MOBIL EXPLORATION NORWAY INC. — REPEAT FORMATION TESTING WORKSHEET

WELL: 33/9-16 | FIELD: Wildcat | LOCATION: N. Sea, Norway | RIG: Ross Isle

DATE: 30-31/12/92 | LOGGING Co: Schlumberger | RUN No: 2A | GAUGE: HP

GEOLOGIST: Herrett/Greidanus MUD TYPE: KCl/PHBA/Polymer MUD DENSITY: 12.7 ppg/1.52 sg | HOLE SIZE: 8.5"

TEST No	DEPTH mRKB	TYPE	HYD PRESS BEFORE psi	TIME SET	FORMATION PRESS psi	TIME RETRAC	HYD PRESS AFTER psi	RESULT	REMARKS
1	2684.4	P	5835.0	00:21	5639.2	00:24	5836.3	V Good	Drawdown 5607 psi.
2	2685.0	P	5839.1	00:34	-	00:37	5838.0		Plugging?
3	2685.0	P	5837.9	00:40	5640.1	00:42	5837.8	V Good	
4	2686.4	P	5843.6	00:48	5642.4	00:54	5840.9	V Good	
5	2687.0	P	5842.4	01:04	5643.1	01:07	5841.6	V Good	
6	2688.0	P	5845.4	01:14	5644.8	01:17	5843.4	V Good	
7	2689.0	P	5847.5	01:25	5646.3	01:29	5846.1	V Good	
8	2690.0	P	5850.2	01:37	5647.9	01:40	5847.9	V Good	
9	2693.5	P	5857.3	01:49	5652.8	01:52	5853.9	V Good	
10	2698.5	P	5866.7	02:01	5659.5	02:05	5863.5	V Good	
11	2704.9	P	5882.5	02:13	5667.7	02:16	5875.9	V Good	Tie in, +0.1 m.
12	2713.0	P	5911.5	02:50	5679.9	02:53	5898.1	V Good	
13	2725.0	P	5921.6	03:10	5696.8	03:14	5920.2	V Good	
14	2730.0	P	5933.5	03:31	5705.0	03:34	5930.9	Good	
15	2736.0	P	5947.5	03:43	5728.1	03:49	5943.1	Poor	Irregular buildup to stabilization.
16	2747.5	P	5976.0	04:00	5727.8	04:08	5976.1	V Good	Poor stabilization. Tie in, OK.
17	2815.5	P	6108.3	04:53	5289.2	04:58	6113.3	V Good	Drawdown to 3663 psi.
18	2817.0	P	6118.2	05:11	5290.6	05:15	6116.7	Good	
19	2820.5	P	6125.7	05:26	5295.2	05:31	6123.7	Good	

REFERENCE LOG:DIL/BHC/LDT/CNL/NGT/AMS | CONVERSION CONSTANTS: KPa = PSI * 6.89474 | PPG (EMW) = psi/(TVDepth * 0.1703)

MOBIL EXPLORATION NORWAY INC. — REPEAT FORMATION TESTING WORKSHEET

WELL: 33/9-16 | FIELD: Wildcat | LOCATION: N. Sea, Norway | RIG: Ross Isle

DATE: 31/12/92 | LOGGING Co: Schlumberger | RUN No: 2A | GAUGE: HP

GEOLOGIST: Herrett/Greidanus | MUD TYPE:KCl/PHBA/Polymer | MUD DENSITY: 12.7 ppg/1.52 | HOLE SIZE: 8.5"

TEST No	DEPTH mRKB	TYPE	HYD PRESS BEFORE psi	TIME SET	FORMATION PRESS psi	TIME RETRAC	HYD PRESS AFTER psi	RESULT	REMARKS
20	2823.0	P	6130.9	05:42	5299.3	05:45	6128.5	Good	
21	2830.0	P	6147.6	05:59	5311.1	06:04	6142.4	Good	
22	2839.0	P	6164.3	06:19	5321.0	06:23	6160.7	V Good	
23	2845.0	P	6175.5	06:37	5329.0	06:41	6173.7	V Good	
24	2849.0	P	6184.1	06:56	5333.9	07:00	6182.0	V Good	
25	2857.0	P	6200.4	07:16	5400.7	07:20	6199.1	V Good	
26	2863.0	P	6213.6	07:33	5526.6	07:37	6211.0	Good	
27	2685.0	P/S	5833.3	08:18	5638.8	08:44	5833.6	Good	Drawdown 5625.5 psi

5639.2 final pressure after filling lower chamber.
5639.3 final pressure after filling upper chamber.

Pressure of lower chamber: 20 bar.
Contained 0.23 cubic foot of gas and 10 litres of water with trace of oil.
Salinity of sample: 17 000 mg/l. Salinity of mud filtrate: 26 000 mg/l.
Resistivity of sample: 0.239 ohm m at 12 deg C.
Gas analysis made by Exlog inconclusive.

Upper chamber remained sealed and sent to town for analysis.

NOTES:

REFERENCE LOG:DIL/BHC/LDT/CNL/NGT/AMS | CONVERSION CONSTANTS: KPa = PSI * 6.89474 | PPG (EMW) = psi/(TVDepth * 0.1703)

MOBIL EXPLORATION NORWAY INC.				MDT REPEAT FORMATION TESTING WORKSHEET
WELL: 33/9-16	FIELD: Wildcat	LOCATION: N. Sea, Norway		RIG: Ross Isle
DATE: 01/01/93	LOGGING Co: Schlumberger	RUN No: 2B		GAUGE: CQG gauge on MDT
GEOLOGIST: Herrett/Greidanus	MUD TYPE: KCl/PHBA/Polymer	MUD DENSITY:		HOLE SIZE: 8.5"

TEST No	DEPTH mRKB	TYPE	HYD PRESS BEFORE psi	TIME SET	FORMATION PRESS psi	TIME RETRAC	HYD PRESS AFTER psi	RESULT	REMARKS
1	2684.5	S	5885.3	01:12	5633.5	01:28	5883.5	GOOD	Fluid resistivity stabilised at 0.07 ohm-m.
	Pressure of 2.75 gal chamber: 600 psi Negligible gas. Recovered 10 litres water and sl trace of oil. Salinity of sample: 21000 mg/l Resistivity of sample: 0.277 ohm m at 12 deg C 1 gallon chamber kept sealed and sent for analysis								
2	2687.0	Test Only	5869.9	01:37	5638.2	01:46	5869.5	GOOD	Flow through pump out valve whilst still in hydrocarbon zone. Check for hydrocarbons in flow using resistivity sensor in probe. Resistivity stabilised at 0.06 ohm-m. NO SAMPLE TAKEN.
3	2713.0	S	5959.1	01:57	5675.2	02:15	5960.5	GOOD	Fluid resistivity stabilised at 0.06 ohm-m.
	Pressure of 2.75 gal chamber: 500 psi Negligible gas. Recovered 10 litres water and sl trace of oil. Salinity of sample: 25000 mg/l Resistivity of sample: 0.169 ohm m at 12 deg C 1 gallon chamber kept sealed and sent for analysis								

NOTES: Due to discrepancy of 6-7 psi between RFT and MDT formation pressures Schlumberger investigated the problem and discovered that CQG gauge had not been corrected for distance from gauge to probe on raw data set. 1.5 psi has been added to all pressures (included above). The discrepancy between the RFT and MDT readings is now within resolution of the tools used.

REFERENCE LOG:	CONVERSION CONSTANTS: KPa = PSI * 6.89474	PPG (EMW) = psi/(TVDepth * 0.1703)

MOBIL EXPLORATION NORWAY INC.

WELL 33/9-16

RFT/MDT SAMPLE ANALYSIS SUMMARY

Contractor: GECO-PRAKLA

	Sample Number		
	1	2	*3
Sample type	RFT	MDT	MDT
Depth (mMD)	2685	2684.5	2713
Chamber contents	Water/Gas	Water/Gas	Water

Results from flash separation:

Gas oil ratio (CF/BBL)	N/A	N/A	-
Oil density (g/cc)	N/A	N/A	-
Oil gravity (API)	N/A	N/A	-
Gas gravity (Air = 1)	0.675	0.683	-

Chamber contents after flash separation:

Gas (litre)	4.8	6.9	-
Stock tank oil (cc)	None	None	-
Water (cc)	3500	3500	-
Emulsion (cc)	-	-	-
Water Resistivity @ 20 Deg C. (ohm-m)	0.2331	0.2320	0.1764

* A flash separation was not performed on sample 3 as it contained only traces of gas (no hydrocarbons detected) and 2.5 litres of water.

Figure 2.15

Date: 3/12/93

MENI INTERVAL MUD PROPERTIES SUMMARY

MUD TYPE: WATER BASE MUD WELL: 33/8-16 INTERVAL HOLE SIZE: 36 ins RIG: ROSS ISLE MUD COMPANY: ANCHOR DRILLING FLUIDS

MINIMUM, MAXIMUM AND AVERAGE DATA:

26/11/92	919		8.9	93	100	286	193	146	110	58	55	77	135											900	40	9.9			95.6	5.2				971
26/11/92	919		8.9	93	100	286	193	146	110	58	55	77	135											900	40	9.9			95.6	5.2				971
			8.9	93	100	286	193	146	110	58	55	77	135											900	40.0	9.9			95.6	5.2				

MUD PROPERTIES DATABASE:

						Rheology measured at 120 °F								Rheology measured at Flowline temp																				
Date	Depth MD ft	Temp FL °F	Mud Wt ppg	PV	YP	600 rpm	300 rpm	200 rpm	100 rpm	6 rpm	3 rpm	10sec Gel	10min Gel	600 rpm	300 rpm	200 rpm	100 rpm	6 rpm	3 rpm	API cc	HTHP cc	Cake 32nd	PI cc	Calcium mg/l	Chlorides mg/l	MBT ppb	pH	Sand %vol	Oil %vol	Water %vol	Chem %vol	H2S %vol	LGS %vol	Hole Dev.	Depth ft 2400 hr
26/11/92																																0,0		971
	919		8.9	93	100	286	193	146	110	58	55	77	135											900	40	9.9			95.6	5.2		-0.9		
																																0,0		

Date: 3/12/93

MENI INTERVAL MUD PROPERTIES SUMMARY

MUD TYPE: WATER BASE MUD WELL: 33/9-16 INTERVAL HOLE SIZE: 26 ins RIG: ROSS ISLE MUD COMPANY: ANCHOR DRILLING FLUIDS

MINIMUM, MAXIMUM AND AVERAGE DATA:

29/11/92	1253		8.9	87	85	259	172	130	91	38	35	40	76											500	37.5	9.4			93.2	4.9		1.9		1253
1/12/92	1335		9.2	94	104	292	198	149	104	43	39	47	82											700	37.5	10.2			95.6	5.2		1.9		1335
	82		9.1	92	98	281	189	143	100	41	38	45	80											587	37.5	9.7			94.0	5.0		1.9		82

MUD PROPERTIES DATABASE:

				Rheology measured at 120 °F										Rheology measured at Flowline temp																			
Date	Depth MD ft	Temp FL °F	Mud Wt ppg	PV	YP	600 rpm	300 rpm	200 rpm	100 rpm	6 rpm	3 rpm	10sec Gel	10min Gel	600 rpm	300 rpm	200 rpm	100 rpm	6 rpm	3 rpm	API cc	HTHP cc	Cake 32nd	Pf cc	Calcium mg/l	Chlorides mg/l	MBT ppb	pH	Sand %vol	Oil %vol	Water %vol	Chem %vol	HGS %vol	LGS %vol	Hole Dev.	Depth ft 2400 hr
29/11/92																															0,0		1253
	1253		8.9	87	85	259	172	130	91	38	35	40	76											700	37.5	10.2			95.6	5.2		-0.9		
																															0,0		
30/11/92																															0,0		1335
	1335		9.2	94	104	292	198	149	104	43	39	47	82											500	37.5	9.4			93.2	4.9		1.9		
																															0,0		
1/12/92																															0,0		1335
	1335		9.2	94	104	292	198	149	104	43	39	47	82											500	37.5	9.4			93.2	4.9		1.9		
																															0,0		

Date: 3/12/93

MENI INTERVAL MUD PROPERTIES SUMMARY

MUD TYPE: WATER BASE MUD WELL: 33/8-16 INTERVAL HOLE SIZE: 17,5 ins RIG: ROSS ISLE MUD COMPANY: ANCHOR DRILLING FLUIDS

MINIMUM, MAXIMUM AND AVERAGE DATA:

2/12/92	1335	21	8.8	4	13	29	21	17	14	9	8	8	26	40	31	28	24	21	17	10		2.0	0.1	100	8500	17.5	8.6	0.30		91.8	2.6		2.6		1335
12/12/92	3609	92	9.4	19	82	111	93	77	57	33	30	31	68	118	95	89	79	52	48	18		14.2	0.4	440	12000	22.5	10	0.75		97.0	4.2		5.1		3609
	2274	75	9.1	10	45	65	55	46	37	24	21	23	38	68	52	45	38	26	24	12.44		3.8	0.1	262	10250	20.1	9.1	0.49		94.5	3.1		3.5		2274

MUD PROPERTIES DATABASE:

				Rheology measured at 120 °F										Rheology measured at Flowline temp																		
Date	Depth MD ft	Temp FL °F	Mud Wt ppg	PV	YP	600 rpm	300 rpm	200 rpm	100 rpm	6 rpm	3 rpm	10sec Gel	10min Gel	600 rpm	300 rpm	200 rpm	100 rpm	6 rpm	3 rpm	API cc	HTHP cc	Cake 32nd	Pf cc	Calcium mg/l	Chlorides mg/l	MBT ppb	pH	Sand %vol	Oil %vol	Water %vol	Chem %vol	H2S %vol	LGS %vol	Hole Dev.	Depth ft 2400 hr
2/12/92																																	0,0		1335
	1335		8.762	7	37	51	44	40	37	29	28	29	34							18		3	0.05	260	9000	20	9.3			97.0			2.6		
																																	0,0		
3/12/92																																	0,0		1335
	1335		8.762	19	73	111	92	77	57	26	23	26	30							11.4		2	0.1	180	9000	22.5	9			97.0			2.6		
																																	0,0		
4/12/92																																	0,0		1335
	1335		8.762	11	74	96	85	72	54	27	22	25	30							10.8		2	0.15	100	8500	22.5	9.5			97.0			2.7		
																																	0,0		
5/12/92																																	0,0		1335
	1335		8.762	11	82	104	93	76	56	28	24	27	32							10.7		2	0.15	100	9000	22.5	9.4			97.0			2.6		
																																	0,0		
6/12/92																																	0,0		1335
	1335		8.8	12	69	93	81	69	53	27	24	26	31							12.6		2	0.1	120	9000	20	9.2			96.7			2.9		
																																	0,0		
7/12/92																																	0,0		1335
	1335	21	8.8	12	72	96	84	69	54	28	24	26	32							12.2		2	0.1	120	9000	20	9.2			96.7			2.9		
																																	0,0		
8/12/92	1341	70	8.8	7	46	60	53	46	41	33	30	31	33	118	95	89	79	52	48	13.8		2	0.4	300	8500	19	10	0.3		96.6	3.1				2234
	1804	88	9.2	7	44	58	51	44	40	29	26	27	33	63	55	47	42	32	26	14.7		2	0.1	400	12000	20	9.1	0.5		93.5	3.1		2.9		
	2179	90	9.4	4	28	36	32	26	24	22	19	18	26	40	31	28	24	21	19	13.8		13.8	0.1	360	12000	20	8.6	0.6		91.9	3.1		4.6		
9/12/92	3609	80	9.3	8	25	41	33	28	25	21	16	20	42	50	41	33	28	24	17	10.6		2	0.1	420	12000	19	8.8	0.75		92.7	2.6		4.3		3609
	3125	92	9.4	6	29	41	35	31	26	21	17	25	43	47	37	33	28	22	18	11.3		2	0.1	440	11500	20	9	0.5		91.8	2.6		5.1		
	2562	90	9.4	9	26	44	35	29	24	21	16	18	42	49	36	32	25	22	17	14.2		14.2	0.1	260	12000	19	8.7	0.3		91.8	2.6		5.1		
10/12/92																																	0,0		3609
	3609	78	9.4	11	25	47	36	29	27	23	20	20	68	77	53	46	37	25	23	10.1		2	0.2	350	11000	20	8.9	0.5		91.9	3.8		3.9		
																																	0,0		
11/12/92																																	0,0		3609
	3609	62	9.4	16	29	65	47	36	28	22	16	24	65	100	70	53	40	25	23	10		2	0.1	240	11000	17.5	8.7	0.5		91.9	4.2		3.5		
																																	0,0		
12/12/92																																	0,0		3609
	3609		9.2	8	13	29	21	17	14	9	8	8	26																				0,0		
																																	0,0		

WELL: 33/9-16 MUD COMPANY: ANCHOR DRILLING FLUIDS A/S
INTERVAL HOLE SIZE: 12,25 ins RIG: ROSS ISLE
MUD TYPE: WATER BASE MUD WELL: 33/9-16

MINIMUM, MAXIMUM AND AVERAGE DATA:

13/12/92	3640	61	10.9	20	9	68	40	35	22	5	4	4	23	113	80	64	44	12	9	4		1.0	0.1	280	50000	8.75	8.3	1.00		79.5	2.3	4.7	1.4		3983
21/12/92	7172	95	12.6	52	65	169	117	92	64	16	14	23	65	223	151	119	81	22	16	5.2		4.5	0.2	900	64000	15	10.6	1.00		83.0	2.9	12.4	5.7		7172
	3532	82	12.1	37	40	113	76	61	43	13	10	12	44	169	118	94	65	19	15	4.394		2.0	0.1	551	56278	12.4	8.7	1.00		81.0	2.7	10.5	3.1		3189

MUD PROPERTIES DATABASE:

						Rheology measured at 120 °F								Rheology measured at Flowline temp																				
Date	Depth MD ft	Temp FL °F	Mud Wt ppg	PV	YP	600 rpm	300 rpm	200 rpm	100 rpm	6 rpm	3 rpm	10sec Gel	10min Gel	600 rpm	300 rpm	200 rpm	100 rpm	6 rpm	3 rpm	API cc	HTHP cc	Cake 32nd	Pf cc	Calcium mg/l	Chlorides mg/l	MBT ppb	pH	Sand %vol	Oil %vol	Water %vol	Chem %vol	HGS %vol	LGS %vol	Hole Dev.	Depth ft 2400 hr
13/12/92	3640		10.9	20	28	68	48	39	27	8	6	6	25	160	115	90	65	22	18	5		2	0.2	400	52000	12	10.6	1			2.7	4.7	5.3		3983
	3924	85	11.5	31	9	71	40	35	22	5	4	4	23							4.6		1	0.1	360	54000	8.75	9.8			83.0	2.7	7.2	4.7		
	3983		11.5	33	12	78	45	39	35	11	9	10	29							4.5		4.5	0.1	280	54000	10	9.8			82.5	2.7	6.8	5.7		
14/12/92	4313	77	11.6	23	36	82	59	48	33	10	7	9	32	113	80	64	44	12	9	5		2	0.1	400	53000	12	8.5	1			2.9	9.1	1.6		5062
	4921	86	11.7	35	50	120	85	68	48	14	12	13	35							4.4		1		560	50000	15	8.7	1		83.0	2.9	9.0	2.9		
	5036	88	11.9	33	48	114	81	66	46	14	10	11	40	159	115	94	64	18	14	4		4		480	51000	14	8.5	1		82.0	2.9	9.5	3.4		
15/12/92	5644	80	12.35	37	51	125	88	70	50	15	12	15	45	160	115	90	65	22	18	5.2		2	0.1	800	52000	14	8.6	1			2.9	11.9	1.9		6207
	5803	80	12.2	36	46	118	82	65	46	15	13	13	46	157	110	88	62	20	16	4		1	0.1	800	55000	12.5	8.4	1		81.5	2.9	11.3	1.9		
	6135	86	12.4	49	54	152	103	82	58	15	11	14	48	223	151	119	81	20	17	4		4	0.1	880	55000	13	8.4	1		81.0	2.9	12.3	1.4		
16/12/92	6330	80	12.5	39	46	124	85	68	46	14	10	14	42	185	130	105	72	19	14	4.8		2		900	58000	12	8.5	1			2.7	11.9	2.9		6795
			12.35	52	65	169	117	92	64	16	14	23	65							4		1		720	55000	14	8.4			80.0	2.7	10.8	4.1		
	6795	95	12.4	48	45	141	93	74	52	15	13	14	52	200	132	105	72	20	16	4		4		440	55000	12	8.5	1		80.5	2.7	11.6	2.8		
17/12/92	6983	80	12.5	35	45	115	80	64	44	13	10	13	55	130	90	70	48	14	10	4.8		2		800	58000	12	8.3	1			2.6	11.8	3.0		7172
	7172	88	12.5	40	46	126	86	71	49	15	13	14	58	183	131	109	74	21	17	4.2		1	0.2	480	60000	12.5	8.4	1		79.5	2.6	11.4	3.9		
																																	0.0		
18/12/92																																	0.0		7172
	7172		12.5	39	40	118	79	64	44	14	11	12	48	178	122	97	67	19	14	4		1	0.1	400	62000	12.5	8.4	1		80.0	2.6	11.8	2.9		
																																	0.0		
19/12/92																																	0.0		7172
	7172	81	12.6	37	39	113	76	61	42	14	11	13	55	175	120	96	66	19	15	4.4		1	0.05	400	64000	12.5	8.3	1		80.0	2.5	12.4	2.2		
																																	0.0		
20/12/92																																	0.0		7172
	7172		12.6	42	27	111	69	54	37	12	10	11	48	174	119	94	64	17	13	4.2		1	0.1	360	63000	12.5	8.5	1		80.0	2.5	12.4	2.3		
																																	0.0		
21/12/92																																	0.0		7172
	7172		12.6	29	29	87	58	45	30	7	5									4		1		450	62000	12	8.4	1		80.0	2.3	12.3	2.7		
																																	0.0		

Date: 3/12/93

MENI INTERVAL MUD PROPERTIES SUMMARY

MUD TYPE: WATER BASE MUD WELL: 33/9-16 INTERVAL HOLE SIZE: 8,5 ins RIG: ROSS ISLE MUD COMPANY: ANCHOR

MINIMUM, MAXIMUM AND AVERAGE DATA:

22/12/92	6888	69	12.5	24	20	68	44	32	21	7	5	6	30	93	60	47	31	9	7	4	13.0	1.0	0.1	60	24000	9	8.8	0.25		80.0	1.9	12.4	1.5		765
7/1/93	9416	98	12.7	40	54	130	92	68	47	20	14	15	61	176	119	94	64	18	14	5.8	17.2	4.4	1.6	400	58000	12	12.5	1.00		81.0	2.5	14.1	3.7		9416
	2528	82	12.6	33	38	105	71	57	38	11	8	9	42	146	100	79	54	14	10	4.641	15.1	1.8	0.4	136	33148	11.0	9.8	0.40		80.9	2.1	13.5	2.1		8651

MUD PROPERTIES DATABASE:

						Rheology measured at 120 °F								Rheology measured at Flowline temp																				
Date	Depth MD ft	Temp FL °F	Mud Wt ppg	PV	YP	600 rpm	300 rpm	200 rpm	100 rpm	6 rpm	3 rpm	10sec Gel	10min Gel	600 rpm	300 rpm	200 rpm	100 rpm	6 rpm	3 rpm	API cc	HTHP cc	Cake 32nd	Pf cc	Calcium mg/l	Chlorides mg/l	MBT ppb	pH	Sand %vol	Oil %vol	Water %vol	Chem %vol	H2S %vol	LGS %vol	Hole Dev.	Depth ft 2400 hr
22/12/92	7185	72	12.5	25	27	77	52	41	28	7	5	7	31	101	69	55	37	9	7	5.4		1	0.15	200	58000	10	9.6	0.75		81.0	2.3	12.4	1.8		7330
	7330	86	12.5	24	20	68	44	32	21	7	5	6	34	93	60	47	31	9	7	5.8	17.2	1	0.15	120	56000	9	9.8	0.75		81.0	2.3	12.4	1.9		
																																	0,0		
23/12/92	7513	80	12.5	35	40	110	75	60	40	9	7	9	30	160	110	70	51	15	12	4		1	0.2	100	54000	10	9.4	1		81.0	2.5	12.6	1.5		7721
	7513	80	12.5	37	44	118	81	65	44	11	8	9	31	159	113	92	64	18	11	4.2	16	1	0.2	120	52000	9	9.2	1		81.0	2.5	12.6	1.6		
	7676	78	12.5	34	37	105	71	56	38	9	8	8	35	162	111	88	60	15	11	4	13.2	4	0.1	120	51000	11	9.2	0.75		81.0	2.5	12.6	1.6		
24/12/92	8170	82	12.5	35	41	111	76	60	41	10	8	9	38	154	109	87	59	14	11	4.2		1	0.05	160	42000	11	8.8	0.5		81.0	2.3	12.6	2.3		8350
	8333	80	12.5	35	37	107	72	57	39	9	7	8	40	153	105	83	56	15	10	4.2	13.8	1	0.05	80	40000	12	9.5	0.25		81.0	2.3	12.6	2.4		
	7881	74	12.5	32	36	100	68	54	36	9	7	7	36	161	111	88	60	15	11	4	13	4	0.05	120	48000	11	9.1	0.75		81.0	2.3	12.5	2.1		
25/12/92	8701	88	12.7	37	46	120	83	66	47	12	9	11	45	144	100	81	57	14	11	4.6		1	0.2	80	30000	12	9.6	0.5		80.0	2.1	13.2	3.5		8799
	8799	88	12.7	33	45	111	78	63	45	14	11	12	51	153	105	85	59	18	14	4.6	15.6	1	0.1	80	25000	12	9.6	0.25		80.0	2.1	13.2	3.7		
	8472	80	12.5	31	35	97	66	53	36	9	7	8	43	149	101	80	55	14	10	4.2	13.2	4.2	0.15	120	34000	12	9.3	0.25		81.0	2.1	12.6	2.9		
26/12/92	8798	80	12.7	33	39	105	72	58	40	12	9	12	51	125	85	67	46	12	10	5	15.4	1	0.2	140	25000	12	9.5	0.25		81.0	2.1	14.1	1.9		8881
	8881	83	12.7	29	36	94	65	52	36	10	8	9	45	132	90	72	49	13	10	5	16.4	1	0.3	60	26000	12	9.25	0.25		81.0	2.1	14.0	1.8		
																																	0,0		
27/12/92	8954	78	12.7	34	43	111	77	62	43	12	9	11	47	164	113	91	63	14	11	4.8		1	0.1	80	25000	11	9.3	0.25		81.0	2.0	14.0	2.0		9022
	9019	69	12.7	31	37	99	68	56	39	10	8	9	43	147	100	82	56	15	12	4.4	15.2	1	0.2	60	26000	10	9.4	0.25		81.0	2.0	14.0	2.0		
																																	0,0		
28/12/92																																	0,0		9104
	9075	81	12.7	27	34	88	61	48	32	9	7	7	38	119	80	63	43	10	7	5	16.8	1	0.2	60	25000	11	9.3	0.25		81.0	1.9	14.0	2.0		
	9026	80	12.7	32	44	108	76	62	43	10	8	9	45	147	103	84	59	14	11	4.2		4.2	0.2	80	26000	11	9.4	0.25		81.0	1.9	14.0	2.0		
29/12/92	9400	94	12.7	36	37	109	73	58	39	10	7	8	37	152	104	82	58	14	10	4.8	15.2	1	0.15	60	26000	11	9.4	0.25		81.0	1.9	14.0	2.1		9416
	9416	90	12.7	35	38	108	73	60	41	10	8	8	37	155	105	85	58	15	11	4.4	15.4	1	0.2	60	26000	11	9.3	0.25		81.0	1.9	14.0	2.1		
	9235	98	12.7	36	46	118	82	66	45	10	8	9	42	152	107	88	60	14	11	4.4		4.4	0.2	120	27000	12	9.3	0.25		81.0	1.9	14.0	2.0		
30/12/92																																	0,0		9416
	9416		12.7	35	37	107	72	56	38	9	7	8	40	176	119	94	63	15	10	4.6	15.8	1	0.2	60	26000	11	9.2	0.25		81.0	1.9	14.0	2.1		
																																	0,0		
31/12/92																																	0,0		9416
	9416		12.7	31	29	91	60	47	31	8	6	6	33	155	104	81	54	11	8	4.2		1	0.1	60	25000	11	9.1	0.25		81.0	1.9	14.0	2.1		
																																	0,0		
1/01/93																																	0,0		9416
	9416		12.7	30	28	88	58	46	30	8	6	6	30	141	92	72	47	10	7	4	14.6	1	0.1	60	24000	11	9.1	0.25		81.0	1.9	14.0	2.2		
																																	0,0		
2/01/93																																	0,0		6888
	6888		12.7	38	54	130	92	68	42	20	14	15	61							5		1	1.5	260	24000	11	11.9	0.25		81.0	2.3	14.0	1.7		
																																	0,0		
3/01/93																																	0,0		6888
	6888		12.7	40	40	120	80	62	39	15	12	12	59							5.5		1	1.6	400	24000	11	12.5	0.25		81.0	2.3	14.0	1.7		
																																	0,0		
4/01/93																																	0,0		6880
	6888		12.7	37	41	115	78	60	37	14	12	11	52							5.5		1	1.6	400	24000	11	12.5	0.25		81.0	2.3	14.0	1.7		
																																	0,0		
5/01/93																																	0,0		6880
	6888		12.7	36	38	114	76	59	37	14	12	11	50							5.5		1	1.6	400	24000	11	12.5	0.25		81.0	2.3	14.0	1.7		
																																	0,0		
6/01/93																																	0,0		6880
	6888		12.7																														0,0		
																																	0,0		
7/01/93																																	0,0		765
			12.7																														0,0		
																																	0,0		

TOTAL WELL MATERIAL UNITS RECONCILIATION - BY PRODUCT

WELL NAME : 33/9-16

MENI 10/92

RECEIPT OR RETURN DATE d/mm/yy	MENI ORDER/ TRANSFER /RETURN NUMBER	UNITS DELIVERED ON MANIFEST A	UNITS SHORT TO RIG B	UNITS RETURNED / TRANSFERRED ON MANIFEST C	UNITS DAMAGED OR SHORT NO CREDIT D	NET TOTAL UNITS USED WELL MTLS. CONSUMPTION =A-C+D	REMARKS (Destination) Units on Rig at start, and left on Rig at end of well will be documented like all other materials. Items below are for information purposes only - to ensure MT has been issued.	
PRODUCT NAME : BENTONITE (BULK)					**UNIT SIZE (Kg): 1000**			
19-11-92	N00362	100.0					Units on Rig at start of well :	NIL
2-12-92	N01088	90.0						
14-12-92	NO1101	50.0		50.0	3.0			
1-01-93	MT00177			36.0	4.0			
COLUMN TOTALS		240.0		86.0	7.0	**161.0**	Units remaining on Rig at end of well :	NIL
PRODUCT NAME : BENTONITE (SACKS)					**UNIT SIZE (Kg): 25**			
19-11-92	N00362	50.0					Units on Rig at start of well :	NIL
6-12-92	N01011	100.0						
1-01-93	MT00177			4.0				
COLUMN TOTALS		150.0		4.0		**146.0**	Units remaining on Rig at end of well :	NIL
PRODUCT NAME : BARITE					**UNIT SIZE (Kg): 1000**			
28-11-92	N00362	100.0					Units on Rig at start of well :	NIL
28-11-92	N01088	100.0						
2-12-92	N01096	100.0	4.0					
13-12-92	N1099/1101	200.0	9.0					
16-12-92	NO1107	200.0						
21-12-92	N01102	100.0	15.0					
25-12-92	NO1125	100.0						
26-12-92	N01127	100.0						
1-01-93	MTOO177			172.0	8.0			
COLUMN TOTALS		1000.0	28.0	172.0	8.0	**836.0**	Units remaining on Rig at end of well :	NIL

TOTAL WELL MATERIAL UNITS RECONCILIATION - BY PRODUCT

WELL NAME : 33/9-16

MENI 10/92

RECEIPT OR RETURN DATE d/mm/yy	MENI ORDER/ TRANSFER /RETURN NUMBER	UNITS DELIVERED ON MANIFEST A	UNITS SHORT TO RIG B	UNITS RETURNED / TRANSFERRED ON MANIFEST C	UNITS DAMAGED OR SHORT NO CREDIT D	NET TOTAL UNITS USED WELL MTLS. CONSUMPTION =A-C+D	REMARKS (Destination) Units on Rig at start, and left on Rig at end of well will be documented like all other materials. Items below are for information purposes only - to ensure MT has been issued.	
PRODUCT NAME : CAUSTIC					**UNIT SIZE (Kg): 25**			
19-11-92	N00362	40.0					Units on Rig at start of well :	NIL
2-12-92	N01088	40.0						
12-12-92	NO1101	80.0						
1-01-93	MT00177			85.0				
COLUMN TOTALS		160.0		85.0		**75.0**	Units remaining on Rig at end of well :	NIL
PRODUCT NAME : SODA ASH					**UNIT SIZE (Kg): 25**			
19-11-92	N00362	40.0					Units on Rig at start of well :	NIL
2-12-92	N01089	40.0						
17-12-92	NO1123	76.0						
30-12-92	MT00173			40.0				
1-01-93	MT00177			26.0	3.0			
COLUMN TOTALS		156.0		66.0	3.0	**93.0**	Units remaining on Rig at end of well :	NIL
PRODUCT NAME : LIME					**UNIT SIZE (Kg): 20**			
19-11-92	N00362	44.0					Units on Rig at start of well :	NIL
1-01-93	MTOO177			33.0				
COLUMN TOTALS		44.0		33.0		**11.0**	Units remaining on Rig at end of well :	NIL
PRODUCT NAME : SPERCELL FE					**UNIT SIZE (Kg): 25**			
2-12-92	N01088	30.0					Units on Rig at start of well :	NIL
6-12-92	N01088	105.0						
16-12-92	NO1107	99.0						
30-12-92	MT00173			99.0				
1-01-93	MTOO177			68.0	6.0			
COLUMN TOTALS		234.0		167.0	6.0	**73.0**	Units remaining on Rig at end of well :	NIL

TOTAL WELL MATERIAL UNITS RECONCILIATION - BY PRODUCT

WELL NAME : 33/9-16

MENI 10/92

RECEIPT OR RETURN DATE d/mm/yy	MENI ORDER/ TRANSFER /RETURN NUMBER	UNITS DELIVERED ON MANIFEST A	UNITS SHORT TO RIG B	UNITS RETURNED / TRANSFERRED ON MANIFEST C	UNITS DAMAGED OR SHORT NO CREDIT D	NET TOTAL UNITS USED WELL MTLS. CONSUMPTION =A-C+D	REMARKS (Destination) Units on Rig at start, and left on Rig at end of well will be documented like all other materials. Items below are for information purposes only - to ensure MT has been issued.	
PRODUCT NAME : CELPOL SL					**UNIT SIZE (Kg): 25**			
2-12-92	N01088	168.0					Units on Rig at start of well :	NIL
12-12-92	NO1101	240.0						
16-12-92	NO1107	96.0						
30-12-92	MTOO173			192.0				
1-01-93	MT00177			151.0				
COLUMN TOTALS		504.0		343.0		**161.0**	Units remaining on Rig at end of well :	NIL
PRODUCT NAME : CELPOL REG					**UNIT SIZE (Kg): 25**			
2-12-92	N01088	408.0					Units on Rig at start of well :	NIL
16-12-92	NO1107	96.0						
30-12-92	MT00173			48.0				
1-01-93	MTOO177			274.0	3.0			
COLUMN TOTALS		504.0		322.0	3.0	**185.0**	Units remaining on Rig at end of well :	NIL
PRODUCT NAME : XCD POLYMER					**UNIT SIZE (Kg): 25**			
2-12-92	N01088	240.0					Units on Rig at start of well :	NIL
30-12-92	MT00173			40.0				
1-01-93	MTOO177			98.0	3.0			
COLUMN TOTALS		240.0		138.0	3.0	**105.0**	Units remaining on Rig at end of well :	NIL
PRODUCT NAME : MICA COARSE					**UNIT SIZE (Kg): 25**			
2-12-92	N01088	40.0					Units on Rig at start of well :	NIL
30-12-92	MT00173			40.0				
COLUMN TOTALS		40.0		40.0			Units remaining on Rig at end of well :	NIL
PRODUCT NAME : MICA FINE					**UNIT SIZE (Kg): 25**			
2-12-92	N01088	40.0					Units on Rig at start of well :	NIL
30-12-92	MT00173			40.0				
COLUMN TOTALS		40.0		40.0			Units remaining on Rig at end of well :	NIL

TOTAL WELL MATERIAL UNITS RECONCILIATION - BY PRODUCT

WELL NAME : 33/9-16

MENI 10/92

RECEIPT OR RETURN DATE d/mm/yy	MENI ORDER/ TRANSFER /RETURN NUMBER	UNITS DELIVERED ON MANIFEST A	UNITS SHORT TO RIG B	UNITS RETURNED / TRANSFERRED ON MANIFEST C	UNITS DAMAGED OR SHORT NO CREDIT D	NET TOTAL UNITS USED WELL MTLS. CONSUMPTION =A-C+D	REMARKS (Destination) Units on Rig at start, and left on Rig at end of well will be documented like all other materials. Items below are for information purposes only - to ensure MT has been issued.	
PRODUCT NAME : RENAX 100					UNIT SIZE (Ltr): 200			
2-12-92 1-01-93	N01089 MT00177	12.0		11.0	1.0		Units on Rig at start of well :	NIL
COLUMN TOTALS		12.0		11.0	1.0	2.0	Units remaining on Rig at end of well :	NIL
PRODUCT NAME : ANCO FREE PIPE					UNIT SIZE (Ltr): 200			
2-12-92 1-01-93	N01088 MT00177	16.0		16.0			Units on Rig at start of well :	NIL
COLUMN TOTALS		16.0		16.0			Units remaining on Rig at end of well :	NIL
PRODUCT NAME : KWIK SEAL MEDIUM					UNIT SIZE (Kg): 25			
2-12-92 6-12-92 30-12-92	N01089 N01089 MT00173	20.0 20.0		40.0			Units on Rig at start of well :	NIL
COLUMN TOTALS		40.0		40.0			Units remaining on Rig at end of well :	NIL
PRODUCT NAME : WALNUT COARSE					UNIT SIZE (Kg): 25			
2-12-92 30-12-92	N01089 MT00173	55.0		55.0			Units on Rig at start of well :	NIL
COLUMN TOTALS		55.0		55.0			Units remaining on Rig at end of well :	NIL
PRODUCT NAME : WALNUT FINE					UNIT SIZE (Kg): 25			
6-12-92 30-12-92	N01088 MT00173	60.0		60.0			Units on Rig at start of well :	NIL

TOTAL WELL MATERIAL UNITS RECONCILIATION - BY PRODUCT

WELL NAME : 33/9-16

MENI 10/92

RECEIPT OR RETURN DATE d/mm/yy	MENI ORDER/ TRANSFER /RETURN NUMBER	UNITS DELIVERED ON MANIFEST A	UNITS SHORT TO RIG B	UNITS RETURNED / TRANSFERRED ON MANIFEST C	UNITS DAMAGED OR SHORT NO CREDIT D	NET TOTAL UNITS USED WELL MTLS. CONSUMPTION =A-C+D	REMARKS (Destination) Units on Rig at start, and left on Rig at end of well will be documented like all other materials. Items below are for information purposes only - to ensure MT has been issued.	
COLUMN TOTALS		60.0		60.0			Units remaining on Rig at end of well :	N IL
PRODUCT NAME : ANCO PHPA					UNIT SIZE (Kg):			
12-12-92	NO1101	240.0					Units on Rig at start of well :	NIL
1-01-93	MT00177			63.0				
COLUMN TOTALS		240.0		63.0		177.0	Units remaining on Rig at end of well :	NIL
PRODUCT NAME : KCl					UNIT SIZE (Kg): 25			
12-12-92	NO1101	1600.0					Units on Rig at start of well :	NIL
16-12-92	NO1107	280.0						
30-12-92	MT00173			440.0	8.0			
1-01-93	MT00177			280.0	12.0			
COLUMN TOTALS		1880.0		720.0	20.0	1180.0	Units remaining on Rig at end of well :	NIL
PRODUCT NAME : DELTA P					UNIT SIZE (Kg): 25			
12-12-92	NO1101	40.0					Units on Rig at start of well :	NIL
30-12-92	MT00173			40.0				
COLUMN TOTALS		40.0		40.0			Units remaining on Rig at end of well :	NIL
PRODUCT NAME : DEFOAMER					UNIT SIZE (Kg): 25			
12-12-92	NO1101	4.0					Units on Rig at start of well :	NIL
30-12-92	MT00173			4.0				
COLUMN TOTALS		4.0		4.0			Units remaining on Rig at end of well :	NIL
PRODUCT NAME : ANCOCIDE					UNIT SIZE (Kg): 25			
12-12-92	NO1101	35.0					Units on Rig at start of well :	NIL
30-12-92	MT00173			35.0				
COLUMN TOTALS		35.0		35.0			Units remaining on Rig at end of well :	NIL

TOTAL WELL MATERIAL UNITS RECONCILIATION - BY PRODUCT

WELL NAME : 33/9-16

MENI 10/92

RECEIPT OR RETURN DATE d/mm/yy	MENI ORDER/ TRANSFER /RETURN NUMBER	UNITS DELIVERED ON MANIFEST A	UNITS SHORT TO RIG B	UNITS RETURNED / TRANSFERRED ON MANIFEST C	UNITS DAMAGED OR SHORT NO CREDIT D	NET TOTAL UNITS USED WELL MTLS. CONSUMPTION =A-C+D	REMARKS (Destination) Units on Rig at start, and left on Rig at end of well will be documented like all other materials. Items below are for information purposes only - to ensure MT has been issued.	
PRODUCT NAME : CITRIC ACID					**UNIT SIZE (Kg): 25**			
12-12-92 1-01-93	NO1101 MT00177	40.0		40.0			Units on Rig at start of well :	NIL
COLUMN TOTALS		40.0		40.0			Units remaining on Rig at end of well :	NIL
PRODUCT NAME : KCL BRINE					**UNIT SIZE (M3)**			
13-12-92 16-12-92	NO1102 NO1102	150.0 150.0					Units on Rig at start of well :	NIL
COLUMN TOTALS		300.0				**300.0**	Units remaining on Rig at end of well :	NIL
PRODUCT NAME : SODIUM BICARBONATE					**UNIT SIZE (kg): 25**			
17-12-92 1-01-93	NO1123 MT00177	84.0		57.0	5.0		Units on Rig at start of well :	NIL
COLUMN TOTALS		84.0		57.0	5.0	**32.0**	Units remaining on Rig at end of well :	NIL

Geochemical Report for Well NOCS 33/9-16

Authors: Kjell Arne Bakken
Ian L. Ferriday

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7002 Trondheim
Norway

Date : 25.02.93

LIST OF ENCLOSURES

Appendix 1: TABLES

Chapter 1

INTRODUCTION

Well NOCS 33/9-16 was analysed on behalf of Mobil Exploration Norway by authorization of Dag Isaksen.

The well is located in the Norwegian sector of the North Sea and is situated in the Tampen Spur, North-East of the Statfjord Field at 61 °23'28.81"N, 01°57'1.93"E. The water depth was 227 m and Kelly Bushing (KB) elevation was 22 m. All depths given are relative to KB unless otherwise specified. The location of the well is shown in Figure 1.

Samples (cuttings, side-wall cores, conventional cores and oils) were supplied by Mobil and delivered to Geolab Nor's laboratory in Trondheim. A stratigraphy was provided by Mobil and is used in this report.

Both screening and follow-up analyses were performed. Samples for analyses were selected in agreement with Dag Isaksen on a continuous basis. The well was analysed from 450 m to 2870 m. Conventional core samples were preferred for analyses where available, and side-wall cores were preferred to cuttings samples. One oil sample was also analysed. The results are presented in the relevant stratigraphic sections of this report.

The report is divided into chapters according to the various analytical methods used. Within the chapters the results are mainly discussed in a (descending) stratigraphic context.

1.1 General Comments

The cuttings samples were supplied unwashed in cans. The samples were analysed for headspace and occluded gas, washed, described and picked before analyses commenced. The conventional core samples were supplied as core-chips which were used after removal of any superficial contamination. The side-wall cores were cleansed of drill mud before analyses.

The quality of the rock samples was good. No analytical problems were encountered. However, Dag Isaksen (Mobil) gave the information (after analyses were finished) that two samples used were mislabelled. These are: 2835 m and 2865 m, both side-wall cores. The true depth of these two samples is not known. Both these samples were used for Rock-Eval analyses and the 2835 m sample is included in the 2841 m composite sample used for GC, GC-MS and isotope analyses. The data for these samples must therefore be treated with care.

1.2 Analytical Program

In accordance with the contract, sample availability and the screening analysis results, the following analytical program was executed for well NOCS 33/9-16 in the section from 450 m to 2870 m:

Analysis type	No of samples	Figures	Tables
Headspace and Occluded Gas	102	2a-c	1a-c
Lithology description	148	3	2
Rock-Eval pyrolysis	58	4a,5a,6	3
Quantitative GHM (S_1 and S_2), wellsite	58	4b-c,5b	5
		10a-d,11a-c	
Thermal Extraction and Pyrolysis GC (GHM)	15	7a-d,8a-d,9	4
Soxhlet Extraction of organic matter	17		
MPLC/HPLC separation			6a-e
Saturated hydrocarbon GC	16	12a-g	7
Aromatic hydrocarbon GC	16	13a-c	8
Vitrinite reflectance	22	14	9
Visual kerogen microscopy	17	15a-b	9,10
Isotope composition C_{15}+ fractions	11	16a-b, 17	11a-b
GC - MS of saturated and aromatic HC	11	18a-g	12a-i
GC - MS cross-plots		19a-h	

Table 1a: C1 to C7 hydrocarbons in HEADSPACE gas
(μl gas/kg rock)

Project: 33/9-16
Well: NOCS 33/9-16
Depth unit of measure: m * Indicated values in ml gas/kg rock

Depth	C1	C2	C3	iC4	nC4	C5+	sum C1-C4	sum C2-C4	%wet ness	iC4/nC4
450.00	8793	2	-	-	-	3	8795	2	-	-
490.00	54001	11	1	-	-	5	54013	12	-	-
530.00	126443	22	4	3	1	9	126473	30	-	3.00
570.00	66590	12	2	1	-	5	66605	15	-	-
610.00	57609	15	2	1	-	4	57627	18	-	-
650.00	35596	8	1	1	1	4	35607	11	-	1.00
690.00	36830	11	2	-	-	8	36843	13	-	-
730.00	63426	23	4	-	-	9	63453	27	-	-
770.00	36599	10	3	-	1	3	36613	14	-	-
810.00	39749	12	3	1	-	5	39765	16	-	-
850.00	26666	8	1	-	-	5	26675	9	-	-
890.00	23593	8	2	1	-	3	23604	11	0.1	-
930.00	37779	13	2	1	-	4	37795	16	-	-
970.00	15499	7	1	-	-	3	15507	8	0.1	-
1010.00	5679	3	-	-	-	1	5682	3	0.1	-
1050.00	17488	6	1	-	-	3	17495	7	-	-
1090.00	26238	9	1	-	-	3	26248	10	-	-
1130.00	7783	6	3	-	-	1	7792	9	0.1	-
1170.00	13104	8	2	-	-	2	13114	10	0.1	-
1210.00	8019	4	-	-	-	1	8023	4	0.1	-
1250.00	2077	83	7	1	15	20	2183	106	4.9	0.07
1290.00	4252	2	-	-	-	-	4254	2	0.1	-
1330.00	2467	1	-	-	-	-	2468	1	-	-

Table 1a: C1 to C7 hydrocarbons in HEADSPACE gas
(μl gas/kg rock)

Project: 33/9-16
Well: NOCS 33/9-16
Depth unit of measure: m * Indicated values in ml gas/kg rock

Depth	C1	C2	C3	iC4	nC4	C5+	sum C1-C4	sum C2-C4	%wet ness	iC4/nC4
1370.00	2228	1	-	-	-	-	2229	1	-	-
1410.00	2211	2	-	-	-	-	2213	2	0.1	-
1450.00	2511	6	1	-	-	-	2518	7	0.3	-
1490.00	1922	6	1	-	-	-	1929	7	0.4	-
1530.00	1791	7	1	-	-	1	1799	8	0.4	-
1570.00	1326	5	1	-	-	1	1332	6	0.5	-
1610.00	3961	30	4	2	1	7	3998	37	0.9	2.00
1650.00	3395	16	2	1	-	27	3414	19	0.6	-
1690.00	5502	25	2	3	1	168	5533	31	0.6	3.00
1730.00	12242	72	4	6	1	124	12325	83	0.7	6.00
1770.00	4244	31	2	2	-	43	4279	35	0.8	-
1810.00	2104	18	2	-	-	12	2124	20	0.9	-
1850.00	5222	46	6	1	1	12	5276	54	1.0	1.00
1890.00	2196	22	4	1	1	6	2224	28	1.3	1.00
1930.00	5176	52	16	3	2	3	5249	73	1.4	1.50
1970.00	2756	27	8	1	1	5	2793	37	1.3	1.00
2010.00	3370	51	23	4	3	6	3451	81	2.4	1.33
2050.00	5015	92	59	12	9	15	5187	172	3.3	1.33
2090.00	4571	113	68	15	12	8	4779	208	4.4	1.25
2130.00	3472	121	95	29	33	10	3750	278	7.4	0.88
2170.00	4740	164	133	53	68	23	5158	418	8.1	0.78
2210.00	1269	72	93	51	76	32	1561	292	18.7	0.67
2250.00	1642	115	225	206	335	301	2523	881	34.9	0.61

Table 1a: C1 to C7 hydrocarbons in HEADSPACE gas
(µl gas/kg rock)

Project: 33/9-16
Well: NOCS 33/9-16
Depth unit of measure: m * Indicated values in ml gas/kg rock

Depth	C1	C2	C3	iC4	nC4	C5+	sum C1-C4	sum C2-C4	%wet ness	iC4/nC4
2589.00	1526	293	451	109	184	102	2563	1037	40.5	0.59
2598.00	1382	301	473	104	180	78	2440	1058	43.4	0.58
2607.00	1672	451	775	178	326	202	3402	1730	50.9	0.55
2616.00	1541	378	667	158	302	170	3046	1505	49.4	0.52
2625.00	2118	454	816	193	379	199	3960	1842	46.5	0.51
2634.00	9223	2425	5163	1310	2385	1271	20506	11283	55.0	0.55
2643.00	2414	702	1543	379	801	470	5839	3425	58.7	0.47
2652.00	2272	592	1302	322	688	426	5176	2904	56.1	0.47
2661.00	1205	290	630	190	419	421	2734	1529	55.9	0.45
2670.00	5159	1375	1929	528	1065	953	10056	4897	48.7	0.50
2679.00	1871	388	341	69	144	140	2813	942	33.5	0.48
2688.00	3825	339	237	36	80	86	4517	692	15.3	0.45
2697.00	621	81	83	17	41	55	843	222	26.3	0.41
2706.00	1155	91	72	14	35	57	1367	212	15.5	0.40
2715.00	1334	124	105	21	49	61	1633	299	18.3	0.43
2724.00	722	78	99	25	65	96	989	267	27.0	0.38
2733.00	1056	174	237	49	117	157	1633	577	35.3	0.42
2742.00	1889	472	468	84	184	175	3097	1208	39.0	0.46
2751.00	6078	1720	1631	224	471	335	10124	4046	40.0	0.48
2760.00	78902	8424	3595	250	327	70	91498	12596	13.8	0.76
2769.00	77050	10247	4926	347	427	79	92997	15947	17.2	0.81
2778.00	93554	22274	14758	956	1602	394	133144	39590	29.7	0.60
2787.00	64677	17973	15301	1252	2429	936	101632	36955	36.4	0.52

Table 1a: C1 to C7 hydrocarbons in HEADSPACE gas
(μl gas/kg rock)

Project: 33/9-16
Well: NOCS 33/9-16
Depth unit of measure: m * Indicated values in ml gas/kg rock

Depth	C1	C2	C3	iC4	nC4	C5+	sum C1-C4	sum C2-C4	%wet ness	iC4 / nC4
2796.00	96049	24935	19047	2062	2902	1558	144995	48946	33.8	0.71
2805.00	58312	19100	15636	1737	2393	1247	97178	38866	40.0	0.73
2814.00	44458	19209	14599	1504	1954	929	81724	37266	45.6	0.77
2823.00	19389	10297	11196	1447	2052	1098	44381	24992	56.3	0.71
2832.00	20136	6404	4832	586	740	389	32698	12562	38.4	0.79
2841.00	24466	6326	4255	503	600	279	36150	11684	32.3	0.84
2850.00	30617	6451	5314	938	938	518	44258	13641	30.8	1.00
2859.00	14944	4869	4085	670	670	312	25238	10294	40.8	1.00
2868.00	118832	9623	4058	561	589	267	133663	14831	11.1	0.95
2870.00	80551	8096	3332	441	496	232	92916	12365	13.3	0.89

Table 1b: C1 to C7 hydrocarbons in CUTTINGS gas
(µl gas/kg rock)

Project: 33/9-16
Well: NOCS 33/9-16
Depth unit of measure: m * Indicated values in ml gas/kg source rock

Depth	C1	C2	C3	iC4	nC4	C5+	sum C1-C4	sum C2-C4	%wet ness	iC4/nC4
450.00	62	1	-	-	-	-	63	1	1.6	-
490.00	118	2	1	-	-	-	121	3	2.5	-
530.00	129	2	-	-	-	-	131	2	1.5	-
570.00	126	2	-	-	-	-	128	2	1.6	-
610.00	192	2	-	-	-	-	194	2	1.0	-
650.00	162	1	-	-	-	-	163	1	0.6	-
690.00	137	1	-	-	-	2	138	1	0.7	-
730.00	144	3	1	-	-	2	148	4	2.7	-
770.00	160	3	1	-	-	1	164	4	2.4	-
810.00	152	3	1	-	-	2	156	4	2.6	-
850.00	152	2	1	-	-	-	155	3	1.9	-
890.00	128	2	1	-	-	1	131	3	2.3	-
930.00	114	2	1	-	-	1	117	3	2.6	-
970.00	97	1	-	-	-	1	98	1	1.0	-
1010.00	118	2	1	-	-	2	121	3	2.5	-
1050.00	106	2	1	-	-	5	109	3	2.8	-
1090.00	80	3	1	-	-	2	84	4	4.8	-
1130.00	42	1	1	-	-	1	44	2	4.6	-
1170.00	93	6	3	-	1	5	103	10	9.7	-
1210.00	28	2	1	-	-	-	31	3	9.7	-
1250.00	22	2	1	-	-	1	25	3	12.0	-
1290.00	32	2	1	-	-	1	35	3	8.6	-
1330.00	35	2	1	-	-	1	38	3	7.9	-

Table 1b: C1 to C7 hydrocarbons in CUTTINGS gas
(µl gas/kg rock)

Project: 33/9-16
Well: NOCS 33/9-16
Depth unit of measure: m * Indicated values in ml gas/kg source rock

Depth	C1	C2	C3	iC4	nC4	C5+	sum C1-C4	sum C2-C4	%wet ness	iC4 / nC4
1370.00	25	2	1	-	-	1	28	3	10.7	-
1410.00	15	2	1	-	-	1	18	3	16.7	-
1450.00	16	1	1	-	-	1	18	2	11.1	-
1490.00	16	2	1	-	-	1	19	3	15.8	-
1530.00	18	2	1	-	-	1	21	3	14.3	-
1570.00	20	2	1	-	-	1	23	3	13.0	-
1610.00	35	2	1	1	1	6	40	5	12.5	1.00
1650.00	34	2	1	1	1	17	39	5	12.8	1.00
1690.00	26	2	1	-	-	49	29	3	10.3	-
1730.00	69	3	1	1	1	154	75	6	8.0	1.00
1770.00	23	2	1	-	-	28	26	3	11.5	-
1810.00	20	2	1	-	-	7	23	3	13.0	-
1850.00	44	4	2	-	1	7	51	7	13.7	-
1890.00	44	4	2	-	1	5	51	7	13.7	-
1930.00	15	1	1	-	-	1	17	2	11.8	-
1970.00	19	1	1	-	-	4	21	2	9.5	-
2010.00	24	2	2	1	1	4	30	6	20.0	1.00
2050.00	23	3	4	2	3	12	35	12	34.3	0.67
2090.00	36	6	13	11	9	16	75	39	52.0	1.22
2130.00	35	5	14	9	15	15	78	43	55.1	0.60
2170.00	11	2	5	5	10	8	33	22	66.7	0.50
2210.00	16	3	10	19	43	58	91	75	82.4	0.44
2250.00	35	4	5	11	31	107	86	51	59.3	0.35