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REPORT TYPE	REPORT NO. IFE/KR/F-92/048	DATE 1992-04-01
	REPORT TITLE REPORT ON STABLE ISOTOPES ($\delta^{13}\text{C}$, δD , $\delta^{18}\text{O}$) ON GAS SAMPLES FROM WELL 6608/10-2	DATE OF LAST REV.
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SUMMARY The gas components $\text{C}_1 - \text{C}_5$ and CO_2 have been separated from three gas samples from well 6608/10-2; DST 3A, Bottle no. 86B-00415, DST 3B Bottle no. B-213 and DST 2, Bottle no. 83B-00876 and the $\delta^{13}\text{C}$ values of methane, ethane, propane, the butanes and CO_2 have been measured. The hydrogen isotopic composition of methane has also been determined.		DISTRIBUTION Statoil (5) Andresen, B. Råheim, A. Throndsen, T. File (2)
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1 INTRODUCTION

Three gas samples from well 6608/10-2; DST 3A, Bottle no. 86B-00415, DST 3B Bottle no. B-213 and DST 2, Bottle no. 83B-00876 were received and analysed March 1992.

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 the methane.

2 ANALYTICAL PROCEDURE

The natural gas samples have been quantified and separated into the different gas components by a Carlo Erba 4200 gas chromatograph.

The hydrocarbon gas components were oxidised 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 combustion water was reduced with zinc metal in a sealed quartz tube to prepare hydrogen for isotopic analysis. The isotopic measurements were performed on a Finnigan Mat 251 and Finnigan Delta mass spectrometer. IFEs value on NBS 22 is $29.77 \pm .06\text{‰}$ PDB.

3 RESULTS

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

The uncertainty on the $\delta^{13}C$ value is estimated to be $\pm 0.3\text{‰}$ PDB and includes all the different analytical steps. The uncertainty in the δD value is likewise estimated to be $\pm 5\text{‰}$.

Table 1: Volume composition of gas samples from well 6608/10-2.

Sample	IFE no	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 /
DST 3A, 86B-00415	10477	91.5	4.4	1.6	0.23	0.35	0.07	0.07	1.8	98.2	0.07	0.64
DST 3B, B 213	10478	91.0	4.7	1.7	0.23	0.43	0.12	0.11	1.8	98.2	0.07	0.54
DST 2 83B-00876	10479	88.7	5.9	2.3	0.31	0.52	0.12	0.11	2.0	98.0	0.09	0.60

Table 2: Isotopic composition of gas samples from well 6608/10-2.

Sample	IFE no	C ₁	C ₁	C ₂	C ₃	iC ₄	nC ₄	CO ₂	CO ₂
		δ ¹³ C ‰ PDB	δ D ‰ SMOW	δ ¹³ C ‰ PDB	δ ¹³ C ‰ PDB	δ ¹³ C ‰ PDB	δ ¹³ C ‰ PDB	δ ¹³ C ‰ PDB	δ ¹⁸ O ‰ PDB
DST 3A, 86B-00415	10477	-36.6	-185	-28.1	-27.0	-25.4	-26.6	-12.4	-4.9
DST 3B, B 213	10478	-36.5	-187	-28.1	-27.5	-23.5	-27.1	-12.0	-14.1
DST 2 83B-00876	10479	-38.3	-186	-28.4	-27.3	-26.1	-27.0	-12.3	-15.4

4 INTERPRETATION

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