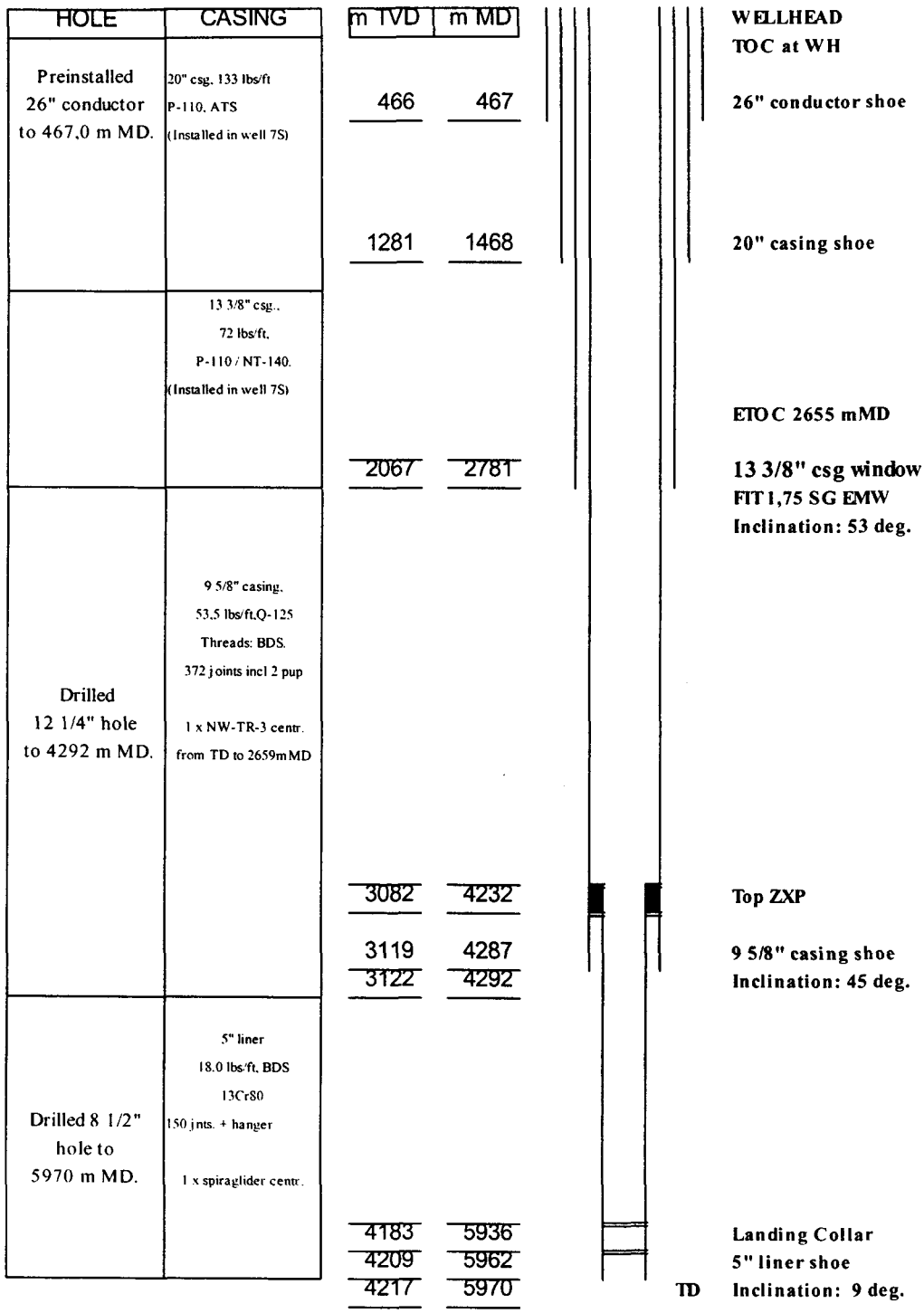
2 .4 8 1/2" hole section (4292 mMD - 5970 mMD, 3122 mTVD - 4217 mTVD)

The section was drilled in 13 drilling runs in addition to 3 runs for coring.

The direction turned from 281° to 320° at the end of the section. The inclination was increased from 44° to 67° before dropping to 9° at TD.
It was experienced steering problems and difficulties to drop inclination.

The section was drilled with 1.53 sg Interdrill, pseudo oilbased mud.

2 .6 Wellbore Schematic



FORMATION PRESSURE

FORMASJONSTRYKK -MDT BRØNN: 30/3-7B					KJØRING: 1B			DATO: 12.07.98 - 15.07.98				
TST #	SONE NAVN	DYBDE mMD BD	DYBDE mSVD MSL	INIT. RES. TRYKK (BAR)	MÅLT RES. TRYKK (BAR)	TRYKK AVL. (BAR)	PORE TRYKK ref. BD	BRØNN TRYKK (BAR) HP - after	TRYKK MÅLERschlum. file no.	KRFT md-CP	TEMP °C	KOMMENTARER
1.	B2B Oseberg	4301.0	3072.7		358.13		1.188	465.0	QD1-9	929	116.7	ok
2.	B2B Oseberg	4306.0	3076.2		358.26		1.187	466.3	QD1-10	3.7	117.3	ok
3.	B2A Oseberg	4318.0	3084.8		358.63		1.185	466.2	QD1-11	1.3	118.4	ok
4.	B2A Oseberg	4324.0	3089.0		358.71		1.184	466.7	QD1-12	5.8	119.0	ok
5.	IDS3	4384.0	3131.8		360.65		1.153	473.0	QD1-13	0.7	120.2	ok
6.	Statfjord	4613.0	3285.4		363.7		1.109	502.1	QD1-14	0.4	123.0	ok
7.	Statfjord	4617.0	3287.5		-		-	512.4	QD2-244	-		no seal, 2nd pass
8.	Statfjord	4620.0	3288.9		364.83		1.111	502.1	QD1-15	0.3	123.7	ok
9.	Statfjord	4623.0	3290.4		364.16		1.109	512.8	QD2-243	2.9	130.0	ok, 2nd pass
10.	Statfjord	4634.0	3295.3		364.71		1.109	497.6	QD1-16	2.0	124	ok
11.	Statfjord	4642.7	3299.1		365.99		1.110	516.0	QD2-242	2.1	130.2	ok, 2nd pass
12.	Statfjord	4646.6	3300.9		366.23		1.112	474.1	QD2-241	1.1	130.1	ok, 2nd pass
13.	Statfjord	4646.7	3301.0		-		-	402.8	QD2-240	-		no constant build up, 2nd pass
14.	Statfjord	4654.0	3303.9		365.42		1.108	499.2	QD1-17	3.6	124.2	ok
15.	Statfjord	4658.0	3305.6		-		-	518.8	QD2-239	-		no seal, 2nd pass
16.	Statfjord	4673.4	3311.9		-		-	520.0	QD2-238	-		no seal , 2nd pass
17.	Statfjord	4674.5	3312.3		-		-	520.4	QD2-237	-		no seal , 2nd pass
18.	Statfjord	4674.5	3312.3		366.17		1.108	520.7	QD2-236	13.4	130.4	ok, 2nd pass

FORMASJONSTRYKK -MDT BRØNN: 30/3-7B					KJØRING: 1B			DATO: 12.07.98 - 15.07.98				
TST #	SONE NAVN	DYBDE mMD BD	DYBDE mSVD MSL	INIT. RES. TRYKK (BAR)	MÅLT RES. TRYKK (BAR)	TRYKK AVL. (BAR)	PORE TRYKK ref. BD	BRØNN TRYKK (BAR) HP - after	TRYKK MÅLERsch lum. file no.	KRFT md-CP	TEMP °C	KOMMENTARER
19.	Statfjord	4674.9	3312.5		366.20		1.108		QD2-247	16.5	130	**450cc fluid sample**, 2nd pass
20.	Statfjord	4676.2	3313.1		366.60			500.24	QD1-18	0.6	124.0	ok
21.	Statfjord	4678.0	3313.8		-		-	521.2	QD2-235	-		no seal, 2nd pass
22.	Statfjord	4725.0	3333.2		-		-	502.3	QD1-20	-		no seal , no print
23.	Statfjord	4725.5	3333.4		-		-	524.4	QD2-234	-		tight, 2nd pass
24.	Statfjord	4727.0	3334.0		-		-	503.7	QD1-19	-		no seal probe 1, no print
25.	Statfjord	4727.0	3334.0		-		-	503.3	QD2-21	-		no seal probe 2, no print
26.	Statfjord	4743.0	3340.6		368.24		1.105	525.9	QD2-233	22.7	131.4	ok, 2nd pass
27.	Statfjord	4755.2	3345.5		368.83		1.105	505.3	QD1-22	20.3	126.9	ok
28.	Statfjord	4763.4	3349.1		369.29		1.106	529.4	QD2-232	5.3	132.3	ok, 2nd pass
29.	Statfjord	4778.1	3354.8		369.73		1.105	506.5	QD1-23	10.7	127.6	ok
30.	Ness	5142.1	3506.4		395.91		1.132	529.9	QD1-24	1.0	132.2	ok
31.	Ness	5148.9	3509.5		-		-	528.5	QD1-31	-		tight
32.	Ness	5149.1	3509.6		-		-	530.3	QD1-25	-		tight
33.	Ness	5152.0	3511.0		-		-	530.5	QD1-26	-		tight
34.	Ness	5152.0	3511.0		-		-	530.4	QD1-30	-		tight
35.	Ness	5163.9	3516.5		-		-	530.8	QD1-27	-		tight
36.	Ness	5164.0	3516.5		396.28		1.13	530.1	QD1-29	9.8	134.2	ok
37.	Ness	5164.1	3516.6		-		-	531.5	QD1-28	-		tight

FORMASJONSTRYKK ...IDT BRØNN: 30/3-7B					KJØRING: 1B			DATO: 12.07.98 - 15.07.98				
TST #	SONE NAVN	DYBDE mMD BD	DYBDE mSVD MSL	INIT. RES. TRYKK (BAR)	MÅLT RES. TRYKK (BAR)	TRYKK AVL. (BAR)	PORE TRYKK ref. BD	BRØNN TRYKK (BAR) HP - after	TRYKK MÅLERsch lum. file no.	KRFT md-CP	TEMP °C	KOMMENTARER
38	Ness	5172.0	3520.3		396.62		1.130	531.5	QD1-32	6.7	133.6	ok
39.	Ness	5196.1	3528.9		397.36		1.130	531.9	QD1-34	0.3	134.8	ok
40.	Ness	5197.1	3531.5		-		-	533.2	QD1-33	-		tight
41.	Etive	5209.2	3537.4		397.58		1.128	533.7	QD1-35	0.4	135.2	ok
42.	Etive	5219.0	3542.0		398.07		1.127	534.2	QD1-36	0.2	135.9	ok
43.	Etive	5225.0	3545.0		398.01		1.126	534.5	QD1-37	0.4	136.3	ok
44.	B3 Oseberg	5261.1	3562.4		-		-	538.1	QD1-38	-		no seal
45.	B3 Oseberg	5261.1	3562.4		508.2		1.431	537.8	QD1-40	0.3	136.6	ok
46.	B3 Oseberg	5262.1	3562.9		-		-	538.3	QD1-39	-		tight
47.	B3 Oseberg	5272.0	3567.8		509.53		1.433	538.4	QD1-41	0.2	137.8	still small BU
48.	B3 Oseberg	5281.1	3572.5		-		-	539.1	QD1-42	-		tight
49.	B2 Oseberg	5303.0	3583.4		461.33		1.312	539.9	QD1-44	0.1	139.0	1st DD, 2nd leak ?
50.	B2 Oseberg	5310.0	3587.0		461.48		1.291	541.8	QD1-43	1.0	139.0	ok
51.	B2 Oseberg	5319.0	3591.6		461.79		1.290	542.6	QD1-45	1.1	139.6	ok
52	Tarbert	5521.0	3731.0		-		-	571.3	QD1-46	-		tight
53.	Tarbert	5525.2	3734.6		-		-	572.6	QD1-48	-		tight
54.	Tarbert	5527.0	3736.0		-		-	572.7	QD1-47	-		tight
55.	Tarbert	5534.0	3742.5		-		-	574.2	QD1-49	-		tight
56.	Ness	5653.0	3851.5		-		-	596.2	QD1-50	-		tight
57.	Ness	5654.0	3852.3		-		-	596.4	QD1-51	-		no seal

FORMASJONSTRYKK -MDT BRØNN: 30/3-7B					KJØRING: 1B			DATO: 12.07.98 - 15.07.98				
TST #	SONE NAVN	DYBDE mMD BD	DYBDE mSVD MSL	INIT. RES. TRYKK (BAR)	MÅLT RES. TRYKK (BAR)	TRYKK AVL. (BAR)	PORE TRYKK ref. BD	BRØNN TRYKK (BAR) HP - after	TRYKK MÅLERsch lum. file no.	KRFT md-CP	TEMP °C	KOMMENTARER
58.	Etive	5679.1	3876.0		-		-	601.2	QD1-52	-		tight both probes
59.	Etive	5679.2	3876.0		-		-	601.4	QD1-53	-		tight
60.	Etive	5682.0	3879.0		-		-	601.9	QD1-55	-		tight
61.	Oseberg	5694.5	3891.2		492.9		1.272	623.6	QD2-229			still build up, 2nd pass
62.	Oseberg	5694.6	3891.3		-		-	625.2	QD2-222	-		tight, 2nd pass
63.	Oseberg	5695.0	3891.5		-		-	603.3	QD1-56	-		tight
64.	Oseberg	5696.6	3893.3		-		-	624.1	QD2-218	-		no seal
65.	Oseberg	5696.8	3893.5		-		-	624.3	QD2-226	-		no seal, 2nd pass
66.	Oseberg	5696.8	3893.5		-		-	625.6	QD2-223	-		no seal, 2nd pass
67.	Oseberg	5697.3	3894.0		-		-		QD2-227	-		no seal, 2nd pass
68.	Oseberg	5700.0	3896.5		-		-	603.6	QD1-57	-		tight
69.	Oseberg	5708.2	3904.5		-		-	604.9	QD1-58	-	150.6	tight
70.	Oseberg	5721.0	3916.8		-		-	607.3	QD1-59	-	150.9	tight
71.	Oseberg	5721.0	3916.8		494.07		1.267	627.6	QD1-217	0.3	142.8	ok, 2nd pass, probe 1
72.	Oseberg	5732.0	3927.5		-		-	609.9	QD1-60	-	151.2	tight
73.	Oseberg	5741.6	3936.8		495.7		1.266	630.9	QD2-224	0.3	146.7	2nd pass, still BU
74.	Oseberg	5742.0	3937.5		-		-	612.6	QD1-61	-	151.3	tight
75.	Oseberg	5754.0	3949.0		-		-	615.2	QD1-62	-	151.5	tight
76.	IDS	5902.8	4094.7		533.23		1.308		QD2-100	5.5	153.8	**3 x 450cc fluid samples** only #1 on file, 2nd pass
77.	IDS	5903.0	4094.9		533.46		1.310	647.7	QD1-70	5.4	146.3	ok

FORMASJONSTRYKK -MDT BRØNN: 30/3-7B					KJØRING: 1B			DATO: 12.07.98 - 15.07.98				
TST #	SONE NAVN	DYBDE mMD BD	DYBDE mSVD MSL	INIT. RES. TRYKK (BAR)	MÅLT RES. TRYKK (BAR)	TRYKK AVL. (BAR)	PORE TRYKK ref. BD	BRØNN TRYKK (BAR) HP - after	TRYKK MÅLERsc hlum. file no.	KRFT md-CP	TEMP °C	KOMMENTARER
78.	IDS	5905.2	4097.0		533.09		1.308		QD2-88	3.7		ok, 2nd pass
79.	IDS	5905.6	4097.4		533.21		-	649.5	QD2-99	-		almost tight, 2nd pass
80.	IDS	5906.1	4097.9		533.21		1.308		QD2-90	6.4	150.5	ok, abort fluid sampling due to power black, 2nd pass
81.	IDS	5906.0	4097.8		-		-	653.5	QD2-95	-	152.8	tight, 2nd pass
82.	IDS	5906.0	4097.8		-		-	647.7	QD2-84	-	152.0	no seal, 2nd pass
83.	IDS	5906.1	4097.9		533.53		1.309	648.1	QD1-69	8.2	146.6	ok
84.	IDS	5906.1	4097.9		533.51		1.309		QD2-74	6.0	146.7	ok, abort fluid sampling due to tool compression, 2nd pass
85.	IDS	5906.2	4098.0		-		-	652.9	QD2-97	-	152.0	tight, 2nd pass
86.	IDS	5908.4	4100.2		-		-	648.3	QD1-68	-		tight
87.	IDS	5909.0	4100.8		-		-	650.0	QD1-73	-		tight
88.	IDS	5911.0	4102.8		533.67		1.308	648.5	QD1-67	5.3	148.0	ok
89.	IDS	5917.0	4108.7		-		-	650.5	QD1-66	-		tight

Antall tester: 89 nivåer	**Vellykka tester: 39 nivåer**	**Antall væskeprøver: 2 (4x 450cc in total)**
Hydrostatisk gradient til overflaten : 1.59 - 1.51 g/cc		
Hydrostatisk gradient i loggeintervallet : ------- g/cc		
Maks. poretrykksgradient i intervallet ref. BD : 1.433 g/cc		
Min. poretrykksgradient i intervallet ref. BD : 1.105 g/cc		

KOMMENTARAR :
SG1 reads approx. 10 bars lower than QD1 (and QD2 & SG2)
3 x 450cc samples taken in IDS, porbably gas, 1 x 450cc sample taken in Statfjord, water (contaminated).
All pressure points and fluid samples in 2nd pass were taken with probe #2 (except for pressure point #71)

FORMASJONSTRYKK -MDT BRØNN: 30/3-7B					KJØRING: 1C			DATO: 17.07.98 - 19.07.98				
TST #	SONE NAVN	DYBDE mMD BD	DYBDE mSVD MSL	INIT. RES. TRYKK (BAR)	MÅLT RES. TRYKK (BAR)	TRYKK AVL. (BAR)	PORE TRYKK ref. BD	BRØNN TRYKK (BAR) HP - after	TRYKK - MÅLER	KRFT md-CP	TEMP °C	KOMMENTARER
1.	Oseberg	4290.2	3065.1		357.90		1.169		QD2	7.1	116.9	ok
2.	Oseberg	4290.5	3065.2		357.83		1.169		QD2	56.6	118.6	sampling 2 x 1 gal. 2 x 400cc PVT. (no clean up)
3.	Oseberg	4311.0	3079.8		358.77		1.166	455.8	QD2	1.4	121	ok
4.	IDS	4381.6	3130.0		-		-	463.1	QD2	-	122.5	Supercharged/tight
5.	IDS	4387.0	3134.0		-		-	463.9	QD2	-	122.5	Supercharged/tight
6.	IDS	4391.1	3136.9		-		-	464.8	QD2	-	122.2	Dårlig, men permeabel Ikke ventet lenge nok
7.	IDS	4396.6	3140.9		-		-	466.3	QD2	-	121.7	Supercharged/tight
8.	IDS	4396.3	3140.8		-		-	465.9	QD2	-	120	Supercharged/tight
9.	IDS	4390.1	3136.2		-		-	464.5	QD2	-	122.5	Supercharged/tight

Antall tester: 9 nivåer	**Vellykka tester: 3 nivåer**	**Antall væskeprøver: 2x450cc, 2 x 1 gal**
Hydrostatisk gradient til overflaten : -------- g/cc		
Hydrostatisk gradient i loggeintervallet : -------- g/cc		
Maks. poretrykksgradient i intervallet ref. BD : 1.169 g/cc		
Min. poretrykksgradient i intervallet ref. BD : 1.166g/cc		

KOMMENTARAR :
2 x 450cc sent to lab, 2 x 1 gal dumped on rig,
1 st 1 gal (sn MRSC GA 143) No pressure on bottle, no gas, 1.6 lt fluid probably mud / filtrate
2 nd 1 gal bottle (sn MRSC GA48) , 245 bar pressure, 230 cu ft gas and 1 lt fluid porbably mud/filtrate. Gas breakdown C1 576608 ppm, C2 52204 ppm, C3 24513 ppm IC4 2787 ppm, nC4 7237 ppm, iC5 2810 ppm.. Fluid density of sample 0.8098 g/cc and base oil density 0.8084 g/cc.
Both fluid samples from 1 gal bottles also sent to Sclumberger labs.

50 YEARS OF RESEARCH

ife

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Date of last revision

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Statoil

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Summary

Two gas samples from well 30/3-7B; sample TS 11313/652 4290.5m and TS 9116/652 5903m are analysed for gas and isotopic composition.

The work is done in accordance with «The Norwegian Industry Guide to Organic Geochemical Analyses», third edition 1993.

Distribution

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Approved by	Tor Bjønstad	1998-10-16	Tor Bjørnstad

1 Introduction

Two gas samples from well 30/3-7B; sample TS 11313/652 4290.5m and TS 9116/652 5903m are analysed for gas and isotopic composition.

On the samples C_1 - C_5 and CO_2 are quantified. The $\delta^{13}C$ value is measured on methane, ethane, propane, the butanes and CO_2. In addition the δD value is measured on methane.

2 Analytical procedures

Aliquots of 0.5 ml are sampled with a syringe for analysis on a Poraplot Q column connected with flame ionisation (FID) and thermal conductivity (TCD) detectors. The detection limit for the hydrocarbon gas components is 0.01 µl/ml, for CO_2 0.2 µl/ml.

For the isotope analysis 5-10 ml of the gas is sampled with a syringe and then separated into the different gas components by a Carlo Erba 4200 gas chromatograph. The hydrocarbon gas components are oxidised in separate CuO-ovens in order to prevent cross contamination. The combustion products CO_2 and H_2O are frozen into collection vessels and separated.

The combustion water is reduced with zinc metal in a sealed quarts tubes to prepare hydrogen for isotopic analysis. The isotopic measurements are performed on a Finnigan MAT 251 and a Finnigan Delta mass spectrometer.

IFEs value on NBS 22 is -29.77 ± .06‰ PDB.

The uncertainty in the $\delta^{13}C$ value is estimated to be ± 0.3‰ PDB and includes all the different analytical steps. The estimate is based on repeated analysis of a laboratory standard gas mixture. The uncertainty in the δD value is likewise estimated to be ± 10‰.

3 Results

The normalised volume composition of the gas samples is shown in Table 1. The stable isotope composition is shown in Table 2.

The molecular composition related to the carbon isotope variations in methane from the samples are plotted in Figure 1 (Schoell, 1983), the carbon and hydrogen variations in

methane are plotted in Figure 2 (Schoell, 1983) and the carbon isotope variation in ethane related to the carbon isotope variations in methane in Figure 3 (Schoell, 1983).

The $\delta^{13}C$ values of methane, ethane and propane are plotted in James maturity diagram (James, 1983), Figure 4. A source LOM between 10 and 11 is indicated for the gas samples.

Table 1 Volume composition of gas samples (normalised values) from well 30/3-7B

Bottle	Sample depth	IFE no GEO	C_1 %	C_2 %	C_3 %	iC_4 %	nC_4 %	iC_5 %	nC_5 %	CO_2 %	ΣC_1- C_5 %	Wet-ness	iC_4/ nC_4
TS 11313/652	4290.5	981121	81.5	8.6	4.7	0.60	1.7	0.39	0.58	1.9	98.1	0.17	0.35
TS 9116/652	5903	981122	77.9	9.9	4.3	0.65	1.4	0.50	0.45	4.9	95.1	0.18	0.46

Table 2 Isotopic composition of gas samples from well 30/3-7B

Bottle	Sample depth	IFE no GEO	C_1 $\delta^{13}C$ ‰ PDB	C_1 δ D ‰ SMOW	C_2 $\delta^{13}C$ ‰ PDB	C_3 $\delta^{13}C$ ‰ PDB	iC_4 $\delta^{13}C$ ‰ PDB	nC_4 $\delta^{13}C$ ‰ PDB	CO_2 $\delta^{13}C$ ‰ PDB	CO_2 $\delta^{18}O$ ‰ PDB
TS 11313/652	4290.5	981121	-46.1	-198	-31.0	-28.2	-26.5	-27.4	-8.6	-9.3
TS 9116/652	5903	981122	-47.0	-208	-32.2	-28.6	-28.7	-28.4	-2.1	-14.3

4 Literature

James, A.T. (1983). Correlation of natural gas by use of carbon isotopic distribution between hydrocarbon components. *The American Association of Petroleum Geologists Bulletin*, **67**, 1176-1191.

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