647

TABLE III

ANALYSIS OF MONTHLY PRODUCTION FOR THE YEAR ENDING 31st DECEMBER 1961

MONTH	FLOWING				GAS/AIR LIFT				PUMPING				PLUNGER LIFT				OTHER METHODS				SALT WATER				Total No. of Wells produced	Total No. of Idle Wells	Total No. of Abandoned Wells	No. of Wells drill- ing at end of month	Total No. Wells Start- ed	Daily Aver. per producing Well Bbls.	TOTAL OIL PROD- UCED	Daily Av. Prodn. bbl. Total Oil	C.H.P.S. Production bbls.		
	No. of Wells	Quantity Bbls.	% of Total Oil	Daily Aver. Per Well Bbls	No. of Wells	Quantity Bbls.	% of Total Oil	Daily Aver. per Well Bbls.	No. of Wells	Quantity Bbls.	% of Total Oil	Daily Aver. per Well Bbls.	No. of Wells	Quantity Bbls.	% of Total Oil	Daily Aver. per Wet Well	No. of Wet Wells	Quantity Bbls.	% of Total Fluid Prod.	Daily Aver. per Wet Well	Total No. of Wells produced	Total No. of Idle Wells	Total No. of Abandoned Wells	No. of Wells drill- ing at end of month									Total No. Wells Start- ed	Daily Aver. per producing Well Bbls.	TOTAL OIL PROD- UCED
JANUARY 31 days	1019	2,789,396	71.1	88.3	387	389,880	10.0	32.5	1543	609,140	15.5	12.7	257	132,715	3.4	16.7	13	840	-	2.3	1476	757,622	16.2	16.6	3219	2536	1673	24	7452	39.3	3,922,071	126,519	12,902	4,803	17,705
FEBRUARY 28 days	1015	2,529,972	71.5	89.0	390	331,069	9.4	30.3	1541	556,472	15.7	12.9	252	121,417	3.4	17.2	12	1,166	-	3.5	1457	685,098	15.8	16.3	3210	2560	1676	25	7471	34.9	3,540,096	126,432	11,929	4,479	16,408
MARCH 31 "	1042	2,741,421	70.8	84.9	408	371,872	9.6	29.4	1537	617,351	15.9	13.0	271	138,228	3.6	16.5	12	1,692	0.1	4.5	1463	711,143	15.5	15.7	3270	2520	1678	24	7492	38.2	3,870,564	124,857	12,873	5,043	17,916
APRIL 30 "	1033	2,638,574	71.1	85.1	383	356,509	9.6	31.0	1553	590,194	15.9	12.7	260	123,510	3.3	15.8	10	1,202	0.1	4.0	1444	677,482	15.4	15.6	3239	2564	1682	30	7515	38.2	3,709,989	123,666	12,706	4,773	17,479
MAY 31 "	1034	2,748,710	72.0	85.8	388	368,364	9.7	30.6	1506	572,726	15.0	12.3	262	124,460	3.3	15.3	9	1,014	-	3.6	1478	717,033	15.9	15.8	3199	2627	1695	22	7543	38.5	3,815,274	123,073	12,703	4,825	17,528
JUNE 30 "	1037	2,639,392	71.4	84.8	415	373,445	10.1	30.0	1481	566,064	15.3	12.7	271	117,611	3.2	14.4	14	2,416	-	6.2	1469	718,005	16.3	16.3	3218	2626	1701	23	7568	38.3	3,698,928	125,298	11,723	4,542	16,265
PRODUCTION TOTAL 1st JAN-30th JUNE 181 days.	1030	16,087,465	71.3	86.3	395	2,191,139	9.7	30.6	1527	3,511,947	15.6	12.7	262	757,941	3.4	16.0	12	8,430	-	3.9	1464	4,246,373	15.8	16.0	3226	2572	1684	148	45,041	38.6	22,556,922	124,624	(74,836)	(28,465)	(103,301)
JULY 31 days	1066	2,734,592	71.3	82.6	419	405,205	10.6	31.3	1511	580,447	15.1	12.4	266	110,407	2.9	13.4	13	3,817	0.1	9.5	1537	806,192	17.4	16.9	3275	2585	1705	26	7,591	37.8	3,834,468	123,693	12,097	4,164	16,261
AUGUST 31 "	1051	2,734,385	71.4	83.9	441	422,889	11.1	30.9	1486	550,808	14.4	12.0	271	112,490	2.9	13.4	17	6,473	0.2	12.3	1503	777,358	16.9	16.7	3266	2613	1711	26	7,616	37.8	3,827,045	123,453	10,993	4,070	15,063
SEPTEMBER 30 days	1063	2,719,914	71.8	85.3	410	380,821	10.1	31.0	1491	568,581	15.0	12.7	277	113,720	3.0	13.7	11	5,405	0.1	16.4	1631	769,421	16.9	15.7	3252	2641	1722	22	7,637	38.8	3,788,441	126,281	11,404	4,442	15,846
OCTOBER 31 "	1056	2,829,064	71.9	86.4	409	401,684	10.2	31.7	1497	573,150	14.6	12.4	293	126,194	3.2	13.9	12	3,839	0.1	10.3	1603	794,451	16.8	16.0	3267	2643	1733	23	7,686	38.8	3,933,951	126,901	11,773	4,705	16,478
NOVEMBER 30 "	1073	2,778,898	72.5	86.3	406	363,950	9.5	29.9	1482	564,321	14.7	12.7	295	122,651	3.2	13.9	10	3,176	0.1	10.6	1600	752,302	16.4	15.7	3266	2667	1737	25	7,689	39.1	3,832,996	127,767	10,941	4,975	15,916
DECEMBER 31 "	1074	2,905,900	72.7	87.3	382	375,066	9.4	31.7	1486	575,540	14.4	12.5	297	135,131	3.4	14.7	10	2,332	0.1	8.3	1591	783,641	16.4	15.9	3249	2692	1746	24	7,711	39.7	3,993,969	128,838	12,219	4,075	16,294
PRODUCTION TOTAL 1st JULY-31st Dec. 184 days	1064	16,702,753	72.0	85.3	411	2,349,615	10.1	31.1	1492	3,412,847	14.7	12.4	283	720,593	3.1	13.8	12	25,042	0.1	11.4	1577	4,683,365	16.8	16.2	3262	2639	1726	146	45,910	38.6	23,210,850	126,146	(69,427)	(26,431)	(95,858)
YEAR'S PRODUCTION TOTAL 365 days	-	32,790,218	71.7	-	-	4,540,754	9.9	-	-	6,924,794	15.1	-	-	1,478,534	3.2	-	-	33,472	0.1	-	-	8,929,738	16.3	-	-	-	-	-	-	-	45,767,772	-	144,263	54,896	199,159
DAILY AVERAGES	-	89,836	-	85.8	-	12,441	-	30.9	-	18,972	-	12.6	-	4,051	-	14.8	-	92	-	7.7	-	24,465	16.3	16.1	-	-	-	-	-	125,391	-	125,391	-	-	-
AVERAGE DURING YR.	1047	-	-	-	403	-	-	-	1509	-	-	-	273	-	-	-	12	-	-	-	1521	-	-	-	-	-	-	38.7	-	-	-	-	-	-	

T A B L E III A

Analysis of Production for 1961 by Operating Companies  
(All Crude Oil figures are for dry oil)

COMPANY	F L O W I N G		GAS/AIR LIFT		PUMPING		PLUNGER LIFT		OTHER METHODS		S A L T W A T E R			Average of Wells Produced	Daily Av. per Producing Well	Total Oil Produced (bbls.)	PRODUCTION FROM CROWN OIL RIGHTS			PRODUCTION FROM PRIVATE OIL RIGHTS			
	Av. No. of Wells	Quantity (bbls.)	Av. No. of Wells	Quantity (bbls.)	Av. No. of Wells	Quantity (bbls.)	Av. No. of Wells	Quantity (bbls.)	Av. No. of Wells	Quantity (bbls.)	Av. No. of Wells wet	Quantity (bbls.)	% of Total Fluid Production				Daily Av. per wet Well	Average No. of Wells	Production (bbls.)	Daily Av. per producing well	Average No. of Wells	Production (bbls.)	Daily Av. per. producing well
APEX T'DAD OILFIELDS LTD.,	75	1,366,597	36	293,381	262	1,297,131	23	207,900	7	31,497	157	828,594	20.59	14.46	403	21.73	3,196,506	160	1,727,693	29.58	243	1,468,813	16.56
JADE PET. CO. LTD.,	-	-	-	-	-	-	-	-	1	859	-	-	-	-	1	2.35	859	-	-	-	1	859	2.35
DOMINION OIL LTD.,	2	119,695	-	-	-	-	-	-	-	-	2	9,506	7.36	13.02	2	163.96	119,695	2	119,695	163.96	-	-	-
KERN T'DAD OILFIELDS LTD.,	86	658,973	10	56,209	100	246,929	-	-	-	-	48	162,696	14.46	9.29	195	13.52	962,111	60	421,246	19.23	135	540,865	10.98
PREMIER CONSOLIDATED OILFIELDS LTD.,	5	28,446	-	-	144	267,661	-	-	2	285	43	164,169	35.65	10.46	151	5.38	296,392	44	62,733	3.95	107	233,659	5.96
SHELL TRINIDAD LTD.,	187	3,951,541	63	715,875	275	1,781,624	1	7	2	775	284	1,626,648	19.85	15.69	527	33.53	6,449,822	421	5,828,752	37.93	106	621,070	16.05
STEKOLL PANAM PETROLERA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T'DAD CENTRAL OILFIELDS LTD.	20	735,721	-	-	108	432,353	-	-	-	20	75	221,328	15.93	8.09	128	25.00	1,168,094	128	1,168,094	25.00	-	-	-
T'DAD NORTHERN AREAS LTD.,	65	9,358,676	-	-	-	-	-	-	-	-	17	87,133	0.92	14.04	65	394.46	9,358,676	65	9,358,676	394.46	-	-	-
TEXACO T'DAD INC.,	435	13,024,206	134	2,199,657	586	2,721,062	-	-	-	36	747	4,091,562	18.57	15.01	1,155	42.57	17,944,961	1,000	16,236,740	44.48	155	1,708,221	30.19
T'DAD PET. DEV. CO. LTD.,	171	3,546,363	162	1,275,632	35	178,034	249	1,270,627	-	-	148	1,747,496	21.79	32.35	617	2.33	6,270,656	600	6,183,196	23.58	17	87,460	1.46
TOTAL	-	32,790,218	-	4,540,754	-	6,924,794	-	1,478,534	-	33,472	-	8,939,132	19.53	-	3,244	-	45,767,772	2,480	41,106,825	-	764	4,660,947	-
DAILY AVERAGE / WELL Bbls.	-	85.90	-	30.87	-	12.57	-	14.83	-	7.64	-	-	-	16.10	-	38.65	-	-	-	45.41	-	-	16.71
	1,047		403		1,509		273		12		1,521												

C. H. P. S.

NATURAL GASOLINE PRODUCTION, 1961

COMPANY	CROWN OIL RIGHTS (bbls.)	PRIVATE OIL RIGHTS (bbls.)	TOTAL (bbls.)
APEX TRINIDAD OILFIELDS LTD.,	46,335	54,095	100,430
TEXACO TRINIDAD INC.,	-	-	-
T'DAD PET. DEV. CO. LTD.,	97,928	801	98,729
TOTAL	144,263	54,896	199,159



TABLE V.

## RETURN OF PRODUCTION, STOCKS &amp; DISPOSAL OF PETROLEUM

DURING YEAR 1961

(All figures in barrels)

	CRUDE AND PROCESS OILS	REFINED PRODUCTS.														TOTAL (all products)
		AVIATION SPIRIT		MOTOR SPIRIT	WHITE SPIRIT	AV. TURBINE FUEL	KEROSENE (Burning Oil)	VAPOURISING OIL	GAS & DIESEL OILS	FUEL OIL (ALL GRADES)	LUBRICATING OILS & GREASES	BITUMEN	OTHER FINISHED PRODUCTS	LIQUEFIED PETROLEUM GASES	FEED OR BLENDING STOCKS.	
		100 OCTANE	OTHER GRADES.													
1. OPENING STOCKS, 1st. JAN. 1961.	2,644,500	37,284	176,535	907,798	2,712	-	79,849	90,798	1,505,644	1,586,455	687	32,091	563,180	163	384,235	5,367,411
2. CRUDE OIL PRODUCTION INCLUDING CASING HEAD PETROLEUM SPIRIT	45,966,931															
3. <u>IMPORTS</u>																
VENEZUELA	31,262,315	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COLOMBIA	4,010,347	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OTHER COUNTRIES	27,237,142	-	-	47,926	-	-	674	-	6,844	105,102	-	-	-	-	-	-
TOTAL IMPORTS	62,509,804	-	-	47,926	-	-	674	-	6,844	105,102	-	-	2,848	-	33,635	197,029
4. RUNS TO STILL.	103,754,713	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5. PRODUCTION OBTAINED		743,864	3,082,379	12,596,652	74,000	993,034	1,722,255	1,129,636	16,471,699	56,346,349	922	216,531	7,227,529	48,456	318,677	100,971,983
6. <u>CONSUMPTION</u>																
TRINIDAD & TOBAGO BUNKERS	-	-	650	961,290	3,378	206,285	250,761	6	456,958	512,461	98	30,390	166,078	31,363	-	2,619,716
REFINERY FUEL	43,517	-	-	-	-	-	52	-	3,113,157	11,910,726	-	-	448	-	-	15,088,349
TOTAL CONSUMPTION	43,517	37,939	26,677	961,290	3,378	206,285	250,813	6	3,570,113	12,428,084	98	30,390	166,526	31,363	-	17,712,962
7. <u>SHIPMENTS</u>																
UNITED KINGDOM	1,288,883	12,846	2,385,901	4,288,948	-	-	-	1,013,700	3,139,251	6,259,536	-	-	-	-	-	-
NORTH AMERICA	3,117,312	-	-	2,672,979	-	277,126	163,136	-	666,448	22,060,100	-	-	134,971	-	-	17,245,153
E.E. COMMUNITY	-	-	364,674	496,261	-	-	-	-	3,182,747	4,733,243	-	-	4,186,658	-	-	30,028,447
OTHER EASTERN HEMISPHERE	-	106,655	83,642	1,297,393	60,458	20,377	299,276	121,024	4,250,073	5,719,437	-	-	2,111,171	-	-	10,888,096
WEST INDIES & GUIANAS	-	119,302	112,573	1,624,770	-	63,587	747,994	-	1,313,994	939,496	1,072	114,303	554,437	-	-	12,627,125
ON WESTERN HEMISPHERE	-	430,386	121,710	1,263,764	673	425,659	122,132	112	887,933	4,406,956	-	74,728	79,687	-	12,874	5,090,077
TOTAL SHIPMENTS	4,406,195	669,339	3,068,500	11,644,105	61,131	786,749	1,352,538	1,134,836	13,470,446	44,098,328	1,072	189,031	7,286,307	16,817	136	7,893,861
8. Closing Stock as at 31st Dec. 1961	2,645,413	73,920	163,737	946,991	12,203	-	212,427	35,592	343,628	1,510,994	419	29,201	340,724	439	723,537	5,050,702

\* Refers only to Oil Company manufacture in Trinidad.  
Excludes imports by local distributors.

T A B L E VI

STATEMENT SHOWING CONTRIBUTIONS BY THE OIL INDUSTRY TO TERRITORIAL  
REVENUE AND GOVERNMENT OPERATED SERVICES - 1961  
(Marketing Companies not included)

Item	HEAD OR SUB-HEAD	1961	% Difference 1961/1960	1960	1959	1958	1957	1956	1955	1954	1953	1952
	<u>CROWN ROYAL TIES, TAXATION, ETC.</u>	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
1.	Customs	1,401,804	- 2.8	1,945,707	2,024,876	2,354,974	2,267,204	1,371,241	1,097,527	1,270,440	1,191,346	1,204,736
2.	Excise duty on Petroleum Spirit	92,724	-11.8	105,091	124,046	183,331	129,093	122,243	124,304	136,257	141,361	132,817
3.	Land and Building Taxes	240,646	+ 3.5	239,863	250,461	250,815	209,973	203,086	200,413	199,263	228,180	113,301
4.	Vehicles, Licences & Registration	206,222	- 2.3	210,961	148,195	170,721	130,267	134,227	137,441	85,439	118,741	107,868
5.	Taxes on Income	28,232,741	- 5.1	29,761,832	29,618,807	36,818,288	27,666,940	19,630,291	18,827,104	14,692,510	15,091,972	17,091,094
6.	Reimbursements - Petroleum Department	64,291	- 1.6	65,341	53,625	82,042	11,525	50,025	50,546	40,613	32,644	27,750
7.	Earnings of Government Departments	12,229	- 18.4	14,980	4,068	21,077	50,726	61,466	33,013	11,476	9,436	17,784
8.	Sundries	26,505	+ 48.1	17,897	96,587	79,365	61,241	38,857	32,456	30,797	39,592	43,365
9.	Royalty on Oil	19,246,317	+ 6.5	18,064,049	16,236,712	16,101,883	13,945,903	10,227,905	8,706,169	8,231,840	7,011,584	6,592,399
10.	Royalty on Gas	187,403	+ 9.3	171,502	135,802	111,748	111,394	94,016	91,096	72,417	68,255	85,031
11.	Forests - Sale of Timber	173,625	+ 42.4	121,950	132,476	137,835	157,505	156,295	140,206	138,594	68,174	61,174
12.	Exploration Licences	-	-	-	-	-	1,273	5,549	3,437	5,687	4,356	14,192
13.	Harbour Dues on Crude Oil & Products	2,304,145	+ 31.43	1,753,076	1,509,693	1,389,087	1,016,102	1,136,310	953,586	872,334	809,507	753,598
14.	SUB-TOTALS ITEMS 1 - 13	52,188,652	- .54	52,412,249	50,335,148	57,701,166	45,759,146	33,231,511	30,397,298	25,787,661	25,298,148	26,244,636
	<u>VARIOUS SERVICES</u>											
15.	Wharves & Harbours (Rentals etc.)	203,963	+44.4	141,270	173,612	199,263	93,102	74,846	58,347	92,493	82,279	74,499
16.	Post Office	55,112	+ 2.3	53,850	62,611	53,011	58,509	48,496	52,490	47,559	45,613	50,154
17.	Rent of Government Property	10,406	+ 47.9	7,034	11,782	11,141	17,774	15,287	16,811	12,175	10,320	10,732
18.	(Government Railway, Telegraph & Telephone. (Telephone included for first time in 1961)	341,015	+170.6	126,020	131,335	129,403	140,469	112,900	104,698	125,726	119,097	165,312
19.	Fees and Payments for Specific Services	57,083	+ 84.5	30,938	130,725	38,631	44,988	47,215	23,742	29,578	35,258	29,609
20.	SUB-TOTALS ITEMS 15 - 19	667,579	+ 85.9	359,112	510,065	431,449	354,842	298,744	256,088	305,531	292,567	330,306
21.	GENERAL TOTAL	52,856,231	+ .05	52,831,361	50,845,213	58,132,615	46,113,988	33,530,255	30,653,386	26,093,192	25,590,715	26,574,942
A	Total Revenue of Territory & Government Operated Services	164,442,053	- 5.8	174,509,915	147,917,385	139,934,076	110,954,729	96,931,614	89,991,040	80,154,136	74,535,864	73,013,672
B	Percentage of "A" Contributed by the Oil Industry	32.1	+ 5.9	30.3	34.4	41.5	41.5	34.6	34.1	32.6	34.3	36.4
C	Percentage of "A" less items 13,15 & 18 Contributed by the Oil Industry	33.8	+ 7.9	31.3	35.8	43.4	42.0	36.1	36.0	34.0	36.1	38.3
D	Excise collected on Gasoline & Propane (including duty shown under Item 2 above)	3,331,329	+ 10.5	3,013,966	2,763,588	4,959,941	2,381,018	2,186,203	1,985,082	1,891,322	1,714,221	1,560,225

TABLE VII

STATEMENT SHOWING THE AMOUNT OF MONEY DISBURSED  
IN THE TERRITORY ON OVERSEAS PURCHASES OF  
MATERIALS BY THE OIL INDUSTRY - 1961

ITEM	HEAD OR SUB-HEAD	1961	% Difference 1961/1960	1960	1959	1958	1957	1956	1955	1954	1953	1952
	<u>MONEYS EARNED AND PAYABLE IN THE</u> <u>TERRITORY</u>											
1.	Total Contribution to Government Revenue (Item 21 Table VI)	52,856,231	+ 0.05	52,831,361	50,843,213	58,132,165	46,113,988	33,530,255	30,653,386	26,093,192	25,590,715	26,574,942
2.	Payments to Employees *	44,265,080	+ 4.3	42,429,050	42,147,355	41,450,305	37,552,026	35,700,911	34,557,926	31,040,008	29,164,141	24,743,598
3.	Payments to Contractors *	42,467,047	+ 1.6	41,796,242	33,666,818	23,898,821	17,069,310	13,042,638	10,643,977	9,465,908	7,439,632	7,604,548
4.	Local Purchases of Materials	15,074,415	+ 2.7	14,672,142	14,589,697	9,040,923	9,210,891	8,116,298	7,217,873	7,026,657	5,862,292	5,662,114
5.	All other Local Expenditure (Rents, Private Royalties etc.)	16,641,295	- 10.5	18,603,538	18,068,454	13,049,813	20,655,539	15,470,566	13,819,910	13,220,262	11,527,727	13,095,125
6.	SUB - TOTAL	171,304,068	+ 0.6	170,332,333	159,317,537	145,572,477	130,601,755	103,860,668	96,893,072	86,846,027	79,584,507	77,680,327
	<u>OVERSEAS PURCHASES OF MATERIALS</u> <u>( C.I.F. VALUATION)</u>											
7.	Importations from (a) United Kingdom	28,072,980	- 16.1	33,443,860	37,577,311	36,231,825	37,197,160	23,994,740	24,760,317	23,833,618	24,439,951	22,888,622
	(b) Canada	23,558	+ 7193.5	323	-	861,020	1,065,175	1,275,812	930,113	1,143,337	1,065,818	927,095
	(c) U.S.A.	5,781,722	- 23.3	7,541,519	7,096,192	6,201,404	5,859,427	3,394,161	5,184,603	3,651,034	4,329,034	4,329,858
	(d) All other Sources	553,278	- 46.7	1,038,087	1,317,423	6,383,844	3,090,064	2,008,580	425,181	1,594,177	2,032,287	1,432,977
8.	SUB - TOTAL	34,431,538	- 18.1	42,023,789	45,990,926	49,678,093	47,211,826	32,673,293	31,300,214	30,222,166	30,867,914	31,465,671
9.	GRAND TOTAL	205,735,606	- 3.1	212,356,123	205,308,463	195,250,570	177,813,581	138,533,961	128,193,286	117,068,193	110,452,421	109,146,198

\* These amounts include hidden contributions to the direct revenue of the territory in the form of Customs Duties, Income Tax, Licences etc.

TABLE IX

## SUMMARY OF GROWN (ROYALTY) CRUDE ASSESSED WITH PRICES AND ANALYSES - 1961

(For Half Yearly assessment periods ending 30th June and 31st December)

1 Barrel = 34.9726 I.G.

COMPANY	Net Royalty Production bbls	ROYALTY			SUB DIVISION OF (ROYALTY) CRUDE INTO PRODUCTS AS PER R.L.E -1 ANALYSIS												Crude Oil Weighted Average Gravity °A.P.I
		10% Assessed bbls	Value \$	Average Price \$/bbl	LIGHT FRACTIONS			GAS OIL					FUEL OIL				
					Quantity bbls	Percentage	Tetra Ethyl lead to blend to 70/72 Octane Gasoline mls.	53-57 D.I bbls	48-52 D.I bbls	43-47 D.I bbls	No.2 Fuel bbls	Total Gas Oils bbls	Percentage	Quantity bbls.	Percentage		
Apex (Trinidad) Oilfields Ltd.	865,596	86,860	395,773.81	4.56	11,874	13.7	217,936	-	-	-	25,820	25,820	29.7	49,166	56.6	23.7	
Dominion Oil Ltd.	81,004	8,100	47,768.06	5.90	4,969	61.3	262,023	2,667	-	-	-	2,667	32.9	464	5.8	51.8	
Kern Trinidad Oilfields Ltd.	209,137	20,914	79,714.69	3.81	1,796	8.6	51,405	662	-	-	-	662	3.2	18,456	88.2	17.1	
Premier Consolidated Oilfields Ltd	32,355	3,236	14,855.84	4.59	212	6.6	1,568	-	-	596	-853	1,249	38.6	1,775	54.8	23.1	
Estate of Timothy Roodal	287	29	122.22	4.21	1	2.5	-	-	-	-	8	8	29.7	20	67.8	20.1	
Shell Trinidad Ltd	2,964,780	296,478	1,435,395.20	4.84	58,385	19.7	2,007,113	54,232	-	43,820	308	98,360	33.2	139,733	47.1	28.8	
Trinidad Central Oilfields Ltd.	598,015	59,802	289,375.40	4.84	19,989	33.4	520,156	-	2,034	-	9,640	11,674	19.5	28,139	47.1	31.0	
Trinidad Northern Areas Ltd.	4,120,349	412,035	1,967,684.03	4.78	102,109	24.8	4,456,486	-	105,670	-	-	105,670	25.6	204,256	49.6	31.0	
Trinidad Petroleum Development Co. Ltd.	3,079,595	307,960	1,457,402.93	4.73	59,445	19.3	1,223,386	-	-	2,257	93,001	95,258	30.9	153,257	49.8	26.6	
Texaco Trinidad Inc.,	2,215,703	221,571	3,875,860.17	4.72	167,630	20.4	3,659,259	-	39,491	53,288	141,614	234,393	28.5	419,548	51.1	29.3	
Totals and Averages for First Half Year	20,169,821	2,016,985	9,563,952.35	4.74	426,410	21.1	12,399,332	57,561	147,195	99,961	271,044	575,761	28.6	1,014,814	50.3	28.9	
Apex (Trinidad) Oilfields Ltd.	856,345	85,634	381,699.78	4.46	12,058	14.1	161,121	-	-	-	25,457	25,457	29.7	48,119	56.2	23.5	
Dominion Oil Ltd	38,691	3,869	22,495.31	5.81	2,378	61.5	123,173	1,272	-	-	-	1,272	32.9	219	5.6	51.6	
Kern Trinidad Oilfields Ltd.	210,832	21,083	78,581.44	3.73	1,773	8.4	52,380	198	480	-	-	670	3.2	18,634	88.4	17.6	
Premier Consolidated Oilfields Ltd	29,742	2,974	12,798.08	4.27	160	5.4	184	-	-	-	953	953	32.0	1,861	62.0	21.3	
Estate of Timothy Roodal	349	35	144.43	4.13	1	2.3	-	-	-	-	10	10	29.8	24	67.9	20.1	
Shell Trinidad Ltd.	2,847,005	284,702	1,337,969.20	4.70	55,855	19.6	2,098,019	59,111	-	31,848	227	91,186	32.1	137,661	48.3	28.4	
Trinidad Central Oilfields Ltd.	570,079	57,009	271,285.11	4.91	19,453	34.1	500,938	-	2,019	-	8,778	10,797	18.9	26,777	47.0	31.0	
Trinidad Northern Areas Ltd.	5,283,327	523,833	2,439,177.18	4.66	126,058	24.1	5,863,506	130,366	-	-	-	130,366	24.9	267,409	51.0	30.6	
Trinidad Petroleum Development Co. Ltd.	3,080,081	308,007	1,410,585.47	4.58	50,192	16.3	811,343	-	-	2,603	97,837	100,440	32.6	157,375	51.1	25.9	
Texaco Trinidad Inc.,	7,946,960	794,696	3,638,062.92	4.58	154,116	19.4	3,280,247	-	38,417	48,359	138,205	224,981	28.3	415,599	52.3	27.5	
Totals and Average for Second Half Year	20,818,411	2,081,842	9,592,708.92	4.61	422,026	20.3	12,890,911	190,945	40,916	82,810	271,467	586,138	28.1	1,073,678	51.6	28.0	
YEAR'S TOTALS AND AVERAGES	40,988,232	4,098,827	19,156,661.27	4.67	848,436	20.7	25,290,243	248,506	188,111	182,771	542,511	1,161,899	28.3	2,088,492	51.0	28.4	



