



Title: FINAL WELL REPORT  
 WELL 31/4-11  
 PL 055

No. : 1  
 Rev. : 0  
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 Date : 17-12-2001

<b>Sample depths and fluid type related to Formation and Group. Depths in m MD RKB</b>					
Sample type G/O/W	Dr-Sognefj Fm.	Fensfjord Fm.	Brent Gp.	Mobilit y md/cp	Comments, number of sample bottles
Gas	2162 (*)			na	Casing RFT. Segregated 2 3/4 + 1 gallon.
	2182.5			113	Sampled two 250 cc
Oil		2357.5		3.2	Sampled one 1 gallon, three 250cc and one 450 cc. Pb measured from 450 cc = 96 bar at 14 °C
		2372.3		5.8	Sampled one 450 cc Pb = 98 bar at 14 °C
			2678.5	1 463	Sampled one 2 3/4 gallon, one 1 gallon and five 250cc Pb measured from 1 gallon = 113 bar at 13 °C
			2675.1	308	Sampled two 250 cc
Water	2205.8			103	Sampled one 250 cc
			2699.2	126	Sampled one 1 gallon, four 450 cc and two 250cc
			2712.8	17.6	Sampled one 1 gallon

Table 8.4.1: Sample summary

\* Segregated sample using the Casing RFT

**Brent Group:**

Water and oil samples were collected from the Brent Group. Due to tool failure during run 2B, the oil samples were collected by pumping formation fluid directly into to the chambers without cleaning up the near wellbore first. The degree of contamination in the samples are effected by the sampling method. The water samples were collected during run 2C and is approximately 20% contaminated by mudfiltrate. Because of tool failure during run 2B two extra oil samples were collected in the Brent Group during run 2C.

**Fensfjord Formation:**

Oil samples were collected from two different depths, 2357.5 m and 2372.3 m. The mobility measured at the sample depths are in the range of 3 - 6 md/cp. The low mobility caused a high drawdown during pumping and sampling. This could have effected the sample quality.

**Draupne-Sognefjord Formation**

In the Draupne-Sognefjord Formation samples were collected from two different depths. One sample depth at 2182.5 m in the gas zone and one sample depth at 2205.8 m. One segregated sample collected by use of the Casing RFT at 2162 m confirm gas in the upper part of the Draupne-Sognefjord Formation.

**Mini tests**

No minitests were performed. The Fensfjord Formation was considered too tight for mini testing. The Draupne-Sognefjord Formations were gas saturated and therefore minitest was not considered as an objective. Minitest in the Brent was planned but not performed due to unreliable tool. Table 8.4.2 presents the sampling operational summary and gives an overview of sampling depths, bottles, volumes, pressures and times.

## DAILY MUD PROPERTIES:RHEOLOGY PARAMETERS FOR WELL 31/4-11 PO: 1

Hole section : 36"			WATER BASED SYSTEM																
Date	Depth [m]		Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann Readings							Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]	
	MD	TVD					600	300	200	100	60	30	6						3
2000-07-27 23:00	283	283	BENTONITE MUD								0	0					0,0		
2000-07-28	362	362	SPUD MUD	100,0	1,03						0	0					50,0		
Hole section : 17 1/2"			WATER BASED SYSTEM																
Date	Depth [m]		Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann Readings							Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]	
	MD	TVD					600	300	200	100	60	30	6						3
2000-07-29	1087	1087	SPUD MUD	100,0	1,03						0	0					50,0		
2000-07-31	1103	1103	SPUD MUD	100,0	1,03						0	0							
Hole section : 12 1/4"			WATER BASED SYSTEM																
Date	Depth [m]		Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann Readings							Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]	
	MD	TVD					600	300	200	100	60	30	6						3
2000-08-01 17:00	1100	1100	GLYDRIL	70,0	1,32		56	43	35	26	0	0	11	10	50,0	13,0	15,0	3,5	6,0
2000-08-02 21:00	1600	1598	GLYDRIL	59,0	1,50	35,0	78	60	50	40	0	0	15	13	50,0	18,0	21,0	6,0	10,0
2000-08-03 22:15	2034	1946	GLYDRIL	55,0	1,51	48,0	75	55	47	35	0	0	12	10	50,0	20,0	17,5	5,0	9,5
2000-08-04 22:00	2121	1998	GLYDRIL	62,0	1,50	49,0	88	65	54	41	0	0	15	12	50,0	23,0	21,0	6,0	12,0
2000-08-05 21:00	2135	2006	GLYDRIL	75,0	1,50	25,0	83	61	52	40	0	0	15	12	50,0	22,0	19,5	6,0	12,0
2000-08-06 14:35	2139	2008	GLYDRIL	73,0	1,50	27,0	81	60	52	39	0	0	14	12	50,0	21,0	19,5	6,0	12,0
2000-08-07 23:00	2152	2016	GLYDRIL	73,0	1,50	27,0	81	60	50	38	0	0	14	11	50,0	21,0	19,5	5,5	12,5
2000-08-08 21:00	2163	2022	GLYDRIL	75,0	1,50	24,0	83	62	53	40	0	0	14	12	50,0	21,0	20,5	6,5	13,5
2000-08-09 16:00	2176	2030	GLYDRIL	71,0	1,50	30,0	82	60	52	39	0	0	13	11	50,0	22,0	19,0	6,5	12,0
2000-08-10 17:00	2176	2030	GLYDRIL	60,0	1,50	39,0	83	61	51	38	0	0	13	11	50,0	22,0	19,5	6,0	12,5
2000-08-12	2176	2030	GLYDRIL								0	0			50,0				
Hole section : 8 1/2"			WATER BASED SYSTEM																
Date	Depth [m]		Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann Readings							Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]	
	MD	TVD					600	300	200	100	60	30	6						3
2000-08-13	2179	2031	GLYDRIL								0	0			50,0				
2000-08-14	2205	2046	GLYDRIL								0	0			50,0				
2000-08-15	2240	2066	GLYDRIL				58	44	37	28	0	0	10	8	50,0	14,0	15,0	4,0	6,0
2000-08-16 22:00	2316	2107	GLYDRIL	59,0	1,20	33,0	60	46	39	29	0	0	10	9	50,0	14,0	16,0	5,0	7,0

## DAILY MUD PROPERTIES:RHEOLOGY PARAMETERS FOR WELL 31/4-11 PO: 1

Hole section : 8 1/2"		WATER BASED SYSTEM																	
Date	Depth [m]		Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann Readings								Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]
	MD	TVD					600	300	200	100	60	30	6	3					
2000-08-17 23:00	2343	2122	GLYDRIL	70,0	1,20	25,0	55	41	35	26	0	0	9	8	50,0	14,0	13,5	4,0	6,0
2000-08-18 22:00	2370	2136	GLYDRIL	70,0	1,21	22,0	55	41	35	26	0	0	9	7	50,0	14,0	13,5	3,5	6,5
2000-08-19	2398	2151	GLYDRIL	72,0	1,20	24,0	56	42	35	27	0	0	9	8	50,0	14,0	14,0	4,0	6,5
2000-08-20 23:00	2431	2168	GLYDRIL	74,0	1,20	24,0	57	43	36	27	0	0	9	8	50,0	14,0	14,5	4,0	6,5
2000-08-21	2607	2281	GLYDRIL	74,0	1,20	36,0	64	48	40	30	0	0	11	9	50,0	16,0	16,0	5,0	8,5
2000-08-22 19:00	2835	2441	GLYDRIL	76,0	1,21	35,0	71	53	45	34	0	0	11	9	50,0	18,0	17,5	5,0	9,5
2000-08-23 22:00	2835	2441	GLYDRIL	88,0	1,21	22,0	65	48	40	30	0	0	10	8	50,0	17,0	15,5	4,5	8,0
2000-08-24 22:00	2835	2441	GLYDRIL	93,0	1,21	20,0	65	48	40	30	0	0	10	8	50,0	17,0	15,5	4,5	7,0
2000-08-25 22:00	2835	2441	GLYDRIL	93,0	1,21	20,0	65	48	40	30	0	0	10	8	50,0	17,0	15,5	4,5	7,0
2000-08-26 22:00	2835	2441	GLYDRIL	97,0	1,21	21,0	63	47	39	30	0	0	10	8	50,0	16,0	15,5	4,5	7,5
2000-08-27 20:00	2835	2441	GLYDRIL	99,0	1,20	18,0	66	48	40	30	0	0	11	9	50,0	18,0	15,0	5,0	8,0
2000-08-28 21:00	2835	2441	GLYDRIL	68,0	1,21	24,0	59	44	37	29	0	0	10	8	50,0	15,0	14,5	4,5	7,0
2000-08-29 21:00	2835	2441	GLYDRIL	68,0	1,20	24,0	59	44	37	29	0	0	10	8	50,0	15,0	14,5	4,5	7,0
2000-08-30 20:30	2835	2441	GLYDRIL	72,0	1,21	21,0	60	45	38	29	0	0	10	8	50,0	15,0	15,0	4,5	7,0
2000-08-31 18:00	2835	2441	GLYDRIL	69,0	1,20		59	44	38	27	0	0	10	8	50,0	15,0	14,5	4,5	7,0
2000-09-01 19:00	2835	2441	GLYDRIL	70,0	1,21		60	45	39	30	0	0	10	8	50,0	15,0	15,0	4,5	7,0
2000-09-02 21:00	2835	2441	GLYDRIL	70,0	1,21	20,0	60	45	39	29	0	0	10	8	50,0	15,0	15,0	4,5	7,0
2000-09-03 21:45	3129	2655	GLYDRIL	68,0	1,21	38,0	64	49	43	33	0	0	12	10	50,0	15,0	17,0	5,5	10,0

Hole section : P&A		WATER BASED SYSTEM																	
Date	Depth [m]		Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann Readings								Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]
	MD	TVD					600	300	200	100	60	30	6	3					
2000-09-04 15:00	3271	2765	GLYDRIL		1,21		122	93	83	68	0	0	42	37	50,0	29,0	32,0		
2000-09-05 14:30	3271	2765	GLYDRIL	70,0	1,21	25,0	59	45	38	29	0	0	10	9	50,0	14,0	15,5	5,0	8,5
2000-09-06 22:00	3271	2765	GLYDRIL	70,0	1,21	23,0	55	42	35	27	0	0	9	8	50,0	13,0	14,5	4,5	8,0
2000-09-07 22:00	3271	2765	GLYDRIL	70,0	1,21	23,0	55	42	35	27	0	0	9	8	50,0	13,0	14,5	4,5	8,0
2000-09-08 15:00	3271	2765	GLYDRIL	65,0	1,23		55	41	35	27	0	0	9	8	50,0	14,0	13,5	4,5	8,0
2000-09-09 15:00	3271	2765	GLYDRIL	65,0	1,23		55	41	35	27	0	0	9	8	50,0	14,0	13,5	4,5	8,0
2000-09-10		0	GLYDRIL				0	0	0	0	0	0	0	0	50,0				
2000-09-11		0	GLYDRIL				0	0	0	0	0	0	0	0	50,0				

## DAILY MUD PROPERTIES : OTHER PARAMETERS FOR WELL 31/4-11 PO: 1

Hole section : 36"			WATER BASED SYSTEM																						
Date	Depth [m]		Mud Type	Dens [sg]	Filtrate		Filtcake		HPHT Press/Temp [bar/DegC]	pH	Alcalinity			Inhib Chem [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++ [mg/l]	Tot hard [mg/l]	Percentage Solid Oil Sand			CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
	MD	TVD			API [ml]	HPHT [ml]	API [mm]	HPHT [mm]			Pm [ml]	Pf [ml]	Mf [ml]							[%]	[%]	[%]			
2000-07-27 23:00	283	283	BENTONITE MUD						/																
2000-07-28	362	362	SPUD MUD	1,03					/																
Hole section : 17 1/2"			WATER BASED SYSTEM																						
Date	Depth [m]		Mud Type	Dens [sg]	Filtrate		Filtcake		HPHT Press/Temp [bar/DegC]	pH	Alcalinity			Inhib Chem [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++ [mg/l]	Tot hard [mg/l]	Percentage Solid Oil Sand			CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
	MD	TVD			API [ml]	HPHT [ml]	API [mm]	HPHT [mm]			Pm [ml]	Pf [ml]	Mf [ml]							[%]	[%]	[%]			
2000-07-29	1087	1087	SPUD MUD	1,03					/																
2000-07-31	1103	1103	SPUD MUD	1,03					/																
Hole section : 12 1/4"			WATER BASED SYSTEM																						
Date	Depth [m]		Mud Type	Dens [sg]	Filtrate		Filtcake		HPHT Press/Temp [bar/DegC]	pH	Alcalinity			Inhib Chem [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++ [mg/l]	Tot hard [mg/l]	Percentage Solid Oil Sand			CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
	MD	TVD			API [ml]	HPHT [ml]	API [mm]	HPHT [mm]			Pm [ml]	Pf [ml]	Mf [ml]							[%]	[%]	[%]			
2000-08-01 17:00	1100	1100	GLYDRIL	1,32	4,0	1		/	0,3	0,1	1,0			72000	900			14,0	9,0	29	4,0	54			
2000-08-02 21:00	1600	1598	GLYDRIL	1,50	4,0	1		/	0,1	0,1	1,0			78000	950			20,5	9,0	35	4,0	98			
2000-08-03 22:15	2034	1946	GLYDRIL	1,51	3,9	1		/		0,0	1,0			93000	840			21,6	9,0	36	4,0	108			
2000-08-04 22:00	2121	1998	GLYDRIL	1,50	3,7	1		/		0,0	1,0			91000	400			21,4	9,0	37	4,0	119			
2000-08-05 21:00	2135	2006	GLYDRIL	1,50	3,6	1		/	0,1	0,0	1,0			92000	440			21,4	9,0	37	4,0	117			
2000-08-06 14:35	2139	2008	GLYDRIL	1,50	3,6	1		/	0,1	0,0	1,0			91000	540			21,0	9,0	38	4,0	97			
2000-08-07 23:00	2152	2016	GLYDRIL	1,50	3,7	1		/	0,1	0,0	1,0			92000	480			21,0	9,0	38	4,0	95			
2000-08-08 21:00	2163	2022	GLYDRIL	1,50	3,2	1		/	0,1	0,0	1,0			90000	520			21,0	9,0	38	4,0	100			
2000-08-09 16:00	2176	2030	GLYDRIL	1,50	3,4	1		/		0,0	1,0			90000	600			21,0	9,0	39	4,0	100			
2000-08-10 17:00	2176	2030	GLYDRIL	1,50	3,4	1		/		0,0	1,0			93000	440			21,4	8,0	39	4,0	115			
2000-08-12	2176	2030	GLYDRIL					/																	
Hole section : 8 1/2"			WATER BASED SYSTEM																						
Date	Depth [m]		Mud Type	Dens [sg]	Filtrate		Filtcake		HPHT Press/Temp [bar/DegC]	pH	Alcalinity			Inhib Chem [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++ [mg/l]	Tot hard [mg/l]	Percentage Solid Oil Sand			CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
	MD	TVD			API [ml]	HPHT [ml]	API [mm]	HPHT [mm]			Pm [ml]	Pf [ml]	Mf [ml]							[%]	[%]	[%]			
2000-08-13	2179	2031	GLYDRIL					/																	
2000-08-14	2205	2046	GLYDRIL					/																	
2000-08-15	2240	2066	GLYDRIL		3,0	1		/	8,6	0,0	1,5			86000	240			10,5		14		25			
2000-08-16 22:00	2316	2107	GLYDRIL	1,20	3,6	1		/	0,0	0,0	2,0			86000	240			11,0		21		52			
2000-08-17 23:00	2343	2122	GLYDRIL	1,20	3,1	1		/	0,0	0,0	1,0			88000	360			11,5		21		67			



**TOTAL CONSUMPTION OF MUD ADDITIVES ON WELL 31/4-11 PO: 1**

<b>Section</b>	<b>Product/ Additive</b>	<b>Unit</b>	<b>Total Amount Used</b>
17 1/2"	CMC EHV	kg	925,00
	M-I BAR	kg	93000,00
	SODA ASH	kg	150,00
	WYOMING BENTONITE	kg	3000,00
12 1/4"	CELPOL ESL	kg	3550,00
	CMC EHV	kg	125,00
	DUOTEC NS	kg	1250,00
	GLYDRIL MC	l	12000,00
	KCL BRINE	l	160000,00
	KCL POWDER	kg	27000,00
	M-I BAR	kg	182000,00
	NUTPLUG C	kg	250,00
	POTASSIUM CARBONATE	kg	950,00
	SODA ASH	kg	950,00
8 1/2"	BARITE	kg	4000,00
	CELPOL ESL	kg	7025,00
	CITRIC ACID	kg	375,00
	DUOTEC NS	kg	650,00
	GLYDRIL MC	l	4500,00
	KCL BRINE	l	329000,00
	KCL POWDER	kg	7000,00
	M-I BAR	kg	40000,00
	POTASSIUM CARBONATE	kg	1200,00
	RHODOPOL 23P	kg	1975,00
	SODA ASH	kg	375,00
	SODIUM BICARBONATE	kg	950,00
0.0	CITRIC ACID	kg	725,00
	M-I BAR	kg	2000,00
	RHODOPOL 23P	kg	50,00
	SODA ASH	kg	50,00
	SODIUM BICARBONATE	kg	725,00