

SECTIONS SUMMARY

WELL 7324/10-1

OPERATOR Statoll

	36"	26"	17 1/2"	12 1/4"	8 1/2"	6"	TOTAL
Barite -mt		26	158	361	1612	256	2413
Bentonite - mt	23			0,5	166	31	220,5
Bicarbonate - 25 kg				91	274	131	496
NaCL salt - 25 kg				80	516	17	613
Desco CF - 25 lb					212		212
Propol Reg - 25 kg			4	187	35		226
Propol SL - 25 kg			162	214	22		398
Gypsum - 40 kg			222	87			309
Lignite - 25 kg					252	150	402
lime - 40 kg	4		3	8			15
Milgard - 25 kg			7	8			15
NaOH - 25 kg	4		1				5
Probio II - 25 l			16	14			30
Prodefoam - 25 l				2	18	9	29
Prothin - 25 kg					754	339	1092
Soda Ash - 25 kg					85	6	91
Kwickseal M - 40 lb				25	51		76
CMC HV - 25 kg			354				354
Mica/Nutplug Fine - 25 kg				31			31
Mica Fine - 25 kg					170	6	176
Mica Coarse - 25 kg					102	6	108
Nutplug Fine - 25 kg					195	6	201
Nutplug Coarse - 25 kg						6	6
Miltemp - 50 lb						3	3
XCD-Polymer - 25 kg						2	2
Caustic Soda - 25 kg						39	39
Cost (NOK)	46 620	18 200	320 496	493 427	1 790 886	337 602	3007231
Volume (m3)	425	0	1030	772	1906	442	4575
Length (m)	497	558	1570	2235	2627	1152,2	8639,2
Cost per m (NOK)	717,2	284,4	315,2	742	4568,6	1152,2	7779,6
Cost per m3	109,7	0	311,2	639,2	939,6	763,8	2763,5
Days	2	2	11	18	26	8	67
Maximum MW (s.g.)							0

Formation fluid sampling

One segregated formation sample was taken.

Results performed at wellsite:

6 Gallon chamber, 570 m RKB.

Time to filling the chamber: 56 Minutes.

Opening pressure : 0 PSI

Recovery : 10 Liters

Density : 1.06 g/cc (Mud filtrate 1.02 g/cc).

Cl- : 51000 Mg/l (Mud filtrate 22000Mg/l).

Rw : 0.120 at 11 deg.C.

Ph : 8.4

CO2 : 0.2 %

H2S : 0 %

- * The chamber was sealed before being filled up.
- * The water from the 6 gallon chamber is a mixture of mudfiltrate and formation water.
- * There were no indication of associated gas in the water.
- * The sandstones in Triassic were too cemented to get any sample.

2-3/4 Gallon chamber

The chamber was only filled with mud due to a seal failure accured in the beginning of the sampling.

Pressure points

RFT run no.1(logging run 2a).

Depth m RKB	Formation pr PSIA/g/cc	Hyd.pre.bef PSIA/g/cc	Hyd.pre.aft. PSIA/g/cc	Remarks
570	858.9/1.06	1000.8/1.23	1000.6/1.23	Good perm.
574.4	865.4/1.06	1008.5/1.23	1008.6/1.23	V.G perm.
578.5	-	1015.9/1.23	1015.0/1.23	Dry test
580.5	-	1019.1/1.23	1018.6/1.23	Dry test
637.3	970.8/1.071	1116.5/1.23	1118.1/1.23	Good perm.
646	982.3/1.069	1133.4/1.23	1133.2/1.23	V.G perm.
654	994.5/1.069	1147.4/1.23	1147.4/1.23	Good perm.

RFT run no.2(logging run 5b).

Depth m RKB	Formation pr PSIA/g/cc	Hyd.pre.bef PSIA/g/cc	Hyd.pre.aft. PSIA/g/cc	Remarks
1607.3	-	3058.3/1.34	-	Dry test
1607.5	-	3053.6/1.34	-	Dry test
1607.5	3543.7/1.55	3056.9/1.34	-	Low perm.
1608.7	-	3063.6/1.34	-	Dry test
1612.2	-	3066.2/1.34	-	Seal fail
1612.5	3066.8/1.34	3066.6/1.34	3066.9/1.34	Seal fail
1614.0	-	3069.7/1.34	-	Seal fail
1614.5	-	3076.2/1.34	-	Dry test
1617.0	-	3081.4/1.34	-	Dry test
1624.0	-	3088.3/1.34	-	Dry test
1627.0	-	3093.9/1.34	-	Dry test
1636.5	-	3111.9/1.34	-	Dry test
1643.9	-	3126.4/1.34	-	Dry test
1648.9	-	3141.9/1.34	-	Dry test
1649.4	-	3137.1/1.34	-	Dry test
1657.4	-	3152.5/1.34	-	Dry test
1661.7	-	3160.7/1.34	-	Dry test
1664.7	-	3166.6/1.34	-	Dry test
1673.4	-	3183.1/1.34	-	Dry test
1692.9	-	3220.4/1.34	-	Dry test
1695.8	-	3233.5/1.34	-	Dry test
1696.4	-	3227.1/1.34	-	Dry test
1709.1	-	3251.5/1.34	-	Dry test
1796.4	-	3412.8/1.34	-	Dry test
1831.7	-	3483.1/1.34	-	Dry test
1939.4	-	3685.4/1.34	-	Dry test
2078.7	3955.6/1.34	3949.2/1.34	4030.0/1.36	Low perm?
2184.1	-	4152.7/1.34	-	Dry test
2185.9	-	4157.4/1.34	-	Dry test

RFT run no.3(logging run 8C).

Depth m RKB	Formation pr PSIA/gr/cc	Hyd.pr.bef. PSIA/gr/cc	Hyd.pre.aft. PSIA/gr/cc	Remarks
2516.8	-	-	-	Seal fail
2549.6	-	-	-	Seal fail
2550.0	-	5601.4/1.55	5603.1/1.55	Dry test
2550.2	9.5	5591.1/1.54	5595.5/1.54	Dry test
2550.3	-	-	-	Seal fail
2550.5	-	-	-	Seal fail
2550.7	6.9	5588.9/1.54	5591.7/1.54	Dry test
2550.8		5601.8/1.54	5602.5/1.54	Dry test
2550.9	-	-	-	Seal fail
2607.1	17.9	5723.3/1.54	5725.8/1.54	Dry test
2607.6	-	-	-	Seal fail
2608.0	28.1	5723.7/1.54	5727.6/1.54	Dry test
2608.5	-	-	-	Seal fail
2609.0	-	-	-	Seal fail
2611.0	20.3	5722.4/1.54	5729.4/1.54	Dry test
2620.1	13.7	5747.4/1.54	5749.8/1.54	Dry test
2621.3	-	-	-	Dry test
2621.4	-	-	-	Seal fail



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Grading

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Prepared by
Kjell Øygard, Geolab Ann Elin Gilje, Geolab Ingun Skjevraak, Geolab Jorunn Johannesen, Geolab IFE

Approved by ⁴¹⁰
 16/2-90 *S. Olausen*
 S. Olausen, Dept. manager

Text operator K. Øygard

16/2-90 *T. Meyer*
 T. Meyer, Sec. manager

1 INTRODUCTION.

This report presents the results of a standard geochemical study of the well 7324/10-1 in the Barents Sea. The analytical work was performed according to a geochemical standard, which Norsk Hydro, NPD Saga Petroleum and Statoil have agreed on (Organic Geochemistry Standard analytical procedure requirement and reporting guide. June 1988). The project was carried out at Statoil's GEOLAB with subcontracts to IFE ("VITRINITE REFLECTANCE WELL 7324/10-1 OFFSHORE NORWAY", "GAS ANALYSIS OF HEADSPACE CANS, WELL 7324/10-1" and isotopic ratios of extracted fractions, appendices A and B.

Objective.

The aim of this report is to give a organic geochemical evaluation of the source rocks and migrated hydrocarbons, and characterize the hydrocarbons in well 7324/10-1 with respect to potential source kerogen facies and levels of maturity.

The number of analysed samples and type of analyses are as follows:

ANALYSIS	SAMPLE TYPE			
	CUTT	SWC	CORE	TOTAL
Headspace and occluded gas	54			54
TOC	60	25	4	89
Pyrolysis *	25	20	2	47
Extraction	10	3	2	15
Group separation	8	2	2	12
GC saturated	8	2	2	12
GC aromatic	8	2	2	12
Isotope $\delta^{13}\text{C}$ of fractions	3	2	1	6
Biomarker	8	2	2	12

Vitrinite reflectance	20	20	5	45
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* These pyrolyses supplement those carried out on the rig by Statoil, using a GHM-instrument.

TABLE 1.
WELL no.: 7324/10-1, LITHOLOGIC DESCRIPTION.

Sample no. Type	Depth mRKB	TOC %	LITHOLOGY. Rock name, mod lith, colour, gr. size, sorting, roundness, matrix, cementation, hardness, accessories, fossils, porosity, contamination.
S4021 SWC	544	1.00	CLYST: GN BLK, FRM, BLKY-SL FISS, NON CALC
S4022 SWC	555	0.89	CLYST: GRY BLK, SFT, NON CALC
S4042 SWC	561	0.07	CLYST: MOD BRN, MOD HD, SUBFISS, MICROMICA, NON CALC
S4043 SWC	563	1.14	CLYST: BRN BLK, FRM, MASS, SL MICROMICA I/P, NON CALC, I/P MICROPYR
S4023 SWC	564	1.13	CLYST: BRN BLK-OLV BLK, MICROMICA, SL CARB, ELSE A/A
S4044 SWC	567	0.52	SST: OLV GRY, CLR QTZ, V FN, MOD SRTD, SUBRND, ARG MTX, SL CALC CMNT, FRM, CARB GRNS, SL GLAU, SL MICA, V PR VIS POR.
S3987 CAN.S	580		20% SST: CLR TRANSL QTZ, FN-MED RND, WLL SRTD, LSE, 60% CLYST: MED BRN GRY, SFT-FRM, BLKY, V SLTY I/P, OCC GRDG SLTST, NON CALC, CARB SPKS 20% SLTST: V ARG, DK BRN GRY, OCC GRDG V FN SST, CARB SPKS, BLKY, NON CALC, FRM-MOD HD TR% PYR; GLAU
S4024 SWC	599	0.60	CLYST: MED DK GRY, FRM, MASS, MICROMICA, SL CARB, NON CALC.
S4025 SWC	615	0.75	CLYST: DK OLV GRY, SL MORE CARB, ELSE A/A
WETB.	640		40% SLTST: SLTST: V ARG, MED-DK OLV GRY, FRM-MOD HD, BLKY, MICROMICA, CARB, V CALC 40% LST: LT GRY-WH, FRM-MOD HD, BLKY, ARG-SLTY 10% CLYST: DK GRY, FRM-MOD HD, BLKY-SUBFISS, SL CALC, SUBFISS 10% SST: LT GRY, CLR QTZ, V FN, W SRTD, SUBANG, HD, SIL & CALC CMTD, NO VIS POR TR PYR
S4066 SWC	638,645 +648	0.08	SST: LT OLV GRY, CLR QTZ, V FN-FN, MOD WELL SRTD, SUBANG-SUBRND, SL KAOL MTX, V PR CMNTLSE, V FRI-LSE, SL CARB, OCC CLYST LAM
S4026 SWC	676,5	1.03	CLYST: DK BRN GRY, FRM-I/P HD, BLKY, SL CARB I/P, SL AREN I/P, SL CALC I/P.

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S3979 CAN.S	700		90%	CLYST: RD BRN, DSKY YEL, MED GRY-MED GN GRY, FRM, BLKY, SL SLTY, NONCALC
			10%	SST: LT GN GRY, FN-V FN, PR SRTD, ANG, HD, SIL CMTD, GLAU, GRDG TO SLTST, NO VIS POR
S3980 CAN.S	760		50%	CLYST: LT GRY-V LT GN GRY, SDY-SLTY 1/P, FRM, BLKY, NONCALC, SL GLAUC
			40%	SST: LT GN GRY, V FN-FN, PR SRTD, ANG, HD, SIL CMTD, CALC CMTD 1/P, OCC GRDG SLTDT, GLAU, CARB, NO VIS POR TR
			TR	CLYST: MED BRN GRY-DK GRY
S4027 SWC	767	0.29		CLYST: DK GRN GRY, SLTY & SDY, FRM, MASS, CARB, NON CALC.
S3981 CAN.S	820		60%	SST: LT GRN GRY, V FN, GRD TO SLTST 1/P, ARG MTX, SIL CMNT 1/P, ANG-SUBANG, WELL SRTD.
			40%	CLYST: PRED LT OLV GRY-GRM GRY, SFT-FRM, SDY-SLTY, BLKY, NONCALC, MICROMICA
			TR	LST: YEL WH-YEL BRN, HD, BLKY, XLN.
S4028 SWC	858	1.05		CLYST: DK BRN GRY, FRM, MASS, SL CARB, NON CALC
S3982 CAN.S	880		50%	SST: LT GRY, CLR-MLKY QTZ, FN-MED, FAIR-PR SRTD, SUBANG, HD-FRI, CALC CMTD, NO-V PR VIS POR, ARG MTX, GLAUC
			30%	SLTST: LT GRY, OCC DK BRN GRY, GRDR TO V FN SST, FRM-MOD HD, MICROMICA, SL CARB, SL GLAUC 1/P MOD CALC
			20%	CLYST: BRN/BLK, SUBFISS, MOD HD, MICROMICA, CARB, NONCALC, SL SLTY.
			TR	COAL; GLAUC
S3983 CAN.S	940		100%	SST: LT GRY, CLR-LT BRN QTZ, MED-FN, FAIR SRTD, ANG-SUBANG, ARG MTX, PRTLY CALC CMNT, FRI-MOD HD, POOR-FAIR VIS POR, SL CARB, SL GLAUC.
			TR	LST: WH, FRM BLKY.
S4029 SWC	958	1.24		CLYST: DK GRY-MED DK GRY, FRM-HD, WKY, NON CALC
S4030 SWC	989	29.20		COAL: BLK, SHINY, FISS, PYR
S3984 CAN.S	1000		60%	SLTST: LT -MED GRY, HD, BLKY, CARB, SL CALC, MICROMICA.
			30%	CLYST: MULTICOL, DK OLV GRY, LT BRN GRY, BLKY-SUBFISS, MOD HD-HD, CARB, MICROMICA, NO CALC.
			10%	SST : GRY WH-LT GRN GRY, CLR QTZ, KAOL MTX, SL CALC CMNTD 1/P, V FN, MOD SRTD, ANG-SUBANG,

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				V GLAUC.
			GDTR	COAL: BLK, SHNY, V HD, BRTL.
			TR	LST, PYR
S3985 CAN.S	1060		80%	SLTST: DK OLV GRY-BRN GRY, ARG, BLKY, HD, MICROMIC, CARB, NON CALC
			20%	SST: LT GRY, GN GRY, V FN-FN, PRED V FN, ANG-SUBANG, PR SRTD, CALC CMTD, CARB, MICROMIC, V GLAU, MOD VIS POR
			GDTR	CLYST: LT GRY, GN GRY, RD BRN, BLKY-SUBFISS, MOD HD-HD, NON CALC
			TR	LST, COAL, PYR
S4031 SWC	1095	1.95		CLYST: DK GRY-MED DK GRY, SUBFISS, MICA, HD
S3986 CAN.S	1120		50%	CLYST: DK GRY, FRM-MOD HD, BLKY-FLKY, MICROMICA, SLTY, NON CALC
			50%	SLTST: A/A
			TR	SST
S4032 SWC	1148	1.03		CLYST: OLV BLK-OLV GRY, MASS, FRM, SOAPY, NON-CALC
S3987 CAN S	1180		100%	CLYST: DK OLV GRY, I/P V SLTY, BLKY-SUBFISS, HD, MICROMICA, CARB, NON CALC
			TR	SLTST, SST, COAL, PYR
S3988 CAN.S	1240		90%	SST: MLKY WH-LT YEL WH, CLR-TRNSL QTZ, PRED FN, ALSO FN-MED, ANG, SUBANG I/P, MOD SRTD, SIL CMTD, I/P CALC/DOL, CMTD, FRI-HD, CARB, GLAU, NO-PR VIS POR
			5%	CLYST: BRN BLK, DK BRN, FISS-SUBFISS, HD, CARB, MICROMIC, NON CALC
			5%	SLTST: LT-MED OLV GRY, V ARG, BLKY, MICROMICA, CARB, NON CALCA/A
			GDTR	COAL
S4033 SWC	1284	0.77		CLYST: OLV GRY-MED DK GRY, FRM, OCC LAM, SOAPY, NON CALC
S3989 CAN.S	1300		60%	SLTST: MED-DK GRY-DK BRN GRY, MOD HD, BLKY, CARB, MICROMICA, NON CALC, GRDG TO CLYST
			20%	CLYST: BRN BLK-OLV BLK, HD BLKY, MICROMICA, SL SLTY, SL CARB, NON CALC
			20%	SST: MED GRY-BRN GRY, CLR-MLKY-LT BRN QTZ, FN, FAIR SRTD, ANG, V HD-HD, CALC-DOL-PYR CMTD, NO VIS POR, GRDG TO SLTST AND SOY DOL, CARB
			TR	PYR
S3990	1360		90%	CLYST: DK GRY-DK BRN GRY, MOD HD, SUBFISS-BLKY,

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CAN.S				MICRO-MICA, CARB, SLTY, I/P GRDG TO SLTST
			10% TR	SLTST: A/A SST, PYR
S4034 SWC	1383	1.04		CLYST: OLV BLK-DK GRN GRY, FRM, MASS, MICROMICA, SOAPY, NON CALC
WETB.	1411		100%	CLYST: OLV GRY-DK OLV GRY, MED DK GRY, FRM-MOD HD, SUBFISS-BLKY, MICROMICA, CARB, SLTY, I/P GRDG TO SLTST
CORE #1	1412			CLYST/SH: DK GRY-DK BRN GRY, FRM-HD, PRED MOD HD, MASS-FISS, SL-I/P MOD CARB, OCC CARB PLANT FRGS, MICROMICA, NON CALC-OCC TR CALC GRNS, POSS SILICIFED I/P, I/P GRDG TO SLTST
#	1414,66		A/A	
WETB.	1420		100% TR	CLYST/SH: OLV GRY-DK OLV GRY, MED DK GRY, FIRM-MOD HD, SUBFISS-BLKY, MICRO-MICA, CARB, SLTY, I/P GRDG TO SLTS SST: OCC GLAU
S3991 CAN.S	1420			
WETB.	1423		A/A	BUT NO SST
#	1432		100% TR	CLYST/SH: A/A DOL
#	1438		50% 50%	CLYST/SH: A/A SLTST: MED GRY-MED DK GRY, SDY I/P, MOD HD, BLKY, CARB, MICROMICA, NON CALC
#	1444		A/A	
#	1450		A/A	
#	1456		100% TR	CLYST/SH: DK GRY-DK BRN GRY, MOD HD SUBFISS-BLKY, NON CALC, I/P GRD TO SLTST PYR FORAMS, LS
S4035 SWC	1458	1.06		CLYST: OLV GRY-DK GRN GRY, FRM, PRTLY LAM, SOAPY, NON CALC
WETB.	1462		100%	CLYST: AS 1456
"	1468	1.01	A/A	
"	1474		A/A	

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"	1480		A/A	
S3992 CAN.S	1480			
WETB.	1486		A/A	
"	1492	0.93	A/A	
"	1498		100% TR	CLYST/SH: DK GRY-DK BRN GRY, MOD HD, SUBFISS-BLKY NON CALC LS,DOL,SLTST
"	1504		A/A	
"	1510		100%	CLYST/SH: A/A
"	1516		A/A	
"	1522		A/A	
"	1525		100%	CLYST/SH: 1/P LESS SLTY AND MORE FISS, ELSE A/A
"	1528	0.94	A/A	
"	1534		100%	CLYST/SH: ONLY TR OF BRN GRY, ELSE A/A
"	1540		A/A	
S3993 CAN.S	1540			
WETB.	1546		A/A	
"	1552		100% TR	CLYST/SH: A/A PYR
"	1558	0.80	100%	CLYST/SH: A/A
"	1564		100% TR	CLYST/SH: A/A SLTST/LS/MICROPYR CONC
"	1570		100% TR	CLYST/SH A/A LS/CALC SLTST/MICROPYR CONC
WETB.	1582		100% TR	CLYST: DK GRY-BRN GRY, FRM-MOD HD, BLKY-SUBFISS, MICROMIC, NON-CALC, SLTY ANHY
"	1588		A/A	ALSO TR PYR
"	1594		A/A	ALSO TR FN-V FN SST

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S4036 SWC	1599,5	0.87		CLYST: OLV BLK, SL CALC, MOD HD, SL SLTY, MICROMICA
WETB.	1600		100% TR	CLYST: AS 1582 PYR, ANHY, CALCITE, SST
S3994 CAN.S	1600			
S4067 SWC	1599,5 +1603,5	1.35		CLYST: AS 1599,5
WETB.	1606	2.53	80% 20% TR	CLYST: GRY BLK-BRN BLK, V MICROMIC,SUBFISS, CALC,HD,SLTY CLYST: DK GRY A/A A/A
WETB.	1612	1.81	50% 40% 10% TR	CLYST: DK GRY-BRN GRY, FRM-MOD HD,BLKY-SUBFISS, MICROMIC, NON CALC,SLTY CLYST: DK GRY A/A SST: QTZ,CLR-WH, FN,W SRT,W CALC CMT,CARB,MICA PYR
"	1618		40% 40% 20% TR	CLYST: GRY BLK-BRN BLK A/A CLYST: DK GRY, A/A SST: A/A PYR, LST, DOL
"	1624		80% 20% TR	SST: A/A CLYST: A/A PYR
"	1630		60% 40% TR	SST: MED DK GRY-MED GRY, V FN-FN,W SRT,RND, CALC CMT,HD,SLTY,CARB,GLAU A/A CLYST: DK GRY A/A PYR AND GLAU
"	1636	0.67	70% 30%	CLYST: DK GRY A/A SST: A/A
"	1642		100% TR	SST: MED DK-MED GRY, V FN-FN, W SRT, RND, CALC CMT, HD, SLTY, CARB, GLAU CLYST: DK GRY-BRN GRY
"	1648		70% 30%	SST: A/A CLYST: DK GRY-BRN GRY, FRM-MOD HD, BLKY-SUBFISS, MICROMIC, NON CALC, SLTY
WETB.	1657	1.12	90% 10%	SST: A/A CLYST: A/A
S3995	1660		70%	SST: MED DK-MED GRY, V FN-FN, W SRT, RND,

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WELL no.: 7324/10-1, LITHOLOGIC DESCRIPTION.

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CAN.S			30% TR	CALC CMT, HD, SLTY, CARB, GLAU CLYST: DK GRY-MED GRY, V FN-FN, W SRT, RND, CALC CMT, HD, SLTY, CARB, GLAU LST
CORE #2	1661			CLYST: DK GRY-GRY BLK, MOD HD, SL SLTY, SL CARB, MICROMIC, NON CALC
S4068 CORE	1667,25	1.91		A/A
"	1667,3	0.95		A/A
WETB.	1670	0.80	90% 10% TR	CLYST: DK GRY-GRY BLK A/A SST: A/A LST
"	1678		70% 30% TR	CLYST: DK GRY-GRY BLK A/A SST/SLTST:SLT-V FN ELSE A/A CALCITE
"	1684		100% TR	CLYST: A/A SST/SLTST:A/A
"	1690		90% 10%	CLYST: DK GRY-BRN GRY, FRM-MOD HD, BLKY-SUBFISS, MICROMIC, NON CALC, SLTY SST/SLTST:OLV GRY, PA GRY, OCC WH, SLT-FN, W CALC CMT, ARG, GLAU, SL CARB, MOD HD
"	1696		A/A	
"	1702		90% 10% TR	CLYST: OLV GRY, LT OLV GRY, DK GRY ELSE A/A SST/SLTST:A/A LST/DOL:PA GRY-PA BRN, MOD HD, XLN
"	1708		100% TR TR	CLYST: A/A SST/SLTST:A/A LST/DOL:A/A
"	1714		100% TR	CLYST: A/A SST/SLTST:A/A
"	1720		60% 40% TR	CLYST: A/A SST/SLTST:A/A LST/DOL:A/A
S3996 CAN.S	1720			
WETB.	1726		50%	SST: LT GRY-V LT GRY, VFN-FN, W SRT, RND, CALC CMT, HD, SLTY, CARB, GLAU, ARG SUBFISS, SDY, SLTY

TABLE 1.
WELL no.: 7324/10-1, LITHOLOGIC DESCRIPTION.

Sample no. Type	Depth mRKB	TOC %	LITHOLOGY. Rock name, mod lith, colour, gr. size, sorting, roundness, matrix, cementation, hardness, accessories, fossils, porosity, contamination.
"	1732	1.07	90% CLYST: A/A 10% SST: A/A TR LST
"	1738	0.98	70% CLYST: A/A 30% SST: A/A TR LST
WETB.	1744	0.87	80% CLYST: A/A 20 SST: A/A TR LST/DOL, COAL
"	1750		90% CLYST: A/A 10% SST: A/A TR PYR, GLAU
"	1756		80% SST: A/A 20% CLYST: A/A TR A/A
"	1762		50% SST: LT GRY-V LT GRY, VFN-FM, W SRT, RND, CALC CMT, HD, CARB, GLAU, ARG TR PYR, GLAU
"	1765		90% CLYST: DK OLV GRY, DSKY YEL BRN, OLV GRY, NON CALC, SL MICROMIC, MICRO CARB FRAGS 10% SST: A/A TR A/A
"	1768		A/A
"	1774		A/A
"	1777		A/A
CORE #3	1777		CLYST: DK GRY, HD-V HD, SUBFISS, SL SLTY, SL MICROMIC, NON CALC SST/SLTST: OLV GRY-PA GRY, OCC WH, SLTY-FM, W CALC CMT, MOD HD, SL MICA, OCC GLAU, OCC CARB
"	1780		A/A
S3997 CAN.S	1780		100% SH: GRY-BLK, MOD HD, SUBFISS, SL SLTY, NON CALC TR SST/SLTST, LST
CORE #3	1781		CLYST: DK GRY, HD-V HD, SUBFISS, SL SLTY, SL MICROMIC, MICROMIC CARB FRAGS, NON CALC
"	1782		A/A
S4069 CORE	1782,5	0.92	SH/CLYST: DK GRY-BLK, ELSE A/A

TABLE 1.
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Sample no. Type	Depth mRKB	TOC %	LITHOLOGY.	Rock name, mod lith, colour, gr. size, sorting, roundness, matrix, cementation, hardness, accessories, fossils, porosity, contamination.
"	1783	1.10	A/A	
WETB.	1786		100% TR	SH: GRY-BLK, DSKY YEL BRN, ORGANIC RICH, MOD HD, SUBFISS, SL SLTY, NON CALC SST/SLTST
"	1792	1.20	A/A	
WETB.	1795		100% TR TR	SH: A/A LST SST/SLTST
"	1798	0.75	50% 50% TR	SST/SLTST: OLV-GRY - PA GRY, SLT-VFN OCC FN, SUBANG, W CALC CMT, MICA, SL ARG, OCC GLAU SH: A/A LST
"	1804	0.73	50% 50% TR TR	SH: A/A SLTST: OLV GRY, SLT, CALC, MICA, MOD HD, V ARG SST PYR
"	1810	0.92	70% 30% TR	SH: A/A SLTST: A/A SST
"	1816		90% 10% TR TR	SH: OLV BLK ELSE A/A SLTST: A/A SST PYR
"	1822		100% TR	SH: OLV BLK A/A SST
"	1828		80% 20% TR	SH: A/A SST: A/A LST
"	1834		70% 30%	SST: PA GRY-MED GRY, VFN-FN, W SRTD, W CALC CMT, POOR VIS POR, OCC SL ARG, MICA, GLAU, OCC W/ COAL FRAGS SH: OLV BLK A/A
"	1840		60% 40% TR	SST/SLTST: LT OLV GRY-GRN GRY, CALC CMT, MICA, MOD HD, VFN-FN, W TR GLAU, POOR VIS POR CLYST/SH: MED DK GRY OCC DSKY YEL BRN, ORG RICH I/P W CARB FRAG, SLTY, NON CALC, MOD HD PYR
S3998 CAN.S	1840			

TABLE 1.
WELL no.: 7324/10-1, LITHOLOGIC DESCRIPTION.

Sample no.	Depth mRKB	TOC %	LITHOLOGY.	Rock name, mod lith, colour, gr. size, sorting, roundness, matrix, cementation, hardness, accessories, fossils, porosity, contamination.
WETB.	1846		80% 15% 5%	CLYST/SH: DK GRY-MED GRY, ELSE A/A SST/SLTST: A/A LS: MOD YEL BRN-MOD ORN PNK, HD,XLM
"	1852		90% 5% 5%	CLYST/SH: A/A SST: A/A LS: A/A
"	1858		A/A	
WETB.	1864		A/A	
"	1870		100% TR TR	SH: OLV BLK, MOD HD, NON CALC, SUBFISS, SL SLTY, SL MICROMIC SST PYR
"	1876		100% SL TR	SH: A/A SST
"	1882		100%	SH: A/A
"	1888		100% TR	SH: A/A DOL
"	1894	0.91	100% TR	SH: A/A SST
"	1900	0.76	100% TR	SH: A/A SST
S3999 CAN.S	1900	0.75	100% TR TR TR	CLYST: DK GRY BRN, BLOCKY OCC SUBFISS,MOD HD, SL SLTY, SL MICROMIC, SL CARB, SL CALC SH LST SLTST-SST
WETB.	1906		100% TR	SH: AS 1870 SST
"	1912		A/A	
"	1918		100%	SH: OLV BLK, MOD HD, NON CALC, SUBFISS, SL SLTY, SL MICROMIC
"	1924		100% TR	SH: A/A SST
"	1930		A/A	
"	1936		100% TR	SH: A/A SST

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Sample no. Type	Depth mRKB	TOC %	LITHOLOGY.	Rock name, mod lith, colour, gr. size, sorting, roundness, matrix, cementation, hardness, accessories, fossils, porosity, contamination.
"	1942		60% SST: 40% SH:	PA-OLV GRY, VFN, W CALC CMT,MOD HD, MICA, SL CARB, SL ARG A/A
"	1948		60% SH: 40% SST: TR LST	OLV BLK-OLV GRY A/A A/A
WETB.	1954		90% SH: 10% SST: TR	OLV BLK-MED DK GRY, I/P V SLTY, W CARB FRAG, NON CALC, FISS - SUBFISS, MOD HD LT OLV GRY - LT GRY, W CALC CMT, VFN - FN, SLTY, GLAU, W CARB FRAG, MOD HD, LO VIS POR PYR, ANH,LST
"	1960		80% SH: 20% SST: TR	A/A A/A A/A
S4000 CAN.S	1960	0.64	90% CLYST: 10% SST:	DK BR GRY, BLKY-SUBFISS, MOD HD, I/P V SLTY, SL CARB, SL CALC LT OLV GRY - LT GRY, ELSE A/A
WETB.	1966		60% SH: 40% SST: TR	AS 1954 I/P MORE SLTY, ELSE A/A PYR, ANH, LST
"	1972	0.77	90% SH: 10% SST/SLTST: GD TR LS: TR	A/A A/A WH-LT GRY, HD, XLM PYR, GLAU
"	1978	0.65	70% SST/SLTST: 30% SH: TR	A/A A/A LS, COAL FRAG
"	1984	0.75	70% SH: 30% SST: TR	OLV BLK,ELSE A/A VFN-FN,ELSE A/A LST/DOL
"	1990		80% SH: 20% SST: TR	OLV BLK,MOD HARD, SL-V SLTY, W CARB FRAG, NON CALC, FISS - SUBFISS, MOD HD LT OLV GRY - LT GRY, W CALC CMT, VFN - FN, SLTY, GLAU W CARB FRAG, MOD HD, LO VIS POR LST/DOL
S4001 CAN.S	1990	0.80	100% CLYST/SH: TR	A/A SST, LS
WETB.	1996		95% SH: 5% SST:	AS 1990 LT OLV GRY - LT GRY, W CALC CMT, VFN - FN, SLTY, GLAU W CARB FRAG, MOD HD, LO VIS POR

TABLE 1.
WELL no.: 7324/10-1, LITHOLOGIC DESCRIPTION.

Sample no. Type	Depth mRKB	TOC %	LITHOLOGY.	Rock name, mod lith, colour, gr. size, sorting, roundness, matrix, cementation, hardness, accessories, fossils, porosity, contamination.
"	2002		100% TR	SH: A/A SST
"	2008		A/A	
"	2014		A/A	
"	2019		100% TR	SH: A/A SST: A/A, GRD TO SLTST
WETB.	2026		60% 40%	SH: A/A SST: V SLTY-ARG, OLV BLK-DK OLV GRY, V FN-SLT, FAIR SRTD, ANG, HD, WLL CALC CMNT, ALMOST MRL, SL CARB
"	2032		100% TR	SH: A/A BUT V SLTY SST
"	2038		60% 40%	SLTST: OLV GRY-OLV BLK, HD, V ARG, MOD CALC I/P, SL CARB, MICA, MICROPYR SH: A/A, V SLTY
"	2044		A/A	BOTH SLTST AND SH PRTLY BRN BLK.
"	2050	0.88	80% 20%	SH: A/A SLTST: A/A
S4020 CAN.S	2050	0.80	90% 10%	CLYST: BLK BRN, SUBFISS, MOD HD, V SLTY, SL MIC, SL CARB, SL GLAU, SL CALC SLTST: A/A
WETB.	2056	1.07	100% TR	SH: OLV BLK, MOD HARD, SL-V SLTY, W CARB FRAG, NON CALC, FISS - SUBFISS, MOD HD LST
"	2062		100% TR	SH: A/A SST
"	2068	1.02	80% 20% TR	SLTST: A/A SH: A/A LST
"	2074	0.91	80% 20%	SLTST: DK OLV GRY-MED GRY, NON CALC, ARG, MICA SH: OLV BLK-OLV GRY, MOD HD, SL SLTY, NON CALC, MOCROMIC
"	2080	0.74	90% 10% TR	SLTST: A/A SH: A/A LST
S4002 CAN.S	2080	0.80	100%	CLYST: BLK-BRN, SUBFISS, MOD HD, V SLTY, SL MICA, SL CARB, SL GLAU, SL CALC, OCC PYR

TABLE 1.
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Sample no. Type	Depth mRKB	TOC %	LITHOLOGY. Rock name, mod lith, colour, gr. size, sorting, roundness, matrix, cementation, hardness, accessories, fossils, porosity, contamination.
WET .	2086		80% SLTST: DK OLV GRY-MED GRY, NON CALC, ARG, MICA 20% SH: OLV BLK-OLV GRY, MOD HD, SL SLTY, NON CALC, MICROMIC TR LST
"	2092		A/A
"	2098		80% SLTST: A/A 20% SH: A/A TR LST
"	2104		80% SLTST: A/A 20% SH: A/A TR LST, SST TR SST
"	2110	0.73	70% SLTST: DK OLV GRY-MED GRY, NON CALC, ARG, MICA 30% SH: OLV BLK-OLV GRY, MOD HD, SL SLTY, NON CALC, MICROMIC TR LST
"	2116		50% SLTST: A/A 50% SH: A/A TR LST
"	2122		50% SLTST: A/A 50% SH: A/A TR LST, PYR
"	2128	0.91	80% SH: A/A 20% SLTST: A/A TR PYR
"	2134		80% SH: A/A 20% SLTST: A/A, PRTLY CALC TR PYR
"	2140		60% SH: OLV BLK-OLV GRY, MOD HD, SUBFISS, NON CALC, SL SLTY, MICROMICA. 20% SLTST: DK OLV GRY-MED GRY, MOD HD, V ARG, NON-SL CALC, MICA, OCC SL CARB. 20% LST: WH-OFF WH-OLV GRY, HD, BLKY, XLN. TR PYR
S4003 CAN.S	2140	0.88	100% CLYST: BLK-BRN, SUBFISS, MOD HD, V SLTY, SL MICA, SL CARB, SL GLAU, SL CALC, OCC PYR TR LST
WETB.	2146		90% SH: AS 2140 - WETBAG 10% SLST: AS 2140 - WETBAG TR LST, PYR

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Sample no. Type	Depth mRKB	TOC %	LITHOLOGY.	Rock name, mod lith, colour, gr. size, sorting, roundness, matrix, cementation, hardness, accessories, fossils, porosity, contamination.
"	2152		100% TR	SH: A/A SLTST, LST
"	2158		A/A	
"	2164	0.77	100% TR GD TR	SH: A/A SLYST, PYR LST
"	2170		A/A	
WETB.	2176		50% 50% TR	SH: A/A LST: OLV GRY-OFF GRY, HD, BLKY, V ARGIL. SLST
"	2182		60% 40% TR	SH: A/A, THAT IS: OLV BLK-OLV GRY, MOD HD, SUBFISS, NON CALC, SL SLTY, MICRONICA. SLTST: A/A, THAT IS: DK OLV GRY-MED GRY, MOD HD, V ARG, NON- V CALC, MICA, OCC SL CARB. LST, PYR
"	2188		A/A	
"	2194	1.07	A/A	
"	2200	1.19	50% 50% TR	SH: A/A SLTST: A/A PYR AND LST
S4004 CAN.S	2200	1.10	90% 10% TR	CLYST: BLK BRN,BLOCKY-SUBFISS, MOD HD, SL-V SILTY, SL MICROMIC, SL CARB, SL GLAU, SL CALC SH: DK GRY - BLK, MOD HD, BLOCKY, SL CALC SLTST, SST
WETB.	2206	1.10	50% 50% TR	SH: A/A, THAT IS: OLV BLK-OLV GRY, MOD HD, SUBFISS, NON CALC, SL SLTY, MICRONICA. SLTST: A/A, THAT IS: DK OLV GRY-MED GRY, MOD HD, V ARG, NON- V CALC, MICA, OCC SL CARB. LST, PYR
"	2212	1.10	A/A	
"	2218		A/A	
"	2224		80% 20% TR	SLTST: A/A, SH: OLV BLK,MOD HD,SL SLTY,SL MICROMIC,SUBFISS LST,SST

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Sample no. Type	Depth mRKB	TOC %	LITHOLOGY.	Rock name, mod lith, colour, gr. size, sorting, roundness, matrix, cementation, hardness, accessories, fossils, porosity, contamination.
"	2230		80% 20% TR	SLTST: A/A SH: A/A LST, SST
WETB.	2241		70% 10% 20% TR	SLTST: MED-DK GRY, BRN GRY-OCC LT BRN GRY, OCC SDY, PRED V ARG GRDG TO CLYST, MOD HD, MICROMICA-MICA, I/P MICROPYR, PRED SL-MOD CARB, NON CALC, I/P LAM CLYST: BRN GRY-MED GRY, SLTY, SFT-FRM, MICROMICA, SL CARB, NON CALC SH: A/A LST, CALCITE, PYR
"	2248	0.80	90% TR	SLTST: A/A BUT MORE BRN GRY, DOM FRM-OCC MOD HD, OCC SFT SH, LST
"	2254		70% 30% TR	CLYST: OLV GRY-OLV BLK, MED DK GRY, MOD HD, SUBFISS, SL CARB, MICROMICA, SL-NON CALC, GRD TO SLTST. SLTST: DK GRY-OLV GRY, MOD HD, BLKY, MICROMICA, SL CARB, SL-NON CALC. LST
"	2260		A/A	SFTER CLYST AND SLTST.
S4005 CAN.S	2260	0.60	90% 10% TR	CLYST: AS 2260 WETBAG SH: DK GRY - BLK, MOD HD, BLOCKY, SL CALC SLTST, LST
WETB.	2263	3.08	100% TR	CLYST/SH: BRN BLK, FRM, I/P MOD HD, BLKY-SUBFISS, FISS I/P, MICROMICA, SL-MOD CARB, MOD CALC. LST
"	2266	4.45	100%	CLYST/SH: A/A
"	2269	3.13	A/A	CMT AND MUD ADD CONTAM.
S3957 WETB.	2269	1.93 0.68		SH: A/A CLYST: A/A
Klapmyss Fm. WETB.	2272		A/A	
S3958 WETB.	2272	2.71 0.56		SH: A/A CLYST: A/A
WETB.	2278		50% 30% 20%	CLYST/SH: BRN BLK, A/A SLTST: PRED A/A CLYST: A/A

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WELL no.: 7324/10-1, LITHOLOGIC DESCRIPTION.

Sample no.	Depth mRKB	TOC %	LITHOLOGY.	Rock name, mod lith, colour, gr. size, sorting, roundness, matrix, cementation, hardness, accessories, fossils, porosity, contamination.
			TR	LST: A/A VERY CONTAM BY MUD ADD.
WETB.	2284		30% 40% 30% TR	CLYST/SH: A/A SLTST: A/A CLYST: A/A LST CONTAM A/A
"	2290		50% 40% TR	SLTST: PRED MED DK GRY, OCC OLV GRY-BRN GRY, ARG, MOD HD-1/P FRI, SUBFISS, MICROMICA-1/P V MICROMICA, SL CARB, SL-1/P MOD CALC, 1/P GRDG TO CLYST CLYST: MED DK GRY, OLV GRY-DK OLV GRY, SLTY, FRM-MOD HD, SUBFISS, MICROMICA, SL CARB, PRED SL CALC, 1/P GRDG TO SLTST CLYST/SH, PYR SL CHT CONTAM, ABUN MUD ADD CONTAM.
"	2296	0.91	A/A	CONTAM A/A
"	2302		70% 30% TR	SLTST: DK BRN GRY-DK OLV GRY, ALSO MED DK GRY-DK GRY, OCC MICROPYR, ELSE A/A CLYST: DK BRN GRY-DK OLV GRY, ALSO MED DK GRY, ELSE A/A CLYST/SH, PYR CONTAM A/A
"	2308		90% 10% TR	SLTST: A/A CLYST: A/A CLYST/SH, PYR CONTAM A/A
"	2314		80% 20% TR	SLTST: A/A CLYST: A/A CLYST/SH, PYR CONTAM A/A
"	2320	2.49	A/A	CONTAM A/A
S4006 CAN.S	2320	1.53	60% 40% TR	CLYST: A/A SLTST: A/A SH, PYR CONTAM A/A
WETB.	2326		80% 20% TR	SLTST: A/A CLYST: A/A CLYST/SH, PYR CONTAM A/A
WETB.	2332		80%	SST: V ARGIL & SLTY, DK BRN GRY-MED GRY, V FN-SLT, FAIR SRTD, BLKY, HD, V MICA, CALC CMNT.

TABLE 1.
WELL no.: 7324/10-1, LITHOLOGIC DESCRIPTION.

Sample no. Type	Depth mRKB	TOC %	LITHOLOGY.	Rock name, mod lith, colour, gr. size, sorting, roundness, matrix, cementation, hardness, accessories, fossils, porosity, contamination.
			20% TR	CLYST: MED GRY, FRM, BLKY-SUBFISS, SL-MOD CALC, MICRONICA, MOD-V SLTY. PYR CONTAM BY MUD ADDITIVES
"	2338	0.61	A/A	SST GRD TO SLTST. CONTAM A/A
"	2344	0.73	30% 70% TR	SLTST/SST: A/A CLYST: A/A PYR CONTAM A/A
"	2350		100% GD TR TR	CLYST: A/A SLTST/SST: A/A PYR CONTAM A/A
"	2356	0.68	70% 30% TR	CLYST: A/A SLTST/SST: A/A PYR CONTAM A/A
"	2362		A/A	BOTH SLTST AND CLYST ARE MED-DK GRY, ELSE A/A CONTAM A/A
"	2368		30% 70%	CLYST: A/A, THAT IS: MED-DK GRY, MOD HD, BLKY-SUBFISS, SL-NON CALC, MICRONICA. SLTST/SST: A/A, THAT IS: MED-DK GRY, MOD HD-HD, FRI I/P, BLKY, MICA, MOD-SL CALC. CONTAM. BY MUD ADDITIVES
"	2373		60% 40%	CLYST: A/A SLTST: A/A CONTAM A/A
"	2380		10% 10% 80%	SLTST: A/A CLYST: A/A CLYST/SH: BRN BLK-GRY BLK, MOD HD, BLKY, SUBFISS-FISS, MICRONICA, SL CARB, SL-MOD CALC. CONTAM A/A
S4007 CAN.S	2380	0.99	80% 40%	CLYST: MED GRY - DK BRN GRY, SLTY - V SLTY, FRM-MOD HD, SUBFISS, MICRONICA, SL CARB, SL CALC SLTST: DK GRY, MOD HD, I/P V MICROMIC, SL CARB, MOD CALC, I/P GRD TO CLYST ABUN MUD ADD CONTAM
WETB.	2386		100% TR	CLYST/SH: BRN BLK-GRY BLK, ELSE AS 2380 WETBAG CLYST

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Sample no. Type	Depth mRKB	TOC %	LITHOLOGY. Rock name, mod lith, colour, gr. size, sorting, roundness, matrix, cementation, hardness, accessories, fossils, porosity, contamination.
			CONTAM A/A
S3955 WETB.	2386	3.44 0.50	CLYST/SH: A/A CLYST
"	2392		A/A
"	2398		A/A
"	2404		90% CLYST/SH: A/A, PRTLY MED BRN GRY. 10% SLTST: MED BRN GRY, FRM-MOD HD, BLKY, MOD CALC, MICROMICA, V ARGIL. TR PYR
"	2410		90% CLYST/SH: BRN BLK-GRY BLK, SLTY, MOD HD, SUBFISS-FISS, MICROMICA, SL CARB, SL-MOD CALC, I/P GRDG TO V ARG SLTST 10% SLTST: MED BRN GRY, FRM-MOD HD, BLKY, MOD CALC, MICROMICA, V ARGIL. TR PYR, SST
"	2416		90% CLYST/SH: A/A BUT I/P (ABOUT 20%) BRN GRY AND SUBFISS-BLKY, ELSE A/A 10% SLTST: A/A TR PYR
"	2422		90% CLYST/SH: A/A 10% SLTST: A/A TR SST, PYR
"	2428	1.25	90% CLYST/SH: LESS BRN GRY CLYST, ELSE A/A 10% SLTST: A/A TR PYR
"	2432		A/A
"	2434		A/A
S3956 WETB.	2434	2.20 0.90	SH: A/A CLYST: A/A
"	2437		60% CLYST/SH: A/A 40% CLYST: BRN GRY-MED DK GRY, MOD HD, SUBFISS-FISS, SL CARB, OCC GRDG TO ARG SLTST TR SLTST, PYR
"	2440		A/A
S4008 CAN.S	2440		
WETB.	2443		80% CLYST/SH: A/A 20% CLYST: A/A

TABLE 1.
WELL no.: 7324/10-1, LITHOLOGIC DESCRIPTION.

Sample no.	Depth mRKB	TOC %	LITHOLOGY.	Rock name, mod lith, colour, gr. size, sorting, roundness, matrix, cementation, hardness, accessories, fossils, porosity, contamination.
			TR	PYR
"	2449		60%	CLYST/SH: A/A
			40%	CLYST: A/A
			TR	PYR
"	2455		70%	CLYST/SH: GRY BLK-BRN BLK, SLTY, MOD HD, SUBFISS-I/P FISS, MICROMICA, SL CARB, SL-I/P MOD CALC
			10%	CLYST: OLV GRY-MED DK GRY, SL-V SLTY, MOD HD, SUBFISS-BLKY, SL MICROMICA, SL CARB, NON-MOD CALC
			20%	ARG LST/DOL: BRN GRY-DK BRN GRY, V ARG/SLTY, I/P GRDG TO CALC/DOL SLTST, HD, SUCR, I/P CARB, XLN
			TR	PYR, CALCITE
"	2461		80%	CLYST/SH: GRY BLK, NON-SL CALC, OCC MOD CALC, ELSE A/A
			20%	CLYST: A/A
			TR	ARG LST/DOL, PYR
"	2467		90%	CLYST/SH: A/A
			10%	CLYST: A/A
			TR	LST/DOL, CALCITE, PYR
"	2472		A/A	
"	2478		80%	CLYST/SH: GRY BLK-BRN BLK, SLTY, MOD HD, SUBFISS-I/P FISS, MICROMICA, SL CARB, SL-I/P MOD CALC
			20%	CLYST: OLV GRY-MED DK GRY, SL-V SLTY, MOD HD, SUBFISS-BLKY, SL MICROMICA, SL CARB, NON-MOD CALC
			GDTR	ARG LST/DOL
			TR	PYR, CALCITE
"	2485		90%	CLYST/SH: A/A
			10%	CLYST: A/A
			TR	ARG LST/DOL, PYR
"	2491		100%	CLYST/SH: A/A
			GDTR	CLYST: A/A
			TR	ARG LST/DOL, PYR
"	2497		90%	CLYST/SH: A/A
			10%	CLYST: A/A
			TR	LST/DOL, PYR: A/A
WETB.	2500		100%	CLYST/(SH): PRED SUBFISS-I/P BLKY, INCR SLTY GRDG TO SLTST, OCC MOCROPYR, ELSE A/A
			TR	CLYST, LST/DOL, PYR

TABLE 1.
WELL no.: 7324/10-1, LITHOLOGIC DESCRIPTION.

Sample no. Type	Depth mRKB	TOC %	LITHOLOGY.	Rock name, mod lith, colour, gr. size, sorting, roundness, matrix, cementation, hardness, accessories, fossils, porosity, contamination.
S4009 CAN.S	2500			
WETB.	2503		100% TR	CLYST/(SH): PRED SUBFISS-I/P BLKY, INCR SLTY GRDG TO SLTST, OCC MICRO-PYR, ELSE A/A CLYST, LST/DOL, PYR
"	2509		90% 10% TR	CLYST/(SH): GRY BLK-DK GRY, ELSE A/A CLYST: OLV GRY-MED DK GRY, A/A LST/DOL, PYR, CALCITE
WETB.	2515		80% 10% 10% TR	CLYST/SH: GRY BLK - DK GRY, SUBFISS-BLKY, MICROMIC, SLTY, SL CALC. CLYST: OLV GRY-MED DK GRY, SL-V SLTY, MOD HD, SUBFISS-BLKY, SL CARB, NON-MOD CALC, SL MICROMIC. SST/SLTST: LT GRY-MED GRY, ARG, V FN, HD, RNDED, WL SRTD, V CALC CMTD PYR, CALC, LS/DOL
"	2521		50% 40% 10% TR	CLYST/SH: A/A SST/SLTST: A/A CLYST: A/A A/A
"	2527		40% 30% 30% TR	SST/SLTST: A/A CLYST/SH: A/A CLYST: A/A A/A
"	2533		40% 30% 30% TR	CLYST: OLV GRY-MED DK GRY A/A SST/SLTST A/A CLYST/SH: GRY BLK-DK GRY A/A A/A
"	2539		80% 10% 10% TR	SST/SLTST A/A CLYST A/A CLYST/SH A/A A/A
"	2545		60% 30% 10%	SST/SLTST: LT GRY-MED GRY, ARG, V FN-SLTY, HD, RNDED, WL SRTD, V CALC CMTD, NO VIS POR CLYST: OLV GRY-MED DK GRY, SL- V SLTY, MOD HD, SUBFISS-BLKY SL CARB, NON-MOD CALC, SL MICROMIC CLYST/SH: GRY BLK-DK GRY, SUBFISS-BLKY, MICROMIC, SLTY, V - SL CALC
WETB.	2550		40%	SST: DK BRN GRY, CLR-SMKY QTZ, V FN-I/P SLT, FAIR-PR SRTD, SUBANG-SUBRND, V ARG AND SLTY NTRX, SL CALC CMTD, MOD HD-FRI, MICA,

TABLE 1.
WELL no.: 7324/10-1, LITHOLOGIC DESCRIPTION.

Sample no. Type	Depth mRKB	TOC %	LITHOLOGY. Rock name, mod lith, colour, gr. size, sorting, roundness, matrix, cementation, hardness, accessories, fossils, porosity, contamination.
			SL CARB, OCC TR BFF SPKS, I/P MICROPYR, PR VIS POR
			40% SST/SLTST: LT-MED GRY, CLR QTZ, SLT-V FN, SL-I/P V ARG MTRX, WLL CALC CMTD - WLL SIL CMTD, OCC MICA, OCC SL CARB, PRED NO VIS POR
			20% CLYST: LT-DK GRY, DK OLV GRY, SLTY, I/P GRDG TO SLTST, MOD HD, BLKY-I/P SUBFISS, MICROMICA I/P, SL CARB, NON-SL CALC, OCC MOD CALC . ABUN LIGN CONTAM
"	2556		60% SLTST/SST: A/A 40% CLYST: A/A TR SST, PYR, CALCITE, LST ABUN LIGN CONTAM
S4010 CAN.S	2560		60% SLTST/SST: INCR SDY, ELSE A/A 40% CLYST: A/A TR PYR, LST ABUN LIGN CONTAM
WETB.	2566		60% SLTST/SST: ALSO V LT GRY, LESS SDY, I/P KAOL MTRX, ELSE A/A 40% CLYST: A/A ABUN LIGN CONTAM
"	2576		60% SLTST/SST: A/A 40% CLYST: A/A
"	2584		80% CLYST:A/A 20% SLTST:A/A
"	2590		50% CLYST:A/A 50% SLTST:A/A
S4011 CAN.S	2590		
WETB.	2596		50% SLTST:A/A 50% CLYST:A/A TR LST/DOL
S4037 SWC	2598	0.28	SLTST: LT GRY-OLV GRY, MOD HD, SL CALC, SL ARG, MICROMICA
S4038 SWC	2686,5	0.19	CLYST: MED GRY, SLTY&SDY, FRM, LAM, MICROMICA-MICA, SL CARB, SL-MOD CALC
S4039 SWC	2774	0.23	CLYST: MED GRY, MOD HD, BLKY, SL SLTY, MICROMIC, NON CALC
S4012 CAN.S	2800		50% SLTST: MED DK GRY, OCC DK GRY, OCC GRD TO CLYST, OCC GRD TO SST, PRED SL CALC, MOD HD-HD, BLKY, SL-V MICA-MICROMICA, I/P SL CARB.

TABLE 1.
WELL no.: 7324/10-1, LITHOLOGIC DESCRIPTION.

Sample no.	Depth mRKB	TOC %	LITHOLOGY. Rock name, mod lith, colour, gr. size, sorting, roundness, matrix, cementation, hardness, accessories, fossils, porosity, contamination.
			<p>40% CLYST: MED DK GRY, SL-V SLTY, MOD HD, SUBFISS-BLKY, MICRONICA, SL CARB, NON CALC</p> <p>5% SST: LT-MED GRY, CLR QTZ, V FN, MOD SRTD, SUBANG, HD, PRED V WLL CALC CMTD, ARG MTX, MICA, WH SPKS, NO VIS POR.</p> <p>5% LST: LT GRY BRN, OCC DK GRY BRN, MOD HD, SLTY I/P, XLN</p> <p>TR PYR</p> <p>ABUN LIGN CONTAM</p>
S4013 CAN.S	2860		<p>50% CLYST: MED DK GRY, SLTY - V SLTY, MOD HD, SUBFISS - BLKY, MICROMIC, SL CARB, NON CALC</p> <p>40% SLTST: MED DK GRY, OCC DK GRY, GRDG TO CLYST I/P, GRDG TO SST I/P, NON - SL CALC, MOD HD - HD, BLKY, MIC/MICROMIC, SL CARB I/P</p> <p>10% SST: LT GRY - MED GRY, CLR QTZ, V FN, MOD SRTD, SUBANG, HD, CALC CMTD, OCC SILIC CMTD, ARG, MIC, WH SPKS, NO VIS POR.</p> <p>ABUN LIGN CONTAM</p>
S4040 SWC	2885	0.23	<p>Clyst: MED DK GRY, MOD HD, BLKY-SUBFISS, SLTY/SDY, MICROMIC, SL MICROPYR, NON CALC</p>
S4014 CAN.S	2890		<p>60% SLTST: MED DK GRY, OCC DK GRY, GRDG TO CLYST I/P, GRDG TO SST I/P, NON - SL CALC, MOD HD - HD, BLKY, MIC/MICROMIC, SL CARB I/P</p> <p>30% CLYST: MED DK GRY, SLTY - V SLTY, MOD HD, SUBFISS - BLKY, MICROMIC, SL CARB, NON CALC</p> <p>10% SST: LT GRY - MED GRY, CLR QTZ, V FN, MOD SRTD, SUBANG, HD, CALC CMTD, OCC SILIC CMTD, ARG, MIC, WH SPKS, NO VIS POR.</p> <p>GD TR LST</p> <p>ABUN LIGN CONTAM</p>
S4041	2911	0.18	<p>Clyst: MED GRY-MED DK GRY, MOD HD, BLKY-SUBFISS, SLTY, MICROMIC, NON CALC</p>

TABLE 2 : HEADSPACE GAS ($\mu\text{L}/\text{kg}$ sample), WELL 7324/10-1

SAMPLE NO.	DEPTH (mRKB)	C1	C2	C3	IC4	NC4	C5+
S3977	580.00	8316	195	142	278	354	3136
8484	"	10471	137	106	258	137	3386
S3978	640.00	28985	567	714	2243	472	1053
8485	"	32952	869	1122	3898	785	1242
S3979	700.00	77	2	6	8	4	13
8486	"	5275	103	517	621	310	547
S3980	760.00	28552	196	329	231	39	120
8487	790.00	8653	65	169	169	91	92
S3981	820.00	15530	117	284	111	57	95
8488	"	16117	146	583	218	146	58
S3982	880.00	20188	172	211	215	51	121
8489	910.00	13483	793	1003	467	653	447
S3983	940.00	3177	88	82	67	26	62
S3984	1000.00	174943	19971	5605	815	606	200
8490	"	322919	36342	12264	1834	1834	497
S3985	1060.00	13726	1931	461	156	57	44
8491	"	14952	2634	918	334	159	90
S3986	1120.00	26015	4903	2272	355	302	112
S3987	1180.00	41331	6923	3285	476	442	200
8492	1210.00	17258	6558	1905	607	497	207
S3988	1240.00	14797	2236	621	190	92	107
S3989	1300.00	22320	4788	2415	323	338	122
8493	1330.00	26755	9746	7032	1257	1903	938
S3990	1360.00	10568	1750	1208	210	226	361
S3991	1420.00	4014	1107	965	102	120	62
S3992	1480.00	3260	1104	1294	161	212	98
S3993	1540.00	2767	1267	2022	297	449	221
S3994	1600.00	1953	1333	2810	541	1147	1254
8494	1630.00	36	23	79	33	67	24
S3995	1660.00	1888	1270	2902	725	1507	1943
S3996	1720.00	10798	3795	6865	1799	2812	2063

TABLE 2 : HEADSPACE GAS ($\mu\text{L}/\text{kg}$ sample), WELL 7324/10-1

SAMPLE NO.	DEPTH (mRKB)	C1	C2	C3	IC4	NC4	C5+
S3997	1780.00	4257	1969	3726	968	1663	1900
S3998	1840.00	8279	7060	12012	2186	3967	3821
S3999	1900.00	8051	6928	10537	2603	4371	3694
S4000	1960.00	8125	5411	10946	3902	5828	7304
8495	"	17124	12744	26257	13474	25593	45644
S4001	1990.00	11039	9503	14924	4599	7069	10340
8496	2020.00	7401	8029	11855	3048	6159	5984
S4020	2050.00	5210	4968	6079	1470	1896	1211
S4002	2080.00	10934	9949	12353	3398	4298	3695
S4003	2140.00	15732	18323	28729	9976	11891	13004
S4004	2200.00	15785	12415	12484	3484	3353	2538
S4005	2260.00	15724	11451	10523	2979	2950	2777
S4006	2320.00	11334	7169	7420	2505	2079	1948
8497	"	16242	5208	10905	3880	3880	3300
S4007	2380.00	647	243	158	46	25	19
S4008	2440.00	24979	6895	2090	438	214	102
S4009	2500.00	26023	8373	1777	284	133	70
S4010	2560.00	11498	4206	1064	206	107	81
S4011	2590.00	9253	3556	987	235	127	97
S4012	2800.00	1422	650	276	74	54	53
8498	2830.00	670	174	17	-	-	-
S4013	2860.00	827	363	251	71	64	68
S4014	2890.00	477	158	108	32	28	31

TABLE 3 : OCCLUDED GAS ($\mu\text{L}/\text{kg}$ sample), WELL 7324/10-1

SAMPLE NO.	DEPTH (mRKB)	C1	C2	C3	IC4	NC4	C5+
S3977	580.00	135	48	34	26	25	65
8484	"	31	2	2	2	3	109
S3978	640.00	608	49	103	377	178	1267
8485	"	141	53	30	142	73	110
S3979	700.00	208	14	16	11	15	227
8486	"	50	-	-	-	-	-
S3980	760.00	573	27	60	44	29	85
8487	"	73	2	4	-	-	-
S3981	820.00	182	17	64	40	51	56
8488	"	49	2	29	23	35	13
S3982	880.00	293	38	90	100	54	147
8489	910.00	27	3	23	14	36	27
S3983	940.00	964	73	43	25	27	67
S3984	1000.00	8478	12426	9202	1844	2493	1030
8490	"	984	4002	3565	564	827	140
S3985	1060.00	197	289	237	60	75	66
8491	"	294	23	79	52	48	18
S3986	1120.00	452	738	1101	268	467	284
S3987	1180.00	559	1158	1648	326	647	456
8492	1210.00	84	189	541	119	327	307
S3988	1240.00	615	376	349	144	143	271
S3989	1300.00	486	853	1258	255	555	373
8493	1330.00	56	65	138	49	87	28
S3990	1360.00	567	682	1120	265	453	533
S3991	1420.00	228	448	1183	186	459	300
S3992	1480.00	235	511	1831	375	933	797
S3993	1540.00	182	193	976	248	769	843
S3994	1600.00	130	82	613	231	981	4192
8494	1630.00	49	7	117	84	374	535
S3995	1660.00	549	152	976	576	1769	8125
S3996	1720.00	736	296	483	238	579	1492

TABLE 3 : OCCLUDED GAS ($\mu\text{L}/\text{kg}$ sample), WELL 7324/10-1

SAMPLE NO.	DEPTH (mRKB)	C1	C2	C3	IC4	NC4	C5+
S3997	1780.00	834	213	550	213	715	2079
S3998	1840.00	367	111	585	196	771	1523
S3999	1900.00	407	196	1240	761	2252	6439
S4000	1960.00	802	322	1449	1149	2935	17793
8495	"	122	36	115	163	285	3294
S4001	1990.00	367	235	1269	568	1707	5480
8496	2020.00	196	62	613	428	1376	2791
S4020	2050.00	858	919	3218	1484	3617	8126
S4002	2080.00	621	633	2504	1624	3467	11211
S4003	2140.00	552	270	1516	1487	2882	12015
S4004	2200.00	834	1381	4191	2702	4086	9556
S4005	2260.00	721	615	2156	1424	2291	7233
S4006	2320.00	910	599	2490	2334	2639	5491
8497	"	85	33	229	232	288	276
S4007	2380.00	558	718	2838	2205	1813	1981
S4008	2440.00	1778	3071	4106	1641	1023	402
S4009	2500.00	3297	6254	4575	1163	521	185
S4010	2560.00	1483	483	1102	649	547	586
S4011	2590.00	1599	6273	6894	2205	1102	432
S4012	2800.00	564	111	139	49	34	45
8498	2830.00	169	17	11	-	-	-
S4013	2860.00	660	57	41	14	11	25
S4014	2890.00	540	40	26	9	9	22

TABLE 4 : SUM HEADSPACE AND OCCLUDED GAS CONCENTRATION ($\mu\text{L}/\text{kg}$ sample), WELL 7324/10-1

SAMPLE NO.	DEPTH (mRKB)	C1	C2	C3	IC4	NC4	C5+	SUM C1-C4	IC4/NC4	Wetness
S3980	760,00	29125	223	389	275	68	205	30080	4.04	3.17
8487	790,00	8726	67	173	169	91	92	9226	1.86	5.42
S3981	820,00	15712	134	348	151	108	150	16453	1.40	4.50
8488	"	16166	147	611	242	181	71	17347	1.34	6.81
S3982	880,00	20481	210	301	315	105	268	21412	3.00	4.35
8489	910,00	13510	796	1026	481	689	504	16502	0.70	18.13
S3983	940,00	4141	161	124	92	53	130	4571	1.74	9.41
S3984	1000,00	183420	32397	14807	2659	3100	1230	236383	0.86	22,41
8490	"	323904	40344	15829	2398	2661	637	385136	0.90	15.90
S3985	1060,00	13923	2220	698	217	132	110	17190	1.64	19.01
8491	"	15246	2656	997	386	207	108	19492	1.86	21.78
S3986	1120,00	26467	5640	3373	623	769	396	36872	0.81	28.22
S3987	1180,00	41890	8081	4933	802	1089	656	56795	0.74	26.24
8492	1210,00	17342	6747	2446	726	824	514	28085	0.88	38.25
S3988	1240,00	15412	2612	970	334	235	378	19563	1.42	21.22
S3989	1300,00	22805	5641	3673	578	893	495	33590	0.65	32.11
8493	1330,00	26811	9811	7170	1307	1990	966	47089	0.66	43.06
S3990	1360,00	11135	2433	2327	475	679	894	17049	0.70	34.69

TABLE 4 : SUM HEADSPACE AND OCCLUDED GAS CONCENTRATION ($\mu\text{L/kg}$ sample), WELL 7324/10-1

SAMPLE NO.	DEPTH (mRKB)	C1	C2	C3	IC4	NC4	C5+	SUM C1-C4	IC4/NC4	Wetness
S3991	1420,00	4243	1554	2148	288	578	362	8811	0.50	51.84
S3992	1480,00	3495	1616	3125	536	1145	896	9917	0.47	64.76
S3993	1540,00	2949	1460	2997	545	1219	1065	9170	0.45	67.84
S3994	1600,00	2083	1415	3422	771	2128	5446	9819	0.36	78.79
8494	1630,00	85	30	196	117	441	559	869	0.27	90.22
S3995	1660,00	2437	1422	3878	1301	3276	10068	12314	0.40	80.21
S3996	1720,00	11534	4091	7348	2038	3391	3556	28402	0.60	59.39
S3997	1780,00	5091	2182	4276	1181	2378	3980	15108	0.50	66.30
S3998	1840,00	8646	7172	12598	2382	4738	5344	35536	0.50	75.67
S3999	1900,00	8458	7124	11776	3364	6624	10134	37346	0.51	77.35
S4000	1960,00	8927	5734	12396	5052	8763	25098	40872	0.58	78.16
8495	"	17246	12779	26372	13637	25879	48959	95913	0.53	82.02
S4001	1990,00	11406	9739	16193	5167	8776	15820	51281	0.59	77.76
8496	2020,00	7597	8091	12468	3476	7535	8774	39167	0.46	80.60
S4020	2050,00	6068	5886	9297	2955	5512	9337	29718	0.54	79.58
S4002	2080,00	11555	10582	14857	5023	7766	14906	49783	0.65	76.79
S4003	2140,00	16283	18593	30245	11462	14773	05019	91356	0.78	82.18

TABLE 4 : SUM HEADSPACE AND OCCLUDED GAS CONCENTRATION ($\mu\text{L}/\text{kg}$ sample), WELL 7324/10-1

SAMPLE NO.	DEPTH (mRKB)	C1	C2	C3	IC4	NC4	C5+	SUM C1-C4	IC4/NC4	Wetness
S4004	2200,00	16618	13796	16676	6186	7439	12094	60715	0.83	72.63
S4005	2260,00	16445	12066	12679	4402	5241	10010	50833	0.84	67.65
S4006	2320,00	12243	7769	9910	4839	4718	7439	39479	1.03	68.99
8497	"	16327	5241	11134	4112	4168	3576	40982	0.99	60.16
S4007	2380,00	1206	961	2995	2251	1838	2000	9251	1.22	86.96
S4008	2440,00	26757	9965	6196	2080	1237	504	46235	1.68	42.13
S4009	2500,00	29320	14627	6352	1448	654	255	52401	2.21	44.05
S4010	2560,00	12981	4689	2166	855	655	667	21346	1.31	39.19
S4011	2590,00	10852	9829	7882	2440	1229	529	32232	1.99	66.33
S4012	2800,00	1986	761	415	124	89	98	3375	1.39	41.16
8498	2830,00	839	191	28	-	-	-	1058	0	20.70
S4013	2860,00	1487	420	292	85	75	93	2359	1.13	36.96
S4014	2890,00	1016	198	134	41	37	53	1426	1.11	28,75

TABLE 5. TABULATION OF PYROLYSES DATA.

DEPTH mRKB	SAMPLE no.	S1	S2	TOC	HI	PP	PI	TMAX
544.00	S4021	0.0	0.4	1.0	45	0.5	0.10	432
555.00	S4022	0.0	0.3	0.8	34	0.4	0.23	426
561.00	S4042	0.0	0.2	0.0		0.3	0.07	
563.00	S4043	0.1	0.5	1.1	48	0.7	0.17	428
564.00	S4023	0.1	0.4	1.1	36	0.5	0.24	425
567.00	S4044	0.1	0.4	0.5	88	0.6	0.18	
599.00	S4024	0.1	0.3	0.6	60	0.5	0.22	429
615.00	S4025	0.0	0.4	0.7	56	0.5	0.16	426
648.00	S4066	0.0	0.0	0.0	113	0.1	0.25	
676.50	S4026	0.1	0.3	1.0	37	0.5	0.22	
767.00	S4027	0.0	0.1	0.2	38	0.1	0.15	
858.00	S4028	0.0	0.7	1.0	73	0.8	0.06	438
958.00	S4029	0.1	1.2	1.2	102	1.4	0.10	439
989.00	S4030	3.9	68.7	29.2	235	72.7	0.05	430
1095.00	S4031	0.1	1.4	1.9	73	1.6	0.08	440
1148.00	S4032	0.1	0.6	1.0	66	0.9	0.20	436
1284.00	S4033	0.0	0.4	0.7	60	0.5	0.15	438
1383.00	S4034	0.1	0.6	1.0	66	0.8	0.14	437
1411.00		0.1	0.7			0.9	0.20	445
1412.00		0.1	0.6			0.8	0.23	446
1414.66		0.1	0.6			0.8	0.22	447
1420.00		0.1	0.2			0.4	0.29	445
1423.00		0.1	0.5			0.7	0.25	448
1432.00		0.2	0.6			0.9	0.28	442
1438.00		0.1	0.5			0.7	0.21	445

TABLE 5. TABULATION OF PYROLYSES DATA.

DEPTH	SAMPLE	S1	S2	TOC	HI	PP	PI	TMAX
mRKB	no.							
1444.00		0.1	0.4			0.6	0.23	443
1450.00		0.1	0.5			0.7	0.23	445
1456.00		0.2	0.9	0.9	102	1.1	0.18	444
1458.00	S4035	0.2	1.0	1.0	102	1.3	0.17	426
1462.00		0.1	0.8			1.0	0.13	447
1468.00		0.1	0.8	1.0	84	1.0	0.12	447
1474.00		0.1	0.6			0.7	0.14	446
1480.00		0.0	0.5			0.7	0.13	443
1486.00		0.3	0.4			0.8	0.38	450
1492.00		0.0	0.8	0.9	89	0.9	0.10	448
1498.00		0.0	0.6			0.7	0.12	445
1504.00		0.1	0.5			0.8	0.21	443
1510.00		0.1	0.5			0.7	0.20	444
1516.00		0.0	0.3			0.4	0.14	444
1522.00		0.0	0.5			0.6	0.14	448
1525.00		0.1	0.5			0.6	0.22	445
1528.00		0.1	0.6	0.9	70	0.8	0.14	449
1534.00		0.1	0.4			0.6	0.29	447
1540.00		0.0	0.3			0.4	0.19	446
1546.00		0.1	0.6			0.8	0.24	447
1552.00		0.0	0.4			0.5	0.13	447
1558.00		0.5	0.9	0.8	114	1.4	0.36	443
1564.00		0.1	0.3			0.5	0.35	446
1570.00		0.1	0.6			0.7	0.15	446
1582.00		0.2	0.3			0.6	0.42	449
1588.00		0.2	0.6			0.9	0.29	446
1594.00		0.2	0.6			0.9	0.25	451
1599.50	S4036	0.1	0.6	0.8	70	0.8	0.22	450
1600.00		0.3	0.5			0.9	0.39	448
1603.50	S4067	0.7	1.9	1.3	143	2.7	0.28	430
1606.00		2.2	7.9	2.5	313	10.2	0.22	447
1612.00		1.0	4.4	1.8	246	5.5	0.19	447

TABLE 5. TABULATION OF PYROLYSES DATA.

DEPTH	SAMPLE	S1	S2	TOC	HI	PP	PI	TMAX
MRKB	no.							
1618.00		0.1	0.5			0.8	0.25	445
1624.00		0.1	0.3			0.4	0.25	444
1630.00		0.1	0.6			0.8	0.23	450
1636.00		0.3	0.7	0.6	115	1.1	0.29	451
1642.00		0.4	0.1			0.5	0.77	
1648.00		0.1	0.0			0.3	0.72	
1657.00		0.2	0.8	1.1	79	1.1	0.22	450
1661.00		0.0	0.0			0.1	0.50	
1667.25	S4068	0.4	1.5	1.9	83	2.0	0.21	446
1667.30		0.5	0.8	0.9	93	1.4	0.36	454
1670.00		0.3	0.9	0.8	114	1.3	0.28	455
1678.00		0.2	0.7			1.0	0.21	453
1684.00		0.1	0.5			0.7	0.23	453
1690.00		0.1	0.3			0.5	0.24	456
1696.00		0.6	0.0			0.7	0.93	
1702.00		0.0	0.3			0.5	0.19	453
1708.00		0.0	0.4			0.6	0.16	455
1714.00		0.0	0.0			0.1	0.27	
1720.00		0.1	0.1			0.3	0.39	
1726.00		0.1	0.1			0.3	0.47	
1732.00		0.2	0.8	1.0	76	1.1	0.24	459
1738.00		0.2	0.9	0.9	96	1.2	0.20	458
1744.00		0.2	1.1	0.8	134	1.4	0.15	457
1750.00		0.1	0.4			0.6	0.25	455
1756.00		0.2	0.6			0.9	0.25	452
1762.00		0.0	0.1			0.3	0.32	
1765.00		0.5	0.9			1.6	0.36	450
1768.00		0.1	0.4			0.6	0.21	455
1774.00		0.1	0.3			0.6	0.32	458
1777.00		0.3	0.4			0.7	0.43	460
1780.00		0.4	0.4			0.8	0.51	452
1781.00		0.4	0.5			0.9	0.44	456
1782.00		0.8	1.5			2.4	0.36	453
1782.55	S4069	0.4	0.6	0.9	73	1.1	0.40	442

TABLE 5. TABULATION OF PYROLYSES DATA.

DEPTH	SAMPLE	S1	S2	TOC	HI	PP	PI	TMAX
mRKB	no.							
1783.00		1.0	1.4	1.1	133	2.5	0.43	448
1786.00		2.1	5.1			7.3	0.30	454
1792.00		1.0	2.3	1.2	192	3.4	0.31	449
1795.00		1.3	3.0			4.4	0.31	450
1798.00		0.5	2.0	0.7	269	2.5	0.20	455
1804.00		0.2	0.8	0.7	121	1.1	0.19	457
1810.00		0.3	0.7	0.9	80	1.1	0.35	464
1816.00		0.2	0.4			0.7	0.38	455
1822.00		0.2	0.4			0.7	0.32	455
1828.00		0.2	0.5			0.8	0.26	457
1834.00		0.1	0.0			0.3	0.64	
1840.00		0.1	0.3			0.5	0.37	461
1846.00		0.1	0.4			0.6	0.27	459
1852.00		0.1	0.3			0.5	0.24	463
1858.00		0.1	0.3			0.5	0.29	460
1864.00		0.1	0.4			0.6	0.25	460
1870.00		0.1	0.3			0.4	0.25	460
1876.00		0.1	0.4			0.6	0.20	458
1882.00		0.1	0.4			0.6	0.28	460
1888.00		0.0	0.4			0.5	0.18	463
1894.00		0.5	1.0	0.9	115	1.6	0.34	456
1900.00	S3999	0.1	0.4	0.7	57	0.6	0.26	452
1900.00		0.5	1.2	0.7	167	1.8	0.31	450
1906.00		0.2	0.4			0.6	0.32	463
1912.00		0.0	0.3			0.5	0.19	463
1918.00		0.1	0.4			0.7	0.25	459
1924.00		0.0	0.2			0.4	0.24	463
1930.00		0.1	0.3			0.4	0.27	455
1936.00		0.1	0.3			0.5	0.33	458
1942.00		0.0	0.0			0.2	0.56	
1948.00		0.0	0.2			0.4	0.23	464
1954.00		0.1	0.3			0.5	0.24	458
1960.00	S4000	0.2	0.4	0.6	66	0.7	0.39	
1960.00		0.1	0.3			0.5	0.32	459

TABLE 5. TABULATION OF PYROLYSES DATA.

DEPTH	SAMPLE	S1	S2	TOC	HI	PP	PI	TMAX
mRKB	no.							
1966.00		0.4	0.3			0.8	0.59	456
1972.00		0.6	0.5	0.7	70	1.2	0.55	453
1978.00		0.7	0.5	0.6	82	1.2	0.57	454
1984.00		0.1	1.4	0.7	197	1.6	0.10	453
1990.00	S4001	0.1	0.4	0.8	59	0.6	0.27	
1990.00		0.0	0.3			0.4	0.18	466
1996.00		0.2	0.4			0.7	0.39	453
2002.00		0.1	0.3			0.5	0.27	466
2008.00		0.0	0.3			0.4	0.21	467
2014.00		0.1	0.4			0.6	0.28	453
2019.00		0.2	0.5			0.8	0.33	458
2020.00		0.4	0.4			0.8	0.49	452
2026.00		0.1	0.6			0.8	0.21	456
2032.00		0.1	0.5			0.7	0.23	449
2038.00		0.1	0.3			0.5	0.33	460
2044.00		0.1	0.2			0.4	0.30	454
2050.00	S4020	0.2	0.4	0.8	54	0.7	0.35	
2050.00		0.3	1.2	0.8	138	1.5	0.21	453
2056.00		0.3	0.6			0.9	0.36	460
2062.00		0.2	0.7	1.0	72	1.1	0.27	453
2068.00		0.8	0.6	1.0	61	1.5	0.58	450
2074.00		0.2	0.5	0.9	59	0.8	0.32	455
2080.00	S4002	0.2	0.3	0.8	49	0.6	0.37	
2080.00		0.6	0.2	0.7	32	0.9	0.72	462
2086.00		0.2	0.3			0.6	0.45	455
2092.00		0.4	0.3			0.9	0.55	451
2098.00		0.2	0.2			0.5	0.50	459
2104.00		0.2	0.3			0.6	0.46	462
2110.00		0.5	0.3	0.7	41	0.8	0.63	472
2116.00		0.3	0.3			0.6	0.51	479
2122.00		0.3	0.3			0.7	0.52	461
2128.00		0.4	0.5	0.9	63	1.0	0.42	477
2134.00		0.1	0.2			0.4	0.40	470
2140.00	S4003	0.2	0.4	0.8	51	0.7	0.37	

TABLE 5. TABULATION OF PYROLYSES DATA.

DEPTH	SAMPLE	S1	S2	TOC	HI	PP	PI	TMAX
MRKB	no.							
2140.00		0.3	0.2			0.6	0.60	457
2146.00		0.1	0.2			0.4	0.30	477
2152.00		0.1	0.1			0.4	0.46	475
2158.00		0.1	0.3			0.5	0.26	470
2164.00		0.4	0.4	0.7	57	0.9	0.53	460
2170.00		0.1	0.4			0.6	0.26	460
2176.00		0.1	0.3			0.5	0.33	467
2182.00		0.2	0.4			0.7	0.40	467
2188.00		0.2	0.2			0.5	0.42	455
2194.00		0.3	1.4	1.0	136	1.8	0.20	457
2200.00	S4004	0.4	0.5	1.1	48	1.0	0.46	
2200.00		0.5	0.5	1.1	42	1.0	0.52	461
2206.00		0.6	0.4	1.1	40	1.1	0.59	457
2212.00		0.5	0.2	1.1	23	0.8	0.67	457
2218.00		0.4	0.3			0.7	0.57	460
2224.00		0.1	0.1			0.3	0.40	470
2230.00		0.1	0.1			0.3	0.37	465
2241.00		0.2	0.0			0.3	0.83	
2248.00		0.4	1.2	0.8	151	1.7	0.28	459
2254.00		0.2	0.1			0.4	0.74	
2260.00	S4005	0.1	0.3	0.6	50	0.4	0.32	
2260.00		0.2	0.1			0.4	0.67	
2263.00		2.1	1.3	3.0	43	3.5	0.62	461
2266.00		3.7	1.9	4.4	43	5.6	0.66	464
2269.00	S3957	0.1	0.4	0.6	59	0.6	0.29	474
2269.00	S3957B	0.5	1.0	1.9	52	1.5	0.34	463
2269.00		1.2	1.0	3.1	34	2.3	0.55	452
2272.00	S3958	0.6	0.4	0.5	82	1.1	0.59	
2272.00	S3958B	0.9	1.4	2.7	52	2.4	0.41	461
2272.00		1.3	10.9			12.3	0.11	464
2278.00		0.4	0.1			0.7	0.72	
2284.00		0.3	0.5			0.9	0.41	458

TABLE 5. TABULATION OF PYROLYSES DATA.

DEPTH	SAMPLE	S1	S2	TOC	HI	PP	PI	TMAX
mRKB	no.							
2290.00		0.1	0.4			0.6	0.30	462
2296.00		0.2	0.9	0.9	99	1.1	0.19	457
2302.00		0.2	0.2			0.5	0.54	462
2308.00		0.1	0.2			0.4	0.42	462
2314.00		0.2	0.6			0.9	0.32	464
2320.00	S4006	0.3	0.7	1.5	46	1.1	0.35	
2320.00		0.9	0.7	2.4	28	1.7	0.58	448
2326.00		0.2	0.2			0.5	0.50	455
2332.00		0.2	0.1			0.4	0.66	458
2338.00		0.2	6.1	0.6	1002	6.3	0.03	460
2344.00		0.2	2.4	0.7	332	2.7	0.09	466
2350.00		0.2	0.1			0.4	0.56	443
2356.00		0.3	1.3	0.6	204	1.7	0.20	460
2362.00		0.2	0.0			0.3	0.85	
2368.00		0.2	0.1			0.4	0.72	
2373.00		0.0	0.0			0.1	0.75	441
2374.00		0.3	0.1			0.5	0.69	468
2380.00	S4007	0.1	0.3	0.9	35	0.5	0.31	
2380.00		0.6	0.1			0.7	0.83	448
2386.00	S3955	0.2	0.5	1.4	34	0.8	0.34	
2386.00	S3955B	0.5	1.0	3.4	30	1.6	0.36	468
2386.00	S3955A	0.0	0.2	0.5	40	0.3	0.29	
2386.00		0.5	0.1			0.7	0.83	445
2392.00		0.6	0.2			0.9	0.74	451
2398.00		0.6	0.1			0.8	0.80	451
2404.00		0.5	0.3			0.9	0.57	451
2410.00		0.5	0.1			0.6	0.82	450
2416.00		0.4	0.1			0.6	0.80	450
2422.00		0.2	0.0			0.3	0.88	461
2428.00		0.5	0.7	1.2	58	1.2	0.41	462
2432.00		0.4	0.0			0.5	0.88	
2434.00	S3956	0.2	0.4	1.5	27	0.6	0.33	
2434.00	S3956A	0.1	0.3	0.9	33	0.4	0.29	
2434.00	S3956B	0.3	0.6	2.2	30	1.0	0.32	

TABLE 5. TABULATION OF PYROLYSES DATA.

DEPTH	SAMPLE	S1	S2	TOC	HI	PP	PI	TMAX
mRKB	no.							
2434.00		0.2	0.0			0.3	0.83	
2437.00		0.1	0.0			0.2	0.75	468
2443.00		0.1	0.0			0.2	0.68	463
2449.00		0.1	0.0			0.2	0.84	
2455.00		0.1	0.1			0.2	0.55	
2461.00		0.1	0.1			0.2	0.55	468
2467.00		0.3	0.1			0.5	0.76	456
2472.00		0.1	0.1			0.2	0.48	
2478.00		0.0	0.1			0.2	0.36	454
2485.00		0.0	0.1			0.2	0.36	469
2491.00		0.0	0.0			0.2	0.40	464
2497.00		0.1	0.1			0.2	0.45	464
2503.00		0.0	0.1			0.2	0.27	463
2509.00		0.0	0.1			0.2	0.33	468
2515.00		0.0	0.0			0.1	0.83	
2521.00		0.0	0.0			0.1	0.50	476
2527.00		0.0	0.0			0.2	0.40	469
2533.00		0.0	0.1			0.2	0.39	458
2539.00		0.2	0.1			0.3	0.68	477
2545.00		0.2	0.0			0.3	0.74	474
2550.00		0.1	0.0			0.2	0.88	
2556.00		0.0	0.0			0.0	1.00	
2566.00		0.0	0.0			0.1	0.80	
2576.00		0.1	0.0			0.2	0.67	457
2584.00		0.2	0.1			0.4	0.62	454
2590.00		0.1	0.1			0.3	0.42	459
2596.00		0.2	0.1			0.3	0.70	
2598.00	S4037	0.0	0.0	0.2	18	0.1	0.38	
2686.50	S4038	0.0	0.0	0.1	47	0.1	0.36	
2774.00	S4039	0.0	0.0	0.2	30	0.1	0.36	
2885.00	S4040	0.0	0.0	0.2	30	0.1	0.30	
2911.00	S4041	0.0	0.0	0.1	39	0.1	0.30	

TABLE 6. CONCENTRATION OF EXTRACTABLE ORGANIC MATTER (EOM IN mg HC/kg rock) AND CHROMATOGRAPHIC FRACTIONS (%), WELL 7324/10-1.

DEPTH mRKB	SAMPLE NO.	ROCK (g)	EOM (mg/kg sed)	HYDROCARBONS			NON HYDROCARBONS		
				SAT EOM %	ARO EOM %	HC EOM %	NSO EOM %	ASPH EOM %	Non HC EOM %
648.00	S4066	45.29	79					13.9	
989.00	S4030	9.83	8464	5.9	26.0	31.9	17.6	50.4	69.1
1603.50	S4067	30.13	2662	44.9	20.8	65.7	18.0	16.3	34.3
1667.25	S4068	37.75	1597	13.8	22.0	35.8	15.4	48.8	64.2
1782.55	S4069	39.25	1768	49.0	18.6	67.6	20.0	12.4	32.4
1900.00	S3999	36.46	639	36.6	28.5	65.1	2.2	32.7	34.9
1960.00	S4000	37.11	935	51.0	21.3	72.3	11.0	16.8	27.8
1990.00	S4001	38.17	542	32.7	23.8	56.5	14.9	28.6	43.5
2050.00	S4020	36.88	738	37.7	20.2	57.9	16.9	25.2	42.1
2080.00	S4002	40.34	697	40.9	45.9	86.8	12.9	0.3	13.2
2140.00	S4003	29.29	816	49.8	17.3	67.0	12.5	20.5	33.0
2200.00	S4004	37.92	1023	54.6	18.6	73.2	14.4	12.4	26.8
2260.00	S4005	39.09	358					14.3	
2320.00	S4006	23.77	639	49.0	20.8	69.8	22.4	8.0	30.4
2380.00	S4007	33.70	190						

TABLE 7. CONCENTRATION OF EXTRACTABLE ORGANIC MATTER (EOM) AND CHROMATOGRAPHICS FRACTIONS (PPM), WELL 7324/10-1

DEPTH (mRKB)	SAMPLE No.	TOT EOM	HYDROCARBONS			NON HYDROCARBONS		
			SAT	ARO	TOT	ASPH	NSO	TOT
648,00	S4066	79				11		
989,00	S4030	8464	501	2203	2704	4269	1491	5760
1603,50	S4067	2662	1195	553	1748	435	479	914
1667,25	S4068	1597	220	351	571	780	246	1026
1782,55	S4069	1768	867	328	1195	219	354	573
1900,00	S3999	639	234	182	416	209	14	223
1960,00	S4000	935	477	199	676	157	103	260
1990,00	S4001	542	177	129	306	155	81	236
2050,00	S4020	738	278	149	427	186	125	311
2080,00	S4002	697	285	320	605	90	2	92
2140,00	S4003	816	406	141	547	167	102	269
2200,00	S4004	1023	559	190	749	127	147	274
2260,00	S4005	358				51		
2320,00	S4006	639	313	133	446	51	143	194
2380,00	S4007	190						

TABLE 8. GAS CHROMATOGRAPHIC DATA FROM EXTRACT FRACTIONS, WELL 7324/10-1.

DEPTH m(RKB)	SAMPLE NO	<u>Pr</u> nC17(A)	<u>Ph</u> nC18(B)	<u>A</u> B	<u>Pr</u> Ph	CPI1	CPI2	MPI1	MPI2	Rc
989,00	S4030	3,10	0,46	6,74	6,34	2,13	2,32	0.53	0.56	
1603,50	S4067	0,86	0,48	1,79	1,75	1,09	1,00	0.64	0.68	
1667,25	S4068	0,54	0,13	4,15	4,00	1,12	1,12	0.70	0.80	
1782,55	S4069	0,53	0,30	1,77	1,73	1,11	1,08	0.73	0.78	
1900,00	S3999	0,35	0,14	2,50	2,69	1,09	1,04	0.83	0.92	
1960,00	S4000	0,78	0,51	1,53	1,64	1,13	1,05	1.00	1.06	
1990,00	S4001	0,32	0,14	2,29	2,28	1,10	1,07	1.01	1.11	
2050,00	S4020	0,40	0,19	2,11	2,18	1,10	1,09	1.05	1.21	
2080,00	S4002	0,40	0,20	2,00	2,01	1,12	1,11	1.12	1.21	
2140,00	S4003	0,40	0,20	2,00	2,07	1,06	0,97	1.30	1.42	
2200,00	S4004	0,40	0,25	1,60	1,69	1,10	1,03	1.38	1.47	
2260,00	S4005	0,38	0,32	1,20	1,31	0,99	0,93			
2320,00	S4006	0,41	0,36	1,14	1,19	1,09	1,00	1.30	1.39	
2380,00	S4007	0,32	0,77	0,41	0,51	1,31	1,08			

TABLE 9. TABULATION OF CARBON ISOTOPE DATA OF EOM AND FRACTIONS IN $\delta^{13}\text{C}$ o/oo PDB), WELL 7324/10-1.

DEPTH mRKB	SAMPLE NO.	EOM	SAT	ARO	NSO	ASP
989.00	S4030	-26.2	-29.9	-27.4	-26.4	-25.8
1603.00	S4067	-28.2	-30.1	-29.3	-28.8	-28.0
1782.55	S4069	-31.0	-32.2	-30.1	-29.7	-30.2
1960.00	S4000	-30.4	-31.3	-29.2	-29.2	-29.1
2200.00	S4004	-29.0		-28.0	-28.3	-28.6
2320.00	S4006	-26.0	-25.8	-14.7*	-27.9	-20.3*

* - the results are probably too low, due to imperfect combustion.

TABLE 10. TABULATION OF PEAKS OF THE TRITERPANES FROM ION m/z 191. WELL 7324/10-1.

DEPTH	SAMPLE	27A	27B	29A	X	29B	30A	30B	31A	31B	32A	32B	33A	33B	34A
	NO.														
989.00	S4030	4	85	175	12	95	224	89	151	115	41	28	13	9	6
1603.00	S4067	58	5	51	69	3	168	18	69	49	64	44	46	32	29
1667.25	S4068	30	29	88	52	13	179	16	81	58	55	42	28	18	13
1782.55	S4069														
1900.00	S3999														
1960.00	S4000														
1990.00	S4001	48	59	79	37	13	97	9	48	30	21	15	15	11	10
2050.00	S4020														
2080.00	S4002														
2140.00	S4003														
2200.00	S4004	19	38	164	4	15	172	15	117	96	75	55	60	38	32
2320.00	S4006	21	25	134	7	18	181	15	119	93	81	62	75	48	47

TABLE 11. TABULATION OF THE STERANES FROM ION m/z 217.

DEPTH	SAMPLE NO	29e	29f	29g	29h
989.00	S4030	140	68	65	192
1603.00	S4067				
1667.25	S4068	112	50	28	97
1782.55	S4069				
1900.00	S3999	27	43	59	29
1960.00	S4000				
1990.00	S4001	37	65	64	34
2050.00	S4020				
2080.00	S4002				
2140.00	S4003				
2200.00	S4004	76	126	117	103
2320.00	S4006	72	86	107	95

TABLE 12. TABULATION OF THE STERANES FROM ION m/z 218.

DEPTH	SAMPLE NO	27f	27g	28f	28g	29f	29g
989.00	S4030	86	9	23	25	142	122
1603.00	S4067	99	65	95	94	102	166
1667.25	S4068	109	84	103	127	154	108
1782.55	S4069	130	54	47	66	54	81
1900.00	S3999	113	68	49	63	86	116
1960.00	S4000	119	51	37	48	30	38
1990.00	S4001	130	82	62	80	128	117
2050.00	S4020	98	72	56	77	39	35
2080.00	S4002						
2140.00	S4003	90	79	59	69	44	60
2200.00	S4004	84	62	70	75	164	149
2320.00	S4006	137	112	102	124	155	171

TABLE 13. MOLECULAR RATIOS FROM STERANE AND TERPANE MASS CHROMATOGRAMS. MATURITY AND SOURCE CHARACTERISTIC RATIOS FOR WELL 7324/10-1.

DEPTH mRKB	SAMPLE NO.	27B/27A ¹	29A/30A ²	%27 ³ f+g	%28 f+g	%29 f+g	δ 22S ⁴
989.00	S4030	4.49	0.78	23.3	11.8	64.9	3.00
1603.00	S4067	92.06	0.30	26.4	30.4	43.2	1.35
1667.25	S4068	50.85	0.49	28.2	33.6	38.2	1.86
1782.55	S4069			42.6	26.2	31.3	
1900.00	S3999			36.6	22.6	40.8	
1960.00	S4000			52.6	26.3	21.1	
1990.00	S4001	44.86	0.81	35.4	23.7	40.9	1.73
2050.00	S4020			45.1	35.3	19.6	
2080.00	S4002						
2140.00	S4003			42.1	31.9	25.9	
2200.00	S4004	33.33	0.95	24.2	24.0	51.8	1.56
2320.00	S4006	45.65	0.74	31.1	28.2	40.7	1.38

1) 27B/27A in m/z 191.

2) Relative abundance of unknown (X/30A in m/z 191).

3) Weight % distribution of C27, C28 and C29 steranes in m/z 218 (27f+27g, 28f+28g, 29f+29g).

4) [(31A/32A)+(32A/33A)+(33A/34A)] in m/z 191.

TABLE 14. MOLECULAR RATIOS FROM STERANE AND TERPANE MASS
CHROMATOGRAMS. MATURITY RATIOS FOR WELL 7324/10-1.

DEPTH mRKB	SAMPLE	$\alpha\beta/\alpha\beta+\beta\alpha^a$	% 22S ^b	% $\beta\beta^c$	% 20S ^d	Ttx ^e
989.00	S4030	71.57	58.43	28.60	42.17	11.21
1603.00	S4067	90.32	58.90			95.83
1667.25	S4068	91.79	58.61	27.18	53.59	80.00
1782.55	S4069					
1900.00	S3999			64.56	48.21	
1960.00	S4000					
1990.00	S4001	91.51	59.19	64.50	52.11	74.00
2050.00	S4020					
2080.00	S4002					
2140.00	S4003					
2200.00	S4004	91.98	57.95	57.58	42.46	21.05
2320.00	S4006	92.35	57.92	53.61	43.11	28.00

a) $100 \cdot 30A / (30A + 30B)$ in m/z 191.

b) $100 \cdot \{ (31A / (31A + 31B)) + (32A / (32A + 32B)) + (33A / (33A + 33B)) \} / 3$ in m/z 191.

c) $100 \cdot (29f + 29g) / (29f + 29g + 29e + 29h)$ in m/z 217.

d) $100 \cdot 29e / (29e + 29h)$ in m/z 217.

e) $100 \cdot X / (X + 29B)$ in m/z 191.

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INTRODUCTION

This report gives the results of vitrinite reflectance analyses performed on 41 samples covering the depth interval from 564 mrb to 2914 mrb in well 7324/10-1 offshore northern Norway:

The aim of the study was to establish a reliable vitrinite reflectance versus depth profile for the entire well section.

MATERIAL

The samples subjected for analysis were provided from the client partly while drilling, and partly after the well was completed. The samples consisted of conventional cores, sidewall cores and ditch cuttings. The sample lithologies were mainly claystones, but one carbominerite sample was also included. Many of the samples proved to be heavily contaminated by lignitic mud additive, and therefore two samples of mud additive was also analysed, one unused and one used.

ANALYTICAL TECHNIQUES

In this report the term *vitrinite reflectance* is used throughout although strictly vitrinite is defined only for the bituminous coal range for reflectance values above approximately $R_m=0.5$. The vitrinite precursor in the lower reflecting brown coal range is called *huminite*.

The samples being analysed for vitrinite reflectance in this study were initially not treated with any acid prior to further preparation. However, it was difficult to obtain a satisfactory polish for some of the samples. These samples were subsequently treated with hydrochloric and hydrofluoric acid in order to remove the mineral matrix. The bulk rock samples and organic residues were embedded in a cold setting epoxy resin to make briquettes. These were subsequently ground flat and polished using 0.25 μm diamond paste and magnesium oxide as the two final steps.

The analytical equipment being used was a Zeiss MPM 03 photometer microscope. Viewing and measurements were made through a Zeiss Neofluoar 40/0.90 oil objective using immersion oil with refractive index $n=1.518$. The measurements were made through a green filter with peak transmission at 546 nm and with a photometer sensitive field of about 2.5 μm in diameter. For photometer calibration three different standards were used in order to fit the different maturity levels of the samples. The standards had reflectance values of $R_m = 0.588, 0.879$ and 1.696 respectively. The measurements were made without a polarizer and using a stationary stage. On each sample

around 25 points or more were measured if possible, preferentially telocollinite where available. A representative population was selected among the readings based on observations made during measuring, and an arithmetic mean was calculated for this population.

Table 1. Vitrinite reflectance data well 7324/10-1.

Well	sample code IFE	sample depth mrkb, type	lithology	vitrite reflectance Rm (N) sample quality.
7324/10-1	ST 1175	564.0 swc	claystone	0.57 (5) o+ooo
	ST 1176	633.0 swc	claystone	0.45 (10) -oooo
	ST 1177	714.0 swc	claystone	1.09 (4) inert
	ST 1178	767.0 swc	claystone	1.57 (17) inert
	ST 1142	835.0 swc	claystone	*1.28 (25) inert
	ST 1143	989.0 swc	carbominerite	0.49 (25) ooooo
	ST 1143	989.0 swc	carbominerite	*0.50 (25) ooooo
	ST 1144	1085.0 swc	claystone	0.49 (10) -o-oo-
	ST 1144	1085.0 swc	claystone	*0.52 (18) o+oo-
	ST 1145	1153.0 swc	claystone	0.60 (25) ooooo
	ST 1145	1153.0 swc	claystone	*0.55 (21) o+oo-
	ST 1147	1292.0 swc	claystone	0.64 (29) ooooo
	ST 1148	1412.00 core	claystone	0.66 (10) -+ooo
	ST 1149	1414.51 core	claystone	0.71 (22) o+ooo
	ST 1146	1508.0 swc	claystone	1.01 (13) inert
	ST 1146	1508.0 swc	claystone	*0.65 (13) o+oo-
	ST 1150	1561.00 core	claystone	0.73 (13) o+ooo
	ST 1151	1606 cut	claystone	0.71 (4) o+o-o
	ST 1152	1667.30 core	claystone	0.75 (23) oo+o-
	ST 1153	1744 cut	claystone	0.82 (23) oo+oo
	ST 1154	1782.60 core	claystone	1.05 (9) inert
	ST 1155	1786 cut	claystone	0.74 (19) o-o-o
	ST 1156	1900 cut	claystone	0.92 (10) o++oo
	ST 1157	1984 cut	claystone	0.89 (7) o++oo
	ST 1158	2056 cut	claystone	0.92 (9) o++oo
	ST 1159	2128 cut	claystone	1.17 (22) o++oo
	ST 1160	2194 cut	claystone	1.21 (14) o++oo
	ST 1161	2272 cut	claystone	1.11 (3) --o--
	ST 1162	2286 cut	claystone	1.53 (12) -+o--
	ST 1163	2356 cut	claystone	1.42 (4) -+o--
	ST 1164	2380 cut	claystone	1.64 (11) -+o--
	ST 1165	2410 cut	claystone	1.38 (19) -+o--
	ST 1166	2428 cut	claystone	1.54 (22) -+o--
	ST 1167	2450 cut	claystone	1.70 (3) -+o--
	ST 1168	2470 cut	claystone	1.58 (10) -+o--
	ST 1169	2485 cut	claystone	1.70 (14) -+o--
	ST 1170	2509 cut	claystone	1.70 (9) -+o--
	ST 1171	2533 cut	claystone	1.66 (18) -+o--
	ST 1172	2550 cut	claystone	1.44 (9) -+o--
	ST 1179	2665.0 swc	claystone	1.82 (3) --oo-
ST 1180	2695.0 swc	claystone	2.12 (23) o+ooo	
ST 1181	2790.0 swc	claystone	2.15 (15) o+ooo	
ST 1182	2830.0 swc	claystone	2.10 (6) -+o+o	
ST 1183	2890.0 swc	claystone	2.14 (22) o+ooo	
ST 1184	2914.0 swc	claystone	2.14 (8) o+ooo	
ST 1173	unused MA	lignite	0.29 (25) oooooS	
ST 1174	2565 MA	lignite	0.26 (25) oooooS	

Table 1 cont'd.....

LEGEND

Rm : mean random reflectance in oil
N : number of readings
core : conventional core
swc : sidewall core
cut : cuttings
MA : mud additive
* : sample subjected for HCl and HF treatment

CODE FOR DATA QUALITY

The sample quality is characterised by five items as follows:

ooooo

5: particle surface quality
4 : particle size
3 : type of vitrinite
2 : identification of vitrinite
1 : abundance of vitrinite

+ : may give a too high vitrinite reflectance value
o : have no effect on the resulting vitrinite reflectance value
- : may give a too low vitrinite reflectance value

An ideal sample is characterised as follows: ooooo

DATA REPORT

GAS ANALYSIS OF HEADSPACE CANS, WELL 7324/10-1

T 6269 no. 136

1. INTRODUCTION

Cutting samples in headspace cans from well 7324/10-1 were received and analyzed October 1989.

Headspace and occluded gas are analysed ($C_1 - C_{5+}$, CO_2), and the carbon isotopic composition of methane are determined. The hydrogen isotopic composition of methane are determined when possible.

2. ANALYTICAL PROCEDURES

1 ml of headspace gas are analysed by gas chromatography and quantified by help of a an external standard gas mixture.

In order to prepare for isotopic measurements 10 ml of headspace gas are separated by gas chromatography and the methane combusted in a CuO oven at 850°C. The combustion products CO_2 and H_2O are frozen into collection vessels and separated. The water is reduced with zinc metal in a sealed tube to prepare hydrogen for isotopic measurements. All isotopic measurements are performed on a Finnigan Mat 251 and a Finnigan Delta mass spectrometer.

After isotopic determination the headspace cans are carefully opened and the gas volume quantified by adding up with water. The samples are washed with tempered water on 4, 1 and 0.125 mm sieves to remove drilling mud, and dried at 35 - 40 °C before weighing.

Before drying, aliquots of the 1 - 4 mm fraction are crushed in an airtight ball mill with water for 10 minutes, and 1 ml of the occluded gas are analysed by gas chromatography and quantified by help of a an external standard gas mixture.

Gas composition are calculated as μl gas/kg dry rock.

3. RESULTS

The isotopic composition of the methane gas is shown in table 1. The uncertainty in the $\delta^{13}C$ value is estimated to be ± 0.3 ‰ and includes all the different analytical steps. The uncertainty in the δD value is likewise estimated to ± 5 ‰.

IFE's value on NBS 22 is -29.77 ± 0.06 ‰ PDB.

Gas composition calculated as μl gas/kg dry rock are shown in table 2 (headspace gas), table 4 (occluded gas) and table 6 (sum of headspace and occluded gas).

The volume composition of the headspace and the occluded gas are shown in table 3 and table 5, respectively.

ndp (no detection possible) in the tables indicate that the amount of the different hydrocarbons is less than the detection limit ($0.001 \mu l$ HC/ml gas).

Table 1. Isotopic composition of methane from headspace cans, well 7324/10-1.

SAMPLE DEPTH (m)	IFE NO.	$\delta^{13}\text{C}$ ‰ PDB	δD ‰ SMOW
580	8484	-46.5	-208
640	8485	-44.0	-242
700	8486	-45.7	-
790	8487*	-49.4	-
820	8488	-43.4	-
910	8489*	-46.6	-
1000	8490	-47.6	-230
1060	8491	-47.9	-295
1210	8492*	-45.9	-282
1330	8493	-41.4	-
1630	8494	-37.2	-
1960	8495*	-46.3	-
2020	8496*	-1.8	-
2320	8497	-42.5	-306
2830	8498	-42.1	-

* $\delta^{13}\text{C}$ mean of two parallel analysis.

Table 2. Composition of headspace gas from well 7324/10-1 calculated as amount of gas/kg dry rock.

SAMPLE DEPTH (m)	IFE NO.	GAS VOLUME (ml)	SAMPLE WEIGHT DRY (kg)	C ₁ μl/kg	C ₂ μl/kg	C ₃ μl/kg	iC ₄ μl/kg	nC ₄ μl/kg	C ₅₊ μl/kg	CO ₂ μl/kg
580	8484	200	0.132	10471	137	106	258	137	3386	ndp
640	8485	240	0.171	32952	869	1122	3898	785	1242	351
700	8486	380	0.037	5275	103	517	621	310	547	2586
790	8487	253	0.194	8653	65	169	169	91	92	1733
820	8488	218	0.090	16117	146	583	218	146	58	4563
910	8489	347	0.149	13483	793	1003	467	653	477	11407
1000	8490	241	0.214	322919	36342	12264	1834	1834	497	2003
1060	8491	172	0.227	14952	2634	918	334	159	90	1822
1210	8492	150	0.217	17258	6558	1905	607	497	207	1816
1330	8493	290	0.175	26755	9746	7032	1257	1903	938	4352
1630	8494	333	0.185	36	23	79	33	67	24	1135
1960	8495	217	0.163	17124	12744	26257	13474	25593	45664	1460
2020	8496	349	0.278	7401	8029	11855	3048	6159	5984	1731
2320	8497	282	0.219	16242	5208	10905	3880	3880	3300	490
2830	8498	300	0.483	670	174	17	ndp	ndp	ndp	1943

Table 3. Volume composition of headspace gas from well 7324/10-1, normalized values.

SAMPLE DEPTH (m)	IFE NO.	C ₁ %	C ₂ %	C ₃ %	iC ₄ %	nC ₄ %	C ₃₊ %	CO ₂ %	WET- NESS	iC ₄ / nC ₄
580	8484	72.2	0.94	0.73	1.8	0.94	23.4	ndp	0.28	1.89
640	8485	79.9	2.1	2.7	9.5	1.9	3.0	0.85	0.19	4.96
700	8486	53.0	1.0	5.2	6.2	3.1	5.5	26.0	0.28	2.00
790	8487	78.9	0.59	1.5	1.5	0.83	0.84	15.8	0.06	1.86
820	8488	73.8	0.67	2.7	1.0	0.67	0.27	20.9	0.07	1.50
910	8489	47.7	2.8	3.5	1.6	2.31	1.7	40.3	0.20	0.71
1000	8490	85.5	9.6	3.2	0.49	0.49	0.13	0.53	0.14	1.00
1060	8491	71.5	12.6	4.4	1.60	0.76	0.43	8.7	0.22	2.10
1210	8492	59.8	22.7	6.6	2.1	1.7	0.72	6.3	0.36	1.22
1330	8493	51.5	18.7	13.5	2.4	3.7	1.8	8.4	0.44	0.66
1630	8494	2.6	1.7	5.7	2.4	4.8	1.7	81.2	0.86	0.50
1960	8495	12.0	9.0	18.4	9.5	18.0	32.1	1.0	0.88	0.53
2020	8496	16.7	18.2	26.8	6.9	13.9	13.5	3.9	0.83	0.49
2320	8497	37.0	11.9	24.8	8.8	8.8	7.5	1.1	0.63	1.00
2830	8498	23.9	6.2	0.6	ndp	ndp	ndp	69.3	0.22	

Table 4. Composition of occluded gas from well 7324/10-1 calculated as amount of gas/kg dry rock.

SAMPLE DEPTH (m)	IFE NO.	SAMPLE WEIGHT DRY (g)	C ₁ μl/kg	C ₂ μl/kg	C ₃ μl/kg	iC ₄ μl/kg	nC ₄ μl/kg	C ₅₊ μl/kg
580	8484	23	31	2	2	2	3	109
640	8485	26	141	53	30	142	73	110
700	8486	26	50	ndp	ndp	ndp	ndp	ndp
790	8487	29	73	2	4	npd	npd	npd
820	8488	28	49	2	29	23	35	13
910	8489	30	27	3	23	14	36	27
1000	8490	29	984	4002	3565	564	827	140
1060	8491	30	294	23	79	52	48	18
1210	8492	30	84	189	541	119	327	307
1330	8493	29	56	65	138	49	87	28
1630	8494	29	49	7	117	84	374	535
1960	8495	28	122	36	115	163	285	3294
2020	8496	32	196	62	613	428	1376	2791
2320	8497	28	85	33	229	232	288	276
2830	8498	30	169	17	11	ndp	ndp	ndp

Table 5. Volume composition of occluded gas from well 7324/10-1, normalized values.

SAMPLE DEPTH (m)	IFE NO.	C ₁ %	C ₂ %	C ₃ %	iC ₄ %	nC ₄ %	C ₅₊ %	WET- NESS	iC ₄ / nC ₄
580	8484	20.6	1.2	1.6	1.5	1.8	73.3	0.79	0.87
640	8485	25.8	9.7	5.4	25.8	13.3	20.0	0.74	1.95
700	8486	100.0	ndp	ndp	ndp	ndp	ndp		
790	8487	92.9	2.4	4.6	ndp	ndp	ndp	0.07	
820	8488	32.6	1.1	19.0	15.4	23.3	8.6	0.67	0.66
910	8489	20.6	2.2	17.9	11.1	27.2	20.9	0.79	0.41
1000	8490	9.8	39.7	35.4	5.6	8.2	1.4	0.90	0.68
1060	8491	57.3	4.4	15.3	10.1	9.3	3.5	0.43	1.09
1210	8492	5.3	12.1	34.5	7.6	20.9	19.6	0.95	0.36
1330	8493	13.3	15.4	32.5	11.6	20.5	6.7	0.87	0.56
1630	8494	4.2	0.56	10.0	7.2	32.1	45.9	0.96	0.22
1960	8495	3.0	0.89	2.9	4.1	7.1	82.0	0.97	0.57
2020	8496	3.6	1.14	11.2	7.8	25.2	51.1	0.96	0.31
2320	8497	7.4	2.9	20.0	20.3	25.2	24.1	0.93	0.81
2830	8498	85.6	8.8	5.5	ndp	ndp	ndp	0.14	

Table 6. Sum of headspace and occluded gas from well 7324/10-1.

SAMPLE DEPTH (m)	IFE NO.	C ₁ μl/kg	C ₂ μl/kg	C ₃ μl/kg	iC ₄ μl/kg	nC ₄ μl/kg	C ₅₊ μl/kg	CO ₂ μl/kg
580	8484	10501	139	109	261	139	3495	ndp
640	8485	33093	923	1152	4040	858	1352	351
700	8486	5325	103	517	621	310	547	2586
790	8487	8726	67	173	169	91	92	1733
820	8488	16166	147	611	242	181	71	4563
910	8489	13510	796	1026	481	689	504	11407
1000	8490	323904	40344	15829	2398	2661	637	2003
1060	8491	15246	2656	997	386	207	108	1822
1210	8492	17342	6747	2446	726	824	514	1816
1330	8493	26811	9811	7170	1307	1990	966	4352
1630	8494	85	30	196	117	441	559	1135
1960	8495	17246	12779	26372	13637	25879	48959	1460
2020	8496	7597	8091	12468	3476	7535	8774	1731
2320	8497	16327	5241	11134	4112	4168	3576	490
2830	8498	839	191	28	ndp	ndp	ndp	1943



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Abstract
Cuttings and core samples from 1411 to 2596 mRKB in well 7324/10-1 were pyrolysed at wellsite.

Prepared by Kjell Øygaard, GEOLAB Steinar Ulvøen, GEOLAB
Text operator Kjell Øygaard

Approved by

10/11-89 *Lange Meyer*

13/11-89 *Sten O. Stein*

1 INTRODUCTION.

In order to get a better evaluation of the potential source rocks in the well 7324/10-1 and to optimize the coring points in shales, it was decided to do geochemistry on the rig while drilling. The only available instrument at that time was a GHM (Geofina Hydrocarbon Meter).

The GHM has mainly been developed for simultaneous analyses of C6 - C25 free hydrocarbons (S1) and pyrolysates (S2) in small rock samples. The system combines thermal extraction (S1) and temperature programmed pyrolysis (S2) gas chromatographic techniques. Since the main purposes to run the GHM on this well was to get information about source rock quality and amount of free hydrocarbons, it was not necessary to run gas chromatographic analyses of the free hydrocarbons and the pyrolysis products. For this reason the inlets for the two gas chromatography columns were sealed off, and only bulk analyses were carried out most of the time.

2 ANALYTICAL INSTRUMENT HANDLING AND EXPERIMENTAL CONDITIONS.

The GHM instrument is designed by Geolab Nor and Fina. The new about this instrument is the injector, which is put on the top of a Varian 3400 gas chromatograph. Figure 1 shows a diagram of the total system.

The samples are weighed into small crucibles, similar to those used with the Rock Eval instrument, to quantify the hydrocarbons in mg per g rock. The temperature program for releasing thermal extractable hydrocarbons (S1) and the kerogen pyrolysate (S2) is as follows: Isothermal at 340 °C for 3 minutes. Then from 340 to 540 with a ramp temperature of 25 °C/min. before keeping the top temperature at 540 °C for 2.6 minutes. The gas flow from the injector is normally split to the columns and to bulk detection in a ratio of 1:30. But in this case, for most of the time, the column inlets were sealed off, and therefore all the gas went through the bulk flame ionization detector (FID).

For normal pyrolysis and thermal extraction GC the hydrocarbons are trapped inside the first part of the columns with liquid nitrogen (-195.8 °C) during the temperature programming of the injector. After the injection, the liquid nitrogen is taken out of the GC-oven, and the gas chromatograph starts with an oven temperature program as follows:

- 40 °C for 1 min.
- 8 °C/min to 295 °C.
- 295 °C isothermally for 20 min.
- Flame ionization detector at 300 °C.

The detector signals were collected on an IBM compatible PC and processed by the chromatographic software Minichrom made by VG Laboratory Systems Ltd.

About 15 to 30 mg of crushed rock samples were weighed in a crucible. The weight used was a Mettler AT250, which was standing on a table, capable of resisting most of the seawave motion. But, despite this, still the readings from the weight fluctuate like a sinusoidal curve around the true weight. To come around this problem, the weight was registered at the highest and the lowest readings approximately 16 times, and the average of these numbers was taken to be the "right" weight. There was a good repeatability with this technique, but the experience gained during this project say that a two armed balance weight most likely would have been better to use in the rough rig condition. In contrast to the weight the GHM instrument was very stabil at all times during this project.

The GHM was calibrated against established standard samples to find the conversion factors from peak area/g rock to mg HC/g rock for S1 and S2 peaks. The maximum generation of the S2 peak (Tmax) is systematically recorded to be about 62 to 65 °C higher than the established Rock-Eval Tmax values for the standard samples. All the GHM Tmax values for the samples were therefore corrected for this difference. The chromatogram of the bulk analysis were shown on the PC monitor screen. The S2 peak was magnified on this screen by help of a zooming technique, and it was thus possible to record the time where

the S2 was at maximum peak height. Even for small S2 values it was possible to measure the Tmax. Two typical chromatograms are shown in Figure 2.

The samples analysed were shales, claystones or sandstones from cuttings and cores. Some of the samples analysed on the rig were reanalysed on-shore at the Statoil geochemistry laboratory to show the reproducibility of the results. This is shown in Table 1. The results from the reanalysed samples at the on-shore laboratory show all very good agreements with the results obtained at the rig. This means that the calibration of the weight and the GHM was satisfactory.

TABLES

Table 1. Sample reanalysed at the on-shore laboratory. The sample marked with (RE) are analysed on the Rock Eval, the others are analysed on a LECO THA-100.

SAMPLE	SAMPLE						
DEPTH	TYPE	LITHOL.	S1	S2	PP	PI	Tmax
1480	cut	SH	0.09	0.59	0.68	0.14	443
	Onshore lab		0.23	0.77	1.00	0.23	443
1636	CUT	SH	0.31	0.77	1.07	0.29	451
	Onshore lab (RE)		0.42	0.42	0.84	0.50	445
1670	CUT	SH	0.36	0.91	1.28	0.28	455
	Onshore lab (RE)		0.17	0.60	0.77	0.22	446
1732	CUT	SH	0.25	0.81	1.06	0.24	459
	Onshore lab (RE)		0.17	0.71	0.88	0.19	448
1744	CUT	SH	0.20	1.17	1.37	0.14	457
	Onshore lab		0.18	0.67	0.85	0.21	458
1783	CORE	SH	1.08	1.46	2.54	0.42	448
	Onshore lab		0.55	1.24	1.79	0.31	451
1810	CUT	SH	0.39	0.74	1.13	0.35	464
	Onshore lab (RE)		0.21	0.60	0.81	0.26	448
1828	CUT	SH	0.21	0.59	0.80	0.26	457
	Onshore lab (CRUSHED)		0.16	0.43	0.59	0.27	455
	Onshore lab (UNCRUNSHED)		0.16	0.45	0.61	0.26	456
1978	CUT	SH	0.71	0.53	1.24	0.57	454
	Onshore lab		0.42	0.47	0.89	0.47	417
	Onshore lab (RE)		0.22	0.42	0.64	0.34	454
1990	CUT	SH	0.08	0.36	0.45	0.19	466
	Onshore lab		0.18	0.44	0.62	0.29	459
2164	CUT	SH	0.49	0.44	0.93	0.52	460
	Onshore lab (RE)		0.20	0.38	0.58	0.34	460
2194	CUT	SH/SLT	0.37	1.45	1.82	0.21	457
	Onshore lab		0.38	0.55	0.93	0.41	471
2230	CUT	SLT/SH	0.10	0.17	0.27	0.36	465
	Onshore lab		0.34	0.36	0.70	0.49	470

Table 2. The GHM results.

SAMPLE DEPTH	SAMPLE TYPE	LITHOLOGY	S1	S2	PP	PI	Tmax
1411	CUT	SH	0.17	0.78	0.95	0.18	444
1411	CUT	SH	0.18	0.73	0.91	0.19	445
1411	CUT	SH	0.15	0.52	0.67	0.22	451
1412	CORE	SH	0.19	0.65	0.83	0.29	446
1414.66	CORE	SH	0.18	0.63	0.81	0.22	447
Junk Basket		SH	0.04	0.59	0.64	0.07	439
1420	CUT	SH	0.11	0.27	0.38	0.29	445
1423	CUT	SH	0.18	0.55	0.73	0.25	448
1432	CUT	SH	0.24	0.63	0.87	0.28	442
1438	CUT	SH	0.15	0.58	0.73	0.20	445
1444	CUT	SH	0.14	0.48	0.62	0.23	443
STANDARD SK142			3.02	29.42	32.44	0.09	437
Establ. value for SK142:			1.85	30.40	32.25	0.06	437
1450	CUT	SH	0.15	0.52	0.67	0.22	445
1456	CUT	SH	0.20	0.94	1.14	0.17	444
1462	CUT	SH	0.12	0.84	0.96	0.13	447
STANDARD BVM			0.47	17.60	18.07	0.03	421*
1468	CUT	SH	0.13	0.85	0.99	0.13	447
1474	CUT	SH	0.10	0.61	0.72	0.14	446
1480	CUT	SH	0.09	0.59	0.68	0.14	443
1486	CUT	SH	0.30	0.49	0.78	0.38	450
1492	CUT	SH	0.09	0.83	0.93	0.10	448
1498	CUT	SH	0.09	0.65	0.74	0.13	445
1504	CUT	SH	0.16	0.59	0.76	0.22	443
STANDARD BVM			0.41	19.41	19.82	0.02	419*
1510	CUT	SH	0.15	0.59	0.75	0.20	444
1516	CUT	SH	0.06	0.36	0.42	0.15	444
1522	CUT	SH	0.08	0.51	0.59	0.14	448
1525	CUT	SH	0.14	0.50	0.64	0.22	445
1528	CUT	SH	0.11	0.66	0.76	0.14	449
1534	CUT	SH	0.18	0.44	0.62	0.29	447
1540	CUT	SH	0.08	0.35	0.43	0.18	446
1546	CUT	SH	0.19	0.61	0.80	0.24	447

SAMPLE	SAMPLE						
DEPTH	TYPE	LITHOLOGY	S1	S2	PP	PI	Tmax
1552	CUT	SH	0.06	0.42	0.48	0.13	447
STANDARD	BVM		0.55	19.97	20.52	0.03	423*
1558	CUT	SH	0.52	0.91	1.43	0.37	443
1564	CUT	SH	0.17	0.32	0.49	0.35	446
1570	CUT	SH	0.11	0.61	0.72	0.15	446
STANDARD	BVM		0.44	17.50	17.94	0.02	416*
STANDARD	BVM		0.55	19.59	20.14	0.03	418*
STANDARD	BVM		0.57	20.53	21.10	0.04	418*
STANDARD	BVM		0.51	20.90	21.41	0.02	418*
STANDARD	BVM		0.59	16.36	16.95	0.03	417*
1582	CUT	SH	0.25	0.35	0.59	0.41	449
1588	CUT	SH	0.25	0.60	0.85	0.29	446
1594	CUT	SH	0.23	0.69	0.91	0.25	451
1600	CUT	SH	0.34	0.54	0.88	0.39	448
1606	CUT	SH	2.23	7.92	10.15	0.22	447

1612	CUT	SH	1.04	4.45	5.49	0.19	447
1618	CUT	SH	0.19	0.57	0.76	0.25	445
1624	CUT	SH	0.10	0.30	0.40	0.25	444
1630	CUT	SH	0.18	0.61	0.80	0.23	450
1636	CUT	SH	0.31	0.77	1.07	0.29	451
1642	CUT	SAND	0.41	0.12	0.53	0.77	
1648	CUT	SAND	0.18	0.07	0.24	0.73	
1657	CUT	SH	0.26	0.89	1.15	0.23	450
1661	CORE	SLT	0.06	0.06	0.12	0.50	
1667.3	CORE	SH	0.50	0.88	1.37	0.36	454
1670	CUT	SH	0.36	0.91	1.28	0.28	455
1678	CUT	SH	0.20	0.77	0.97	0.21	453
1684	CUT	SH	0.17	0.57	0.74	0.23	453
1684A	CUT	SLT	0.04	0.06	0.10	0.40	
1690	CUT	SH	0.13	0.39	0.52	0.25	456
1696	CUT	SLT	0.69	0.05	0.74	0.93	
1702	CUT	SH	0.09	0.38	0.47	0.19	453
1708	CUT	SH	0.09	0.46	0.56	0.17	455
1714	CUT	SLT	0.03	0.08	0.11	0.28	
1720	CUT	SLT	0.13	0.19	0.32	0.41	
1726	CUT	SLT	0.14	0.16	0.29	0.46	

*Established value for BVM: 0.47 19.0 19.47 0.02 420

SAMPLE	SAMPLE						
DEPTH	TYPE	LITHOLOGY	S1	S2	PP	PI	Tmax
1732	CUT	SH	0.25	0.81	1.06	0.24	459
1738	CUT	SH	0.24	0.94	1.18	0.20	458
1744	CUT	SH	0.20	1.17	1.37	0.14	457
1750	CUT	SH	0.14	0.42	0.56	0.25	455
1756	CUT	SH	0.23	0.68	0.92	0.25	452
1762	CUT	SLT	0.08	0.17	0.25	0.32	
1765	CUT	SH	0.56	0.99	1.55	0.36	450
1768	CUT	SH	0.12	0.44	0.56	0.22	455
1774	CUT	SH	0.18	0.38	0.56	0.33	458
1777	CUT	SH	0.22	0.52	0.73	0.29	458
STANDARD	BVM		0.48	18.51	18.98	0.03	420*
1777	CORE	SH	0.30	0.40	0.70	0.43	460
1780	CORE	SH	0.42	0.40	0.82	0.51	452
1781	CORE	SH	0.41	0.53	0.94	0.44	456
1782	CORE	SH	0.84	1.52	2.37	0.36	453
1783	CORE	SH	1.08	1.46	2.54	0.42	448
1783A	CORE	SH	0.82	1.28	2.09	0.39	449
1786	CUT	SH	2.17	5.12	7.29	0.30	454
1792	CUT	SH	1.05	2.30	3.35	0.31	449
1795	CUT	SH	1.36	3.03	4.38	0.31	450
1798	CUT	SH	0.51	2.02	2.53	0.20	455
1804	CUT	SH	0.20	0.88	1.08	0.18	457
1810	CUT	SH	0.39	0.74	1.13	0.35	464
1816	CUT	SH	0.29	0.46	0.75	0.38	455
1822	CUT	SH	0.21	0.44	0.65	0.33	455
1828	CUT	SH	0.21	0.59	0.80	0.26	457
1834	CUT	SLT	0.16	0.09	0.24	0.64	
1840	CUT	SH	0.18	0.31	0.49	0.37	461
1846	CUT	SH	0.15	0.41	0.56	0.27	459
1852	CUT	SH	0.13	0.38	0.51	0.25	463
1858	CUT	SH	0.14	0.35	0.49	0.28	460
1864	CUT	SH	0.15	0.45	0.60	0.25	460
1870	CUT	SH	0.10	0.30	0.40	0.25	460
1876	CUT	SH	0.12	0.48	0.61	0.20	458
1882	CUT	SH	0.16	0.41	0.57	0.28	460
1888	CUT	SH	0.09	0.40	0.48	0.18	463
1894	CUT	SH	0.53	1.05	1.58	0.34	456
1900	CUT	SH	0.56	1.27	1.83	0.31	450

*Established value for BVM: 0.47 19.0 19.47 0.02 420

SAMPLE	SAMPLE						
DEPTH	TYPE	LITHOLOGY	S1	S2	PP	PI	Tmax
1906	CUT	SH	0.20	0.42	0.61	0.32	463
1912	CUT	SH	0.09	0.39	0.48	0.19	463
1918	CUT	SH	0.16	0.49	0.65	0.24	459
1924	CUT	SH	0.09	0.28	0.37	0.24	463
1930	CUT	SH	0.13	0.32	0.45	0.30	455
1936	CUT	SH	0.15	0.31	0.47	0.33	458
1942	CUT	SLT	0.09	0.07	0.16	0.59	
1948	CUT	SH	0.08	0.27	0.36	0.23	464
1954	CUT	SH	0.12	0.37	0.49	0.24	458
STANDARD BVM			0.45	20.76	21.21	0.02	419*
1960	CUT	SH	0.15	0.32	0.46	0.32	459
1966	CUT	SH	0.48	0.34	0.82	0.58	456
1972	CUT	SH	0.66	0.54	1.20	0.55	453
1978	CUT	SH	0.71	0.53	1.24	0.57	454
1984	CUT	SH	0.16	1.48	1.64	0.10	453
1990	CUT	SH	0.08	0.36	0.45	0.19	466
1996	CUT	SH	0.29	0.43	0.72	0.41	453
2002	CUT	SH	0.14	0.38	0.53	0.27	466
2008	CUT	SH	0.08	0.31	0.39	0.20	467
2014	CUT	SH	0.18	0.46	0.65	0.28	453
2019	CUT	SH	0.26	0.52	0.78	0.33	458
2020	CUT	SH	0.41	0.43	0.84	0.49	452
2026	CUT	SH/SST	0.16	0.60	0.75	0.21	456
2032	CUT	SH	0.15	0.50	0.65	0.23	449
2038	CUT	SLT/SH	0.18	0.36	0.54	0.34	460
2044	CUT	SLT/SH	0.13	0.28	0.41	0.32	454
2050	CUT	SH/SLT	0.32	1.22	1.54	0.21	453
2056	CUT	SH	0.34	0.60	0.94	0.36	460
2062	CUT	SH	0.29	0.77	1.06	0.27	453
2068	CUT	SLT/SH	0.84	0.62	1.46	0.58	450
2074	CUT	SLT/SH	0.26	0.55	0.81	0.32	455
2080	CUT	SLT/SH	0.62	0.24	0.85	0.72	462
2086	CUT	SH/SLT	0.25	0.31	0.56	0.44	455
2092	CUT	SH/SLT	0.47	0.38	0.84	0.56	451
2098	CUT	SLT/SH	0.25	0.26	0.50	0.49	459
2104	CUT	SLT/SH	0.29	0.33	0.61	0.46	462
2110	CUT	SLT/SH	0.51	0.30	0.81	0.63	472
2116	CUT	SLT/SH	0.32	0.31	0.64	0.51	479

*Established value for BVM: 0.47 19.0 19.47 0.02 420

SAMPLE	SAMPLE						
DEPTH	TYPE	LITHOLOGY	S1	S2	PP	PI	Tmax
2122	CUT	SLT/SH	0.37	0.34	0.70	0.52	461
2128	CUT	SLT/SH	0.41	0.58	0.99	0.42	477
2134	CUT	SLT/SH	0.16	0.24	0.40	0.40	470
STANDARD BVM			0.59	21.44	22.04	0.03	422*
2140	CUT	SH/SLT	0.38	0.26	0.65	0.59	457
2146	CUT	SH/SLT	0.13	0.29	0.42	0.31	477
2152	CUT	SH	0.16	0.19	0.35	0.46	475
2158	CUT	SH	0.12	0.35	0.47	0.25	470
2164	CUT	SH	0.49	0.44	0.93	0.52	460
2170	CUT	SH	0.16	0.45	0.61	0.27	460
2176	CUT	SH/LST	0.16	0.32	0.48	0.33	467
2182	CUT	SH/SLT	0.27	0.40	0.67	0.40	467
2188	CUT	SH/SLT	0.20	0.28	0.49	0.42	455
2194	CUT	SH/SLT	0.37	1.45	1.82	0.21	457
2200	CUT	SH/SLT	0.54	0.50	1.05	0.52	461
2206	CUT	SH/SLT	0.63	0.44	1.07	0.59	457
2212	CUT	SH/SLT	0.50	0.26	0.76	0.66	457
2218	CUT	SH/SLT	0.41	0.31	0.72	0.57	460
2224	CUT	SLT/SH	0.12	0.18	0.29	0.39	470
2230	CUT	SLT/SH	0.10	0.17	0.27	0.36	465
STANDARD BVM			0.49	20.96	21.44	0.02	419*
Junk basket 2		SH	0.92	0.34	1.26	0.73	465
Junk basket 3		SH	0.77	0.32	1.09	0.71	472
Junk basket 4		SH	0.35	0.21	0.56	0.63	446
Junk basket 5		SH	0.34	0.11	0.45	0.76	461
STANDARD BVM			0.44	19.55	19.99	0.02	418*
2241	CUT	SLTST/SH	0.26	0.05	0.32	0.83	
2248	CUT	SLTST	0.47	1.21	1.68	0.28	459
2254	CUT	CLYST/SLT	0.29	0.10	0.40	0.74	
2260	CUT	CLYST/SLT	0.29	0.14	0.43	0.68	
2263	CUT	CLYST/SH	2.17	1.33	3.50	0.62	461
2266	CUT	CLYST/SH	3.72	1.90	5.62	0.66	464
STANDARD BVM			0.49	20.04	20.52	0.02	420*
2269	CUT	CLYST/SH	1.27	1.06	2.34	0.54	452

2272	CUT	CLYST/SH	1.34	10.94	12.28	0.11	464
2278	CUT	CLYST/SH	0.48	0.19	0.67	0.72	

*Established value for BVM: 0.47 19.0 19.47 0.02 420

SAMPLE	SAMPLE						
DEPTH	TYPE	LITHOLOGY	S1	S2	PP	PI	Tmax
2284	CUT	CLYST/SLTST	0.37	0.53	0.90	0.41	458
2290	CUT	SLTST/CLYST	0.19	0.44	0.63	0.30	462
2296	CUT	SLTST/CLYST	0.21	0.90	1.11	0.19	457
2302	CUT	SLTST/CLYST	0.26	0.21	0.47	0.56	462
2308	CUT	SLTST/CLYST	0.16	0.22	0.38	0.43	462
2314	CUT	SLTST/CLYST	0.29	0.61	0.90	0.33	464
2320	CUT	SLTST/CLYST	0.97	0.70	1.67	0.58	448
2326	CUT	SLTST/CLYST	0.24	0.24	0.48	0.49	455
2332	CUT	SST/CLYST	0.23	0.12	0.35	0.65	458
2338	CUT	SST/SLTST	0.21	6.11	6.31	0.03	460
2344	CUT	CLYST/SLTST	0.23	2.42	2.65	0.09	466
2350	CUT	CLYST	0.24	0.19	0.43	0.56	443
2356	CUT	CLYST	0.34	1.39	1.72	0.20	460
2362	CUT	CLYST/SLTST	0.23	0.04	0.28	0.85	
2368	CUT	CLYST/SLTST	0.28	0.11	0.39	0.72	
2373	CUT	SAND	0.09	0.03	0.13	0.75	441
2374	CUT	CLYST/SLTST	0.35	0.16	0.51	0.69	468
2380	CUT	CLYST/SH	0.61	0.12	0.73	0.84	448
2386	CUT	CLYST/SH	0.58	0.13	0.72	0.81	445
2386A	CUT	CLYST/SH	0.45	0.16	0.61	0.73	446
2392	CUT	CLYST/SH	0.64	0.23	0.87	0.74	451
2398	CUT	CLYST/SH	0.61	0.15	0.77	0.80	451
2404	CUT	CLYST/SH	0.50	0.37	0.87	0.58	451
2410	CUT	CLYST/SH	0.51	0.11	0.62	0.82	450
2416	CUT	CLYST/SH	0.49	0.13	0.62	0.79	450
2422	CUT	CLYST/SH	0.28	0.04	0.32	0.86	461
STANDARD BVM			0.45	24.29	24.73	0.02	418*
2428	CUT	CLYST/SH	0.52	0.73	1.24	0.42	462
2432	CUT	CLYST/SH	0.46	0.06	0.52	0.88	
STANDARD BVM			0.49	22.47	22.96	0.02	419*
STANDARD BVM			0.49	18.71	19.20	0.03	423*
2434	CUT	CLYST/SH	0.26	0.05	0.31	0.85	
2437	CUT	CLYST/SH	0.15	0.05	0.19	0.76	468
2443	CUT	CLYST/SH	0.15	0.07	0.22	0.69	463
STANDARD BVM			0.47	18.45	18.92	0.02	419*
2449	CUT	CLYST/SH	0.16	0.03	0.19	0.86	
2455	CUT	CLYST/SH	0.13	0.10	0.23	0.57	
2461	CUT	CLYST/SH	0.13	0.10	0.23	0.56	468

*Established value for BVM: 0.47 19.0 19.47 0.02 420

SAMPLE		SAMPLE					
DEPTH	TYPE	LITHOLOGY	S1	S2	PP	PI	Tmax
2467	CUT	CLYST/SH	0.37	0.13	0.50	0.73	456
2472	CUT	CLYST/SH	0.10	0.11	0.22	0.48	
2478	CUT	CLYST/SH	0.08	0.14	0.22	0.37	454
2485	CUT	CLYST/SH	0.08	0.14	0.21	0.36	469
2491	CUT	CLYST/SH	0.06	0.09	0.15	0.41	464
2497	CUT	CLYST/SH	0.10	0.12	0.23	0.46	464
2503	CUT	CLYST/SH	0.06	0.16	0.22	0.28	463
2509	CUT	CLYST/SH	0.06	0.12	0.19	0.34	468

2515	CUT	SAND	0.05	0.01	0.06	0.83	
2521	CUT	CLYST/SH	0.07	0.07	0.14	0.51	476
2527	CUT	CLYST/SH	0.06	0.09	0.15	0.38	469
2533	CUT	CLYST/SH	0.07	0.11	0.19	0.40	458
2539	CUT	CLYST/SH	0.23	0.11	0.34	0.68	477
2545	CUT	CLYST/SH	0.23	0.08	0.31	0.74	474
2550	CUT	SAND	0.15	0.02	0.16	0.89	
2556	CUT	SAND	0.04	0.00	0.05	0.90	
2566	CUT	SAND	0.04	0.01	0.05	0.76	
2576	CUT	SHALE	0.14	0.07	0.21	0.66	457
2584	CUT	SHALE	0.23	0.14	0.38	0.62	454
2590	CUT	SHALE	0.11	0.15	0.27	0.42	459
2596	CUT	SHALE	0.23	0.10	0.33	0.71	

*Established value for BVM: 0.47 19.0 19.47 0.02 420

FIGURES

Figure 1. Flow diagram of the GHM system.

GEOFINA HYDROCARBON METER.

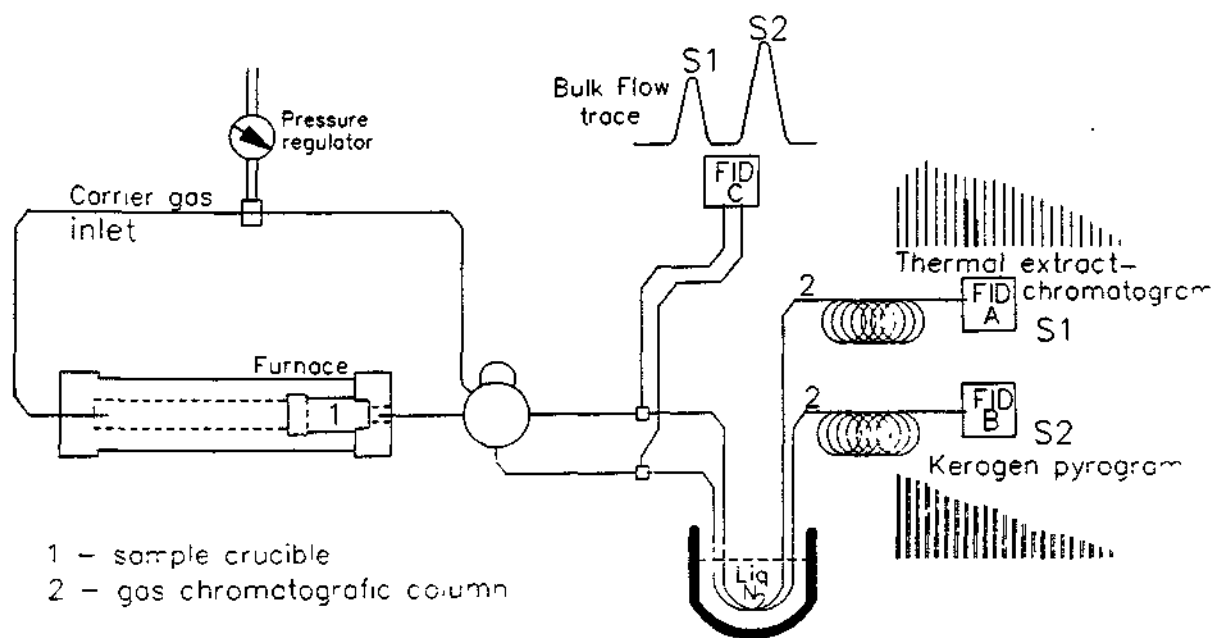


Figure 2. Two pyrolysis chromatograms.

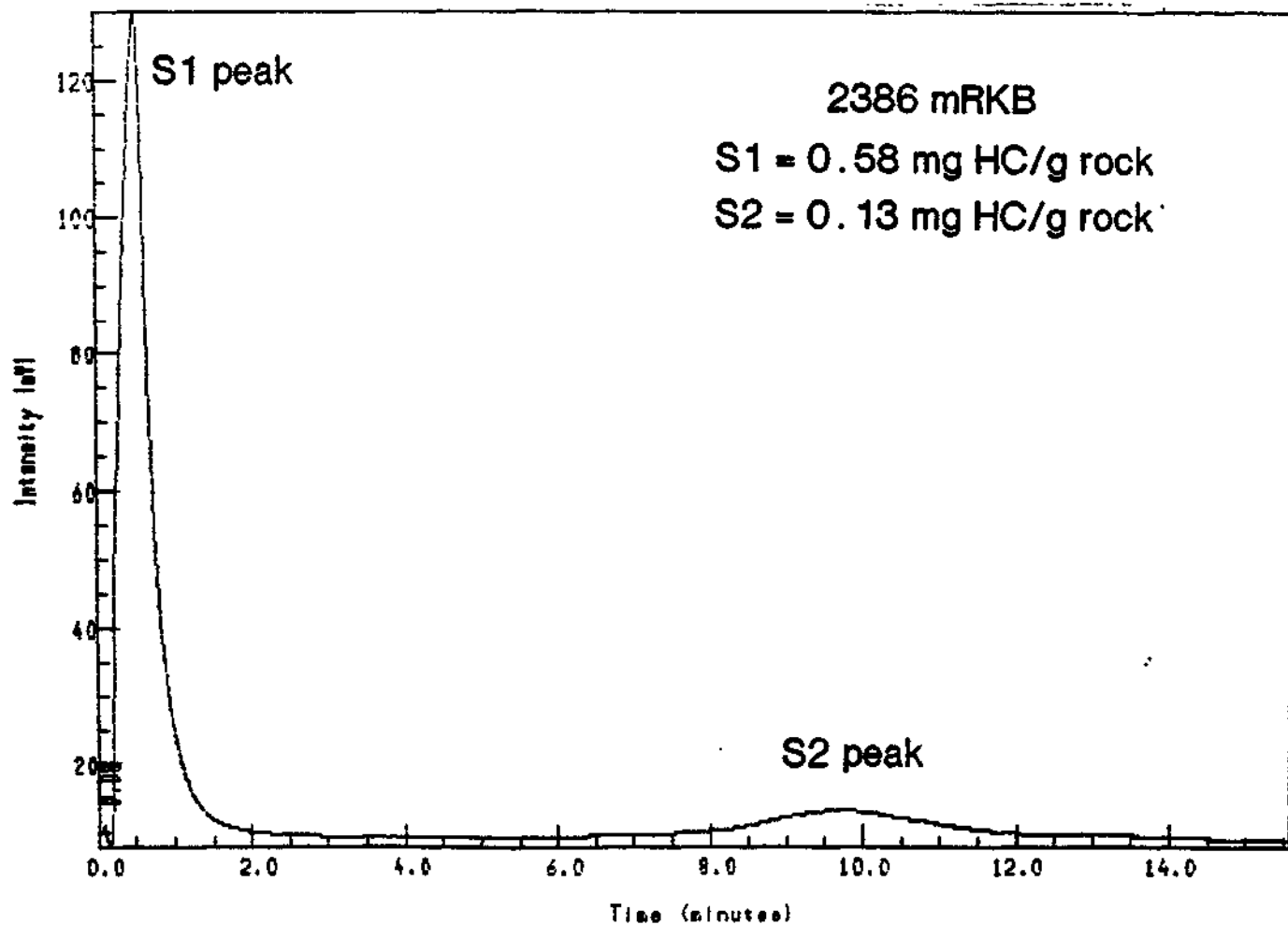
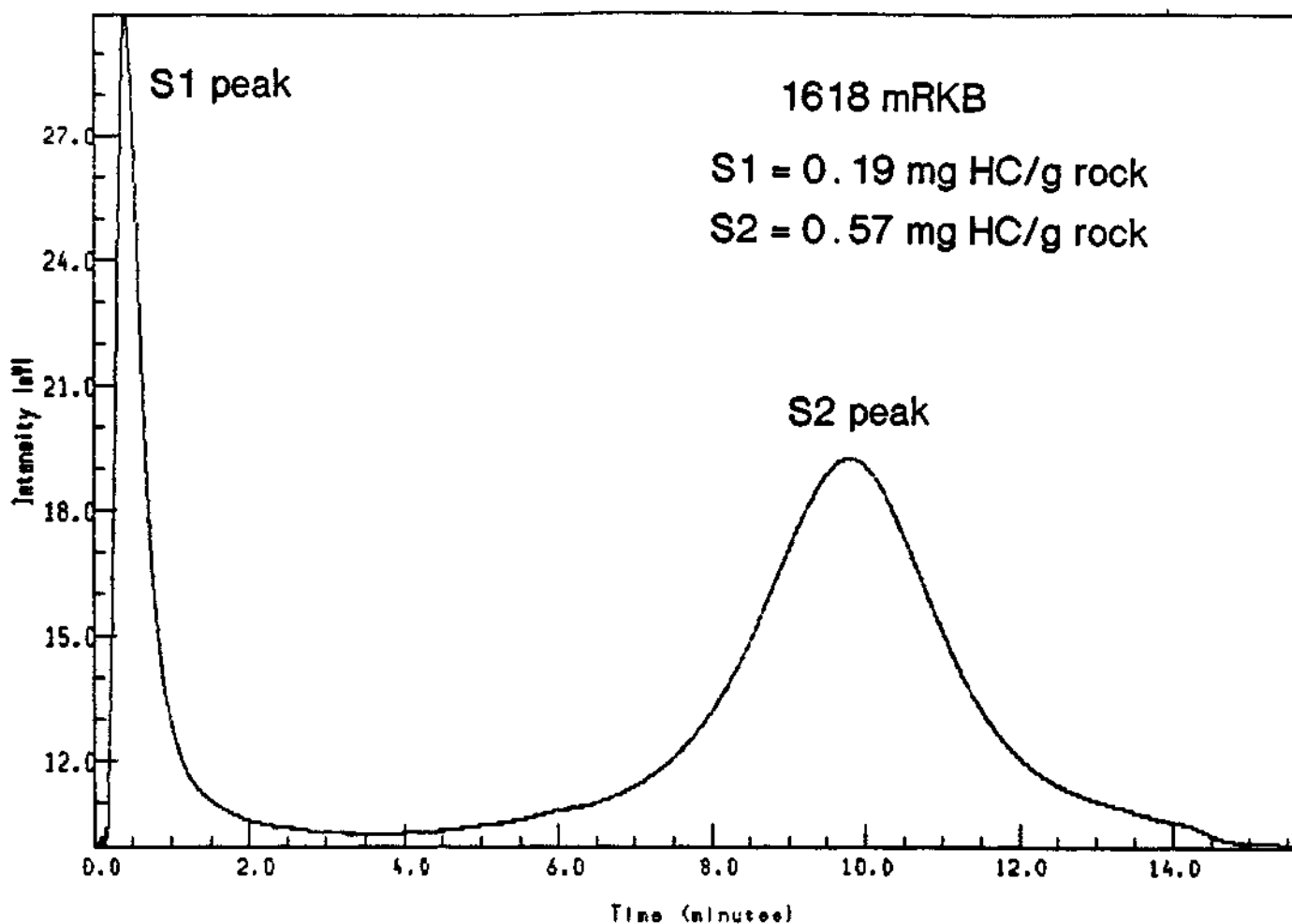


Figure 3. A total gas chromatogram of thermal extract and a pyrolysis product.

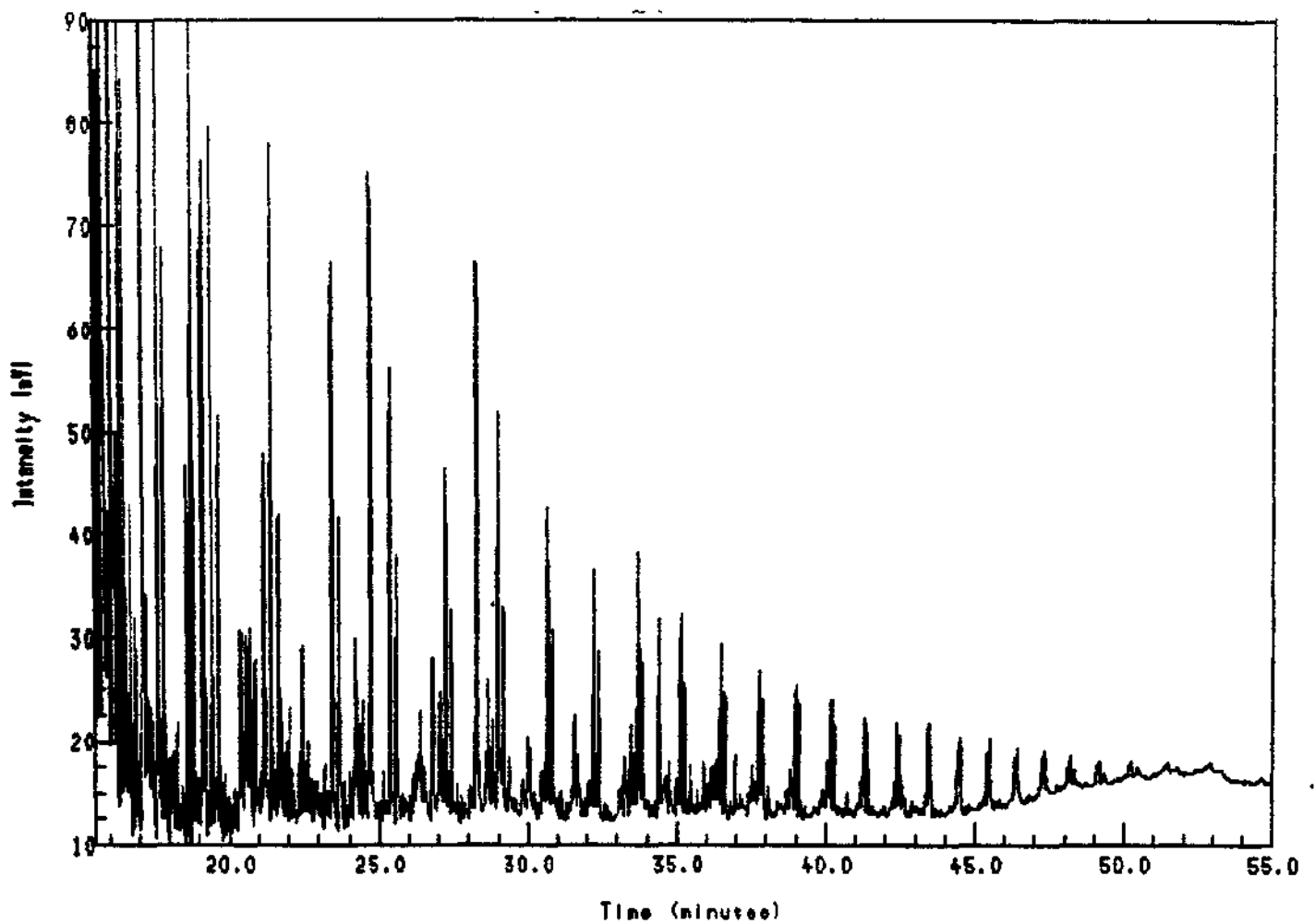
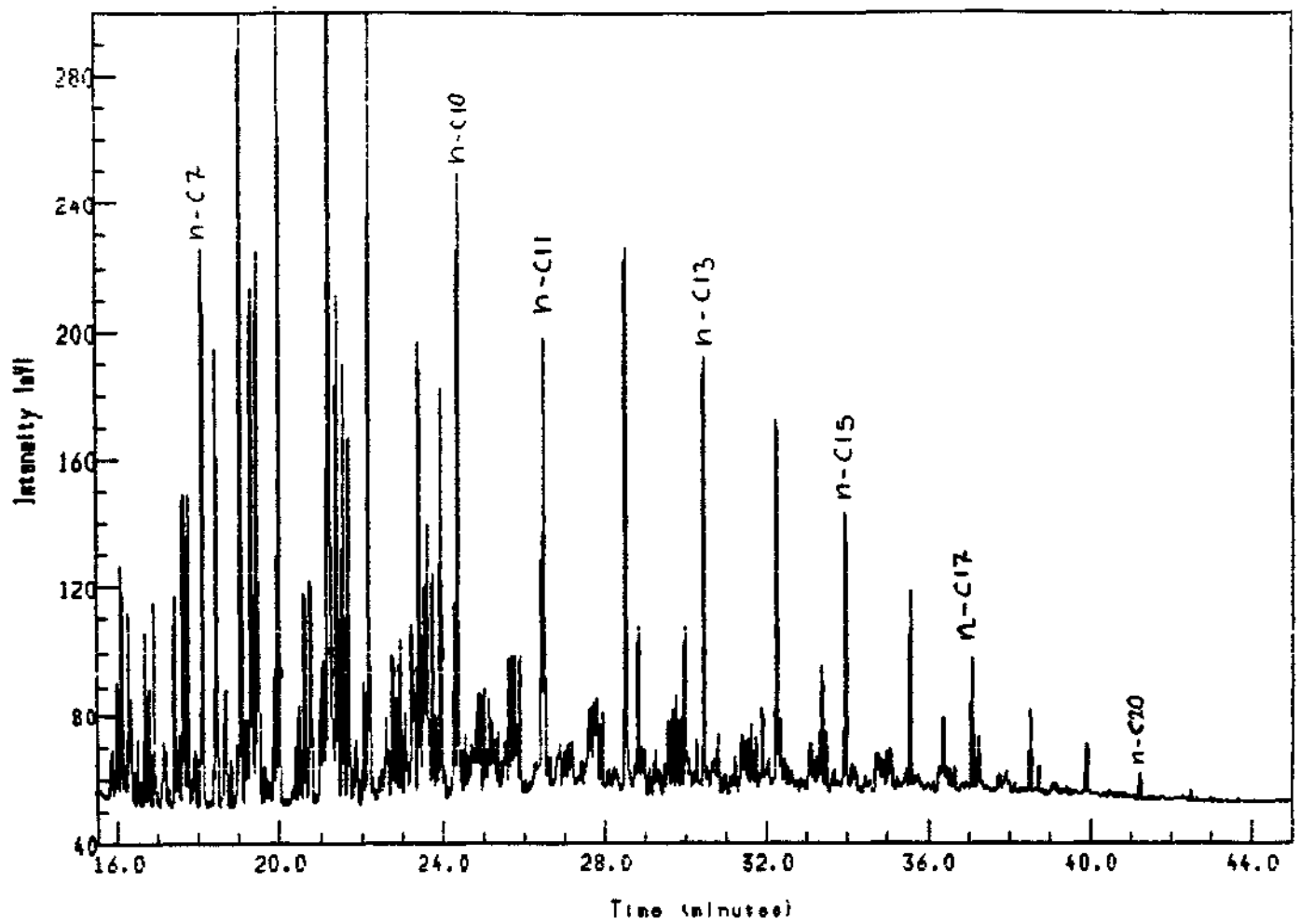


Figure 4. Plot of Tmax against depth.

Brønn : NO 7324/10-1

