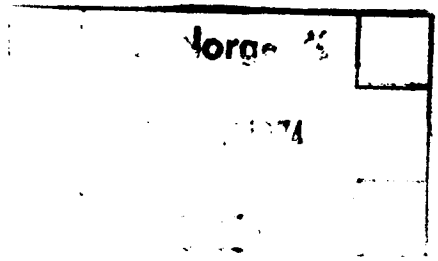
[redacted] Nos-A0186

elf - r.e.

[redacted]

NOTE du DPT RECHERCHE TECHNIQUE & ETU

à SERVICES EXPLOITATION à ELF NORGE (311.E)



N° : 2051 n° 4/4-209
JS/ym

- For the attention of Mr. CARRE -

Object : Analysis of fluids from FIT n° 1 of 25/2-2.

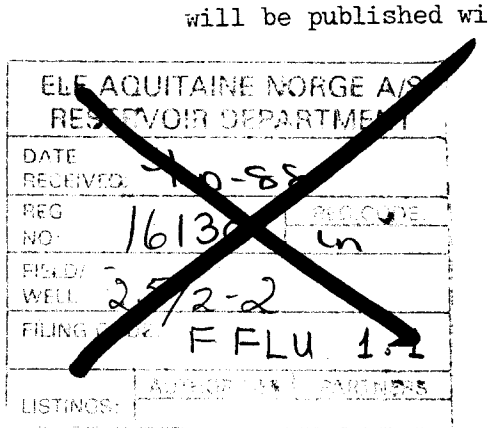
Please find attached the result of the transfer and analysis carried out on the fluids obtained during FIT n° 1 of 25/2-2.

The gas is very poor in heavy hydrocarbons and as in the case of other gases from FRIGG has scarce quantities of C5 - C6 - C7 and C8.

Its composition is very different from the reservoir fluids of 25/1-4 and 25/2-1 ; it may be compared to the separator gases of these wells.

The water is related to that of 25/1-3, and differs from the water obtained at 25/1-4 and 25/2-1.

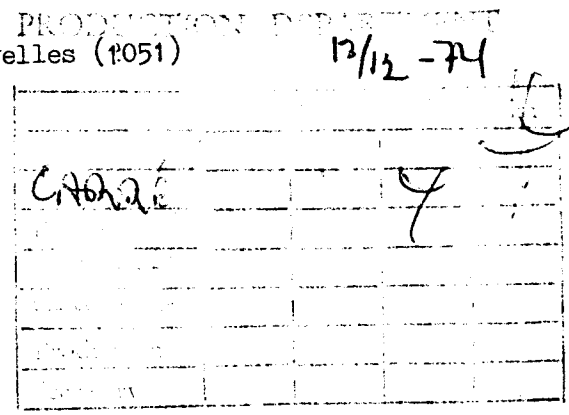
A recapitulatory study covering all the fluids produced at FRIGG will be published within a short time.



J. SAVELLI

Copy to :

- Dpt Recherche Technique & Etudes Nouvelles (1051)
- Dpt Gisements (1056)
- Dpt Production & Transports (1053)
- Dpt Contrôle des Opérations (1055)
- Laboratoire Exploration (2035)



25/2 - 2

FIT N° 1

Date of sample	:	7 july 1974
Depth of sample	:	1952 meters
Pressure at sampling depth	:	197.5 abs. bars
Temperature at sampling depth	!	57.6° C
Volumes obtained at bottom-nole T° and P	:	
. Gas	:	10.262 litres
. Water	:	0.119 litres

COMPOSITION OF GAS IN % MOLAR

Constituents	% molar
N 2	0,619
CO2	0,049
C1	95,606
C2	3,621
C3	0,072
C4	0,011
NC4	0,005
IC5	T
NC5	T
C6	T
C7	T
C8	0,003
C9	0,005
C10	0,002
C11+	0,007
Specific Gravity (air - 1)	0,578
Density 0/760	0,747
15/750	0,699
Molar mass	16,68
GMV Mth/m3 at 0/760	9749
Recovery in g/m3 at 15/750 C 3 +	2,78
C 4 +	1,45
C 5 +	1,07

25/2-2

FIT N° 1

MEASUREMENT OF COMPRESSIBILITY FACTOR

Pressure absolute bars	Z
249.8	0.8935
235.1	0.8850
219.3	0.8772
207.0	0.8720
195.0	0.8689
174.5	0.8671
142.9	0.8733
120.4	0.8840
91.2	0.9036
62.0	0.9311
40.3	0.9549

C4+ was present in too slight a quantity and did not permit the determination of the dew pressure.

.../

CHROMATOGRAPHIC ANALYSIS OF CONDENSATE

OBTAINED BY TREATMENT OF GAS

AT -34° C AND 40 BARS

-

Constituents	Abreviations	%	Constituents	Abreviations	%
Methane	NP1		2.3.3 Trimethylpentane	P8	0.92
Ethane	NP2		2.3 Dimethylhexane	IP8	
Propane	NP3		2 Methylheptane	IP8	0.18
Iso-butane	IP4		4 Methylheptane	IP8	0.17
Normal butane	NP4		3-4 Dimethylhexane	IP8	0.02
2-2 Dimethylpropane	IP5		3 Methylheptane	IP8	0.49
Iso-pentane	IP5	T	1 C2 C4 Trimethylcyclopentane	CP8	0.26
Normal pentane	NP5	T	1 T4 Dimethylcyclohexane	CP8	
2-2 Dimethylbutane	IP6	T			5.90
Cyclopentane	CP5	T	1 Cis 3 Dimethylcyclohexane	CP8	
2-3 Dimethylbutane	IP6	0.05	1 Methyl T3 Ethylcyclopentane	CP8	0.21
2 Methylpentane	IP6	T	1 Methyl T2 Ethylcyclopentane	CP8	
3 Methylpentane	IP6	T	1 Methyl C3 Ethylcyclopentane	CP8	
Normal hexane	NP6	0.02	1 Methyl 1 Ethylcyclopentane	CP8	0.34
Methylcyclopentane	CP6	0.06	Cycloheptane	CP7	
2-2 Dimethylpentane	IP7	0.09	1 T2 Dimethylcyclohexane	CP8	1.11
Benzene	A6	0.22	Normal Octane	NP8	0.02
2-4 Dimethylpentane	IP7	T	1 Trans 3 Dimethylcyclohexane	CP8	0.27
3-3 Dimethylpentane	IP7	0.12	Isopropylcyclopentane	CP8	0.25
Cyclohexane	CP6	0.01	2-3-5 Trimethylhexane	IP9	0.94
2 Methylhexane	IP7	0.07	1 T2 T3 C4 Tetramethylcyclopen	CP9	0.84
1-1 Dimethylcyclopentane	CP7		2-2 Dimethylheptane	IP9	0,20
		0,65	1 Methyl C2 Ethylcyclopentane	CP8	0.10
2-3 Dimethylcyclopentane	IP7		2-4 Dimethylheptane	IP9	0.29
3 Methylhexane	IP7	0,05	2 Methyl 4 Ethylhexane	IP9	0,09
1 Trans 3 Dimethylcyclopentane	CP7	0,15	2-6 Dimethylheptane	IP9	
1 Cis 3 Dimethylcyclopentane	CP7				0,13
		0,24	4-4 Dimethylheptane	IP9	
3 Ethyl-pentane	IP7		Propylcyclopentane	CP8	
1 Trans 2 Dimethylcyclopentane	CP7	T	Ethylcyclohexane	CP8	
2-2-4 Trimethylpentane	IP8		Ethylbenzène	A8	0.02
Normal heptane	NP7	0,17	2-5 Dimethylheptane + 3 5 DMC7	IP9	0.36
2-2 Dimethylhexane	IP8		1-1 Dimethyl C3 Ethylcyclopent	CP8	2.69
		0.04	1-1-3 Trimethylcyclohexane	CP9	
1 Cis 2 Dimethylcyclopentane	CP7				T
Methylcyclohexane	CP7	0.14	1-1-4 Trimethylcyclohexane	CP9	
2-5 Dimethylhexane	IP8	0.12	2-3-3 Trimethylhexane	IP9	11.30
Ethylcyclopentane	CP7		1 C3 C5 Trimethylcyclohexane	CP9	0.04
		0.24			
2-4 Dimethylhexane	IP8		Para-Xylene	A8	0.04
2-2-3 Trimethylpentane	CP8	0.70	Meta-Xylene	A8	0.20
1 Trans 2 Cis 4 Trimethylcyclopentane	CP8	0.07	2-3 Dimethylheptane	IP9	0.17
Toluene	A7	0.10	1 C3 T5 Trimethylcyclohexane	CP9	
					0.12
			3-4 Dimethylheptane	IP9	

.../

Constituents	Abrevia tions	%	Constituents	Abrevia tions	%
1Trans 2 Cis 3 Trimethylcyclopentane	A7	0.10	4 Methyl Octane	IP9	0.44
2-3-4 Trimethylpentane	CP8	T	3 Methyl Octane	IP9	0.69
2 Methyl -3Ethylpentane	IP8	0.02	3 Ethyl Heptane	IP9	0.02
1-1-3 Trimethylcyclopentane	CP8	0.56	2 Methyl Octane	IP9	0.03
1-1-2 - d° -	CP8	0.70	Ortho-Xylene	A8	0.37
1 T2 C3 Trimethylcyclohexane	CP9	0.11	Normal decane	NP10	0.13
1 T2 C4 Trimethylcyclohexane	CP9	0.39	Propylbenzene	A9	0.71
1 T2 Methyl C3 Ethylcyclopentane	CP9	0.22	1-3 Ethyltoluene	A9	0.60
1-1-2 Trimethylcyclohexane	CP9	1.65	1-4 "	A9	0.03
1 C2 C4 Trimethylcyclohexane	CP9	0.14	1-2 "	A9	0.03
1 Methyl T 4 Ethylcyclohexane	CP9	0.16	1-3-5 Trimethylbenzene	A9	0.15
1 Methyl C 3 Ethylcyclohexane	CP9	1.38	1-2-4 "	A9	0.59
Cumène	A9	0.07	1-2-3 "	A9	0.10
Normal nonane	NP9	0.16			
1 M4 Ethylcyclohexane	CP9	1.20			
1 MT2 Ethylcyclohexane	CP9	0.10			
1 M1 Ethylcyclohexane	CP9	0.52	Normal undecane	NP11	
1 MC2 Ethylcyclohexane	CP9	0.72	Methylhexahydroindenes (grouped)	CP10	1.04
3-3-5 Trimethylhexane	IP10	1.66	Dimethylethylcyclohexanes (grouped)	CP10	1.66
Bicyclonomane	CP9	1.00	Methylisopropylcyclohexanes (grouped)	CP10	0.48
4-4 Dimethyloctane	IP10	0.05	No identified C10 naphtenes	CP10	0.38
2-5 "	IP10	0.35			
2-7 "	IP10	)	Isabutylbenzene	A10	0.41
2-6 "	IP10	(0.87			
2-3 "	IP10	0.31	Normal dodecane	NP12	
3-4 "	IP10	0.16			
4-5 "	IP10				
5 Methylnoname	IP10	0.15			
4 "	IP10	2.53			
2 "	IP10	0.20			
3 "	IP10	0.64			

.../

RECAPITULATION

Carbon number	IP	NP	CP	A	Total
6	0.05	0.02	0.07	0.22	0.36
7	0.78	0.17	0.87	0.10	1.92
8	2.11	0.02	13.16	0.53	15.82
9	14.72	0.16	8.53	2.28	25.69
10	6.92	0.13	3.56	0.41	11.02
Total	24.58	0.50	26.19	3.54	54.81

C 11 + 45,19

Total density	:	780.5
Molar mass	:	133
Density of C11+	:	804.6
Molar mass of C11+	:	147.5