

COLONY OF TRINIDAD AND TOBAGO



**ADMINISTRATION REPORT OF THE
PETROLEUM DEPARTMENT
FOR THE YEAR 1951**

ADMINISTRATION REPORT OF THE PETROLEUM DEPARTMENT, 1951

HONOURABLE COLONIAL SECRETARY,

I have the honour to submit for the information of His Excellency the Governor, the following Report on the Petroleum and Asphalt Industries of the Colony for the year 1951.

The Report is set out in the sections, tables, appendices and maps as detailed below.

THE PETROLEUM INDUSTRY

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THE PETROLEUM INDUSTRY

SUMMARY AND COMMENT

During 1951 there was but little change in the scale of field operations, drilling, production and exploration being maintained at the level of the previous two years.

2. Exploration drilling was actively continued during the year but the results were disappointing with the exception of the discovery of a productive patch of Herrera sandstone in Well No. 188 on the Coora Field of Trinidad Petroleum Development Company Limited. It will require the drilling of several other wells before the value of this discovery can be assessed.

3. The average value of local crude to which the incomes of local producing companies are closely related was 7.87 per cent. higher in 1951 than in 1950. On the other hand, disbursements in the Colony by the oil companies during 1951, which represent a very large proportion of their total outgoings, showed an increase of 22 per cent. over the figure for 1950.

4. The trend which these figures indicate, namely diminishing cash resources, has been in evidence for several years and, as pointed out in last year's report, has a limiting effect on exploration. A rising wages bill coupled with adverse market conditions may rapidly accelerate this trend.

SECTION I—ACTIVITIES OF THE OIL INDUSTRY

DRILLING

5. Twenty-seven drilling rigs were in operation during the year. Trinidad Leaseholds Limited operated nine rigs, while six were run by Trinidad Petroleum Development Company Limited and five by United British Oilfields of Trinidad Limited. Apex Trinidad Oilfields Limited maintained three rigs, Antilles Petroleum Company (Trinidad) Limited two and Kern Trinidad Oilfields Limited one.

6. One hundred and forty-four (144) new wells were started during the year and one hundred and thirty-one (131) were completed as producers. These figures compare with one hundred and forty-nine (149) wells commenced and one hundred and thirty-six (136) completed during the previous year 1950.

7. Nine (9) wells were abandoned while drilling, representing 59,731 feet of dry hole or 9 per cent. of the annual footage. The dry footage for the three-year period 1949—1951 is 8.33 per cent. of the total footage for that period.

8. The total footage drilled during the year was 664,887 feet, an increase of 0.8 per cent. over last year's figure of 659,565 feet. The average depth of completed wells was 4,481 feet as compared to 4,436 feet in 1950. Trinidad Leaseholds Limited abandoned their Morne Diablo 34 at a depth of 14,018 feet. This is the deepest hole yet drilled in the Colony.

9. Statistics relative to drilling are given in Table I, Items 14–21 inclusive. The annual footage, item 18, and the average depth per well, item 21, being shown in graph form in Appendix "C". A monthly analysis of drilling activity is given in Table II.

EXPLORATION

10. In Table IX, a list is given of those wells with an objective depth of 8,000 feet or over, which were being drilled during the year. The location of each is shown on the map at the end of this report. Of these, four wildcats, namely Trinidad Leaseholds Limited, Morne Diablo 34; Trinidad Northern Areas Limited, Mount Harris 1; Trinidad Petroleum Development Company Limited, Marabella 1; and United British Oilfields of Trinidad Limited, Balata 2; were all abandoned as dry holes.

11. The post war expenditure on deep drilling is shown in the attached table:—

EXPENDITURE ON DEEP WELLS

	<i>For the period 1st January, 1945– 31st December, 1950</i>	<i>For the year 1951</i>	<i>Total at 31st December, 1951</i>
1. Cost of drilling wells including depreciation ...	\$22,110,000	\$6,338,000	\$28,449,000
2. Investment in capital equipment ...	7,059,000	402,000	7,461,000
	\$29,170,000	\$6,740,000	\$35,910,000
3. Less depreciation on capital equipment ...	1,746,000	916,000	2,662,000
4. Total outlay on deep drilling ...	\$27,424,000	\$5,824,000	\$33,248,000

12. United British Oilfields of Trinidad Limited conducted a geological survey in the Ortoire Basin and started a seismograph survey. Seismograph Service Limited also shot a line of about four and one half miles for Apex Trinidad Oilfields Limited across their Fyzabad and Coora leases.

PRODUCTION OF CRUDE OIL

13. The total production of crude oil for the year 1951 was 20,842,716 barrels, an average of 57,103 barrels per day. This represents an increase of 1 per cent. over the figure for 1950.

14. Statistics relative to crude oil production are shown under Items Nos. 1 and 22-27 inclusive in Table I. Items 1 and 25 being reproduced in graph form in Appendix "A". In Table III a detailed monthly breakdown of production methods is given, the annual production contributed by the principal producing methods being graphed as a percentage of the total production in Appendix "B".

15. The average daily production per producing well (Table I, item 25) again dropped, being 25.1 barrels per day in 1951 as compared to 25.7 barrels per day in 1950. The percentage of salt water in the total fluid produced maintained the steady upward trend displayed for some years, being 16.9 per cent. as compared to 15.1 per cent. in 1950. Salt water production is shown in graph form in Appendix "F".

REFINING

16. Five (5) permits for the refining of oil were issued under the Oil Mining and Refining Ordinance, three of these being for small topping plants operated respectively by Apex Trinidad Oilfields Limited, Brighton Terminal Limited and Trinidad Petroleum Development Company Limited.

17. Construction of a Catalytic Cracking Plant by Trinidad Leaseholds Limited was well advanced by the end of the year. The extension of the topping plant operated by Brighton Terminal Limited was completed and in operation at the end of the year.

18. Refinery input (Item 13. Table I) again showed an increase over the previous year being 35,160,050 barrels as compared to 29,813,245 barrels in 1950. Of this total 9,017,732 barrels were processed by United British Oilfields of Trinidad Limited at Point Fortin and 25,663,591 barrels by Trinidad Leaseholds Limited at Pointe-a-Pierre. Brighton Terminal Limited processed 456,106 barrels while 22,621 barrels were treated in field topping plants.

NATURAL GASOLINE RECOVERY PLANTS

19. Two plants for the recovery of natural gasoline were in operation during the year. The charcoal adsorption plant operated by Apex Trinidad Oilfields Limited processed 92.1 per cent. of the company's total production of gas, the average throughput being 9.99 million cubic feet per day as compared to an average of 9.62 million cubic feet per day in 1950. The average yield (including some compression gasoline) was 1.09 gallons per thousand cubic feet treated.

20. The oil absorption plant operated by Trinidad Petroleum Development Company Limited handled 70 per cent. of the company's total production of gas, processing an average of 9.80 million cubic feet per day for an average recovery of 0.804 gallons per thousand cubic feet treated. The figures compare with an average daily throughput of 8.28 million cubic feet per day in 1950 for recovery of 0.706 gallons per thousand cubic feet.

21. Compression gasoline amounting to about 15 barrels per day was made by Trinidad Leaseholds Limited on its Guayaguayare field and was returned to crude storage.

NATURAL GAS

22. Details of the production and utilization of natural gas in 1950 and 1951, are given in Table IV. It will be seen from the table that there was little difference between the two years. Trinidad Leaseholds Limited continued their repressuring experiment at Forest Reserve. Gas was also replaced in formation by the same company at Guayaguayare and by Apex Trinidad Oilfields Limited at Fyzabad.

TRANSPORT AND STORAGE

23. No major additions were made to the main pipe line system during the year. Permit No. 214 was issued to Trinidad Leaseholds Limited under the provisions of Section 3 (i) of the Oil Mining and Refining Ordinance Ch. 26. No. 3, to extend their refinery at Pointe-a-Pierre by the addition of four storage tanks each of 50,000 barrels capacity.

24. The total tankage available for storage of crude oil and refined products (excluding field gathering stations and refinery rundown tanks) was 10,280,131 barrels at 31st December, 1951.

IMPORTS AND EXPORTS OF PETROLEUM AND ITS PRODUCTS

25. Crude oil imported into the Colony for refining and re-export increased by 45 per cent. rising from 11,214,000 barrels in 1950 to 15,855,000 barrels in 1951 (Table I, Item 8). The greater part of this crude was imported by Trinidad Leaseholds Limited from Venezuela. A small amount came from Columbia (Table V, Item 3).

26. Imports of Tucupita Fuel Oil by Brighton Terminal Limited for bunkering or transshipment amounted to 3,324,544 barrels. This company also imported 293,036 barrels of foreign crude for refining. Esso Standard Oil (Antilles) S.A. transhipped 4,276 barrels of Bunker "C" Grade Fuel and 270,976 barrels of Diesel Oil in Port-of-Spain Harbour.

27. Exports of local crude dropped by over twelve per cent. of last year's figure to 1,918,000 barrels. Of this amount 1,587,052 barrels were exported by Trinidad Leaseholds Limited to Canada while 221,006 barrels were sent by Antilles Petroleum Company (Trinidad) Limited to the McColl-Frontenac Company of Canada.

28. Total exports of petroleum and its products (local crude plus the refined products of both local and foreign crudes) increased by nearly 18 per cent. being 34,359,000 barrels as compared to 29,150,000 barrels in 1950.

29. A nine year record of total imports and exports of petroleum is given in Table I, Items 6-12, while a detailed breakdown for 1951 is given in Table V.

SECTION II—THE OIL INDUSTRY IN RELATION TO THE LOCAL ECONOMY

LOCAL EXPENDITURE

30. In 1951 the Oil Industry paid out just over 66 million dollars in the Colony or 22 per cent. more than in 1950. Since 1946 local annual outgoings of the industry have increased at an average rate of over 19 per cent. per annum. It is important to note however that during the same period there has been no corresponding increase in the annual production which has remained almost constant for some years.

31. Details of local outgoings are given in Tables VI and VII from which it will be noted that contributions to Government revenue exceeded 22 million dollars, an increase of over 30 per cent. compared to 1950 while nearly 44 million dollars passed into local circulation.

TAXATION OF THE OIL INDUSTRY

32. Direct contribution to revenue in 1951 made by the Oil Industry amounted to \$22,414,050 or over 34 per cent. of the total revenue of the Colony. This figure is an increase of \$5,538,410 over the comparable figure for 1950. The percentage change under each Head of Revenue in the figures for 1951 as compared to those for 1950 is shown in Table VI. The more important changes, which are discussed individually in the succeeding paragraphs are listed below:—

<i>Source of Revenue</i>	<i>Increase</i>	<i>Decrease</i>
	\$	\$
Customs Import Duties	—	277,023
Royalty on Oil and Gas	703,250	—
Income Tax	5,010,446	—
Sundry Heads	—	43,549
Harbour Dues	145,286	—
	<hr/>	<hr/>
	\$5,858,982	\$ 320,572
Net Increase in Revenue	—	5,538,410
	<hr/>	<hr/>
	\$5,858,982	\$5,858,982

33. Customs Import Duties (Item 1, Table VI) paid by the Oil Industry decreased by over 28 per cent. falling from \$974,118 in 1950 to \$697,095 in 1951. This fall is due to a substantial drop of 38 per cent. in the imports of U.S. origin which were valued, c.i.f. at \$5,469,200 in 1950 but at only \$3,401,644 in 1951. Imports from the United Kingdom on the other hand, showed a corresponding increase. The total c.i.f. value of oil industry imports rose by two per cent. from \$21,831,730 to \$22,327,947. Details are given under Items 6, 7 and 8 of Table VII.

34. Royalties assessed in 1951 in respect of the period 1st July, 1950 to 30th June, 1951, on crude oil and casing head petroleum spirit produced, on gas sold and for dead rent (minimum royalty on non-productive leases) amounted to \$6,615,557, as compared to \$5,856,287 assessed for the previous twelve months. The increase of \$759,270 is very largely due to the better price obtained for royalty oil, being an average of \$3.62 per barrel for the year ended 30th June, 1951, as compared to an average of \$2.99 per barrel for the previous twelve months. The volume of crown gas sold and of casing head petroleum spirit produced both increased during the assessment period, an additional revenue of over \$22,000 accruing in each case.

35. Income tax collected during 1951 showed a substantial increase of \$5,010,446 over the \$8,704,846 collected in the previous year, the actual figure being \$13,715,292. The rate of tax, 40 per cent., was the same as that for the previous year. The increase in taxable incomes was largely due to the rise in fuel oil prices during 1950.

LOCAL DISBURSEMENTS

36. The Oil Industry's annual expenditure in the Colony other than contributions to revenue showed an increase of 16.8 per cent. over the previous year being \$43,645,782 in place of \$37,367,253. A breakdown of these figures into their principal components is given in Table VII, Items 1-5.

37. Payments to employees (Table VII, Item 1) increased by 11 per cent. Contributing to this increase was a rise of over 4 per cent. in the average daily number of registered employees (14,378 as compared to 13,788 in 1950), and several increases during the second half of the year in the cost of living bonus (*see* paragraph 47).

38. Payments to contractors increased by 23 per cent. from \$6,125,164 to \$7,527,758 (Table VII, Item 2). At first sight this increase would appear to be almost wholly accounted for by a 22 per cent. increase in the average daily number of persons employed by the contractors (3,338 as compared to 2,736 in 1950). This however is not the case since, of these annual totals, only about 40 per cent. represents wages, the remaining 60 per cent. being for materials supplied and services rendered. Contractors labour enjoys the same wage rates and cost of living bonus as labour directly employed by the Industry.

39. Local purchases of materials rose by 22.6 per cent. (Table VII, Item 3) to \$4,837,764. Approximately half of this increase was due to higher average prices but the actual volume of purchases also increased. Overseas purchases (Table VII, Items 6 and 7) were only slightly above last year's figure (2.3 per cent.) but importations from the United States dropped considerably (37 per cent.) while those from the United Kingdom showed corresponding increase.

40. No detailed breakdown is available of the numerous accounts making up Item 4 of Table VII—"Other local cash expenditure"—which showed an increase of 22.5 per cent. reaching a figure of \$10,361,590 for the year. Since there was no expansion in the scale of operations of the industry as compared to the previous year, the increase must be largely attributable to higher prices.

EXPORTS OF PETROLEUM AND ITS PRODUCTS

41. The total values of petroleum and its products exported during 1950 and 1951 based on Customs and Excise Department figures are:—

	1950	1951
Crude Oil and products	\$126,309,236	\$158,675,574
Petroleum Bitumen	2,873,982	3,183,533
	<u>\$129,183,218</u>	<u>\$161,859,107</u>

42. The value of the leading staple products exported from the Colony during 1951 is shown in the following table:—

	Value \$	Percentage of Total
1. Petroleum and its products	158,675,574	76.44
2. Petroleum Bitumen	3,183,533	1.53
3. Asphalt and its products	3,988,570	1.92
4. Cocoa	11,563,270	5.57
5. Sugar, Molasses and Rum	21,816,392	10.51
6. Coconuts, Coconut Oil, &c.	439,313	0.21
7. Coffee	1,096,299	0.53
8. Bitters	721,947	0.35
9. Fresh Fruits, Fruit Juices, &c.	1,920,272	0.93
10. All others	4,179,025	2.01
	<u>\$207,584,195</u>	<u>100.00</u>

43. The value given for Item 1 above includes the value of products obtained from imported crude and is therefore not on a strictly comparable basis with the export values given for other products which are wholly of local origin. The value of each of the more important products exported annually is shown in Appendix "E", graphed as a percentage of the total annual value of the Colony's exports. The value of the products obtained from imported crude is shown on this graph which indicates clearly the increasing importance of imported crudes in the local refining business and the relatively decreasing importance of indigenous crude.

44. Harbour Dues on petroleum cargoes (14 cents per ton) increased by nearly 25 per cent. from \$587,516 to \$732,802. This increase is due to increased imports of crude and other oils for refining and re-export (Table I, Items 8 and 9).

INDUSTRIAL RELATIONS

45. Cordial relations continued to exist between Management and Labour. During the year one stoppage of work was reported. This stoppage was unofficial and was made without the sanction and against the advice of the Oilfield Workers Trade Union.

46. The cost of living rose sharply during the year as evidenced by the Government's official cost of living index number which stood at 233 on the 1st January, 1951 but which had risen to 251 by the 31st December, 1951.

47. In accordance with the arrangement whereby the oilfield workers receive a cost of living bonus of $\frac{1}{2}$ cent per hour for every 5 complete points rise in the Government's cost of living index number above the basic figure of 111 ascertained in January, 1938, the following additions were made to wages:—

- i. An addition of $\frac{1}{2}$ cent per hour at an index number of 236 effective on and from 1st August consequent upon the index number for that month rising to 240.
- ii. An addition of 1 cent per hour at an index number of 246 effective on and from 1st September, consequent upon the index number for that month rising to 246.
- iii. An addition of $\frac{1}{2}$ cent per hour at an index number of 251 effective on and from 1st November, consequent upon the index number for that month rising to 251.
- iv. An *ex gratia* addition of 1 cent per hour effective on and from 1st September. This addition was made in recognition of the fact that during a long period of rising prices some hardship may be occasioned by the time lag between price rise and wage adjustment. It was, however, agreed with the Oilfield Workers Trade Union that this addition will form part of any adjustment to wage rates which may be made in any agreement relating wages to the new index of retail prices which Government expects to publish in 1952.

48. With a labour force of 17,700 persons (including contractors labour) working an average of 200 hours per month, the cost to the industry of each rise of 1 cent per hour in wages is over \$400,000 in a complete year.

SECTION III—ADMINISTRATION

ROYALTY ASSESSMENT

49. Early in the year it became apparent that lessees of Crown oil rights leased under the provisions of the Land (Oil Mining) Regulations 1934, who, during the preceding two years had produced more than 50 per cent. of the production from such leases, considered that the existing method of determining the value of crude oil had ceased to be a fair one. In accordance with the provisions of sub-clause iv of Clause 7 of Schedule II to the Land (Oil Mining) Regulations, 1934, they jointly served on the Governor a notice dated 2nd June, 1951, requesting that some other method of determining the value of crude oil be agreed upon. This notice was effective on and from the 1st January, 1952.

50. The lessees suggested that a suitable method with which to replace the existing method would be to determine the value of the crude oil by the use of a value of products formula in precisely the same manner as crude oil taken as royalty in kind under the provisions of the old type leases is evaluated.

51. This suggestion was acceptable to Government in principle. Certain details were however still under discussion at the end of the year.

Old Type Leases: Ten per cent of the crude oil produced on these leases is taken as royalty in kind and is sold back to the lessees at a price determined by aggregating the values of its gasoline, gas oil and fuel oil contents and deducting therefrom a refining charge. Certain fuel used in drilling, producing and refining is allowed free of royalty.

The following table shows the total sales of royalty oil by half-yearly periods for 1950 and 1951:—

Period	BARRELS AS PER STATISTICAL RECORDS			Actual quantity sold (1) barrels	Average value per barrel \$ B.W.I.	Revenue \$ B.W.I.
	Gross Production	Free of Royalty	Net Production			
1950						
January–June	4,092,464	73,344	4,019,120	402,046	3.24.91	1,306,303.79*
July–December	4,120,061	70,337	4,049,724	405,099	3.58.51	1,452,319.42*
1951						
January–June	4,012,983	71,677	3,941,306	394,253	3.66.05	1,443,149.04
July–December	3,976,915	69,130	3,907,785	390,890	3.71.34	1,451,537.06 (2)

52. *1934 Type Leases:* Crude oil produced on these leases is valued at the price of West Texas Sour Crude of the same A.P.I. gravity plus 14.3 U.S. cents per barrel. Royalty is on a sliding scale from 10 to 12½ per cent. according to the size of the well. All crude assessable for royalty during 1951 under these leases paid royalty at 10 per cent. *ad valorem*. There was no change in the price of West Texas Sour Crude during 1951, the price for 22.0–22.9 A.P.I. gravity crude being U.S.\$2.16 per barrel.

The free of royalty concession under these leases is restricted to certain oil used in drilling and production operations only.

Period	BARRELS AS PER STATISTICAL RECORDS			Actual quantity valued (1) barrels	Average value per barrel \$ B.W.I.	Revenue \$ B.W.I.
	Gross Production	Free of Royalty	Nett Production			
1950						
January–June	3,960,141	15,061	3,945,080	3,945,478	3.96.71	1,565,191.49
July–December	4,016,615	15,788	4,000,827	4,001,350	3.96.91	1,588,158.18
1951						
January–June	4,001,595	12,631	3,988,964	3,989,554	3.97.59	1,586,220.96
July–December	4,270,513	14,747	4,255,766	4,256,352	3.96.21	1,686,393.39 (2)

FOOTNOTE: (1) Royalty oil sold on old type leases or valued for royalty on the 1934 type leases is calculated at 34.9726 Imperial gallons per barrel.

Statistical volumes of gross production, F.O.R. &c., include some volumes reported at 34.973 Imperial gallons per barrel and some at 35 Imperial gallons per barrel. Standardization is proceeding slowly.

(2) Revenue figures for the period July–December, 1951 are provisional only and are subject to slight adjustment.

* Amended figures from previous report.

53. In addition to the above royalties on crude oil, the following table shows the amounts collected on natural gas sold, casing head petroleum spirit recovered and minimum royalties paid on leases with small or no production.

Period	NATURAL GAS SOLD		C.H.P.S. RECOVERY		Minimum Royalties \$
	Volume (M.C. Ft.)	Royalty \$	Volume (Imp. gals.)	Royalty \$	
<i>Old Type Leases :</i>					
1950					
January-June	179,844	3,620.56	148,463	1,534.33	—
July-December	114,192	2,302.04	158,185	1,689.15	—
1951					
January-June	16,224	331.08	183,444	2,035.30	—
July-December	43,619	876.98	167,391	2,373.76	—
<i>1934 Type Leases :</i>					
1950					
January-June	1,342,428	37,240.50	1,475,290	26,352.75	166,606.58*
July-December	1,717,017	51,920.36	1,767,150	32,441.43	172,316.28*
1951					
January-June	1,540,138	44,635.14	1,992,245	36,687.20	201,351.69
July-December	1,680,436	49,300.82	2,059,424	38,005.63	184,643.50

54. The total royalty assessed during 1951 in respect of the two half yearly royalty periods ended respectively on 31st December, 1950 and 30th June, 1951 was \$6,615,557.27 being the sum of the separate items of revenue shown for those two periods in the preceding three tables. The amount collected by the Accountant General during the year in respect of royalties was \$6,672,270.75 the reconciliation between the two figures being as follows:—

Amount collected in respect of royalty	\$6,672,270.75
<i>Less</i>	
Minimum rentals paid in advance by United British Oilfields of Trinidad, Ltd. ...	\$52,312.32
Amount due to re-valuation of crude produced by Apex Trinidad Oilfields Limited for period ended 30th June, 1950 ...	6,727.59
	<hr/>
	\$6,613,230.84
<i>Add</i>	
Amount due on Mining Lease No. 3090/16	2,326.43
Amount assessed	<hr/>
	\$6,615,557.27

55. The royalty assessment for the period 1st July, 1950 to 30th June 1951 was \$759,270 greater than that for the preceding twelve months. This increase is very largely due to the higher average value of crude but is partly accounted for by dead rents on an increased acreage under lease.

SAMPLING AND TESTING OF ROYALTY CRUDE OIL

56. During the year under review the sampling procedures for crude oil taken as royalty in kind on the old type leases and sold back to the lessees were carefully examined by Mr. I. S. Rutherford, Assistant Petroleum Technologist and as a result of his investigation and recommendations, a number of changes were made which resulted not only in more accurate sampling but in an overall simplification of the method and work involved. The co-operation and helpful suggestions of the lessees concerned is gratefully acknowledged.

57. The sales agreements between the Governor and the lessees for the buy-back of royalty crude specify that the price payable shall be calculated by aggregating the value of the gasoline, gas oil and fuel oil content of the crude oil and deducting therefrom an allowance for processing.

58. The gasoline, gas oil and fuel oil content of the crude oil is to be determined from a sample (representative of the lease production) by distillation in the R.L.E. 1 Still as described in the *Journal of the Institute of Petroleum*, Vol. XXIV, pages 605-620, under the heading "Laboratory Method for evaluating Crude Oil" by R. E. Johnstone, M.Sc., F.I.C., and R. Palmer, M.A.

59. In the case of some leases it was possible to obtain a sample from a single tank or pipe line which was representative of the complete lease or part of the lease, but in the other cases economic considerations of oilfield development had precluded the segregation of crude oil in field storage on a lease basis and rather elaborate methods had evolved for obtaining a representative sample.

* Amended figures from previous report.

60. At the beginning of 1951 four different methods of obtaining a sample representative of the entire production of a lease were in use. They were as follows :—

Where the lease production was not sufficiently segregated in field storage :—

- A. When the number of wells on the lease was too large to enable each well to be sampled monthly a composite monthly sample was made up from a few only of the major wells on the lease. This composite sample was adjusted to match the weighted average specific gravity and the weighted average light products content of the production of all the wells on the lease. The two weighted averages were calculated from the most recent data available for each individual well.
- B. In one case lease production was pumped to field storage along with non-lease production of very nearly the same quality. In this case a monthly tank or pipe line sample was taken. If the specific gravity of the sample differed by plus or minus 0.005 from the weighted average specific gravity of the productions of all the wells on lease as calculated from the most recent data for each individual well it was corrected to within this range by the addition of an appropriate crude produced on the lease.
- C. When the number of wells on the lease was small a monthly composite sample was made up from individual well samples in proportion to the previous months production of each well.

Where lease production was sufficiently segregated in field storage :—

- D. A monthly sample was taken from the lease tanks or from a pipe line delivering into or out of the tanks.

61. Methods A and B necessitated frequent determinations of the specific gravity of the production of every well. The amount of work involved and subsequent calculation was considerable. Moreover, since the composite sample was based on the figures for the previous month the most suitable well for blending the sample to the required specification was not infrequently "off production of every well. The amount of work involved and subsequent calculation was considerable, almost impossible to produce a blended sample which approximated sufficiently closely both to the calculated specific gravity and to the Light Fraction content of the average production of the lease. Methods A and B were discontinued during the year.

62. Methods C and D have been retained and the following new method added :—

- E. Individual well head samples were evaluated directly in the R.L.E. 1 Still. The analysis of the production of each individual well remains valid until replaced by the analysis of a new sample. A new sample and analysis is required at the expense of the lessee if periodic checks on the specific gravity of the production from the well shows a change of over 1° A.P.I. since the previous analysis was made or if there has been any change in the producing horizon, due to plugging back or perforating. Either the Governor or the lessee can call for a new analysis at will (at their respective expense).

This method is suitable for isolated wells and leases with a small number of wells having a stable quality of oil.

63. The volume of oil which it is required to sample amounts to 8 million barrels a year or about 40 per cent. of the total production of the Colony. This has been achieved by the selection of 14 different sample points with only slight modifications to the existing crude oil collection systems.

64. The following table shows the changes made in sampling procedure, the present sampling method and other relevant data for each sampling point :—

CRUDE OIL SAMPLING							
Company	Area	Sample Collection method		Approximate No. of Wells represented in Sample	Approximate monthly quantity of crude sampled (1,000 Bbls.)	Approximate difference in monthly assessment due to 1% variation in Quality Trend Line	
		Former	Present				
1. T.L.L.	... Barrackpore	...	C & D	23	7		\$
2. T.L.L.	... Forest Reserve L.O.	...	D		171		25
3. T.L.L.	... Forest Reserve H.O.	...	D	388)	175		700
4. T.L.L.	... Guayaguayare	...	D	50	24		600
5. T.L.L.	... Quinam	...	D	15	9		100
6. U.B.O.T.	... Parrylands	...	D	54	30		30
7. U.B.O.T.	... Penal	...	B	65	89		120
8. U.B.O.T.	... P. F. East	...	B	17	12		300
9. U.B.O.T.	... P. F. West (Waxy)	...	B	14	18		50
10. U.B.O.T.	... P. F. Central	...	B	97	70		90
11. U.B.O.T.	... P. F. West	...	B	7	9		200
12. Apex	... Fyzabad A.	...	A	8	5		Not required
13. Apex	... Fyzabad B.	...	A	10	7		do.
14. Apex	... Fyzabad C.	...	A	17	14		do.
				765	640		

65. The overall result of these changes has resulted in 94 per cent. of the crude oil concerned being fully represented by monthly samples taken from only ten points. The large amount of work formerly required in collecting individual well samples for determination of specific gravity and light fraction content is no longer required and the number of bulk samples analysed has been reduced from 168 to 120 per year. The remaining 6 per cent. of the crude oil to be sampled is handled by Method E.

66. All field samples are taken and sealed in the presence of an officer of this Department—the Petroleum Inspector, who also witnesses and checks the subsequent analyses. In order to keep a continuous check on the validity of samples and their analyses the quality of each sample is evaluated by the following formula:—

$$(\text{Light Fraction \%} \times 10) + (\text{Gas Oil \%} \times 8) + (\text{Fuel Oil \%} \times 4)$$

The weights used of 10 : 8 : 4 are very close to the ratios of the prices of the three products during the past year. The values so obtained are graphed for each sampling point to give a Quality Trend Line. When studied in connection with the production data for the wells contributing to a sample the quality trend line gives reliable check on possible errors in production records, sampling and analysis.

67. Quality Trend Lines for sampling points No. 1 to No. 10 inclusive are shown in Appendices H–M. The analysis of samples taken at points 2 and 4 are also shown (Appendices H and I). The actual effect in dollars per month on royalty assessment of a 1 per cent. change in quality is shown on the Quality Trend Line graphs and in the above table. It is a useful office guide in allocating time and staff to checking work.

68. Change or lack of change in these Quality Trend Lines depends on production conditions in the area represented by the sample and many factors are involved. All abrupt changes in Quality Trend Lines are noted and production records are then checked to find the cause. If the cause cannot be found in the office records the sample or analysis may be queried.

69. During 1951 both samples and their analyses were very satisfactory and only two queries were necessary:—

- i. Sample No. 8. The Quality Trend Line (Appendix L) shows an abrupt change of about 7 per cent. in June the new value continuing into July. No production changes were found to account for it. A detailed check with the lessee revealed a typographical error in reporting the specific gravity of one well which however produced over 20 per cent. of the crude oil to be sampled. Sampling Method B was still in use at that time so that the representative sample for analysis was blended to an incorrect calculated average specific gravity. The necessary adjustments to the assessment have been made.
- ii. Sample No. 3. An abrupt change of 4 per cent. in the Quality Trend Line occurred in October, 1951 (Appendix K). This is an abnormal variation for so large a volume of crude (175,000 barrels) and it appears to be due to a defective sample.

70. On the other hand abrupt changes in Quality Trend Lines may be correct as, for example that shown by sample No. 5 (Appendix K). This sample represents only 15 wells. The crudes produced vary widely in analysis and specific gravity so that varying productions of individual wells may have a pronounced effect on the quality and specific gravity of the average sample. The calculated average specific gravity graph has been partially reproduced and the correlation between this and the Quality Trend line is clear. As a further example the gradual fall in the Quality Trend Line of Sample No. 4 (Appendix I) in the latter part of 1951 is due to the production of new wells with a poorer quality crude.

71. Table X summarises the half-yearly results of all sampling since its introduction in 1949. A Quality Trend Line calculated from the half-yearly overall average analysis in the same way as in the case of individual samples and using the resulting figure for July-December, 1949 as an arbitrary 100 per cent. gives the following results:—

July-December, 1949	=	100.0 per cent.
January-June, 1950	=	99.8 per cent.
July-December, 1950	=	100.4 per cent.
January-June, 1951	=	101.0 per cent.
July-December, 1951	=	101.1 per cent.

It will be noted from these figures that the average quality of all the crude sample is now very stable.

72. The sales agreements for royalty crude provide for a rebate to cover the calculated cost of treating the Light Fraction Content of the crude with Tetra Ethyl Lead to bring the knock rating of this product up to 70/72 Octane Number Motor Method. Octane rating tests were made, in consequence, on 60 samples a year. The results of these tests showed that the knock rating of the light fraction content of the samples from three of the sampling points was consistently over 70/72 Octane Number and that the monthly variations in the Tetra Ethyl Lead requirement of samples from the other points were very small. It has now been found possible to reduce the number of knock rating tests to 15 per year.

73. In May 1951, Government was given notice by the Lessees of 1934 Type Mining Leases requiring a change in the method of assessing royalty on crude oil and after the preliminary discussions it became apparent that sampling and analysis procedure similar to that described above would be applied to the crude oil from these leases as from 1st January, 1952. The 1934 Type

mining leases account for the other half of the Crown oil produced in the Colony but affect all lessees as against only three lessees of Pre-1934 Type leases. Preparatory discussions to foresee sampling and analysis procedure were initiated and agreement was reached with the majority of the lessees by the end of the year.

LOCAL SALES OF PETROLEUM PRODUCTS

74. The volume of motor gasoline on which excise duty (9c. B.W.I. per gallon) was paid was 16,161,855½ gallons yielding \$1,454,567 in revenue, an increase of 6.3 per cent. in both gallonage and revenue compared to last year. This increase is almost wholly due to the increased number of motor cars and transport vehicles in use. Sales of kerosene amounted to 4,292,513 gallons.

75. The Price Stabilization Fund continued to operate very successfully and although cost components increased during the year by 0.363 cents per gallon for gasoline and by 1.195 cents per gallon in the case of kerosene it was possible to maintain the retail prices of these two products unchanged at 42 cents and 26 cents per gallon respectively during the year. Sales of aviation gasoline at Piarco Airport amounted to 2,990,354 gallons (Free of Excise).

ACCIDENTS

76. Of the accidents reported during the year, 68 were of a serious nature. In addition six persons were killed by the explosion of a boiler at a drilling well. This accident appeared to be due to negligence on the part of the fireman.

LEGISLATION

77. The Land (Oil Mining) (Amendment) Regulations, 1951, effective on and from 12th July, 1951 (*Royal Gazette* Notice No. 119) amended the Land (Oil Mining) Regulations, 1934, by providing for the issue of Exploration Licences for an initial period of two years in place of one year, and by substituting a new specification for fuel oil.

78. The Oil in Waters of the Colony Ordinance, 1951, effective on the 1st June, 1951, made it illegal for any vessel to discharge oil into the territorial waters of the Colony.

LICENCES AND LEASES

79. One exploration licence was issued for a period of two years with effect from 1st July, 1951, and two exploration licences were extended for the further period of one year as from 1st January, 1951. Nine principal and six supplemental leases were issued during the year while one principal lease was surrendered. One principal lease was renewed for a further term of twenty-one years. A summary of the leasing situation as at 31st December, 1951, is as follows :—

A.—Leases Registered :—

Locality	ACREAGE								
	Surface rights in Private Ownership			Surface rights vested in Crown					
	A.	R.	P.	A.	R.	P.			
Principal Mining Leases as at 31st December, 1950—	79	...	...	55,986	0	04½	159,244	2	15
Marine Licences "							18,304	0	00
Principal Mining Leases issued during 1951 :—									
Apex Reg. No. 4552/51	1	Turure, Tamana, Chaguanas, &c.	...	16,510	3	22	—	—	—
T.N.A. do. 3476/51	1	Turure	...	—	—	—	500	0	00
T.P.D. do. 4862/51		Siparia	...	60	1	19	—	—	—
		Charuma and Coeal	...	160	0	12	—	—	—
		Cedros	...	—	—	—	1,137	0	00
		Savana Grande and Ortoire	...	123	3	22	65	2	12
		do.	...	130	0	39	—	—	—
		Siparia	...	10	1	19	—	—	—
	7	Cedros	...	1,555	1	30	513	2	30
	88			74,537	1	07½	161,460	3	17
							179,764		
Principal Mining Lease surrendered in 1951 :—									
U.B.O.T. Reg. No. 6737/46	1	Ortoire	...	—	—	—	55	0	01
	87			74,537	1	07½	161,465	3	16
							179,769		
Supplemental Mining Leases issued during 1951 :—									
K.T.O. Reg. No. 256/51	1	Pointe-a-Pierre	...	17	0	18	—	—	—
S.T.O. do. 1199/51	1	Siparia	...	—	—	—	108	1	30
T.L.L. do. 1056/51	1	Moruga	...	206	1	30	32	1	30
U.B.O.T. do. 7434/51		Erin	...	(No acreage)			—	—	—
		Siparia	...	do.			—	—	—
	3	Naparima and Siparia	...	4	2	27	—	—	—
	6			74,765	2	02½	161,546	2	36
							179,850		

A.—Leases Registered—(Continued)

Locality		ACREAGE					
		Surface rights vested in Crown			Surface rights vested in Crown		
		A.	R.	P.	A.	R.	P.
Exploration Licences as at 31st December, 1950		—	—	—	54,825	1	22
Exploration Licence issued during 1951 : T.N.A. Reg. No. 8867/51 1 Pointe-a-Pierre, Naparima, &c.		—	—	—	839	2	06
		—	—	—	55,664	3	28
Exploration Licences approved for conversion to Mining Leases :— T.L.L. Reg. No. 9824/49 Moruga U.B.O.T. do. 799/50 Cocal		2,360	0	00	—	—	—
		906	0	00	3,266	0	00
		—	—	—	52,398	3	38
Exploration Licences relinquished during 1951 :— T.N.A. Reg. No. do. 10176/49 Central Range do. 1476/50 Cedros do. 10234/49 Manzanilla U.B.O.T. do. 798/50 Cedros		19,500	0	00	—	—	—
		816	1	22	—	—	—
		1,148	0	00	—	—	—
		802	0	00	22,266	1	22
Exploration Licences in force		—	—	—	30,132	2	06

B.—Leases granted but not yet registered :—

(i) Principal Leases :

Company		Locality		ACREAGE					
				Surface rights in Private Ownership			Surface rights vested in Crown		
				A.	R.	P.	A.	R.	P.
Antilles	3	Mayaro	—	—	—	8,400	0	00	
		Cocal	—	—	—	1,240	0	00	
		Ortoire	—	—	—	9,144	0	00	
Apex	4	Tamana, Charuma, &c.	—	—	—	8,744	2	02	
		Arena Reserve	—	—	—	207	3	04	
		Turure	778	2	18	1,980	2	35	
T.L. Ltd.	6	Turure, Manzanilla, &c.	—	—	—	187	0	07	
		Naparima	308	0	00	20	0	00	
		Savana Grande, Siparia and Moruga	290	0	00	1,587	0	00	
T.N.A.	4	Moruga	16	0	33	—	—	—	
		Siparia	—	—	—	79	1	32	
		Moruga	—	—	—	2,360	0	00	
T.N.A.	4	Savana Grande	—	—	—	159	0	01	
		Nariva	—	—	—	7,603	0	00	
		Central Range Soldado and Los Gallos	—	—	—	6,704	0	00	
T.P.D.	6	Central Range	12,277	0	22½	1	3	33	
		Moruga	13	1	37	268	0	22	
		Do.	—	—	—	205	1	01	
U.B.O.T.	7	Do.	—	—	—	274	0	00	
		Pointe-a-Pierre	181	3	12	—	—	—	
		Moruga	1,688	3	35	292	2	20	
U.B.O.T.	7	Savana Grande	999	0	20	220	2	39	
		Erin	157	0	15	—	—	—	
		Cocal and Ortoire	11	0	32	2,330	1	11	
U.B.O.T.	7	Cocal, Charuma and Ortoire	118	2	36	2,323	1	04	
		Rousillac	89	3	29	845	2	27	
		Ortoire	—	—	—	2,791	0	00	
U.B.O.T.	7	Do.	—	—	—	45,901	0	00	
		Nariva	—	—	—	6,122	0	00	
		Cocal	—	—	—	928	3	29	
(ii) Supplemental Leases :									
K.T.O.	2	Guapo (2)	0	3	08	15	0	18	
T.P.D.	3	Central Range	49	0	31	—	—	—	
U.B.O.T.	8	Siparia	11	3	34	31	3	35	
		Erin	57	3	17	10	0	03	
		Ortoire, Charuma and Cocal	3,223	3	26	—	—	—	
U.B.O.T.	8	La Brea	156	3	19	14	2	08	
		Do.	—	—	—	4	3	12	
		Siparia	—	—	—	34	1	24	
U.B.O.T.	8	Cocal	8	1	14	—	—	—	
		La Brea	—	—	—	Not surveyed			
		Siparia	—	—	—	do.			
U.B.O.T.	8	Guapo	—	—	—	do.			

Total acreage of areas granted but not yet registered :—

A.	R.	P.
129,471	2	05½

C.—*Exploration Licences effective :—*

Company	Locality	Crown Oil Rights		
		A.	R.	P.
Trinidad Northern Areas, Ltd.	Pointe-a-Pierre	839	2	06
Trinidad Petroleum Development Company Ltd.	Nariva (Renewal)	5,664	0	00
United British Oilfields of Trinidad Limited	Nariva (Renewal)	23,629	0	00
		30,132	2	06

D.—*Marine Areas in Territorial Waters :—*

Licences covering 18,304 acres have been issued.

E.—*Private Oil Rights :—*

Returns submitted by the Oil Companies show that 113,845 acres of private oil rights were under lease at the end of the year as compared to 103,718 acres at the end of 1950.

The total of the leased areas under Heads "A", "B", and "E" above is 509,761 acres or about 42.7 per cent. of the total acreage of the Colony.

GEOLOGICAL WORK IN 1951

80. The Government Geologist, Major A. G. A. Sutton, completed both a geological report on the island and a geological map compiled from information obtained largely from the Oil Companies. A final report on water supply was also completed. Several occurrences of ores reported by local prospectors were examined but nothing of commercial interest was discovered.

THE ASPHALT INDUSTRY

81. The following tables show the quantity of natural asphalt extracted from the Pitch Lake and the quantity of derived products exported:—

	1951	1950	1949
	Tons	Tons	Tons
Extracted by Works and Hydraulics Department	38,413	40,564	46,466
Extracted by Company	116,292	92,282	98,694
	154,705	132,846	145,160
<i>Exported :</i>			
Crude Asphalt	38	—	27
Dried Asphalt	45,557	46,659	47,961
Asphalt Cement	39,473	23,433	37,288
	85,068	70,092	85,276

STAFF

82. The staff of the Department at the end of the year was as follows :—

Port-of-Spain Office :—

W. N. FOSTER	...	...	Petroleum Technologist
I. S. RUTHERFORD	...	...	Assistant Petroleum Technologist
A. G. A. SUTTON	...	...	Geologist
G. M. COOLMAN	...	...	Draughtsman
H. O. ROBERTS	...	...	Senior Clerk
Miss W. M. SAMLALSINGH	...	...	1st Class Clerk
Mr. P. B. RAMROOP	...	...	2nd Class Clerk
Mr. L. R. MOHAMID	...	...	Acting 2nd Class Clerk
Miss E. A. MAULE	...	...	Stenographer
Mr. R. HUGGINS	...	...	Messenger, Grade II.

San Fernando Office :—

Mr. J. BURSLEM	...	...	2nd Assistant Petroleum Technologist
Mr. J. D. BACK	...	...	Petroleum Inspector
Mr. YAKUBH ALI	...	...	Draughtsman
Mr. R. E. ALEXANDER	...	...	2nd Class Clerk
Mr. HANIFF ALI	...	...	Messenger, Grade II.

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

W. N. FOSTER
Petroleum Technologist

15th August, 1952

TABLE I
ANNUAL STATISTICS OF PRODUCTION, DRILLING, EXPORTS AND IMPORTS

Item	Unit	1951	% difference 51/50	1950	1949	1948	1947	1946	1945	1944	1943
PRODUCTION											
1 Crude Oil	1,000's bbls.	20,843	+ 1.0	20,632	20,617	20,107	20,433	20,142	21,000	21,543	21,286
2 Natural Gasoline	do.	201	+ 8.6	185	168	182	181	187	182	185	182
3 TOTAL CRUDE OIL AND NATURAL GASOLINE	do.	21,044	+ 1.1	20,817	20,785	20,289	20,614	20,239	21,182	21,728	21,468
4 From Crown Oil Rights	do.	16,397	+ 0.6	16,300	16,288	15,309	15,373	15,541	16,878	17,430	17,089
5 From Private Oil Rights	do.	4,647	+ 2.9	4,517	4,497	4,980	5,241	4,788	4,304	4,298	4,379
6 TOTAL IMPORTS	1,000's bbls.	16,347	+ 45.2	11,258	11,678	8,882	5,917	2,933	3,394	3,188	1,101
7 Imports of Refined Products	do.	36	+ 56.5	23	25	22	21	40	409	840	365
8 Imports of Crude Oil for Refining	do.	15,355		11,214	11,333	8,840	5,896	2,893	2,119	1,082	—
9 Imports of Other Oils for Refining and Blending	do.	456	+ 45.2	21	320	20	—	—	866	1,266	736
10 TOTAL EXPORTS*	1,000's bbls.	34,359	+ 17.9	29,150	29,745	26,552	23,092	20,687	20,723	19,781	16,000
11 Exports of Crude Oil	do.	1,918	— 12.6	2,194	2,037	1,706	881	263	—	—	—
12 Exports of Refined Products	do.	32,441	+ 20.3	26,956	27,708	24,846	22,211	20,424	20,723	19,781	16,000
13 Refinery throughput (Crude Oil and Natural Gasoline)	1,000's bbls.	35,160	+ 17.9	29,813	29,617	27,074	25,281	22,713	23,170	22,498	21,086
14 No. of Wells Started	As stated	144	— 3.4	149	146	145	162	124	110	105	127
15 TOTAL NUMBER OF DRILLING WELLS COMPLETED	As stated	140	— 2.8	144	144	141	157	108	100	100	136
16 Number of Drilling Wells completed as oil wells	do.	131	— 3.7	136	130	134	141	104	95	96	133
17 Number of Drilling Wells abandoned while drilling (Dry holes, &c.)	do.	9	+ 12.5	8	14	7	16	4	5	4	3
18 TOTAL FOOTAGE DRILLED (ALL WELLS)	Feet	664,887	+ 0.8	659,565	630,209	638,681	644,639	533,209	453,872	456,957	493,731
19 Footage drilled on Crown Oil Rights	do.	521,751	— 0.5	524,374	451,624	489,987	446,798	406,017	345,071	352,938	389,527
20 Footage drilled on Private Oil Rights	do.	143,136	+ 5.9	135,191	178,585	148,694	197,891	127,192	108,801	103,999	104,204
21 AVERAGE DEPTH OF COMPLETED DRILLING WELLS (Item 15)	Feet	4,481	+ 1.0	4,436	4,065	4,259	4,155	4,772	4,586	4,535	3,620
22 TOTAL NUMBER OF WELLS PRODUCING (Average during year)	As stated	2,290	+ 3.8	2,197	2,089	2,013	1,876	1,820	1,735	1,637	1,591
23 Number of Wells producing by flowing (Average during year)	do.	584	— 1.7	594	618	629	625	615	634	642	625
24 Number of Wells producing by Artificial Lift (Average during year)	do.	1,696	+ 5.8	1,603	1,473	1,384	1,251	1,205	1,101	995	963
25 AVERAGE DAILY PRODUCTION DURING YEAR PER PRODUCING WELL	Barrels	25.1	— 2.3	25.7	27.0	27.3	30.0	30.4	33.3	36.1	36.8
26 Average daily production during year per flowing well	Barrels	48.5	— 3.4	50.2	51.9	50.7	54.2	55.0	59.5	63.9	64.8
27 Average daily production during year per artificial lift well	do.	17.0	+ 2.4	16.6	16.6	16.7	17.8	17.9	18.2	18.3	17.5
28 TOTAL VALUE OF DOMESTIC EXPORTS	000 \$	207,584	+ 23.9	167,562	131,790	127,105	82,262	57,572	54,815	49,273	36,678
29 TOTAL VALUE OF PETROLEUM AND ITS PRODUCTS	do.	161,859	+ 25.3	129,183	99,166	96,287	63,050	43,046	44,085	39,811	29,441
30 TOTAL VALUE OF ASPHALT AND ITS PRODUCTS	do.	3,989	+ 49.5	2,669	3,011	2,946	1,773	1,739	477	859	729
31 TOTAL NATURAL GAS PRODUCED	Millions of Cubic Feet	31,725	— 1.8	32,312	32,287	30,697	29,618	27,169	27,503	28,496	29,074
32 Used as Fuel	do.	16,616	— 0.9	16,771	17,270	16,430	14,371	14,190	13,882	12,639	13,881
33 Replaced in Formation	do.	2,590	— 3.1	2,674	2,387	1,241	902	807	96	191	117
34 Losses, Not Collected, Vented, &c.	do.	12,519	— 2.7	12,867	12,630	13,026	14,345	12,172	13,525	15,666	15,076

* Figures given in previous Reports have been amended in this Table to include Petroleum Bitumen.

I. S. RUTHERFORD
Assistant Petroleum Technologist

TABLE II—MONTHLY ANALYSIS OF DRILLING WELLS FOR THE YEAR 1951

MONTH	Average No. of Rigs Running	No. of New Wells Started	No. of Old Wells Abandoned	No. of Oil Wells Recom- pleted	DRILLING WELLS COMPLETED						MONTHLY FOOTAGE DRILLED			Average Footage drilled per day
					Completed as Oil Wells		Abandoned while drilling				Crown Oil Rights	Private Oil Rights	Total	
					No.	Aggregate Depth in Feet	Dry holes		Technical causes					
							No.	Aggregate Depth in Feet	No.	Aggregate Depth in Feet	No.	Aggregate Depth in Feet		
JANUARY	28	13	1	2	8	36,175	1	3,750	—	—	50,936	10,642	61,578	1,986
FEBRUARY	27	12	—	3	15	66,608	1	7,643	—	—	26,986	10,994	37,980	1,356
MARCH	24	10	—	10	8	37,152	—	—	—	—	40,199	8,030	48,229	1,556
APRIL	27	11	1	12	13	65,396	1	3,700	—	—	41,822	13,695	55,517	1,851
MAY	25	11	1	17	8	30,667	—	—	—	—	45,288	9,695	54,983	1,774
JUNE	27	11	1	21	10	44,861	—	—	—	—	36,496	12,839	49,335	1,645
JULY	26	16	1	12	15	65,944	—	—	—	—	50,134	10,251	60,385	1,948
AUGUST	27	15	—	9	11	43,700	2	24,713	—	—	45,170	15,938	61,108	1,971
SEPTEMBER	27	11	1	10	11	41,518	1	4,200	—	—	45,585	22,634	68,219	2,274
OCTOBER	28	16	—	16	14	57,780	1	5,994	—	—	45,091	9,321	54,412	1,755
NOVEMBER	27	10	3	8	9	35,491	—	—	—	—	48,627	12,249	60,876	2,029
DECEMBER	27	8	2	7	9	42,357	2	9,731	—	—	45,417	6,848	52,265	1,686
YEAR'S TOTAL	—	144	11	127	131	567,649	9	59,731	—	—	521,751	143,136	664,887	1,822

Average depth of drilling wells completed 4,481 feet.

I. S. RUTHERFORD
Assistant Petroleum Technologist

TABLE III

ANALYSIS MONTHLY PRODUCTION FOR THE YEAR ENDING 31ST DECEMBER, 1951

All crude oil quantity figures are for dry oil—1 Barrel (bbl.)= 35 Imperial Gallons

MONTH	FLOWING				GAS/AIR/LIFT				PUMPING				PLUNGER LIST			OTHER METHODS			SALT WATER			No. of Wells Produced	No. of Idle Wells	Total No. of Wells Abandoned	No. of Wells drilling at end of month	Total No. of Wells Started	Daily Average per Producing Well Bbls.	CROWN OIL RIGHTS		PRIVATE OIL RIGHTS		Total Oil Produced Bbls.			
	No. of Wells	Quantity Bbls.	% of Total Oil	Daily Average per Well Bbls.	No. of Wells	Quantity Bbls.	% of Total Oil	Daily Average per Well Bbls.	No. of Wells	Quantity Bbls.	% of Total Oil	Daily Average per Well Bbls.	No. of Wells	Quantity Bbls.	% of Total Oil	Daily Average per Well Bbls.	No. of Wells	Quantity Bbls.	% of Total Fluid Production	Daily Average per Wet Well	No. of Wells							Quantity Bbls.	% of Total Fluid Production	Daily Average per Wet Well	No. of Wells		Quantity Produced Bbls.	No. of Wells	Quantity Produced Bbls.
January ...	587	914,135	51.3	50.2	105	107,501	6.0	33.0	1,275	660,500	37.1	16.7	227	97,784	5.5	13.9	52	1,144	0.1	0.7	827	361,490	16.9	14.1	2,246	1,258	919	23	4,446	25.6	1,539	1,395,065	707	385,979	1,781,044
February ...	590	818,692	51.9	49.6	98	91,873	5.9	33.5	1,272	577,066	36.6	16.2	227	88,390	5.6	13.9	60	1,530	—	0.9	827	318,882	16.8	13.8	2,247	1,272	919	20	4,458	25.1	1,533	1,233,560	714	343,991	1,577,551
March ...	576	881,564	50.4	49.4	92	102,248	5.8	35.9	1,285	678,433	38.8	17.0	225	86,343	4.9	12.4	52	1,167	0.1	0.7	802	345,875	16.5	13.9	2,230	1,297	919	22	4,468	25.3	1,520	1,359,526	710	390,229	1,749,755
April ...	579	844,796	49.8	48.6	93	104,230	6.1	37.4	1,292	662,756	39.0	17.1	220	84,960	5.0	12.9	47	921	0.1	0.7	846	343,249	16.8	13.5	2,231	1,306	921	20	4,478	25.4	1,528	1,319,563	703	378,100	1,697,663
May ...	585	886,195	50.5	48.9	96	109,866	6.2	36.9	1,275	672,251	38.3	17.0	222	86,339	4.9	12.5	62	1,735	0.1	0.9	822	354,331	16.8	13.9	2,240	1,305	922	22	4,489	25.3	1,536	1,362,909	704	393,477	1,756,386
June ...	569	847,342	49.2	49.6	93	101,701	6.0	36.5	1,300	676,639	39.3	17.3	226	93,233	5.4	13.8	62	1,644	0.1	0.9	768	347,986	16.8	15.1	2,250	1,306	923	21	4,500	25.5	1,551	1,343,955	699	376,604	1,720,559
Production 1st Jan., to 30th June, 1951 Totals ...	—	5,192,724	—	—	—	617,419	—	—	—	3,927,645	—	—	—	537,029	—	—	—	8,141	—	—	Avg. 815	2,071,813	16.8	14.0	—	—	—	—	—	—	8,014,578	—	2,268,380	10,282,958	
July ...	570	866,509	48.8	49.0	94	128,813	7.3	44.2	1,343	701,859	39.5	16.9	223	76,475	4.3	11.1	64	2,039	0.1	1.0	810	377,728	17.5	15.0	2,294	1,278	924	22	4,518	25.0	1,576	1,388,448	718	387,247	1,775,695
August ...	585	851,416	48.2	46.9	95	135,025	7.6	45.8	1,348	697,664	39.5	16.7	218	81,997	4.6	12.1	66	2,174	0.1	1.1	815	364,328	17.1	14.4	2,312	1,272	925	24	4,533	24.7	1,589	1,377,068	723	391,208	1,768,276
September ...	585	841,130	48.7	47.9	88	123,841	7.2	46.9	1,361	678,767	39.3	16.6	214	80,307	4.7	12.5	62	1,880	0.1	1.0	808	359,172	17.2	14.8	2,310	1,285	927	21	4,543	24.9	1,591	1,345,764	719	380,161	1,725,925
October ...	590	881,731	49.3	48.2	86	117,765	6.6	44.2	1,359	696,494	38.9	16.5	221	90,915	5.1	13.3	65	2,073	0.1	1.0	799	363,498	16.9	14.7	2,321	1,289	928	22	4,560	24.9	1,599	1,401,707	722	387,271	1,788,978
November ...	602	841,708	48.7	46.6	82	109,421	6.3	44.5	1,374	676,257	39.1	16.4	225	99,391	5.8	14.7	62	2,038	0.1	1.1	818	344,664	16.6	13.5	2,345	1,271	931	23	4,570	24.6	1,618	1,350,273	727	378,542	1,728,815
December ...	588	857,401	48.4	47.0	87	113,939	6.4	42.2	1,385	701,709	39.6	16.3	221	97,606	5.5	14.2	60	1,514	0.1	0.8	816	354,978	16.7	14.0	2,341	1,281	934	22	4,578	24.4	1,616	1,384,168	725	387,901	1,772,069
Production 1st July, to 31st Dec., 1951 Totals ...	—	5,139,895	—	—	—	728,804	—	—	—	4,152,750	—	—	—	526,591	—	—	—	11,718	—	—	Avg. 811	2,164,368	17.0	14.5	—	—	—	—	—	—	8,247,428	—	2,312,330	10,559,758	
Year's Production Totals ...	—	10,332,619	—	—	—	1,346,223	—	—	—	8,080,395	—	—	—	1,063,620	—	—	—	19,859	—	—	—	4,236,181	—	—	—	—	—	—	—	—	16,262,006	—	4,580,710	20,842,716	
Daily Averages ...	—	28,309	—	48.5	—	3,688	—	40.1	—	22,138	—	16.7	—	2,914	—	13.1	—	54	—	0.9	—	11,606	—	14.3	—	—	—	—	—	—	—	44,553	—	12,550	57,103
Average during year	584	—	49.6	—	92	—	6.4	—	1,322	—	38.8	—	222	—	5.1	—	60	—	0.1	—	813	—	16.9	—	2,280	—	—	—	—	—	1,566	—	714	—	

Natural Gasoline Production 1951

	Barrels
From Crown Oil Rights ...	135,168
From Private Oil Rights ...	65,867
	<hr/>
	201,035

TABLE IV
PRODUCTION AND DISPOSAL OF NATURAL GAS

(All Figures in thousands of cubic feet)

1951	GAS PRODUCTION (M.C. Ft.)		GAS DISPOSAL (M.C. Ft.)				
	Gas Production	Inter Company Sales and Interfield Transfers	Used as Fuel	Replaced in formation	Losses and unaccounted for	Not collected	Vented as surplus
January ...	2,758,872	947,192	1,440,718	218,626	213,648	413,886	471,994
February ...	2,351,727	802,472	1,242,089	175,179	147,988	384,058	402,413
March ...	2,565,123	926,539	1,329,306	226,978	183,897	396,264	428,678
April ...	2,575,854	955,538	1,411,642	200,482	170,621	388,463	404,646
May ...	2,776,967	959,831	1,382,354	204,258	161,195	484,976	544,184
June ...	2,668,114	923,991	1,337,888	205,889	184,878	459,473	479,986
July ...	2,711,960	963,214	1,382,686	231,520	189,952	504,447	403,355
August ...	2,665,597	905,875	1,405,393	206,371	169,557	439,638	444,638
September ...	2,607,606	888,167	1,381,472	206,407	165,141	353,841	500,745
October ...	2,718,328	949,155	1,420,151	221,318	134,845	424,462	517,552
November ...	2,603,103	942,979	1,408,396	231,242	119,906	395,310	448,249
December ...	2,721,504	981,559	1,474,369	261,375	152,050	415,373	418,337
TOTALS ...	31,724,755	11,146,512	16,616,464	2,589,645	1,993,678	5,060,191	5,464,777
Percentage of Total ...	100	—	52.4	8.1	6.3	16.0	17.2

TABLE IV A
PRODUCTION AND DISPOSAL OF NATURAL GAS

(All Figures in thousands of cubic feet)

1950	GAS PRODUCTION (M.C. Ft.)		GAS DISPOSAL (M.C. Ft.)				
	Gas Production	Inter Company Sales and Interfield Transfers	Used as Fuel	Replaced in formation	Losses and Unaccounted for	Not collected	Vented as surplus
January ...	2,812,757	858,856	1,458,424	240,151	228,123	342,579	543,480
February ...	2,601,913	793,346	1,364,480	187,085	187,980	314,708	547,660
March ...	2,806,238	826,048	1,434,994	206,589	228,695	366,351	569,609
April ...	2,758,604	746,289	1,317,698	319,233	221,834	352,833	547,006
May ...	2,731,973	741,923	1,355,186	209,954	197,130	559,479	410,224
June ...	2,573,048	798,747	1,334,600	201,357	246,784	545,359	244,948
July ...	2,703,944	882,957	1,435,878	228,019	195,590	435,171	409,286
August ...	2,725,186	923,426	1,443,291	196,830	232,796	402,350	449,919
September ...	2,509,053	916,218	1,370,849	189,900	189,413	394,062	364,829
October ...	2,719,681	972,519	1,456,587	238,985	196,820	409,950	417,339
November ...	2,602,018	883,868	1,392,736	223,728	179,882	409,954	395,718
December ...	2,767,236	918,709	1,405,836	232,181	212,767	419,598	496,854
TOTALS ...	32,311,651	10,262,906	16,770,559	2,674,012	2,517,814	4,952,394	5,396,872
Percentage of Total ...	100	—	51.9	8.3	7.8	15.3	16.7

TABLE V
 RETURN OF PRODUCTION, STOCKS AND DISPOSAL OF PETROLEUM DURING THE YEAR ENDING 1951
 (All Figures in Tons of 2,240 lb.)

	Crude and Process Oils	AVIATION SPIRIT		Motor Spirit	White Spirit	Burning Oil	Vapourising Oil	Gas and Diesel Oils	Fuel Oils (All Grades)	Lub. Oil and Grease	Bitumen	Other finished products	Liquified Petroleum Gas	Feed or Blending Stock for Transfer
		100 Octane	Other Grades											
1. OPENING STOCKS	203,041	5,409	13,057	55,601	126	7,975	15,028	75,634	130,770	1,786	7,548	4,026	4	56,227
2. CRUDE OIL PRODUCTION INCLUDING CASING HEAD PETROLEUM SPIRIT	3,001,498	—	—	—	—	—	—	—	—	—	—	—	—	—
3. IMPORTS : Venezuela	2,148,107	—	—	—	—	—	—	19,440	—	—	—	—	—	—
Colombia	146,806	—	—	—	—	—	—	—	—	—	—	—	—	—
United States of America, United Kingdom, Netherlands West Indies, and Canada	33,207	—	—	—	—	—	—	—	—	3,733	—	—	—	—
TOTAL IMPORTS	2,328,120	—	—	—	—	—	—	19,440	—	3,733	—	—	—	—
4. RUNS TO STILLs	5,015,682	—	—	—	—	—	—	—	—	—	—	—	—	—
5. PRODUCTS OBTAINED	—	46,531	144,689	630,404	314	84,552	347,512	690,670	2,747,178	356	71,725	45,961	27	5,743
6. CONSUMPTION : Trinidad and Tobago	3,990	—	4	54,585	194	15,661	—	21,470	81,778	3,131	22	24,014	23	648
Bunkers	—	5,848	3,698	—	—	—	—	235,363	1,197,899	—	—	—	—	—
Refinery Fuel	—	—	—	—	—	—	—	—	15,174	—	—	—	—	—
TOTAL CONSUMPTION	3,990	5,848	3,702	54,585	194	15,661	—	256,833	1,294,851	3,131	22	24,014	23	648
7. SHIPMENTS : Exported	273,690	40,973	139,952	580,947	—	66,335	321,747	459,985	1,412,321	121	71,930	20,904	—	10,490
*Re-exported	—	—	—	—	—	—	—	—	—	474	—	—	—	—
TOTAL SHIPMENTS	273,690	40,973	139,952	580,947	—	66,335	321,747	459,985	1,412,321	595	71,930	20,904	—	10,490
8. CLOSING STOCKS ON 31ST DECEMBER, 1951	215,560	5,119	14,092	50,473	246	10,531	40,793	68,926	170,776	2,149	7,321	5,069	8	39,346
9. BALANCE NOT SPECIFICALLY ACCOUNTED FOR	†23,737	—	—	—	—	—	—	—	—	—	—	—	—	—

*Fuel Oils imported for transshipment not included in this Return.
 † Pipe line losses, &c.

I. S. RUTHERFORD
 Assistant Petroleum Technologist

TABLE VI

STATEMENT SHOWING CONTRIBUTIONS TO REVENUE OF THE COLONY BY THE OIL INDUSTRY

	1951	% difference 1951/1950	1950	1949	1948	1947	1946	1945	1944	1943	1942
	\$		\$	\$	\$	\$	\$	\$	\$	\$	\$
1. Customs	697,095	— 28.4	974,118	1,238,426	778,276	650,525	370,193	636,035	709,372	578,030	565,176
Excise Duty on Petroleum Spirit	90,291	— 21.9	115,637	36,910	—	—	—	—	—	—	—
2. Land and Building Taxes	100,526	— 0.7	101,203	84,754	(145,874	150,919	167,062	120,484	130,733	121,974	110,592
Vehicles, Licences and Registration	90,885	— 15.6	107,647	69,371	(—	—	—	—	—	—	—
3. Taxes on Income	13,715,292	+ 57.6	8,704,846	13,292,777	7,441,508	3,552,074	2,730,744	3,076,581	2,666,052	2,918,920	1,865,856
4. Reimbursements—Petroleum Office	30,287	— 5.8	32,151	24,611	30,071	23,884	16,808	21,839	19,176	16,621	16,581
5. Earnings of Government Departments	10,804	+ 2.9	10,504	5,045	1,934	2,079	1,319	555	760	491	514
6. Miscellaneous	28,177	— 11.7	31,917	64,386	5,204	13,190	7,658	10,351	15,472	35,129	21,881
7. Royalty on Oil	6,508,520	+ 11.8	5,823,226	3,596,251	(4,030,076	1,976,989	1,287,917	1,428,160	1,351,531	1,498,307	1,183,177
Royalty on Gas	99,189	+ 22.1	81,233	74,217	(—	—	—	—	—	—	—
8. Forests—Sale of Timber, &c.	42,594	— 38.2	68,899	38,715	43,693	37,924	22,667	23,849	19,569	16,490	36,563
Exploration Licences	3,366	— 65.6	9,797	3,864	15,222	13,956	21,031	10,757	16,060	15,509	15,629
9. Extraordinary	—	—	—	—	—	—	—	—	—	—	120
10. Cocoa Subsidy—Special Taxation	—	—	—	—	—	—	—	—	—	—	—
11. Emergency Taxation—Oil Impost	—	—	—	—	—	—	—	—	—	414,348	436,925
12. Levy on Income	—	—	—	—	—	—	—	—	—	—	3,526
SUB TOTALS	21,417,026	+ 33.3	16,061,178	18,529,327	12,491,858	6,421,540	4,625,399	5,328,611	4,928,725	5,615,819	4,256,540
13. Harbour Dues on Crude Oil and Products	732,802	+ 24.7	587,516	585,901	557,040	367,345	226,055	190,480	169,513	—	—
SUB TOTALS	22,149,828	+ 33.0	16,648,694	19,115,228	13,048,898	6,788,885	4,851,454	5,519,091	5,098,238	5,615,819	4,256,540
14. Fees and Payments for Specific Services	22,600	— 13.6	26,146	12,308	9,294	16,261	11,060	10,331	8,009	10,783	7,606
15. Post Office	43,140	+ 41.3	30,529	34,656	25,061	28,066	25,405	19,424	19,166	23,520	18,758
16. Rent of Government Property	9,523	+ 70.4	5,588	11,151	4,174	5,662	49,999	2,509	1,079	1,489	1,778
17. Government Railway and Telegraph	151,930	+ 10.5	137,501	115,539	101,209	110,571	107,499	77,260	62,734	80,080	47,667
18. Wharves and Harbours (Rentals and other services)	37,029	+ 36.2	27,182	*26,350	39,027	127,194	47,767	50,533	28,259	34,499	22,018
19. GRAND TOTAL	22,414,050	+ 32.8	16,875,640	19,315,232	13,227,663	7,076,639	5,093,184	5,679,148	5,217,485	5,766,190	4,354,367
20. Total Revenue of the Colony under the above eighteen Heads	65,215,814	+ 16.4	56,038,019	58,391,567	49,593,902	42,075,147	47,776,085	34,900,299	29,158,819	33,373,031	26,768,239
21. Percentage of Total Revenue of Colony contributed by the Oil Industry	34.4	+ 4.3	30.1	33.1	26.6	16.8	†10.7	16.3	17.9	17.3	16.3
22. Excise collected on Petroleum products (paid by General Public)	1,454,567	+ 6.3	1,367,860	2,394,109	2,381,909	2,135,938	1,762,496	1,491,779	1,255,876	1,212,306	1,468,132

* Corrected figure from 1949 Report.

† NOTE—Drop in percentage of total revenue contributed by Oil Industry in 1946 was due to total revenue of Colony being increased by re-payment by His Majesty's Treasury a loan of \$9,200,000.

TABLE VII

STATEMENT SHOWING THE AMOUNT OF MONEY DISBURSED IN THE COLONY (OTHER THAN CONTRIBUTION TO REVENUE) BY THE OIL INDUSTRY

	1951	% diff. 1951/1950	1950	1949	1948	1947	1946	1945	1944	1943	1942
	\$		\$	\$	\$	\$	\$	\$	\$	\$	\$
1. Payments to Employees *	20,918,670	+ 11.0	18,839,945	17,081,804	16,201,000	14,701,680	13,896,842	12,781,464	12,401,298	11,695,979	10,377,356
2. Payments to Contractors *	7,527,758	+ 22.9	6,125,164	4,488,089	3,543,432	2,855,917	2,369,675	2,410,418	2,871,227	2,969,415	2,638,996
3. Local Purchases of materials	4,837,764	+ 22.6	3,946,065	4,336,776	3,929,831	4,005,478	3,494,215	3,813,021	3,955,870	3,095,691	3,946,405
4. Other local expenditure (rents, Private Royalties, &c.) ...	10,361,590	+ 22.5	8,456,079	7,080,430	3,817,212	3,181,947	2,619,541	2,609,726	2,273,991	2,316,201	3,084,130
5. Sub-total	43,645,782	+ 16.8	37,367,253	32,987,099	27,491,475	24,745,022	22,380,273	21,614,629	21,502,386	20,077,236	20,046,887
OVERSEAS PURCHASES OF MATERIALS, C.I.F. DOLLARS TRINIDAD CURRENCY											
6. Importations from the United Kingdom	17,208,625	+ 17.1	14,690,802	14,161,158	8,515,146	6,822,090	4,425,954	1,438,971	1,019,965	1,303,615	1,583,702
7. Importations from :											
Canada	944,464	+ 30.4	724,216	516,130	5,690,016	4,758,800	2,322,331	5,136,245	5,085,790	3,679,393	4,773,440
United States of America	3,401,644	— 37.8	5,469,200	7,766,696							
Other Sources	773,214	— 18.4	947,512	1,012,427							
8. Sub-total	22,327,947	+ 2.3	21,831,730	23,456,411	14,205,162	11,580,890	6,748,285	6,575,216	6,105,755	4,983,008	6,357,142
9. Total (Items 5 and 8 of this Table and Item 19 of Table VI)	88,387,779	+ 16.2	76,074,623	75,758,742	54,924,300	43,402,551	34,221,742	33,868,993	32,825,626	30,826,484	30,758,396

* These amounts include hidden contributions to the direct revenue of the Colony in the form of Customs Duties, Income Tax, Licences, &c.

TABLE VIII

LIST OF OIL OPERATORS IN TRINIDAD SHOWING THE AREAS HELD UNDER MINING LEASE AND EXPLORATION LICENCE

ITEM	OPERATORS	LANDS HELD UNDER REGISTERED MINING LEASE ON 31st DECEMBER, 1951									LANDS HELD UNDER EXPLORATION LICENCE ON 31st DECEMBER, 1951			DISPOSAL OF OIL
		Crown Surface Crown Oilrights			Private Surface Crown Oilrights			Private Surface Private Oilrights			Crown Surface Crown Oilrights			
		A.	R.	P.	A.	R.	P.	A.	R.	P.	A.	R.	P.	
1	ANTILLES PETROLEUM CO. (TRINIDAD), LTD. ...	254 *12,544	1 0	36 00	5,900	2	38	12,351	2	13	—	—	—	Sold to Texas Petroleum Co. and Brighton Terminal, Ltd.
2	APEX (TRINIDAD) OILFIELDS, LTD. ...	9,194	0	06	18,783	3	03	2,377	2	04	—	—	—	Sold to Trinidad Leaseholds, Ltd.
3	GOLDING PETROLEUM CO. ...	—	—	—	—	—	—	18	0	12	—	—	—	Sold to Antilles Petroleum, Co.
4	KERN TRINIDAD OILFIELDS, LTD ...	331 *5,760	1 0	12 00	610	0	15	13,447	1	03	—	—	—	Sold to United British Oilfields of Trinidad, Ltd.
5	NATIONAL MINING CORPORATION, LTD. ...	10,139	0	10	1,608	3	02	3,442	2	32	—	—	—	Sold to Trinidad Leaseholds, Ltd.
6	PREMIER (TRINIDAD) OILFIELDS, LTD. ...	500	0	00	—	—	—	1,643	1	18	—	—	—	Sold to Trinidad Leaseholds, Ltd.
7	TIMOTHY ROODAL ...	—	—	—	9	2	12	—	—	—	—	—	—	Sold to Trinidad Leaseholds, Ltd.
8	SIPARIA (TRINIDAD) OILFIELDS, LTD. ...	2,008	3	00	10,976	3	28	79	2	17	—	—	—	Sold to Trinidad Leaseholds, Ltd.
9	TRINIDAD CENTRAL OILFIELDS, LTD. ...	6,996	2	31	—	—	—	35	2	00	—	—	—	Sold to Trinidad Leaseholds, Ltd.
10	TRINIDAD CONSOLIDATED OILFIELDS, LTD. ...	—	—	—	1,026	2	11	1,822	2	24	—	—	—	Sold to Trinidad Leaseholds, Ltd.
11	TRINIDAD LEASEHOLDS, LTD. ...	91,035	1	14	15,780	0	05	13,259 8,826	1 1	37 †03	—	—	—	Pumped to Company's Refinery at Pointe-a-Pierre
12	TRINIDAD PETROLEUM DEVELOPMENT Co., LTD. ...	21,835	3	13	7,700	0	08	30,368	1	16	5,664	0	00	Sold to United British Oilfields of Trinidad, Ltd.
13	UNITED BRITISH OILFIELDS OF TRINIDAD, LTD. ...	16,042 18,751	† 0	49 34	12,369	0	00½	12,124 532	2 2	26 †28	23,629	0	00	Pumped to Company's Refinery at Point Fortin
14	TRINIDAD NORTHERN AREAS, LTD. ...	500	0	00	—	—	—	13,516	0	09	839	2	06	
	TOTALS ...	177,142 179,850	† 2	21 36	74,765	2	02½	113,845	3	02	30,132	2	06	

* Submarine Oil Mining Licence.

† Held jointly by Trinidad Leaseholds and United British Oilfields of Trinidad, Ltd.

I. S. RUTHERFORD

Assistant Petroleum Technologist

TABLE IX

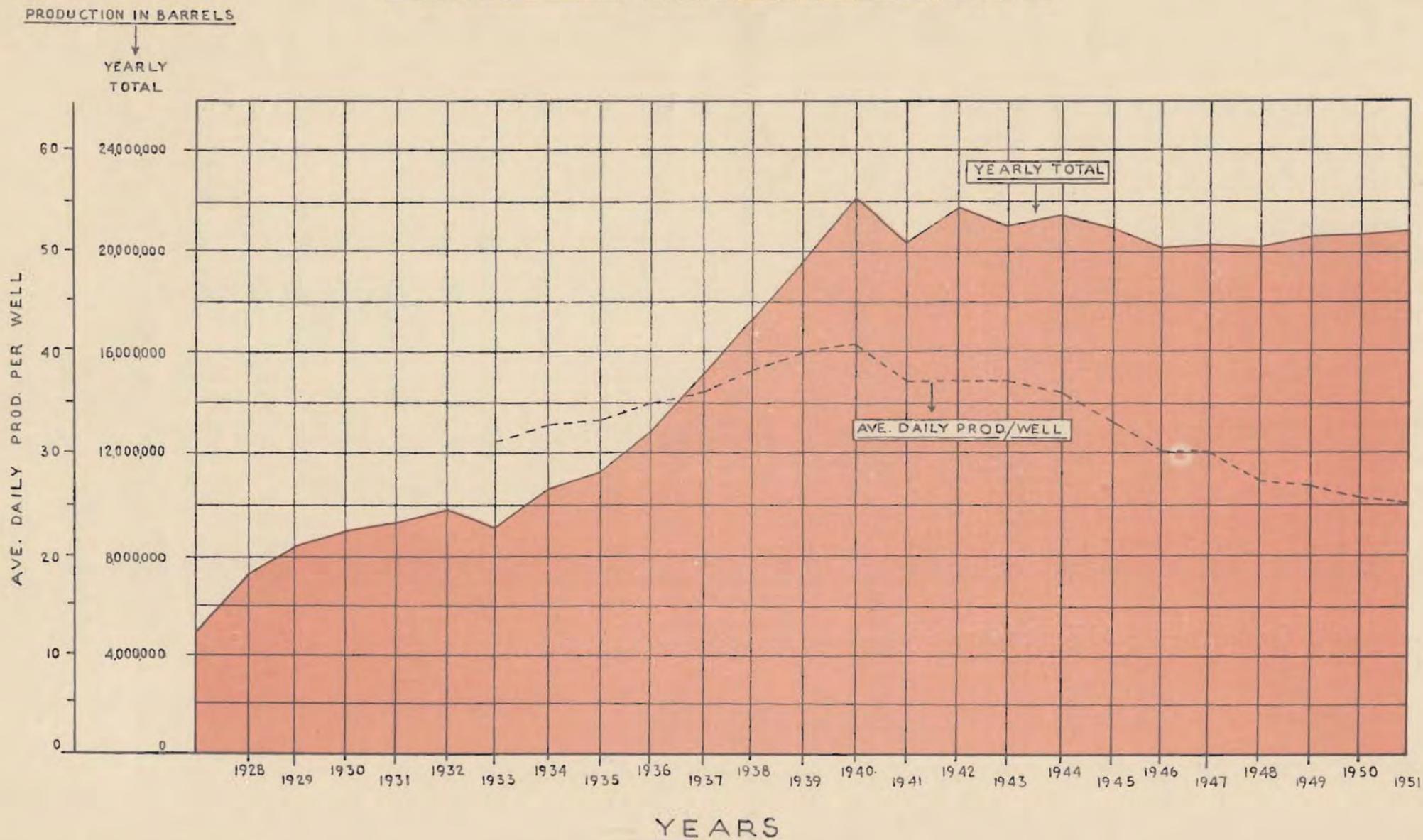
INFORMATION REGARDING EXPLORATORY WELLS COMPLETED OR DRILLING TO A DEPTH OF \pm 8,000 FEET AND OVER DURING THE YEAR 1951

Company	Well No.	Total Depth Feet	Result	Remarks	Map Reference Appendix N
Apex (Trinidad) Oilfields Ltd ...	Fyzabad ... 510	8,515 (6,733 feet included in 1950 return)	Producer	—	F. 6
	do. ... 511	8,408 (8,100 feet included in 1950 return)	Closed in	Produced gas only	F. 6
	do. ... 517	8,272	Producer	—	F. 6
	do. ... 519	8,982	Abandoned	Unproductive	F. 6
	do. ... 522	8,270	Producer	—	F. 6
	do. ... 525	4,967	Drilling in progress	Objective depth 8,500 feet	F. 6
	do. ... 527	6,433	Drilling in progress	Objective depth 8,600 feet	F. 6
Trinidad Leaseholds Limited ...	Morne Diablo ... 34 (Joint Venture with S.T.O.L.)	14,018 (12,604 feet included in 1950 return)	Abandoned	—	H. 6
	Barrackpore ... 344	10,821 (10,766 feet included in 1950 return)	Small Producer	—	H. 6
	do. ... 345	10,034 (9,040 feet included in 1950 return)	Abandoned	—	H. 6
	do. ... 347	9,883	Drilling in progress	Objective depth 10,000 feet	H. 6
	Wilson ... 53 (Joint Venture with T.C.O.)	8,563	Drilling in progress	Objective depth 10,000 feet	H. 6
	Marac ... 1	8,151	Drilling in progress	Objective depth 12,000 feet	L. 6
Trinidad Northern Areas Limited ...	Mount Harris ... 1	10,695 (7,970 feet included in 1950 return)	Abandoned	—	L. 1
Trinidad Petroleum Development Company, Limited	Coora ... 188	13,471 (13,285 feet as at end 1950)	Producing	—	F. 7
	do. ... 190	9,478	Drilling in progress	—	F. 6
	do. ... 191	11,617	Drilling in progress	—	F. 6
	Marabella ... 1	6,478	Abandoned	Objective depth 11,000 feet	G. 4
	Moruga ... 2	10,201	Drilling in progress	Objective depth 14,000 feet	I. 6
	Palo Seco ... 303	7,980	Producing	—	E. 6
	do. ... 306	8,100	Producing	—	E. 6
The United British Oilfields of Trinidad Limited (U. B. O. T.)	Penal ... P-166	10,505	Producer	—	H. 6
	do. ... P-175	8,663	Drilling in progress	Objective depth 9,000 feet	G. 6
	do. ... P-180	3,881	Drilling in progress	Objective depth 10,000 feet	G. 12
	Catshill ... CO-2	8,205	Result yet incomplete	Suspended pending further tests	J. 5
	Balata ... C-2 (Joint Venture with T.C.O.)	7,643 (5,423 feet included in 1950 return)	Dry Hole	Abandoned	L. 4

TABLE X
SUMMARY OF PRE-HOLLAND MINING LEASES CRUDE OIL SALES, PRICES AND ANALYSES

Half-yearly Assessment Periods		Net Production Bbls.	ROYALTY			Sub-Division of (Royalty) Crude into Products as per R.L.E. Analyses									
			10 % taken in kind and sold to Producer Bbls.	Total Sale Price \$	Average Sale Price per Barrel \$	GASOLINE		GAS OILS				TOTAL GAS OILS		FUEL OIL	
						Quantity	Percentage	53-57D.I.	48-52D.I.	43-47D.I.	No. 2 Fuel	Quantity	Percentage	Quantity	Percentage
1949 July-December	T.L.L.	2,206,242	220,624	631,705.71	2.86	26,945	—	—	—	6,294	56,265	62,559	—	131,120	—
	U.B.O.T.	1,648,310	164,960	418,350.56	2.54	17,469	—	4,015	—	19,614	—	23,629	—	123,862	—
	Apex	139,752	13,976	39,938.00	2.86	1,606	—	—	—	—	4,107	4,107	—	8,263	—
	TOTALS AND AVERAGES	3,994,304	399,560	1,089,994.27	2.73	46,020	11.5	4,015	—	25,908	60,372	90,295	22.6	263,245	65.9
1950 January-June	T.L.L.	2,173,027	217,304	738,758.66	3.40	27,547	—	—	—	6,212	54,999	61,211	—	128,546	—
	U.B.O.T.	1,712,712	171,404	520,858.84	3.04	17,843	—	—	3,187	20,831	—	24,018	—	129,543	—
	Apex	133,381	13,338	44,771.57	3.36	1,335	—	—	—	—	4,095	4,095	—	7,908	—
	TOTALS AND AVERAGES	4,019,120	402,046	1,304,389.07	3.24	46,725	11.6	—	3,187	27,043	59,094	89,324	22.2	265,997	66.2
July-December	T.L.L.	2,300,278	230,027	855,670.07	3.72	28,405	—	—	—	4,774	59,867	64,641	—	136,981	—
	U.B.O.T.	1,614,531	161,580	545,414.91	3.38	16,225	—	—	3,644	22,531	—	26,175	—	119,180	—
	Apex	134,915	13,492	49,208.12	3.65	1,316	—	—	—	—	4,005	4,005	—	8,171	—
	TOTALS AND AVERAGES	4,049,724	405,099	1,450,293.10	3.58	45,946	11.3	—	3,644	27,305	63,872	94,821	23.4	264,332	65.3
1951 January-June	T.L.L.	2,256,226	225,623	852,868.69	3.78	27,592	—	—	—	4,718	60,491	65,209	—	132,822	—
	U.B.O.T.	1,545,204	154,642	536,911.69	3.47	15,522	—	4,256	—	22,289	—	26,545	—	112,575	—
	Apex	139,876	13,988	51,334.42	3.67	1,302	—	—	—	—	4,156	4,156	—	8,530	—
	TOTALS AND AVERAGES	3,941,306	394,253	1,441,114.80	3.66	44,416	11.3	4,256	—	27,007	64,647	95,910	24.3	253,927	64.4
July-December	T.L.L.	2,314,435	231,442	893,998.66	3.86	28,457	—	—	—	4,883	61,818	66,701	—	136,284	—
	U.B.O.T.	1,451,109	145,224	502,084.35	3.46	13,778	—	3,999	—	—	21,653	25,652	—	105,794	—
	Apex	142,241	14,224	53,455.09	3.76	1,326	—	—	—	—	4,104	4,104	—	8,794	—
	TOTALS AND AVERAGES	3,907,785	390,890	1,449,538.10	3.71	43,561	11.1	3,999	—	4,883	87,575	96,457	24.7	250,872	64.2

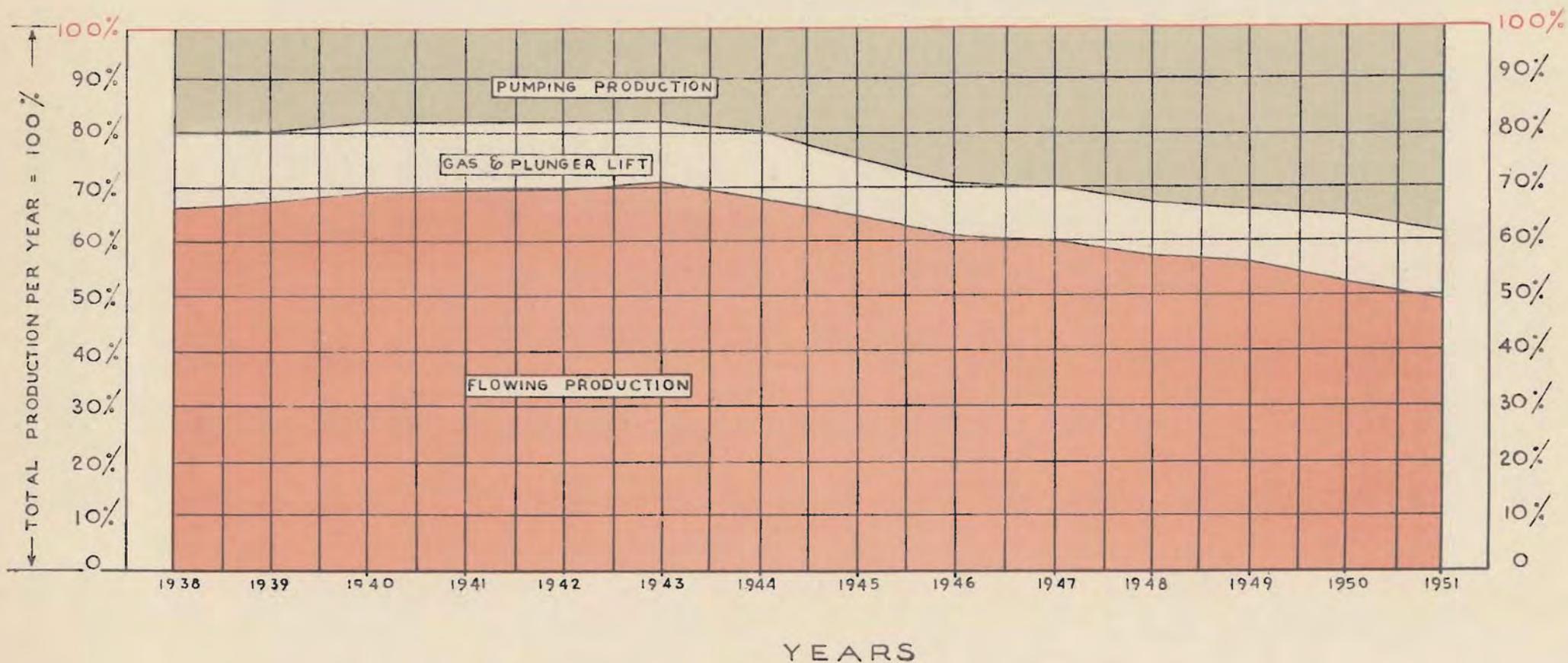
ANNUAL CRUDE OIL PRODUCTION



FOR FIGURES USED IN CONSTRUCTING GRAPH SEE TABLE I — ITEMS 1 AND 25 —

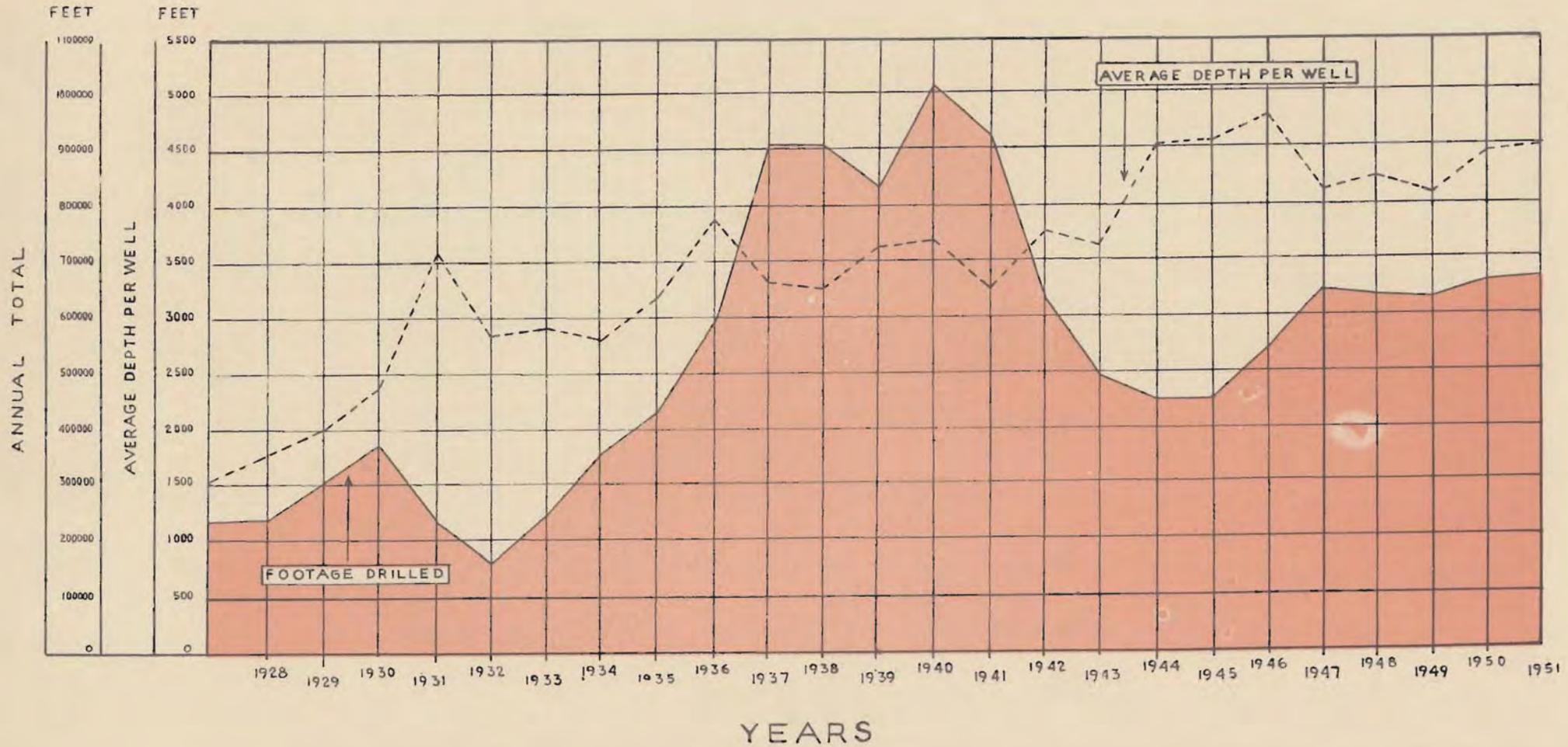
CRUDE OIL PRODUCTION METHODS

RELATIVE PROPORTIONS OF ANNUAL PRODUCTION (100%) OBTAINED BY THE THREE PRINCIPAL PRODUCING METHODS



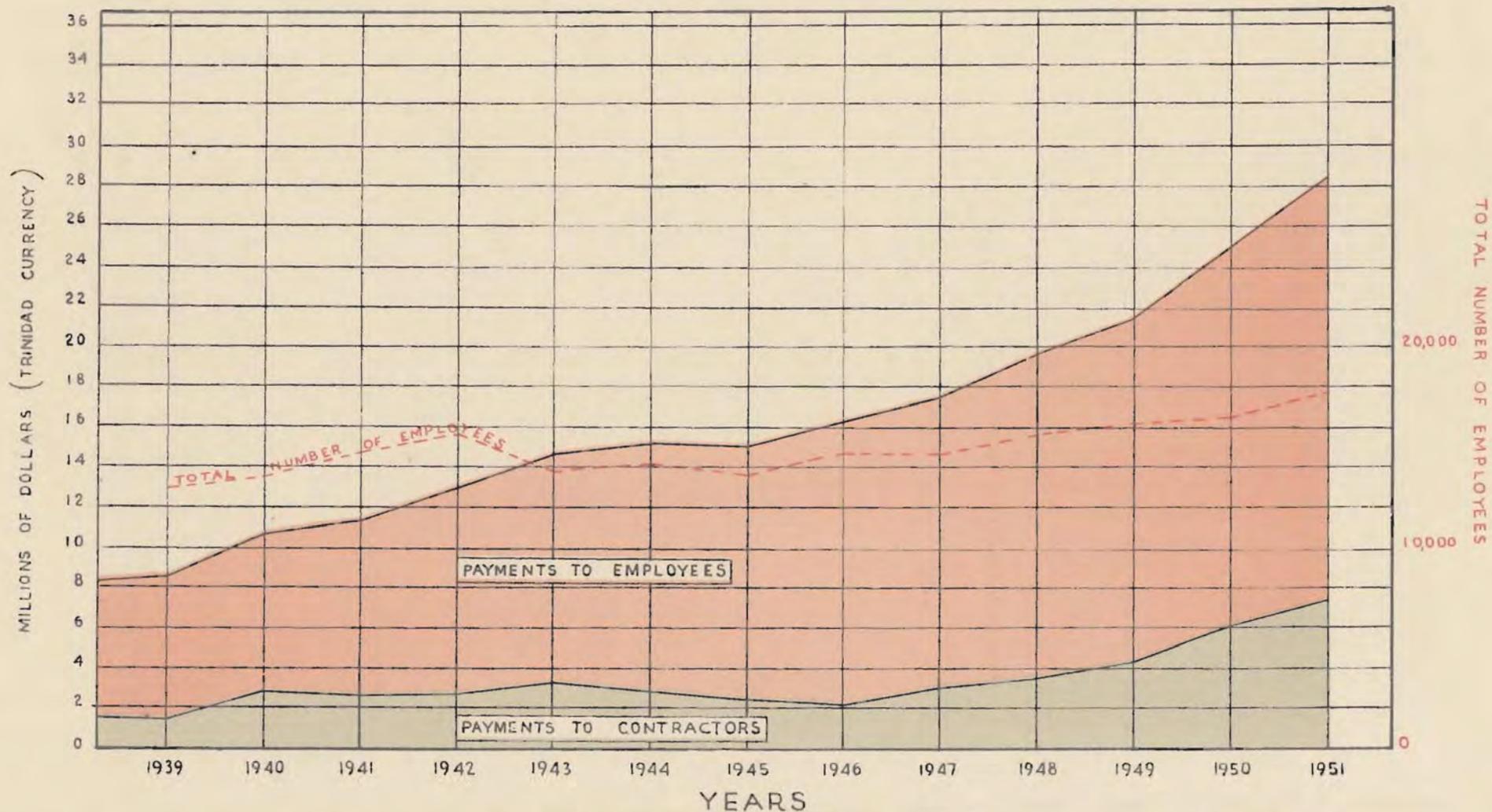
SEE TABLE III FOR DETAILED FIGURES FOR 1951

ANNUAL DRILLING FOOTAGE



FOR FIGURES USED IN CONSTRUCTING GRAPH SEE TABLE I — ITEMS 18 AND 21 —

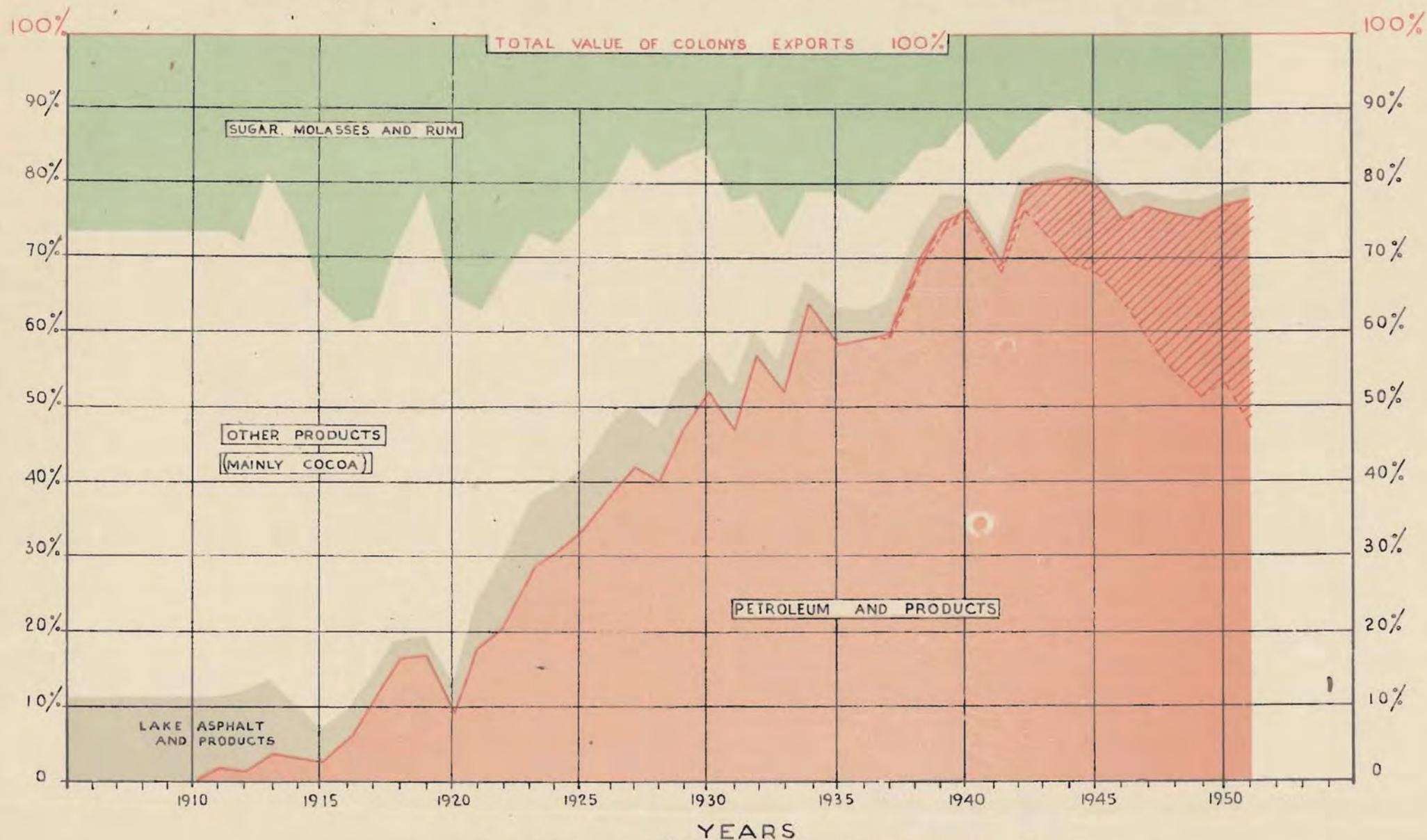
OIL COMPANIES ANNUAL PAYMENTS TO CONTRACTORS AND EMPLOYEES



FOR FIGURES USED IN CONSTRUCTING GRAPH SEE TABLE VII ITEMS 1 AND 2

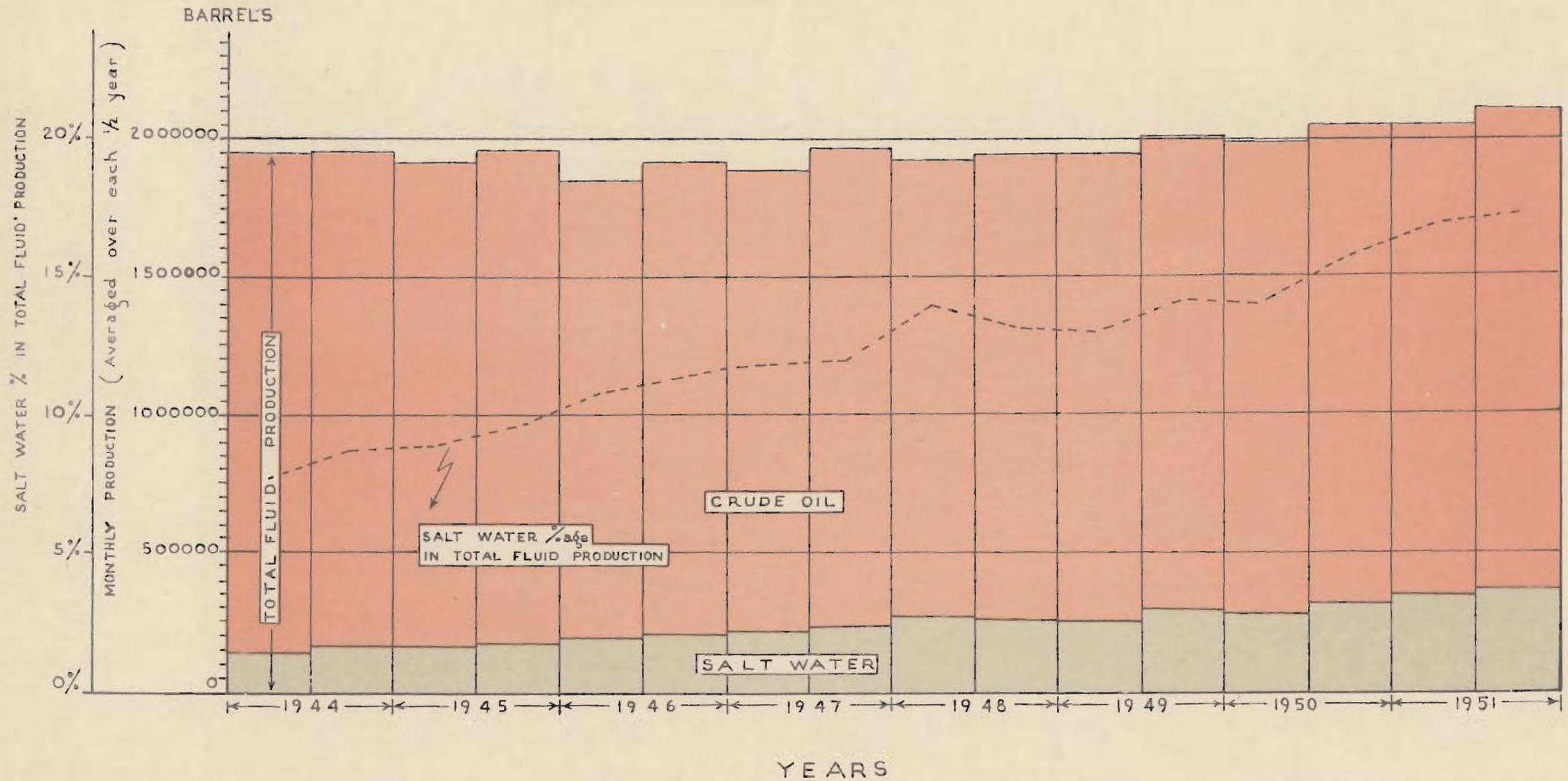
NB. PAYMENTS TO CONTRACTORS ARE MAINLY WAGES

PERCENTAGE DISTRIBUTION OF TOTAL VALUES OF COLONY'S EXPORTS



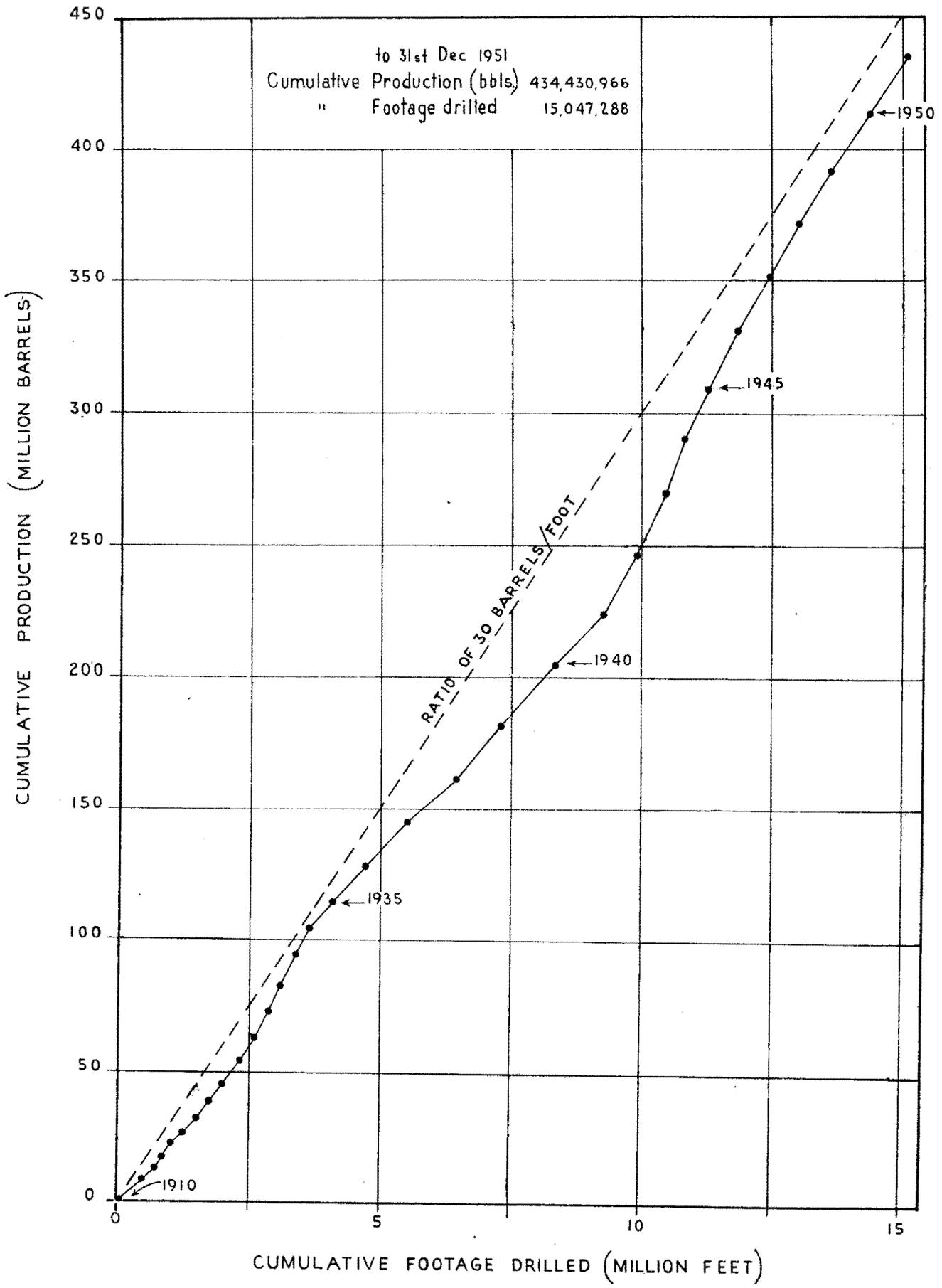
FOR VALUES IN \$^s SEE TABLE I—ITEMS 28, 29 AND 30
 THE HATCHED AREA SHOWS THE VALUE OF IMPORTED CRUDE REFINED IN THE COLONY

PRODUCTION OF SALT WATER

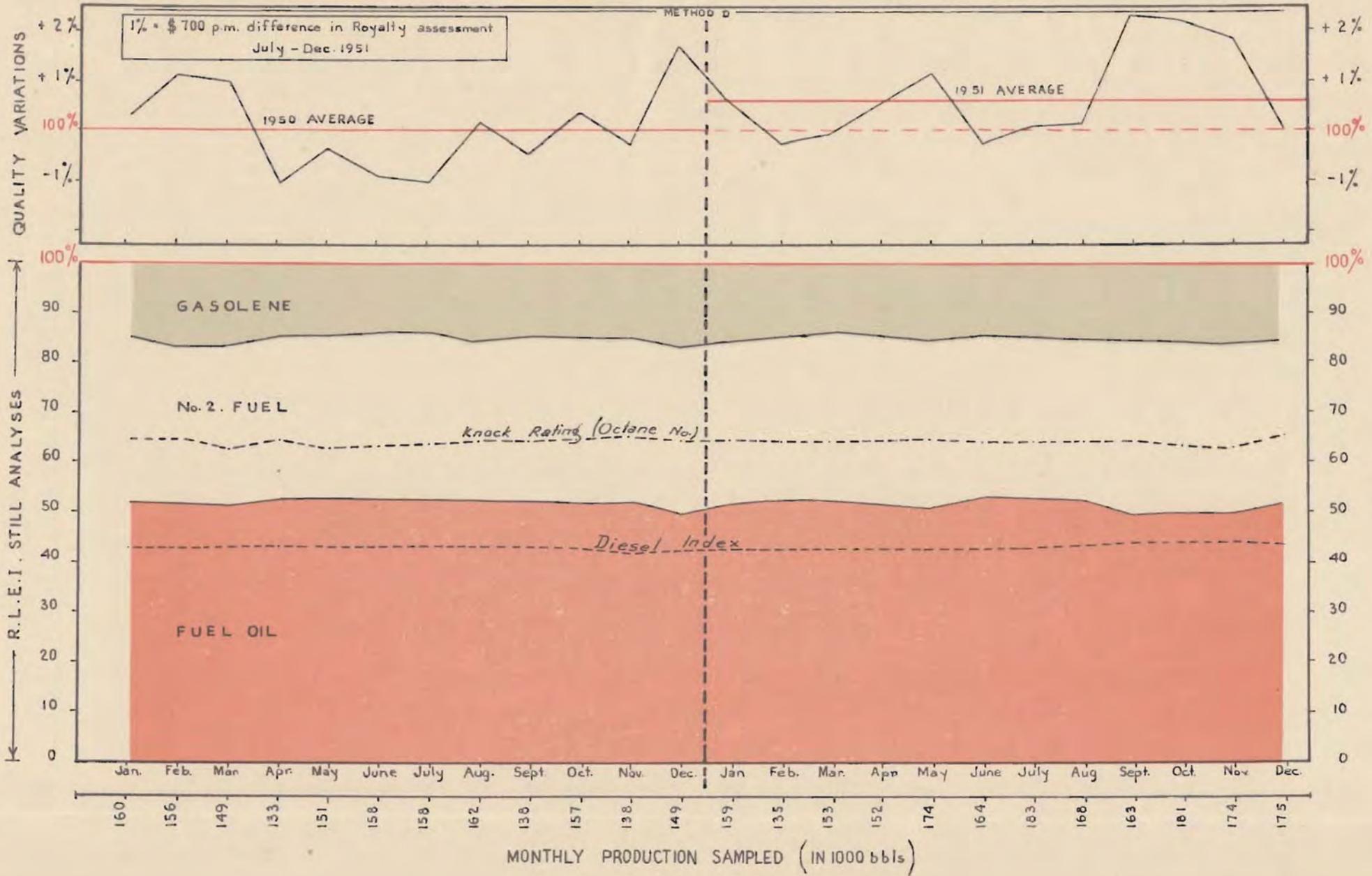


SEE TABLE III FOR 1951 FIGURES IN DETAIL

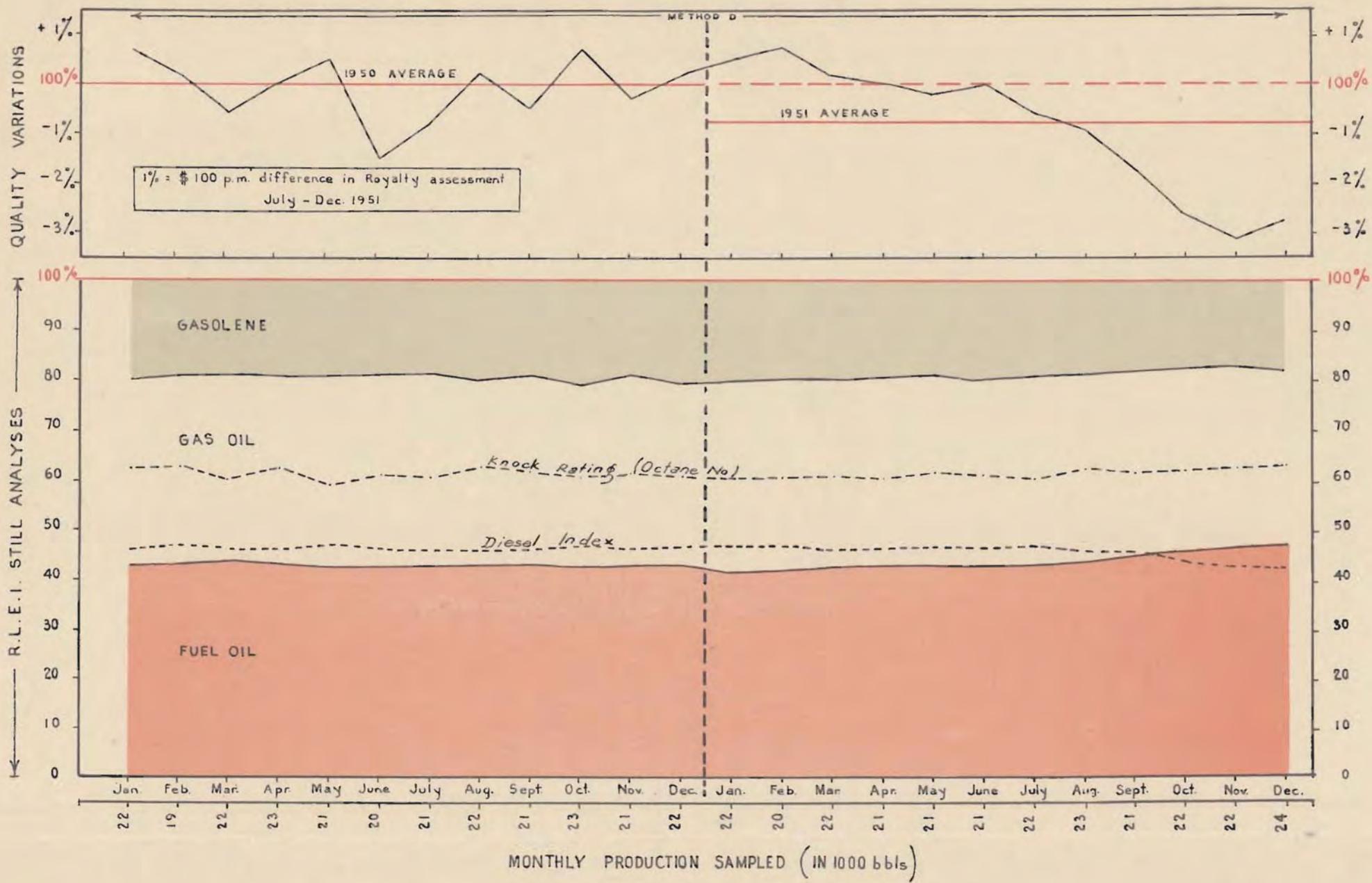
CUMULATIVE PRODUCTION & FOOTAGE



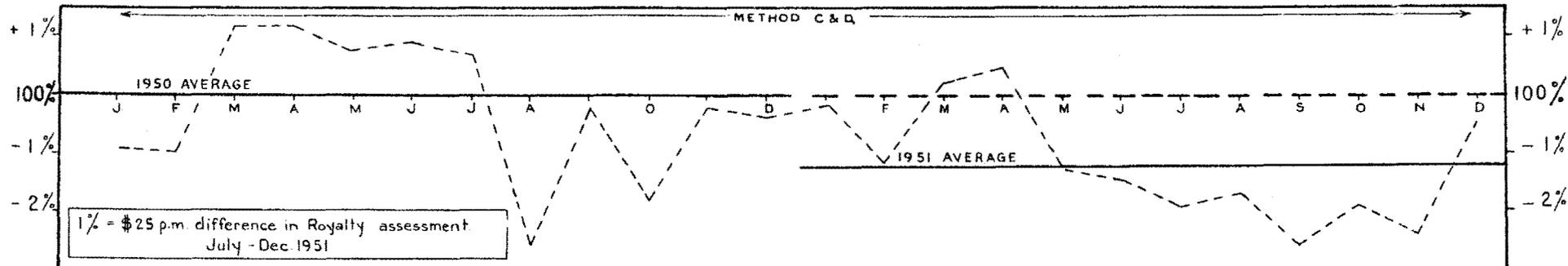
CRUDE OIL SAMPLE No. 2



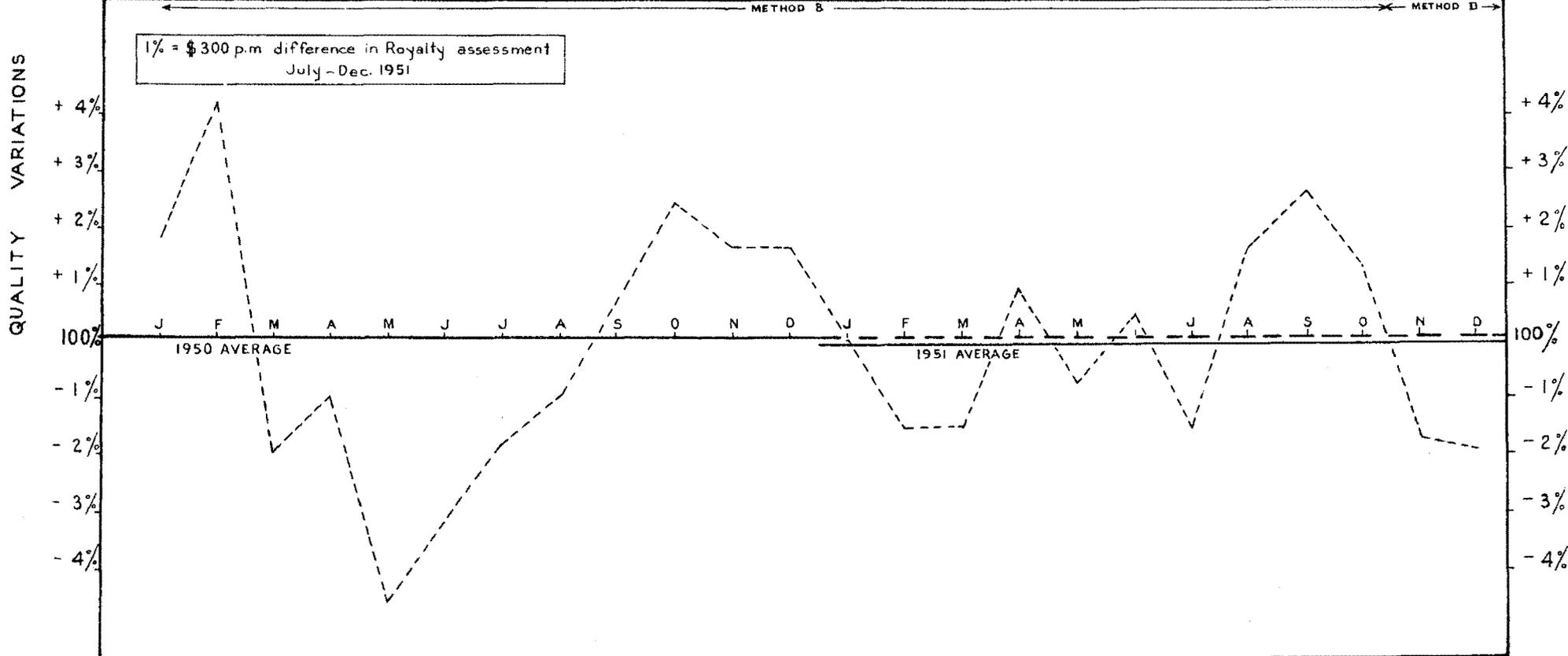
CRUDE OIL SAMPLE No. 4



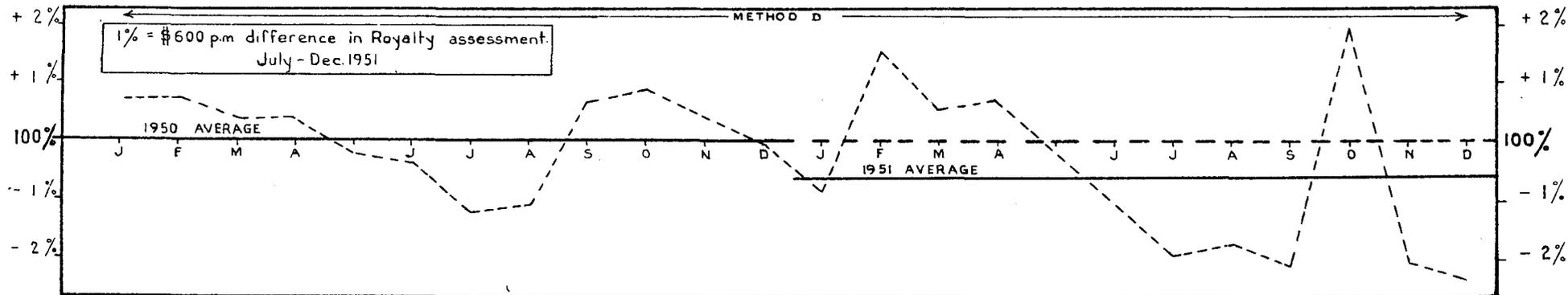
CRUDE OIL SAMPLE No. 1.



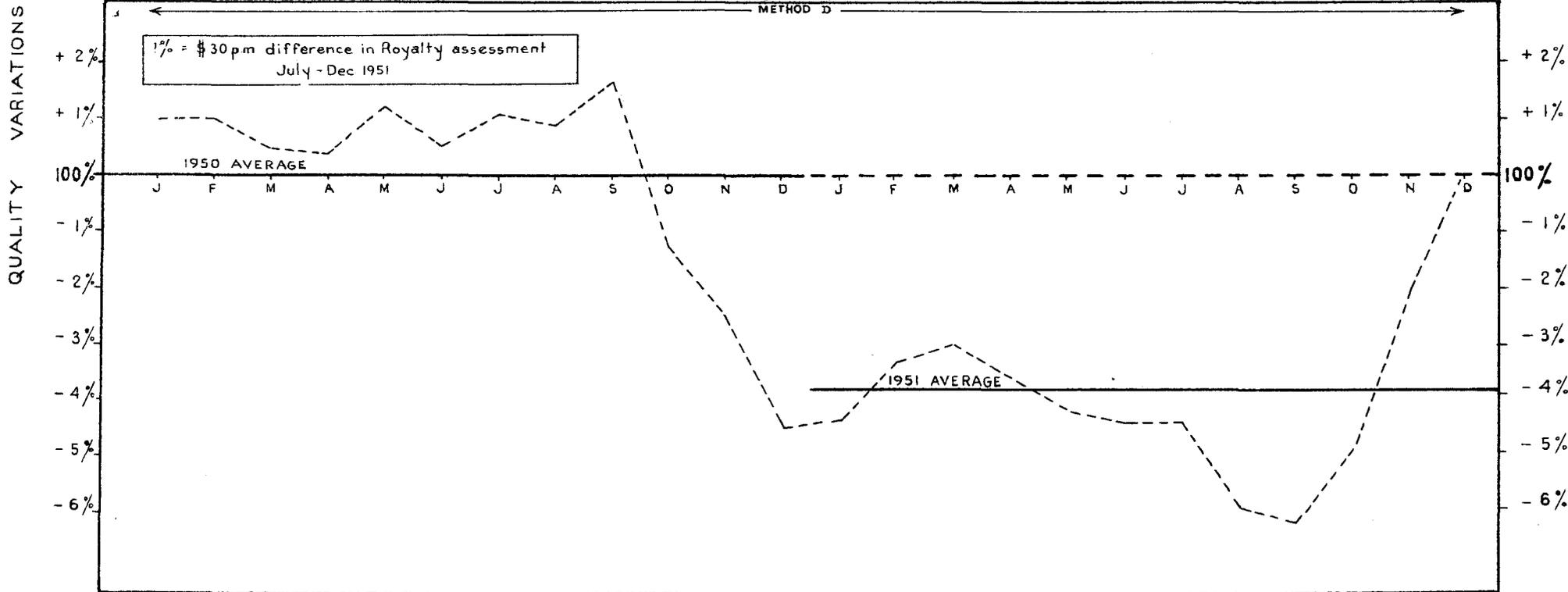
CRUDE OIL SAMPLE No. 7



CRUDE OIL SAMPLE No. 3

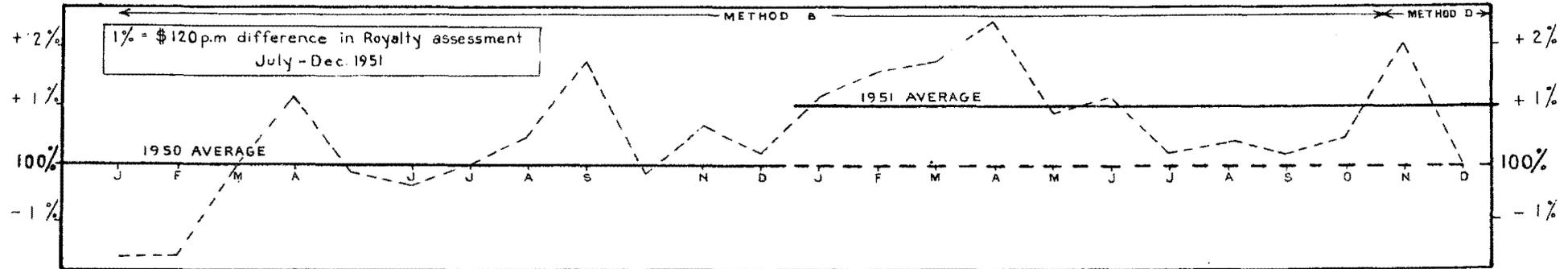


CRUDE OIL SAMPLE No. 5

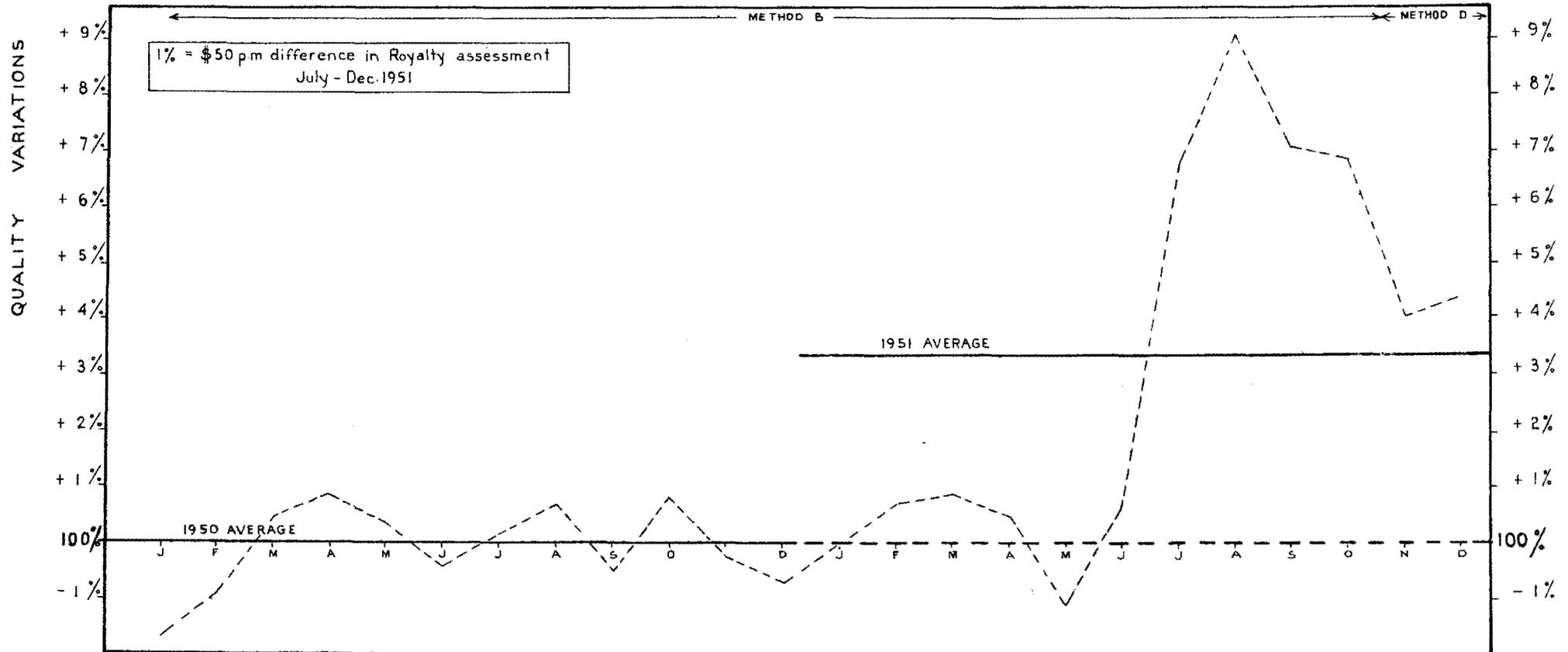


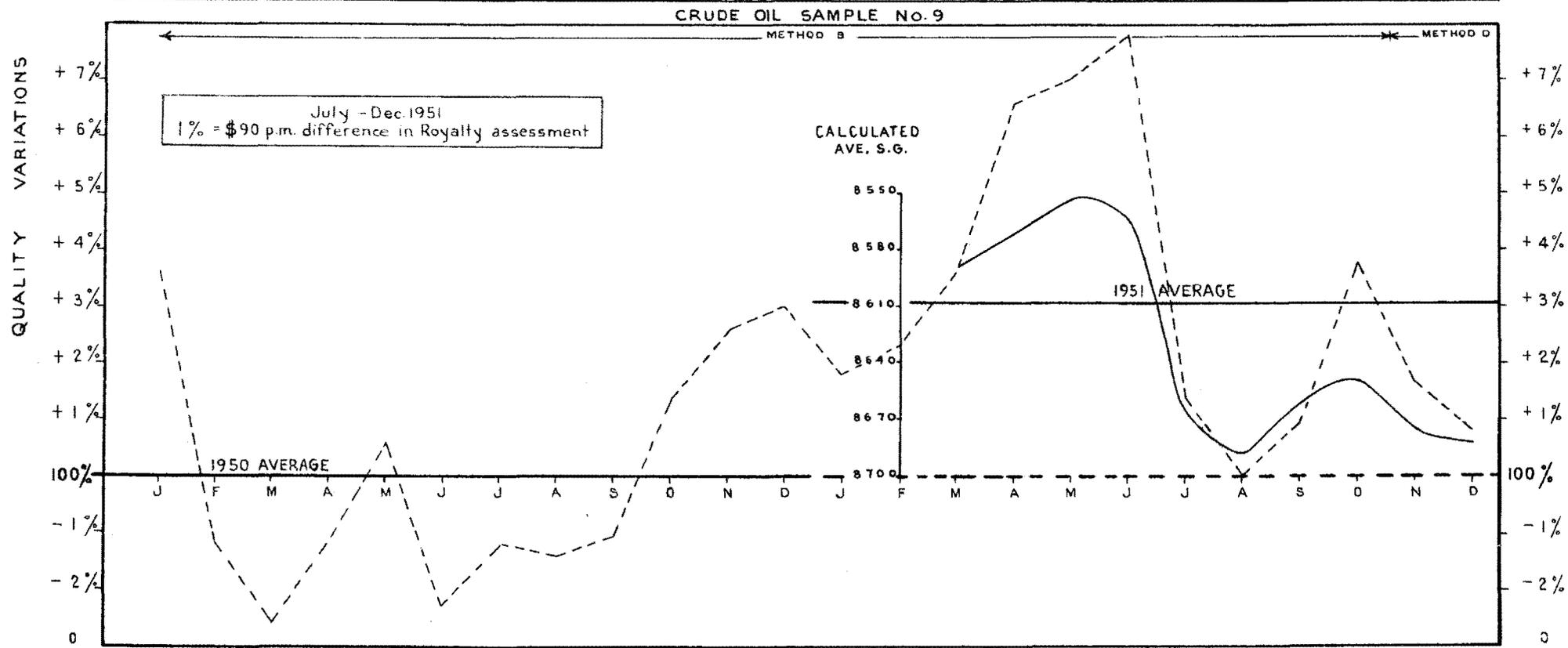
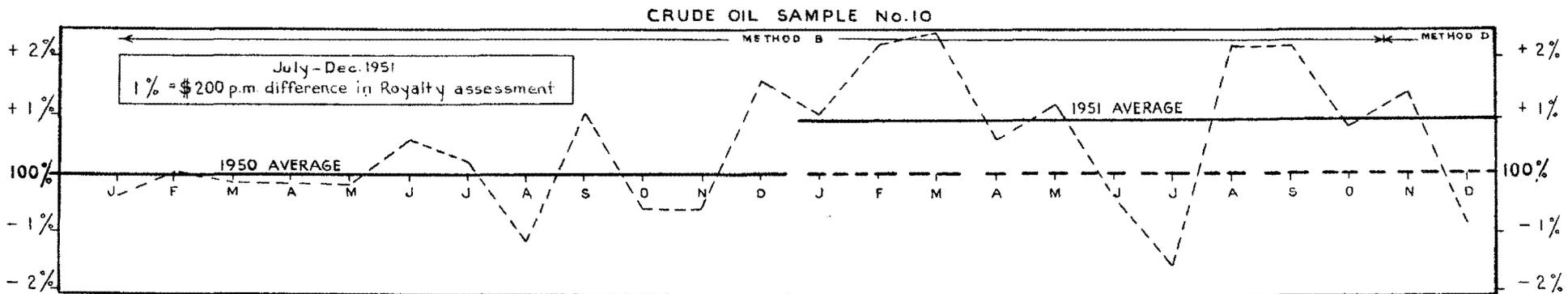
QUALITY VARIATIONS

CRUDE OIL SAMPLE No. 6



CRUDE OIL SAMPLE No. 8





MAP OF SOUTH TRINIDAD

SCALE

SHOWING LOCATION OF WELLS DRILLED TO OVER 8000' AND OTHER IMPORTANT EXPLORATORY WELLS

REFERENCE

-  Anticlinal Uplift
 -  Fault (Dip Indicated)
 -  Wells completed prior to 1951
 -  Wells " or drilling in 1951
- After E. Lehner 1933

