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SUMMARY

The gas components C_1-C_4 and CO_2 have been separated from natural gases from well 6507/8-1, and the $\delta^{13}C$ values of these components have been measured. The isotopic composition of hydrogen from CH_4 has also been measured.

DISTRIBUTION

Statoil (10)
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KEYWORDS

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1. INTRODUCTION

Two gas samples from well 6507/8-1, DST 1; 2444-2463 m RKB, and DST 2; 2387-2406 m RKB, were received and analysed during January 1987.

On the sample C_1-C_4 and CO_2 are quantified, and the $\delta^{13}C$ value is measured on methane, ethane, propane, the butanes and CO_2. The δD value is also measured on methane.

2. ANALYTICAL PROCEDURE

The natural gases have been quantified and separated into the different gas components by a Carlo-Erba 4200 instrument. This gas chromatograph is equipped with a special injection loop in order to concentrate the samples, in the case of low concentration of the gas components. The hydrocarbon gas components were oxidized in separate CuO-ovens in order to prevent cross contamination. The combustion products CO_2 and H_2O were frozen into collection vessels and separated.

The water was reduced with zinc metal in a sealed tube to prepare hydrogen for isotopic analysis. The isotopic measurements were performed on a Finnigan Mat 251 and a Finnigan Mat delta mass spectrometer. Our $\delta^{13}C$ value on NBS 22 is -29.77 $\pm$ .06 o/oo PDB.

3. RESULTS

The volume composition of the samples is given in Table 1. The results have been normalized to 100%. The stable isotope results are given in Table 2.

Our uncertainty on the $\delta^{13}C$ value is estimated to be $\pm$ 0.3 o/oo and includes all the different analysis step. The uncertainty on the δD value is likewise estimated to be $\pm$ 5 o/oo.

Table 1 Volume composition of gas samples from well 6507/8-1

Sample	IFE no.	C_1 %	C_2 %	C_3 %	i-C_4 %	n-C_4 %	CO_2 %	ΣC_1-C_4	$\frac{\Sigma C_2\text{-}C_4}{\Sigma C_1\text{-}C_4}$	$\frac{i\text{-}C_4}{n\text{-}C_4}$
6507/8-1 DST 1 2444-2463 m RKB	5869	93.9	3.7	0.51	0.18	0.17	1.5	98.5	0.05	1.09
6507/8-1 DST 2 2387-2406 m RKB	5870	89.4	4.9	1.1	0.32	0.32	4.0	96.0	0.07	1.00

Table 2 Isotopic composition of gas samples from well 6507/8-1

Sample	IFE no.	C_1 $\delta^{13}C$ PDB	C_1 δD SMOW	C_2 $\delta^{13}C$ PDB	C_3 $\delta^{13}C$ PDB	i-C_4 $\delta^{13}C$ PDB	n-C_4 $\delta^{13}C$ PDB	CO_2 $\delta^{13}C$ PDB	CO_2 $\delta^{18}O$ PDB
6507/8-1 DST 1 2444-2463 m RKB	5869	-44.1	-197	-28.7	-24.9	-24.0	-25.5	- 8.7	-10.9
6507/8-1 DST 2 2387-2406 m RKB	5870	-44.0	-193	-28.5	-24.5	-23.9	-26.0	- 8.2	- 7.5