

Fig. A163

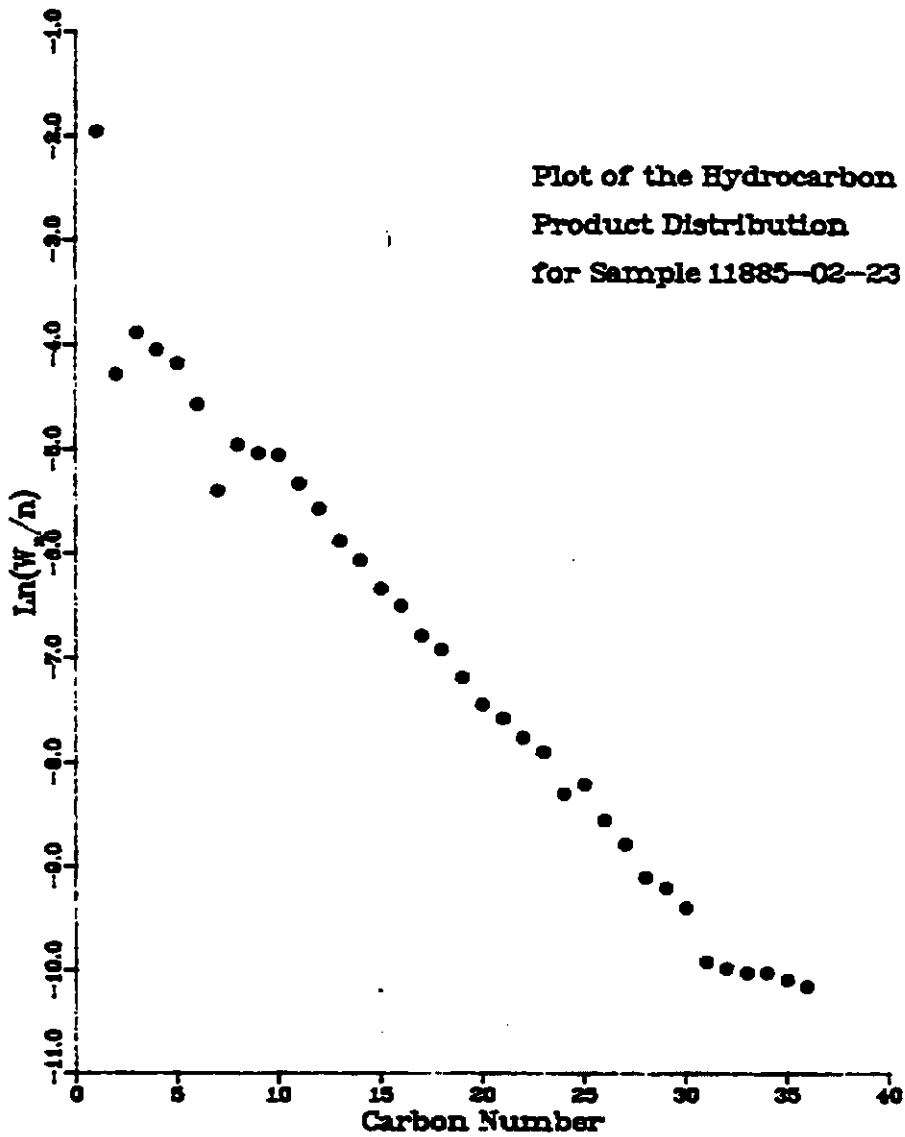


Fig. A164

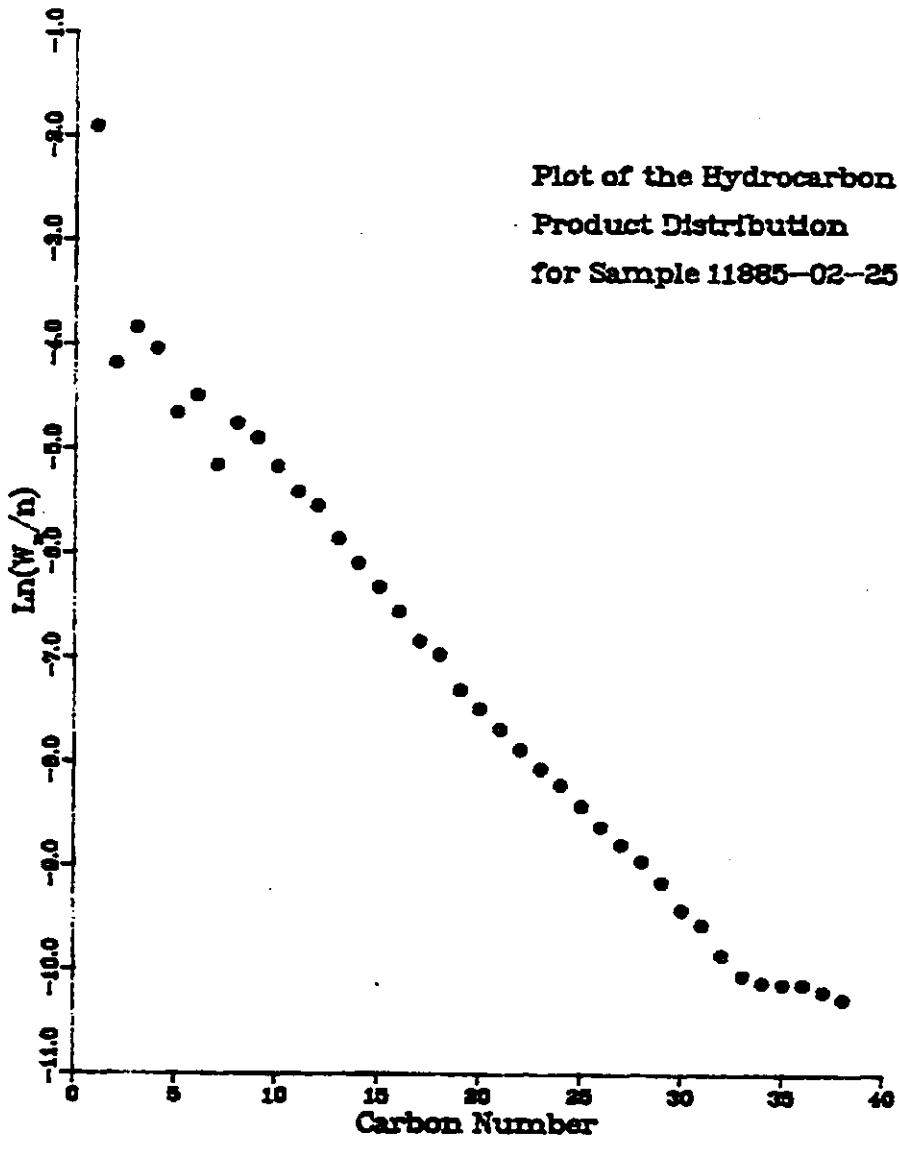


Fig. A165

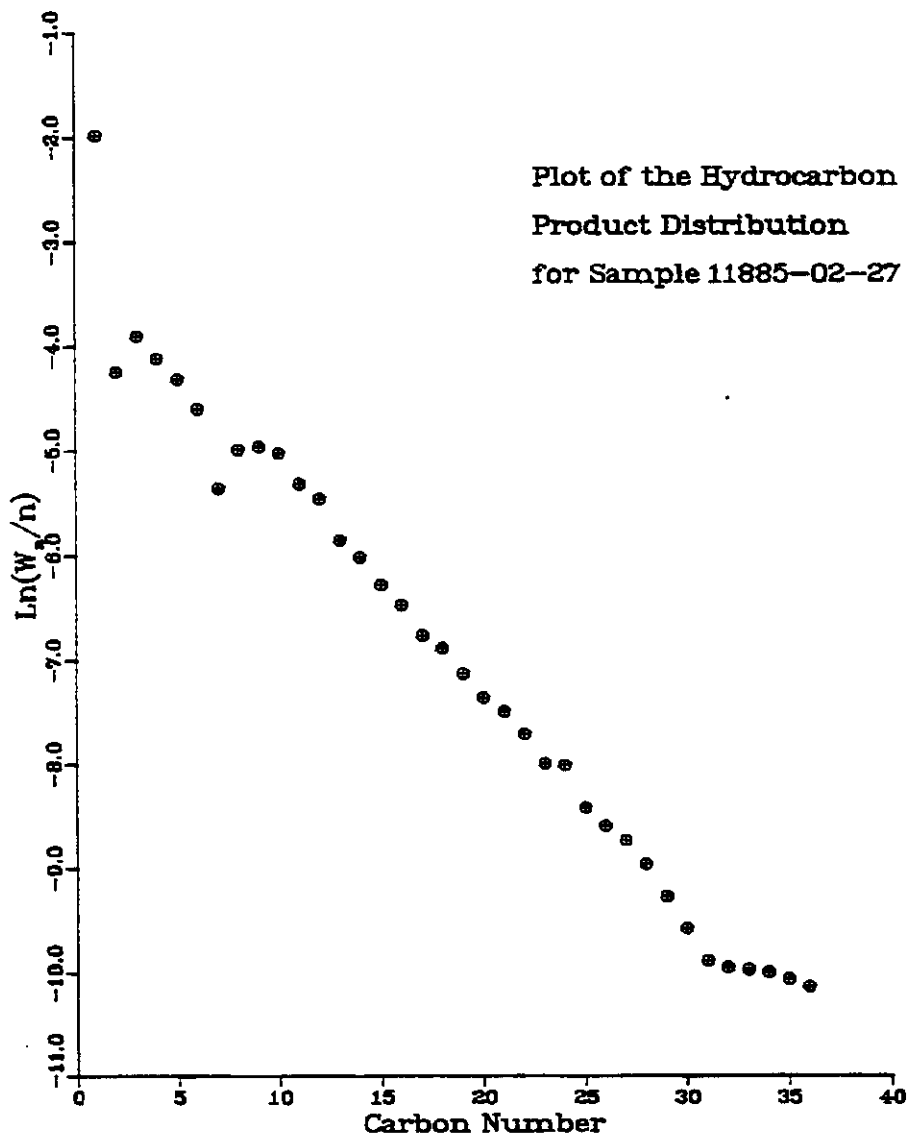


Fig. A166

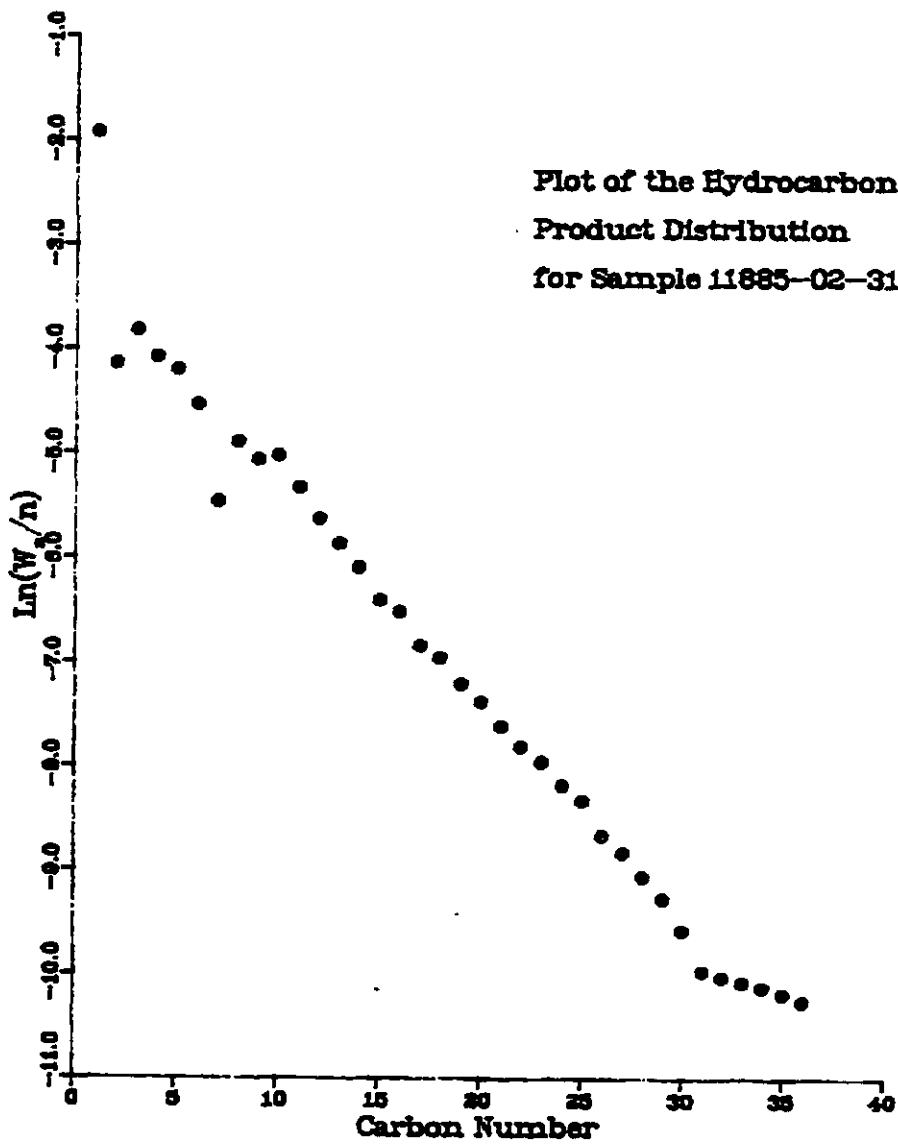


Fig. A167

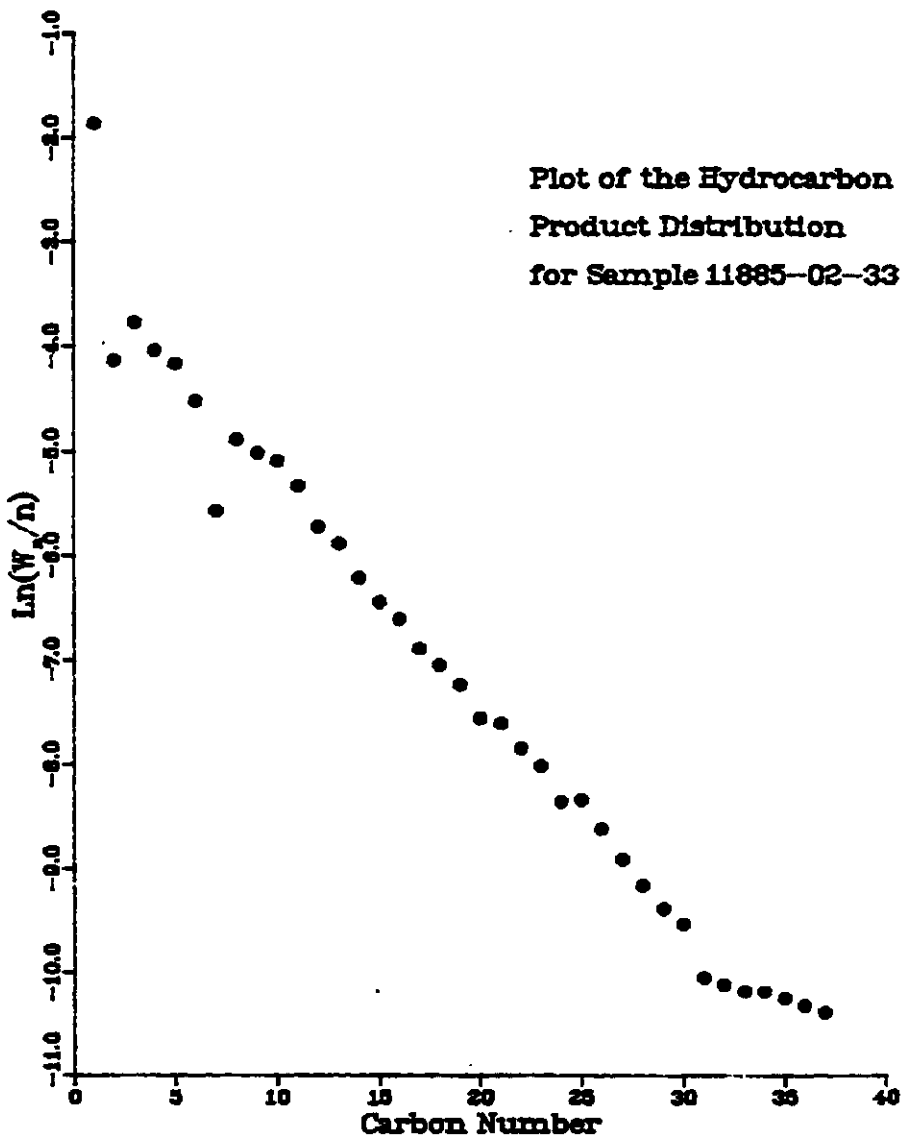


Fig. A168

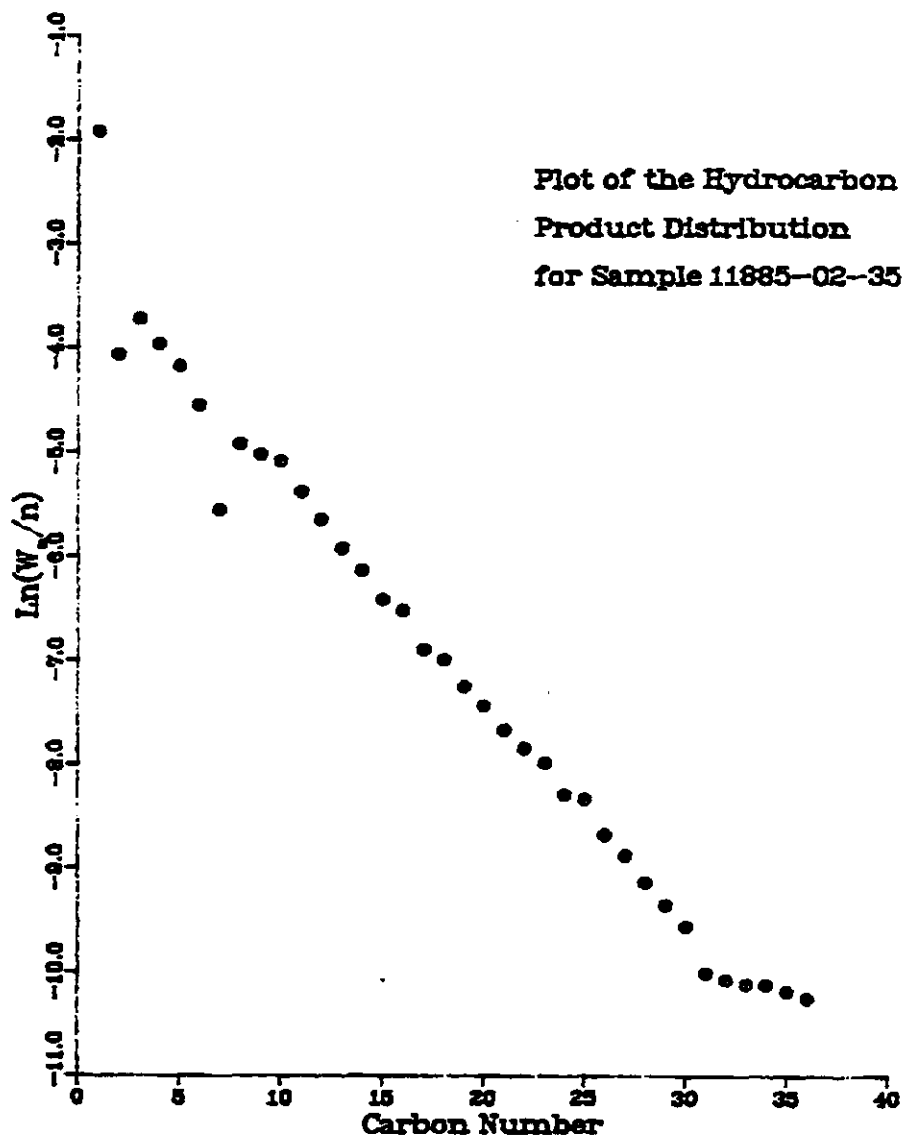


Fig. A169

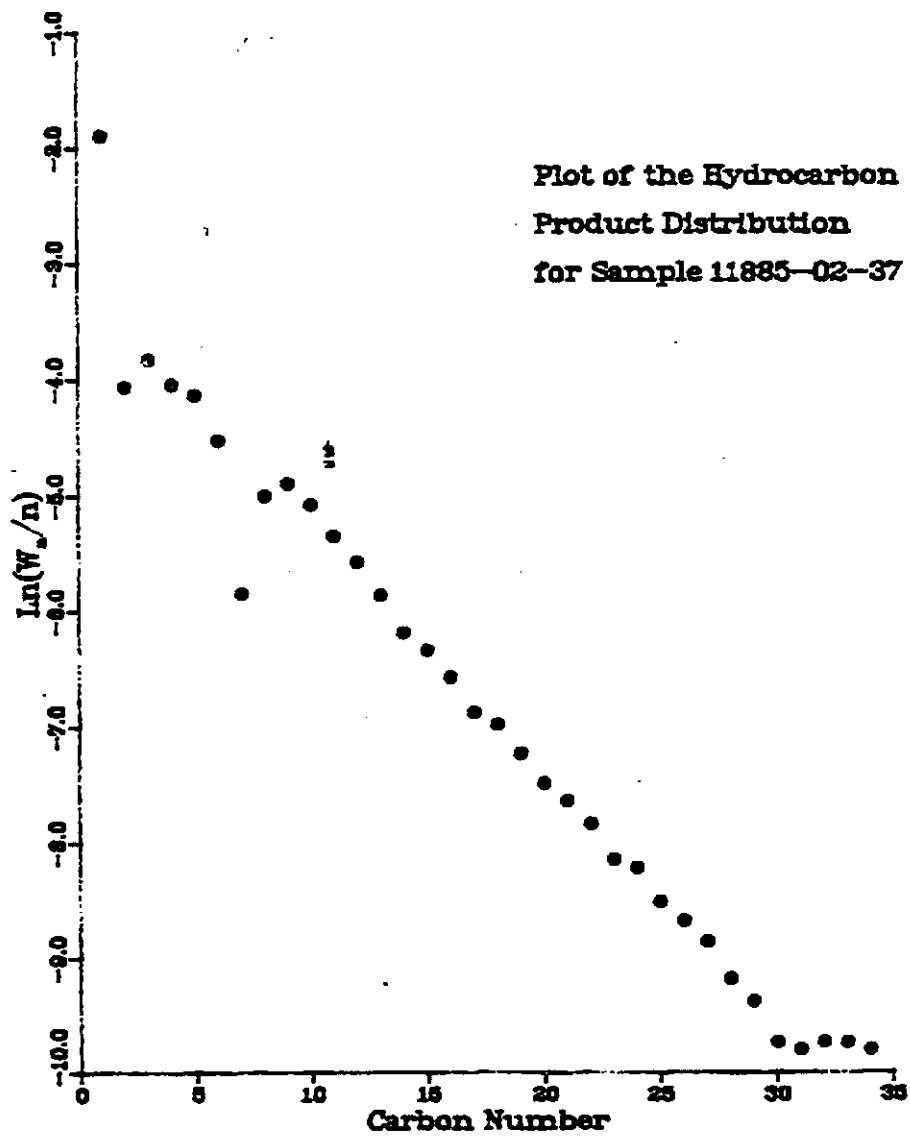


Fig. A170

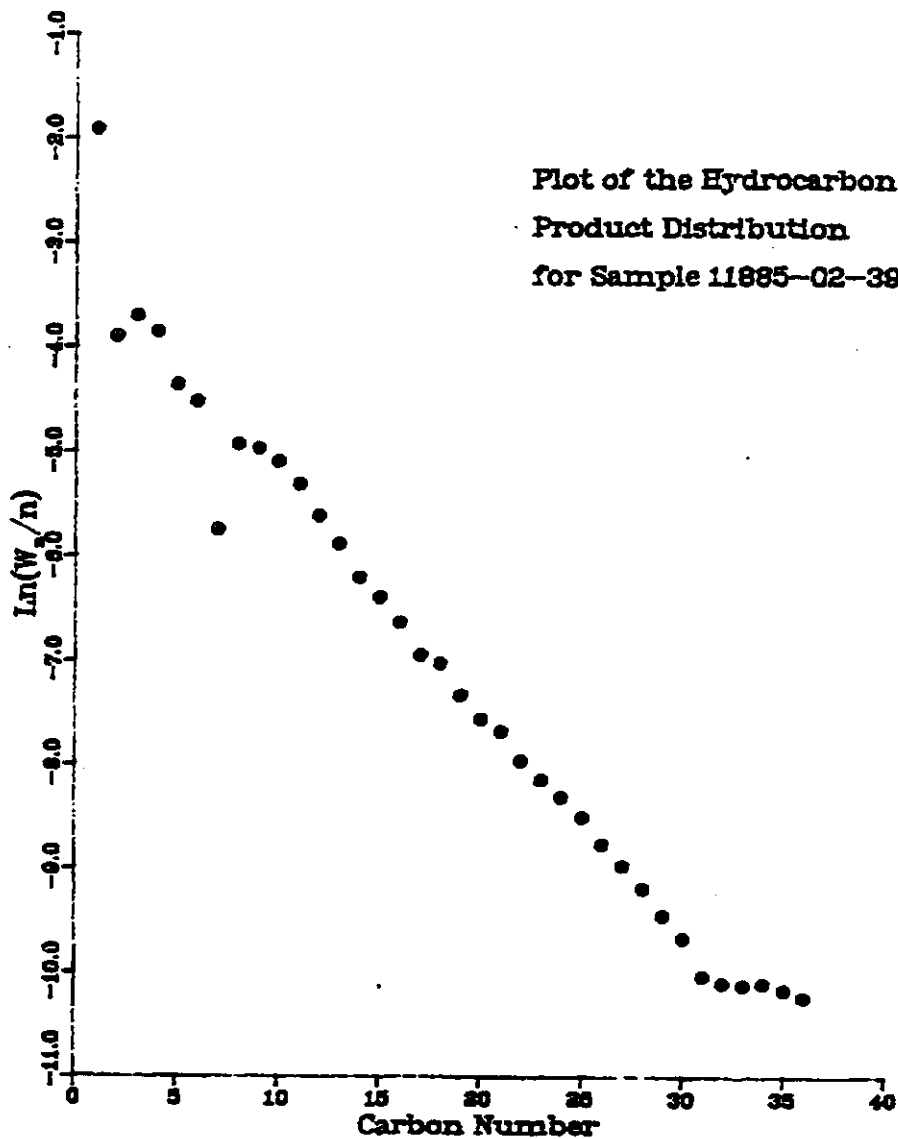


Fig. A171

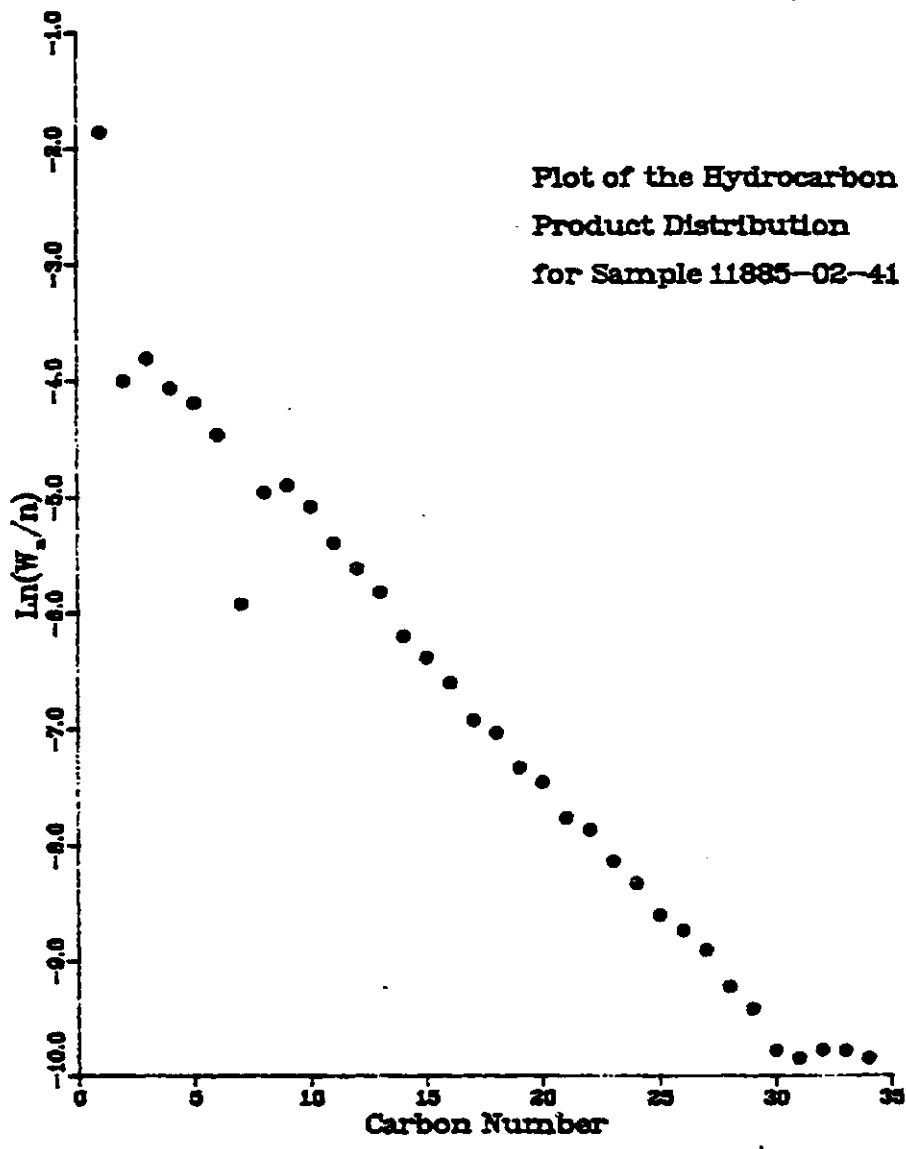


Fig. A172

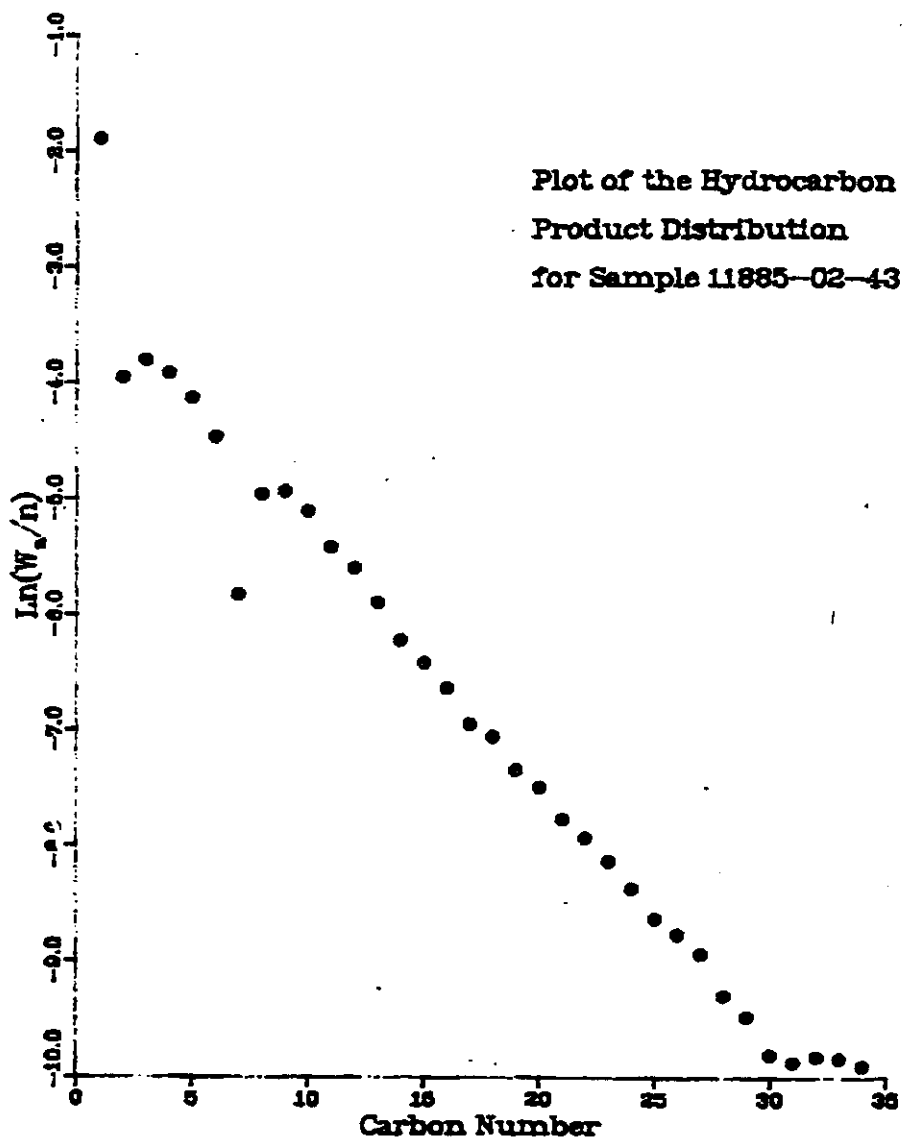


Fig. A173

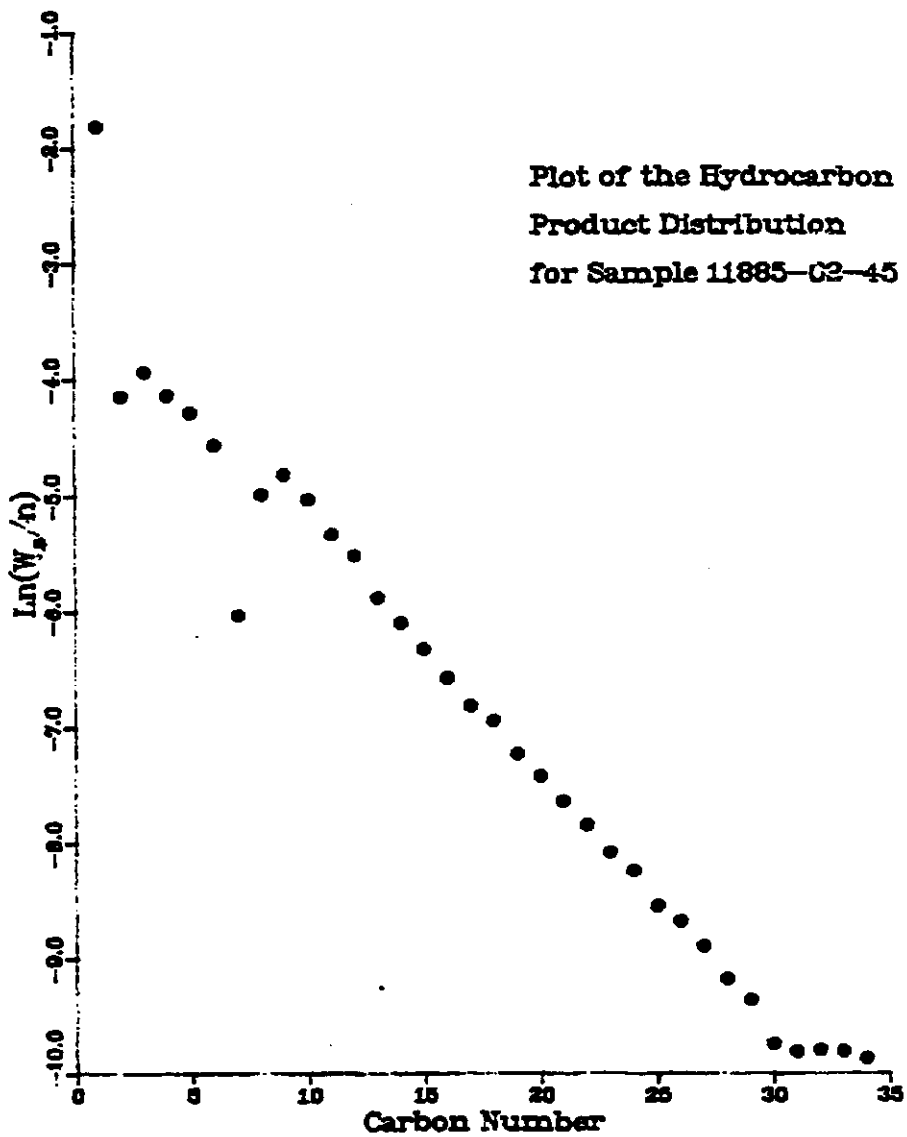


Fig. A174

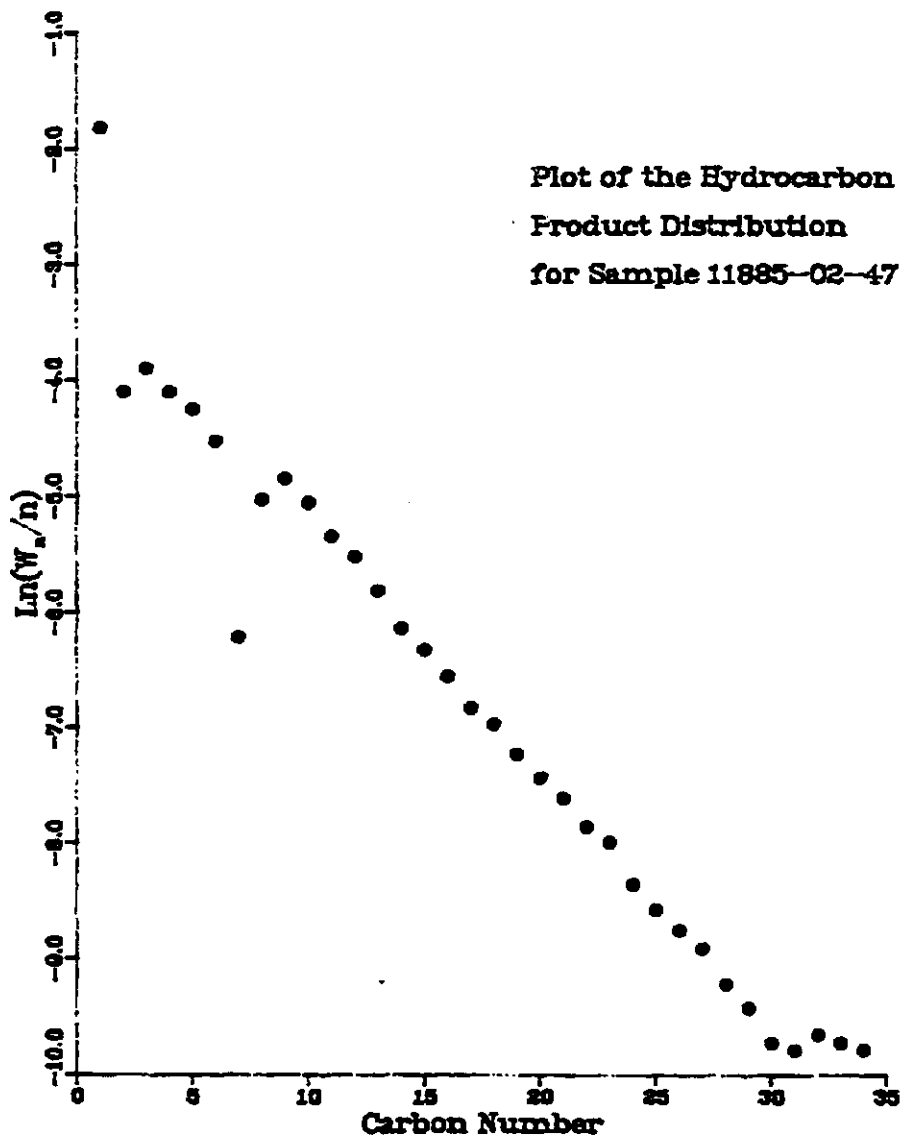


Fig. A175

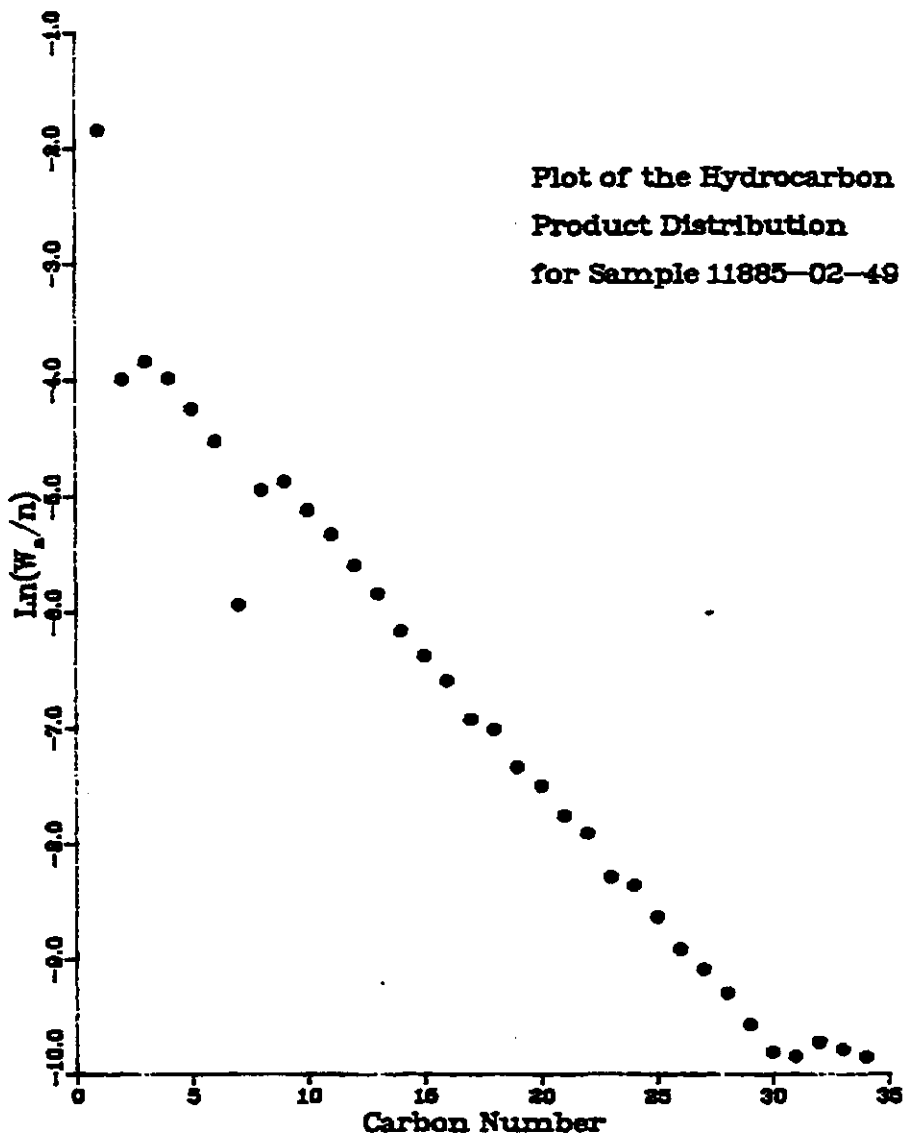


Fig. A176

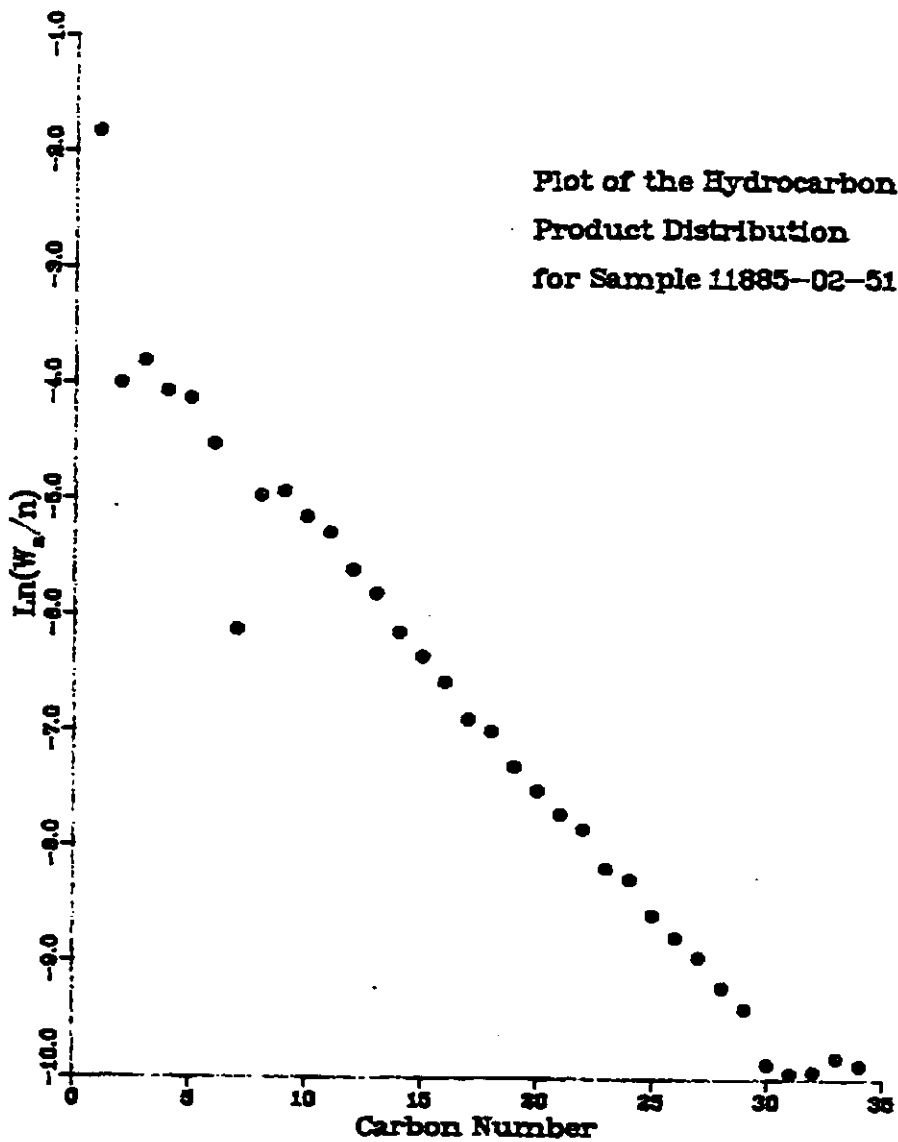


Fig. A177

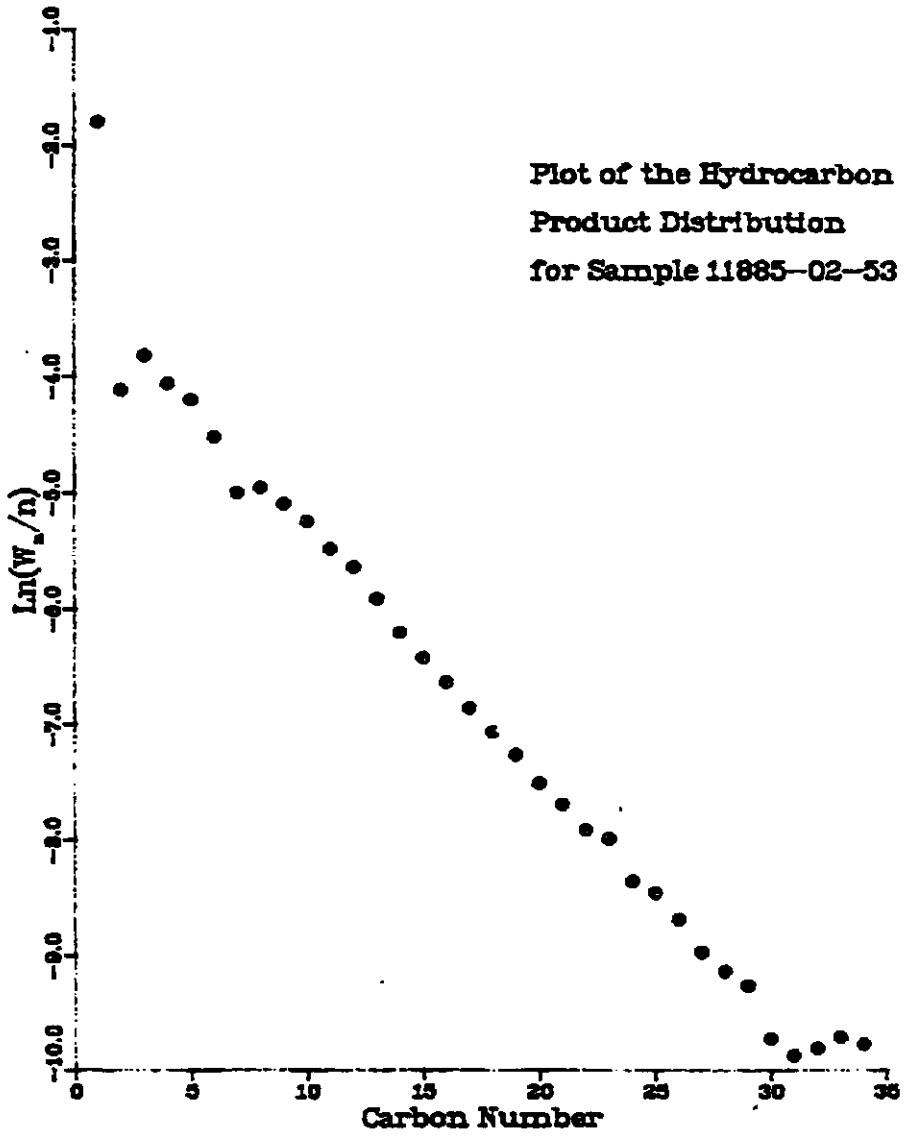


Fig. A178

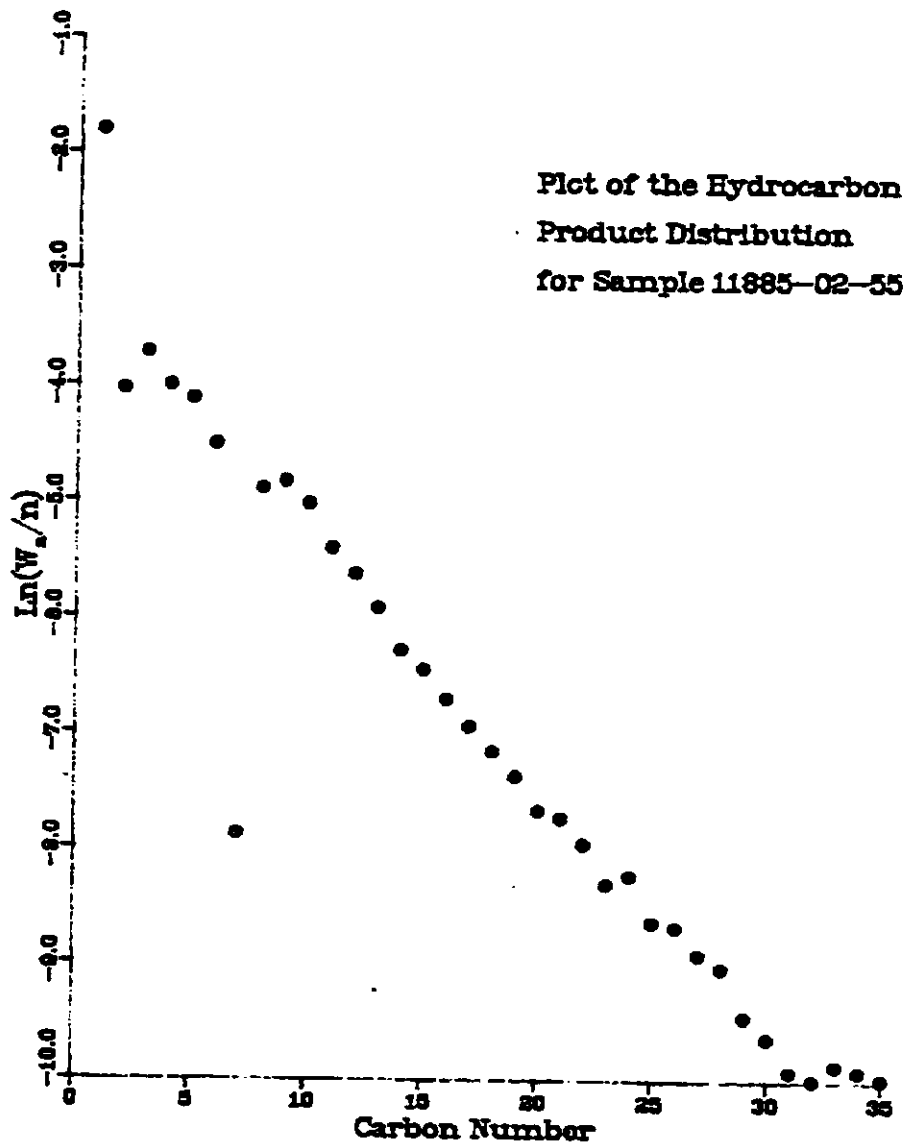


Fig. A179

OVEN TEMP NOT READY

RT: SLICES 9.19

OVEN TEMP=26°C SETPT=26°C LIMIT=495°C

RT: OVEN TEMP=76°C SETPT=76°C LIMIT=495°C

OVEN TEMP=176°C SETPT=176°C LIMIT=495°C

RT: OVEN TEMP=276°C SETPT=276°C LIMIT=495°C

RT: OVEN TEMP=336°C SETPT=336°C LIMIT=495°C

RT: STOP RUN

SAMPLE: D11885-2-8L

Fig. A180

038

RT: STOP RUN

RT: STOP RUN

RT: STOP RUN

RT: STOP RUN

RT: STOP RUN

RT: STOP RUN

RT: STOP RUN

RT: STOP RUN

SAMPLE: J11985-2-13L

Fig. A181

REPRODUCED FROM THE ORIGINAL RECORDING

054

OVEN TEMP NOT READY

RT: 61026 0.20

RT: OVEN TEMP=25°C SETPT=26°C LIMIT=405°C

RT: OVEN TEMP=75°C SETPT=76°C LIMIT=405°C

RT: OVEN TEMP=175°C SETPT=176°C LIMIT=405°C

RT: OVEN TEMP=275°C SETPT=276°C LIMIT=405°C

RT: OVEN TEMP=350°C SETPT=350°C LIMIT=405°C

RT: STOP RUN

SAMPLE: 011885-2-33L

Fig. A182

DR3

IN RESEARCH AND DEVELOPMENT DIVISION OF THE NATIONAL BUREAU OF STANDARDS

COT

1.24 TEMP NOT RECD

RT: 0.0000 0.00

RT: 0.0000 0.00 0.0000 0.0000

RT: 0.0000 0.00 0.0000 0.0000

RT: 0.0000 0.00 0.0000 0.0000

RT: 0.0000 0.00 0.0000 0.0000

RT: 0.0000 0.00 0.0000 0.0000

RT: 0.0000 0.00

SAMPLE: C11835 - 2 - 55

Fig. A183

Table A19

RESULT OF SYNGAS OPERATION

RUN NO. 11885-02
 CATALYST Co/Tb/X4/X8-U103+U101 1186420 250 CC 107.0G(156.3 @END +49.3)
 FEED H2:CO:ARGON OF 50:50:0 @ 1260 CC/MN OR 302 GHSV

RUN & SAMPLE NO.	11885-02-01	885-02-03	885-02-05	885-02-08	885-02-09
FEED H2:CO:AR	50:50: 0	50:49: 0	50:50: 0	49:50: 0	49:50: 0
HRS ON STREAM	22.5	46.5	70.5	100.0	181.5
PRESSURE, PSIG	292	300	295	292	306
TEMP. C	263	262	260	260	258
FEED CC/MIN	1260	1260	1260	1260	630
HOURS FEEDING	22.50	24.00	24.00	29.50	89.50
EFFLNT GAS LITER	678.85	767.85	807.00	996.20	1468.35
GM AQUEOUS LAYER	180.45	186.48	177.92	215.34	386.95
GM OIL	52.55	63.71	77.20	90.51	150.21
MATERIAL BALANCE					
GM ATOM CARBON %	78.07	81.41	84.22	82.40	92.32
GM ATOM HYDROGEN %	81.13	81.39	85.99	87.11	93.77
GM ATOM OXYGEN %	85.64	88.16	87.33	85.18	96.79
RATIO CHX/(H2O+CO2)	0.7750	0.7945	0.8993	0.9068	0.8850
RATIO X IN CHX	2.3339	2.3565	2.3431	2.3448	2.3844
USAGE H2/CO PRDCT	2.0477	2.0784	1.9903	1.9939	1.7712
FEED H2/CO FRM EFFLNT	1.0392	1.0323	1.0210	1.0247	0.9845
RESIDUAL H2/CO RATIO	0.4241	0.4491	0.4711	0.4806	0.3502
RATIO CO2/(H2O+CO2)	0.1042	0.0925	0.0882	0.0852	0.1760
K SHIFT IN EFFLNT	0.0493	0.0458	0.0456	0.0448	0.0748
SPECIFIC ACTIVITY SA	1.8874	1.6469	1.7713	1.7256	1.9700
CONVERSION					
ON CO %	37.88	35.80	36.19	35.96	44.64
ON H2 %	74.65	72.07	70.56	69.96	80.31
ON CO+H2 %	56.62	54.22	53.55	53.17	62.33
PRDCT SELECTIVITY, WT %					
CH4	11.74	12.24	11.32	11.57	13.37
C2 HC'S	2.43	2.58	2.38	4.16	3.62
C3H8	3.14	3.39	3.36	3.27	4.16
C3H6=	2.49	2.60	2.93	2.49	2.90
C4H10	2.37	2.59	2.66	2.37	3.05
C4H8=	3.89	4.21	4.13	3.82	4.28
C5H12	2.37	2.80	2.60	2.60	3.33
C5H10=	4.78	5.09	4.51	4.49	5.15
C6H14	2.84	2.69	2.40	2.50	3.03
C6H12= & CYCLO'S	3.80	3.80	2.88	3.48	4.20
C7+ IN GAS	20.05	11.83	8.99	9.37	10.03
LIQ HC'S	40.10	46.19	51.83	49.89	42.88
TOTAL	100.00	100.00	100.00	100.00	100.00

Table A19 (continued)

SUB-GROUPING					
C1 -C4	26.06	27.61	26.78	27.58	31.37
C5 -420 F	51.29	45.14	43.68	44.38	44.61
420-700 F	17.26	21.48	23.84	22.00	18.95
700-END PT	5.40	5.77	5.70	5.94	5.07
C5+-END PT	73.94	72.39	73.22	72.32	68.63
ISO/NORMAL MOLE RATIO					
C4	0.1456	0.1024	0.1300	0.0818	0.1525
C5	0.1621	0.1495	0.1297	0.1078	0.1143
C6	0.4294	0.2760	0.2327	0.1982	0.2656
C4=	0.0628	0.0687	0.0816	0.0708	0.0748
PARAFFIN/OLEFIN RATIO					
C3	1.2046	1.2405	1.0939	1.2568	1.3675
C4	0.5874	0.5936	0.6219	0.5974	0.5894
C5	0.4826	0.5349	0.5604	0.5624	0.6274
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))	0.8125	0.8190	0.8228	0.8207	0.8103
RATIO CH4/(1-A)**2	3.3402	3.7367	3.6072	3.5997	3.7126
ALPHA FRM CORRELATION					
ALPHA (EXPTL/CORR)	0.8524	0.8497	0.8475	0.8465	0.8620
	0.9532	0.9639	0.9710	0.9696	0.9400
W%CH4 FRM CORRELATION					
W%CH4 (EXPTL/CORR)	14.2259	14.8630	15.1351	15.4353	10.1957
	0.8251	0.8238	0.7479	0.7494	1.3109
LIQ HC COLLECTION					
PHYS. APPEARANCE	CLDY	CLR OIL	CLR &SLD	WH &SLD	YLW WAXY
DENSITY	0.761	0.762	0.760	0.756	0.760
N, REFRACTIVE INDEX	1.4278	1.4285	1.4273	1.4278	1.4280
SIMULT'D DISTILATN					
10 WT % @ DEG F	261	294	291	266	265
16	300	307	306	303	302
50	453	458	452	451	450
84	672	669	651	659	658
90	744	724	711	724	722
RANGE(16-84 %)	372	362	345	356	356
WT % @ 420 F	43.50	41.00	43.00	44.00	44.00
WT % @ 700 F	86.54	87.50	89.00	88.09	88.18

REMARKS: LOW MATERIAL BALANCE IN THIS RUN DUE TO LEAK.

HALF SP-VEL
EFLNT ADJTD
FOR BALANCE

NEW FORMAT JAN 25, 85

Table A20

RESULT OF SYNGAS OPERATION

RUN NO. 11885-02
 CATALYST Co/Tb/X4/X8-U103+U101 1186420 250 CC 107.0G(156.3 @END +49.3)
 FEED H2:CO:ARGON OF 50:50:0 @ 1260 CC/MN OR 302 GHSV

RUN & SAMPLE NO.	11885-02-11	885-02-13	885-02-15	885-02-17	885-02-19
FEED H2:CO:AR	50:49: 0	50:49: 0	50:49: 0	50:49: 0	50:49: 0
HRS ON STREAM	205.5	229.5	253.5	277.5	301.5
PRESSURE,PSIG	300	300	300	300	300
TEMP. C	261	261	261	260	259
FEED CC/MIN	1260	1260	1260	1260	1260
HOURS FEEDING	24.00	24.00	24.00	24.00	24.00
EFFLNT GAS LITER	876.35	867.10	861.15	878.95	887.75
GM AQUEOUS LAYER	153.01	152.60	149.99	148.43	149.83
GM OIL	60.25	57.19	53.19	53.22	51.23
MATERIAL BALANCE					
GM ATOM CARBON %	83.47	82.40	80.06	81.89	82.46
GM ATOM HYDROGEN %	82.58	82.01	80.51	81.66	82.60
GM ATOM OXYGEN %	86.22	85.21	83.89	84.82	85.37
RATIO CHX/(H2O+CO2)	0.8978	0.8947	0.8544	0.8878	0.8895
RATIO X IN CHX	2.3884	2.3861	2.3925	2.3867	2.3862
USAGE H2/CO PRDFT	2.0706	2.0762	2.1163	2.0811	2.0821
FEED H2/CO FRM EFFLNT	1.0215	1.0277	1.0383	1.0297	1.0343
RESIDUAL H2/CO RATIO	0.5477	0.5514	0.5692	0.5686	0.5733
RATIO CO2/(H2O+CO2)	0.0694	0.0682	0.0686	0.0687	0.0679
K SHIFT IN EFFLNT	0.0409	0.0404	0.0419	0.0420	0.0418
SPECIFIC ACTIVITY SA	1.0939	1.0879	0.9989	1.0653	1.1138
CONVERSION					
ON CO %	31.11	31.24	30.33	30.48	30.56
ON H2 %	63.07	63.10	61.81	61.61	61.51
ON CO+H2 %	47.26	47.39	46.36	46.27	46.29
PRDFT SELECTIVITY,WT %					
CH4	13.80	13.62	14.00	13.69	13.54
C2 HC'S	2.73	3.49	3.23	3.57	3.96
C3H8	3.41	3.78	3.62	3.65	3.99
C3H6=	2.23	2.53	2.43	2.59	2.66
C4H10	2.67	2.96	2.75	2.86	3.25
C4H8=	4.01	4.51	3.98	4.12	4.68
C5H12	2.63	2.71	2.94	2.97	3.24
C5H10=	4.43	4.65	4.62	4.85	4.97
C6H14	2.87	2.94	3.01	3.09	3.07
C6H12= & CYCLO'S	3.75	3.89	3.83	3.66	3.79
C7+ IN GAS	10.28	9.77	10.92	11.58	11.53
LIQ HC'S	47.19	45.16	44.67	43.38	41.33
TOTAL	100.00	100.00	100.00	100.00	100.00

Table A20 (continued)

SUB-GROUPING					
C1 -C4	28.85	30.88	30.01	30.47	32.08
C5 -420 F	44.86	43.83	43.95	45.02	44.37
420-700 F	21.38	20.23	21.26	20.30	19.55
700-END PT	4.91	5.06	4.78	4.21	4.01
C5+-END PT	71.15	69.12	69.99	69.53	67.92
ISO/NORMAL MOLE RATIO					
C4	0.0654	0.1300	0.0611	0.0573	0.1312
C5	0.0569	0.0680	0.0676	0.0675	0.0577
C6	0.1531	0.1715	0.1463	0.1625	0.1715
C4=	0.0765	0.0922	0.0776	0.0801	0.0958
PARAFFIN/OLEFIN RATIO					
C3	1.4604	1.4273	1.4265	1.3443	1.4307
C4	0.6413	0.6329	0.6686	0.6697	0.6700
C5	0.5762	0.5663	0.6194	0.5962	0.6325
SCHULZ-FLORY DISTRIB					
ALPHA (EXP(SLOPE))	0.8140	0.8127	0.8181	0.8122	0.8096
RATIO CH4/(1-A)**2	3.9892	3.8795	4.2316	3.8840	3.7358
ALPHA FRM CORRELATION					
ALPHA (EXPTL/CORR)	0.8401	0.8397	0.8382	0.8383	0.8380
ALPHA (EXPTL/CORR)	0.9690	0.9677	0.9761	0.9689	0.9662
W%CH4 FRM CORRELATION					
W%CH4 (EXPTL/CORR)	17.6384	17.7403	18.2193	17.9784	17.8726
W%CH4 (EXPTL/CORR)	0.7822	0.7676	0.7683	0.7616	0.7575
LIQ HC COLLECTION					
PHYS. APPEARANCE	CLDY WAXY	CLDY WAXY	CLDY &SLD	CLDY &SLD	CLDY &SLD
DENSITY	0.758	0.756	0.757	0.757	0.758
N, REFRACTIVE INDEX	1.4286	1.4274	1.4264	1.4264	1.4264
SIMULT'D DISTILATN					
10 WT % @ DEG F	263	265	290	291	293
16	303	303	306	306	306
50	444	449	456	451	452
84	644	650	651	643	644
90	705	712	708	696	696
RANGE(16-84 %)	341	347	345	337	338
WT % @ 420 F	44.30	44.00	41.70	43.50	43.00
WT % @ 700 F	89.60	88.80	89.30	90.30	90.30

NEW FORMAT JAN 25,85