

R. I. 3253

NOVEMBER 1934

DEPARTMENT OF THE INTERIOR

UNITED STATES BUREAU OF MINES
JOHN W. FINCH, DIRECTOR

REPORT OF INVESTIGATIONS

ANALYSES OF CRUDE OILS FROM SOME FIELDS
OF SOUTHERN LOUISIANA



BY

A. J. KRAEMER AND E. L. GARTON

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By A. J. Kraemer^{2/} and E. L. Garton^{3/}

INTRODUCTION

For a number of years the Bureau of Mines has been conducting an investigation of crude petroleum from producing fields in the United States and the Western Hemisphere and has published a series of reports on these fields. Analyses of crude-oil samples from some oil fields of Louisiana are given in Bulletin 291.^{4/} Analyses of 26 representative crude oils from various producing formations of southern Louisiana are given in this report. These samples are from 14 fields in 10 parishes in the southern part of the State, usually designated as the "Louisiana Gulf Coast area."

ACKNOWLEDGMENTS

Thanks are due the representatives of the various companies from whom samples were obtained for their cooperation and assistance in helping to secure representative samples. The samples were analyzed under the direction of E. C. Lane at the Bartlesville station of the Bureau of Mines.

SOUTHERN LOUISIANA FIELDS

The samples were obtained from the Darrow and Sorrento fields, Ascension Parish; the Gueydan field, Vermilion Parish; the Iowa, Lockport, and Sulphur fields, Calcasieu Parish; the Jennings field, Acadia Parish; the Lake Barre and Lake Felto fields, Terrebonne Parish; the Leesville field, La Fourche Parish; the Port Barre field, St. Landry Parish; and the Sweet Lake, Welsh, and White Castle fields in the parishes of Cameron, Jefferson Davis, and Iberville, respectively.

^{1/} The Bureau of Mines will welcome reprinting of this paper provided the following footnote acknowledgment is used: "Reprinted from U. S. Bureau of Mines Report of Investigations 3253."

^{2/} Senior refinery engineer, U. S. Bureau of Mines.

^{3/} Assistant physical chemist, U. S. Bureau of Mines.

^{4/} Smith, N. A. C., and Lane, E. C., Tabulated Analyses of Representative Crude Petroleums of the United States: Bull. 291, Bureau of Mines, 1928, 62 pp.

According to Hopkins^{5/} production in 1932 in the coastal fields continued to increase to 11,355,000 barrels in 1932 compared to 9,560,000 barrels in 1931. The total output of 21,478,000 barrels for the State in 1932 was only 1 percent below that of the previous year. The increased production in the coastal fields, coincident with the decline in the northern fields, caused the district to become outstanding in the State, whereas 10 years ago the output of this producing district was relatively small.

Production in approximately one half the fields in the Louisiana Gulf Coast area decreased in 1932, but substantial increases in the Lake Barre and East Hackberry fields more than compensated for the recession in other fields. The Vinton and Lockport fields, which ranked first and second respectively in 1931, registered substantial declines in output in 1932 and fell to third and fourth places respectively.

In 1932, two new fields, the Gueydan and the Darrow, were opened in Vermilion and Ascension Parishes, respectively. Three oil wells were completed at Gueydan in 1932, and the field produced about 200,000 barrels in 9 months. The Iowa field, discovered in 1931, produced consistently. The yield was about 500,000 barrels in 1932 compared with a few thousand barrels in 1931.

Production for the Louisiana Gulf Coast area was 15,088,000 barrels in 1933, while that for the rest of the State was 9,548,000 barrels^{6/} - a total for the State of 24,636,000 barrels^{6/}. This was a substantial increase over the production in 1932.

Wade^{7/} gives analyses of coastal Texas oils corresponding in geographical location with the coastal Louisiana crude oils.

DISCUSSION OF RESULTS

A study of the entire series of southern Louisiana crude-oil analyses shows considerable variation in the physical and chemical properties of the oils. Samples 33030 (Iowa field) and 33038 (Lake Pelto field) show the greatest variation. The gravities range from 41.5° A. P. I. (Iowa field) to 17.1° A. P. I. (Lake Pelto field). The sulphur content ranges from less than 0.10 percent (sample 33030) to 0.53 percent (sample (33038)). The viscosities range from 35 seconds at 77°F. to 540 seconds at 100°F. The pour points are all below 5°F. The gasoline or naphtha fraction ranges from 2.4 to 34.2 percent, and several samples contain no gasoline fraction. The residuum ranges from 9.2 to 46.8 percent, and the carbon residue of residuum ranges from 2.9 to 11.7 percent.

5/ Hopkins, G. R., Crude Petroleum and Petroleum Products: Minerals Yearbook 1932-33, Bureau of Mines, 1933, pp. 459-495, 819 pp.

6/ U. S. Bureau of Mines, Petroleum, Petroleum Products, and Natural Gasoline, Monthly Petroleum Statement No. P. 115; December 1933, p. 12.

7/ Wade, Gustav, Tabulated Analyses of Texas Crude Oils, R. I. 3252, Bureau of Mines, 1934, 40 pp.

These 26 analyses include 8 crude oils of naphthene base, crude oils of naphthene-intermediate base, and 10 crude oils of intermediate base. Of these analyses 16 show wax to be absent. The analyses as tabulated in the following tables show many items of interest.

The analyses of the crude oils produced in the Lockport field show that the physical and chemical properties of the oils are similar but that as the depth increases the percentages of the lighter distillates increase with corresponding decreases in percentage of residuum. A majority of the samples of crude oil from this field are of naphthene base, and sample 33026, although of naphthene-intermediate base, closely resembles naphthene-base oils. Sample 33023, however, which is produced from the greatest depth, is a typical intermediate-base crude and is the only one to show the presence of wax. This sample and sample 33025 (the two deepest samples) show the greatest variations from the other samples of this field.

The analyses of the oils produced in the Port Barre field, St. Landry Parish, also show wide variation in physical and chemical characteristics. The sulphur content ranges from 0.41 to 0.53 percent, and the viscosity at 100°F. ranges from 60 to 230 seconds. The analyses indicate that the deepest sample has a naphthene base. The other two samples are "intermediate." Other characteristics also are different from those of the Lockport oils. However, the range of depths covered by the samples is much less in the Port Barre field than in the Lockport field.

The two samples of crude oil from the Jennings field, Acadia Parish, are very similar and are of "intermediate base." A previous sample, collected in 1921 at a depth of 1,845 to 2,200 feet, and given in Bulletin 291, is of naphthene base. A comparison of the properties of this sample and samples 30390 and 30392 in the following tables shows the production changes from naphthene to intermediate base as the depth increases, which is similar to production from the Lockport field.

The samples of the Sorrento field, Ascension Parish, also show how the physical and chemical properties vary with depth of production. The analyses show that the base of the oil changes from naphthene-intermediate base, wax being absent, to intermediate base, wax being present, as the depth increases from 1,632 feet to 4,874 feet.

BASE OF CRUDE OIL

It has become general practice to classify crude oils in three groups according to the so-called "base", namely, paraffin, intermediate, and naphthene. Discussion of this classification and technical definitions of the grades based upon differences in physical behavior are given in Bulletin 291^{8/} and Report of Investigations 2806.^{9/} As the analytic study of petroleum

^{8/} See footnote 4.

^{9/} Smith, N. A. C., The Interpretation of Crude-Oil Analyses: Rept. of Investigations 2806, Bureau of Mines, 1927, 20 pp.

progressed and new oils were found, it became apparent that three so-called "bases" are not adequate for differentiating all the known crude-petroleum oils. In order to extend the classification it became necessary to add 4 intervening grades, making a total of 7. This new classification is as follows: Paraffin, paraffin-intermediate, intermediate-paraffin, intermediate, intermediate-naphthene, naphthene-intermediate, and naphthene. These names indicate the gradation in characteristics of the oils throughout the range from paraffin to naphthene bases. Table 2 gives data upon which the "base" of these southern Louisiana crude oils are classified. Only one of the intervening classifications is represented here, namely, naphthene-intermediate.

TABLES

Table 1 summarizes the physical and chemical properties of the crude oils. Following table 4 the detailed results of the distillation analyses by the Bureau of Mines Hempel method are given for all of the samples.

Table 2 gives data upon which is based the classification of these crude oils according to "base." Table 3A compares the crude oils of naphthene base, table 3B compares the crude oils of naphthene-intermediate base, and table 3C compares the crude oils of intermediate base. Table 4 summarizes briefly the history of these fields and gives available production data.

CONCLUSIONS

The analyses of southern Louisiana crude oils, summarized in tables 1 and 2, show that (1) the crude oils of each district have the same general characteristics, (2) the crude oils of each field vary in characteristics from the oils of the other southern Louisiana fields, and (3) the stratigraphic position of the producing bed has a decided influence on the characteristics of the oil.

Table 1. - Summary of properties of some crude oils from southern Louisiana

Sample no.	Field	Parish	Formation	Depth, feet	Properties of crude ^{1/}			Gasoline or naphtha fraction Percent	Viscosity at 100° of vacuum fractions, seconds			Residuum		
					Gravity, °A.P.I.	Sulphur, percent	Viscosity at seconds 100° F.		Percent	°A.P.I.	225-250°C.	250-275°C.	275-300°C.	Percent	Carbon residue, percent
33039	Darrow	Ascension	- - - - -	4008-4035	29.1	0.15	58	11.3	45.4	75	135	300	20.7	4.0
33034	Gueydan	Vermilion	- - - - -	4014-4029	27.7	.17	63	5.0	46.9	96	125	240	21.9	2.9
33030	Iowa	Calcasieu	Oligocene	6961-6979	41.5	(2)	38	34.2	56.7	57	89	190	9.3	3.1
33030	Jennings	Acadia	- - - - -	7139-7435	35.6	0.15	41	26.8	52.7	62	99	210	17.8	5.9
33032	Do.	Do.	- - - - -	7200-7300	34.6	.15	41	23.8	51.3	63	105	240	18.5	5.9
33035	Lake Barre	Terrebonne	Miocene	3670-3800	35.8	.39	43	28.1	56.7	69	120	240	18.4	8.6
33036	Do.	Do.	- - - - -	3804-3849	28.6	.49	55	20.2	50.4	82	150	340	27.3	8.0
33038	Lake Pelto	Do.	- - - - -	1250-1391	17.1	.53	540	8.9	42.6	135	310	(3)	38.2	10.9
33037	Leesville	La Fourche	- - - - -	3665-3684	28.2	.38	75	15.8	50.9	83	160	370	29.4	6.1
33026	Lockport	Calcasieu	Upper Miocene	2975-2981	23.8	.18	110	nil	---	80	150	380	27.5	4.5
33024	Do.	Do.	- - - - -	3362-3370	23.7	.19	105	nil	---	85	175	(3)	24.7	4.8
33028	Do.	Do.	Miocene	4332-4339	25.2	.18	69	2.6	40.2	77	155	400	20.4	3.8
33029	Do.	Do.	- - - - -	3745-3757	24.7	.17	80	nil	---	80	150	380	21.1	4.0
33027	Do.	Do.	- - - - -	3866-3874	24.3	.20	87	nil	---	83	160	(3)	22.6	4.5
33025	Do.	Do.	Lower Miocene	5109-5114	27.9	.15	50	5.5	46.5	82	190	(3)	13.3	4.1
33023	Do.	Do.	Oligocene	6473-6482	40.4	.10	35	34.0	54.7	63	83	200	9.2	2.5
33043	Port Barre	St. Landry	- - - - -	3365-3407	28.8	.41	60	15.0	49.0	73	120	250	22.9	4.3
33044	Do.	Do.	Oligocene	3472	27.0	.42	66	12.2	50.6	77	140	340	22.9	5.6
33042	Do.	Do.	- - - - -	3626-3638	21.5	.53	230	4.2	44.7	93	200	(3)	33.4	7.9
33040	Sorrento	Ascension	Cap rock	1612-1632	26.3	.43	78	3.7	42.8	85	160	380	20.5	3.5
33041	Do.	Do.	- - - - -	4346-4874	31.3	.21	58	5.6	47.2	65	97	185	19.1	3.2
33032	Sulphur	Calcasieu	- - - - -	3101-3119	21.5	.42	350	2.9	42.8	83	180	(3)	37.2	11.7
33031	Do.	Do.	Oligocene	5650-5683	21.3	.42	390	2.4	41.9	77	140	300	46.8	9.2
33039	Sweet Lake	Cameron	5,800-foot sand	5924	28.8	.15	63	3.7	47.8	72	125	220	19.7	3.4
33033	Welsh	Jeff. Davis	- - - - -	1230 (?)	21.6	.24	280	nil	---	105	240	(3)	29.9	7.0
32372	White Castle	Iberville	Basal Miocene	5165-5175	24.2	.30	130	6.1	43.6	83	155	300	35.0	7.0

^{1/} Pour points for all samples below 50°F.^{2/} Less than 0.10 percent.^{3/} More than 400 seconds.

Table 2. - Summary of data indicating the base of the crude oil

Sample no.	Field	Parish	Formation	Depth, feet	Fraction distilling at atmospheric pressure between 250-275°C.		Fraction distilling at 40 mm pressure between 275-300°C.			Indication of wax	Base of crude
					Sp. gr.	%A.P.I.	Sp. gr.	%A.P.I.	Cloud point		
33039	Darrow	Ascension	- - - - -	4008-4035	.859	33.2	0.912	23.7	35	Present	Intermediate
33034	Gueydan	Vermilion	- - - - -	4014-4029	.875	30.2	.906	24.7	(1)	Absent	Naphthene-intermediate
33030	Iowa	Calcasieu	Oligocene	6961-6979	.835	38.0	.895	26.6	95	Present	Intermediate
30390	Jennings	Acadia	- - - - -	7139-7435	.846	35.8	.901	25.6	99	Do.	Do.
30392	Do.	Do.	- - - - -	7200-7300	.848	35.4	.904	25.0	85	Do.	Do.
33035	Lake Barre	Terrebonne	Miocene	3670-3800	.837	37.6	.903	25.2	70	Do.	Do.
33036	Do.	Do.	Do.	3804-3849	.860	33.0	.925	21.5	(1)	Absent	Naphthene-intermediate
33038	Lake Pelto	Do.	- - - - -	1250-1391	.885	28.4	.960	15.9	(1)	Do.	Naphthene
33037	Leesville	La Fourche	- - - - -	3665-3684	.856	33.8	.918	22.6	(1)	Do.	Intermediate
33026	Lockport	Calcasieu	Upper Miocene	2975-2981	.874	30.4	.930	20.7	(1)	Do.	Naphthene-intermediate
33024	Do.	Do.	Do.	3362-3370	.877	29.9	.936	19.7	(1)	Do.	Naphthene
33028	Do.	Do.	Miocene	4332-4339	.876	30.0	.935	19.8	(1)	Do.	Do.
33029	Do.	Do.	Do.	3745-3757	.876	30.0	.936	19.7	(1)	Do.	Do.
33027	Do.	Do.	Do.	3866-3874	.875	30.2	.936	19.7	(1)	Do.	Do.
33025	Do.	Do.	Lower Miocene	5109-5114	.875	30.2	.935	19.8	(1)	Do.	Do.
33023	Do.	Do.	Oligocene	6374-6482	.838	37.4	.890	27.5	95	Present	Intermediate
33043	Port Barre	St. Landry	- - - - -	3365-3407	.867	31.7	.913	23.5	80	Do.	Do.
33044	Do.	Do.	Oligocene	3472	.866	31.9	.924	21.6	75	Do.	Do.
33042	Do.	Do.	- - - - -	3626-3638	.874	30.4	.937	19.5	(1)	Absent	Naphthene
33040	Sorrento	Ascension	Cap rock	1612-1632	.871	31.0	.921	22.1	(1)	Do.	Naphthene-intermediate
33041	Do.	Do.	- - - - -	4346-4874	.847	35.6	.892	27.1	75	Present	Intermediate
33032	Sulphur	Calcasieu	- - - - -	3101-3119	.871	31.0	.929	20.8	(1)	Absent	Naphthene-intermediate
33031	Do.	Do.	Oligocene	5650-5683	.876	30.0	.920	22.3	(1)	Do.	Do.
30389	Sweet Lake	Cameron	5,800-foot sand	5924	.866	31.9	.905	24.9	65	Present	Do.
33033	Welsh	Jeff. Davis	- - - - -	1230 (?)	.876	30.0	.938	19.4	(1)	Absent	Naphthene
32372	White Castle	Iberville	Basal Miocene	5165-5175	.872	30.8	.924	21.6	(1)	Do.	Naphthene-intermediate

1/ Below 5° F.

TABLE 3A. - Comparison of the crude oils of naphthalene base produced in the different fields of southern Louisiana

Sample no.	33038	33024	33028	33029	33027	33025	33042	33033
Field.....	Lake Pelto	Lockport	Lockport	Lockport	Lockport	Lockport	Port Barre	Welsh
Location (parish).....	Terrebonne	Calcasieu	Calcasieu	Calcasieu	Calcasieu	Calcasieu	St. Landry	Jefferson Davis
Formation.....	....	Upper Miocene	Miocene	Miocene	Miocene	Lower Miocene	....	.....
General characteristics: ^{1/}								
°A.P.I. gravity.....	17.1	23.7	25.2	24.7	24.3	27.9	21.3	21.6
Sulphur content, percent.....	0.53	0.19	0.18	0.17	0.20	0.15	0.53	0.24
Viscosity at 100°F.....	540.	105.	69.	80.	87.	50.	230.	280.
Color.....	Brownish black	Greenish black	Brownish green	Brownish green	Brownish green	Brownish green	Greenish black	Greenish black
"Gasoline or Naphtha" content:								
Percent.....	0.9	nil	2.6	nil	nil	5.5	4.2	nil
°A.P.I. gravity.....	42.6	.....	40.2	.....	.....	46.5	44.7	.....
Vacuum fraction: ^{2/}								
Temperatures of cut, °C.....	275-300	275-300	275-300	275-300	275-300	275-300	275-300	275-300
°F.....	(527-572)	(527-572)	(527-572)	(527-572)	(527-572)	(527-572)	(527-572)	(527-572)
Viscosity at 100°F.....	Over 400	Over 400	400	380	Over 400	Over 400	Over 400	Over 400
°A.P.I. gravity.....	15.9	19.7	19.8	19.7	19.7	19.8	19.5	19.4
Residuum:								
Percent.....	38.2	24.7	20.4	21.1	22.6	13.3	33.4	29.9
°A.P.I. gravity.....	....	16.0	17.0	16.5	16.4	16.7	12.0	14.8
Carbon residue, percent.....	10.9	4.8	3.8	4.0	4.5	4.1	7.9	7.0
Carbon residue of crude, percent..	4.2	1.2	0.8	0.8	1.0	0.6	2.6	2.1

^{1/} Pour points for all samples below 5°F.^{2/} Cloud points for all naphthalene base samples below 5°F.

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TABLE 3B. - Comparison of the crude oils of naphthene-intermediate base produced in different fields of southern Louisiana

Sample no.	33034	33036	33026	33040	33032	33031	30389	32372
Field.....	Gueydan	Lake Barre	Lockport	Sorrento	Sulphur	Sulphur	Sweet Lake	White Castle
Location (parish).....	Vermilion	Terrebonne	Calcasieu	Ascension	Calcasieu	Oligocene	Cameron	Iberville
Formation.....	.....	Miocene	Upper Miocene	Cap rock	.....	.....	5,800-foot Sand	Basal Miocene
General characteristics: ^{1/}								
°A.P.I. gravity.....	27.7	28.6	23.8	26.3	21.5	21.3	28.8	24.2
Sulphur content, percent.....	0.17	0.49	0.18	0.45	0.42	0.42	0.15	0.30
Viscosity at 100°F.....	63.	55.	110.	78.	350.	390.	63.	130.
Color.....	Greenish black	Greenish black	Greenish black	Dark green	Brownish black	Brownish black	Brownish black	Greenish black
"Gasoline or naphtha" content:								
Percent.....	5.0	20.2	nil	3.7	2.9	2.4	3.7	6.1
°A.P.I. gravity.....	46.9	50.4	.....	42.8	42.8	41.9	47.8	43.6
Vacuum fraction:								
Temperatures of cut, °C.....	275-300	275-300	275-300	275-300	275-300	275-300	275-300	275-300
°F.....	(527-572)	(527-572)	(527-572)	(527-572)	(527-572)	(527-572)	(527-572)	(527-572)
Viscosity at 100°F.....	240	340	380	380	Over 400	300	220	300
°A.P.I. gravity.....	24.7	21.5	20.7	22.1	20.8	22.3	24.9	21.6
Cloud point, °F.....	(2)	(2)	(2)	(2)	(2)	(2)	65	(2)
Residuum:								
Percent.....	21.9	27.3	27.5	20.5	37.2	46.8	19.7	35.0
°A.P.I. gravity.....	21.1	14.4	16.4	18.7	12.6	14.2	20.5	16.0
Carbon residue, percent.....	2.9	8.0	4.5	3.5	11.7	9.2	3.4	7.0
Carbon Residue of crude, percent..	0.6	2.2	1.2	0.7	4.4	4.3	0.7	2.5

^{1/} Pour points for all samples below 5°F.^{2/} Below 5°F.

TABLE 3C. - Comparison of the crude oils of intermediate base produced in the different fields of southern Louisiana

Sample no.	33039	33030	30390	30392	33035	33037	33023	33043	33044	33041
Field	Darrow	Iowa	Jennings	Jennings	Lake Barre	Leesville	Lockport	Port Barre	Port Barre	Sorrento
Location (parish)	Ascension	Calcasieu	Acadia	Acadia	Terrebonne	La Fourche	Calcasieu	St. Landry	St. Landry	Ascension
Formation .....	....	Oligocene	....	....	Miocene	....	Oligocene	....	Oligocene	....
General characteristics: ^{1/}										
°A.P.I. gravity	29.1	41.5	35.6	34.6	35.8	28.2	40.4	28.8	27.0	31.3
Sulphur content, percent	0.15	(2)	0.15	0.15	0.39	0.38	0.10	0.41	0.42	0.21
Viscosity at 100°F.	58	38	41	41	43	75	35	60	66	58
Color	Brownish green	Dark green	Brownish black	Brownish black	Greenish black	Greenish black	Green	Brownish green	Brownish green	Dark green
"Gasoline or naphtha" content:										
Percent	11.3	34.2	26.8	23.8	28.1	15.8	34.0	15.0	12.2	5.6
°A.P.I. gravity	45.4	56.7	52.7	51.3	56.7	50.9	54.7	49.0	50.5	47.2
Vacuum fraction:										
Temperatures of cut, °C.	275-300	275-300	275-300	275-300	275-300	275-300	275-300	275-300	275-300	275-300
°F.	(527-572)	(527-572)	(527-572)	(527-572)	(527-572)	(527-572)	(527-572)	(527-572)	(527-572)	(527-572)
Viscosity at 100°F.	300	190	210	240	240	370	200	250	340	185
°A.P.I. gravity	23.7	26.6	25.6	25.0	25.2	22.6	27.5	23.5	21.6	27.1
Cloud point, °F.	35	95	100	85	70	(3)	95	80	75	75
Residuum:										
Percent	20.7	9.3	17.8	18.5	18.4	29.4	9.2	22.9	22.9	19.1
°A.P.I. gravity	18.2	19.0	18.1	18.1	14.8	16.2	19.7	17.3	14.8	20.8
Carbon residue, percent	4.0	3.1	5.9	5.9	8.6	6.1	2.5	4.3	5.6	3.2
Carbon residue of crude, percent..	0.8	0.3	1.1	1.1	1.6	1.8	0.2	1.0	1.3	0.6

^{1/} Pour points for all samples below 50°F.^{2/} Less than 0.10 percent.^{3/} Below 50°F.

Table 4. - Summary of the history of some oil fields of Louisiana^{1/}

Field	Parish	Year of dis- covery	Original exploration company	First Commercial Production		Maximum Production		Total production to end of 1932, barrels
				Year	Barrels	Year	Barrels	
Darrow	Ascension	1927	--	1932	--	--	--	--
Gueydan	Vermilion	1929	--	1932	195,000	1932	195,000	195,000
Iowa	Calcasieu	1929	--	1931	3,000	1932	489,000	492,000
Jennings	Acadia	1902	--	1902	548,617	1929	515,000	46,163,000
Lake Barre	Terrebonne	1928	Louisiana Land & Exploration Co.	1929	46,000	1932	2,722,000	4,177,000
Lake Pelto	do.	1928	do.	1929	31,597	1930	56,290	2/ 118,233
Leesville	La Fourche	1928	Texas Co.	1931	154,000	1932	273,000	427,000
Lockport	Calcasieu	1924	--	1924	128,000	1927	2,038,000	10,820,000
Port Barre	St. Landry	1926	Gulf Refining Co. and Texas Co.	1929	33,000	1930	970,000	2,030,000
Sorrento	Ascension	1927	do.	1928	289,000	1928	289,000	495,000
Sulphur	Calcasieu	1926	Union Sulphur Co.	1926	2,064	1929	1,374,000	5,015,000
Sweet Lake	Cameron	1926	--	1926	10,755	1928	661,000	1,754,000
Welsh	Jeff. Davis	1901	--	1903	25,162	1929	59,777	2/ 536,678
White Castle	Iberville	1926	Roxana Petroleum Co.	1929	18,386	1930	300,000	829,000

^{1/} Data from Bulletin 22, Department of Conservation, State of Louisiana; and reports of the U. S. Bureau of Mines, Department of Interior.

^{2/} Production to end of 1931.

R.I. 3253

Sample 33039.

Community well no. 1.
4008-4,035 feet.
Rio Bravo Oil Co.

Darrow field.

Louisiana
Ascension Parish.
Sec. 31, 10 S. 2 E.
St. Helena.

GENERAL CHARACTERISTICS

Specific gravity, 0.881
Percent sulphur, 0.15.
Saybolt Universal viscosity at 77° F., 78 seconds.
Saybolt Universal viscosity at 100° F., 58 seconds.

A.P.I. gravity, 29.1°.
Pour point, below 5°F.
Color, brownish green.

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Dry distillation Barometer, 742 mm. First drop: 83°C.(181° F.)

Temperature, °C.	Per- cent cut	Sum, per- cent	Specific gravity of cut	°A.P.I. of cut	Viscosity at 100° F.	Cloud test, °F.	Temperature, °F.
Up to 50	--	--	--	--	--	--	Up to 122
50 - 75	--	--	--	--	--	--	122 - 167
75 - 100	0.5	0.5)					(167 - 212
100 - 125	.9	1.4)	0.769	52.5	--	--	(212 - 257
125 - 150	1.1	2.5)			--		(257 - 302
150 - 175	3.1	5.6	.795	46.5	--	--	302 - 347
175 - 200	5.7	11.3	.817	41.7	--	--	347 - 392
200 - 225	6.7	18.0	.833	38.4	--	--	392 - 437
225 - 250	8.9	26.9	.845	36.0	--	--	437 - 482
250 - 275	10.9	37.8	.859	33.2	--	--	482 - 527

Vacuum distillation at 40 mm

Up to 200	7.5	7.5	0.876	30.0	44	Below 5	Up to 392
200 - 225	9.8	17.3	.883	28.8	53	do.	392 - 437
225 - 250	8.0	25.3	.893	27.0	75	5	437 - 482
250 - 275	7.2	32.5	.905	24.9	135	20	482 - 527
275 - 300	7.7	40.2	.912	23.7	300	35	527 - 572

Carbon residue of residuum 4.0 percent. Carbon residue of crude, 0.8 percent.

APPROXIMATE SUMMARY

	Percent	Specific Gravity	°A.P.I.	Viscosity
Light gasoline	0.5	--	--	--
Total gasoline and naphtha	11.3	0.800	45.4	--
Kerosene distillate	--	--	--	--
Gas oil	36.1	.858	33.4	--
Nonviscous lubricating distillate	14.9	0.881 - .898	29.1 - 50.100	26.1
Medium lubricating distillate	7.3	.898 - .907	26.1 - 100-200	24.5
Viscous lubricating distillate	8.4	.907 - .915	24.5 - Above 200	23.1
Residuum	20.7	.945	18.2	--
Distillation loss	1.3	--	--	--

R.I. 3253

Sample 33034

Alliance Trust Co. Well no. 2, Gueydan field.
 4,014 - 4,029 feet.
 Pure Oil Co.

Louisiana,
 Vermilion Parish
 Sec. 34, 11 S. 1 W.

GENERAL CHARACTERISTICS

Specific gravity, 0.889

A.P.I. gravity, 27.7°

Percent sulphur, 0.17

Pour point, below 5°F.

Saybolt Universal viscosity at 77° F., 88 seconds.

Color, greenish black,

Saybolt Universal viscosity at 100° F., 63 seconds.

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Dry distillation		Barometer, 750 mm			First drop:	84° C. (183°F.)
Temperature,	Per-	Sum,	Specific	°A.P.I.	Cloud	Temperature,
	cent	per-	gravity	of cut	test,	°F.
Up to 50	--	--	--	--	--	Up to 122
50 - 75	--	--	--	--	--	122 - 167
75 - 100)	--	--	--	--	--	(167 - 212
100 - 125)	--	--	--	--	--	(212 - 257
125 - 150)	--	--	--	--	--	(257 - 302
150 - 175)	2.3	2.3	0.769	52.5	--	(302 - 347
175 - 200	2.7	5.0	.814	42.3	--	347 - 392
200 - 225	5.8	10.8	.841	36.8	--	392 - 437
225 - 250	9.3	20.1	.860	33.0	--	437 - 482
250 - 275	14.3	34.4	.875	30.2	--	482 - 527

Vacuum distillation at 40 mm

Up to 200	8.8	8.8	0.891	27.3	45	Below 5	Up to 392
200 - 225	11.0	19.8	.894	26.8	54	do.	392 - 437
225 - 250	8.4	28.2	.897	26.3	96	do.	437 - 482
250 - 275	7.5	35.7	.901	25.6	125	do.	482 - 527
275 - 300	7.6	43.3	.906	24.7	240	do.	527 - 572

Carbon residue of residuum, 2.9 percent Carbon residue of crude,
 0.6 percent

APPROXIMATE SUMMARY

	Percent	Specific gravity	°A.P.I.	Viscosity
Light gasoline	--	--	--	--
Total gasoline and naphtha	5.0	0.793	46.9	--
Kerosene distillate	--	--	--	--
Gas oil	39.4	.871	31.0	--
Nonviscous lubricating distillate	15.1	0.893-.897	27.0-26.3	50-100
Medium lubricating distillate	11.8	.897-.904	26.3-25.0	100-200
Viscous lubricating distillate	6.4	.904-.908	25.0-24.3	Above 200
Residuum	21.9	.927	21.1	--
Distillation loss	.4	--	--	--

R.I. 3253

Sample 33030

Waite Well no.1
6961-6979 feet.
Magnolia Petroleum Co.

Iowa field
Oligocene.

Louisiana
Calcasieu Parish
Sec. 12, 9 S. 7 W.

GENERAL CHARACTERISTICS

Specific gravity, 0.818

A.P.I. gravity, 41.5°

Percent sulphur, less than 0.1.

Pour point below 5° F.

Saybolt Universal viscosity at 77° F., 38 seconds.

Color, dark green.

Saybolt Universal viscosity at 100° F., 38 seconds.

DISTILLATION. BUREAU OF MINES HEMPEL METHOD

Dry distillation.		Barometer 757 mm			First drop: 31° C. (88° F.)		
Temperature, ° C.	Per- cent cut	Sum, per- cent	Specific gravity of cut	°A.P.I. of cut	Viscosity at 100° F.	Cloud test, ° F.	Temperature, °F.
Up to 50	--	--	--	--	--	--	Up to 122
50 - 75	2.8	2.8	0.674	78.4	--	--	122 - 167
75 - 100	4.7	7.5	.713	67.0	--	--	167 - 212
100 - 125	6.8	14.3	.743	58.9	--	--	212 - 257
125 - 150	6.6	20.9	.763	54.0	--	--	257 - 302
150 - 175	6.5	27.4	.777	50.6	--	--	302 - 347
175 - 200	6.8	34.2	.787	48.3	--	--	347 - 392
200 - 225	7.9	42.1	.799	45.6	--	--	392 - 437
225 - 250	9.3	51.4	.817	41.7	--	--	437 - 482
250 - 275	10.7	62.1	.835	38.0	--	--	482 - 527

Carbon residue of residuum, 3.1 percent. Carbon residue of crude, 0.3 percent.

APPROXIMATE SUMMARY

	Percent	Specific gravity	° A.P.I.	Viscosity
Light gasoline	7.5	0.698	71.2	—
Total gasoline and naphtha	34.2	.752	56.7	—
Kerosene distillate	17.2	.809	43.4	—
Gas oil	24.8	.846	35.8	—
Nonviscous lubricating distillate	8.8	0.859 ~ .882	33.2 ~ 28.9	50 ~ 100
Medium lubricating distillate	4.1	,882 ~ ,896	28.9 ~ 26.4	100 ~ 200
Viscous lubricating distillate	1.5	.896 ~ .902	26.4 ~ 25.4	Above 200
Residuum	9.3	.940	19.0	—
Distillation loss	.1	—	—	—

R.I. 3253

Sample 30390

Houssier-Latreille Well no. 8, Jennings field.
 7,139 - 7,435 feet.
 Yount Lee Oil Co.

Louisiana,
 Acadia Parish,
 Sec. 47, 9 S. 2 W.

GENERAL CHARACTERISTICS

Specific gravity, 0.847
 Percent sulphur, 0.15
 Saybolt Universal viscosity at 100° F., 41 seconds. Color, brownish black.

A.P.I. gravity, 35.6°
 Pour point, below 5° F.

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Dry distillation,		Barometer, 742 mm		First drop: 31° C. (88° F.)			
Temperature, ° C.	Per- cent cut	Sum, per- cent	Specific gravity of cut	° A.P.I. of cut	Viscosity at 100° F.	Cloud test, F.	Temperature, ° F.
Up to 50	0.5	0.5					(Up to 122
50 - 75	.8	1.3	0.713	67.0	--	--	(122 - 167
75 - 100	2.8	4.1					(167 - 212
100 - 125	4.9	9.0	.751	56.9	--	--	212 - 257
125 - 150	5.4	14.4	.771	52.0	--	--	257 - 302
150 - 175	5.9	20.3	.785	48.8	--	--	302 - 347
175 - 200	6.5	26.8	.797	46.0	--	--	347 - 392
200 - 225	7.5	34.3	.811	43.0	--	--	392 - 437
225 - 250	8.5	42.8	.830	39.0	--	--	437 - 482
250 - 275	10.1	52.9	.846	35.8	--	--	482 - 527

Vacuum distillation at 40 mm

Up to 200	5.0	5.0	0.863	32.5	41	5	Up to 392
200 - 225	7.7	12.7	.867	31.7	47	30	392 - 437
225 - 250	6.0	18.7	.877	29.9	62	50	437 - 482
250 - 275	5.0	23.7	.889	27.7	99	70	482 - 527
275 - 300	5.5	29.2	.901	25.6	210	99	527 - 572

Carbon residue of residuum, 5.9 percent. Carbon residue of crude, 1.1 percent.

APPROXIMATE SUMMARY

	Percent	Specific gravity	° A.P.I.	Viscosity
Light gasoline	4.1	0.713	67.0	--
Total gasoline and naphtha	26.8	.768	52.7	--
Kerosene distillate	7.5	.811	43.0	--
Gas oil	28.8	.848	35.4	--
Nonviscous lubricating distillate	11.1	0.869 - .889	31.3 - 27.7	50 - 100
Medium lubricating distillate	4.7	.889 - .900	27.7 - 25.7	100 - 200
Viscous lubricating distillate	3.2	.900 - .907	25.7 - 24.5	Above 200
Residuum	17.8	.946	18.1	--
Distillation loss	.1			

Sample 30392

Hoissiere-Latreille well no. 6, Jennings field.
 7,200 ~ 7,500 feet
 Yount-Lee Oil Co.

Louisiana
 Acadia Parish
 Sec. 47, 9 S. 2 W.

GENERAL CHARACTERISTICS

Specific gravity, 0.852.

Percent sulphur, 0.15.

Saybolt Universal viscosity at 100° F., 41 seconds. Color, brownish black.

A.P.I. gravity, 34.6°,
 Pour point, below 5° F.
 Color, brownish black.

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Dry distillation		Barometer, 743 mm			First drop: 73° C. (163° F.)		
Temperature, °C.	Per-cent cut	Sum-per cent	Specific gravity of cut	° A.P.I. of cut	Viscosity at 100° F.	Cloud test, ° F.	Temperature, ° F.
Up to 50	--	--	--	--	--	--	Up to 122
50 - 75	--	--	--	--	--	--	122 - 167
75 - 100	2.1	2.1	0.720	65.0	--	--	167 - 212
100 - 125	4.3	6.4	.752	56.7	--	--	212 - 257
125 - 150	5.0	11.4	.772	51.8	--	--	257 - 302
150 - 175	5.6	17.0	.786	48.5	--	--	302 - 347
175 - 200	6.8	23.8	.797	46.0	--	--	347 - 392
200 - 225	7.0	30.8	.810	43.2	--	--	392 - 437
225 - 250	8.6	39.4	.829	39.2	--	--	437 - 482
250 - 275	10.2	49.6	.848	35.4	--	--	482 - 527

Vacuum distillation at 40 mm

Up to 200	7.1	7.1	0.864	32.3	42	10	Up to 392
200 - 225	7.2	14.3	.868	31.3	47	30	392 - 437
225 - 250	6.2	20.5	.880	29.3	63	55	437 - 482
250 - 275	5.9	26.4	.892	27.1	105	70	482 - 527
275 - 300	5.3	31.7	.904	25.0	240	85	527 - 572

Carbon residue of residuum, 5.9 percent. Carbon residue of crude, 1.1 percent

APPROXIMATE SUMMARY

	Percent	Specific gravity	° A.P.I.	Viscosity
Light gasoline	2.1	0.720	65.0	--
Total gasoline and naphtha	23.8	.774	51.3	--
Kerosene distillate	7.0	.810	43.2	--
Gas oil	30.9	.850	35.0	--
Nonviscous lubricating distillate	10.7	0.870 - .890	31.1-27.5	50-100
Medium lubricating distillate	4.6	.890 - .900	27.5-25.7	100-200
Viscous lubricating distillate	4.3	.900 - .911	25.7 - 23.8	Above 200
Residuum	18.5	.946	18.1	--
Distillation loss	.2	--	--	--

R.I. 3253.

Sample 33035

State Land Wells 4 and 13. Lake Barre field.

Louisiana.

No. 4, 3,782 - 3,800 feet.

Miocene.

No. 13, 3,670 - 3,703 feet.

The Texas Co.

Terrebonne Parish.

GENERAL CHARACTERISTICS

Specific gravity, 0.846

A.P.I. gravity, 35.8°.

Percent sulphur, 0.39

Pour point, below 5° F.

Saybolt Universal viscosity at 77° F., 48 seconds. Color, greenish black.

Saybolt Universal viscosity at 100° F., 43 seconds.

DILSTILLATION, BUREAU OF MINES HEMPEL METHOD

Dry distillation		Barometer, 750 mm		First drop: 42° C. (103° F.)			
Temperature, ° C.	Per- cent cut	Sum, per- cent	Specific gravity of cut	° A.P.I. of cut	Viscosity at 100° F.	Cloud test ° F.	Temperature ° F.
Up to 50	--	--	--	--	--	--	Up to 122
50 - 75	--	--	--	--	--	--	122 - 167
75 - 100	5.2	5.2	0.685	75.1	--	--	167 - 212
100 - 125	5.4	10.6	.734	61.3	--	--	212 - 257
125 - 150	6.2	16.8	.759	54.9	--	--	257 - 302
150 - 175	5.5	22.3	.778	50.4	--	--	302 - 347
175 - 200	5.8	28.1	.795	46.5	--	--	347 - 392
200 - 225	8.2	36.3	.809	43.4	--	--	392 - 437
225 - 250	7.5	43.8	.823	40.4	--	--	437 - 482
250 - 275	8.9	52.7	.837	37.6	--	--	482 - 527

Vacuum distillation at 40 mm

Up to 200	3.3	3.3	0.860	33.0	42	Below 5	Up to 392
200 - 225	6.9	10.2	.866	31.9	49	15	392 - 437
225 - 250	6.2	16.4	.880	29.3	69	35	437 - 482
250 - 275	3.9	20.3	.893	27.0	120	50	482 - 527
275 - 300	7.5	27.8	.903	25.2	240	70	527 - 572

Carbon residue of residuum, 8.6 percent. Carbon residue of crude, 1.6 percent.

APPROXIMATE SUMMARY

	Percent	Specific gravity	° A.P.I.	Viscosity
Light gasoline	5.2	0.685	75.1	--
Total gasoline and naphtha	28.1	.752	56.7	--
Kerosene distillate	15.7	.816	41.9	--
Gas oil	16.0	.848	35.4	--
Nonviscous lubricating distillate	9.3	0.866 - .888	31.9 - 27.9	50 - 100
Medium lubricating distillate	5.7	.888 - .899	27.9 - 25.9	100 - 200
Viscous lubricating distillate	5.7	.899 - .909	25.9 - 24.2	Above 200
Residuum	18.4	.967	14.8	--
Distillation loss	1.1	--	--	--

Sample 33036

State Land wells nos. 5 and 9. Lake Barre field,
 No. 5, 3,804 - 3,827 feet. Miocene.
 No. 9, 3,805 - 3,849 feet.
 The Texas Co.

Louisiana.
 Terrebonne Parish.

GENERAL CHARACTERISTICS

Specific gravity, 0.884. A.P.I. gravity, 28.6°.
 Percent sulphur, 0.49. Pour point, below 5° F.
 Saybolt Universal viscosity at 77° F., 82 seconds. Color, greenish black.
 Saybolt Universal viscosity at 100° F., 55 seconds.

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Dry distillation		Barometer, 750 mm	First drop: 77° C. (171° F.)				
Temperature, ° C.	Per-cent cut	Sum, per-cent	Specific gravity of cut	° A.P.I.	Viscosity at 100° F.	Cloud test, ° F.	Temperature, ° F.
Up to 50	--	--	--	--	--	--	Up to 122
50 - 75	--	--	--	--	--	--	122 - 167
75 - 100	1.4	1.4	0.715	66.4	--	--	167 - 212
100 - 125	3.3	4.7	.743	58.9	--	--	212 - 257
125 - 150	4.9	9.6	.771	52.0	--	--	257 - 302
150 - 175	4.7	14.3	.789	47.8	--	--	302 - 347
175 - 200	5.9	20.2	.808	43.6	--	--	347 - 392
200 - 225	6.4	26.6	.826	39.8	--	--	392 - 437
225 - 250	7.5	34.1	.843	36.4	--	--	437 - 482
250 - 275	9.1	43.2	.860	33.0	--	--	482 - 527

Vacuum distillation at 40 mm

Up to 200	4.8	4.8	0.884	28.6	45	Below 5	Up to 392
200 - 225	6.7	11.5	.892	27.1	53	do,	392 - 437
225 - 250	6.3	17.8	.904	25.0	82	do,	437 - 482
250 - 275	4.7	22.5	.915	23.1	150	do.	482 - 527
275 - 300	6.8	29.3	.925	21.5	340	do.	527 - 572

Carbon residue of residuum, 8.0 percent. Carbon residue of crude, 2.2 percent.

APPROXIMATE SUMMARY

	Percent	Specific gravity	° A.P.I.	Viscosity
Light gasoline	1.4	0.715	66.4	--
Total gasoline and naphtha	20.2	.778	50.4	--
Kerosene distillate	--	--	--	--
Gas oil	29.1	.853	34.4	--
Nonviscous lubricating distillate	10.0	0.889 - .907	27.7 - 24.5	50 - 100
Medium lubricating distillate	5.6	.907 - .917	24.5 - 22.8	100 - 200
Viscous lubricating distillate	7.6	.917 - .931	22.8 - 20.5	Above 200
Residuum	27.3	.970	14.4	--
Distillation loss	.2	--	--	--

R.I. 3253

Sample 33038

Lake Pelto well no. 1.
1,250 ~ 1,391 feet
The Texas Co.

Lake Pelto field

Louisiana.
Terrebonne Parish.

GENERAL CHARACTERISTICS

Specific gravity, 0.952.

Percent sulphur, 0.53.

Saybolt Universal viscosity at 100° F., 540 seconds. Color, brownish black.

Saybolt Universal viscosity at 130° F., 220 seconds.

A.P.I. gravity, 17.1°

Pour point, below 5° F.

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Dry distillation		Barometer, 758 mm			First drop: 190° C. (374° F.)		
Temperature, ° C.	Per- cent cut	Sum, per- cent	Specific gravity of cut	° A.P.I. of cut	Viscosity at 100° F.	Cloud test ° F.	Temperature ° F.
Up to 50	--	--	--	--	--	--	Up to 122
50 - 75	--	--	--	--	--	--	122 - 167
75 - 100	--	--	--	--	--	--	167 - 212
100 - 125	--	--	--	--	--	--	212 - 257
125 - 150	--	--	--	--	--	--	257 - 302
150 - 175	--	--	--	--	--	--	302 - 347
175 - 200	0.9	0.9	0.813	42.6	--	--	347 - 392
200 - 225	3.9	4.8	.847	35.6	--	--	392 - 437
225 - 250	6.3	11.1	.867	31.7	--	--	437 - 482
250 - 275	9.5	20.6	.885	28.4	--	--	482 - 527

Vacuum distillation at 40 mm

Up to 200	6.4	6.4	0.911	23.8	50	Below 5	Up to 392
200 - 225	7.4	13.8	.921	22.1	69	do.	392 - 437
225 - 250	9.5	23.3	.937	19.5	135	do.	437 - 482
250 - 275	8.5	31.8	.948	17.8	310	do.	482 - 527
275 - 300	7.2	39.0	.960	15.9	Over 400	do.	527 - 572

Carbon residue of residuum, 10.9 percent. Carbon residue of crude, 4.2 percent.

APPROXIMATE SUMMARY

	Percent	Specific gravity	° A.P.I.	Viscosity
Light gasoline	--	--	--	--
Total gasoline and naphtha	0.9	0.813	42.6	--
Kerosene distillate	--	--	--	--
Gas oil	22.9	.877	29.9	--
Nonviscous lubricating distillate	10.9	0.911 - .928	23.8 - 21.0	50 - 100
Medium lubricating distillate	7.8	.928 - .941	21.0 - 18.9	100 - 200
Viscous lubricating distillate	17.1	.941 - .965	18.9 - 15.1	Above 200
Residuum	38.2	1.009	--	--
Distillation loss	2.2	--	--	--

Sample 33037

Leesville wells nos. 2 and 3. Leesville field.
 No. 2, 3,665 - 3,684 feet.
 No. 3, 3,664 - 3,681 feet.
 The Texas Co.

Louisiana.
 La Fourche Parish.
 Sec. 27, 21 S. 22 E.

GENERAL CHARACTERISTICS

Specific gravity, 0.886

Percent sulphur, 0.38

Saybolt Universal viscosity at 77° F., 110 seconds
 Saybolt Universal viscosity at 100° F., 75 seconds.

A.P.I. gravity, 28.2°
 Pour point, below 50°F.
 Color, greenish black.

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Dry distillation.		Barometer, 750 mm. First drop: 74° C. (165° F.)					
Temperature, ° C.	Per- cent cut	Sum, per- cent	Specific gravity of cut	$^{\circ}$ A.P.I. of cut	Viscosity at 100° F.	Cloud test °F.	Temperature ° F.
Up to 50	--	--	--	--	--	--	Up to 122
50 - 75	--	--	--	--	--	--	122 - 167
75 - 100	1.3	1.3	0.712	67.2	--	--	167 - 212
100 - 125	2.1	3.4	.742	59.2	--	--	212 - 257
125 - 150	3.0	6.4	.761	54.4	--	--	257 - 302
150 - 175	5.3	11.7	.787	48.3	--	--	302 - 347
175 - 200	4.1	15.8	.809	43.4	--	--	347 - 392
200 - 225	4.9	20.7	.822	40.6	--	--	392 - 437
225 - 250	7.3	28.0	.836	37.8	--	--	437 - 482
250 - 275	8.5	36.5	.856	33.8	--	--	482 - 527

Vacuum distillation at 40 mm

Up to 200	5.8	5.8	0.879	29.5	45	Below 5	Up to 392
200 - 225	7.3	13.1	.839	27.7	56	do,	392 - 437
225 - 250	7.5	20.6	.899	25.9	83	do,	437 - 482
250 - 275	6.8	27.4	.911	23.8	160	do,	482 - 527
275 - 300	6.5	33.9	.918	22.6	370	do,	527 - 572

Carbon residue of residuum, 6.1 percent. Carbon residue of crude, 1.8 percent.

APPROXIMATE SUMMARY

	Percent	Specific gravity	$^{\circ}$ A.P.I.	Viscosity
Light gasoline	1.3	0.712	67.2	--
Total gasoline and naphtha	15.8	.776	50.9	--
Kerosene distillate	4.9	.822	40.6	--
Gas oil	21.8	.856	.33.8	--
Nonviscous lubricating distillate	12.5	0.884 - .901	28.6 - 25.6	50 - 100
Medium lubricating distillate	6.8	.901 - .912	25.6 - 23.7	100 - 200
Viscous lubricating distillate	8.6	.912 - .921	23.7 - 22.1	Above 200
Residuum	29.4	.958	16.2	--
Distillation loss	.2	--	--	--

R.I. 3253

Sample 33026

Fee A-1, well A-1
2,975 - 2,981 feet
Magnolia Petroleum Co.

Lockport field.
Upper Miocene

Louisiana
Calcasieu Parish
Sec. 9, 10 S. 9 W.

GENERAL CHARACTERISTICS

Specific gravity, 0.911

A.P.I. gravity, 23.8°

Percent sulphur, 0.18

Pour point, below 5° F.

Saybolt Universal viscosity at 100° F., 110 seconds. Color, greenish black.
Saybolt Universal viscosity at 130° F., 67 seconds.

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Dry distillation		Barometer, 746 mm		First drop: 193° C. (379° F.)			
Temperature, ° C.	Per- cent cut	Sum, per- cent	Specific gravity of cut	° A.P.I. of cut	Viscosity at 100° F.	Cloud test, ° F.	Temperature, ° F.
Up to 50	--	--	--	--	--	--	Up to 122
50 - 75	--	--	--	--	--	--	122 - 167
75 - 100	--	--	--	--	--	--	167 - 212
100 - 125	--	--	--	--	--	--	212 - 257
125 - 150	--	--	--	--	--	--	257 - 302
150 - 175	--	--	--	--	--	--	302 - 347
175 - 200	--	--	--	--	--	--	347 - 392
200 - 225	5.1	5.1	0.848	35.4	--	--	392 - 437
225 - 250	7.9	13.0	.866	31.9	--	--	437 - 482
250 - 275	14.2	27.2	.874	30.4	--	--	452 - 527

Vacuum distillation at 40 mm

Up to 200	8.5	8.5	0.889	27.7	45	Below 5	Up to 392
200 - 225	11.1	19.6	.896	26.4	55	do,	392 - 437
225 - 250	9.1	28.7	.910	24.0	80	do,	437 - 482
250 - 275	7.9	36.6	.921	22.1	150	do,	482 - 527
275 - 300	8.5	45.1	.930	20.7	380	do,	527 - 572

Carbon residue of residuum, 14.5 percent. Carbon residue of crude, 1.2 percent.

APPROXIMATE SUMMARY

	Percent	Specific gravity	°A.P.I.	Viscosity
Light gasoline	--	--	--	--
Total gasoline and naphtha	--	--	--	--
Kerosene distillate	--	--	--	--
Gas oil	36.3	0.872	30.8	--
Nonviscous lubricating distillate	17.5	0.892 - .913	27.1 - 23.5	50 - 100
Medium lubricating distillate	7.8	.913 - .923	23.5 - 21.8	100 - 200
Viscous lubricating distillate	10.7	.923 - .935	21.8 - 19.8	Above 200
Residuum	27.5	.957	16.4	--
Distillation loss	.2	--	--	--

Sample 33024

Freesburg and Wolf well no. 4. Lockport field Louisiana
 3,362 - 3,370 feet Upper Miocene. Calcasieu Parish
 Magnolia Petroleum Co. Sec. 9, 10 S, 9 W.

GENERAL CHARACTERISTICS

Specific gravity, 0.912 A.P.I. gravity, 23.7°
 Percent sulphur, 0.19 Pour point, below 5°F.
 Saybolt Universal viscosity at 100° F., Color, greenish black
 105 seconds.
 Saybolt Universal viscosity at 130° F., 64 seconds.

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Dry distillation		Barometer, 745 mm	First drop: 205° C. (401° F.)				
Temperature, °C.	Percent cut	Sum, percent	Specific gravity of cut	°A.P.I. of cut	Viscosity at 100° F.	Cloud test, °F.	Temperature, °F.
Up to 50	--	--	--	--	--	--	Up to 122
50 - 75	--	--	--	--	--	--	122 - 167
75 - 100	--	--	--	--	--	--	167 - 212
100 - 125	--	--	--	--	--	--	212 - 257
125 - 150	--	--	--	--	--	--	257 - 302
150 - 175	--	--	--	--	--	--	302 - 347
175 - 200	--	--	--	--	--	--	347 - 392
200 - 225	4.1	4.1	0.838	37.4	--	--	392 - 437
225 - 250	8.7	12.8	.866	31.9	--	--	437 - 482
250 - 275	13.1	25.9	.877	29.9	--	--	482 - 527

Vacuum distillation at 40 mm

Up to 200	9.7	9.7	0.891	27.3	45	Below .5	Up to 392
200 - 225	12.5	22.2	.901	25.6	56	do,	392 - 437
225 - 250	8.8	31.0	.914	23.3	85	do,	437 - 482
250 - 275	7.7	38.7	.926	21.3	175	do.	482 - 527
275 - 300	7.9	46.6	.936	19.7	Over 400	do.	527 - 572

Carbon residue of residuum, 4.9 percent. Carbon residue of crude, 1.2 percent.

APPROXIMATE SUMMARY

	Percent	Specific gravity	° A.P.I.	Viscosity
Light gasoline	--	--	--	--
Total gasoline and naphtha	--	--	--	--
Kerosene distillate	--	--	--	--
Gas oil	35.9	0.874	30.4	--
Nonviscous lubricating distillate	18.0	0.896 - .916	26.4 - 23.0	50 - 100
Medium lubricating distillate	7.8	.916 - .927	23.0 - 21.1	100 - 200
Viscous lubricating distillate	10.8	.927 - .941	21.1 - 18.9	Above 200
Residuum	24.7	.959	16.0	--
Distillation loss	2.8	--	--	--

R.L. 3253

Sample 33028

Miller well no. 22
4,332 - 4,339 feet
Magnolia Petroleum Co.

Lockport field
Miocene

Louisiana
Calcasieu Parish
Sec. 9, 10 S. 9 W.

GENERAL CHARACTERISTICS

Specific gravity, 0.903

A.P.I. gravity, 25.2°

Percent sulphur, 0.18

Pour point, below 5° F.

Saybolt Universal viscosity at 77° F., 105 seconds Color, brownish green.

Saybolt Universal viscosity at 100° F., 69 seconds

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Dry distillation	Barometer, 746 mm			First drop: 174° C. (345° F.)			
Temperature, ° C.	Per-cent cut	Sum, per-cent	Specific gravity of cut	° A.P.I. of cut	Viscosity at 160° F.	Cloud test, ° F.	Temperature, ° F.
Up to 50	--	--	--	--	--	--	Up to 122
50 - 75	--	--	--	--	--	--	122 - 167
75 - 100	--	--	--	--	--	--	167 - 212
100 - 125	--	--	--	--	--	--	212 - 257
125 - 150	--	--	--	--	--	--	257 - 302
150 - 175	--	--	--	--	--	--	302 - 347
175 - 200	2.6	2.6	0.824	40.2	--	--	347 - 392
200 - 225	5.1	7.7	.848	35.4	--	--	392 - 437
225 - 250	9.9	17.6	.864	32.3	--	--	437 - 482
250 - 275	15.4	33.0	.876	30.0	--	--	482 - 527

Vacuum distillation at 40 mm

Up to 200	11.4	11.4	0.894	26.8	43	Below 5	Up to 392
200 - 225	11.4	22.8	.901	25.6	53	do.	392 - 437
225 - 250	8.9	31.7	.913	23.5	77	do.	437 - 482
250 - 275	7.3	39.0	.925	21.5	155	do.	482 - 527
275 - 300	6.7	45.7	.935	19.8	400	do.	527 - 572

Carbon residue of residuum, 3.8 percent. Carbon residue of crude, 0.8 percent.

APPROXIMATE SUMMARY

	Percent	Specific gravity	°A.P.I.	Viscosity
Light gasoline	--	--	--	--
Total gasoline and naphtha	2.6	0.824	40.2	--
Kerosene distillate	--	--	--	--
Gas oil	44.0	.876	30.0	--
Nonviscous lubricating distillate	16.1	0.899 - .916	25.9 - 23.0	50 - 100
Medium lubricating distillate	6.9	.916 - .927*	23.0 - 21.1	100 - 200
Viscous lubricating distillate	9.1	.927 - .940	21.1 - 19.0	Above 200
Residuum	20.4	.953	17.0	--
Distillation loss	.9	--	--	--

Sample 33029

Bordages well no. 5.
3,745-3,757 feet.
Magnolia Petroleum Co.

Lockport field
Miocene

Louisiana
Calcasieu Parish
Sec. 9, 10 S. 9 W.

GENERAL CHARACTERISTICS

Specific gravity, 0.906

A.P.I. gravity, 24.7°

Percent sulphur, 0.17

Pour point, below 50°F.

Saybolt Universal viscosity at 77°F., 130 seconds

Color, brownish green.

Saybolt Universal viscosity at 100°F., 80 seconds

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Dry distillation		Barometer, 757 mm.			First drop: 177°C. (351°F.)		
Temperature, °C.	Per- cent cut	Sum, per- cent	Specific gravity of cut	° A.P.I. of cut	Viscosity at 100°F.	Cloud test, °F.	Temperature, °F.
Up to 50	--	--	--	--	--	--	Up to 122
50 - 75	--	--	--	--	--	--	122 - 167
75 - 100	--	--	--	--	--	--	167 - 212
100 - 125	--	--	--	--	--	--	212 - 257
125 - 150	--	--	--	--	--	--	257 - 302
150 - 175	--	--	--	--	--	--	302 - 347
175 - 200	2.9	2.9	0.831	38.8	--	--	347 - 392
200 - 225	4.4	7.3	.849	35.2	--	--	392 - 437
225 - 250	10.2	17.5	.865	32.1	--	--	437 - 482
250 - 275	14.0	31.5	.876	30.0	--	--	482 - 527

Vacuum distillation at 40 mm

Up to 200	10.4	10.4	0.893	27.0	45	Below 5	Up to 392
200 - 225	11.4	21.8	.901	25.6	55	do.	392 - 437
225 - 250	8.4	30.2	.914	23.3	80	do.	437 - 482
250 - 275	7.1	37.3	.925	21.5	150	do.	482 - 527
275 - 300	9.4	46.7	.936	19.7	380	do.	527 - 572

Carbon residue of residuum, 4.0 percent. Carbon residue of crude, 0.8 percent.

APPROXIMATE SUMMARY

	Percent	Specific gravity	°A.P.I.	Viscosity
Light gasoline	--	--	--	--
Total gasoline and naphtha	--	--	--	--
Kerosene distillate	--	--	--	--
Gas oil	42.1	0.872	30.8	--
Nonviscous lubricating distillate	17.6	0.897-.917	26.3-22.8	50-100
Medium lubricating distillate	7.4	.917-.927	22.8-21.1	100-200
Viscous lubricating distillate	11.1	.927-.943	21.1-18.6	Above 200
Residuum	21.1	0.956	16.5	--
Distillation loss	0.7	--	--	--

Miller well no. 29
3,866 - 3,874 feet.
Magnolia Petroleum Co.

Loc'port field
Miocene

Louisiana
Calcasieu Parish
Sec. 9, 16 S. 9 W.

GENERAL CHARACTERISTICS

Specific gravity, 0.908

A.P.I. gravity, 24.3°

Percent sulphur, 0.20

Pour point, below 5°F.

Saybolt Universal viscosity at 77°F., 140 seconds

Color, brownish green.

Saybolt Universal viscosity at 100°F., 87 seconds

DISTILLATION, BUREAU OF MINES HELPEL METHOD

Dry distillation	Barometer, 746 mm.			First drop: 182° C. (360° F.)		
Temperature, °C.	Per- cent cut	Sum, cent of cut	Specific gravity of cut	"A.P.I."	Viscosity at 100°F.	Cloud test °F.
Up to 50						Up to 122
50 - 75						122 - 167
75 - 100						167 - 212
100 - 125						212 - 257
125 - 150						257 - 302
150 - 175						302 - 347
175 - 200	2.2	2.2	.829	39.2	--	347 - 392
200 - 225	5.1	7.3	.851	34.8	--	392 - 437
225 - 250	7.9	15.2	.866	31.9	--	437 - 482
250 - 275	13.9	29.1	.875	30.2	--	482 - 527

Vacuum distillation at 40 mm

Up to 200	11.1	11.1	.891	27.3	45	Below 5	Up to 392
200 - 225	12.7	23.3	.901	25.6	55	do.	392 - 437
225 - 250	7.8	31.6	.916	23.0	83	do.	437 - 482
250 - 275	7.3	38.9	.927	21.1	160	do.	482 - 527
275 - 300	9.0	47.3	.936	19.7	over 400	do.	527 - 572

Carbon residue of residuum, 4.5 percent. Carbon residue of crude, 1.0 percent

APPROXIMATE SUMMARY

	Percent	Specific gravity	°A.P.I.	Viscosity
Light gasoline	--	--	--	--
Total gasoline and naphtha	--	--	--	--
Kerosene distillate	--	--	--	--
Gas oil	40.5	0.872	30.8	--
Nonviscous lubricating distillate	18.7	0.896 - .918	26.4-22.6	50 - 100
Medium lubricating distillate	7.2	.918 - .928	22.6-21.0	100 - 200
Viscous lubricating distillate	11.3	.928 - .941	21.0-18.9	Above 200
Residuum	22.6	.957	16.4	--
Distillation loss	.4	--	--	--

Sample 33025

Miller well 16.
5,109 - 5,114 feet
Magnolia Petroleum Co.

Lockport field
Lower Miocene

Louisiana
Calcasieu Parish
Sec. 9, 10 S. 9 W.

GENERAL CHARACTERISTICS

Specific gravity, 0.888
Percent sulphur, 0.15
Saybolt Universal viscosity at 77° F., 62 seconds. Color, brownish green.
Saybolt Universal viscosity at 100° F., 50 seconds.

A.P.I. gravity, 27.9°
Pour point, below 5° F.

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Dry distillation		Barometer, 745 mm		First drop: 108° C. (226° F.)			
Temperature, ° C.	Per- cent cut	Sum, per- cent	Specific gravity of cut	° A.P.I. of cut	Viscosity at 100° F.	Cloud test, ° F.	Temperature, ° F.
Up to 50	--	--	--	--	--	--	Up to 122
50 - 75	--	--	--	--	--	--	122 - 167
75 - 100	--	--	--	--	--	--	167 - 212
100 - 125	0.8	0.8	0.773	51.6	--	--	212 - 257
125 - 150	2.3	3.1	.784	49.0	--	--	257 - 302
150 - 175	2.4	5.5	.813	42.6	--	--	302 - 347
175 - 200	4.3	9.8	.833	38.4	--	--	347 - 392
200 - 225	7.2	17.0	.850	35.0	--	--	392 - 437
225 - 250	11.5	28.5	.863	32.5	--	--	437 - 482
250 - 275	17.5	46.0	.875	30.2	--	--	482 - 527

Vacuum distillation at 40 mm

Up to 200	10.6	10.6	0.889	27.7	44	Below 5	Up to 392
200 - 225	10.5	21.1	.895	26.6	54	do.	392 - 437
225 - 250	7.1	28.2	.909	24.2	82	do.	437 - 482
250 - 275	5.7	33.9	.921	22.1	190	do.	482 - 527
275 - 300	6.7	40.6	.935	19.8	Over 400	do.	527 - 572

Carbon residue of residuum, 4.1 percent. Carbon residue of crude, 0.6 percent.

APPROXIMATE SUMMARY

	Percent	Specific gravity	°A.P.I.	Viscosity
Light gasoline	--	--	--	--
Total gasoline and naphtha	5.5	0.795	46.5	--
Kerosene distillate	--	--	--	--
Gas oil	52.1	0.869	31.3	--
Nonviscous lubricating distillate	14.1	0.892 - .911	27.1 - 23.8	50 - 100
Medium lubricating distillate	5.7	.911 - .922	23.8 - 22.0	100 - 200
Viscous lubricating distillate	9.2	.922 - .942	22.0 - 18.7	Above 200
Residuum	13.3	.955	16.7	--
Distillation loss	0.1	--	--	--

R.I. 3253

Sample 33023

Farquhar well A-5
6,473 - 6,482 feet
Magnolia Petroleum Co.

Lockport field
Oligocene

Louisiana
Calcasieu Parish
Sec. 8, 10 S. 9 W.

GENERAL CHARACTERISTICS

Specific gravity, 0.823

A.P.I. gravity, 40°

Percent sulphur, 0.10

 40°
Pour point below 5° F.Saybolt Universal viscosity at 77° F. 35 seconds. Color, greenSaybolt Universal viscosity at 100° F. 35 seconds.

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Dry distillation		Barometer, 736 mm	First drop: 50 °C. (122° F.)				
Temperature, ° C.	Per-cent cut	Sum, per-cent	Specific gravity of cut	° A.P.I. of cut	Viscosity at 100 F.	Cloud test ° F.	Temperature, ° F.
Up to 50	--	--	--	--	--	--	Up to 122
50 - 75	--	--	--	--	--	--	122 - 167
75 - 100	7.1	7.1	0.708	68.4	--	--	167 - 212
100 - 125	7.0	14.1	.753	56.4	--	--	212 - 257
125 - 150	6.9	21.0	.770	52.3	--	--	257 - 302
150 - 175	6.5	27.5	.782	49.5	--	--	302 - 347
175 - 200	6.5	34.0	.791	47.4	--	--	347 - 392
200 - 225	6.7	40.7	.804	44.5	--	--	392 - 437
225 - 250	8.9	49.6	.820	41.1	--	--	437 - 482
250 - 275	11.4	61.0	.838	37.4	--	--	482 - 527

Vacuum distillation at 40 mm

Up to 200	7.8	7.8	.855	34.0	41	20	Up to 392
200 - 225	6.7	14.5	.857	33.6	47	40	392 - 437
225 - 250	5.6	20.1	.867	31.7	63	60	437 - 482
250 - 275	4.5	24.6	.879	29.5	83	75	482 - 527
275 - 300	4.6	29.2	.890	27.5	200	95	527 - 572

Carbon residue of residuum, 2.5 percent. Carbon residue of crude, 0.2 percent.

APPROXIMATE SUMMARY

	Percent	Specific gravity	°A.P.I.	Viscosity
Light gasoline	7.1	0.708	68.4	--
Total gasoline and naphtha	34.0	.760	54.7	--
Kerosene distillate	15.6	.813	42.6	--
Gas oil	23.7	.848	35.4	--
Nonviscous lubricating distillate	10.7	0.859 - .880	33.2 - 29.3	50 - 100
Medium lubricating distillate	3.9	.880 - .890	29.3 - 27.5	100 - 200
Viscous lubricating distillate	2.3	.890 - .895	27.5 - 26.6	Above 200
Residuum	9.2	.936	19.7	--
Distillation loss	.6	--	--	--

Sample 33043

Botany Bay Lumber Co. wells 8 and 9, Port Barre field. Louisiana
 No. 8, 3,373 - 3,388 feet St. Landry Parish
 No. 9, 3,365 - 3,407 feet Sec. 4, 6 S. 5 E.
 The Texas Co.

GENERAL CHARACTERISTICS

Specific gravity, 0.833

A.P.I. gravity, 28.8°

Percent sulphur, 0.41

Pour point, below 5° F.

Saybolt Universal viscosity at 77° F., 75 seconds. Color, brownish green.

Saybolt Universal viscosity at 100° F., 60 seconds.

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Dry distillation	Barometer, 740 mm First drop: 85° C. (185° F.)						
Temperature, °C.	Per-cent cut	Sum, per-cent	Specific gravity of cut	°A.P.I. of cut	Viscosity at 100° F.	Cloud test ° F.	Temperature, ° F.
Up to 50	—	—	—	—	—	—	Up to 122
50 - 75	—	—	—	—	—	—	122 - 167
75 - 100	1.6	1.6	0.748	57.7	—	—	167 - 212
100 - 125	3.4	5.0	.758	55.2	—	—	212 - 257
125 - 150	2.6	7.6	.774	51.3	—	—	257 - 302
150 - 175	3.1	10.7	.794	46.7	—	—	302 - 347
175 - 200	4.3	15.0	.816	41.9	—	—	347 - 392
200 - 225	7.4	22.4	.836	37.8	—	—	392 - 437
225 - 250	6.2	28.6	.855	34.0	—	—	437 - 482
250 - 275	11.0	39.6	.867	31.7	—	—	482 - 527

Vacuum distillation at 40 mm

Vacuum distillation at 40 mm	Up to 200	6.1	6.1	0.884	28.6	44	Below 5	Up to 392
	200 - 225	8.9	15.0	.888	27.9	50	15	392 - 437
	225 - 250	7.6	22.6	.896	26.4	73	35	437 - 482
	250 - 275	7.2	29.8	.905	24.9	120	60	482 - 527
	275 - 300	7.4	37.2	.913	23.5	250	80	527 - 572

Carbon residue of residuum, 4.3 percent. Carbon residue of crude, 1.0 percent,

APPROXIMATE SUMMARY

	Percent	Specific gravity	° A.P.I.	Viscosity
Light gasoline	1.6	0.748	57.7	—
Total gasoline and naphtha	15.0	.784	49.0	—
Kerosene distillate	—	—	—	—
Gas oil	35.2	.864	32.3	—
Nonviscous lubricating distillate	12.5	0.883 - .901	27.9 - 25.6	50 - 100
Medium lubricating distillate	7.6	.901 - .910	25.6 - 24.0	100 - 200
Viscous lubricating distillate	6.5	.910 - .917	24.0 - 22.8	Above 200
Residuum	22.9	.951	17.3	—
Distillation loss	.3	—	—	—

R.I. 3253

Sample 33044

Wilson-Cochran well no. 2.
3,472 feet.
Gulf Refining Co.

Port Barre field Louisiana
Oligocene formation St. Landry Parish
Sec. 4, 6 S. 5 E.

GENERAL CHARACTERISTICS

Specific gravity, 0.893

A.P.I. gravity, 27.0°

Percent sulphur, 0.42

Pour point, below 5° F.

Saybolt Universal viscosity at 77° F., 93 seconds. Color, brownish green

Saybolt Universal viscosity at 100° F., 66 seconds.

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Dry distillation	Barometer, 739 mm			First drop: 86° C. (187° F.)			
Temperature, ° C.	Per- cent cut	Sum, per- cent	Specific gravity of cut	° A.P.I. of cut	Viscosity at 100° F.	Cloud test ° F.	Temperature ° F.
Up to 50	--	--	--	--	--	--	Up to 122
50 - 75	--	--	--	--	--	--	122 - 167
75 - 100	1.9	1.9	0.751	56.9	--	--	167 - 212
100 - 125	2.7	4.6	.757	55.4	--	--	212 - 257
125 - 150	2.0	6.6	.766	53.2	--	--	257 - 302
150 - 175	2.5	9.1	.784	49.0	--	--	302 - 347
175 - 200	3.1	12.2	.811	43.0	--	--	347 - 392
200 - 225	5.3	17.5	.835	38.0	--	--	392 - 437
225 - 250	7.0	24.5	.853	34.4	--	--	437 - 482
250 - 275	11.3	35.8	.866	31.9	--	--	482 - 527

Vacuum distillation at 40 mm

Up to 200	8.6	8.6	0.889	27.7	44	Below 5	Up to 392
200 - 225	9.1	17.7	.896	26.4	53	15	392 - 437
225 - 250	7.8	25.5	.906	24.7	77	30	437 - 482
250 - 275	7.1	32.6	.914	23.3	140	55	482 - 527
275 - 300	8.3	40.9	.924	21.6	340	75	527 - 572

Carbon residue of residuum, 5.6 percent. Carbon residue of crude, 1.3 percent

APPROXIMATE SUMMARY

	Percent	Specific gravity	° A.P.I.	Viscosity
Light gasoline	1.9	0.751	56.9	--
Total gasoline and naphtha	12.2	.777	50.6	--
Kerosene distillate	--	--	--	--
Gas oil	33.9	.865	32.1	--
Nonviscous lubricating distillate	14.0	0.893 - .909	27.0 - 24.2	50-100
Medium lubricating distillate	7.0	.909 - .917	24.2 - 22.8	100-200
Viscous lubricating distillate	9.6	.917 - .929	22.8 - 20.8	Above 200
Residuum	22.9	.967	14.8	--
Distillation loss	.4	--	--	--

Sample 33042

Botany Bay Lumber Co. well no. 2. Fort Barre field.
 3,626 - 3,638 feet.
 The Texas Co.

Louisiana
 St. Landry Parish
 Sec. 4, 6 S. 5 E.

GENERAL CHARACTERISTICS

Specific gravity, 0.925

A.P.I. gravity, 21.5°

Percent sulphur, 0.53

Pour point, below 5°F.

Saybolt Universal viscosity at 100°F., 230 seconds.

Color, greenish black

Saybolt Universal viscosity at 130°F., 115 seconds.

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Dry distillation

Barometer, 740 mm.

First drop: 83°C. (181°F.)

Temperature, °C.	Per-cent cut	Sum, per-cent	Specific gravity of cut	O.A.P.I. of cut	Viscosity at 100°F.	Cloud test, °F.	Temperature, °F.
Up to 50	--	--	--	--	--	--	Up to 122
50 - 75	--	--	--	--	--	--	122 - 167
75 - 100	0.4	0.4)					(167 - 212
100 - 125	.3	.7)					(212 - 257
125 - 150	.3	1.0)	0.803	44.7	--	--	(257 - 302
150 - 175	.7	1.7)					(302 - 347
175 - 200	2.5	4.2)					(347 - 392
200 - 225	3.2	7.4	.842	36.6	--	--	392 - 437
225 - 250	6.3	13.7	.861	32.8	--	--	437 - 482
250 - 275	9.5	23.2	.874	30.4	--	--	482 - 527

Vacuum distillation at 40 mm

Up to 200	7.8	7.8	0.894	26.8	45	Below 5	Up to 392
200 - 225	9.6	17.4	.904	25.0	57	do.	392 - 437
225 - 250	9.2	26.6	.914	23.3	93	do.	437 - 482
250 - 275	7.9	34.5	.927	21.1	200	do.	482 - 527
275 - 300	7.7	42.2	.937	19.5	over 400	do.	527 - 572

Carbon residue of residuum, 7.9 percent. Carbon residue of crude, 2.6 percent.

APPROXIMATE SUMMARY

	Percent	Specific gravity	O.A.P.I.	Viscosity
Light gasoline	--	--	--	--
Total gasoline and naphtha	4.2	0.803	44.7	--
Kerosene distillate	--	--	--	--
Gas oil	26.6	.873	30.6	--
Nonviscous lubricating distillate	15.0	0.898-.915	26.1-23.1	50-100
Medium lubricating distillate	8.0	.915-.927	23.1-21.1	100-200
Viscous lubricating distillate	11.6	.927-.941	21.1-18.9	Above 200
Residuum	33.4	.986	12.0	--
Distillation loss	1.2	--	--	--

R.I. 3253

Sample 33040

United Lands wells nos. 12 and 18. Sorrento field Louisiana.
 No. 12, 1,623 - 1,632 feet. Cap Rock. Ascension Parish.
 No. 18, 1,612 - 1,615 feet. Sec. 15, 10 S. 4 E., St. Helena.
 Union Sulphur Co.

GENERAL CHARACTERISTICS

Specific gravity, 0.897 A.P.I. gravity, 26.3°
 Percent sulphur, 0.45 Pour point, below 50°F.
 Saybolt Universal viscosity at 77°F., 120 seconds. Color, dark green.
 Saybolt Universal viscosity at 100°F., 78 seconds.

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Dry distillation Barometer, 742 mm. First drop: 164°C. (327°F.)

Temperature, °C.	Per- cent cut	Sum, per- cent	Specific gravity of cut	°A.P.I. of cut	Viscosity at 100°F.	Cloud test, °F.	Temperature, °F.
Up to 50	--	--	--	--	--	--	Up to 122
50 - 75	--	--	--	--	--	--	122 - 167
75 - 100	--	--	--	--	--	--	167 - 212
100 - 125	--	--	--	--	--	--	212 - 257
125 - 150	--	--	--	--	--	--	257 - 302
150 - 175	0.8	0.8)	0.812	42.8	--	--	(302 - 347
175 - 200	2.9	3.7)			--	--	(347 - 392
200 - 225	4.9	8.6	.840	37.0	--	--	392 - 437
225 - 250	8.9	17.5	.856	33.8	--	--	437 - 482
250 - 275	12.8	30.3	.871	31.0	--	--	482 - 527

Vacuum distillation at 40 mm

Up to 200	9.4	9.4	0.889	27.7	46	Below 5	Up to 392
200 - 225	12.4	21.8	.895	26.6	57	do.	392 - 437
225 - 250	9.7	31.5	.905	24.9	85	do.	437 - 482
250 - 275	8.5	40.0	.913	23.5	160	do.	482 - 527
275 - 300	8.8	48.8	.921	22.1	380	do.	527 - 572

Carbon residue of residuum, 3.5 percent. Carbon residue of crude, 0.7 percent.

APPROXIMATE SUMMARY

	Percent	Specific gravity	°A.P.I.	Viscosity
Light gasoline	--	--	--	--
Total gasoline and naphtha	3.7	0.812	42.8	--
Kerosene distillate	--	--	--	--
Gas oil	35.2	.867	31.7	--
Nonviscous lubricating distillate	19.9	0.891-.907	27.3-24.5	50-100
Medium lubricating distillate	8.8	.907-.914	24.5-23.3	100-200
Viscous lubricating distillate	11.5	.914-.925	23.3-21.5	Above 200
Residuum	20.5	.942	18.7	--
Distillation loss	.4	--	--	--

Sample 33041

United Lands well no. 19.
4,346 - 4,874 feet
Union Sulphur Co.

Sorrento field Louisiana
Ascension Parish
Sec. 15, 10 S. 4 E., St. Helena.

GENERAL CHARACTERISTICS

Specific gravity, 0.869 A.P.I. gravity, 31.3°
Percent sulphur, 0.21 Pour point, below 5°F.
Saybolt Universal viscosity at 77°F., 77 seconds. Color, dark green.
Saybolt Universal viscosity at 100°F., 58 seconds.

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Dry distillation		Barometer, 740 mm.			First drop: 120°C. (248°F.)		
Temperature, °C.	Per- cent cut	Sum, per- cent	Specific gravity of cut	°A.P.I. of cut	Viscosity at 100°F.	Cloud test, °F.	Temperature, °F.
Up to 50	--	--	--	--	--	--	Up to 122
50 - 75	--	--	--	--	--	--	122 - 167
75 - 100	--	--	--	--	--	--	167 - 212
100 - 125	--	--	--	--	--	--	212 - 257
125 - 150	1.3	1.3)	0.777	50.6	--	--	(257 - 302
150 - 175	1.7	3.0)	.809	43.4	--	--	(302 - 347
175 - 200	2.6	5.6	.829	39.2	--	--	347 - 392
200 - 225	3.8	9.4	.840	37.0	--	--	392 - 437
225 - 250	7.3	16.7	.840	37.0	--	--	437 - 482
250 - 275	12.5	29.2	.847	35.6	--	--	482 - 527

Vacuum distillation at 40 mm

Up to 200	11.0	11.0	0.858	33.4	42	Below 5	Up to 392
200 - 225	14.2	25.2	.862	32.7	48	15	392 - 437
225 - 250	8.9	34.1	.872	30.8	65	40	437 - 482
250 - 275	8.7	42.8	.881	29.1	97	55	482 - 527
275 - 300	8.8	51.6	.892	27.1	185	75	527 - 572

Carbon residue of residuum, 3.2 percent. Carbon residue of crude, 0.6 percent.

APPROXIMATE SUMMARY

	Percent	Specific gravity	°A.P.I.	Viscosity
Light gasoline	--	--	--	--
Total gasoline and naphtha	5.6	0.792	47.2	--
Kerosene distillate	--	--	--	--
Gas oil	43.1	.850	35.0	--
Nonviscous lubricating distillate	19.3	0.863-.881	32.5-29.1	50-100
Medium lubricating distillate	9.9	.881-.894	29.1-26.8	100-200
Viscous lubricating distillate	2.9	.894-.897	26.8-26.3	Above 200
Residuum	19.1	.929	20.8	--
Distillation loss	.1	--	--	--

R.I. 3253

Sample 33032

Fee well no. 741
3,101 - 3,119 feet
Union Sulphur Co.

Sulphur field

Louisiana
Calcasieu Parish
Sec. 9 S. 10 W.

GENERAL CHARACTERISTICS

Specific gravity, 0.925

A.P.I. gravity, 21.5°

Percent sulphur, 0.42

Pour point below 5°F.

Saybolt Universal viscosity at 100°F., 350 seconds.

Color, brownish black.

Saybolt Universal viscosity at 130°F., 175 seconds.

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Dry distillation.

Barometer, 739 mm.

First drop: 135°C. (275°F.)

Temperature, °C.	Per- cent cut	Sum, per- cent	Specific gravity of cut	°A.P.I. of cut	Viscosity at 100°F.	Cloud test, °F.	Temperature, °F.
Up to 50	--	--	--	--	--	--	Up to 122
50 - 75	--	--	--	--	--	--	122 - 167
75 - 100	--	--	--	--	--	--	167 - 212
100 - 125	--	--	--	--	--	--	212 - 257
125 - 150	--	--	--	--	--	--	257 - 302
150 - 175	--	--	--	--	--	--	302 - 347
175 - 200	2.9	2.9	0.812	42.8	--	--	347 - 392
200 - 225	2.9	5.8	.841	36.8	--	--	392 - 437
225 - 250	5.3	11.1	.857	33.6	--	--	437 - 482
250 - 275	9.1	20.2	.871	31.0	--	--	482 - 527

Vacuum distillation at 40 mm

Up to 200	5.1	5.1	0.889	27.7	45	Below 5	Up to 392
200 - 225	9.1	14.2	.895	26.6	55	do.	392 - 437
225 - 250	8.2	22.4	.905	24.9	83	do.	437 - 482
250 - 275	8.6	31.0	.918	22.6	180	do.	482 - 527
275 - 300	10.0	41.0	.929	20.8	over 400	do.	527 - 572

Carbon residue of residuum, 11.7 percent. Carbon residue of crude, 4.4 percent.

APPROXIMATE SUMMARY

	Percent	Specific gravity	°A.P.I.	Viscosity
Light gasoline	--	--	--	--
Total gasoline and naphtha	2.9	0.812	42.8	--
Kerosene distillate	--	--	--	--
Gas oil	23.5	.869	31.3	--
Nonviscous lubricating distillate	13.6	0.892-.907	27.1-24.5	50-100
Medium lubricating distillate	7.8	.907-.919	24.5-22.5	100-200
Viscous lubricating distillate	13.4	.919-.935	22.5-19.8	Above 200
Residuum	37.2	.982	12.6	--
Distillation loss	1.6	--	--	--

R.I. 3253

Sample 33031

Fee well no. 730
5,650 - 5,683 feet.
Union Sulphur Co.

Sulphur field
Oligocene

Louisiana
Calcasieu Parish
Sec. 29, 9 S. 10 W.

GENERAL CHARACTERISTICS

Specific gravity, 0.926

Percent sulphur, 0.42

Saybolt Universal viscosity at 100°F., 390 seconds.

Saybolt Universal viscosity at 130°F., 185 seconds.

A.P.I. gravity, 21.3°

Pour point below 50°F.

Color, brownish black.

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Dry distillation.

Barometer, 739 mm.

First drop: 170°C. (338°F.)

Temperature, °C.	Per- cent cut	Sum, per- cent	Specific gravity of cut	O.A.P.I. of cut	Viscosity at 100°F.	Cloud test, °F.	Temperature, F.
Up to 50	--	--	--	--	--	--	Up to 122
50 - 75	--	--	--	--	--	--	122 - 167
75 - 100	--	--	--	--	--	--	167 - 212
100 - 125	--	--	--	--	--	--	212 - 257
125 - 150	--	--	--	--	--	--	257 - 302
150 - 175	--	--	--	--	--	--	302 - 347
175 - 200	2.4	2.4	0.816	41.9	--	--	347 - 392
200 - 225	3.1	5.5	.844	36.2	--	--	392 - 437
225 - 250	4.8	10.3	.861	32.8	--	--	437 - 482
250 - 275	9.0	19.3	.876	30.0	--	--	482 - 527

Vacuum distillation at 40 mm

Up to 200	4.0	4.0	0.889	27.7	45	Below 5	Up to 392
200 - 225	7.3	11.3	.894	26.8	53	do.	392 - 437
225 - 250	7.4	18.7	.903	25.2	77	do.	437 - 482
250 - 275	6.1	24.8	.912	23.7	140	do.	482 - 527
275 - 300	7.1	31.9	.920	22.3	300	do.	527 - 572

Carbon residue of residuum, 9.2 percent. Carbon residue of crude, 4.3 percent.

APPROXIMATE SUMMARY

	Percent	Specific gravity	O.A.P.I.	Viscosity
Light gasoline	--	--	--	--
Total gasoline and naphtha	2.4	0.816	41.9	--
Kerosene distillate	--	--	--	--
Gas oil	22.4	.872	30.8	--
Nonviscous lubricating distillate	12.0	0.892-.906	27.1-24.7	50-100
Medium lubricating distillate	6.7	.906-.915	24.7-23.1	100-200
Viscous lubricating distillate	7.7	.915-.924	23.1-21.6	Above 200
Residuum	46.8	.971	14.2	--
Distillation loss	2.0	--	--	--

R.I. 3253

Sample 30389

Yount-Lee well no. 4.
5,924 feet.
Pure Oil Co.

Sweet Lake field
5,800-foot sand.

Louisiana
Cameron Parish
Sec. 12, 13 S. 8 W.

GENERAL CHARACTERISTICS

Specific gravity, 0.884

Percent sulphur, 0.15

Saybolt Universal viscosity at 100°F., 63 seconds.

A.P.I. gravity 28.8°

Pour point below 5°F.

Color brownish black

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Dry distillation. Barometer, 742 mm. First drop: 122°C. (252°F.)

Temperature, cc.	Per- cent cut	Sum, per- cent	Specific gravity of cut	oA.P.I. of cut	Viscosity at 100°F.	Cloud test, °F.	Temperature, °F.
Up to 50	--	--	--	--	--	--	Up to 122
50 - 75	--	--	--	--	--	--	122 - 167
75 - 100	--	--	--	--	--	--	167 - 212
100 - 125	--	--	--	--	--	--	212 - 257
125 - 150	0.7	0.7	--	--	--	--	(257 - 302
150 - 175	1.0	1.7	0.789	47.8	--	--	(302 - 347
175 - 200	2.0	3.7	--	--	--	--	(347 - 392
200 - 225	4.7	8.4	.838	37.4	--	--	392 - 437
225 - 250	9.2	17.6	.854	34.2	--	--	437 - 482
250 - 275	12.9	30.5	.866	31.9	--	--	482 - 527

Vacuum distillation at 40 mm

Up to 200	12.1	12.1	0.879	29.5	44	Below 5	Up to 392
200 - 225	11.4	23.5	.883	28.8	52	5	392 - 437
225 - 250	9.9	33.4	.891	27.3	72	20	437 - 482
250 - 275	8.2	41.6	.899	25.9	125	45	482 - 527
275 - 300	8.0	49.6	.905	24.9	220	65	527 - 572

Carbon residue of residuum, 3.4 percent. Carbon residue of crude, 0.7 percent.

APPROXIMATE SUMMARY

	Percent	Specific gravity	oA.P.I.	Viscosity
Light gasoline	--	--	--	--
Total gasoline and naphtha	3.7	0.789	47.8	--
Kerosene distillate	--	--	--	--
Gas oil	41.8	.865	32.1	--
Nonviscous lubricating distillate	18.3	0.882-.895	28.9-26.6	50-100
Medium lubricating distillate	10.6	.895-.904	26.6-25.0	100-200
Viscous lubricating distillate	5.7	.904-.908	25.0-24.3	Above 200
Residuum	19.7	.931	20.5	--
Distillation loss	.2	--	--	--

Sample 33033

Fee well no. 1.
1,230 (?) feet.
Younte-Lee Oil Co.

Welsh field.

Louisiana
Jefferson Davis Parish
Sec. __, 9 S. 5 W.

GENERAL CHARACTERISTICS

Specific gravity, 0.924

Percent sulphur, 0.24

Saybolt Universal viscosity at 100°F., 280 seconds.

Saybolt Universal viscosity at 130°F., 130 seconds.

A.P.I. gravity, 21.60

Pour point below 50°F.

Color, greenish black.

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Dry distillation.

Barometer, 748 mm. First drop: 200°C. (392°F.)

Temperature, °C.	Per- cent cut	Sum, per- cent	Specific gravity of cut	O.A.P.I. of cut	Viscosity at 100°F.	Cloud test, °F.	Temperature, °F.
Up to 50	--	--	--	--	--	--	Up to 122
50 - 75	--	--	--	--	--	--	122 - 167
75 - 100	--	--	--	--	--	--	167 - 212
100 - 125	--	--	--	--	--	--	212 - 257
125 - 150	--	--	--	--	--	--	257 - 302
150 - 175	--	--	--	--	--	--	302 - 347
175 - 200	--	--	--	--	--	--	347 - 392
200 - 225	2.3	2.3	0.834	38.2	--	--	392 - 437
225 - 250	5.1	7.4	.865	32.1	--	--	437 - 482
250 - 275	9.2	16.6	.876	30.0	--	--	482 - 527

Vacuum distillation at 40 mm.

Up to 200	8.8	8.8	0.893	27.0	47	Below 5	Up to 392
200 - 225	11.0	19.8	.901	25.6	63	do.	392 - 437
225 - 250	10.0	29.8	.911	23.8	105	do.	437 - 482
250 - 275	9.1	38.9	.924	21.6	240	do.	482 - 527
275 - 300	12.2	51.1	.938	19.4	Over 400	do.	527 - 572

Carbon residue of residuum, 7.0 percent. Carbon residue of crude, 2.1 percent.

APPROXIMATE SUMMARY

	Percent	Specific gravity	O.A.P.I.	Viscosity
Light gasoline	--	--	--	--
Total gasoline and naphtha	--	--	--	--
Kerosene distillate	--	--	--	--
Gas oil	22.9	0.874	30.4	--
Nonviscous lubricating distillate	17.3	0.895-.910	26.6-24.0	50-100
Medium lubricating distillate	7.9	.910-.920	24.0-22.3	100-200
Viscous lubricating distillate	19.6	.920-.946	22.3-18.1	Above 200
Residuum	29.9	.967	14.8	--
Distillation loss	2.4	--	--	--

R.I. 3253

Sample 32372

Wilbert well no. 4.
5,165-5,175 feet.
Shell Petroleum Corporation.

White Castle field.
Basal Miocene.

Louisiana.
Iberville Parish.
Sec. 1, 18 S. 12 E.

GENERAL CHARACTERISTICS

Specific gravity, 0.909

A.P.I. gravity, 24.2°

Percent sulphur, 0.30

Pour point below 50°F.

Saybolt Universal viscosity at 100°F., 130 seconds.

Color, greenish black.

Saybolt Universal viscosity at 130°F., 78 seconds.

DISTILLATION, BUREAU OF MINES HEMPEL METHOD

Dry distillation.	Barometer, 741 mm.	First drop: 90°C. (194°F.)
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Dry distillation.	Barometer, 741 mm.	First drop: 90°C. (194°F.)					
Up to 50	--	--	--	--	--	--	Up to 122
50 - 75	--	--	--	--	--	--	122 - 167
75 - 100	0.2	0.2)					(167 - 212
100 - 125	.5	.7)					(212 - 257
125 - 150	.4	1.1)	0.794	46.7	--	--	(257 - 302
150 - 175	2.1	3.2)					(302 - 347
175 - 200	2.9	6.1	.823	40.4	--	--	347 - 392
200 - 225	4.6	10.7	.842	36.6	--	--	392 - 437
225 - 250	6.4	17.1	.856	33.8	--	--	437 - 482
250 - 275	9.9	27.0	.872	30.8	--	--	482 - 527

Vacuum distillation at 40 mm

Up to 200	7.1	7.1	0.890	27.5	44	Below 5	Up to 392
200 - 225	7.4	14.5	.896	26.4	54	do.	392 - 437
225 - 250	8.3	22.8	.906	24.7	83	do.	437 - 482
250 - 275	5.6	28.4	.916	23.0	155	do.	482 - 527
275 - 300	8.3	36.7	.924	21.6	300	do.	527 - 572

Carbon residue of residuum, 7.0 percent. Carbon residue of crude, 2.5 percent.

APPROXIMATE SUMMARY

	Percent	Specific gravity	oA.P.I.	Viscosity
Light gasoline	0.2	--	--	--
Total gasoline and naphtha	6.1	0.808	43.6	--
Kerosene distillate	--	--	--	--
Gas oil	29.0	.869	31.3	--
Nonviscous lubricating distillate	12.2	0.893-.908	27.0-24.3	50-100
Medium lubricating distillate	7.6	.908-.918	24.3-22.6	100-200
Viscous lubricating distillate	8.9	.918-.929	22.6-20.8	Above 200
Residuum	36.0	.959	16.0	--
Distillation loss	1.3	--	--	--