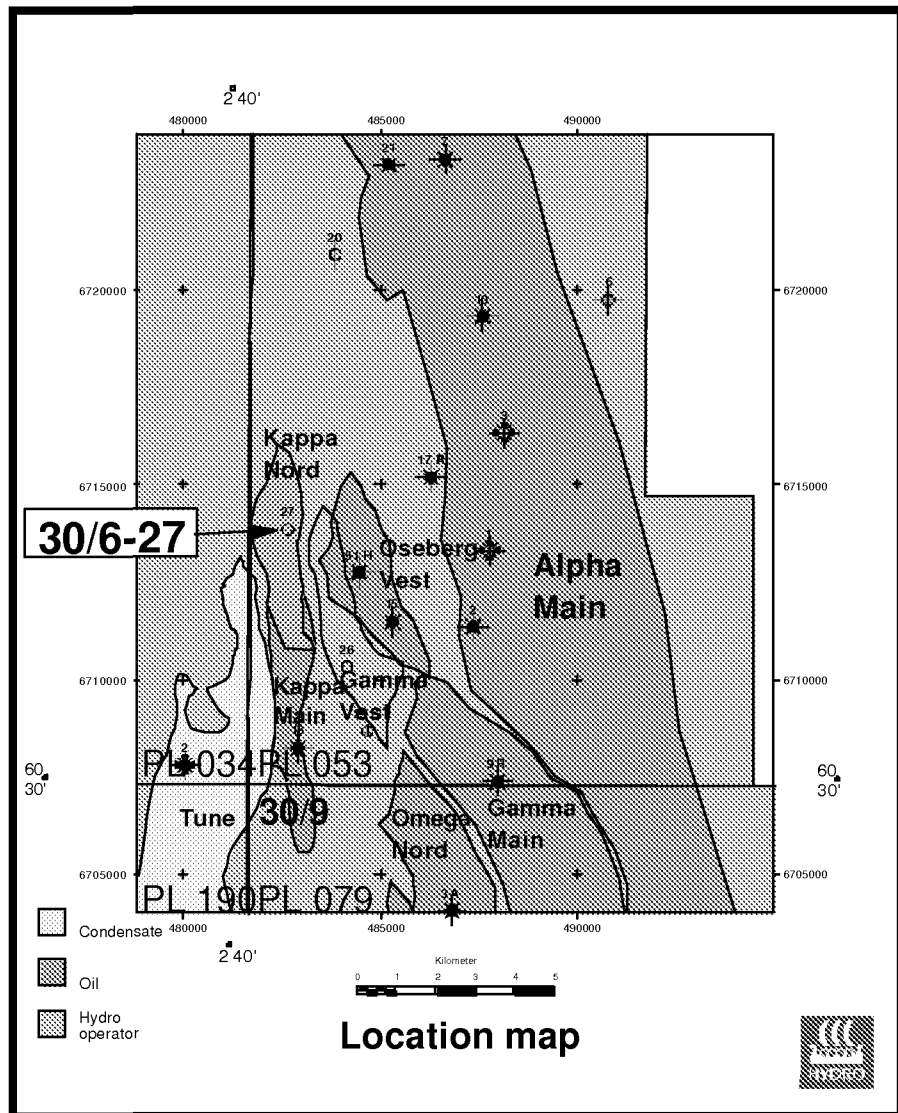
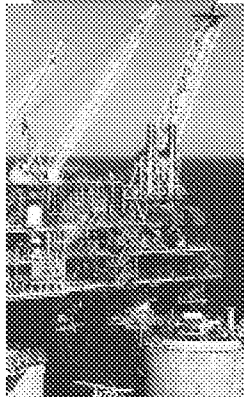
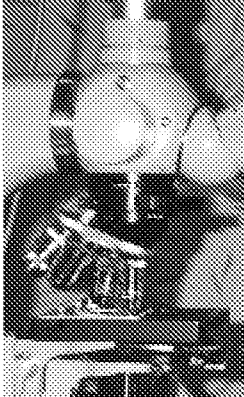


Geochemical characterization well 30/6-27





Title: GEOCHEMICAL CHARACTERIZATION
WELL 30/6-27

No. : NH-00049766
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3 Experimental and sample list

The analytical and preparative methods employed in this study comprise geochemical characterization of sediment extracts and MDT fluids. The analytical program involves:

- ✓ Rock Eval screening
- ✓ Asphaltene precipitation
- ✓ Preparative group type separation by MPLC¹
- ✓ Group type distribution by TLC-FID² (Iatroscan)
- ✓ Gas chromatography (GC-FID) of saturated C₅₋₁₀₍₂₀₎ and C₁₅₊ hydrocarbon fractions
- ✓ Gas chromatography-mass spectrometry (GC-MSD³) of the saturated (SAT) and aromatic (ARO) C₁₅₊ hydrocarbon fractions

All analytical and interpretative works were carried out at the Norsk Hydro O&E Research Centre in Bergen. Isotope measurements are performed by IFE, Kjeller.

All chromatographic data are based on quantitative measurements. The frozen core chips are rig site frozen and transported/stored in a frozen condition, prior to analysis. All sample depths are reported in MD RKB. All data are reported in Appendices 1-3

The analytical methods are based on the guidelines in the Norwegian Industry Guide to Organic Geochemical Analyses (NIGOGA⁴). Major deviations from this guide are:

- Extract and asphaltene workup by centrifugation.
- Internal standard mixture added for quality control and quantitative measurements.
- GC analysis of SAT and ARO fractions by 5% phenyl methyl-silicone stationary phase.
- GC-MSD detection of the aromatic hydrocarbons (not FID).
- Report of a restricted number of compounds relative to the NIGOGA guide, due to known co-elutions or disputable identities.

The data quality control is performed according to defined laboratory procedures, available on request.

Samples which are annotated "s1, s2 ..." represent the internal North Sea reference oil (NSO1) and reflect the analytical repeatability.

The sample list and analytical plan are listed in Table 3.1.

¹ Medium Pressure/Performance Liquid Chromatography
² Thin layer chromatography with Flame Ionisation Detection
³ Gas Chromatography - Mass Selective Detector
⁴ The Norwegian Industry Guide to Organic Geochemical Analyses, edition 4.0, 2000



REPORT

Title: GEOCHEMICAL CHARACTERIZATION
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Type	Start-depth, MD RKB	End-depth, MD RKB	Rock Eval	Extr.	latro scan	d13C isotope	C5-20 HC's	SAT HC's	SAT biom.	ARO HC's	Org-ID	Notes
MUD	3120.00	3120.00			1	1					2146066	
GASB	3120.00	3120.00					1				2146026	
GAS	3129.00	3129.00					1				2158180	
GASB	3140.00	3140.00					1				2146019	
OIL/GAS, MDT	3150.50	3150.50		1	1		1	1	1	1	2158187	
GASB	3160.00	3160.00					1				2146024	
OIL/GAS, MDT	3162.50	3162.50		1	1		1	1	1	1	2158185	
COCH	3162.80	3162.80	1	1	1						2155436	
COCH	3163.30	3163.30	1	1	1						2155437	
COCH	3164.30	3164.30	1	1	1						2155438	
COCH	3165.60	3165.60	1	1	1						2155439	
COCH	3166.70	3166.70	1	1	1						2155440	
COCH	3167.90	3167.90	1	1	1						2155441	
COCH	3168.45	3168.45	1	1	1						2155442	
COCH	3169.50	3169.50	1	1	1						2155443	
COCH	3170.30	3170.30	1	1	1						2155447	
COCH	3171.20	3171.20	1	1	1						2155445	
COCH	3172.40	3172.40	1	1	1						2155446	
COCH	3173.30	3173.30	1	1	1						2155444	
COCH	3174.50	3174.50	1	1	1						2155448	
COCH	3175.50	3175.50	1	1	1						2155449	
COCH	3176.60	3176.60	1	1	1						2155450	
COCH	3177.30	3177.30	1	1	1						2155451	
COCH	3178.50	3178.50	1	1	1						2155452	
COCH	3179.20	3179.20	1	1	1						2155453	
GASB	3180.00	3180.00					1				2146022	
COCH	3180.40	3180.40	1	1	1						2155454	
COCH	3181.70	3181.70	1	1	1						2155455	
COCH	3182.20	3182.20	1	1	1						2155456	
COCH	3183.10	3183.10	1	1	1						2155457	
COCH	3184.70	3184.70	1	1	1						2155458	
COCH	3186.70	3186.70	1	1	1						2155459	
COCH	3187.80	3187.80	1	1	1						2155460	
COCH	3188.40	3188.40	1	1	1						2155461	
GASB	3200.00	3200.00					1				2146021	
GASB	3220.00	3220.00					1				2146027	
GASB	3240.00	3240.00					1				2146025	
GASB	3260.00	3260.00					1				2146031	
GASB	3280.00	3280.00					1				2146032	
GASB	3300.00	3300.00					1				2146029	
GASB	3320.00	3320.00					1				2146033	
MUD	3340.00	3340.00			1	1					2146071	
GASB	3340.00	3340.00					1				2146034	
OIL/GAS, MDT	3352.50	3352.50		1	1		1	1	1	1	2158184	Gas: mainly N2, low HC's
DC	3350.00	3355.00	1	1	1						2155206	
GASB	3360.00	3360.00					1				2146035	
DC	3355.00	3360.00	1	1	1						2155207	
DC	3360.00	3365.00	1	1	1						2155208	
GASB	3380.00	3380.00					1				2146036	
GASB	3400.00	3400.00					1				2146037	
GASB	3420.00	3420.00					1				2146038	
GASB	3432.00	3432.00					1				2146030	
SUM:			29	34	34	21	3	3	3	3		

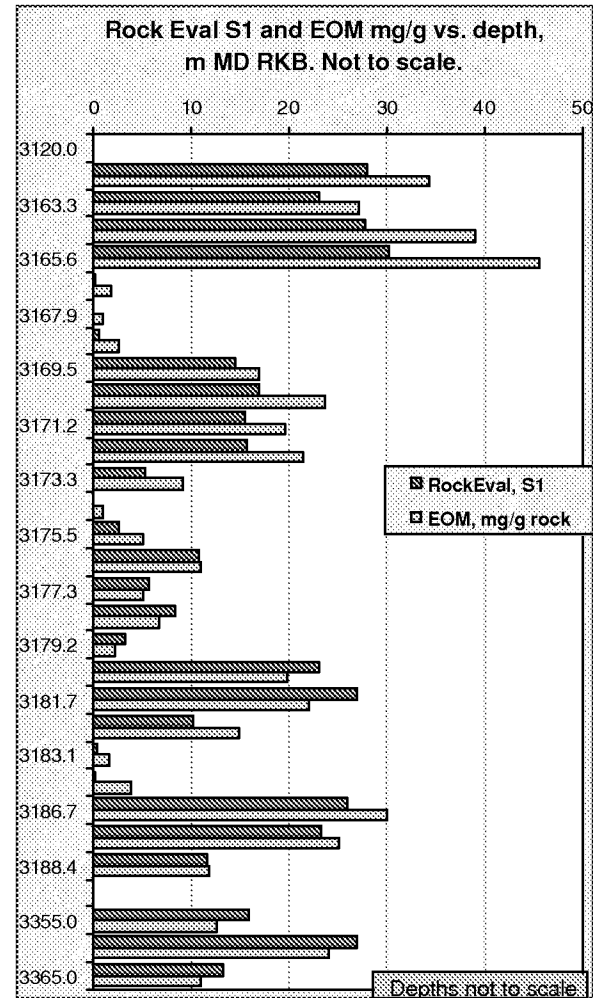
Table 3.1: Sample list and analytical plan.

Appendix 1

Bulk data

Rock Eval and EOM data

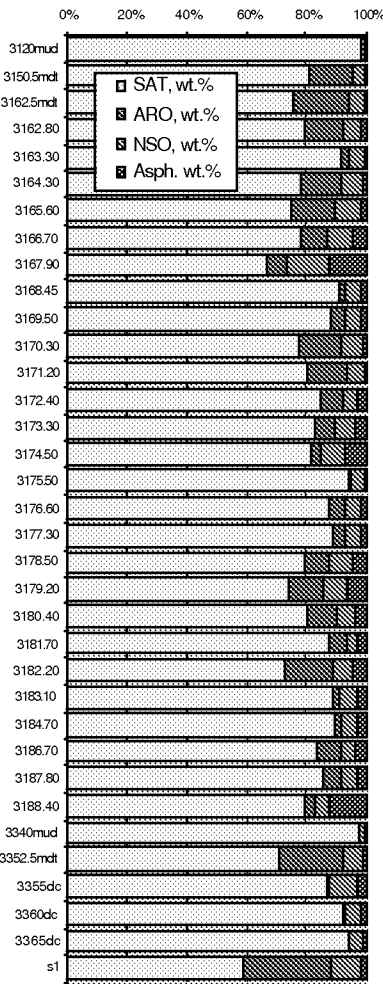
Name	End-depth, m	EOM, mg/g rock	RockEval, S1	S2	Hl	TOC	Tmax
3120mud	3120						
3162.80	3162.8	34.5	28.1	6.0	3.0	200	303
3163.30	3163.3	27.2	23.1	0.8	2.0	41	418
3164.30	3164.3	39.1	27.7	7.4	3.2	235	302
3165.60	3165.6	45.5	30.2	10.4	3.6	290	303
3166.70	3166.7	1.8	0.3	0.4	0.3	131	314
3167.90	3167.9	1.0	0.0	0.2	0.1	115	434
3168.45	3168.45	2.6	0.7	0.2	0.2	118	304
3169.50	3169.5	17.0	14.5	2.6	1.7	154	421
3170.30	3170.3	23.8	17.0	4.3	1.9	226	301
3171.20	3171.2	19.7	15.5	3.0	1.7	179	291
3172.40	3172.4	21.4	15.7	1.7	1.6	108	375
3173.30	3173.3	9.2	5.2	1.2	0.9	141	411
3174.50	3174.5	1.1	0.1	0.3	0.4	66	323
3175.50	3175.5	5.0	2.6	0.2	0.3	55	303
3176.60	3176.6	11.1	10.8	0.7	1.1	68	422
3177.30	3177.3	5.1	5.7	0.7	0.7	94	430
3178.50	3178.5	6.8	8.4	1.6	1.0	168	422
3179.20	3179.2	2.2	3.2	1.0	0.5	213	337
3180.40	3180.4	19.8	23.1	3.8	2.4	159	297
3181.70	3181.7	22.2	27.0	1.8	2.5	73	295
3182.20	3182.2	14.8	10.2	3.6	1.3	269	421
3183.10	3183.1	1.5	0.3	0.2	0.4	39	309
3184.70	3184.7	3.8	0.2	0.3	0.4	61	310
3186.70	3186.7	30.0	26.0	3.5	2.6	134	299
3187.80	3187.8	25.2	23.4	1.9	2.2	85	298
3188.40	3188.4	11.8	11.6	2.1	1.3	166	426
3340mud	3340						
3355dc	3355	12.7	16.0	3.6	2.7	135	436
3360dc	3360	24.0	27.1	2.5	2.9	86	424
3365dc	3365	11.0	13.2	1.9	1.5	130	419



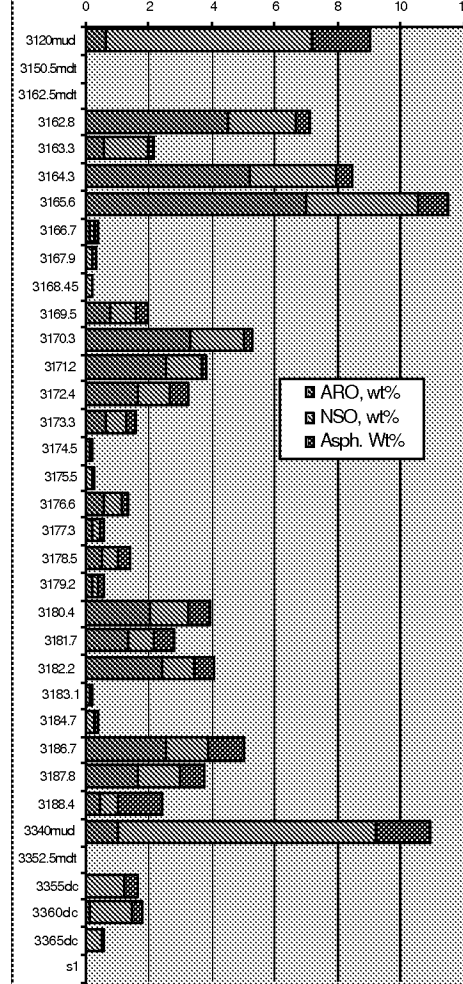
Group type distribution

Name	End-depth, m	EOM, mg/g rock	SAT, wt.%	ARO, wt.%	NSO, wt.%	Asph. wt.%
3120mud	3120.00	423.0	97.9	0.2	1.8	0.43
3150.5mdt	3150.50		80.8	14.5	4.2	0.48
3162.5mdt	3162.50		75.4	18.8	5.1	0.67
3162.80	3162.80	34.3	79.2	13.2	6.3	1.3
3163.30	3163.30	27.2	92.0	2.2	5.1	0.7
3164.30	3164.30	39.1	78.5	13.3	7.0	1.2
3165.60	3165.60	45.5	74.8	15.3	7.8	2.1
3166.70	3166.70	1.8	78.4	8.5	8.6	4.48
3167.90	3167.90	1.0	67.2	6.4	13.6	12.78
3168.45	3168.45	2.6	90.8	2.2	5.0	1.98
3169.50	3169.50	17.0	88.5	4.4	5.1	2
3170.30	3170.30	23.8	77.8	14.0	7.1	1.2
3171.20	3171.20	19.7	80.5	13.2	5.6	0.7
3172.40	3172.40	21.4	84.7	7.9	4.6	2.85
3173.30	3173.30	9.2	82.7	7.3	6.5	3.47
3174.50	3174.50	1.1	81.3	3.7	8.1	6.91
3175.50	3175.50	5.0	94.5	0.5	4.4	0.62
3176.60	3176.60	11.1	88.0	5.0	5.2	1.85
3177.30	3177.30	5.1	89.0	3.9	5.8	1.28
3178.50	3178.50	6.8	79.9	7.9	7.9	4.35
3179.20	3179.20	2.2	74.1	11.4	8.0	6.48
3180.40	3180.40	19.8	80.1	10.3	6.0	3.51
3181.70	3181.70	22.2	87.3	6.1	3.8	2.84
3182.20	3182.20	14.8	72.7	16.3	7.0	3.93
3183.10	3183.10	1.5	88.7	2.2	6.3	2.86
3184.70	3184.70	3.8	90.0	1.6	5.6	2.82
3186.70	3186.70	30.0	83.3	8.4	4.6	3.76
3187.80	3187.80	25.2	85.3	6.7	5.2	2.82
3188.40	3188.40	11.8	79.1	3.9	4.6	12.99
3340mud	3340.00	402.4	97.3	0.3	2.0	0.42
3352.5mdt	3352.50		71.3	21.2	6.7	0.76
3355dc	3355.00	12.7	86.8	0.5	9.4	3.23
3360dc	3360.00	24.0	92.5	0.5	5.6	1.33
3365dc	3365.00	11.0	94.3	0.1	4.7	0.95
s1	1.00		59.1	29.3	9.6	1.9

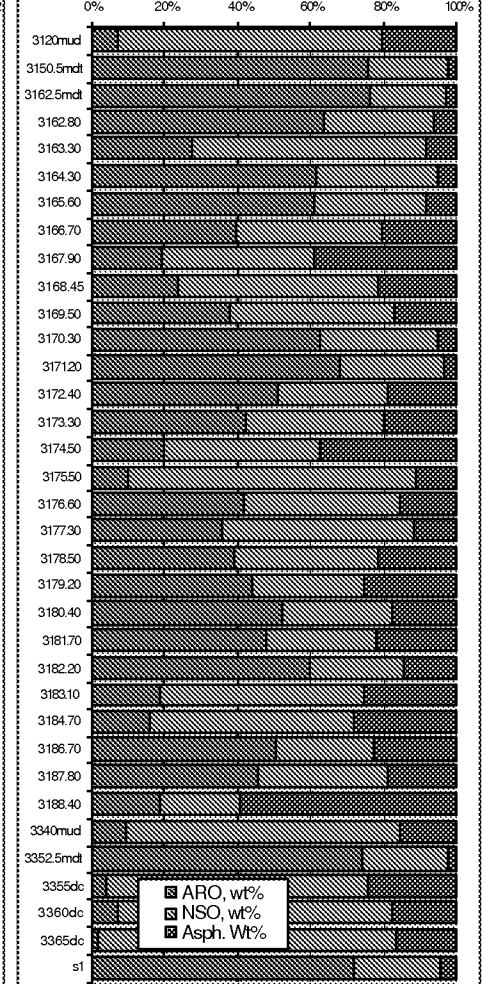
Group type composition, normalized wt%



Group type yields, excl. SAT



Group type, wt%, excl. SAT



Gas data, MDT fluids

End depth, MD RKB	Name	dC13 C1	dD C1	dC13 C2	dC13 C3	dC13 iC4	dC13 nC4	dC13 iC5	dC13 nC5	dC13 CO2	dO18CO2	OrgID	Remarks
3129.00	9845-MA	-39.2		-27.0	-25.2	-29.6	-25.2			-7.4	-8.6	2158180	
3150.50	9323-MA	-39.1		-26.9	-24.2	-25.6	-24.5			-5.1	-10.0	2158189	
3162.50	9834-MA	-39.2		-27.1	-24.4	-25.9	-24.4			-7.5	-9.5	2158182	
3352.50	9839-MA	-40.0		-27.6	-25.8	-26.9	-26.9			-8.8	-10.3	2158183	Mainly N2, low in HC

End depth, MD RKB	Name	C1 %	C2 %	C3 %	iC4 %	nC4 %	iC5 %	nC5 %	CO2 %	C1-C5	Wetness	iC4/nC4
3129.00	9845-MA	93.2	3.1	1.1	0.2	0.3	0.1	0.1	2.0	98.0	0.05	0.56
3150.50	9323-MA	91.2	4.3	1.6	0.2	0.4	0.1	0.1	2.1	97.9	0.07	0.60
3162.50	9834-MA	90.9	4.3	1.6	0.3	0.5	0.1	0.1	2.1	97.9	0.07	0.74
3352.50	9839-MA	84.0	5.9	3.8	0.5	1.8	0.4	0.6	3.1	97.0	0.12	0.28

Gas data, mud gas

End depth, MD RKB	Name	dC13 C1	dD C1	dC13 C2	dC13 C3	dC13 iC4	dC13 nC4	dC13 iC5	dC13 nC5	dC13 CO2	dO18CO2	OrgID	Remarks
3120		-33.4		-24.9	-23.6						-22.2	2146026	
3140		-37.0		-25.1	-23.1	-25.7	-25.5				-22.2	2146019	
3160		-20.9		-21.5	-21.7						-21.8	2146024	
3180		-34.9		-25.5	-24.5						-21.8	2146022	
3200		-33.4		-25.0	-24.2						-20.8	2146021	
3220		-34.7		-25.0	-24.2						-23.0	2146027	
3240		-35.1		-25.8	-24.0						-20.3	2146025	
3260		-35.1		-26.0	-24.6						-19.4	2146031	
3280		-36.4		-26.2	-24.4						-20.2	2146032	
3300		-35.9		-25.7	-24.7						-21.4	2146029	
3320		-36.8		-26.5	-25.2						-21.0	2146033	
3340		-35.2		-26.0	-24.5						-18.7	2146034	
3360		-34.9		-25.2	-24.9						-20.0	2146035	
3380		-37.4		-26.2	-24.2						-20.0	2146036	
3400		-34.6		-26.1	-24.3						-19.2	2146037	
3420		-36.4		-26.4	-24.9						-19.5	2146038	
3432		-36.9		-27.6	-26.1						-19.0	2146030	

End depth, MD RKB	Name	C1 %	C2 %	C3 %	iC4 %	nC4 %	iC5 %	nC5 %	CO2 %	C1-C5	Wetness	iC4/nC4	Remarks
3120		96.8	2.4	0.5	0.0	0.1			0.3		0.03	0.38	2146026
3140		97.1	2.2	0.4	0.0	0.1			0.1		0.03	0.60	2146019
3160		95.7	2.9	0.7	0.1	0.2			0.4		0.04	0.39	2146024
3180		95.9	3.0	0.5					0.6				2146022
3200		85.5	3.1	1.3					10.0				2146021
3220		94.6	2.8	0.8	0.1	0.2			1.6		0.04	0.38	2146027
3240		93.5	2.9	0.8		0.2			2.7				2146025
3260		93.2	3.2	0.6		0.1			3.0				2146031
3280		93.4	3.2	0.9		0.4			2.2				2146032
3300		93.2	3.3	0.9	0.1	0.2			2.4		0.05	0.30	2146029
3320		93.3	3.0	0.9		0.4			2.5				2146033
3340		88.8	4.0	1.6					5.6				2146034
3360		93.4	3.3	1.1		0.4			1.8				2146035
3380		90.9	3.3	1.0		0.5			4.4				2146036
3400		89.4	3.9	1.4		0.6			4.7				2146037
3420		76.5	3.9	2.1		0.9			16.6				2146038
3432		79.6	2.9	1.1	0.1	1.2	0.1	0.2	14.8	85.2	0.06	0.10	2146030

Carbon isotope data, SAT- and ARO-fraction, MDT fluids

End depth, MD RKB	Name	SAT	ARO	OrgID	Remarks
3150.50	9323-MA	-29.6	-28.3	2158187	
3162.50	9834-MA	-29.8	-28.4	2158185	
3352.50	9839-MA	-29.6	-28.3	2158184	

Appendix 2

Summary sheets

Country, well/location: NOR 30/6-27
 Sample type, depth (m): OIL, 3150.5-3150.5 m
 Stratigraphy (Gr./Fm.):

Fluid
sample



E&P Reserach Centre,
Bergen, Norway

Remarks:

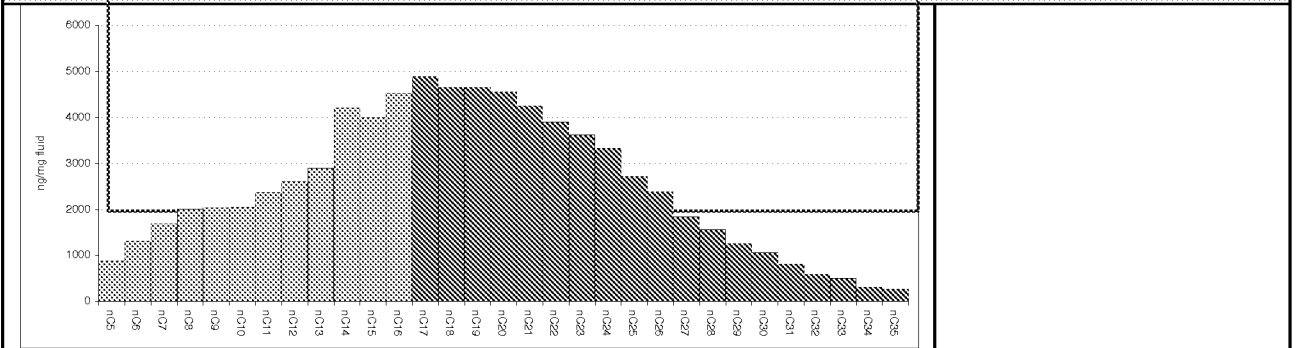
OrgID: 2158187, PlanID: 431957

Bulk data, Iatroscan	Bulk PVT	δ13C isotope	ISTD-mix.(ng/mg EOM):
	GOR, Sm ³ /m ³ B ₀ 1/B _g Density, kg/m ³ API ⁰	Sat. -29.6 Aro. -28.3 NSO Asph. Total Kerogen	C12D26 3840 C16D34 3840 24αββ 23 d8N 46 d10BP 41 d10P 46 d12C 46

GC/FID, depressurized fluid, C6-9 hydrocarbons:

GC/FID	Area	ng/mgEOM
Hep.value	23.42	23.39
Isohep.val.	2.95	2.93
Paraffinicity	0.83	0.83
Aromaticity	1.59	1.45
nC ₆ /Benz.	0.58	0.63
nC ₇ /Tolu.	0.38	0.41

Alkane distribution, combined data from fluid and C15+ fraction:



GC/FID, C15+ fraction hydrocarbons:

GC/FID	Area	ng/mgEOM
Pr/nC ₁₇	0.42	0.42
Ph/nC ₁₈	0.32	0.32
Pr/Ph	1.39	1.39
nC ₁₇ /(C ₁₇ +C ₂₇)	0.73	0.73
nC ₁₇		5
Pristane		2
ΣC ₁₅₋₃₅		63

Country, well/location: NOR 30/6-27
 Sample type, depth (m): OIL, 3150.5-3150.5 m
 Stratigraphy (Gr./Fm.):

Fluid
 sample

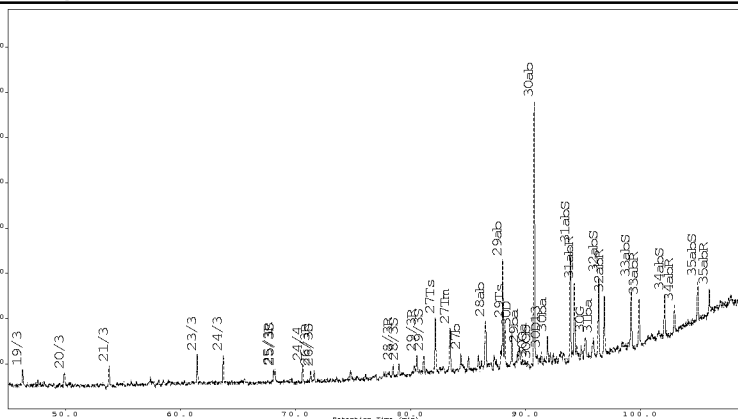


E&P Reserach Centre,
 Bergen, Norway

Remarks:

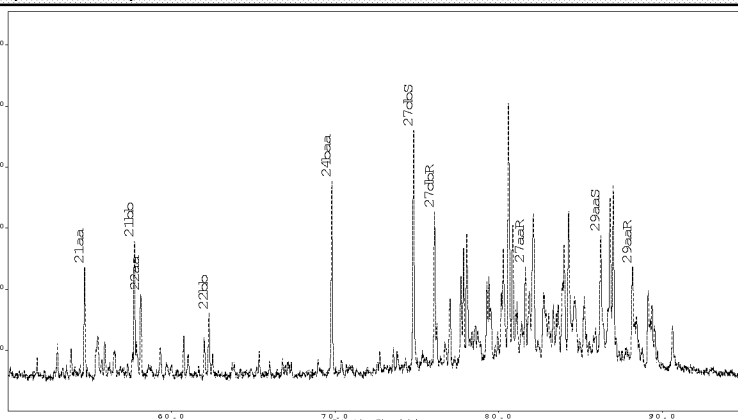
OrgID: 2158187, PlantID: 481967

GC/MS, Terpanes, m/z 191:



GC/MS	Height	ng/mgEOM
%Tri	10	11
%20/3	11	11
%23/3	50	50
%24/4	23	23
C26/C25	1.0	1.0
%27Ts	56	56
%28αβ	15	22
%29Ts	30	30
%25nor30αβ	4	7
%29αβ	27	37
%30βα	9	9
%30D	13	18
%30G	7	10
%32αβS	59	59
%35αβ	0	0

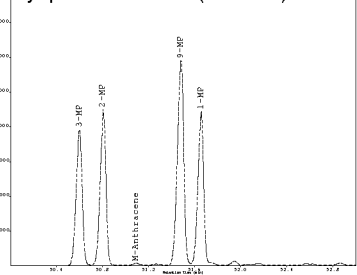
GC/MS, Steranes, m/z 217:



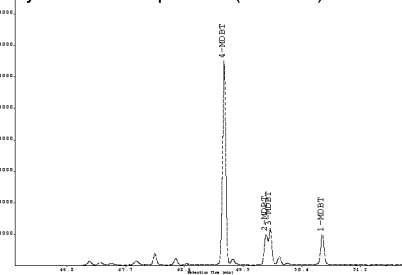
30αβ		43
25nor30αβ		3
Σterpanes		358
%Preg.	12	12
%29ααS	58	58
%29ββ	68	68
%27dia	49	49
%27ster.	30	30
%28ster.	26	26
%29ster.	33	33
%30ster.	11	11
29ααS		16
29ααR		12
Σsteranes		324

Aromatic hydrocarbons, GC/MS:

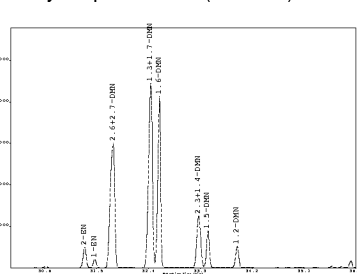
Methyl-phenanthrenes (m/z 192):



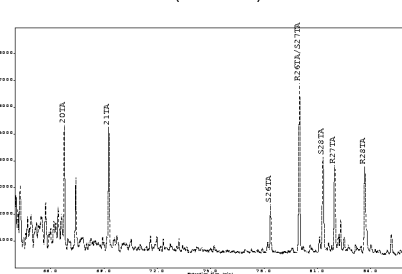
Methyl-dibenzothiophenes (m/z 198):



Dimethyl-naphthalenes (m/z 156):



Triaromatic steroids (m/z 231):



GC/MS	Height	ng/mgEOM
Naphth	426994	1008
C1-naph.	1304689	1838
C2-naph.	1423688	1887
C3-naph.	980547	1322
DNR	3.4	3.4
2/1MN	1.4	1.4
2/1EN	2.4	2.4
Phen.	274408	304
C1-phen.	560996	730
C2-phen.	441291	549
MPI1	0.65	0.70
F1	0.45	0.45
F2	0.24	0.24
%TAS'n	41	41
DBT/P	0.15	0.05
F/P	0.28	0.28
BP/1.6DMN	0.95	0.67
4/1MDBT	6.65	6.65
3MP/R	11.1	13.0

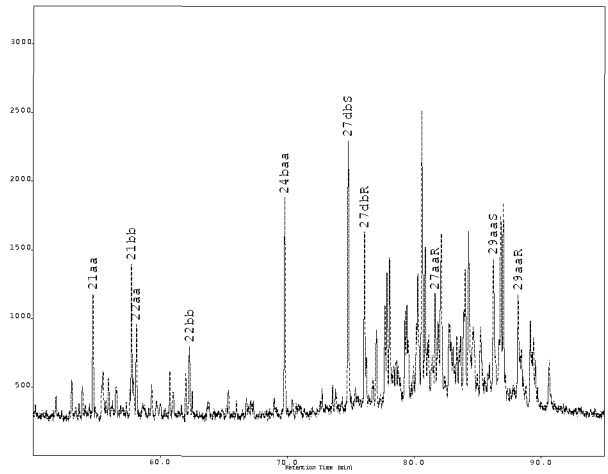
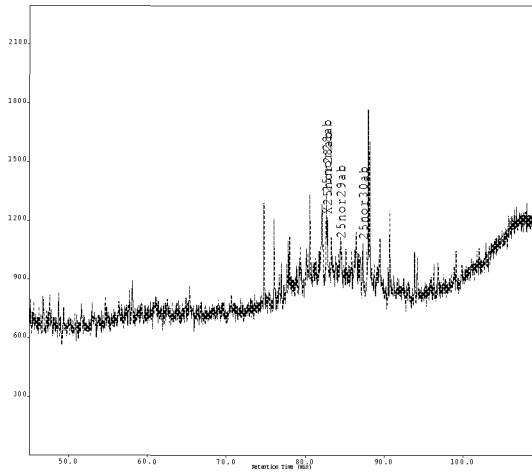
Country, well/location: NOR 30/6-27
Sample type, depth (m): OIL, 3150.5-3150.5 m

Fluid
sample



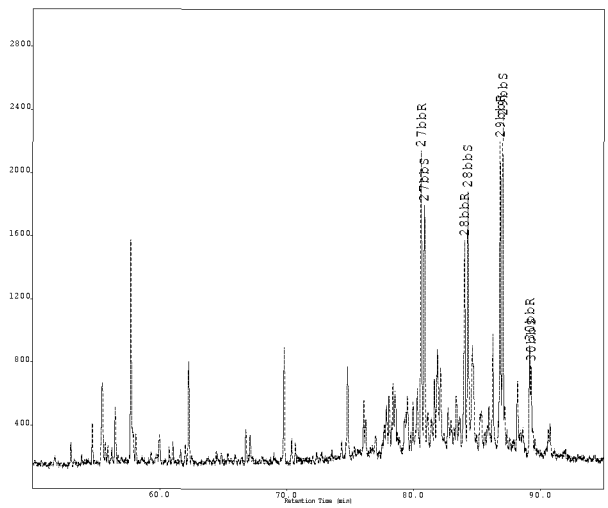
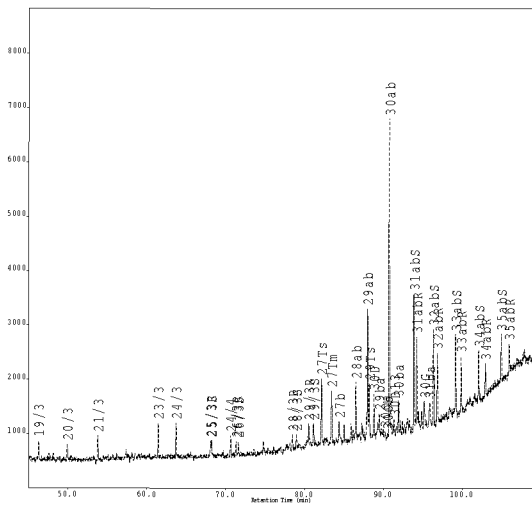
Saturated HC biomarkers, m/z 177

Saturated HC biomarkers, m/z 217



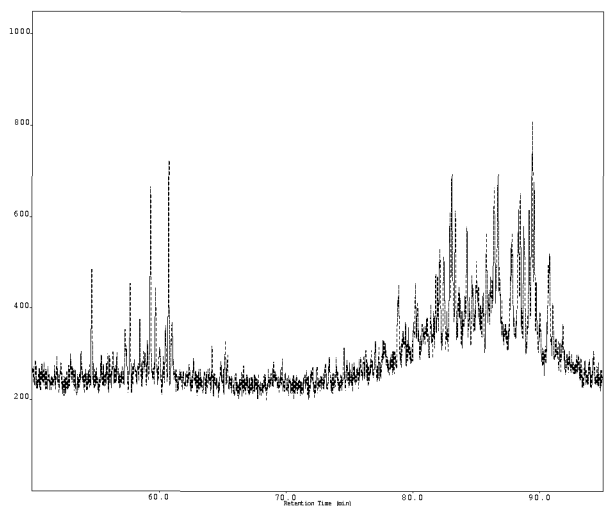
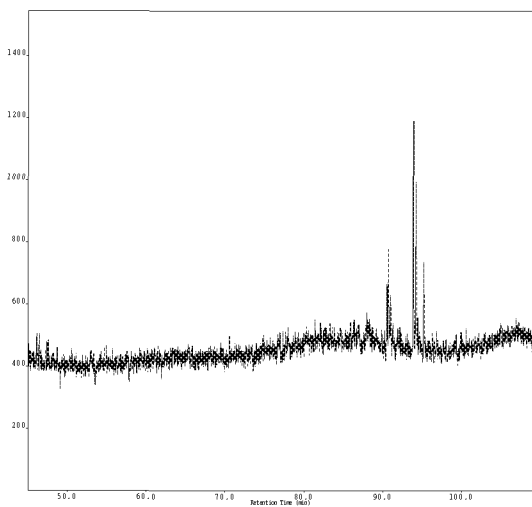
Saturated HC biomarkers, m/z 191

Saturated HC biomarkers, m/z 218



Saturated HC biomarkers, m/z 205

Saturated HC biomarkers, m/z 231

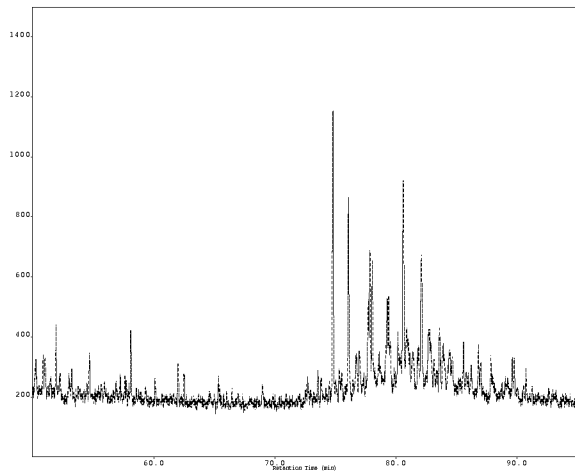


Country, well/location: NOR 30/6-27
Sample type, depth (m): OIL, 3150.5-3150.5 m

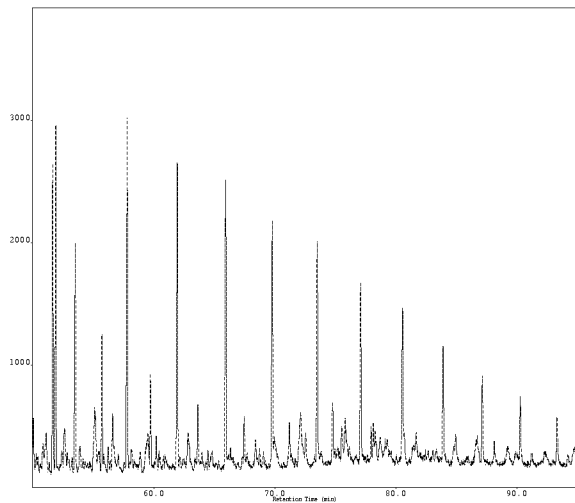
Fluid
sample



Saturated HC biomarkers, m/z 259



QC, monoaromatic steroids in SAT-fraction, m/z 253

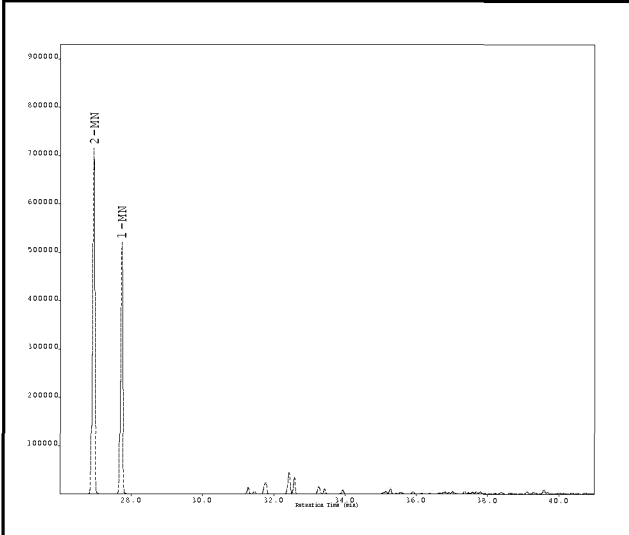


Country, well/location: NOR 30/6-27
 Sample type, depth (m): OIL, 3150.5-3150.5 m

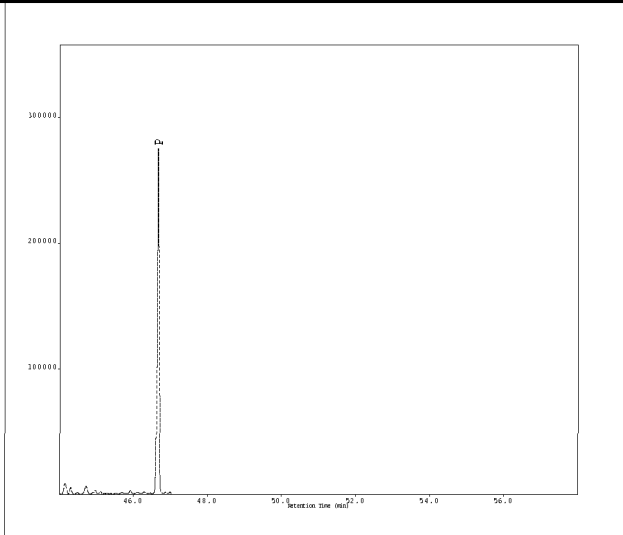
Fluid
 sample



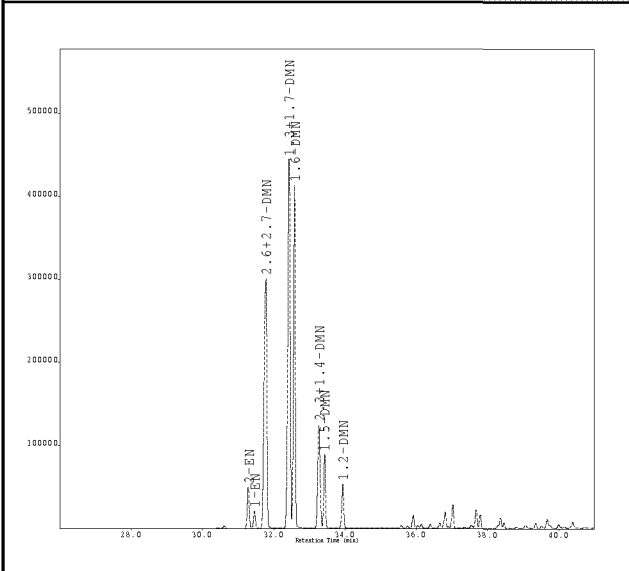
Aromatic HC's, methyl-naphthalenes m/z 142



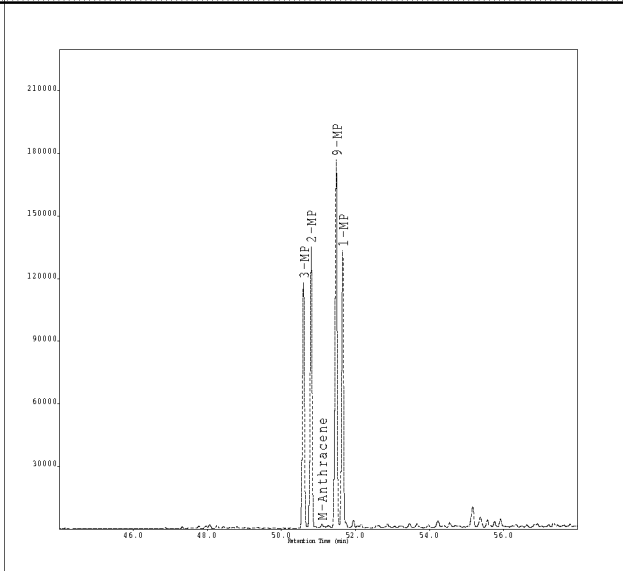
Aromatic HC's, phenanthrene m/z 178



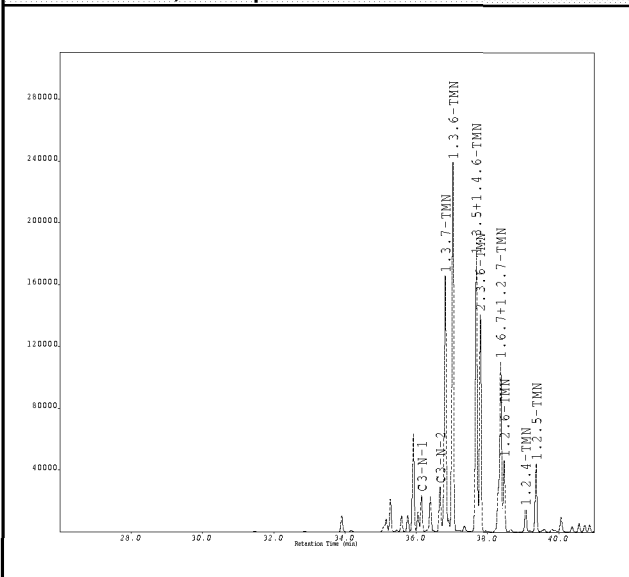
Aromatic HC's, C2-naphthalenes m/z 156



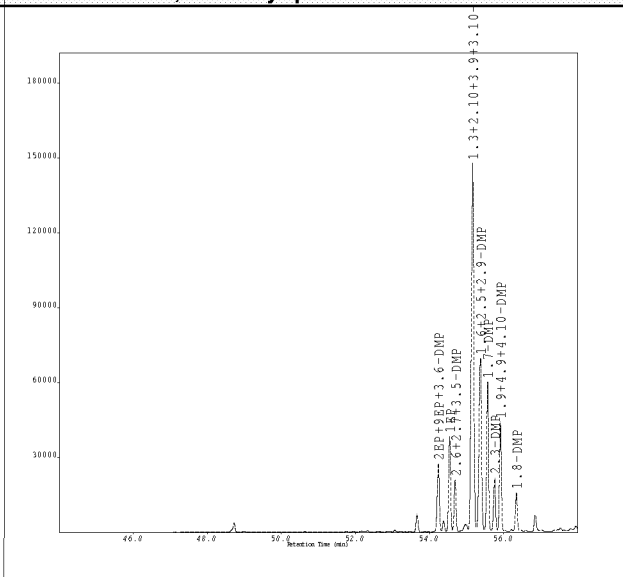
Aromatic HC's, methyl-phenanthrenes m/z 192



Aromatic HC's, C3-naphthalenes m/z 170



Aromatic HC's, dimethyl-phenanthrenes m/z 206

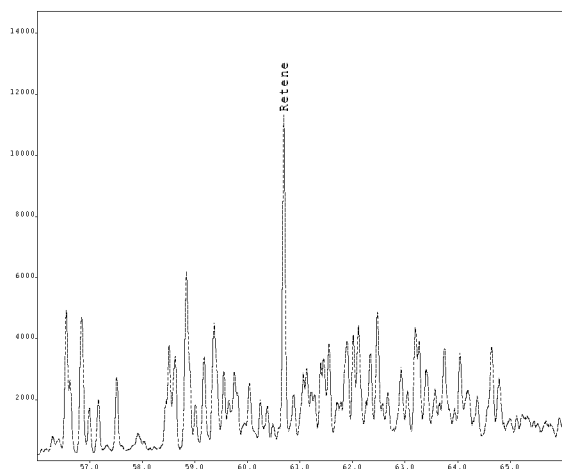


Country, well/location: NOR 30/6-27
 Sample type, depth (m): OIL, 3150.5-3150.5 m

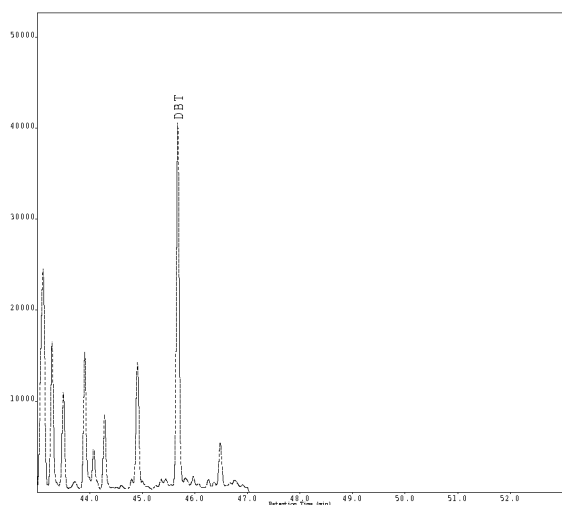
Fluid
 sample



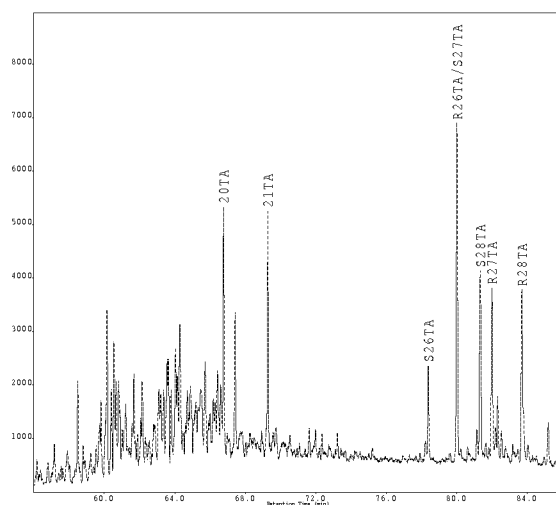
Retene m/z 219



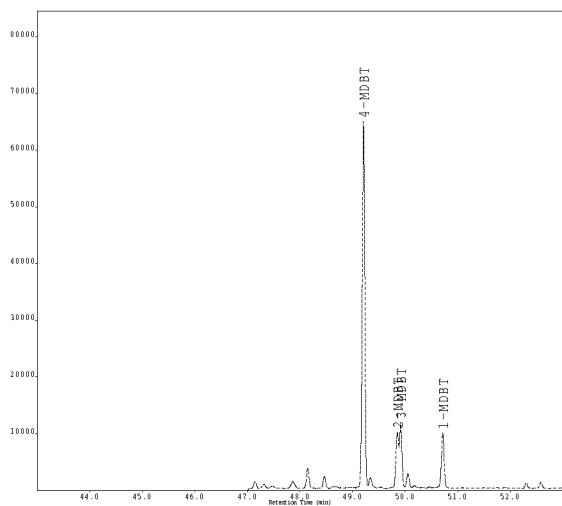
Aromatic HC's, dibenzothiophene m/z 184



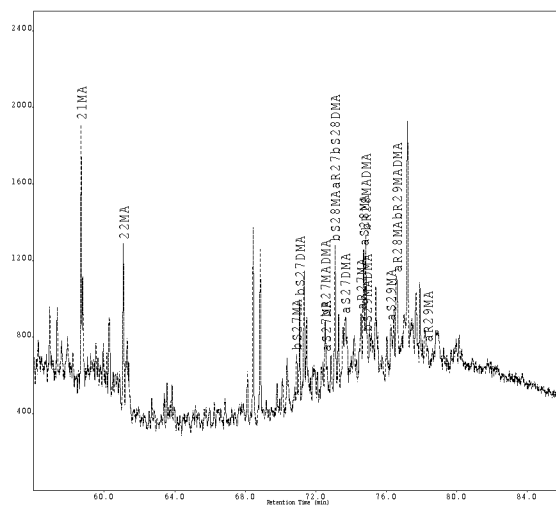
Aromatic HC's, triaromatic steroids m/z 231



Aromatic HC's, methyl-dibenzothiophenes m/z 198



Aromatic HC's, monoaromatic steroids m/z 253



Country, well/location: NOR 30/6-27
 Sample type, depth (m): OIL, 3150.5-3150.5 m
 Stratigraphy (Gr./Fm.):
 Remarks:
 OrgID: , PianiD:

Fluid
sample



E&P Reserach Centre,
Bergen, Norway

Saturated HC's, GC/FID			cont...	Height	ng/mgEOM	cont...	Height	ng/mgEOM
	Area	ng/mgEOM	27b	391	4			
nC11	230679	0	25nor28ab	470	5			
nC12	305457	0	28ab	1056	12	Aromatic HC's, GC/MS		
nC13	395625	0	25nor29ab	161	2		Height	ng/mgEOM
nC14	519921	0	29ab	2179	25	N	426994	1008
iC16	233678	1560	29ba	359	4	2MN	714713	1010
nC15	603071	4030	29Ts	938	11	1MN	520286	735
nC16	672325	4490	25nor30ab	277	3	2EN	49354	65
iC18	266293	1780	30ab	5887	43	1EN	20336	27
nC17	737631	4920	30ba	609	4	2627DMN	300776	399
Prinstane	307911	2060	30D	849	10	1317DMN	444484	589
nC18	701539	4680	30G	416	5	16DMN	413058	548
Phytane	221113	1480	30O	0	0	2314DMN	124322	165
nC19	701246	4680	30D13	214	2	15DMN	88594	117
nC20	685687	4580	31abS	2553	29	12DMN	52454	70
nC21	641146	4280	31abR	1647	19	C3N1	23371	32
nC22	588232	3930	31ba	338	4	C3N2	28816	39
nC23	544702	3640	32abS	1822	21	137TMN	161785	218
nC24	501759	3350	32abR	1273	14	136TMN	238314	321
nC25	411073	2740	33abS	1490	17	135146TMN	177061	239
nC26	358914	2400	33abR	1042	12	236TMN	137104	185
nC27	276691	1850	34abS	940	11	167127TMN	109844	148
nC28	234918	1570	34abR	658	7	126TMN	45735	62
nC29	189449	1260	35abS	895	10	124TMN	14724	20
nC30	159740	1070	35abR	555	6	125TMN	43793	59
nC31	121364	810	21aa	909	15	BP	393470	365
nC32	88690	590	21bb	1028	17	3MBP	332748	309
nC33	75686	510	22aa	678	11	4MBP	129167	120
nC34	46998	310	22bb	517	8	23XDMBP	5917	8
nC35	41084	270	27dbS	1946	32	25DMBP	3132	4
			27dbR	1274	21	2424XDMBP	6209	8
			27bbR	1882	31	23DMBP	20484	28
			27bbS	1506	24	3EBP	19007	26
			27aaR	612	10	35DMBP	56123	76
Saturated HC biomarkers, GC/MS			28bbR	1282	21	33XDMBP	139350	188
19/3	370	4	28bbS	1617	26	4EBP	7213	10
20/3	310	3	29aaS	1010	16	34XDMBP	110746	149
21/3	488	5	29bbR	1820	30	44XDMBP	23552	32
23/3	664	7	29bbS	1923	31	34DMBP	44417	60
24/3	671	8	29aaR	721	12	DBF	40666	38
25/3	0	0	30bbR	697	11	DBF1	40109	54
25/3R	286	3	30bbS	512	8	MDBF2	20740	28
25/3S	0	3				MDBF3	24854	34
26/3R	305	3				F	75872	85
26/3S	310	3				C1F1	32640	37
28/3R	291	3				C1F2	108901	123
28/3S	291	3				1MF	18152	20
29/3R	409	5				DBT	39968	15
29/3S	449	5				4MDBT	64596	25
24/4	390	4				3MDBT	0	0
27Ts	1238	14				1MDBT	9715	4
27Tm	973	11						

Country, well/location: NOR 30/6-27
 Sample type, depth (m): OIL, 3150.5-3150.5 m
 Stratigraphy (Gr./Fm.):
 Remarks:
 OrgID: , PlantID:

Fluid
sample



E&P Research Centre,
Bergen, Norway

Aromatic HC's, GC/MS cont...			cont...		
	Height	ng/mgEOM	Area	ng/mgEOM	
P	274408	304	1C2DMCYC5	532108	40
3MP	117711	153	MCYC6	52992083	3830
2MP	134358	175	113TMCYC5	2876120	210
9MP	176177	229	ECYC5	2175774	160
1MP	132750	173	25DMC6	2897165	210
2EP9EP36DMP	27155	34	223TMC524DM	3276023	240
1EP	38011	47	1C2T4TMCYCE	1866433	130
262735DMP	20425	25	33DMC6	1235798	90
13210393DMP	147196	183	1T2C3TMCYCE	1723667	120
162529DMP	68917	86	234TMC5	329819	20
17DMP	59501	74	TOLUENE	115869097	7680
23DMP	21177	26	23DMC6	3008306	220
194941DMP	43613	54	2MC7	18415733	1330
18DMP	15296	19	4MC7	7340339	530
RETENE	10596	12	3MC7	10782520	780
20TA	4633	2	1C3DMCYC6	13162854	950
21TA	4520	2	1T4DMCYC6	3587000	260
S26TA	1756	1	11DMCYC6	1376256	100
R26TAS27TA	6334	3	1T2DMCYC6	4363614	320
S28TA	3537	2	NC8	51863806	3750
R27TA	3196	2	ECYC6	13870040	1000
R28TA	3231	2	IC9	4290960	280
C5-20 HC's, GC/FID			EBENZENE	11285807	750
	Area	ng/mgEOM	MXYLENE	65947067	4370
IC5	15929706	1150	PXYLENE	16329963	1080
NC5	22912137	1660	4MC8	9415952	620
22DMC4	1764035	130	2MC8	12375939	820
CYC5	2208274	160	3MC8	12049292	800
23DMC4	2305555	170	OXYLENE	27748164	1840
2MC5	16904656	1220	NC9	57503342	3810
3MC5	10681357	770	IC10	10846179	720
NC6	33847571	2450	NC10	57931235	3840
3MCYC5ENE	31363	0	IC11	10996737	730
22DMC5	1586816	110	NC11	66963239	4440
MCYC5	12839466	930	NC12	73662647	4880
24DMC5	2187566	160	IC13	16711099	1110
223TMC4	300242	20	PHC6	140399237	9310
BENZENE	58708864	3890	IC14	15297589	1010
33DMC5	1162154	80	NC13	81793811	5420
CYC6	33837869	2450	IC15	19060755	1260
2MC6	15996291	1160	NC14	119062270	7890
23DMC5	3512510	250	IC16	39214709	2600
11DMCYC5	2208812	160	NC15	113049713	7490
3MC6	16265385	1180	NC16	127964669	8480
1C3DMCYC5	2860882	210	IC18	33914676	2250
1T3DMCYC5	2721524	200	NC17	133721024	8860
3EC5	2130923	150	PRISTANE	55475795	3680
1T2DMCYC5	4818975	350	NC18	140818279	9330
IC8	#####	9310	PHYTANE	50055239	3320
NC7	43720388	3160	NC19	173785549	11520
			NC20	269590566	17870

Country, well/location: NOR 30/6-27
 Sample type, depth (m): OIL, 3162.5-3162.5 m
 Stratigraphy (Gr./Fm.):

Fluid
sample



E&P Research Centre,
Bergen, Norway

Remarks:

OrgID: 2158185, PlanID: 431953

Bulk data, Iatroscan	Bulk PVT	δ13C isotope	ISTD-mix.(ng/mg EOM):														
	GOR, Sm ³ /m ³ B ₀ 1/B _g Density, kg/m ³ API ⁰	Sat. -29.8 Aro. -28.4 NSO Asph. Total Kerogen	<table border="1"> <tr><td>C12D26</td><td>4000</td></tr> <tr><td>C16D34</td><td>4000</td></tr> <tr><td>24αββ</td><td>24</td></tr> <tr><td>d8N</td><td>48</td></tr> <tr><td>d10BP</td><td>42</td></tr> <tr><td>d10P</td><td>48</td></tr> <tr><td>d12C</td><td>48</td></tr> </table>	C12D26	4000	C16D34	4000	24αββ	24	d8N	48	d10BP	42	d10P	48	d12C	48
C12D26	4000																
C16D34	4000																
24αββ	24																
d8N	48																
d10BP	42																
d10P	48																
d12C	48																

GC/FID, depressurized fluid, C6-9 hydrocarbons:	GC/FID	Area	ng/mgEOM
	Hep.val. value Isohep.val. Paraffinicity Aromaticity nC ₆ /Benz. nC ₇ /Tolu.	23.28 2.81 0.82 1.56 0.60 0.39	23.29 2.81 0.82 1.41 0.66 0.43

Alkane distribution, combined data from fluid and C15+ fraction:

GC/FID, C15+ fraction hydrocarbons:	GC/FID	Area	ng/mgEOM
	Pr/nC ₁₇ Ph/nC ₁₈ Pr/Ph nC ₁₇ /(C ₁₇ +C ₂₇)	0.41 0.33 1.40 0.77	0.41 0.33 1.40 0.77
	nC ₁₇ Pristane ΣC ₁₅₋₃₅		5 2 55

Country, well/location: NOR 30/6-27
 Sample type, depth (m): OIL, 3162.5-3162.5 m
 Stratigraphy (Gr./Fm.):

Fluid
 sample

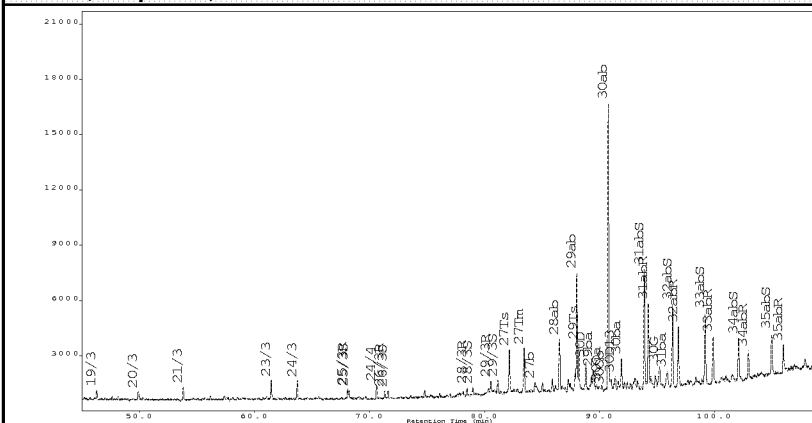


E&P Reserach Centre,
 Bergen, Norway

Remarks:

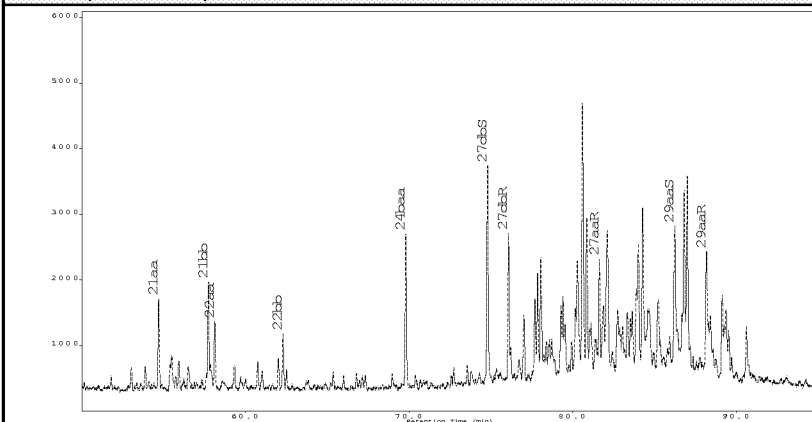
OrgID: 2158185, PlantID: 481968

GC/MS, Terpanes, m/z 191:



GC/MS	Height	ng/mgEOM
%Tri	6	7
%20/3	11	11
%23/3	50	50
%24/4	27	27
C26/C25	0.9	0.9
%27Ts	49	49
%28αβ	15	22
%29Ts	29	29
%25nor30αβ	3	5
%29αβ	27	37
%30βα	10	10
%30D	9	13
%30G	7	10
%32αβS	58	58
%35αβ	1	1

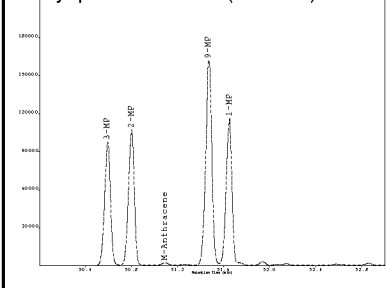
GC/MS, Steranes, m/z 217:



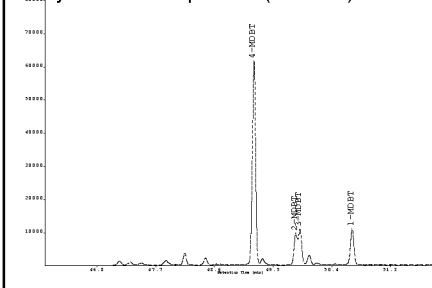
30αβ		78
25nor30αβ		4
Σterpanes		579
%Preg.	9	9
%29ααS	53	53
%29ββ	68	68
%27dia	44	44
%27ster.	30	30
%28ster.	25	25
%29ster.	34	34
%30ster.	10	10
29ααS		22
29ααR		20
Σsteranes		435

Aromatic hydrocarbons, GC/MS:

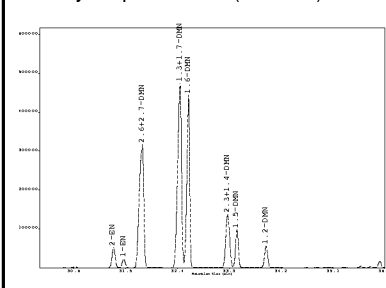
Methyl-phenanthrenes (m/z 192):



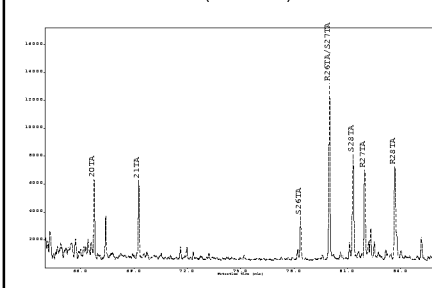
Methyl-dibenzothiophenes (m/z 198):



Dimethyl-naphthalenes (m/z 156):



Triaromatic steroids (m/z 231):



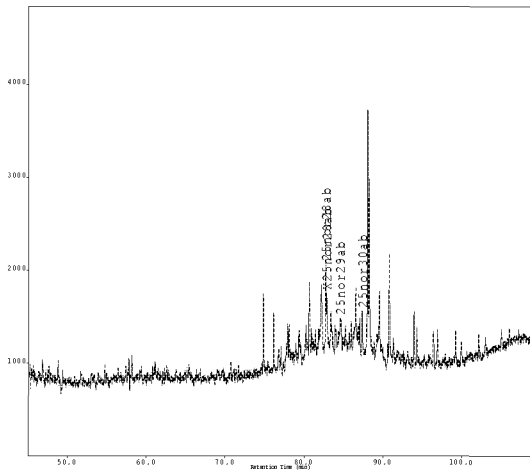
GC/MS	Height	ng/mgEOM
Naphth	500133	1071
C1-naph.	1476593	1964
C2-naph.	1521809	1905
C3-naph.	998337	1271
DNR	3.3	3.3
2/1MN	1.4	1.4
2/1EN	2.3	2.3
Phen.	267839	302
C1-phen.	479894	634
C2-phen.	356320	450
MPI1	0.56	0.60
F1	0.42	0.42
F2	0.22	0.22
%TAS'n	28	28
DBT/P	0.17	0.06
F/P	0.26	0.24
BP/1.6DMN	0.94	0.66
4/1MDBT	5.59	5.59
3MP/R	7.0	8.2

Country, well/location: NOR 30/6-27
Sample type, depth (m): OIL, 3162.5-3162.5 m

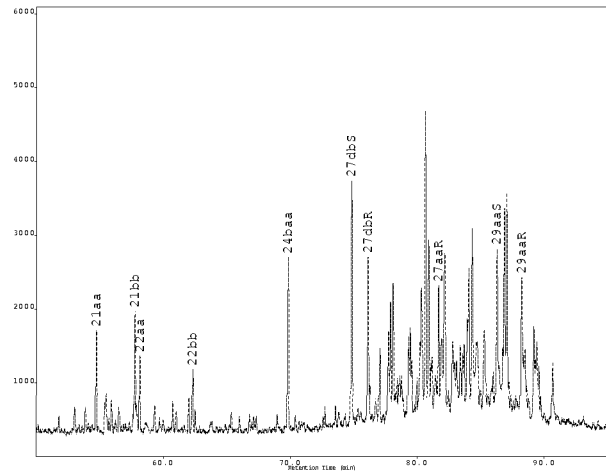
Fluid
sample



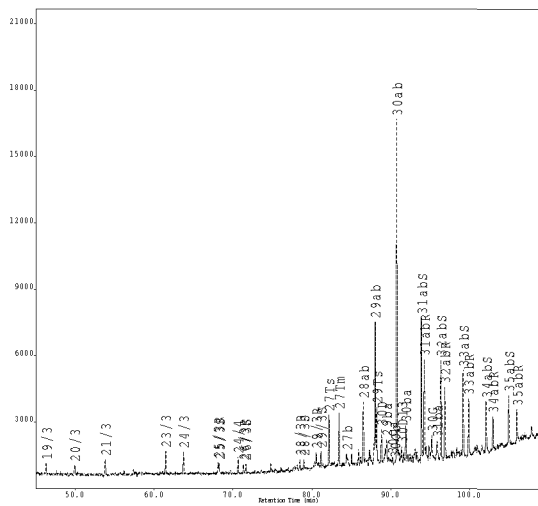
Saturated HC biomarkers, m/z 177



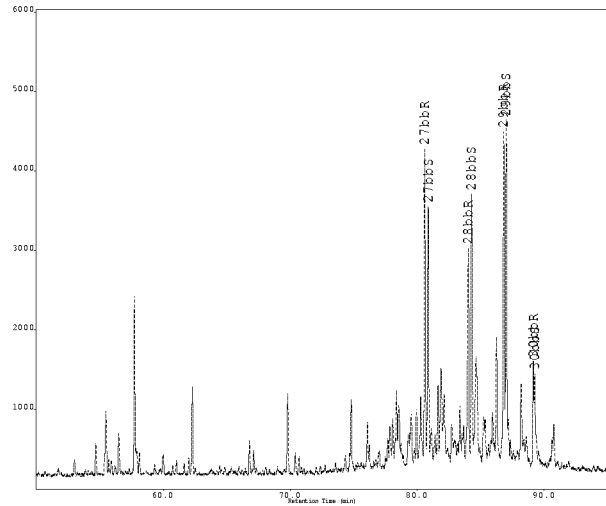
Saturated HC biomarkers, m/z 217



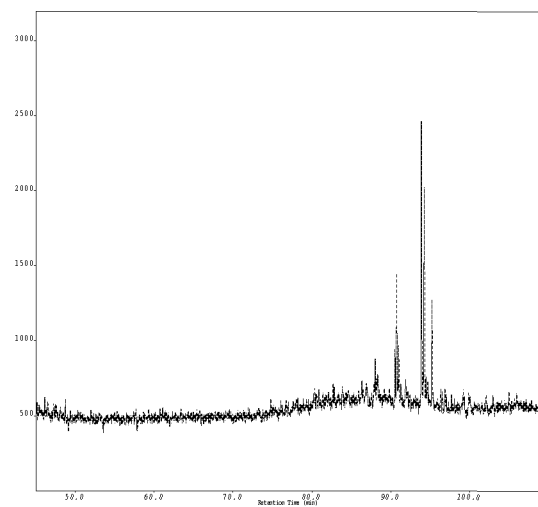
Saturated HC biomarkers, m/z 191



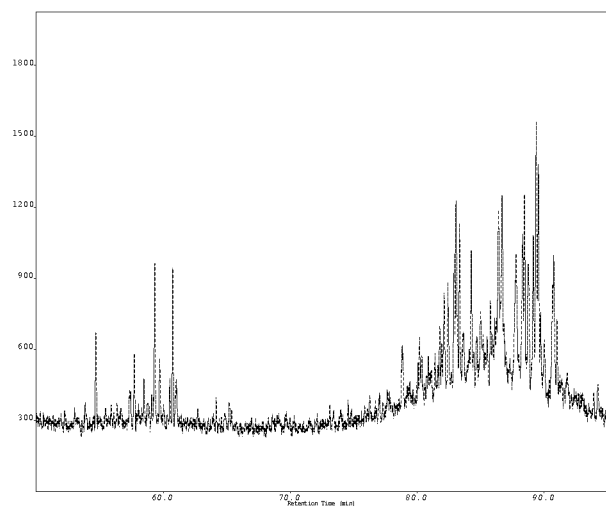
Saturated HC biomarkers, m/z 218



Saturated HC biomarkers, m/z 205



Saturated HC biomarkers, m/z 231

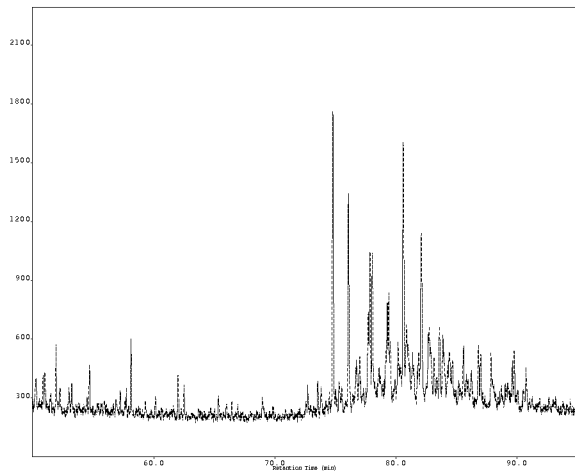


Country, well/location: NOR 30/6-27
Sample type, depth (m): OIL, 3162.5-3162.5 m

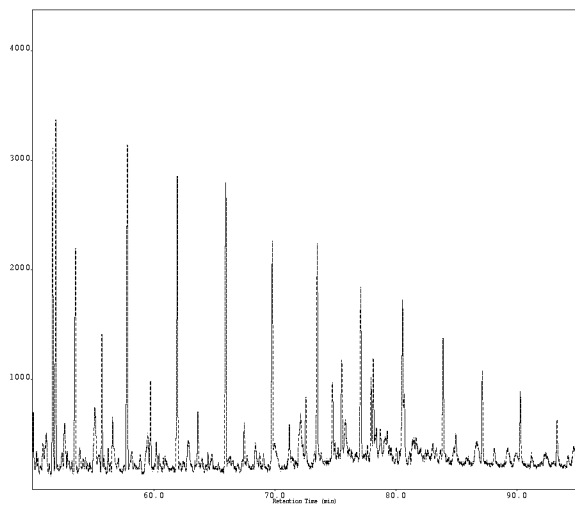
Fluid
sample



Saturated HC biomarkers, m/z 259



QC, monoaromatic steroids in SAT-fraction, m/z 253

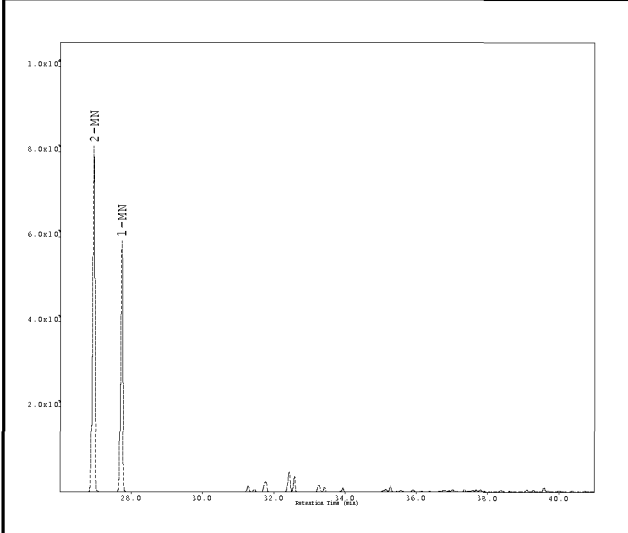


Country, well/location: NOR 30/6-27
 Sample type, depth (m): OIL, 3162.5-3162.5 m

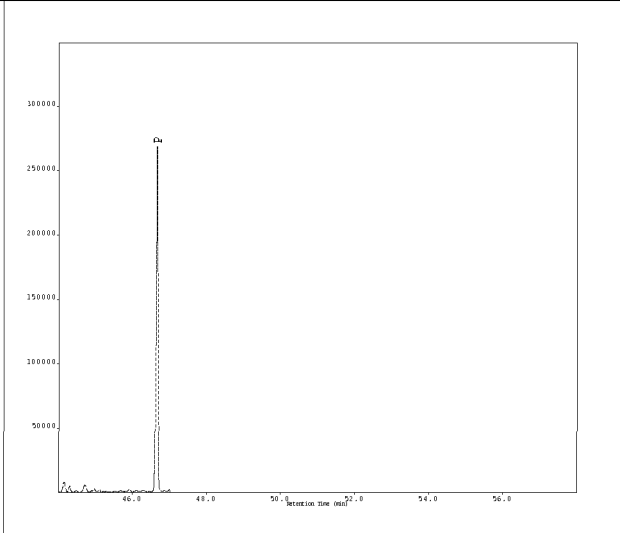
Fluid
 sample



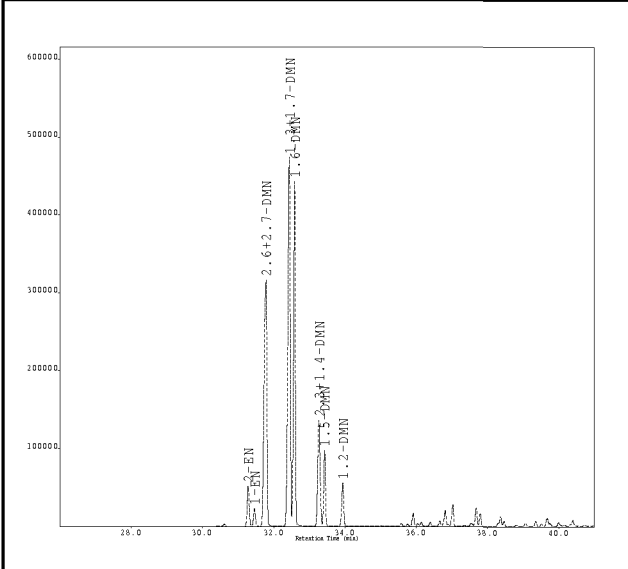
Aromatic HC's, methyl-naphthalenes m/z 142



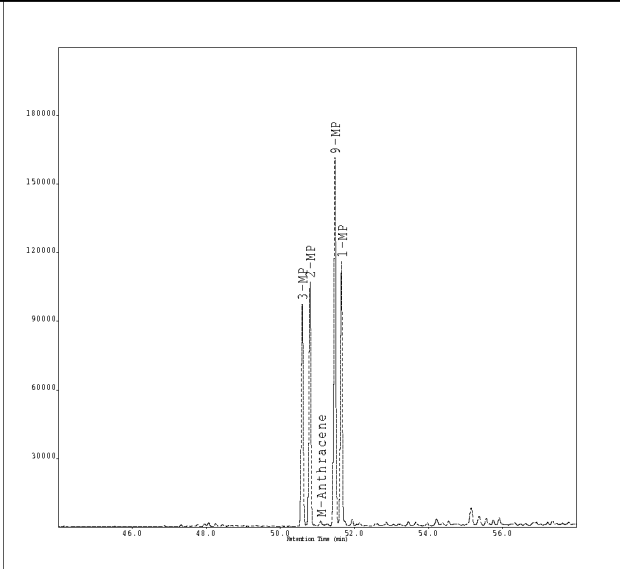
Aromatic HC's, phenanthrene m/z 178



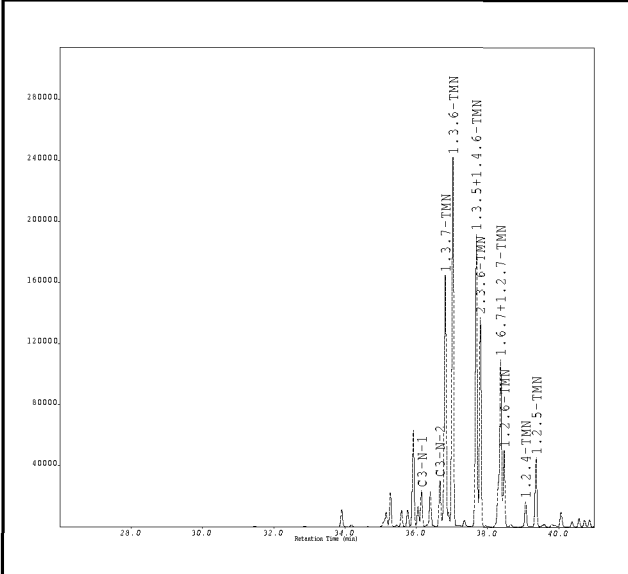
Aromatic HC's, C2-naphthalenes m/z 156



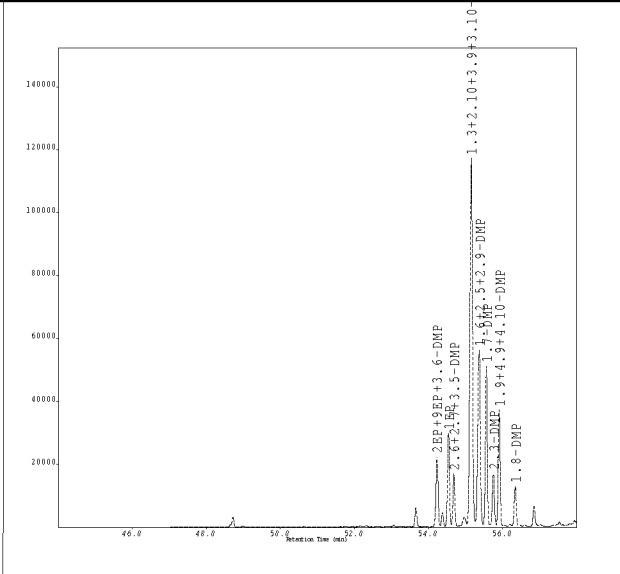
Aromatic HC's, methyl-phenanthrenes m/z 192



Aromatic HC's, C3-naphthalenes m/z 170



Aromatic HC's, dimethyl-phenanthrenes m/z 206

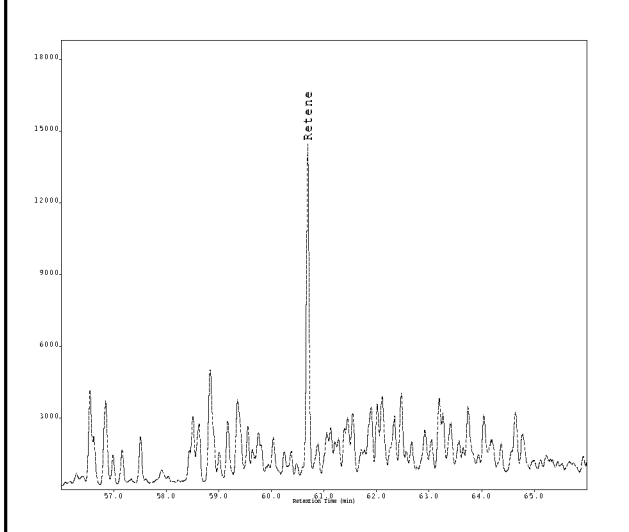


Country, well/location: NOR 30/6-27
 Sample type, depth (m): OIL, 3162.5-3162.5 m

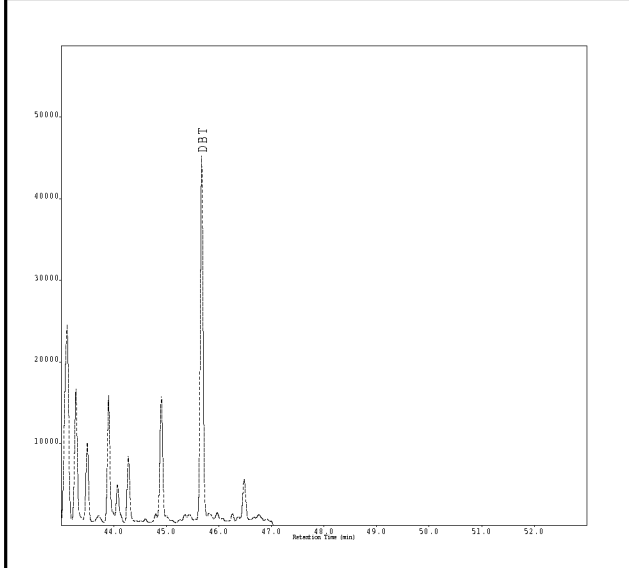
Fluid
 sample



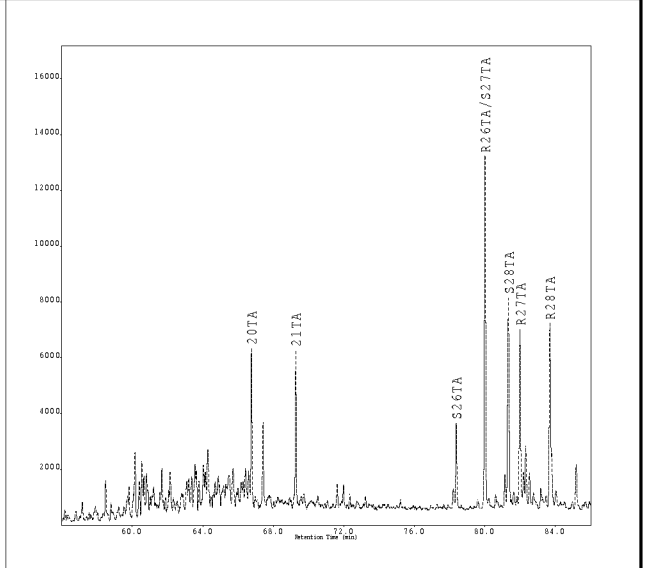
Retene m/z 219



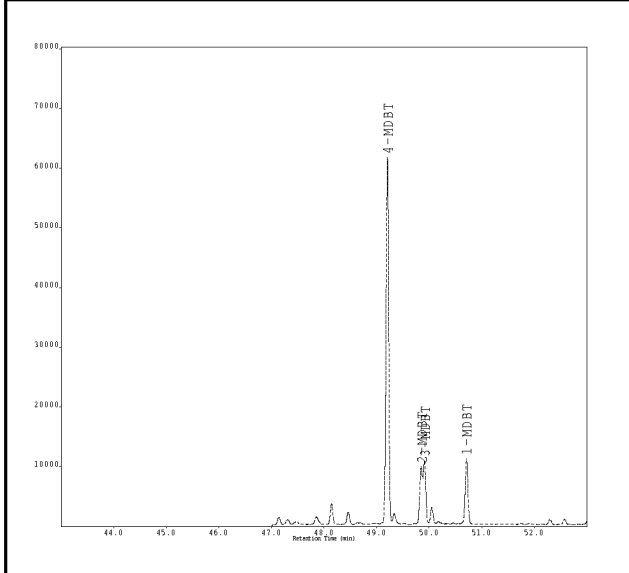
Aromatic HC's, dibenzothiophene m/z 184



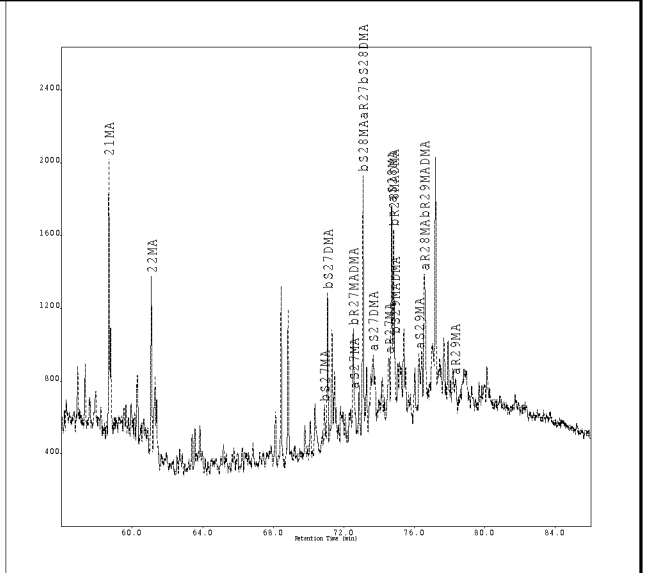
Aromatic HC's, triaromatic steroids m/z 231



Aromatic HC's, methyl-dibenzothiophenes m/z 198



Aromatic HC's, monoaromatic steroids m/z 253



Country, well/location: NOR 30/6-27
Sample type, depth (m): OIL, 3162.5-3162.5 m
Stratigraphy (Gr./Fm.):
Remarks:
OrgID: , PianiD:

Fluid
sample



E&P Reserach Centre,
Bergen, Norway

Saturated HC's, GC/FID			cont...	Height	ng/mgEOM	cont...	Height	ng/mgEOM
Area	ng/mgEOM							
nC11	314852	0	27b	510	4			
nC12	434360	0	25nor28ab	861	7			
nC13	570213	0	28ab	2781	22	Aromatic HC's, GC/MS		
nC14	770313	0	25nor29ab	218	2		Height	ng/mgEOM
iC16	339452	1550	29ab	5885	46	N	500133	1071
nC15	938598	4270	29ba	900	7	2MN	811969	1084
nC16	971172	4420	29Ts	2364	18	1MN	590321	788
iC18	387177	1760	25nor30ab	552	4	2EN	51728	65
nC17	1058020	4820	30ab	15525	78	1EN	22575	28
Prinstane	433682	1970	30ba	1630	8	2627DMN	316639	396
nC18	935970	4260	30D	1508	12	1317DMN	473730	593
Phytane	310088	1410	30G	1097	9	16DMN	442995	554
nC19	913977	4160	30O	0	0	2314DMN	135706	170
nC20	856226	3900	30D13	716	6	15DMN	97188	122
nC21	760722	3460	31abS	6411	50	12DMN	55551	70
nC22	688270	3130	31abR	4347	34	C3N1	23439	30
nC23	617892	2810	31ba	672	5	C3N2	30088	38
nC24	564080	2570	32abS	4480	35	137TMN	160616	204
nC25	468368	2130	32abR	3290	26	136TMN	241190	307
nC26	400062	1820	33abS	3768	29	135146TMN	191281	243
nC27	312966	1420	33abR	2591	20	236TMN	133536	170
nC28	282354	1290	34abS	2242	18	167127TMN	109595	139
nC29	228660	1040	34abR	1530	12	126TMN	47296	60
nC30	196430	890	35abS	2210	17	124TMN	16275	21
nC31	150087	680	35abR	1566	12	125TMN	45021	57
nC32	107910	490	21aa	1363	15	BP	416381	365
nC33	96616	440	21bb	1537	17	3MBP	359308	315
nC34	46497	210	22aa	1032	12	4MBP	122938	108
nC35	49012	220	22bb	870	10	23XDMBP	6175	8
			27dbS	3228	36	25DMBP	3356	4
			27dbR	2216	25	2424XDMBP	6489	8
			27bbR	3866	44	23DMBP	19458	25
			27bbS	3146	36	3EBP	17585	22
			27aaR	1514	17	35DMBP	50056	64
			28bbR	2594	29	33XDMBP	116326	148
			28bbS	3272	37	4EBP	6778	9
			29aaS	1978	22	34XDMBP	99506	127
			29bbR	3889	44	44XDMBP	20014	25
			29bbS	3915	44	34DMBP	40024	51
			29aaR	1755	20	DBF	44254	39
			30bbR	1311	15	DBF1	38549	49
			30bbS	1012	11	MDBF2	20116	26
						MDBF3	24498	31
						F	69280	74
						C1F1	28704	31
						C1F2	102278	109
						1MF	15725	17
						DBT	44507	17
						4MDBT	61393	24
						3MDBT	0	0
						1MDBT	10980	4
Saturated HC biomarkers, GC/MS								
	Height	ng/mgEOM						
19/3	495	4						
20/3	451	4						
21/3	714	6						
23/3	1049	8						
24/3	1052	8						
25/3	0	0						
25/3R	495	4						
25/3S	0	3						
26/3R	425	3						
26/3S	440	3						
28/3R	482	4						
28/3S	419	3						
29/3R	667	5						
29/3S	730	6						
24/4	777	6						
27Ts	2374	19						
27Tm	2429	19						

Country, well/location: NOR 30/6-27
 Sample type, depth (m): OIL, 3162.5-3162.5 m
 Stratigraphy (Gr./Fm.):
 Remarks:
 OrgID: , PlantID:

Fluid
sample



E&P Research Centre,
Bergen, Norway

Aromatic HC's, GC/MS cont...			cont... Area ng/mgEOM		
	Height	ng/mgEOM		Area	ng/mgEOM
P	267839	302	1C2DMCYC5	646954	50
3MP	97076	128	MCYC6	56256871	4120
2MP	106426	141	113TMCYC5	3021173	220
9MP	160864	213	ECYC5	2348664	170
1MP	115528	153	25DMC6	2939251	220
2EP9EP36DMP	22100	28	223TMC524DM	3373805	250
1EP	29478	37	1C2T4TMCYCE	2044944	150
262735DMP	16534	21	33DMC6	1255682	90
13210393DMP	116216	147	1T2C3TMCYCE	1902097	140
162529DMP	55609	70	234TMC5	364324	30
17DMP	50505	64	TOLUENE	118926543	7890
23DMP	16571	21	23DMC6	3195099	230
194941DMP	36811	47	2MC7	19300163	1410
18DMP	12496	16	4MC7	7205661	530
RETENE	13834	16	3MC7	11309302	830
20TA	5558	3	1C3DMCYC6	15904212	1160
21TA	5496	3	1T4DMCYC6	3921859	290
S26TA	3044	1	11DMCYC6	1552320	110
R26TAS27TA	12628	6	1T2DMCYC6	4830909	350
S28TA	7484	4	NC8	55149795	4040
R27TA	6272	3	ECYC6	15443258	1130
R28TA	6587	3	IC9	4771574	320
C5-20 HC's, GC/FID			EBENZENE	11951585	790
	Area	ng/mgEOM	MXYLENE	68806291	4560
IC5	14719923	1080	PXYLENE	17230159	1140
NC5	21840891	1600	4MC8	9774936	650
22DMC4	1646707	120	2MC8	12884284	850
CYC5	2496331	180	3MC8	12149876	810
23DMC4	2255626	170	OXYLENE	29541141	1960
2MC5	16711155	1220	NC9	61175092	4060
3MC5	10658726	780	IC10	11431427	760
NC6	34524857	2530	NC10	59950381	3980
3MCYC5ENE	36662	0	IC11	11577972	770
22DMC5	1568458	110	NC11	71586191	4750
MCYC5	13372596	980	NC12	77178750	5120
24DMC5	2202202	160	IC13	17005884	1130
223TMC4	382747	30	PHC6	136867095	9080
BENZENE	57596430	3820	IC14	16660209	1110
33DMC5	1137235	80	NC13	88186190	5850
CYC6	35009245	2560	IC15	20352563	1350
2MC6	16340489	1200	NC14	125578801	8330
23DMC5	3638847	270	IC16	40708129	2700
11DMCYC5	2352130	170	NC15	117446418	7790
3MC6	16722677	1220	NC16	135510202	8990
1C3DMCYC5	3069619	220	IC18	36388553	2410
1T3DMCYC5	2849325	210	NC17	128570033	8530
3EC5	4288008	310	PRISTANE	59750942	3960
1T2DMCYC5	5192917	380	NC18	120722751	8010
IC8	#####	9080	PHYTANE	45399078	3010
NC7	46048136	3370	NC19	150962120	10010
			NC20	205908146	13660

Country, well/location: NOR 30/6-27
 Sample type, depth (m): OIL, 3352.5-3352.5 m
 Stratigraphy (Gr./Fm.):

Fluid
sample



E&P Reserach Centre,
Bergen, Norway

Remarks:

OrgID: 2158184, PlanID: 431969

Bulk data, Iatroscan	Bulk PVT	δ13C isotope	ISTD-mix.(ng/mg EOM):
	GOR, Sm ³ /m ³ B ₀ 1/B _g Density, kg/m ³ API ⁰	Sat. -29.6 Aro. -28.3 NSO Asph. Total Kerogen	C12D26 4030 C16D34 4030 24αββ 24 d8N 49 d10BP 43 d10P 49 d12C 49

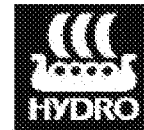
GC/FID, depressurized fluid, C6-9 hydrocarbons:	GC/FID	Area ng/mgEOM
	Hep.value Isohep.val. Paraffinicity Aromaticity nC ₆ /Benz. nC ₇ /Tolu.	22.93 22.92 1.60 1.60 0.82 0.82 0.61 0.50 0.96 1.18 1.08 1.32

Alkane distribution, combined data from fluid and C15+ fraction:

GC/FID, C15+ fraction hydrocarbons:	GC/FID	Area ng/mgEOM
	Pr/nC ₁₇ Ph/nC ₁₈ Pr/Ph nC ₁₇ /(C ₁₇ +C ₂₇)	0.44 0.44 0.36 0.36 1.49 1.49 0.78 0.78
	nC ₁₇ Pristane ΣC ₁₅₋₃₅	3 2 39

Country, well/location: NOR 30/6-27
 Sample type, depth (m): OIL, 3352.5-3352.5 m
 Stratigraphy (Gr./Fm.):

Fluid
 sample

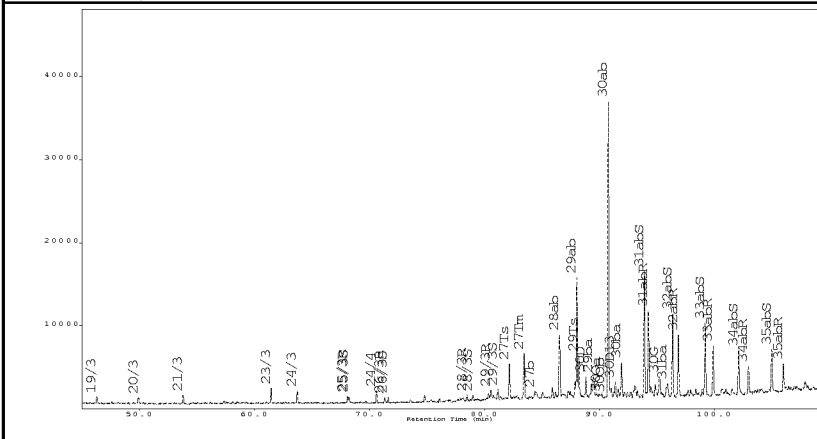


E&P Reserach Centre,
 Bergen, Norway

Remarks:

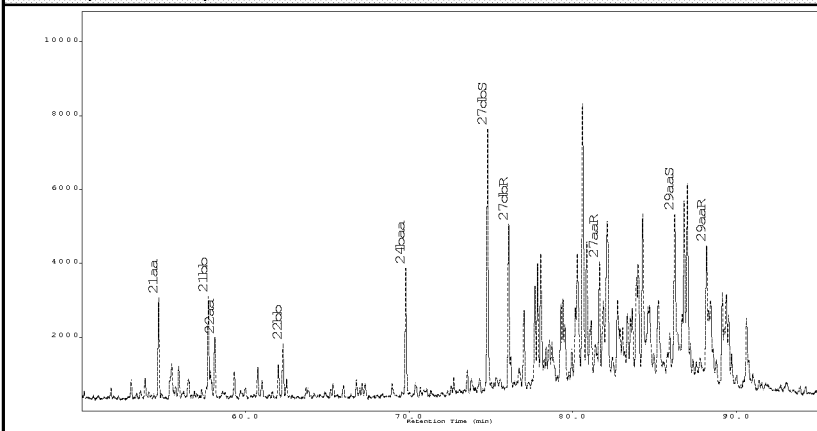
OrgID: 2158184, PlantID: 481969

GC/MS, Terpanes, m/z 191:



GC/MS	Height	ng/mgEOM
%Tri	4	5
%20/3	12	12
%23/3	55	55
%24/4	31	31
C26/C25	0.9	0.9
%27Ts	44	44
%28αβ	17	25
%29Ts	26	26
%25nor30αβ	2	3
%29αβ	27	37
%30βα	10	10
%30D	6	10
%30G	6	9
%32αβS	57	57
%35αβ	0	0

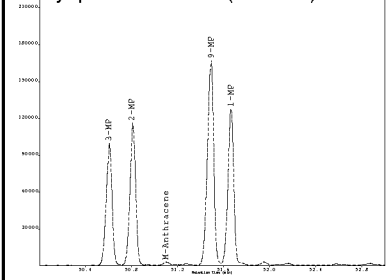
GC/MS, Steranes, m/z 217:



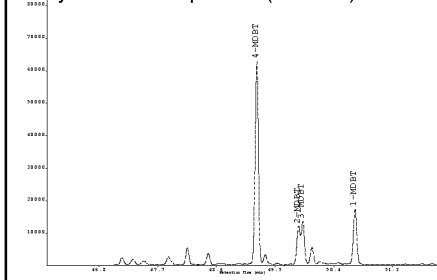
30αβ		124
25nor30αβ		4
Σterpanes		869
%Preg.	10	10
%29ααS	54	54
%29ββ	64	64
%27dia	50	50
%27ster.	29	29
%28ster.	25	25
%29ster.	34	34
%30ster.	12	12
29ααS		31
29ααR		26
Σsteranes		535

Aromatic hydrocarbons, GC/MS:

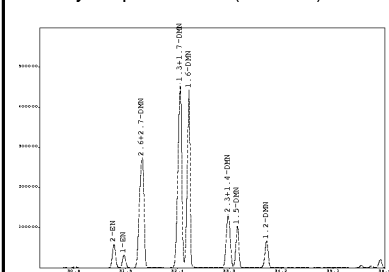
Methyl-phenanthrenes (m/z 192):



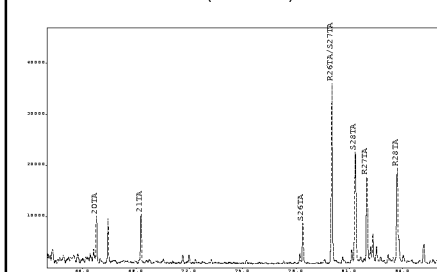
Methyl-dibenzothiophenes (m/z 198):



Dimethyl-naphthalenes (m/z 156):



Triaromatic steroids (m/z 231):



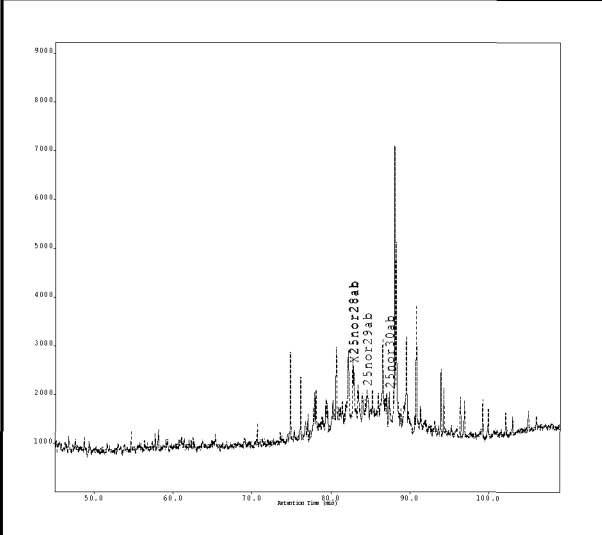
GC/MS	Height	ng/mgEOM
Naphth	614581	1294
C1-naph.	1223569	1501
C2-naph.	1478802	1709
C3-naph.	1142196	1343
DNR	2.6	2.6
2/1MN	1.2	1.2
2/1EN	1.9	1.9
Phen.	270786	225
C1-phen.	508109	495
C2-phen.	392690	366
MPI1	0.57	0.62
F1	0.42	0.42
F2	0.23	0.23
%TAS'n	19	19
DBT/P	0.22	0.08
F/P	0.18	0.21
BP/1.6DMN	0.79	0.55
4/1MDBT	3.63	3.63
3MP/R	2.3	2.7

Country, well/location: NOR 30/6-27
Sample type, depth (m): OIL, 3352.5-3352.5 m

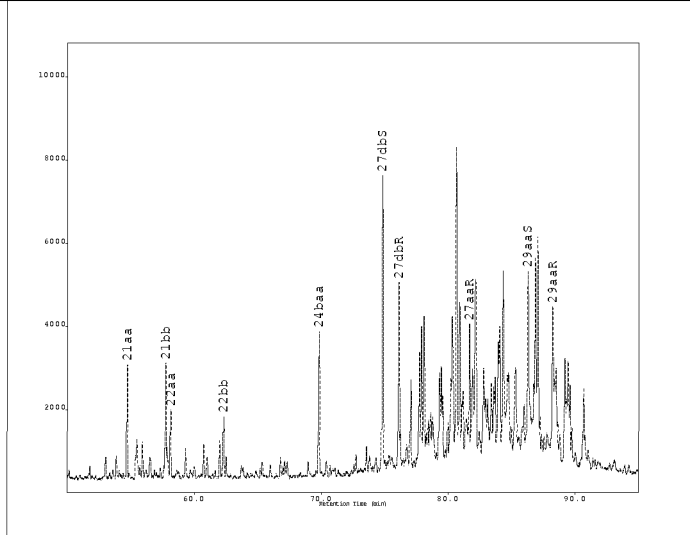
Fluid
sample



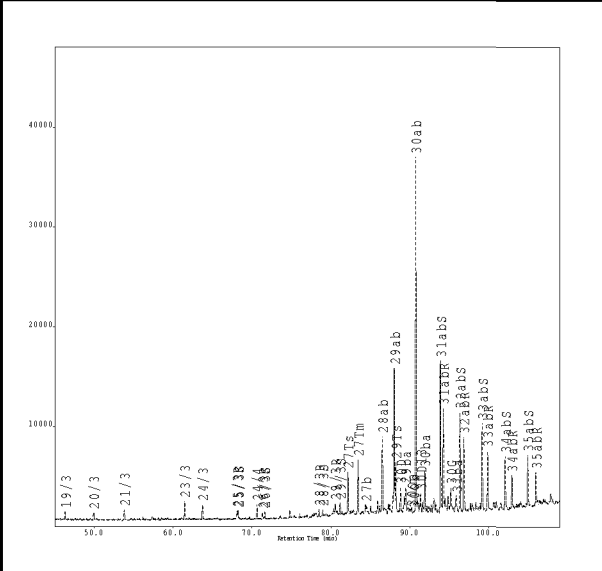
Saturated HC biomarkers, m/z 177



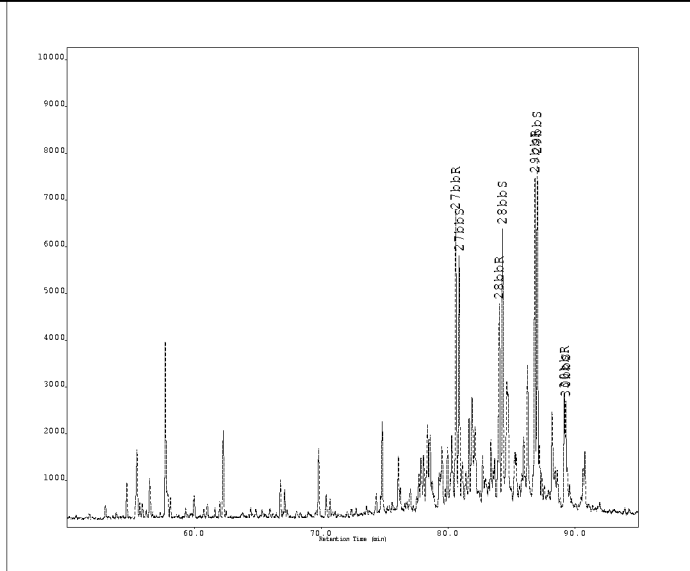
Saturated HC biomarkers, m/z 217



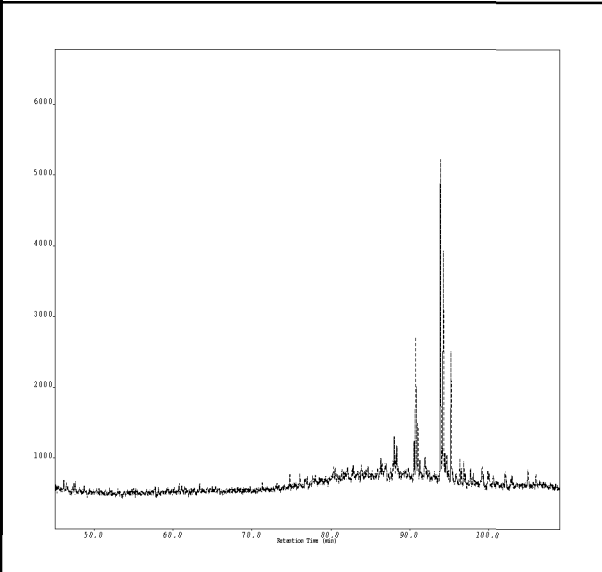
Saturated HC biomarkers, m/z 191



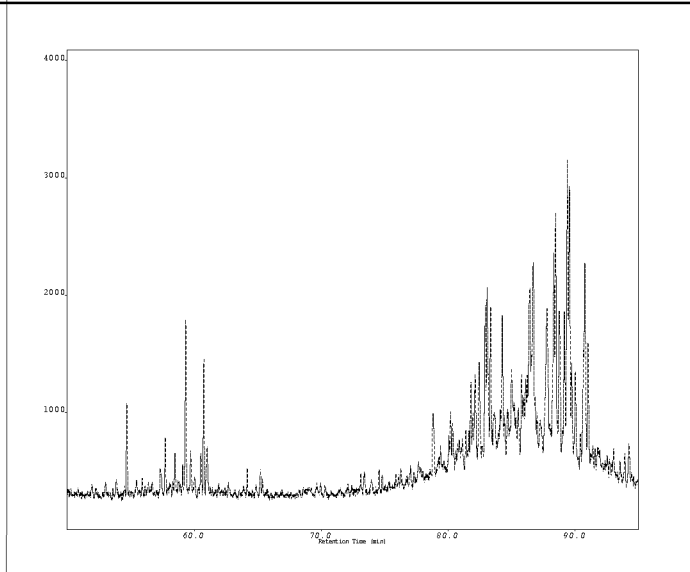
Saturated HC biomarkers, m/z 218



Saturated HC biomarkers, m/z 205



Saturated HC biomarkers, m/z 231

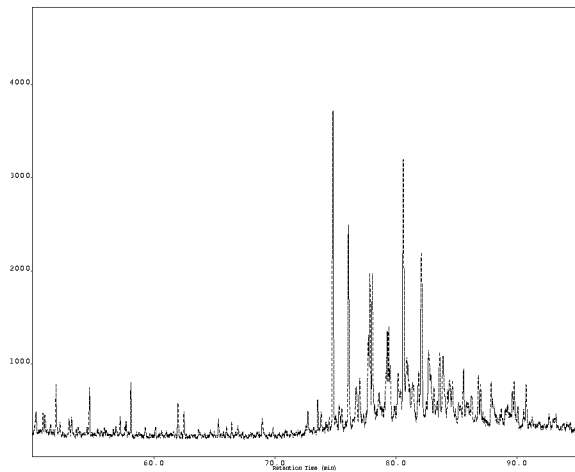


Country, well/location: NOR 30/6-27
Sample type, depth (m): OIL, 3352.5-3352.5 m

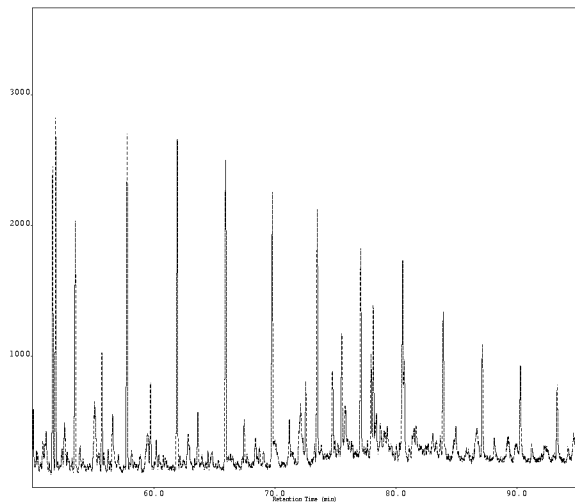
Fluid
sample



Saturated HC biomarkers, m/z 259



QC, monoaromatic steroids in SAT-fraction, m/z 253

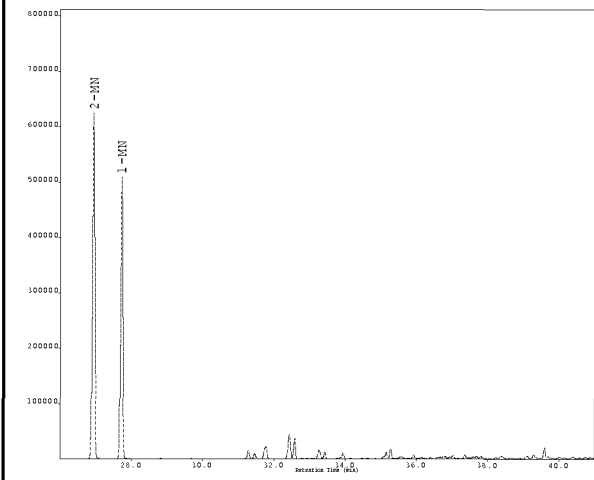


Country, well/location: NOR 30/6-27
Sample type, depth (m): OIL, 3352.5-3352.5 m

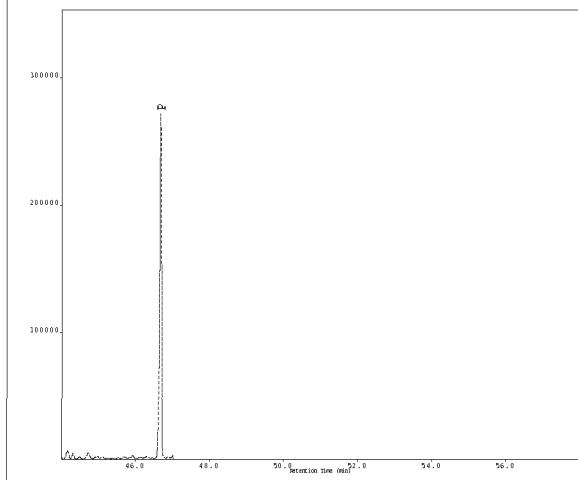
Fluid
sample



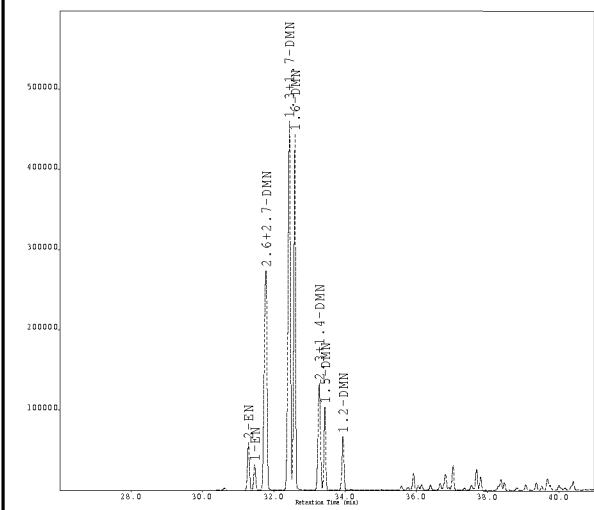
Aromatic HC's, methyl-naphthalenes m/z 142



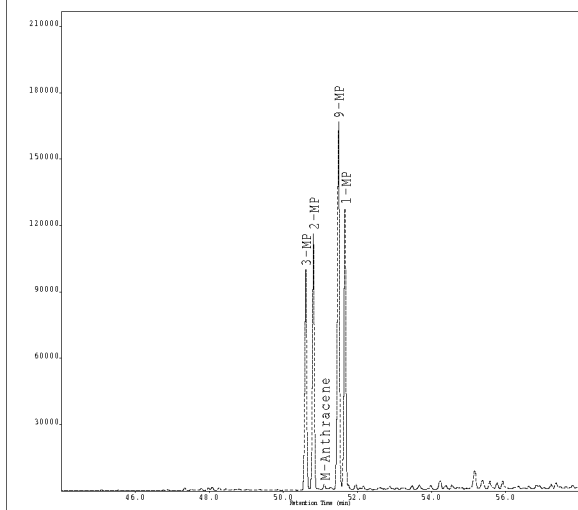
Aromatic HC's, phenanthrene m/z 178



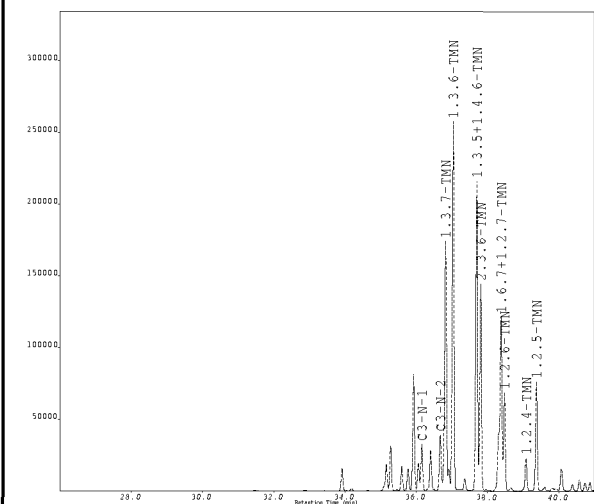
Aromatic HC's, C2-naphthalenes m/z 156



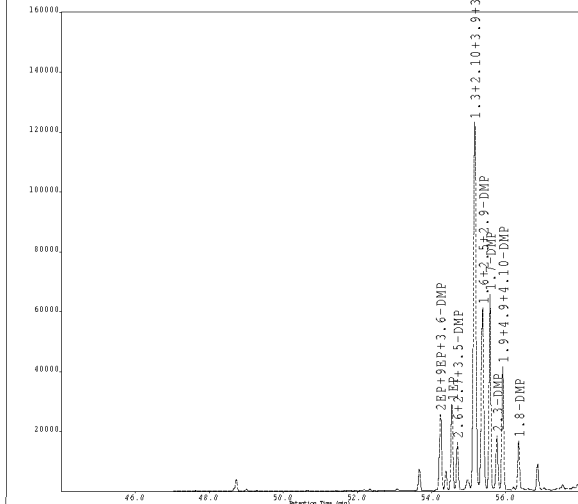
Aromatic HC's, methyl-phenanthrenes m/z 192



Aromatic HC's, C3-naphthalenes m/z 170



Aromatic HC's, dimethyl-phenanthrenes m/z 206

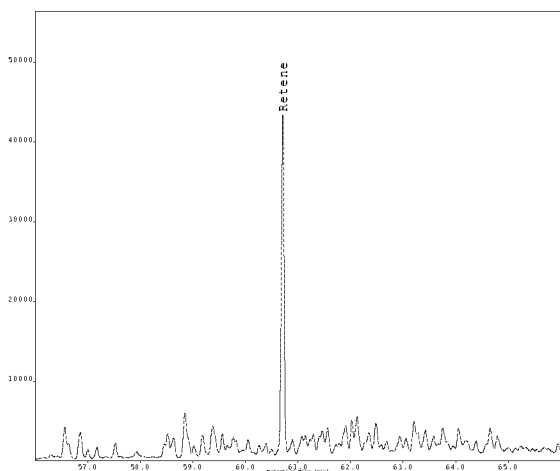


Country, well/location: NOR 30/6-27
 Sample type, depth (m): OIL, 3352.5-3352.5 m

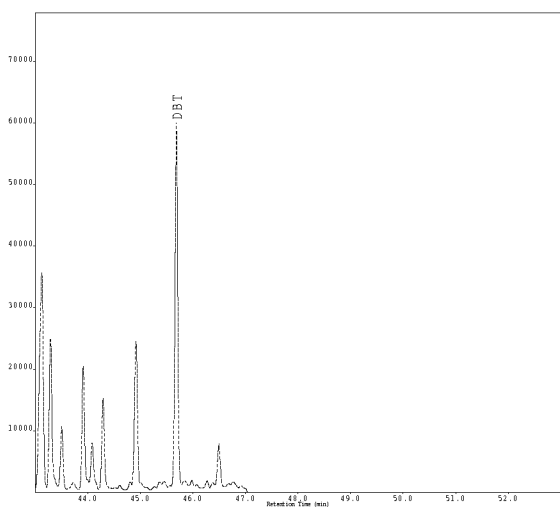
Fluid
 sample



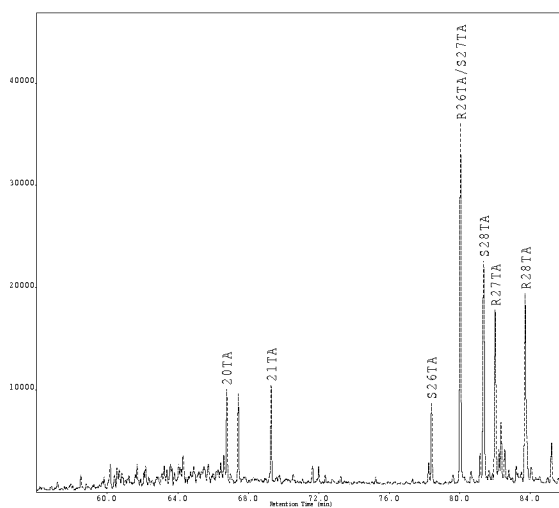
Retene m/z 219



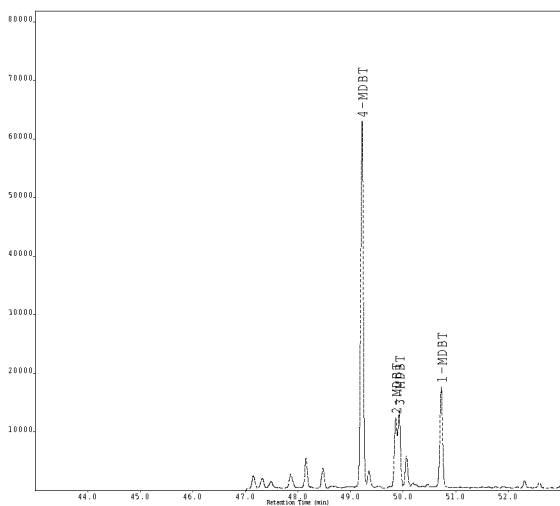
Aromatic HC's, dibenzothiophene m/z 184



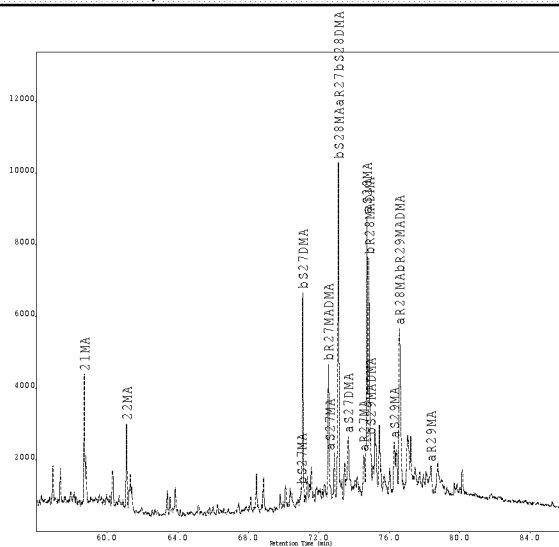
Aromatic HC's, triaromatic steroids m/z 231



Aromatic HC's, methyl-dibenzothiophenes m/z 198



Aromatic HC's, monoaromatic steroids m/z 253



Country, well/location: NOR 30/6-27
 Sample type, depth (m): OIL, 3352.5-3352.5 m
 Stratigraphy (Gr./Fm.):
 Remarks:
 OrgID: , PianiD:

Fluid
sample



E&P Reserach Centre,
Bergen, Norway

Saturated HC's, GC/FID			cont...	Height	ng/mgEOM	cont...	Height	ng/mgEOM
	Area	ng/mgEOM	27b	770	4			
nC11	724056	0	25nor28ab	1208	7	Aromatic HC's, GC/MS		
nC12	870029	0	28ab	7508	41		Height	ng/mgEOM
nC13	974415	0	25nor29ab	552	3	N	614581	1294
nC14	1061322	0	29ab	13389	72	2MN	624115	769
iC16	447083	1410	29ba	2266	12	1MN	508725	627
nC15	1157557	3650	29Ts	4733	26	2EN	59345	69
nC16	1072180	3380	25nor30ab	653	4	1EN	31384	36
iC18	442244	1400	30ab	35492	124	2627DMN	273648	316
nC17	1092960	3450	30ba	4083	14	1317DMN	459562	531
Prinstane	481119	1520	30D	2421	13	16DMN	443275	512
nC18	906264	2860	30G	2125	12	2314DMN	132296	153
Phytane	323396	1020	30O	0	0	15DMN	103433	120
nC19	836338	2640	30D13	1806	10	12DMN	66588	77
nC20	762694	2410	31abS	15269	83	C3N1	32060	38
nC21	675673	2130	31abR	9957	54	C3N2	38622	45
nC22	609983	1920	31ba	1515	8	137TMN	167994	197
nC23	555703	1750	32abS	9849	53	136TMN	256714	302
nC24	520669	1640	32abR	7473	40	135146TMN	215288	253
nC25	435740	1370	33abS	8642	47	236TMN	144320	170
nC26	394018	1240	33abR	5959	32	167127TMN	121590	143
nC27	314762	990	34abS	5325	29	126TMN	67248	79
nC28	306690	970	34abR	3277	18	124TMN	22615	27
nC29	257176	810	35abS	4953	27	125TMN	75745	89
nC30	218876	690	35abR	3372	18	BP	350128	284
nC31	194745	610	21aa	2715	21	3MBP	269577	218
nC32	146333	460	21bb	2585	20	4MBP	84237	68
nC33	148636	470	22aa	1633	13	23XDMBP	7841	9
nC34	69991	220	22bb	1473	12	25DMBP	3792	4
nC35	74575	240	27dbS	7002	55	2424XDMBP	7540	9
			27dbR	4428	35	23DMBP	19239	23
			27bbR	6081	48	3EBP	16771	20
			27bbS	5138	40	35DMBP	36068	42
			27aaR	2852	22	33XDMBP	92561	109
Saturated HC biomarkers, GC/MS			28bbR	4095	32	4EBP	6363	7
19/3	824	4	28bbS	5681	44	34XDMBP	73365	86
20/3	756	4	29aaS	3994	31	44XDMBP	13846	16
21/3	1070	6	29bbR	6427	50	34DMBP	33405	39
23/3	1865	10	29bbS	6560	51	DBF	73519	60
24/3	1513	8	29aaR	3355	26	DBF1	46639	55
25/3	0	0	30bbR	2418	19	MDBF2	22567	27
25/3R	749	4	30bbS	2086	16	MDBF3	27681	33
25/3S	0	4				F	47461	47
26/3R	626	3				C1F1	24536	24
26/3S	685	4				C1F2	92601	91
28/3R	739	4				1MF	14552	14
28/3S	652	4				DBT	59021	17
29/3R	928	5				4MDBT	62482	18
29/3S	1193	6				3MDBT	0	0
24/4	1492	8				1MDBT	17191	5
27Ts	4253	23						
27Tm	5452	30						

Country, well/location: NOR 30/6-27
 Sample type, depth (m): OIL, 3352.5-3352.5 m
 Stratigraphy (Gr./Fm.):
 Remarks:
 OrgID: , PlantID:

Fluid
sample



E&P Research Centre,
Bergen, Norway

Aromatic HC's, GC/MS cont...			cont... Area ng/mgEOM		
	Height	ng/mgEOM			
P	270786	225	1C2DMCYC5	1272557	100
3MP	99467	97	MCYC6	110060748	8740
2MP	115393	112	113TMCYC5	6722472	530
9MP	166021	162	ECYC5	7352287	580
1MP	127228	124	25DMC6	3838901	300
2EP9EP36DMP	25487	24	223TMC524DM	5527044	440
1EP	28640	27	1C2T4TMCYCE	6501481	520
262735DMP	15992	15	33DMC6	1469600	120
13210393DMP	122050	114	1T2C3TMCYCE	7143826	570
162529DMP	60570	56	234TMC5	1708133	140
17DMP	64938	60	TOLUENE	84126071	5450
23DMP	17835	17	23DMC6	7110715	560
194941DMP	41063	38	2MC7	33798998	2680
18DMP	16115	15	4MC7	13077059	1040
RETENE	42634	35	3MC7	20235840	1610
20TA	9133	3	1C3DMCYC6	21323464	1690
21TA	9694	3	1T4DMCYC6	9512230	760
S26TA	7841	3	11DMCYC6	7460870	590
R26TAS27TA	35216	12	1T2DMCYC6	13389026	1060
S28TA	21272	8	NC8	98565906	7830
R27TA	16589	6	ECYC6	39957997	3170
R28TA	18471	7	IC9	15725777	1020
C5-20 HC's, GC/FID			EBENZENE	12233982	790
	Area	ng/mgEOM	MXYLENE	51730778	3350
IC5	28111830	2230	PXYLENE	8864798	570
NC5	57154450	4540	4MC8	13403352	870
22DMC4	1575007	130	2MC8	19564583	1270
CYC5	5866732	470	3MC8	18315099	1190
23DMC4	3874840	310	OXYLENE	25389394	1640
2MC5	34927516	2770	NC9	100894590	6540
3MC5	21158663	1680	IC10	21560712	1400
NC6	78527916	6240	NC10	85919169	5570
3MCYC5ENE	56106	0	IC11	19104181	1240
22DMC5	1726783	140	NC11	92622091	6000
MCYC5	31118889	2470	NC12	92299155	5980
24DMC5	3867506	310	IC13	22368583	1450
223TMC4	296521	20	PHC6	140788038	9120
BENZENE	81553746	5280	IC14	20796667	1350
33DMC5	1241953	100	NC13	95789090	6210
CYC6	69505698	5520	IC15	21800803	1410
2MC6	26711922	2120	NC14	119461217	7740
23DMC5	9547874	760	IC16	37810471	2450
11DMCYC5	6361626	510	NC15	107739192	6980
3MC6	29971180	2380	NC16	111908128	7250
1C3DMCYC5	9062415	720	IC18	31016884	2010
1T3DMCYC5	8552921	680	NC17	103109026	6680
3EC5	2447169	190	PRISTANE	53549167	3470
1T2DMCYC5	16455966	1310	NC18	101060818	6550
IC8	#####	9120	PHYTANE	42738833	2770
NC7	90477065	7180	NC19	118078700	7650
			NC20	146314132	9480

Appendix 3

Mud gas data

Data report on molecular and stable
isotope composition of gas bag samples
from well 30/6-27



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Introduction

17 gas bag samples from well 30/6-27 have been analysed for gas and isotopic composition. The samples range in depth from 3120 to 3432.

The contents of C₁-C₅ and inorganic gases have been quantified and the $\delta^{13}\text{C}$ composition of C₁-C₅ and CO₂ have been determined when possible.

Experimental Procedures

All procedures follow NIGOGA, 4th Edition. Below are brief descriptions of procedures/analytical conditions.

GC analysis of gas components

Aliquots of 1 ml were sampled with a syringe for analysis on a Porabond Q column on a Carlo Erba HRGC 5300 equipped with a flame ionisation (FID) and a thermal conductivity (TCD/HWD) detector. The detection limit for the hydrocarbon gas components is 0.001 $\mu\text{l/ml}$, for CO₂ 0.05 $\mu\text{l/ml}$.

Stable isotope analysis of gas compounds

Due to low hydrocarbon gas concentration in the gas samples the carbon isotopic composition of the hydrocarbon gas components and carbon dioxide were determined by a GC-C-IRMS system. Aliquots were sampled with a syringe and analysed on a VG Isochrom connected on line to a VG Optima Mass spectrometer. A HP 5890 II with a Poraplot Q column is used for the separation and helium is used as a carrier gas. The injections were performed in splitless and split mode, depending on the individual methane concentrations. Determination of hydrogen or oxygen isotopic composition is not included in the analytical procedure.

The uncertainty in the reported results is $\pm 1 \text{ ‰}$ for methane, ethane and CO₂ and $\pm 0.5 \text{ ‰}$ for the other components based on repeated analysis of IFEs laboratory standard (test gas concentration) over a period of 4 years.

Results

The normalised volume composition of the gas samples is shown in Table 1 and Fig. 1. A mixture of nitrogen/oxygen (air) is detected in all samples, but the amounts have not been

quantified. Gas chromatograms from the flame ionisation detection (FID) are shown in the Appendix.

The stable isotope composition of the different gas samples is shown in Table 2 and Fig. 2. The isotopic composition is not determined on all components in all samples, due to low concentrations.



Data report on molecular and stable isotope composition of gas bag samples from well 30/6-27

Table 1. Gas Composition (volume-%)

Well	Sample type	Lower Depth	APT ID	C1%	C2%	C3%	iC4%	nC4%	iC5%	nC5%	CO2%	Sum C1-C5	Wetness (%)	iC4/nC4	ppm
30/6-27	Gas bags	3120	13411	96.8	2.4	0.46	0.03	0.08			0.26	99.7	3.0	0.40	32812
30/6-27	Gas bags	3140	13412	97.1	2.2	0.43	0.03	0.05			0.13	99.9	2.8	0.61	177363
30/6-27	Gas bags	3160	13413	95.7	2.9	0.69	0.07	0.18			0.44	99.6	3.9	0.40	31038
30/6-27	Gas bags	3180	13414	95.9	3.0	0.48					0.63	99.4	3.5		15812
30/6-27	Gas bags	3200	13415	85.5	3.1	1.3					10.0	90.0	4.9		2550
30/6-27	Gas bags	3220	13416	94.6	2.8	0.75	0.06	0.16			1.6	98.4	3.8	0.35	21083
30/6-27	Gas bags	3240	13417	93.5	2.9	0.75		0.20			2.7	97.3	4.0		10950
30/6-27	Gas bags	3260	13418	93.2	3.2	0.60		0.08			3.0	97.0	4.0		9801
30/6-27	Gas bags	3280	13419	93.4	3.2	0.89		0.37			2.2	97.8	4.6		11740
30/6-27	Gas bags	3300	13420	93.2	3.3	0.90	0.06	0.20			2.4	97.6	4.5	0.29	16067
30/6-27	Gas bags	3320	13421	93.3	3.0	0.91		0.36			2.5	97.5	4.4		15887
30/6-27	Gas bags	3340	13422	88.8	4.0	1.6					5.6	94.4	5.9		4912
30/6-27	Gas bags	3360	13423	93.4	3.3	1.1		0.42			1.8	98.2	4.9		13867
30/6-27	Gas bags	3380	13424	90.9	3.3	1.0		0.46			4.4	95.6	4.9		4345
30/6-27	Gas bags	3400	13425	89.4	3.9	1.4		0.58			4.7	95.3	6.2		3475
30/6-27	Gas bags	3420	13426	76.5	3.9	2.1		0.94			16.6	83.4	8.2		2181
30/6-27	Gas bags	3432	13427	79.6	2.9	1.1	0.12	1.2	0.13	0.15	14.8	85.2	6.3	0.10	1710

Table 2. Gas Isotopes

Well	Sample type	Lower Depth	APT ID	C1 δ13C	C2 δ13C	C3 δ13C	iC4 δ13C	nC4 δ13C	iC5 δ13C	nC5 δ13C	CO2 δ13C
30/6-27	Gas bags	3120	13411	-33.4	-24.9	-23.6					-22.2
30/6-27	Gas bags	3140	13412	-37.0	-25.1	-23.1	-25.7	-25.5			-22.2
30/6-27	Gas bags	3160	13413	-20.9	-21.5	-21.7					-21.8
30/6-27	Gas bags	3180	13414	-34.9	-25.5	-24.5					-21.8
30/6-27	Gas bags	3200	13415	-33.4	-24.4	-24.6					-20.8
30/6-27	Gas bags	3220	13416	-34.7	-25.0	-24.2					-23.0
30/6-27	Gas bags	3240	13417	-35.1	-25.8	-24.0					-20.3
30/6-27	Gas bags	3260	13418	-35.1	-26.0	-24.6					-19.4
30/6-27	Gas bags	3280	13419	-36.4	-26.2	-24.4					-20.2
30/6-27	Gas bags	3300	13420	-35.9	-25.7	-24.7					-21.4
30/6-27	Gas bags	3320	13421	-36.8	-26.5	-25.2					-21.0
30/6-27	Gas bags	3340	13422	-35.2	-26.0	-24.5					-18.7
30/6-27	Gas bags	3360	13423	-34.9	-25.2	-24.9					-23.2
30/6-27	Gas bags	3380	13424	-37.4	-26.2	-24.2					-20.0
30/6-27	Gas bags	3400	13425	-34.6	-26.1	-24.3					-19.2
30/6-27	Gas bags	3420	13426	-36.4	-26.4	-24.9					-19.5
30/6-27	Gas bags	3432	13427	-36.9	-27.9	-26.1					-19.0