

cc: R & O Files  
O. D. Thomas (r) R. L. Rayl  
C. J. Silas (r) L. M. Richards  
D. G. Smith  
J. G. Brian  
D. A. Morris

Norway Well file

March 19, 1975

North Sea, Norwegian Sector  
Eldfisk 2/7-7K, Characterisation  
of Crude Oil

DAN-51-75

C. P. Kaiser, Manager  
Calc Office

Attention: C. S. Sauriere

Crude oil samples recovered from DSTs 2, 3, and 6, all of which tested Danian-Cretaceous carbonate between intervals of 2911 to 2925 meters (9550-9595 feet), 2838 to 2865 meters (9310-9400 feet), and 2789 to 2822 meters (9150-9260 feet), respectively, in the Eldfisk 2/7-7K well, have been geochemically characterized. An earlier report (Er-163-73) transmitted conclusions resulting from analyses of four water samples from DST 2.

Conclusions and interpretations resulting from the present study of the hydrocarbons are as follows:

1. The oil recovered by the three DSTs from the 2789-2924 meter (9150-9595 feet) interval is similar to that produced from Danian-Cretaceous reservoirs in the North Sea Tertiary Basin. All the oils are good quality and are paraffinic, with densities of about 0.84 (36 API gravity), asphaltic content of about 5 wt. per cent, and sulfur and nitrogen contents of less than 0.24 and 0.18 wt. per cent, respectively.

2. The crude oils recovered from DSTs 2, 3, and 6 are identical and were derived from organic matter which accumulated in an open marine environment. Terrestrial material was not transported to the site of deposition in this area of the Paleocene source rock facies.

Data upon which these conclusions are based are presented in Tables I through III and Figures 1 through 4.

ORIGINAL SIGNED BY

David A. Morris

DAM:JGF:lf

Attachments: Tables I - III  
Figures 1 - 4

TABLE I  
 CHARACTERIZATION OF CRUDE OILS  
 Recovered from Danian-Cretaceous Carbonate in the Eldfisk 2/7-7X, Norwegian Sector, North Sea

Geochem Branch Code	Depth Interval		Density	API Gravity	Pour Point Deg-C	Viscosity		Heteroelements				Total Crude C-13	Major Petroleum Fractions						Odd-Even Predom- inance
	Meters	Feet				21 Deg-C CS	38 Deg-C CS	Sulfur Wt. %	Nitrogen Wt. %	Vanadium Wt. %	Nickel Wt. %		Saturates Wt. % C-13	Aromatics Wt. % C-13	Asphaltenes Wt. % C-13	Wt. % C-13	Wt. % C-13	Wt. % C-13	
LAW(1)	2911 - 2924	9550 - 9595	0.8494	36.2	2 <sup>o</sup>	8.2	5.4	0.24	0.18	1.19	3.76	-27.2	34.9	--	59.7	-26.6	5.4	-26.2	1.04
LAS(1)	2911 - 2924	9550 - 9595	--	--(2)	-	-	-	-	-	-	-	-27.3	35.6	-27.5	58.9	-26.9	5.6	-26.3	1.05
LAT(1)	2911 - 2924	9550 - 9595	--	--(2)	-	-	-	-	-	-	-	-27.3	34.9	-27.3	59.3	-27.1	5.7	-26.3	1.05
LLS(3)	2838 - 2865	9310 - 9400	0.8438	36.1	-12.0	8.9	5.2	0.22	0.16	0.85	4.23	-27.2	64.3	-27.4	32.8	-26.5	2.8	-26.0	1.03
LIU(3)	2789 - 2822	9150 - 9260	0.8418	36.5	-12.0	8.1	4.6	0.21	0.16	1.04	3.19	-27.1	64.1	-27.3	31.6	-26.4	4.3	-26.0	1.04

(1) Atmospheric crude oil samples recovered along with water, from DST 2, Flow 2

(2) Insufficient oil present to carry out physical and heteroelemental analysis

(3) Pressurized companion gas-liquid samples; LLS from DST 3, Flow 2, and LIU from DST 6, Flow 2.

TABLE II

Compositional Analyses of Gas, Liquid and Combined Stream for Samples LLS (Liquid) and LLR (Gas) from ELDFISK 2/7-7X WELL, Norwegian Sector, North Sea (DST 3, Flow 2)

LIQUID SAMPLE = LLS L  
GAS SAMPLE = LLR G

COMPONENT	GAS SAMPLE		LIQUID SAMPLE		COMBINED STREAM	
	WT PCT.	MOL PCT	WT PCT.	MOL PCT	WT PCT.	MOL PCT
HELIUM	0.000	0.000	0.000	0.000	0.000	0.000
HYDROGEN SULFIDE	0.000	0.000	0.000	0.000	0.000	0.000
OXYGEN + ARGON	0.000	0.000	0.000	0.000	0.000	0.000
NITROGEN	0.337	0.247	0.028	0.166	0.103	0.218
CARBON DIOXIDE	5.301	2.468	0.149	0.550	1.321	1.780
METHANE	63.075	80.569	0.721	7.282	14.682	54.290
ETHANE	14.464	9.857	0.935	5.040	4.121	8.130
PROPANE	10.016	4.655	1.787	6.563	3.968	5.339
ISOBUTANE	1.228	0.433	0.471	1.314	0.733	0.749
N-BUTANE	3.210	1.131	1.810	5.045	2.483	2.535
ISOPENTANE	0.729	0.207	0.856	1.921	0.999	0.821
N-PENTANE	0.908	0.258	1.425	3.198	1.596	1.312
NEOHXANE	0.005	0.001	0.013	0.025	0.014	0.010
CYCLOPENTANE	0.059	0.017	0.193	0.446	0.202	0.171
2,3-DIMETHYLBUTANE	0.008	0.001	0.051	0.097	0.052	0.036
2-METHYLPENTANE	0.144	0.034	0.580	1.090	0.599	0.412
3-METHYLPENTANE	0.069	0.016	0.344	0.647	0.352	0.242
N-HEXANE	0.193	0.045	1.283	2.412	1.299	0.894
METHYLCYCLOPENTANE + 2,2-DIMETHYLPENTANE	0.067	0.016	0.651	1.253	0.652	0.459
2,4-DIMETHYLPENTANE	0.005	0.001	0.052	0.084	0.052	0.030
BENZENE + 2,2,3-TRIMETHYLBUTANE	0.012	0.003	0.205	0.425	0.203	0.154
CYCLOHEXANE + 3,3-DIMETHYLPENTANE	0.037	0.009	0.627	1.207	0.622	0.438
2-METHYLHEXANE	0.014	0.003	0.330	0.534	0.326	0.193
2,3-DIMETHYLPENTANE + 1,1-DIMECYCLOPENT.	0.008	0.001	0.181	0.292	0.179	0.106
3-METHYLHEXANE	0.014	0.003	0.382	0.617	0.377	0.223
1-CIS-3-DIMETHYLCYCLOPENTANE	0.005	0.001	0.148	0.245	0.147	0.088
1-TRANS-3-DIMECYPENTANE + 3-ETHYLPENTANE	0.005	0.001	0.166	0.275	0.164	0.099
1-TRANS-2-DIMETHYLCYCLOPENTANE	0.009	0.001	0.277	0.456	0.273	0.165
N-HEPTANE	0.027	0.005	1.225	1.979	1.205	0.713
1-CIS-2-DIMETHYLCYCLOPENTANE	0.000	0.000	0.053	0.087	0.052	0.031
MECYHEX + 2,2-DIMEHEX + 1,1,3-TRIMECYPENT	0.021	0.004	1.291	2.129	1.268	0.766
2,5-DIMETHYLHEXANE	0.000	0.000	0.038	0.053	0.037	0.019
2,4-DIMETHYLHEXANE + ETHYLCYCLOPENTANE	0.001	0.000	0.176	0.249	0.173	0.089
2,2,3-TRIMETHYLPENTANE	0.000	0.000	0.004	0.005	0.004	0.002

1-TRANS-2-CIS-4-TRIMETHYLCYCLOPENTANE	0.000	0.000	0.078	0.112	0.076	0.040
3,3-DIMETHYLHEXANE	0.000	0.000	0.010	0.014	0.010	0.005
TOLUENE	0.003	0.000	0.648	1.139	0.635	0.409
1-TRANS-2-CIS-3-TRIMETHYLCYCLOPENTANE	0.000	0.000	0.047	0.067	0.046	0.024
2,3,4-TRIMETHYLPENTANE	0.000	0.000	0.000	0.000	0.000	0.000
2,3-DIMEHEX+2,3,3-TRIMEPENT+2-ME3-ETPENT	0.000	0.000	0.068	0.097	0.067	0.034
2-METHYLHEPTANE + 4-METHYLHEPTANE	0.002	0.000	0.441	0.626	0.432	0.224
3,4-DIMEHEX + 1-CIS-2-TRAN-4-TRIMECYPENT	0.000	0.000	0.122	0.173	0.120	0.062
3-ETHYLHEXANE	0.000	0.000	0.022	0.031	0.021	0.011
3-METHYLHEPTANE + 3-ME-3-ETHYLPENTANE	0.001	0.000	0.273	0.387	0.267	0.139
2,2,5-TRIMEHEX+1,1,3-TR-4-TETRAMECYPENT.	0.000	0.000	0.014	0.018	0.014	0.006
1-CIS-2-CIS-4-TRIMETHYLCYCLOPENTANE	0.000	0.000	0.023	0.034	0.023	0.012
1-TRANS-4 + 1-CIS-3 + 1,1-DIMECYHEXANE	0.001	0.000	0.445	0.643	0.436	0.2
1-ME-3-ETHCYPENT + 2,2,4-TRIMETHYLHEXANE	0.000	0.000	0.083	0.120	0.081	0.043
1-ME-TRANS-2 + 1-ME-CIS-3-ETHYLCYPENTANE	0.000	0.000	0.146	0.211	0.143	0.075
CYCLOHEPTANE	0.000	0.000	0.044	0.073	0.043	0.026
N-OCTANE + 1-TRANS-2-DIMETHYLCYCLOHEXANE	0.002	0.000	1.077	1.527	1.054	0.547
1-CIS-4-DIMETHYLCYCLOHEXANE	0.000	0.000	0.203	0.293	0.199	0.105
1-TRANS-3-DIMETHYLCYCLOHEXANE	0.000	0.000	0.087	0.126	0.085	0.045
2,2,4-TRIMEHEXANE + ISOPROPYLCYCLOPENT.	0.000	0.000	0.023	0.029	0.023	0.010
2,3,5-TRIMEHEXANE + 2,2-DIMETHYLHEPTANE	0.000	0.000	0.017	0.021	0.017	0.007
1-METHYL-CIS-2-ETHYLCYCLOPENTANE	0.000	0.000	0.070	0.101	0.068	0.036
2,4-DIMEHEPTANE + 2,2,3-TRIMETHYLHEXANE	0.000	0.000	0.152	0.192	0.149	0.069
2,6-DIMEHEPTANE + 1-CIS-2-DIMECYHEXANE	0.000	0.000	0.119	0.151	0.117	0.054
N-PROPYLCYPENT + 2,5- + 3,5-DIMEHEPTANE	0.000	0.000	0.054	0.079	0.053	0.028
ETHYLCYCLOHEXANE	0.000	0.000	0.372	0.538	0.365	0.193
ETHYLBENZENE	0.000	0.000	0.126	0.193	0.123	0.069
3,3-DIMETHYLHEPTANE + 1,1,3-TRIMECYHEXANE	0.000	0.000	0.187	0.236	0.183	0.084
2,3,3-TRIMETHYLHEXANE	0.000	0.000	0.055	0.069	0.054	0.025
2-METHYL-3-ETHYLHEXANE	0.000	0.000	0.039	0.050	0.038	0.017
P-XYLENE	0.000	0.000	0.088	0.135	0.086	0.048
M-XYLENE + 2,3,4-TRIMETHYLHEXANE	0.000	0.000	0.584	0.891	0.572	0.31
2,3- + 3,4-DIMETHYLHEPTANE	0.000	0.000	0.060	0.076	0.059	0.027
4-METHYLOCTANE	0.000	0.000	0.254	0.321	0.249	0.115
2-METHYLOCTANE	0.000	0.000	0.166	0.210	0.162	0.075
3-ETHYLHEPTANE	0.000	0.000	0.037	0.046	0.036	0.016
3-METHYLOCTANE	0.000	0.000	0.196	0.248	0.192	0.089
O-XYLENE ( + A C-10 ALKANE)	0.000	0.000	0.255	0.389	0.249	0.139
2,2,4-TRIMETHYLHEPTANE	0.000	0.000	0.028	0.032	0.028	0.011
2,2,5-TRIMETHYLHEPTANE	0.000	0.000	0.079	0.090	0.078	0.032
2,2,6-TRIMETHYLHEPTANE	0.000	0.000	0.024	0.027	0.023	0.009
*** UNKNOWN ***	0.000	0.000	0.054	0.062	0.053	0.022
2,5,5-TRIMETHYLHEPTANE	0.000	0.000	0.019	0.021	0.018	0.007

## 3- TABLE II (Concluded)

DAM-51-75

2,4,4-TRIMETHYLHEPTANE	0.000	0.000	0.029	0.033	0.028	0.011
*** A C-9 NAPHTHENE ***	0.000	0.000	0.157	0.201	0.153	0.072
ISOPROPYLBENZENE	0.000	0.000	0.084	0.113	0.082	0.040
N-NOBANE	0.000	0.000	1.031	1.302	1.009	0.466
C-9 NAPHTHENES + C-10 ALKANES	0.000	0.000	2.377	3.049	2.326	1.093
N-PROPYLBENZENE	0.000	0.000	0.000	0.000	0.000	0.000
1-METHYL-3-ETHYLBENZENE	0.000	0.000	0.173	0.234	0.170	0.084
1-METHYL-4-ETHYLBENZENE	0.000	0.000	0.108	0.146	0.106	0.052
1-METHYL-2-ETHYLBENZENE	0.000	0.000	0.233	0.314	0.228	0.112
1,3,5-TRIMETHYLBENZENE	0.000	0.000	0.248	0.335	0.243	0.112
1,2,4-TRIMETHYLBENZENE	0.000	0.000	0.317	0.427	0.310	0.153
1,2,3-TRIMETHYLBENZENE	0.000	0.000	0.168	0.227	0.165	0.081
N-DECANE	0.000	0.000	0.975	1.110	0.954	0.398
UNDECANES AND HEAVIER	0.000	0.000	70.719	36.882	49.181	13.224

MOL PERCENT C6'S = 2.621

MOL PERCENT C7+ = 22.000

TABLE III

Compositional Analysis of Gas, Liquid and Combined Stream  
for Samples LLU (liquid) and LLT (gas) from ELDFISK 2/7-7X WELL,  
Norwegian Sector, North Sea (DST 6, Flow 2)

COMPONENT	GAS SAMPLE		LIQUID SAMPLE		COMBINED STREAM	
	WT PCT.	MOL PCT	WT PCT.	MOL PCT	WT PCT.	MOL PCT
HELIUM	0.000	0.000	0.000	0.000	0.000	0.000
HYDROGEN SULFIDE	0.000	0.000	0.000	0.000	0.000	0.000
OXYGEN + ARGON	0.000	0.000	0.000	0.000	0.000	0.000
NITROGEN	0.355	0.252	0.014	0.075	0.090	0.185
CARBON DIOXIDE	5.312	2.405	0.237	0.773	1.369	1.782
METHANE	66.370	82.447	1.270	11.368	15.493	55.328
ETHANE	14.077	9.330	1.425	6.806	4.391	8.367
PROPANE	8.692	3.928	2.430	7.911	4.193	5.448
ISOBUTANE	0.987	0.338	0.598	1.478	0.784	0.773
N-BUTANE	2.460	0.843	2.196	5.425	2.629	2.591
ISOPENTANE	0.515	0.142	0.981	1.952	1.048	0.832
N-PENTANE	0.634	0.175	1.568	3.120	1.636	1.299
HEXANE	0.005	0.001	0.015	0.025	0.015	0.010
CYCLOPENTANE	0.041	0.011	0.203	0.416	0.203	0.166
2,3-DIMETHYLBUTANE	0.005	0.001	0.056	0.093	0.055	0.036
2-METHYLPENTANE	0.104	0.024	0.610	1.017	0.606	0.403
3-METHYLPENTANE	0.051	0.011	0.359	0.598	0.354	0.235
N-HEXANE	0.149	0.034	1.325	2.207	1.299	0.863
METHYLCYCLOPENTANE + 2,2-DIMETHYLPENTANE	0.053	0.012	0.658	1.123	0.641	0.436
2,4-DIMETHYLPENTANE	0.004	0.000	0.054	0.077	0.052	0.036
BENZENE + 2,2,3-TRIMETHYLBUTANE	0.010	0.002	0.213	0.392	0.206	0.151
CYCLOHEXANE + 3,3-DIMETHYLPENTANE	0.032	0.007	0.633	1.080	0.612	0.417
2-METHYLHEXANE	0.014	0.002	0.331	0.474	0.319	0.182
2,3-DIMETHYLPENTANE + 1,1-DIMECYCLOPENT.	0.007	0.001	0.179	0.256	0.172	0.098
3-METHYLHEXANE	0.014	0.002	0.380	0.544	0.366	0.209
1-CIS-3-DIMETHYLCYCLOPENTANE	0.005	0.001	0.145	0.212	0.139	0.081
1-TRANS-3-DIMECYPENTANE + 3-ETHYLPENTANE	0.005	0.001	0.163	0.238	0.157	0.091
1-TRANS-2-DIMETHYLCYCLOPENTANE	0.009	0.001	0.272	0.398	0.262	0.153
N-HEPTANE	0.030	0.006	1.224	1.753	1.177	0.672
1-CIS-2-DIMETHYLCYCLOPENTANE	0.001	0.000	0.051	0.075	0.049	0.029
MECYHEX + 2,2-DIMEHEX + 1,1,3-TRIMECYPENT	0.023	0.004	1.279	1.870	1.227	0.716
2,5-DIMETHYLHEXANE	0.000	0.000	0.039	0.049	0.037	0.018
2,4-DIMETHYLHEXANE + ETHYLCYCLOPENTANE	0.002	0.000	0.172	0.216	0.165	0.082
2,2,3-TRIMETHYLPENTANE	0.000	0.000	0.004	0.005	0.003	0.001

1-TRANS-2-CIS-4-TRIMETHYLCYCLOPENTANE	0.000	0.000	0.076	0.097	0.072	0.037
3,3-DIMETHYLHEXANE	0.000	0.000	0.010	0.013	0.010	0.005
TOLUENE	0.004	0.001	0.641	0.999	0.614	0.382
1-TRANS-2-CIS-3-TRIMETHYLCYCLOPENTANE	0.000	0.000	0.046	0.059	0.044	0.022
2,3,4-TRIMETHYLPENTANE	0.000	0.000	0.003	0.004	0.003	0.001
2,3-DIMEHEX+2,3,3-TRIMEPENT+2-ME3-ETPENT	0.000	0.000	0.066	0.083	0.063	0.031
2-METHYLHEPTANE + 4-METHYLHEPTANE	0.003	0.000	0.431	0.542	0.413	0.207
3,4-DIMEHEX + 1-CIS-2-TRAN-4-TRIMECYPENT	0.000	0.000	0.120	0.151	0.115	0.058
3-ETHYLHEXANE	0.000	0.000	0.021	0.027	0.020	0.010
3-METHYLHEPTANE + 3-ME-3-ETHYLPENTANE	0.001	0.000	0.270	0.340	0.259	0.129
2,2,5-TRIMEHEX+1,1,3-TR-4-TETRAMECYPENT.	0.000	0.000	0.011	0.013	0.011	0.005
1-CIS-2-CIS-4-TRIMETHYLCYCLOPENTANE	0.000	0.000	0.022	0.028	0.021	0.010
1-TRANS-4 + 1-CIS-3 + 1,1-DIMECYHEXANE	0.002	0.000	0.433	0.554	0.414	0.2
1-ME-3-ETHCYPENT + 2,2,4-TRIMETHYLHEXANE	0.000	0.000	0.081	0.104	0.078	0.039
1-ME-TRANS-2 + 1-ME-CIS-3-ETHYLCYPENTANE	0.000	0.000	0.140	0.179	0.134	0.068
CYCLOHEPTANE	0.000	0.000	0.043	0.062	0.041	0.024
N-OCTANE + 1-TRANS-2-DIMETHYLCYCLOHEXANE	0.003	0.000	1.053	1.324	1.008	0.505
1-CIS-4-DIMETHYLCYCLOHEXANE	0.000	0.000	0.197	0.252	0.188	0.096
1-TRANS-3-DIMETHYLCYCLOHEXANE	0.000	0.000	0.086	0.110	0.082	0.042
2,2,4-TRIMEHEXANE + ISOPROPYLCYCLOPENT.	0.000	0.000	0.021	0.024	0.020	0.009
2,3,5-TRIMEHEXANE + 2,2-DIMETHYLHEPTANE	0.000	0.000	0.016	0.018	0.015	0.006
1-METHYL-CIS-2-ETHYLCYCLOPENTANE	0.000	0.000	0.068	0.087	0.065	0.033
2,4-DIMEHEPTANE + 2,2,3-TRIMETHYLHEXANE	0.000	0.000	0.146	0.163	0.140	0.062
2,6-DIMEHEPTANE + 1-CIS-2-DIMECYHEXANE	0.000	0.000	0.106	0.119	0.102	0.045
N-PROPYLCYPENT + 2,5- + 3,5-DIMEHEPTANE	0.000	0.000	0.061	0.078	0.058	0.029
ETHYLCYCLOHEXANE	0.000	0.000	0.359	0.460	0.344	0.175
ETHYLBENZENE	0.000	0.000	0.120	0.163	0.115	0.062
3,3-DIMETHYLHEPTANE +1,1,3-TRIMECYHEXANE	0.000	0.000	0.181	0.202	0.173	0.077
2,3,3-TRIMETHYLHEXANE	0.000	0.000	0.054	0.061	0.052	0.023
2-METHYL-3-ETHYLHEXANE	0.000	0.000	0.040	0.045	0.038	0.017
P-XYLENE	0.000	0.000	0.086	0.116	0.082	0.044
M-XYLENE + 2,3,4-TRIMETHYLHEXANE	0.000	0.000	0.571	0.773	0.546	0.295
2,3- + 3,4-DIMETHYLHEPTANE	0.000	0.000	0.070	0.079	0.067	0.030
4-METHYLOCTANE	0.000	0.000	0.249	0.279	0.238	0.106
2-METHYLOCTANE	0.000	0.000	0.167	0.187	0.160	0.071
3-ETHYLHEPTANE	0.000	0.000	0.041	0.046	0.039	0.017
3-METHYLOCTANE	0.000	0.000	0.201	0.225	0.192	0.085
O-XYLENE ( + A C-10 ALKANE)	0.000	0.000	0.258	0.348	0.246	0.133
2,2,4-TRIMETHYLHEPTANE	0.000	0.000	0.035	0.036	0.034	0.013
2,2,5-TRIMETHYLHEPTANE	0.000	0.000	0.082	0.082	0.078	0.031
2,2,6-TRIMETHYLHEPTANE	0.000	0.000	0.025	0.026	0.024	0.009
*** UNKNOWN ***	0.000	0.000	0.057	0.058	0.055	0.022
2,5,5-TRIMETHYLHEPTANE	0.000	0.000	0.021	0.021	0.020	0.008

2,4,4-TRIMETHYLHEPTANE	0.000	0.000	0.031	0.031	0.029	0.011
*** A C-9 NAPHTHENE ***	0.000	0.000	0.156	0.177	0.149	0.067
ISOPROPYL BENZENE	0.000	0.000	0.083	0.100	0.080	0.038
N-NONANE	0.000	0.000	0.995	1.113	0.951	0.425
C-9 NAPHTHENES + C-10 ALKANES	0.000	0.000	2.222	2.526	2.124	0.964
N-PROPYLBENZENE	0.000	0.000	0.000	0.000	0.000	0.000
1-METHYL-3-ETHYLBENZENE	0.000	0.000	0.152	0.181	0.145	0.069
1-METHYL-4-ETHYLBENZENE	0.000	0.000	0.094	0.113	0.090	0.043
1-METHYL-2-ETHYLBENZENE	0.000	0.000	0.170	0.203	0.163	0.077
1,3,5-TRIMETHYLBENZENE	0.000	0.000	0.053	0.063	0.051	0.023
1,2,4-TRIMETHYLBENZENE	0.000	0.000	0.030	0.036	0.029	0.013
1,2,3-TRIMETHYLBENZENE	0.000	0.000	0.036	0.043	0.034	0.016
N-DECANE	0.000	0.000	0.359	0.362	0.343	0.138
UNDECANES AND HEAVIER	0.000	0.000	69.709	34.346	49.526	13.104

MOL PERCENT C6'S = 2.721

MOL PERCENT C7+ = 20.670



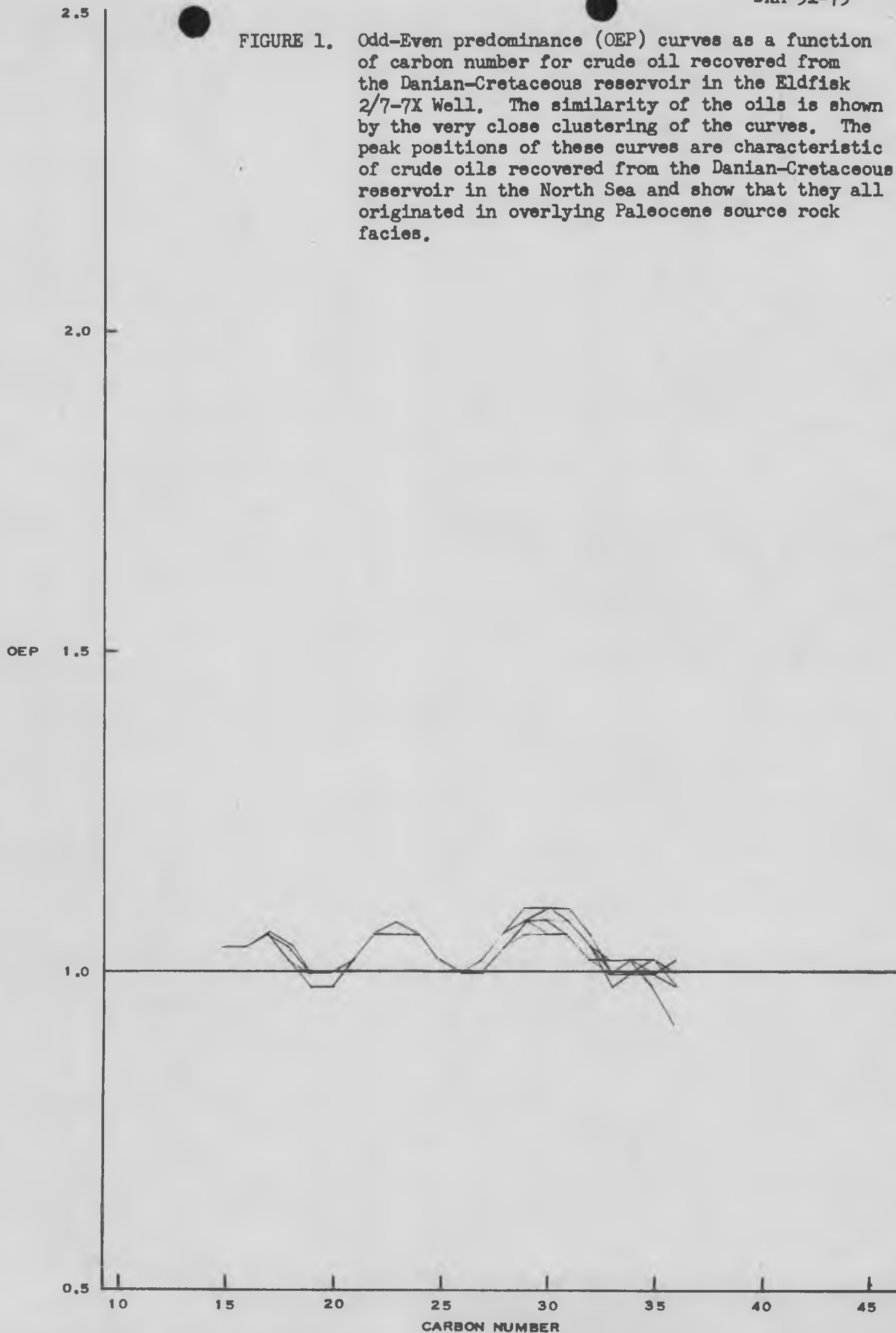
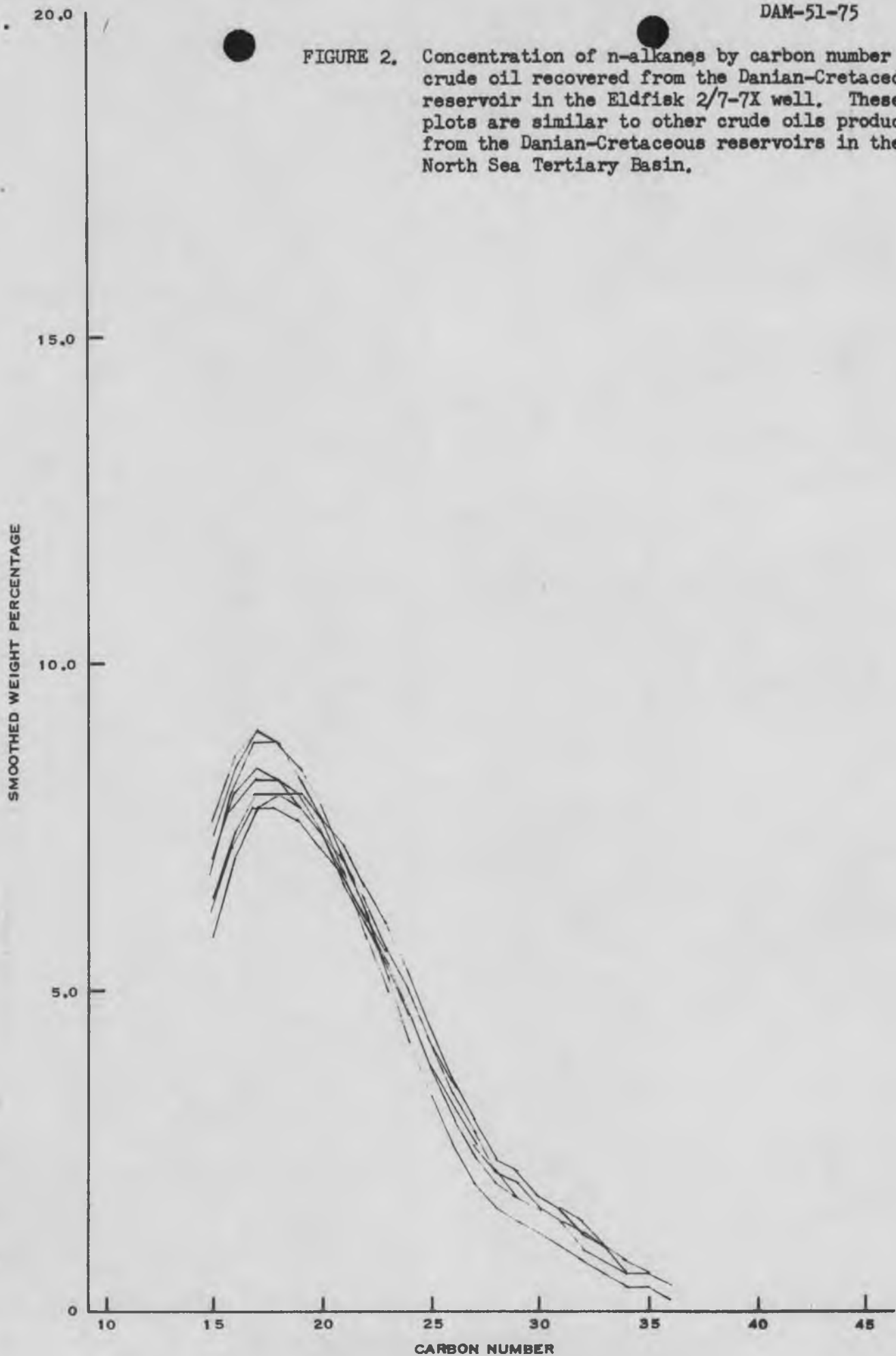


FIGURE 2. Concentration of n-alkanes by carbon number for crude oil recovered from the Danian-Cretaceous reservoir in the Eldfisk 2/7-7X well. These plots are similar to other crude oils produced from the Danian-Cretaceous reservoirs in the North Sea Tertiary Basin.



Carbon Isotopic Composition,  $\delta C_{PDB}^{13}$



Figure 3.

Carbon Isotopic Composition of Individual Hydrocarbons, Methane Through n-Butane for gas in companion samples recovered from the Danian-Cretaceous reservoir in the Eldfisk 2/7-7X. The isotopic distribution is identical to gas associated with crude oils recovered from other Danian-Cretaceous reservoirs in the North Sea Tertiary Basin, and based on previous studies, originated in Paleocene source rocks.

Figure 4  
 COMPONENT COMPOSITION OF COMBINED STREAM  
 THROUGH N-DECANE, BP = 345.4F (= 174.1C)  
 ELDFISK 2/7-7X, NORWEGIAN SECTOR, NORTH SEA

DAM-51-75

