



Core LabTM
RESERVOIR OPTIMIZATION

Reservoir Fluid Study

for

Statoil a.s.

Midnattsol 6405/10-1 MDT

RFLA 20070287

FINAL REPORT

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Section B - Mud Filtrate Analysis Data

Compositional Analysis of Mud Filtrate to C36+

Component	Mole %	Weight %
H ₂ Hydrogen	0.00	0.00
H ₂ S Hydrogen sulphide	0.00	0.00
CO ₂ Carbon dioxide	0.00	0.00
N ₂ Nitrogen	0.00	0.00
C ₁ Methane	0.00	0.00
C ₂ Ethane	0.00	0.00
C ₃ Propane	0.00	0.00
iC ₄ i-Butane	0.00	0.00
nC ₄ n-Butane	0.00	0.00
C ₅ neo-Pentane	0.00	0.00
iC ₅ i-Pentane	0.00	0.00
nC ₅ n-Pentane	0.00	0.00
C ₆ Hexanes	0.00	0.00
Me-Cyclo-pentane	0.00	0.00
Benzene	0.00	0.00
Cyclo-hexane	0.00	0.00
C ₇ Heptanes	0.00	0.00
Me-Cyclo-hexane	0.00	0.00
Toluene	0.00	0.00
C ₈ Octanes	0.00	0.00
Ethyl-benzene	0.00	0.00
Meta/Para-xylene	0.00	0.00
Ortho-xylene	0.00	0.00
C ₉ Nonanes	0.01	0.01
Tri-Me-benzene	0.00	0.00
C ₁₀ Decanes	0.50	0.40
C ₁₁ Undecanes	4.87	3.99
C ₁₂ Dodecanes	17.84	16.00
C ₁₃ Tridecanes	34.29	33.39
C ₁₄ Tetradecanes	31.79	33.66
C ₁₅ Pentadecanes	8.59	9.85
C ₁₆ Hexadecanes	1.80	2.23
C ₁₇ Heptadecanes	0.14	0.18
C ₁₈ Octadecanes	0.07	0.09
C ₁₉ Nonadecanes	0.04	0.07
C ₂₀ Eicosanes	0.03	0.04
C ₂₁ Heneicosanes	0.01	0.02
C ₂₂ Docosanes	0.01	0.01
C ₂₃ Tricosanes	0.00	0.01
C ₂₄ Tetracosanes	0.00	0.01
C ₂₅ Pentacosanes	0.00	0.01
C ₂₆ Hexacosanes	0.00	0.01
C ₂₇ Heptacosanes	0.00	0.00
C ₂₈ Octacosanes	0.00	0.00
C ₂₉ Nonacosanes	0.00	0.00
C ₃₀ Triacontanes	0.00	0.00
C ₃₁ Hentriacontanes	0.00	0.00
C ₃₂ Dotriacontanes	0.00	0.00
C ₃₃ Tritriacontanes	0.00	0.00
C ₃₄ Tetratriacontanes	0.00	0.00
C ₃₅ Pentatriacontanes	0.00	0.00
C ₃₆₊ Hexatriacontanes plus	0.01	0.02
Totals	100.00	100.00

Note:- 0.00 means less than 0.005

Compositional Analysis of Mud Filtrate to C36+

Calculated Properties

C ₇ plus	
Mole %	100.00
Molecular Weight (g mol ⁻¹)	180
Density at 15.6°C (g cm ⁻³)	0.8145
C ₁₀ plus	
Mole %	99.99
Molecular Weight (g mol ⁻¹)	180
Density at 15.6°C (g cm ⁻³)	0.8145
C ₂₀ plus	
Mole %	0.06
Molecular Weight (g mol ⁻¹)	336
Density at 15.6°C (g cm ⁻³)	0.8835
C ₃₆ plus	
Mole %	0.01
Molecular Weight (g mol ⁻¹)	536
Density at 15.6°C (g cm ⁻³)	0.9252

Calculated Whole Sample Properties

Average mole weight (g mol ⁻¹)	180
Density at 15.6°C (g cm ⁻³)	0.8145

Measured Whole Sample Properties

Average mole weight (g mol ⁻¹)	190
Density at 15.6°C (g cm ⁻³)	0.7854

Chromatographic Profile of Mud Filtrate



1.4.2 Drilling fluids

Table 1-2 : Drilling fluids summary

Section	Section TD [m MD RKB]	Max mud weight [g/cm ³]	Mud type
Pilot hole 6405/10-U-1			
9 7/8"	1850	1.03	Seawater/Bentonite
Main hole 6405/10-1			
42" x 36"	1045	1.03	Seawater/Bentonite
26"	1760	1.03	Seawater/Bentonite
17 1/4"	2442	1.11 (1764 – 1911 mMD) 1.12 (1911 – 1951 mMD) 1.12-1.15 (1951 – 2094 mMD) 1.15-1.20 (2094 – 2161 mMD) 1.20-1.30 (2161 – 2356 mMD) 1.30-1.33 (2356 – 2442 mMD)	Performadril WBM
12 1/4"	2808	1.44 (2442 – 2546 mMD) 1.44-1.48 (2546 – 2616 mMD) 1.48 (2616 – 2808 mMD)	INNOVERT OBM
8 1/2"	3182	1.56 (2808 – 2892 mMD) 1.56-1.55 (2892 – 2958 mMD) 1.55 (2958 – 3182 mMD)	INNOVERT OBM

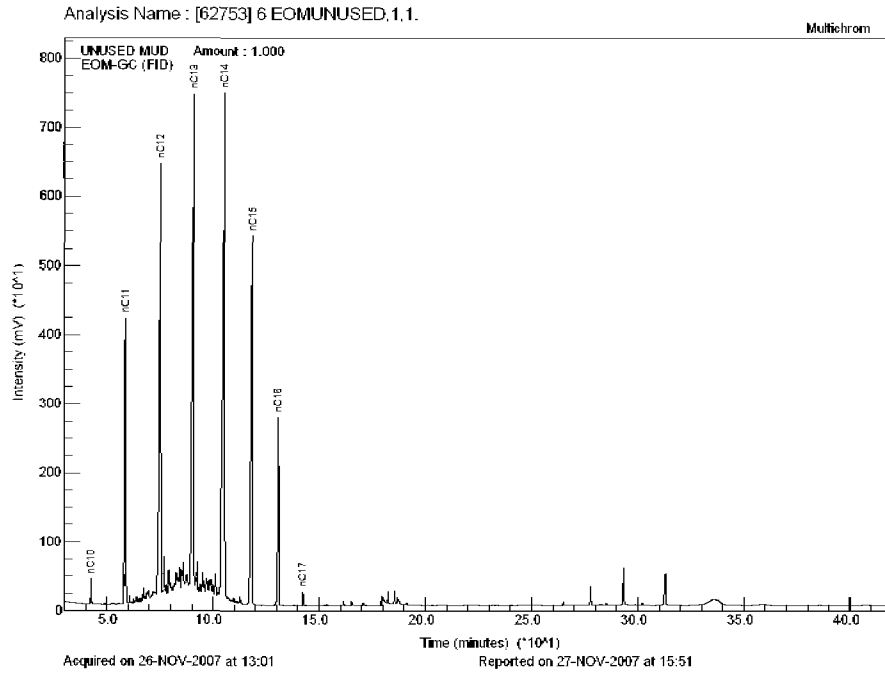


Figure 4.7: EOM-GC Unused Mud

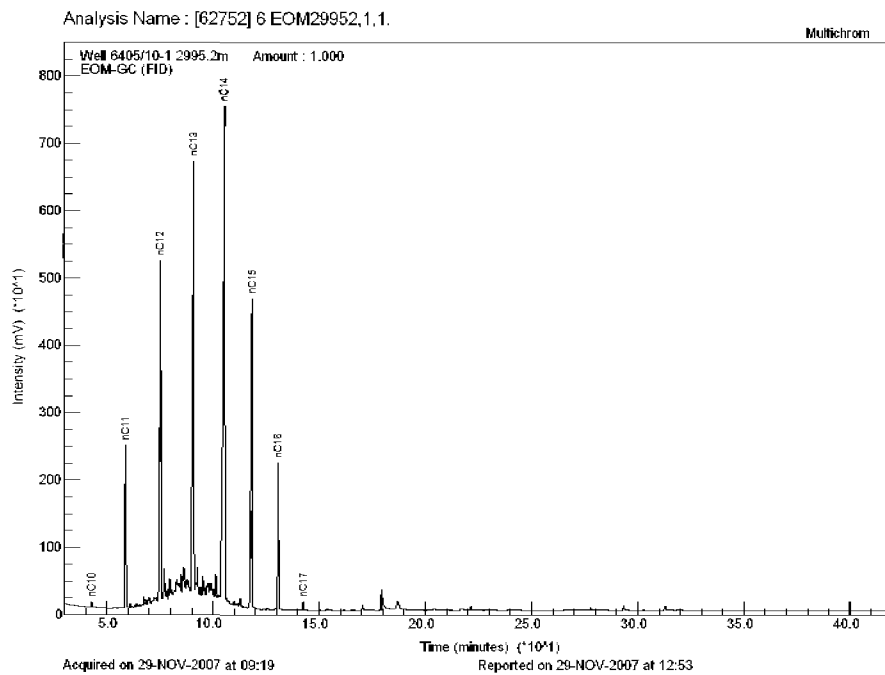


Figure 4.8: EOM-GC from the Nise Formation. Sidewall core 2995.2m