

MUD DATA

Depth Interval	Weight psi/1000 ft	Viscosity sec. MF	Water loss cc API	FANN Properties			pH	Solids %	Cl ppm	Ca/M ppm
				Plastic viscosity	Yield point	Gels 0/10 min				
0- 555		Seawater								
555- 1492	520	42	N.C.	12	18	8/10	8	8	18000	2400
1492- 3000	530	44	7.0	16	14	8/12	11	10	15000	1500
3000- 4500	625	45	8.0	16	11	4/9	12	17	16000	1400
4500- 4900	710	46	6.0	20	15	6/12	12	20	17000	1500
4900- 5220	725	44	5.6	18	18	6/12	11	23	17000	2000
5220- 7500	710	55	10.0	15	20	5/20	10	20	17000	170
7500-13862	745	53	12.5	20	36	6/32	8	25	21000	800
13862-15818	840	65	4.9	40	30	6/29	9.5	33	15000	200

Chemicals	Unit	Consumption	Unit cost (kr)	Total cost (kr)
Barytes	S.T.	2745	403.00	1.106.235,00
Saltgel	S.T.	45	890.50	40.072,50
Saltgel	(80 lb) sx	300	40.63	12.189,00
Caustic Soda	(5 gal) cans	350	93.15	32.602,50
Caustic Soda	(50 kg) sx	108	71.63	7.736,04
Drispac	(50 lb) sx	146	365.60	53.377,60
Unical	(50 lb) sx	2870	63.40	181.958,00
Milben	(50 kg) sx	1580	26.30	41.554,00
LD-7	(5 gal) dr	6	357.50	2.145,00
Flosal	(50 lb) sx	135	75.40	10.179,00
Surfcote	(55 gal) dr	2	946.00	1.892,00
D.D. -detergent	(55 gal) dr	19	1657.50	31.492,50
Pipe free/-lax	(55 gal) dr	11	2762.50	30.387,50
Shalock	(50 lb) sx	1112	113.75	126.490,00
Sod. bicarb.	(50 kg) sx	127	37.57	4.771,39
CMC-LV	(25 kg) sx	252	93.15	23.473,80
Al-Stearate	(25 kg) sx	19	138.84	2.637,96
Zeogel	(50 lb) sx	332	24.21	8.037,72
Milfiber	(40 lb) sx	70	42.90	3.003,00
Mica	(56 lb) sx	360	42.97	15.469,00
Plug	(50 lb) sx	295	44.72	13.192,40
Lubrifiilm	(50 lb) sx	222	260.00	57.720,00
Ligcon.	(50 lb) sx	487	65.50	31.898,50
Carbofree	(50 lb) sx	32	341.25	10.920,00
Kwick Seal	(40 lb) sx	40	104.00	4.160,00
Milflake	(50 lb) sx	32	55.45	1.774,40
Starch	(50 lb) sx	40	62.08	2.483,20
Salt	(50 kg) sx	50	38.74	1.937,00
Dextrid	(50 lb) sx	30	127.73	3.831,90
Stabil hole	(50 lb) sx	80	55.52	4.441,60
TOTAL				1.868.062,51

Depth of well	15818 ft	Total cost chemicals	1.868.062,51
Days on well	139	Mud engineer	88.400,00
Mud cost/ft	kr. 130,76	Rent shakers	42.997,50
Mud cost/day	kr 14.880,-	Rent centrifuges	68.835,00
Mud cost/bbl	kr 176,45	Total	Kr 2.068.295,01

ANALYSIS OF HYDROCARBONS

The below listed samples, taken during the production test of Albuskjell I (1/6-1), have been analysed:

<u>Number</u>	<u>Date</u>	<u>Time</u>	<u>Type</u>	<u>Interval</u>	<u>Content</u>	<u>Remarks</u>
1 D	2/11/72	1440-1600	Surface	12535-12575	± 2 ltrs.	Emulsion, THP 30/130 psi, Temp. 57°F
1	2/11/72	1445-1510	Surface	"	} 20 ltrs.	Gas
1 A	2/11/72	1445-1510	Surface	"		Liquid
8	7/11/72	1545	Surface	11977-11987 11962-11967 11880-11920	± 2 ltrs.	Emulsion, THP 138 psi, Temp. 82°F
3	7/11/72	1600	Surface	"	45 gall.	oil/water
	12/11/72	1615	Surface	10730-10760	± 2 ltrs.	Oil, THP 1230 psi, Temp. 152°F
13	13/11/72	1500-1600	Surface	"	45 gall.	oil
5	14/11/72	1015	Surface	"		gas/oil
9	19/11/72	1415	Surface	10344-10364		gas/oil
18	20/11/72	1115	Surface	"	45 gall.	oil
19 D	20/11/72	1115	Surface	"	± 2 ltrs.	oil

For the results of the tests see the attached laboratory analysis. From sample no. 5 a PVT analysis was made as described in Technical Service Report RKTR. 0063.73 from March 1973.

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Geochemical analysis of samples 1d, 8, 11 and 19d gave the following results:

	<u>Sample 1d</u>	<u>Sample 8</u>	<u>Sample 11</u>	<u>Sample 19d</u>
Density, g/ml	0.81	0.78	0.79	0.78
Sulphur, o/o w	0.27	0.52	0.18	0.27
Vanadium porphyrins, ppm	below 60	below 12	below 0.1	below 0.5
Nickel porphyrins, ppm	below 45	below 7	below 0.1	below 0.3
Normal Alkanes, rp	2.3	2.6	3.2	5.6
Normal Alkanes, r29	1.1	0.9	0.9	0.9
Pristane/Phytane	1.7	1.5	1.2	1.7
Isoprenoid index	0.8	1.8	3.6	0.9
Pristane/normal c17	0.59	0.43	0.51	0.47
Phytane/normal c18	0.45	0.31	0.42	0.37

For analysis of gasoline fractions, see tables 1 to 4.

For distribution of c7 hydrocarbons, see figures 1 to 3.

For distribution of c15 naphthenic-ring compounds, see figure 4.

For distribution of c14 plus alkanes, see tables 5 to 8 and figure 5.

The light fluids, which are low in sulphur and porphyrins, obtained from intervals between 10364' and 12575', are probably late-expulsion products.

According to the distribution of their c7 paraffins, see figure 1, the oil samples have not been bacterially transformed.

On basis of the distributions of their c7 saturates (figure 2), c7 hydrocarbons (figure 3) and c15 naphthenic-ring compounds (figure 5), the four fluid samples do not differ markedly from other mid north sea oils, including the Ekofisk oil, cf. rktr. 0141.72 (ep43962) of sep. 1972. Thus various oils may have derived from similar types of source rock.

If the fluid samples can be considered late-expulsion products, the c14-plus normal-alkane distributions and the associated rp values may indicate some contribution from terrestrial plant matter.

TABLE 1

GASCHROMATOGRAPHIC ANALYSIS OF HYDROCARBONS BOILING BELOW 114 DEGR C

SAMPLE OMC 2120 NORWAY 1/6-1 SAMPLE 1D

COMPONENT	COUNTS	PERCENT WEIGHT
METHANE	0.000	0.00
ETHANE	1.875	0.04
PROPANE	0.744	0.01
ISOBUTANE	7.847	0.18
N-BUTANE	75.060	1.80
ISOPENTANE	164.123	3.89
N-PENTANE	271.858	6.45
2,2-DIMETHYLBUTANE	8.920	0.21
CYCLOPENTANE	37.559	0.89
2,3-DIMETHYLBUTANE	23.859	0.56
2-METHYLPENTANE	212.085	5.03
3-METHYLPENTANE	133.371	3.16
N-HEXANE	500.913	11.88
METHYLCYCLOPENTANE	180.562	4.28
2,2-DIMETHYLPENTANE	7.951	0.18
BENZENE	109.010	2.58
2,4-DIMETHYLPENTANE	32.245	0.76
2,2,3-TRIMETHYLBUTANE	0.372	0.00
CYCLOHEXANE	236.265	5.60
3,3-DIMETHYLPENTANE	5.727	0.13
1,1-DIMETHYLCYCLOPENTANE	25.540	0.60
2-METHYLHEXANE	176.720	4.19
2,3-DIMETHYLPENTANE	45.782	1.08
1-CIS-3-DIMETHYLCYCLOPENTANE	17.776	0.42
3-METHYLHEXANE	216.089	5.12
1-TRANS-3-DIMETHYLCYCLOPENTANE	34.157	0.81
1-TRANS-2-DIMETHYLCYCLOPENTANE	71.664	1.70
3-ETHYLPENTANE	9.282	0.22
2,2,4-TRIMETHYLPENTANE	0.000	0.00
N-HEPTANE	617.668	14.65
1-CIS-2-DIMETHYLCYCLOPENTANE	5.610	0.13
METHYLCYCLOHEXANE	527.838	12.52
1,1,3-TRIMETHYLCYCLOPENTANE	17.238	0.40
2,2-DIMETHYLHEXANE	6.673	0.15
ETHYLCYCLOPENTANE	23.154	0.54
2,5-DIMETHYLHEXANE	19.000	0.45
2,4-DIMETHYLHEXANE	29.365	0.69
2,2,3-TRIMETHYLPENTANE	0.000	0.00
1-TRANS-2-CIS-4-TRIMETHYLCYCLOPENTANE	15.792	0.37
TOLUENE	343.046	8.14
1-TRANS-2-CIS-3-TRIMETHYLCYCLOPENTANE	0.000	0.00
1-3-DIMETHYLHEXANE	0.000	0.00
2,3,4-TRIMETHYLPENTANE	0.000	0.00
2,2,2-TRIMETHYLCYCLOPENTANE	0.000	0.00
		100.00

38.38

61.62

C7

C7 =

TABLE 2

GASCHROMATOGRAPHIC ANALYSIS OF HYDROCARBONS BOILING BELOW 114 DEGR C

SAMPLE CVC 2121 NORWAY 1/6-1 SAMPLE 8

COMPONENT	COUNTS	PERCENT WEIGHT
METHANE	0.000	0.00
ETHANE	0.000	0.00
PROPANE	0.000	0.00
ISOBUTANE	0.000	0.00
N-BUTANE	68.532	0.23
ISOPENTANE	216.150	0.74
N-PENTANE	513.961	1.77
2,2-DIMETHYLBUTANE	0.768	0.00
CYCLOPENTANE	77.019	0.26
2,3-DIMETHYLBUTANE	36.662	0.12
2-METHYLPENTANE	676.811	2.34
3-METHYLPENTANE	467.111	1.61
N-HEXANE	1419.152	4.90
METHYLCYCLOPENTANE	955.119	3.30
2,2-DIMETHYLPENTANE	21.198	0.07
BENZENE	528.925	1.82
2,4-DIMETHYLPENTANE	122.842	0.42
2,2,3-TRIMETHYLBUTANE	0.563	0.00
CYCLOHEXANE	1632.375	5.64
3,3-DIMETHYLPENTANE	5.410	0.01
1,1-DIMETHYLCYCLOPENTANE	151.674	0.52
2-METHYLHEXANE	1546.439	5.35
2,3-DIMETHYLPENTANE	400.804	1.38
1-CIS-3-DIMETHYLCYCLOPENTANE	527.400	1.82
3-METHYLHEXANE	1761.730	6.09
1-TRANS-3-DIMETHYLCYCLOPENTANE	398.853	1.37
1-TRANS-2-DIMETHYLCYCLOPENTANE	778.259	2.69
3-METHYLPENTANE	95.998	0.33
2,2,4-TRIMETHYLPENTANE	0.272	0.00
N-HEPTANE	5698.504	19.71
1-CIS-2-DIMETHYLCYCLOPENTANE	102.209	0.35
METHYLCYCLOHEXANE	5571.614	19.27
1,1,3-TRIMETHYLCYCLOPENTANE	242.373	0.83
2,2-DIMETHYLHEXANE	65.378	0.22
ETHYLCYCLOPENTANE	369.283	1.27
2,5-DIMETHYLHEXANE	205.333	0.71
2,4-DIMETHYLHEXANE	298.971	1.03
2,2,3-TRIMETHYLPENTANE	0.000	0.00
1-TRANS-2-CIS-4-TRIMETHYLCYCLOPENTANE	211.730	0.73
TOLUENE	3739.029	12.93
1-TRANS-2-CIS-3-TRIMETHYLCYCLOPENTANE	0.000	0.00
3,3-DIMETHYLHEXANE	0.000	0.00
2,3,4-TRIMETHYLPENTANE	0.000	0.00
1,1,2-TRIMETHYLCYCLOPENTANE	0.000	0.00
		100.00

TABLE 3

GASCHROMATOGRAPHIC ANALYSIS OF HYDROCARBONS BOILING BELOW 114 DEGR C

SAMPLE CMC 2122 NORWAY 1/6-1 SAMPLE 11

COMPONENT	COUNTS	PERCENT WEIGHT
METHANE	0.000	0.00 2.42
ETHANE	0.000	0.00 1.81
PROPANE	0.000	0.00 3.20
ISOBUTANE	0.000	0.00 1.39
N-BUTANE	0.000	0.00 4.10
ISOPENTANE	4.341	0.03 2.66
N-PENTANE	112.876	0.92 3.65
2,2-DIMETHYLBUTANE <i>C₆</i>	10.006	0.08
CYCLOPENTANE <i>C₅</i>	21.792	0.17
2,3-DIMETHYLBUTANE <i>C₆</i>	30.962	0.25
2-METHYLPENTANE <i>C₆</i>	225.834	1.85
3-METHYLPENTANE <i>C₆</i>	171.749	1.41
N-HEXANE <i>C₆</i>	768.143	6.32 6.0
METHYLCYCLOPENTANE <i>C₆</i>	271.732	2.23
2,2-DIMETHYLPENTANE <i>C₇</i>	35.361	0.29
BENZENE <i>C₆</i>	301.311	2.48
2,4-DIMETHYLPENTANE <i>C₇</i>	73.829	0.60
1,2,3-TRIMETHYLBUTANE <i>C₇</i>	4.902	0.04
CYCLOHEXANE <i>C₇</i>	551.202	4.53 22.2
3,3-DIMETHYLPENTANE	29.310	0.24
1,1-DIMETHYLCYCLOPENTANE	72.646	0.59
2-METHYLHEXANE	673.520	5.54
2,3-DIMETHYLPENTANE	163.317	1.34
1-CIS-3-DIMETHYLCYCLOPENTANE	99.232	0.81
3-METHYLHEXANE	764.818	6.29
1-TRANS-3-DIMETHYLCYCLOPENTANE	122.595	1.00
1-TRANS-2-DIMETHYLCYCLOPENTANE	195.743	1.61
3-METHYLPENTANE	44.621	0.36
2,2,4-TRIMETHYLPENTANE	0.000	0.00
N-HEPTANE	2663.221	21.92
1-CIS-2-DIMETHYLCYCLOPENTANE	50.521	0.41
METHYLCYCLOHEXANE	1995.011	16.42
1,1,3-TRIMETHYLCYCLOPENTANE	73.510	0.60
2,2-DIMETHYLHEXANE	42.802	0.35
ETHYLCYCLOPENTANE	71.532	0.58
2,5-DIMETHYLHEXANE	113.397	0.93
2,4-DIMETHYLHEXANE	144.465	1.18
2,2,3-TRIMETHYLPENTANE	6.689	0.05
1-TRANS-2-CIS-4-TRIMETHYLCYCLOPENTANE	68.013	0.55
TOLUENE <i>C₇</i>	2169.834	17.86
1-TRANS-2-CIS-3-TRIMETHYLCYCLOPENTANE	0.000	0.00
3,3-DIMETHYLHEXANE	0.000	0.00
2,3,4-TRIMETHYLPENTANE	0.000	0.00
1,1,2-TRIMETHYLCYCLOPENTANE <i>C₇</i>	0.000	0.00
		100.00

TABLE 4

GASCHROMATOGRAPHIC ANALYSIS OF HYDROCARBONS BOILING BELOW 114 DEGR C

SAMPLE CMC 2123 NORWAY 1/6-1 SAMPLE 1gD

COMPONENT	COUNTS	PERCENT WEIGHT
METHANE	0.000	0.00
ETHANE	0.000	0.00
PROPANE	0.000	0.00
ISOBUTANE	0.000	0.00
N-BUTANE	0.000	0.00
ISOPENTANE	0.020	0.00
N-PENTANE	0.229	0.01
2,2-DIMETHYLBUTANE	1.558	0.10
CYCLOPENTANE	0.694	0.04
2,3-DIMETHYLBUTANE	1.208	0.07
2-METHYLPENTANE	16.436	1.05
3-METHYLPENTANE	12.973	0.83
N-HEXANE	80.057	5.12
METHYLCYCLOPENTANE	25.343	1.62
2,2-DIMETHYLPENTANE	2.328	0.14
BENZENE	24.972	1.59
2,4-DIMETHYLPENTANE	1.999	0.12
2,2,3-TRIMETHYLBUTANE	1.188	0.07
CYCLOHEXANE	59.876	3.83
3,3-DIMETHYLPENTANE	2.376	0.15
1,1-DIMETHYLCYCLOPENTANE	6.960	0.44
2-METHYLHEXANE	77.751	4.97
2,3-DIMETHYLPENTANE	11.657	0.74
1-CIS-3-DIMETHYLCYCLOPENTANE	12.206	0.78
3-METHYLHEXANE	80.647	5.16
1-TRANS-3-DIMETHYLCYCLOPENTANE	10.489	0.67
1-TRANS-2-DIMETHYLCYCLOPENTANE	22.472	1.43
3-ETHYLPENTANE	5.687	0.36
2,2,4-TRIMETHYLPENTANE	0.000	0.00
N-HEPTANE	356.742	22.84
1-CIS-2-DIMETHYLCYCLOPENTANE	4.584	0.29
METHYLCYCLOHEXANE	323.556	20.72
1,1,3-TRIMETHYLCYCLOPENTANE	14.871	0.95
2,2-DIMETHYLHEXANE	10.414	0.66
ETHYLCYCLOPENTANE	11.205	0.71
2,5-DIMETHYLHEXANE	21.081	1.35
2,4-DIMETHYLHEXANE	26.909	1.72
2,2,3-TRIMETHYLPENTANE	0.000	0.00
1-TRANS-2-CIS-4-TRIMETHYLCYCLOPENTANE	14.940	0.95
TOLUENE	317.921	20.36
1-TRANS-2-CIS-3-TRIMETHYLCYCLOPENTANE	0.000	0.00
3-2-DIMETHYLHEXANE	0.000	0.00
2,3,4-TRIMETHYLPENTANE	0.000	0.00
1,1,2-TRIMETHYLCYCLOPENTANE	0.000	0.00
		100.00

TABLE 5.

GASCHROMATOGRAPHIC ANALYSIS OF N-ALKANES

SAMPLE O/C 2120 NORWAY NORTH SEA 1/6-1 SAMPLE 1 D

COMPONENT BOILING POINT COUNTS PERCENT WEIGHT
- AT 760 MM

COMPONENT	BOILING POINT	COUNTS	PERCENT WEIGHT
N-C 11	195.9	0.000	0.00
N-C 12	216.3	174.258	16.46
N-C 13	235.4	157.117	14.84
N-C 14	253.6	122.006	11.52
N-C 15	270.5	84.625	7.99
N-C 16	286.8	71.214	6.72
N-C 17	301.8	62.058	5.86
N-C 18	316.1	47.063	4.44
N-C 19	329.7	45.880	4.33
N-C 20	342.7	37.724	3.56
N-C 21	355.6	36.008	3.40
N-C 22	367.6	31.864	3.01
N-C 23	379.0	31.705	2.99
N-C 24	389.9	31.110	2.93
N-C 25	400.4	29.625	2.79
N-C 26	410.5	27.292	2.57
N-C 27	420.2	17.629	1.66
N-C 28	429.6	15.531	1.47
N-C 29	438.6	14.267	1.34
N-C 30	447.3	9.647	0.91
N-C 31	456.0	7.335	0.69
N-C 32	464.0	4.355	0.41
N-C 33	472.0	0.000	0.00
N-C 34	479.0	0.000	0.00
N-C 35	487.0	0.000	0.00
N-C 36	494.0	0.000	0.00
N-C 37	501.0	0.000	0.00
N-C 38	508.0	0.000	0.00
N-C 39	514.0	0.000	0.00
N-C 40	521.0	0.000	0.00
N-C 41	529.0	0.000	0.00
N-C 42	539.0	0.000	0.00
N-C 43	548.0	0.000	0.00
N-C 44	556.0	0.000	0.00
N-C 45	564.0	0.000	0.00
			99.99

R₂₁-VALUE (C-21+C-22)/(C-28+C-29) N-ALKANES 2.27R₂₉-VALUE (2 X C-29)/(C-28+C-30) N-ALKANES 1.13

ANALYSIS FOR ISOPRENOIDS

PRISTANE/PHYTANE RATIO (C-19/C-20) 1.73

ISOPRENOID INDEX, IPI (C-19+C-20)/(C-15+C-16) IPR 0.84

GASCHROMATOGRAPHIC ANALYSIS OF N-ALKANES

SAMPLE CVC 2121 NORWAY 1/6-1 (N.S.) SAMPLE 8

COMPONENT BOILING POINT COUNTS PERCENT WEIGHT
AT 760 MM

COMPONENT	BOILING POINT	COUNTS	PERCENT WEIGHT
N-C 11	195.9	0.000	0.00
N-C 12	216.3	6.083	0.77
N-C 13	235.4	33.019	4.21
N-C 14	253.6	58.053	7.42
N-C 15	270.6	74.148	9.47
N-C 16	286.8	80.421	10.27
N-C 17	301.8	73.304	9.36
N-C 18	316.1	66.324	8.47
N-C 19	329.7	63.738	8.14
N-C 20	342.7	49.490	6.32
N-C 21	355.6	40.235	5.15
N-C 22	367.6	36.159	4.62
N-C 23	379.0	32.806	4.19
N-C 24	389.9	29.530	3.77
N-C 25	400.4	27.767	3.54
N-C 26	410.5	22.752	2.90
N-C 27	420.2	17.989	2.29
N-C 28	429.6	17.069	2.18
N-C 29	438.6	12.796	1.63
N-C 30	447.3	10.434	1.33
N-C 31	456.0	10.924	1.39
N-C 32	464.0	10.428	1.33
N-C 33	472.0	8.896	1.13
N-C 34	479.0	0.000	0.00
N-C 35	487.0	0.000	0.00
N-C 36	494.0	0.000	0.00
N-C 37	501.0	0.000	0.00
N-C 38	508.0	0.000	0.00
N-C 39	514.0	0.000	0.00
N-C 40	521.0	0.000	0.00
N-C 41	529.0	0.000	0.00
N-C 42	539.0	0.000	0.00
N-C 43	548.0	0.000	0.00
N-C 44	556.0	0.000	0.00
N-C 45	564.0	0.000	0.00
			100.00

R21-VALUE $(C-21+C-22)/(C-28+C-29)$ N-ALKANES 2.56

R29-VALUE $(2 \times C-29)/(C-28+C-30)$ N-ALKANES 0.93

ANALYSIS FOR ISOPRENOIDS

PRISTANE/PHYTANE RATIO $(C-19/C-20)$ 1.53

ISOPRENOID INDEX (IPI) $(C-19+C-20)/(C-15+C-16)$ IPR 1.82

TABLE 7

GASCHROMATOGRAPHIC ANALYSIS OF N-ALKANES

SAMPLE OMC 2122 NORWAY NORTH SEA 1/6-1 SAMPLE 11

COMPONENT BOILING POINT COUNTS PERCENT WEIGHT
AT 760 MM

COMPONENT	BOILING POINT	COUNTS	PERCENT WEIGHT	
AT 760 MM				
N=C 11	195.9	0.000	0.00	
N=C 12	216.3	0.000	0.00	
N=C 13	235.4	17.033	1.66	
N=C 14	253.6	42.150	4.12	
N=C 15	270.6	70.700	6.92	
N=C 16	286.8	91.740	8.98	
N=C 17	301.8	93.975	9.20	
N=C 18	316.1	91.686	8.98	.18
N=C 19	329.7	97.705	9.57	.19
N=C 20	342.7	79.932	7.82	.16
N=C 21	355.6	70.107	6.86	.14
N=C 22	367.6	63.831	6.25	.13
N=C 23	379.0	57.764	5.65	.11
N=C 24	389.9	51.481	5.04	.10
N=C 25	400.4	48.358	4.73	.095
N=C 26	410.5	34.633	3.39	.068
N=C 27	420.2	26.312	2.57	.051
N=C 28	429.6	23.373	2.28	.046
N=C 29	438.6	18.838	1.84	.037
N=C 30	447.3	17.703	1.73	.035
N=C 31	456.0	12.310	1.20	.024
N=C 32	464.0	11.246	1.10	.022
N=C 33	472.0	0.000	0.00	
N=C 34	479.0	0.000	0.00	
N=C 35	487.0	0.000	0.00	
N=C 36	494.0	0.000	0.00	
N=C 37	501.0	0.000	0.00	
N=C 38	508.0	0.000	0.00	
N=C 39	514.0	0.000	0.00	
N=C 40	521.0	0.000	0.00	
N=C 41	529.0	0.000	0.00	
N=C 42	539.0	0.000	0.00	
N=C 43	548.0	0.000	0.00	
N=C 44	556.0	0.000	0.00	
N=C 45	564.0	0.000	0.00	
			100.00	

RP-VALUE $(C-21+C-22)/(C-28+C-29)$ N-ALKANES 3.17R29-VALUE $(2 \times C-29)/(C-28+C-30)$ N-ALKANES 0.91

ANALYSIS FOR ISOPRENOIDS

PRISTANE/PHYTANE RATIO $(C-19/C-20)$ 1.24ISOPRENOID INDEX; IPI $(C-19+C-20)/(C-15+C-16)$ IPR 3.56

TABLE 8.

GASCHROMATOGRAPHIC ANALYSIS OF N-ALKANES

SAMPLE CVC 2123 NORWAY (N.S.) 1/6-1 SAMPLE 19D.

COMPONENT BOILING POINT COUNTS PERCENT WEIGHT
AT 760 MM

COMPONENT	BOILING POINT	COUNTS	PERCENT WEIGHT
N-C 11	195.9	275.968	8.77
N-C 12	216.3	400.511	12.74
N-C 13	235.4	374.771	11.92
N-C 14	252.6	347.629	11.05
N-C 15	270.6	312.561	9.94
N-C 16	286.8	291.520	9.27
N-C 17	301.8	227.700	7.24
N-C 18	315.1	174.308	5.54
N-C 19	329.7	166.383	5.29
N-C 20	342.7	120.657	3.83
N-C 21	355.6	97.638	3.10
N-C 22	367.6	83.999	2.67
N-C 23	379.0	70.384	2.23
N-C 24	389.9	56.687	1.80
N-C 25	400.4	45.227	1.43
N-C 26	410.5	30.387	0.96
N-C 27	420.2	21.735	0.69
N-C 28	429.6	17.706	0.56
N-C 29	438.6	14.653	0.46
N-C 30	447.3	13.219	0.42
N-C 31	456.0	0.000	0.00
N-C 32	464.0	0.000	0.00
N-C 33	472.0	0.000	0.00
N-C 34	479.0	0.000	0.00
N-C 35	487.0	0.000	0.00
N-C 36	494.0	0.000	0.00
N-C 37	501.0	0.000	0.00
N-C 38	508.0	0.000	0.00
N-C 39	514.0	0.000	0.00
N-C 40	521.0	0.000	0.00
N-C 41	529.0	0.000	0.00
N-C 42	539.0	0.000	0.00
N-C 43	548.0	0.000	0.00
N-C 44	556.0	0.000	0.00
N-C 45	564.0	0.000	0.00
			100.00

RP-VALUE (C-21+C-22)/(C-28+C-29) N-ALKANES 5.61

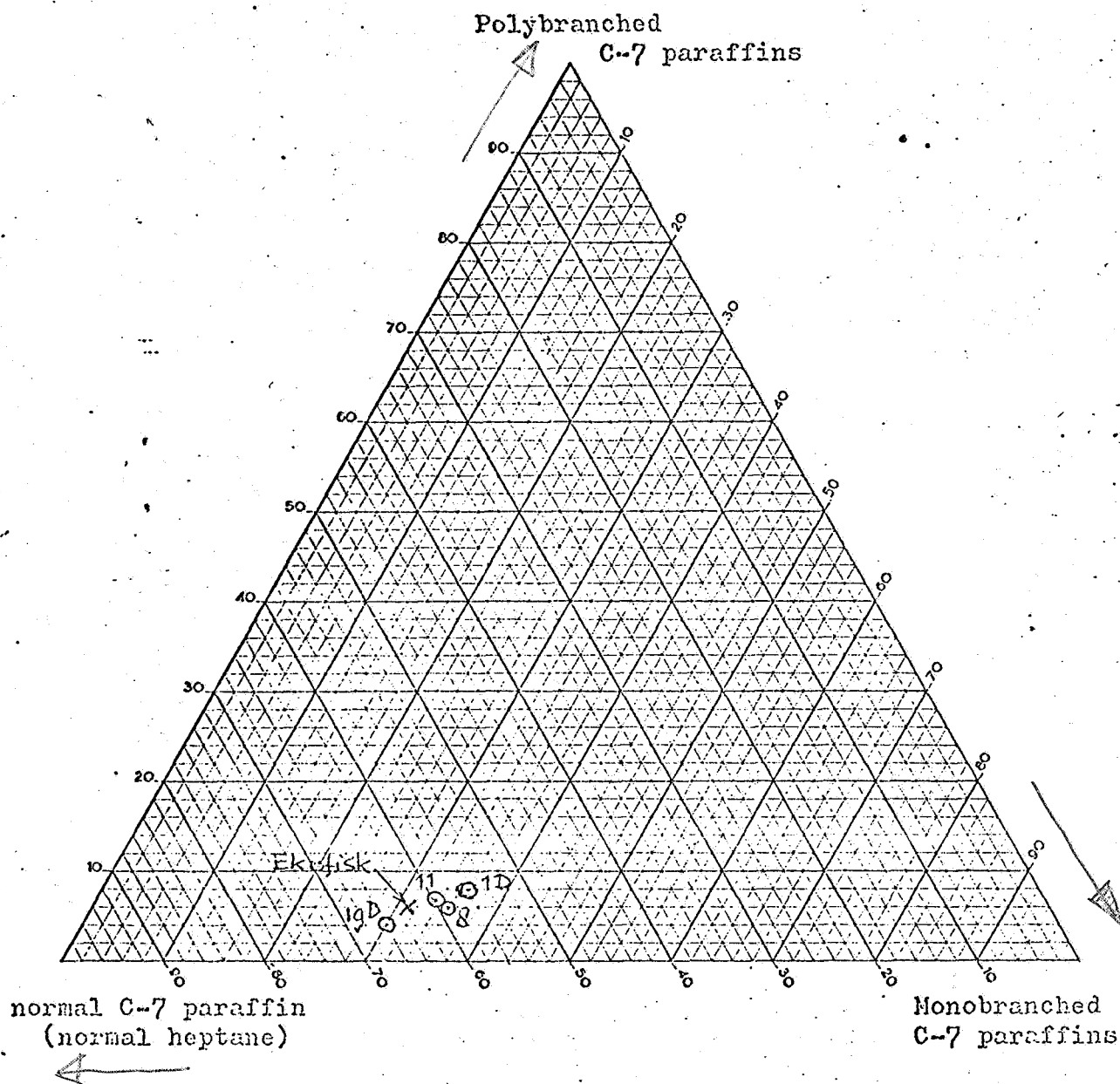
R29-VALUE (2 X C-29)/(C-28+C-30) N-ALKANES 0.94

ANALYSIS FOR ISOPRENOIDS

PRISTANE/PENTANE RATIO (C-19/C-20) 1.66

ISOPRENOID INDEX (IPI) (C-19+C-20)/(C-15+C-16) IPR 0.92

	1D	8	11	19D
normal C ₇	56	59	60	66
monobranched C ₇	36	35	33	30
polybranched C ₇	8	6	7	4

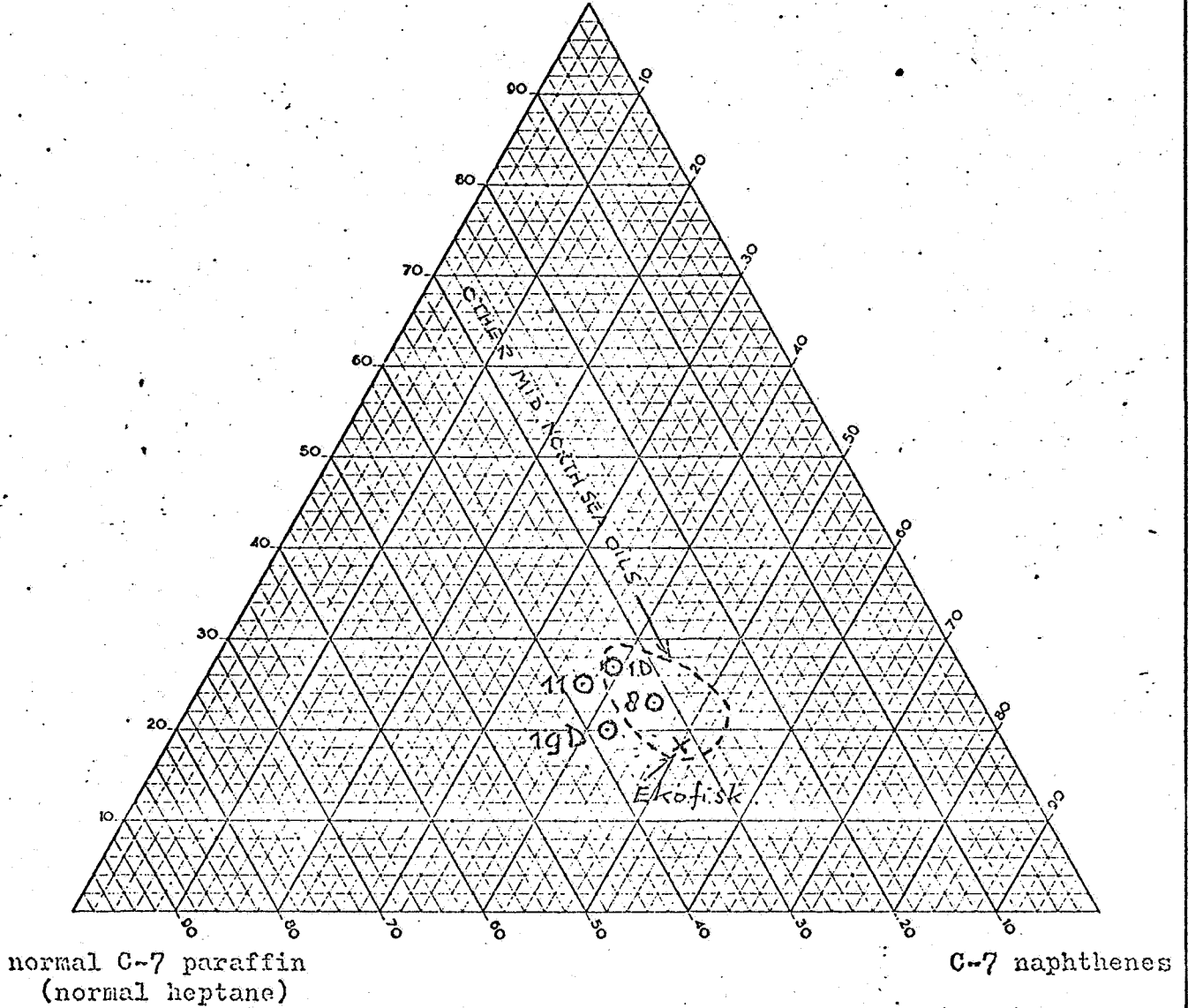


DISTRIBUTION OF C-7 PARAFFINS

FIG. 1

	<u>1D</u>	<u>8</u>	<u>11</u>	<u>19D</u>
normal C ₇	34	32	38	38
branched C ₇	27	23	25	20
C ₇ naphthenes	39	45	37	42

Branched
C-7 paraffins

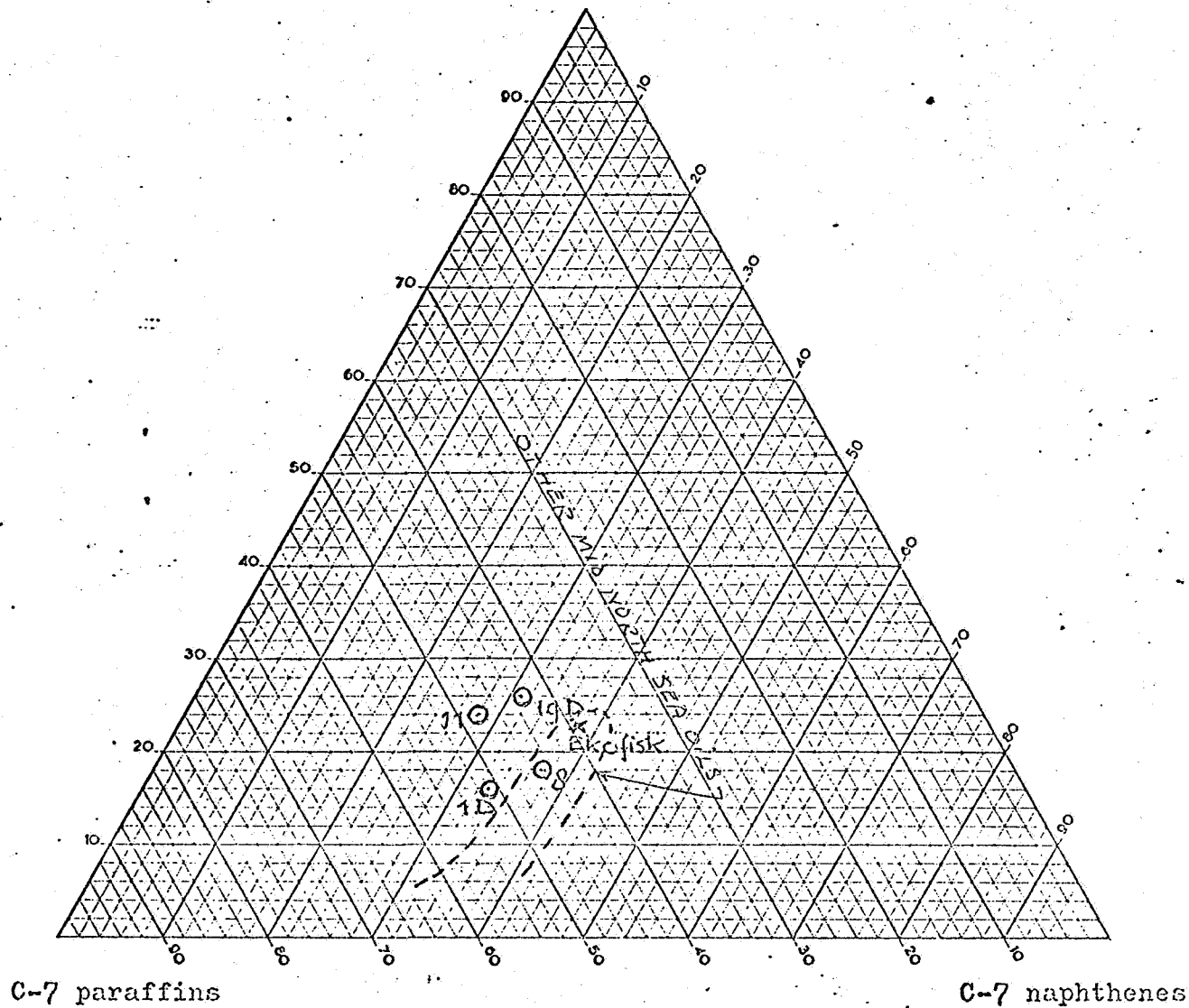


DISTRIBUTION OF C-7 SATURATES

FIG. 2

	<u>1D</u>	<u>8</u>	<u>11</u>	<u>19D</u>
normal C ₇	51	45	48	43
C ₇ naphthenes	33	37	28	31
C ₇ aromatic	16	18	24	25

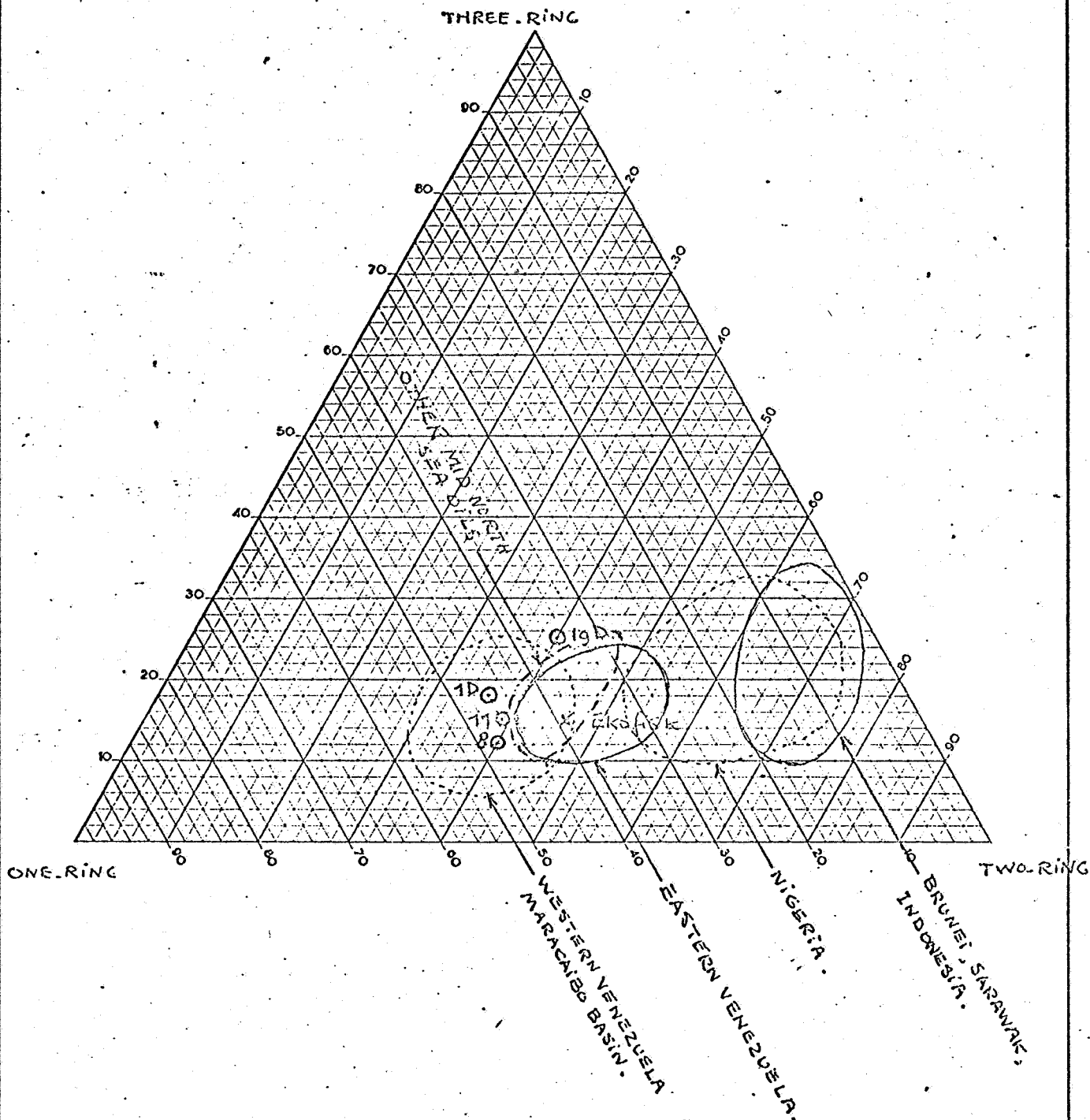
• C-7 aromatic
(toluene)



DISTRIBUTION OF C-7 HYDROCARBONS

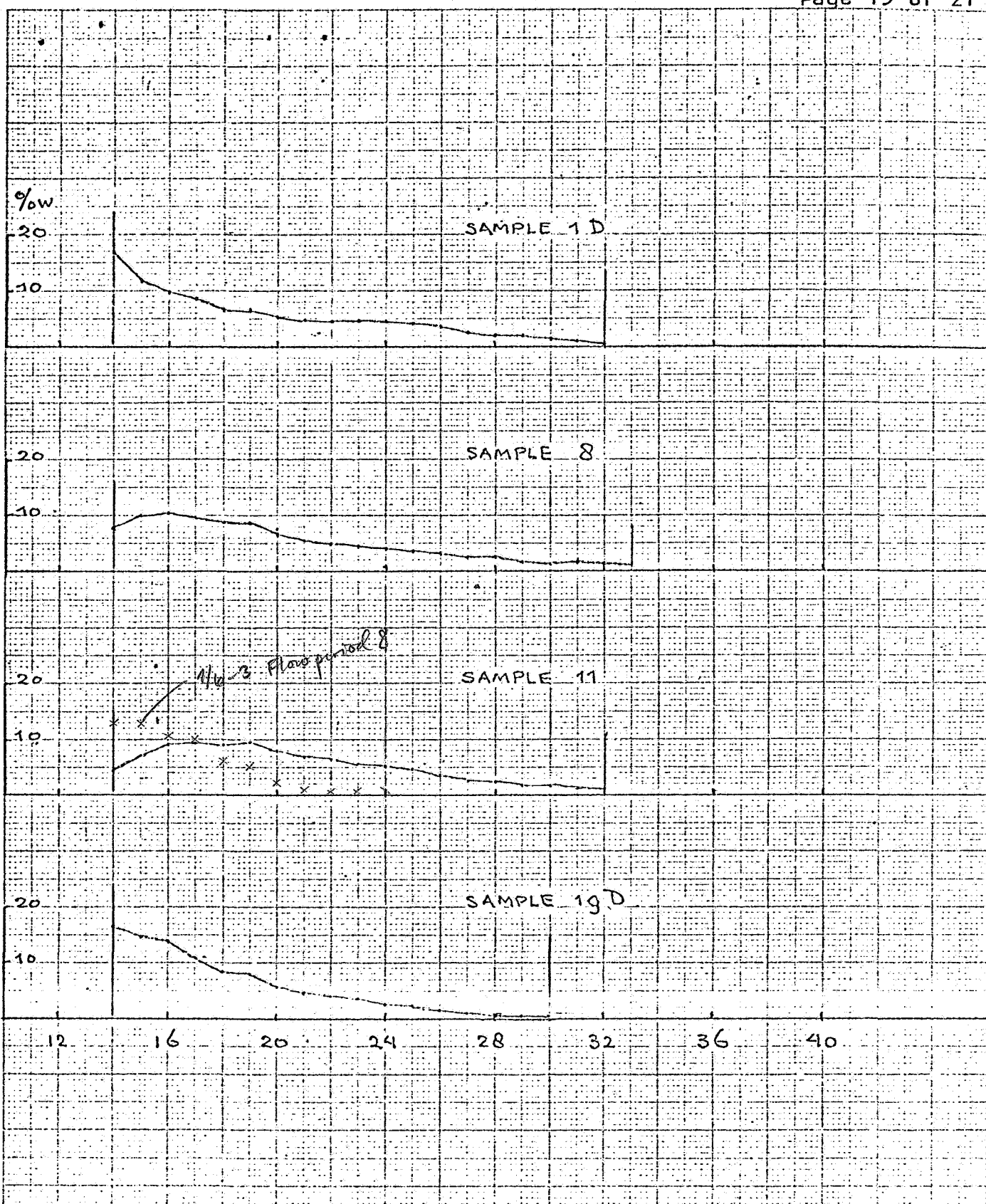
FIG. 3

	<u>1D</u>	<u>8</u>	<u>11</u>	<u>19D</u>
one-ring	46	48	46	35
two-ring	36	40	39	40
three-ring	18	12	15	25



DISTRIBUTION OF CIS NAPHTHENIC-RING COMPOUNDS.

FIG. 4



DISTRIBUTION OF C14+ NORMAL ALKANES

FIG. 5

No. 1

CO ₂	2.40 vol. %
N ₂ +O ₂	0.36
C ₁	82.80
C ₂	9.26
C ₃	3.23
iC ₄	0.34
nC ₄	0.76
iC ₅	0.22
nC ₅	0.24
iC ₆	0.19
nC ₆	0.20

Schilling density 0.6518 (air = 1.00)

H₂S not detectable

Possible traces of hydrogen

1 A

ASTM Distillation		Very approx. TBP	Very approx. Eko TBP
1 BP	60°C		
10 % vol rec.	104°C	94°C	Ca. 95
20 % " "	135°C		
30 % " "	164°C	164°C	Ca. 205
40 % " "	207°C		
50 % " "	255°C	265°C	
60 % " "	297°C		
70 % " "	350°C	365°C	
76 % " "	358°C		
SG 15/4 . c	0.8152	(0.8483)	
Sulphur (Schöniger)	0.14 % wt.	(0.24)	
Visco cS at 100°F	3.01	(5.44)	
cS at 50°C	2.46		
V ₅₀ value	9.15		
Pour point ASTM max	- 6°C	(-9°C)	
Wax	5.9 % wt		
Ash	0.02 % wt.		

NB figures in parenthesis are eko.

Sample: "No. 3. 7/11/72"

Sample: "No. 13.13/11/72"

	Second interval No. 3	Third interval No. 13
Spec. gravity 60/60F	0,8294	0,7926
Pour point ASTM °C	9	-12
Sulphur (x-ray method) %	0,46	0,18
Sulphur (Schöniger method) %	0,39	
Ash, sulphated %	0,06	0,008
Colour ASTM		L 4
Wax %	6,9	11,5
Kin. viscosity at 50°C CS	3,13	1,62
V ₅₀ value	11,7	5,6
ASTM Distillation: IBP °C	53	49
10% rec. °C	112	92
20% " "	151	121
30% " "	194	149
40% " "	241	185
50% " "	285	228
60% " "	332	268
70% " "	364	311
77% " "	371	
83% " "		371

The analysis data from the No. 13 sample refer to a homogenized sample

Separation in drums after settling

Water, vol.%	36,5	-
Oil/precipitated wax mixture vol.%	-	33,2
Clear oil vol.%	63,5	66,8

By centrifuging:

Bottom sediment, inorganic solids mainly:	0,4% vol.
Water	5,0 "
Wax and oil mixture	12,5 "
Pure oil layer	82,1 "
<hr/>	
Water phase: Chloride content:	1.472% wt
	≈ 2,426% NaCl

The following data given under A) refer to the pure oil layer after centrifuging, and B) refer to a homogenized sample boiled under total reflux 30 min. to dissolve precipitated wax.

ASTM. DISTILLATION:	A)	B)
IBP	65°C	67°C
10% rec.	102	102
20% "	128	128
30% "	153	154
40% "	184	185
50% "	224	224
60% "	262	263
70% "	301	304
80% "	353	353
84% "	371	371
Spec. gravity 60/60F	0,7968	0,7991
Sulphated ash % wt	< 0,002	0,002
Wax % wt	3,4	12,4
Sulphur (x-ray) % wt	< 0,05	< 0,05
Sulphur (wickbold)		340 ppm
Pour point ASTM °C	÷ 15	÷ 21
Pour point after same thermal treatment as B)	÷ 21	
Colour ASTM	< 4,5	4,5

Surface Sample no. 5 (Bottles A 1753 and A 7491) show the following composition:

		<u>Separator Gas</u>	<u>Separator Oil</u>	<u>Reservoir Fluid</u>
Methane	Mol %	83.28	2.42	74.40
Ethane	"	7.62	1.81	6.98
Propane	"	3.47	3.20	3.44
Iso Butane	"	0.62	1.39	0.70
N-Butane	"	1.25	4.10	1.56
Iso-Pentane	"	0.37	2.66	0.62
N-Pentane	"	0.39	3.65	0.75
Hexanes	"	0.24	6.00	0.89
Heptanes plus	"	0.16	74.61	8.33
CO ₂	"	2.26	0.16	2.03
N ₂	"	0.34	-	0.30

The reservoir fluid has been calculated for a GOR of 5558 cuft/bbl.

Under reservoir conditions (7283 psia and 275°F) the above reservoir fluid was a one phase (gas) system.

The dewpoint pressure of the system, at 275°F, was 7065 psia.

With reference to Flopetrol sample No. 9 (interval 10344 - 10364') the results of an identification analysis show:

Oil sample

Specific gravity at 60/60 F	0.771
API gravity at 60°F	52
Water content (D & S), % volume	0
Salt content (SMS-125), % weight	0
Sulphur content (SMS-1807), % weight	0.18
Kinematic viscosity at 100°F, CS	1.2
Astm distillation (ASTM D 86)	?
Initial Boiling point, degr. C	43
5% v recovered at degr. C	68
10% v recovered at degr. C	85
20% v recovered at degr. C	108
30% v recovered at degr. C	128
40% v recovered at degr. C	149
50% v recovered at degr. C	175
60% v recovered at degr. C	210
70% v recovered at degr. C	251
80% v recovered at degr. C	300
Residue 18 ml.	

Gas sample

Methane	mol. %	80.02
Ethane	mol. %	9.82
Propane	mol. %	4.17
Iso-Butane	mol. %	0.74
N-Butane	mol. %	1.59
Iso-Pentane	mol. %	0.47
N-Pentane	mol. %	0.53
Hexanes	mol. %	0.39
Heptanes plus	mol. %	0.16
Carbon Dioxide	mol. %	1.67
Nitrogen	mol. %	0.44

Calculated density at 60°F and atm. pressure, g/litre	0.893
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OIL SAMPLE 18

Spec. gravity 60/60 F	0,7944
Sulphated ash	0,014%
Pour point	- 21°C
Viscosity at 122°F	1,51 cs ($V_{50} = 4,85$)
Wax	5,4%
Sulphur (x-ray)	0,05%
ASTM Distillation:	
IBP	51°C
5% rec. at	85 "
10% "	106 "
20% "	129 "
30% "	153 "
40% "	181 "
50% "	215 "
60% "	255 "
70% "	292 "
80% "	340 "
85% "	371 "