



DAILY MATERIALS CONSUMPTION

WELL Statoil, 24/12-2

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DATE 1981	DEPTH Meters	Baryte M/T	Bentonite M/T	Caustic Soda	Soda Ash	Spersene	XP-20	Resinex	CMC L.V.	CMC H.V.	Gypsum	Lime	Mica	Nut Plug	DAILY MUD COST \$	REMARKS
22/6	0		15	3											5631,00	Mix spud mud.
23	202		12	3											4517,40	Drill 36" hole. Run 30" Casing.
24	202														0	Working on well head.
25	203	18	24	4		5				2					11705,40	Drill ahead. Mix kill mud.
26	452		4	1								7			1534,50	Drill 12 1/4" pilot hole.
27	580	27,5	11	2									45		8806,65	Drill losing circ. kill mud.
28	891		6	1									55		3314,50	Drill ahead. Losing circ.
29	1004	4(slugs)	2	1									10	50	2575,30	Drill ahead. Casing point.
30	1004	3(slugs)	8	1										8	3577,30	Trip + Circ hole.
01/7	240	3	4	1											1921,30	Open 12 1/4" hole to 26".
02	444	2	14	1											5496,80	Open 12 1/4" hole to 26".
03	569		19	3									19		7485,42	Losing mud to hole. Open to 26"
04	691		8	1									23		3437,14	Open 12 1/4" hole to 26".
05	781	11	19	2						3			25		9293,10	Open 12 1/4" hole to 26".
06	951	4	5	1									33		72367,05	Open 12 1/4" hole to 26".
07	1005		13	1									13		5100,34	Finish 26" hole, displace with S.W.
08	1005	112	25	9		17							40		26067,65	Build 1.2 mud.
09	1005	34	11	4											8875,20	Build volume + Raise wt.
10	1005	82	12	8	1							2			16012,30	Build volume to circ. casing.
11	1005		5	24	1				49	30	96				8142,23	Convert to Gyp. system.
12	1005	21,5	5	3					8		44				5809,51	Mixed 550 bbl gyp mud.
13	1005									28					1755,60	Add CMC HV to raise visc/YP.
14	1008		8	7	1				22		43				4882,64	Disp. hole + started to build new mud.
15	1013	46	8	4	1				22		40				10863,64	Wt. up mud + build more.
16	1185	35,5	9	5	1				34	20	18				11725,33	Built 260 bbls kill & 260 bbl 1.18 CMC LV/HV
17	1340	17	14	14	1				27	-	58				10055,79	Built 585 bbl gyp + slurry 250 bbl for FL/YP
18	1451		4	10		12			5		18				2387,25	Spersene to control visc. API.
19	1638		10	10					10		62				5369,70	Mixing 550 bbl gyp mud. Gel still high.
20	1781	34		22		25			5		36				6269,30	Raised wt. Reducing PV, gels + f/loss 12cc
21	1875					30			25						2062,75	Treating as before.
22	2044	8	10	12	1	90			20		90	40			8998,80	Mixed 500 bbl gyp mud. Treating active.



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DATE 1981	DEPTH Meters	Barite M/T	Bentonite M/T	Caustic Soda	Soda Ash	Spersene	XP-20	Resinex	CMC L.V.	CMC H.V.	Gypsum	Lime	Soltex	Mica	Nut Plug	D.D.	Pipe Lax	DAILY MUD COST \$	REMARKS
23/7	2044																2	1884,00	Lost pipe, mix spotting solution.
24	2044																	0	Lay down string, pick up new string.
25	2046	39	11	10		54			10	7	40						1		Raised wt. to 1.24.
26	2162	62,5	4	11		132					26							13054,35	Drilling ahead. Viscosity problem.
27	2182	40,5		20					25		56							8071,30	Bit balling.
28	2250	30	2	45					10		46							6802,50	Drilling. Solids problem.
29	2274		4	35					43		120							5964,51	Test BOP premix.
30	2300	14	4	35		25												4592,95	Drilling. Viscosity & Solids problem.
31	2335	34	12	10					55		160							14256,15	P.O.H. Build volume.
01/8	2393	39	6	3					12		40							8824,94	Lower mud wt. to 1.22.
02	2407	7	17	8					45	7	120							11776,45	Reduce mud wt. to 1.20, FL to 10.0.
03	2442	2	17	33		15			31	21	40							11114,32	Drilling-trip.
04	2442	37	10	5		16					40							9626,70	Ream out hole for \diamond bit + Turbine.
05	2442		6	3		18					40							3013,00	Ream, trip, Test BOP. Pick up BHA
06	2442		12	5		20					80							5710,80	RIH \diamond bit. Hung up, POOH+Ream to BTM.
07	2442									30								1881,00	Ream to 1695 + POOH to change assy.
08	2442	30	14	28	2	100				30	120							14863,20	Reaming mud return. Raise wt+YP.
09	2442		4	5	1	10			30		40							3994,70	Repair pump. Build vol Keep yp up FL down.
10	2442	20	8	56	2	20				60	80							11828,40	Keep YP high & FL down.
11	2444	70	5	5	1					60	40							16453,50	Bit would not go (Ball)
12	2445	12	6	8	2					30	80							6758,00	Fishing.
13	2445	6		5							40	130						12626,20	Fishing: soltex on instruction.
14	2445																	0	Fish + cement
15	2187																	0	Drill cement.
16	2220	22																3047,00	Drill cement.
17	2289	2								60								4039,00	Turbo. Keeping YP up.
18	2289	39	11	15	2					55	150							14749,40	Drill Turbo Run mix no. 4+5.
19	2309	5								30								2573,50	Turbo with \diamond
20	2316	5		8	3					30								2796,60	Turbo drill
21	2329	1	4							30	100							4485,10	Turbo drill + POOH mix no. 5.
22	2335									30								1881,00	Turbo drill



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DATE	DEPTH Meters	Barite M/T	Bentonite M/T	Caustic Soda	Soda Ash	Spersene	XP-20	Resinex	CMC L.V.	CMC H.V.	Gypsum	Lime	Soltex	Mica	Nut Plug D.D.	pipe Lax	DAILY MUD COST \$	REMARKS
1981																	0	Run 13-3/8 casing.
23/9	2872																0	Run 13-3/8 casing.
24	2764			23		170	84										6125.30	Convert mud over to Spersene-XP-20.
25	2887	5							20								1899.90	Drill cmt.
26	2938	81	6	3													13507.50	Raise mud wt. Circ. gas.
27	2958	118		4	10	16	15		20								18582.15	Raise mud wt. Circ. gas.
28	2967	127	3	12		42	21										20213.55	Raise mud wt. Circ. gas.
29	2999	49	8	7		25	13										10751.00	" " " Mix gel in no. 5
30	3057	45		11	10	82	91										9404.65	Drilled ahead.
01/10	3127	4		13		24	12										1620.00	Drill ahead. Use Soda Ash for Ca++
02	3207			16	10	24	12										1331.60	" "
03	3272			16	10	24	12										1331.60	" "
04	3301	14															1911.00	" "
05	3302	17	1	10		20											3296.90	RIH w/junk basket Mixed visc pill.
06	3326			5		10											285.50	RIH w/bit & turbo Drill ahead.
07	3377			10		40	10										1240.50	Drill ahead
08	3422			20		10											588.50	" " Add from no. 4 to active.
09	2477	7		10		20											1540.50	" " Wash no. 4
10	3496	3		10		10											802.00	" " Trip to change bit.
11	3550	13		18		35											2809.85	" " Add water & chemical
12	3610	3		20													819.50	" "
13	3663	11		10		30	18										2819.90	" " Suspect carb/bicarb pilot testing.
14	3663																0	Trip. Test BOPs. Lost mud from trip tank.
15	3729	23	2	8		16	8										4626.50	Drilling ahead.
16	3787			10		20	10					50					1076.50	Drilling ahead. Raise Pf.
17	3837	6										50					1036.00	Drilling ahead.
18	3875			10		20	10										871.50	Drilling ahead (repaired pump)
19	3927					20	10					20					751.50	Drilling ahead.
20	3980	6		10		30	15										2037.25	Dril to csg point 3980. Circ.
21	3980																0	Run electric logs.
22	3980																0	POB to run casing 9-5/8



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DATE 1981	DEPTH Meters	Barite	Bentonite	Caustic Soda	Spersene	XP-20	Resinex	Lime							DAILY MUD COST \$	REMARKS	
23/10																	
24	3966														0	Lay cmt plug to pull BOP.	
25	3966			NO ADDITIVES											0	Pull BOP	
26-28				NO ADDITIVES											0	Run BOP, Test RIH	
29	3982			NO ADDITIVES											0	Drill cmt float+shoe leak off 2.13	
30	3991	4													554.00	Trip Change bit + assy	
31	4023			NO ADDITIVES											0	Drill ahead Trip to change bit	
01/11	4073	6													831.00	RIH diamond bits/Gas 5%	
02	4144	92		14	40	60	40								18403.00	Raise wt to 1.85 Resinex used to reduct HP-HT	
03	4193	106	2	6	25	25	25								18530.75	Trip gas 9.0% Raised wt to 1.90	
04	4239	36		24	35	35	35								9650.85	Raise wt to 1.95 using centrifuge	
05	4256			NO ADDITIVES											0	POH WOW Repair PODs	
06	4256	11													1523.50	Repair PODs	
07	4307	48		20	20	20	20								9440.60	Raised wt to 2.00	
08	4307	3													415.50	Set plug	
09	4307			NO ADDITIVES											0	Dress plug + set second	
10	4307			NO ADDITIVES											0	Dress plug + POH + pull riser	
11-21	4307			NO ADDITIVES											0	Rig on strike	
22	4307			NO ADDITIVES													
23	4307	11													1523.50		
24	4307			NO ADDITIVES													
25	4307			5	30	20	20								2674.10	Built volume.	
26	4307	58	2		40										9513.80	Built vol. Drld plugs mud visc.	
27	4307	61			60	30	30								12584.90	Ream to bottom.	
28	4307	12					20								3080.60	Ream to bottom	
29	4313	28		5	35	15									5075.50	Ream to bottom and drill ahead.	
30	4321						30								2127.90	Dr POH & RIH w/junk basket	
01/12	4329	34		5	20	20	20								7198.60	POH w/junk basket. RIH with turbo + Acc kit.	
02	4366	2		10	20	20	20								2867.60	Trip bit, RIH diamond bit	

B-1/2"



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1981 DATE	Meters DEPTH	Barite	Bentonite	Caustic Soda	Spersene	XP - 20	Resinex	Lime							DAILY MUD COST	REMARKS
03/12	4396	35													4847.50	Inc. wt. to 2.03 + POOH tight hole
04	4403	24		10	30										4079.50	RIH can't drill. POOH RIH. Leak off test.
05	4420			4	14										339.10	Drill. POOH. WOW. RIH. Drill POOH for bit.
06	4429	16			30	15									3220.25	Test BOP. RIH. Drill with turbine/diamond bit.
07	4481	31		10		15									4946.25	Drill 4 std wiper trip. Drill
08	4519			8											161.60	Drill. wiper trip. Tight hole. Rig repair.
09	4531														0	RIH Drill POOH for bit RIH
10	4587			20	20										773.00	RIH Clear kill + choke line Drl
11	4625	14													1939.00	Drill ahead. Pull to 1000m to retrieve survey.
12	4652	1													138.50	Drill ahead. POOH to CB. Hole tight 4150.
13	4699	11		10			10								2434.80	Drill ahead POOH to CB.
14	4756	13		20		20									2805.50	RIH and drill ahead.
15	4756														0	POOH test BOP's etc. RIH.
16	4780	3													415.50	Drill + POOH. Hole tight in floor.
17	4801	15													2077.50	RIH w/turbine/diamond bit. Drill. POOH.
18	4819	16		8	30	15		3							3374.15	POOH RIH w/insert bit. Drl ahead
19	4844	18		5			20								4012.60	Drill POOH for bit. Run centrifuge
20	4851	5		1			5	3							1079.65	POOH RIH w/bit no. 62 Drl ahead.
21	4874	16	1	15	20	17									3770.25	Drill ahead. Mix 20m prehyd. Bent.
22	4917	12		10	17	9									2448.10	Drill POOH for bit.
23	4933	7		6											1090.70	RIH and drill w/turbine/diamond bit. POOH for bit.
24	4948	3	1	18	20	10									1820.00	Test BOP RIH Drill
25	4961	10													1385.00	Drill POOH RIH cut core no. 1



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1981/ 1982 DATE	Meters DEPTH	Barite	Bentonite	Caustic Soda	Spersene	XP - 20	Resinex	Lime							DAILY MUD COST \$	REMARKS
26/12	4978														0	Cut core no. 1 POOH RIH Drill
27	5019	14		20	20	10		4							3028.90	Drill ahead.
28	5045	14		10	25										2602.25	Drill ahead Trip for bit.
29	5077	7		12	30										1765.40	RIH and drill ahead.
30	5100	16		12	20										2827.46	Drill to TD POOH + rig up to log
31	5100	2		1		12									357.30	Ran 3 logs, wiper trip RIH
01/01	5100														0	Tool could not get passed 4940 Wiper trip.
02	5100	3		10	20	20									1587.50	C+C mud POOH Ran logs ok Lost mud on trip.
03	5100			5	10										287.50	Log Trip C+C
04	5100														0	Run cst. RIH C+C POOH log.
05	5100														0	Logging.
06	5100														0	BET stuck at 4963.7 RIH w/ o/s
07	5100	14		5											2040.00	POOH w/fish RIH C+C
08	5100														0	RIH O/S set plug 5100 4930 RIH and set plug.
09	3876	7													969.50	Plug 4920-4626 + 4026-3876 Lay out 120 to DP
10	2820														0	Press plug. Set plug 2920-2820
11	2820	7													969.50	Lay out DP & change BOP's
12	2820														0	Test BOP RIH C+C to 1.70
13	2820														0	Perforated cmt casing + POH casing 900 m.
14	850														0	RIH bit and scraper. Set plug 950 - 850. Cirs to 1.24. Per- forate 13-3/8" at 790.
15	850		6	4											2309.20	Mill on packer. RIH w/scraper.
16	275														-	Abandon.



DAILY MUD PROPERTIES

Well Statoil, 24/12-2

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1981 DATE	Meters DEPTH	WT.	VIS SEC.	CORR. 115°F		GELS 0 10	pH	FLUID LOSS		CL CACL NACL	ALKALINITY				RETORT			V.G. METER READING @ 115°						Bbl CEC	\$ TOTAL MUD COST		
				PV	YP			100 PSI API	500 PSI 300°F HT-HP		PF	PM	MF	CA ppm	% OIL	% SOL	% WATER	800 R.P.M.	300 R.P.M.	200 R.P.M.	100 R.P.M.	8 R.P.M.	3 R.P.M.				
22/6	0	8.5	60				10.5																				5631.00
23	202	8.5	50				10.5																				10148.40
24	202	8.5	50				10.5																				10148.40
25	203	8.6	48	10	18	1248	9.5																				21853.80
26	452	8.8	52	10	46	2838	9.4	26		6000	.01		.05	160	0	3	97	66	56	53	47	30	28	-		23388.80	
27	580	1.06	62	11	48	3548	8.4	N/C	N/C	6000	.01	.01	.05	120	0	3	97	70	59	54	49	36	36	37		32195.45	
28	891	1.06	60	11	46	3446	8.4	24.0	N/C	6000	.01	.01	.05	100	0	5	95	68	57	54	48	35	34	38		35509.95	
29	1004	1.06	53	10	45	3437	8.4	20.0	N/C	6000	.01	.01	.05	100	0	3	97	65	55	51	46	35	34	37.5		38085.25	
30	1004	1.06	51	10	42	3538	8.4	22.0	N/C	6000	.01	.01	.05	100	0	3	97	62	52	48	43	32	31	37		41662.55	
01/7	240	1.06	50	8	41	3135	8.4	22.0	N/C	6000	.01	.01	.05	100	0	3	97	57	49	94	41	32	31	38		43583.85	
02	444	1.06	48	8	38	3536	8.4	23.0	N/C	5500	.01	.01	.05	100	0	3	97	54	46	44	42	35	34	35		49080.65	
03	574	1.06	58	9	44	3638	8.4	22.0	N/C	6000	.01	.01	.05	100	0	3	97	62	53	47	43	38	37	37		56566.07	
04	691	1.06	60	10	44	3538	8.4	22.0	N/C	5500	.01	.01	.05	100	0	3	97	64	54	47	42	36	35	27		60003.21	
05	781	1.06	55	10	50	4245	8.4	23.0	N/C	6600	.01	.01	.05	120	0	3	97	70	60	56	52	42	41	38		69296.31	
06	950	1.06	52	10	44	3840	8.4	23.0	N/C	5700	.01	.01	.05	100	0	3	97	64	54	49	42	36	35	38		72367.05	
07	1005	1.06	48	8	38	3436	8.4	23.0	N/C	7500	.01	.01	.05	120	0	3	97	54	46	44	42	35	34	37		77467.39	
08	1005	1.2	47	15	16	1722	8.9	18.4	N/C	5500	.05	.04	.08	120	0	8	92	46	31	28	25	15	14	32		103535.04	
09	1005	1.2	46	15	15	1450	8.8	18.2	N/C	5700	.05	.04	.05	120	0	9	91	45	30	26	20	11	15	31		12410.24	
10	1005	1.2	47	14	15	1536	8.8	18.0	N/C	5500	.05	.05	.05	120	0	9	91							32		28422.54	
11	1005	1.2	48	12	7	2	10.8	12.0	-	5000	.9	2.0	1.1	600	0	7	93	31	19	13	7	1	1	12.5		36584.77	
12	1005	1.2	44	12	6	1	10.8	14.0	-	5000	.8	2.0	1.0	600	0	7	93	30	18	10	4	1	1	12.5		42374.28	
13	1005	1.2	48	11	5	1	10.8	8.4	-	5000	.5	2.0	0.9	680	0	8	92	27	16	11	6	1	1	12.5		44129.88	
14	1008	1.7	50	12	6	1	11.0	22.0	-	8000	1.1	3.6	1.3	760	0	8	92	30	18	12	6	1	1	17.5		49012.52	
15	1013	1.8	40	10	27	1015	11.4	34.0	-	8000	1.8	6.0	2.1	800	0	9	91	47	37	34	30	16	11	12.5	105 F	59876.16	
16	1185	1.18	40	13	9	313	10.7	10.8	-	9000	.4	2.3	.55	720	0	10	90	35	22	16	10	2	1	15.0	105 F	71601.49	
17	1340	1.18	60	14	20	2438	9.6	12.0	-	13000	.15	1.4	.30	800	0	10	90	48	34	29	23	19	20	15.0	120 F	81657.28	
18	1451	1.17	44	11	12	1735	9.0	13.2	-	12000	.15	.7	.30	1000	0	9	91	34	23	19	15	11	10	15.0		84044.53	
19	1638	1.18	45	10	17	1935	9.1	11.2	-	14000	.1	.6	.30	1000	0	9	91	37	27	25	21	19	19	17.5		89414.23	
DATE SPUD: 27-6-81			DATE T.D.:											COST:													



DAILY MUD PROPERTIES

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1981 DATE	Meters DEPTH	WT.	VIS SEC.	CORR. 115°F		GELS		pH	FLUID LOSS		CL <input checked="" type="checkbox"/> CACL <input type="checkbox"/> NACL <input type="checkbox"/>	ALKALINITY			RETORT			V.G. METER READING @ 115°						Bbl CEC	\$ TOTAL MUD COST	
				PV	YP	0	10		BECK STRIP <input type="checkbox"/>	100 PSI API		500 PSI 300°F HT-HP	PF	PM	MF	CA ppm	% OIL	% SOL	% WATER	600 R.P.M.	300 R.P.M.	200 R.P.M.	100 R.P.M.			6 R.P.M.
20/7	1781	1.21	52	10	15	21	36	8.9	16.6	-	13000	0.1	0.3	0.25	1000	-	11	89	35	25	20	16	13	12	17.5	195683.53
21	1875	1.22	45	12	9	17	32	8.7	14.2	-	14000	0.1	0.3	0.3	1040	-	11	89	33	21	15	10	5	4	20.0	197748.28
22	2044	1.22	52	12	14	20	38	9.1	15.0	-	15000	0.2	0.8	0.5	800	-	11	89	38	26	21	16	8	8	40.0	206945.08
23	2044	1.22	48	12	13	18	36	9.0	15.4	-	14000	0.2	0.8	0.5	1023	-	11	89	37	25	21	15	8	7	38	208629.08
24	2044	1.22	48	12	13	18	36	9.0	15.4	-	14000	0.2	0.8	0.5	1030	-	11	89	34	22	18	14	8	7	38	208629.08
25	2046	1.24	48	17	14	18	44	8.9	12.4	-	15000	0.2	1.0	0.5	1200	-	14	86	48	31	24	17	7	6	32	221887.58
26	2162	1.24	53	15	16	14	48	8.6	13.6	-	16000	0.1	0.2	1.4	1080	-	14	86	46	31	25	20	9	8	34	234941.93
27	2182	1.25	46	16	14	18	47	10.2	12.4	-	15000	0.5	0.7	1.2	1180	-	15	85	46	30	26	20	9	9	36	243013.23
28	2250	1.24	55	14	23	15	49	9.8	15.0	-	15000	0.3	0.5	1.2	960	-	14	84	51	37	32	27	14	13	32	249815.73
29	2274	1.24	46	14	16	11	36	9.8	12.6	-	14000	0.4	0.4	1.1	1100	-	14	86	44	30	24	18	6	5	36	255780.24
30	2300	1.25	43	13	11	16	48	10.0	16.8	-	15000	0.5	1.2	1.1	900	-	14	86	37	24	19	14	7	6	38	260373.09
31	2335	1.25	50	15	16	19	46	9.8	15.2	-	14000	0.3	0.6	1.0	920	-	14	86	46	31	26	19	11	10	40	274629.24
01/8	2393	1.22	43	7	12	7	25	9.8	17.0	-	14000	0.4	0.7	1.1	920	-	12	88	28	19	15	11	3	2	38	283454.18
02	2407	1.21	47	15	11	4	28	10.6	12.8	-	13000	0.6	0.9	1.4	880	-	10	90	34	21	16	11	3	2	36	295230.63
03	2442	1.20	36	11	11	4	25	10.4	9.0	-	14000	0.7	1.0	1.4	960	-	10	90	34	23	15	9	3	2	38	306344.95
04	2442	1.20	40	14	11	2	12	9.4	8.6	-	13000	0.2	0.6	1.0	880	-	10	90	39	25	13	11	4	3	40	315971.65
05	2442	1.20	40	13	11	3	15	9.2	9.6	-	13000	0.3	0.6	1.0	880	-	10	90	37	24	12	10	3	2	40	318984.75
06	2442	1.20	42	12	10	3	18	10.4	9.2	-	14000	0.2	2.4	0.45	720	-	10	90	34	22	14	11	3	2	35	324695.55
07	2442	1.22	50	16	10	3	27	10.4	7.6	-	13000	0.1	2.0	0.4	680	-	11	89	42	26	20	13	3	2	37.5	326576.55
08	2442	1.24	63	16	19	22	48	9.4	9.0	-	13000	1.0	0.5	0.3	720	-	12	88	51	35	30	24	16	16	42.5	341439.75
09	2442	1.24	58	20	12	4	32	9.2	7.0	-	13000	0.1	0.5	0.3	760	-	12	88	52	30	23	15	5	4	40.0	345434.45
10	2442	1.24	57	16	15	11	32	10.4	7.8	-	13000	0.2	1.6	0.55	680	-	11	89	47	71	25	18	6	5	40.0	357262.85
11	2444	1.24	57	20	17	8	44	9.7	6.2	-	13000	0.1	0.9	0.6	680	-	11	89	57	37	29	20	8	7	40.0	373716.35
12	2445	1.24	54	19	14	6	37	9.6	6.2	-	13000	0.1	0.4	0.45	720	-	11	89	52	33	26	17	6	5	40.0	380474.35
13	2445	12.4	47	19	13	5	35	9.5	6.2	-	13000	0.1	0.5	0.5	720	-	12	88	52	33	26	16	6	5	40.0	393100.55
14	2445	1.25	50	17	12	5	34	9.4	6.2	-	13000	0.1	0.5	0.5	640	-	12	88	46	29	23	15	5	4	40.0	393100.55
15	2187	1.23	54	17	18	17	63	11.2	8.0	-	12000	2.5	2.4	0.75	600	-	12	88	52	35	28	21	15	14	40.0	393100.55
16	2222	1.23	45	14	12	7	52	11.2	8.8	-	13000	0.30	2.7	0.65	640	-	11	89	40	26	21	14	7	6	42.5	396147.55

DATE SPUD:

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DAILY MUD PROPERTIES

Well: Statoil, 24/12-2

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1981 DATE	Meters DEPTH	WT.	VIS		CORR. 115°F		GELS		pH	FLUID LOSS		CL	NACL	ALKALINITY				RETORT			V.G. METER READING @ 115°						BM	\$ TOTAL MUD COST
			SEC.	PV	YP	0	10	100 PSI API		500 PSI 300°F HT-HP	CA			PF	PM	MF	ppm	% OK	% SOL	% WATER	600 R.P.M.	300 R.P.M.	200 R.P.M.	100 R.P.M.	6 R.P.M.	3 R.P.M.		
			BECK STRIP	100 PSI API	500 PSI 300°F HT-HP	CA	PF	PM	MF	ppm	% OK	% SOL	% WATER	600 R.P.M.	300 R.P.M.	200 R.P.M.	100 R.P.M.	6 R.P.M.	3 R.P.M.	CEC								
17/8	2289	1.24	50	14	14	4	40	11.5	7.0	-	13000	0.5	3.8	0.9	600	-	11	89	42	28	22	14	4	3	42.5	400186.55		
18	2289	1.24	48	14	13	4	26	11.4	8.2	-	13000	0.55	4.0	1.0	600	-	11	89	41	27	20	13	3	2	40.0	414935.95		
19	2309	1.24	53	14	12	3	24	11.4	8.8	-	13000	0.95	6.2	1.35	600	-	12	88	40	26	16	11	4	3	42.5	417509.45		
20	2316	1.24	48	18	12	2	22	11.4	8.0	-	13000	0.7	6.4	1.1	600	-	11	89	48	32	24	15	3	2	40.0	420706.05		
21	2329	1.24	51	18	14	3	22	11.2	6.8	-	13000	0.55	5.4	0.9	640	-	12	88	50	72	23	15	3	2	42.5	424791.15		
22	2335	1.24	48	16	12	3	20	11.1	7.2	-	13000	0.4	5.6	0.8	640	-	11	89	44	28	20	12	3	2	40.0	426672.15		
23	2335	1.22	51	18	13	2	16	11.1	6.8	-	13000	0.4	5.6	0.7	640	-	11	89	48	30	22	13	3	2	40.0	432832.65		
24	2359	1.24	49	17	12	2	8	10.8	6.8	-	13000	0.4	5.8	0.7	660	-	12	88	48	31	23	14	3	2	38.0	434713.65		
25	2359	1.24	44	17	10	2	7	10.7	7.0	-	13000	0.3	4.0	0.6	620	-	12	88	44	27	19	11	3	2	39.0	435007.65		
26	2401	1.24	46	18	11	2	8	10.7	6.8	-	13000	0.3	4.0	0.7	680	-	11	89	49	30	22	14	3	2	36.0	439032.65		
27	2431	1.24	48	20	12	3	9	10.5	6.4	-	14000	0.2	3.6	0.8	640	-	12	88	52	32	24	15	3	2	37.0	450143.15		
28	2455	1.24	48	20	13	3	9	10.5	6.2	-	13000	0.2	3.4	0.7	680	-	13	87	53	33	24	15	3	2	38.0	454675.55		
29	2506	1.24	45	20	12	3	10	10.2	6.4	-	13000	0.2	3.2	0.8	640	-	13	87	52	32	24	15	3	2	37.5	459361.35		
30	2525	1.25	49	21	12	3	8	10.0	6.6	-	14000	0.2	2.8	0.7	640	-	13	87	54	33	25	16	3	2	37.5	465010.85		
31	2543	1.24	47	21	13	3	10	10.0	6.6	-	14000	0.3	3.2	1.2	640	-	13	87	55	34	24	15	3	2	38.0	469963.55		
01/9	2568	1.24	44	18	12	3	12	10.7	7.8	-	13000	0.3	3.6	0.9	680	-	12	88	48	30	22	14	3	2	38	473703.15		
02	2620	1.24	42	16	11	3	16	10.9	8.6	-	14000	0.3	3.0	0.9	640	-	12	88	43	27	21	14	3	2	38	475814.15		
03	2635	1.24	50	18	13	3	26	10.9	7.0	-	14000	2.0	2.6	0.5	600	-	13	87	49	31	24	15	3	2	37.5	479946.35		
04	2646	1.24	44	16	12	3	15	10.6	6.4	-	14000	0.1	2.4	0.35	600	-	13	87	44	28	20	13	3	2	37.0	495418.65		
05	2653	1.24	52	20	13	3	36	10.4	5.8	-	14000	0.1	1.8	0.3	600	-	12	88	53	31	26	17	4	3	35.0	502007.88		
06	2671	1.24	60	21	19	8	48	10.7	6.4	-	14000	0.2	1.7	0.35	600	-	13	87	61	40	31	22	8	7	35.0	506313.45		
07	2696	1.24	56	19	15	6	46	10.7	7.0	-	13000	0.10	2.0	0.30	600	-	13	87	52	34	28	18	6	5	35.0	507459.05		
08	2716	1.24	51	17	14	5	38	10.3	7.8	-	13000	0.1	1.7	0.25	600	-	13	87	48	31	24	16	4	3	39.0	513291.80		
09	2740	1.24	51	17	15	12	58	10.1	8.2	-	13000	0.1	0.6	0.3	600	-	13	87	49	32	26	19	9	8	38.0	518745.15		
10	2745	1.24	50	16	13	9	48	10.2	8.0	-	12000	0.1	0.6	0.4	600	-	13	87	45	29	27	16	7	6	30.0	519870.15		
11	2745	1.25	57	18	14	7	56	10.1	8.4	-	12000	0.1	0.6	0.3	600	-	13	87	50	32	25	16	8	7	35.0	519870.15		
12	2750	1.24	52	15	14	5	42	9.9	8.0	-	12000	0.1	0.5	0.4	640	-	12	88	44	29	23	16	7	6	35.0	528127.20		
13	2779	1.25	52	16	17	12	64	10.9	8.2	-	11000	0.1	0.6	0.35	600	-	13	87	49	33	27	19	10	9	34.0	537220.40		

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23rd June 1981

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DAILY MUD PROPERTIES

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1981 DATE	Meters DEPTH	WT.	VIS		CORR. 115°F		GELS		pH	FLUID LOSS		CL <input type="checkbox"/> CACL <input type="checkbox"/> NACL <input type="checkbox"/>	ALKALINITY			RETORT			V.G. METER READING @ 115°						BM CEC	TOTAL MUD COST	
			SEC.	PV	YP	0	10	BECK STRIP <input type="checkbox"/>		100 PSI API	500 PSI 300°F HT-HP		PF	PM	MF	CA ppm	% OIL	% SOL	% WATER	600 R.P.M.	300 R.P.M.	200 R.P.M.	100 R.P.M.	6 R.P.M.			3 R.P.M.
14/9	2785	1.25	54	17	16	8	16	8	9.9	8.2	2.0	11000	.1	.5	.3	600	-	13	87	50	33	26	20	9	8	35.0	527220.40
15	2787	1.25	54	13	16	12	62	9.8	8.2	1.6	11000	.1	.4	.25	600	-	13	87	50	37	28	21	11	10	34.0	537912.90	
16	2833	1.25	48	15	14	10	54	10.1	8.8	4.2	11000	.1	.6	.35	600	-	13	87	44	29	24	17	9	8	39.0	541198.65	
17	2849	1.24	56	16	15	10	50	10.4	8.6	2.0	12000	.2	1.0	.4	600	-	13	87	47	31	25	19	6	5	38.0	541501.05	
18	2880	1.24	47	18	11	9	32	10.3	8.6	2.0	12000	.1	1.1	.6	600	-	13	87	47	29	22	10	4	3	36.0	543851.05	
19	2886	1.24	52	17	15	14	42	10.0	8.2	0.0	12000	.1	1.1	.7	600	-	14	86	49	32	24	17	6	5	36.0	545058.45	
20	2886	1.24	52	17	15	14	42	10.0	8.2	-	12000	.1	1.1	.7	600	-	13	87	50	32	24	16	5	4	36	545058.45	
21	2886	1.24	52	17	13	8	30	10.0	8.4	1.0	13000	.1	1.1	.7	560	-	13	87	47	30	24	16	4	3	35.0	547280.45	
22	2886	1.24	56	18	16	12	48	9.8	8.4	-	13000	.1	1.0	.8	600	-	13	87	52	34	26	18	7	6	35.0	549340.45	
23	2886	1.24	44	16	12	6	14	9.5	7.8	2.4	13000	.05	.8	.3	560	-	13	87	44	32	27	18	5	4	34.0	549340.45	
24	2764	1.25	43	15	10	3	12	10.5	8.6	2.0	12000	.6	1.8	1.4	440	-	13	87	40	25	18	12	3	2	32.5	555465.75	
25	2887	1.24	47	16	12	4	22	12.4	0.2	38	12000	2.1	9.0	3.4	800	-	12	88	44	28	21	15	3	2	32.0	557365.65	
26	2938	1.33	40	16	9	3	20	11.8	0.9	39	11000	1.2	8.0	2.4	420	-	15	85	41	25	19	12	3	2	34.0	570873.15	
27	2958	1.43	42	17	11	4	19	11.1	9.5	34	11000	.5	8.0	1.4	320	-	20	80	45	28	19	12	3	2	31.0	589455.30	
28	2967	1.68	45	26	12	5	21	11.2	8.5	33	11000	.5	6.0	1.5	320	-	26	74	64	38	27	17	3	2	28.5	609668.85	
29	2999	1.70	46	28	14	7	30	10.0	8.0	34	12000	.5	6.0	1.4	320	-	28	72	70	42	32	20	5	4	26	620419.85	
30	3057	1.70	45	25	12	4	19	10.4	7.0	33	11000	.6	6.0	1.7	300	-	27	73	62	37	26	17	3	2	28	629824.50	
01/10	3127	1.71	49	25	10	4	32	10.5	7.0	2.4	12000	.25	5.0	.75	400	-	27	73	60	35	26	17	4	3	26	631444.50	
02	3207	1.70	49	25	13	4	35	10.7	7.2	4.2	11000	.4	4.6	.9	480	-	26	74	63	38	29	18	5	4	27.5	632776.10	
03	3272	1.70	51	23	12	4	37	10.5	6.8	2.0	12000	.3	4.0	.9	480	-	26	74	58	35	28	18	5	4	27.5	634107.70	
04	3303	1.70	52	25	11	4	37	9.8	6.8	3.2	12000	.2	2.25	.75	480	-	27	72	61	36	29	19	6	4	27.5	636046.70	
05	3307	1.71	60	28	14	5	42	10.0	7.2	4.4	12000	.25	2.4	.8	480	-	27	73	70	42	33	22	7	6	27.5	639343.60	
06	3326	1.70	50	25	12	4	35	10.7	6.6	2.6	12000	.3	4.0	1.0	320	-	27	73	62	37	29	19	4	3	29.0	639629.10	
07	3377	1.70	51	23	10	3	27	10.2	6.0	2.2	12000	.3	2.5	.9	240	-	27	73	56	33	26	16	4	3	28.0	640869.60	
08	3423	1.70	51	24	13	3	26	10.7	5.8	2.6	12000	.4	4.0	1.1	120	-	27	73	61	37	29	18	4	3	27.5	641458.10	
09	3477	1.70	52	24	14	4	26	10.3	5.8	2.8	12000	.55	4.5	1.3	120	-	27	73	62	38	28	19	4	3	28.0	642998.60	
10	3496	1.71	57	21	16	5	30	10.0	6.2	2.8	12000	.3	4.0	1.0	120	-	28	72	68	42	31	21	6	5	28.0	643800.60	
11	3550	1.70	55	24	15	4	30	10.0	5.8	2.5	13000	.4	3.5	.9	80	-	27	73	63	39	30	19	4	3	28.0	646610.45	

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DAILY MUD PROPERTIES

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1981 DATE	Meters		VIS SEC.	CORR. 115°F		GELS		pH	FLUID LOSS		CL 13000	ALKALINITY				RETORT			V.G. METER READING @ 115°						BM CEC	\$ TOTAL MUD COST
	DEPTH	WT.		PV	YP	0	10		100 PSI API	500 PSI 300 °F HT-HP		PF	PM	MF	CA ppm	% OIL	% SOL	% WATER	600 R.P.M.	300 R.P.M.	200 R.P.M.	100 R.P.M.	6 R.P.M.	3 R.P.M.		
12/10	3610	1.70	53	26	14	4	32	10.5	5.6	26.6	13000	.7	4.5	1.8	80	27	73	66	40	31	21	5	4	28.0	647429.95	
13	3663	1.70	54	24	16	6	28	10.5	6.2	26.6	15000	1.0	5.0	4.0	80	27	73	64	40	32	22	6	5	27.5	650249.85	
14	3663	1.71	60	25	16	5	37	10.2	6.0	26.2	15000	.8	4.0	3.8	120	27	73	66	41	31	21	5	4	27.5	650249.85	
15	3729	1.70	55	27	17	5	34	10.0	6.3	27.0	15000	.7	3.8	3.4	120	28	72	71	44	36	26	7	6	26	654876.35	
16	3787	1.70	51	22	16	4	25	11.0	6.2	30.0	15000	1.20	5.0	3.0	160	29	71	60	35	30	19	4	3	26	655952.85	
17	3837	1.71	48	24	14	4	20	11.6	6.5	24.0	14000	1.5	6.2	3.4	180	29	71	62	38	28	18	4	3	24	656988.85	
18	3875	1.71	49	25	12	4	20	11.8	6.4	28	15000	1.5	5.6	3.2	140	29	71	58	35	25	16	4	3	27	657860.35	
19	3927	1.71	52	24	13	4	22	11.7	6.6	26	15000	.8	5.6	3.4	160	29	71	61	37	27	18	3	27.5	658611.85		
20	3980	1.71	52	24	14	4	26	11.4	6.8	27	15000	1.4	4.8	3.1	200	28	72	62	38	28	18	4	3	27.5	660649.10	
21	3980	1.71	52	27	12	4	20	10.3	6.6	25	15000	.8	3.6	2.6	180	28	72	66	39	29	18	4	3	26	660649.10	
22	3980	1.71	56	27	12	4	19	10.3	6.9	27	15000	.7	3.0	3.2	160	27	73	66	39	29	18	4	3	26	660649.10	
23	3966	1.70	60	27	14	4	22	10.0	7.2	27	15000	.5	2.8	2.4	140	27	73	68	41	30	19	4	3	26	663225.00	
24	3966	1.70	52	27	12	4	20	10.0	7.2	29	14000	.5	2.8	2.6	120	27	73	66	39	29	18	4	3	26	663225.00	
25	3966	1.70	52	27	12	4	19	10.0	7.0	29	14000	.6	3.5	2.9	160	27	73	66	39	28	18	4	3	26	663225.00	
26	3966	1.70	52	27	14	4	24	9.8	7.0	29	14000	.5	3.4	2.6	160	27	73	68	41	30	20	4	3	26	663225.00	
27	3966	1.70	55	27	13	4	24	10.0	7.1	28	14000	.6	3.4	2.8	160	27	73	67	40	30	19	4	3	26	663225.00	
28	3966	1.70	55	27	13	4	24	10.0	7.1	29	14000	.6	3.4	2.8	160	27	73	67	40	30	19	4	3	26	663225.00	
29	3983	1.71	52	23	9	4	28	12.0	7.2	28.8	15000	1.4	7.5	3.4	200	29	71	55	32	25	16	4	3	25	663225.00	
30	3991	1.71	52	21	12	3	34	12.0	7.2	29.8	16000	1.0	9.4	2.8	160	28	72	54	33	24	19	4	3	27.5	663779.00	
31	4023	1.71	54	22	12	4	36	11.7	7.2	31.6	15000	.8	8.5	2.5	160	28	72	56	34	26	16	4	3	28	663779.00	
01/11	4073	1.70	58	22	15	8	58	11.3	7.6	30.6	16000	.6	7.6	2.3	120	28	72	59	27	30	20	7	6	26	664610.00	
02	4144	1.84	64	32	13	8	62	10.8	8.0	29.6	15000	.4	3.3	1.9	160	22	68	77	45	35	22	7	6	26	683013.00	
03	4193	1.91	64	31	12	4	42	11.2	6.4	28.4	16000	.6	3.5	2.2	200	32	68	74	43	31	19	5	4	26	701543.75	
04	4239	1.95	63	29	11	4	35	11.2	5.6	34.2	15000	.7	4.0	2.2	200	33	67	89	40	30	19	4	3	26	711194.60	
05	4256	1.92	64	29	11	5	42	11.0	5.4	25.2	15000	.6	4.0	2.2	200	33	67	69	40	31	19	4	3	25	711194.60	
06	4256	1.96	66	30	11	5	44	11.0	5.2	21.6	15000	.6	4.5	2.0	200	34	66	71	41					26	712718.10	
07	4307	2.01	60	36	11	5	41	11.3	5.0	24	15000	.9	5.0	3.0	160	35	65	83	47	36	22	5	4	25	722158.70	
08	4307	2.0	64	34	12	5	45	11.2	5.0	15.2	15000	.8	5.0	2.8	160	36	64	80	46					25	724575.25	

DATE SPUD:

DATE T.O.:

COST:



DAILY MUD PROPERTIES

Well: Statoil, 24/12-2

PAGE 6

1981	Meters	WT.	VIS	CORR.		GELS		pH	FLUID LOSS		CL <input checked="" type="checkbox"/>	ALKALINITY			RETORT			V.G. METER READING @ 115°						BBI	\$ TOTAL MUD COST		
				115°F		6	10		100 PSI API	600 PSI 300°F HT-HP		CA ppm	PF	PM	MF	% OIL	% SOL	% WATER	600 R.P.M.	300 R.P.M.	200 R.P.M.	100 R.P.M.	6 R.P.M.			3 R.P.M.	CEC
09/11	4307	2.01	68	36	14	6	48	11.9	5.0	19.0	15000	1.35	6.0	3.35	120	-	35	65	86	50	38	24	6	5	25		722575.20
10	4307	2.02	70	35	18	6	50	11.8	5.0	18.8	15000	1.3	6.0	3.2	120	-	35	68	85	50	38	25	6	5	25		722575.20
11-21	ON STRIKE																										
22	4307	2.01	58	31	18	12	72	11.5	4.4	-	16000	1.3	8.0	3.3	160	-	-	-	-	-	-	-	-	-	-	-	722574.20
23	4307	2.01	62	27	9	5	43	11.3	5.2	27.2	16000	1.2	7.0	3.2	160	-	35	65	63	36	28	18	4	3	25		724097.70
24	4307	2.00	66	32	18	6	44	11.3	5.4	28.0	17000	1.2	6.8	3.2	160	-	35	65	82	50	37	26	5	4	25		724097.70
25	4307	2.00	68	37	13	5	36	11.3	5.6	25.6	15000	1.0	7.0	2.9	160	-	35	65	87	50	39	24	6	4	25		726771.80
26	4307	2.01	94	42	26	16	87	11.9	7.0	35.0	17000	2.8	23.5	4.8	120	-	35	65	110	68	53	35	14	12	25		736285.60
27	4307	2.01	61	29	17	7	42	11.5	5.6	23.0	18000	1.2	13.0	3.1	120	-	35	65	75	46	35	23	6	5	25		748870.50
28	4307	2.01	68	33	14	8	55	11.3	5.0	21.8	17000	1.0	12.0	3.0	160	-	35	65	80	47	37	24	7	5	25		751951.10
29	4313	2.01	61	32	14	6	40	10.9	5.2	25.0	18000	.75	8.5	2.4	160	-	35	65	78	46	35	23	6	4	25		757026.60
30	4321	2.01	66	33	15	6	40	10.5	5.2	21.0	17000	.85	9.0	2.5	200	-	35	65	81	48	36	23	6	5	28		759154.50
01/12	4329	2.01	70	31	16	6	39	10.5	4.8	20.0	17000	.80	8.0	2.9	240	-	35	65	78	47	35	27	6	5	25		766353.10
02	4366	2.01	57	32	14	5	29	10.5	4.0	17.0	18000	.90	8.8	3.4	200	-	36	64	78	46	-	-	-	-	26		769220.70
03	4397	2.03	74	36	18	8	48	10.3	4.0	19.2	18000	.90	8.5	3.5	280	-	36	64	90	54	41	28	8	7	25		774068.20
04	4403	2.03	82	37	17	7	35	10.5	3.8	17.0	19000	.75	9.0	3.5	280	-	36	64	91	54	42	26	6	4	26		778147.70
05	4420	2.03	68	33	15	7	36	10.7	4.2	17.5	19000	1.0	6.6	1.9	120	-	36	64	81	48	38	22	6	5	26		778426.80
06	4429	2.03	70	35	17	6	34	10.5	4.4	17.8	20000	.7	4.2	2.0	300	-	35	65	87	52	40	24	6	5	25		781707.05
07	4481	2.03	64	35	14	6	30	10.8	4.2	18.0	20000	.9	3.4	2.0	240	-	36	64	84	49	37	23	5	3	25		786653.30
08	4519	2.03	68	36	17	6	35	10.7	4.1	18.0	21000	.7	3.0	2.1	200	-	36	64	89	53	40	25	5	4	25		786814.90
09	4531	2.03	69	35	14	6	33	10.8	4.0	17.4	21000	.8	3.0	2.1	180	-	36	64	84	49	36	23	5	4	25		786814.90
10	4587	2.03	58	32	13	5	24	11.2	4.0	17.0	21000	1.1	5.0	3.2	280	-	36	64	77	45	34	22	4	3	25		787584.90
11	4625	2.03	66	34	13	5	24	10.9	4.0	17.4	21000	1.0	5.0	3.1	280	-	36	64	-	-	-	-	-	-	25		789523.90
12	4652	2.03	66	34	15	6	38	10.7	4.0	16.8	21000	.7	4.5	3.1	240	-	36	64	83	49	37	23	6	5	25		789662.40
13	4699	2.03	70	34	16	6	38	10.7	4.2	17.2	22000	.75	4.5	3.0	280	-	36	64	84	50	37	23	6	5	25		792097.20
14	4756	2.03	62	32	13	6	38	11.3	4.6	16.4	22000	1.2	7.5	3.6	240	-	36	64	77	45	36	23	6	5	25		794902.70
15	4757	2.03	70	32	14	6	36	11.4	4.2	17.0	22000	1.5	8.0	3.6	200	-	36	64	77	45	34	21	5	4	25		794902.70
16	4780	2.03	72	33	15	7	46	11.0	4.4	16.2	22000	1.0	5.0	3.2	200	-	36	64	81	48	36	23	6	5	25		795318.20
DATE SPUD:		DATE T.O.:										COST:															



DAILY MUD PROPERTIES

Well: Statoil, 24/12-2

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1981/ 1982 DATE	Meters DEPTH	WT.	VIS SEC.	CORR. 115°F		GELS		pH	FLUID LOSS		CL <input checked="" type="checkbox"/> CACL <input type="checkbox"/> NACL <input type="checkbox"/>	ALKALINITY			RETORT			V.G. METER READING @ 115°						BM CEC	TOTAL MUD COST	
				PV	YP	0	10		BECK 52 STRIP <input type="checkbox"/>	100 PSI API		500 PSI 300°F HT-MP	PF	PM	MF	CA ppm	% OIL	% SOL	% WATER	600 R.P.M.	300 R.P.M.	200 R.P.M.	100 R.P.M.			6 R.P.M.
17/12	4801	2.03	79	36	17	8	40	10.9	4.6	16.8	22000	.9	3.3	3.0	200	0	36	64	89	53	39	25	7	6	25	797395.70
18	4819	2.03	65	33	15	7	40	11.0	4.6	15.4	22000	1.0	3.0	3.0	240	0	37	63	81	48	37	24	6	5	25	800789.85
19	4844	2.03	62	30	14	7	42	10.8	4.4	14.5	23000	.9	3.2	2.6	220	0	37	63	74	44	33	23	5	4	25	804802.45
20	4851	2.03	64	30	13	6	36	11.2	4.8	14.0	23000	1.4	4.0	2.6	180	0	37	63	73	43	33	22	5	4	22.5	805882.10
21	4874	2.03	57	28	13	6	37	11.2	4.1	13.5	23000	1.3	3.6	2.5	180	0	37	63	69	41	31	20	4	4	22.5	809652.35
22	4917	2.03	57	28	13	5	36	11.1	4.1	13.7	23000	1.3	3.7	2.6	180	0	37	63	69	41	31	21	4	4	22.5	812100.45
23	4933	2.03	65	28	14	7	41	11.1	4.6	12.0	23000	1.4	3.4	2.7	180	0	37	63	70	42	32	20	5	4	22.5	813191.15
24	4948	2.03	56	27	13	6	39	11.3	4.8	11.5	23000	1.5	3.8	2.6	160	0	37	63	67	40	30	20	4	3	22.5	815011.15
25	4961	2.03	62	28	13	6	39	11.2	4.4	11.0	23000	1.5	3.7	2.7	160	0	37	63	69	41	31	20	5	4	22.5	816396.15
26	4978	2.03	68	27	15	8	36	11.3	4.4	12.0	23000	1.5	4.0	2.6	160	0	37	63	69	42	32	22	5	4	22.5	816396.15
27	5019	2.03	60	27	15	8	42	11.0	4.6	11.6	23000	1.4	3.8	2.6	160	0	37	63	69	42	32	21	5	4	22.5	819425.05
28	5045	2.03	67	28	13	7	42	10.9	4.4	11.0	23000	1.6	3.8	3.0	120	0	37	63	69	41	31	21	5	4	22.5	822027.30
29	5077	2.03	57	26	14	7	44	11.2	4.4	11.2	23000	1.6	3.6	3.0	160	0	37	63	66	40	31	20	5	4	22.5	823792.70
30	5100	2.03	68	28	13	6	42	11.0	4.1	11.4	23000	1.7	3.9	3.0	100	0	37	63	69	41	31	21	5	4	22.5	826620.10
31	5100	2.03	71	30	14	7	45	10.8	4.2	11.8	23000	1.2	3.8	3.1	120	0	37	67	74	44	28	20	6	5	22.5	826977.40
01/01	5100	2.03	74	32	14	7	48	10.8	4.4	11.4	23000	1.0	3.7	3.0	120	0	37	63	78	46	30	21	7	6	22.5	826977.40
02	5100	2.03	56	27	11	5	40	10.5	4.0	10.8	23000	.7	3.6	2.4	120	0	36	64	65	38	27	18	6	5	22.5	828524.90
03	5100	2.03	63	30	13	6	38	10.8	3.8	10.8	23000	.9	3.6	3.2	120	0	37	63	73	43	33	22	6	5	22.5	828810.40
04	5100	2.03	61	29	12	6	42	10.8	3.8	11.0	23000	1.0	3.8	3.1	120	0	37	63	70	41	31	20	5	4	22.5	828810.40
05	5100	2.03	64	30	12	6	42	10.8	4.0	11.0	23000	1.0	3.8	2.9	120	0	37	63	72	42	31	20	5	4	22.5	828810.40
06	5100	2.03	62	27	13	7	46	10.6	4.4	11.0	23000	.9	3.8	3.0	160	0	37	63	67	40	31	19	5	4	22.5	828810.40
07	5100	2.03	65	30	13	7	44	10.7	4.5	11.0	23000	1.1	4.0	3.0	160	0	37	63	73	43	32	20	6	5	22.5	830850.40
08	4950	2.02	74	32	16	8	56	11.2	5.6	-	23000	1.8	5.6	4.4	100	0	38	62	80	48	-	-	-	-	22.5	830850.40
09	3876	1.89	60	27	18	22	68	11.7	7.4	-	23000	1.1	8.8	3.6	80	0	32	68	72	45	37	26	13	12	-	831819.90
10	2820	1.89	62	27	20	24	70	11.9	8.4	-	23000	1.1	9.0	4.0	80	0	32	68	74	47	-	-	-	-	-	831819.90
11	2820	1.89	64	27	18	22	70	11.6	8.6	-	23000	1.0	8.6	3.8	80	0	32	68	-	-	-	-	-	-	-	832789.40
12	2820	1.80	66	28	18	24	70	11.7	8.6	-	23000	1.0	8.5	3.6	80	0	32	68	-	-	-	-	-	-	-	832789.40
13	-	1.70	40	11	9	20	51	11.4	11.2	-	27000	0.9	8.0	3.4	80	0	20	74	-	-	-	-	-	-	-	832789.40

DATE SPUD:

DATE T.D.:

CUST:



MATERIAL CONSUMPTION BY INTERVAL

Statoil, 24/12-2

Interval: 36" hole

Depth : R.K.B. - 199.5 meters

<u>PRODUCT</u>	<u>UNIT PRICE</u>	<u>UNIT AMOUNT</u>	<u>COST</u>
Bentonite	\$ 371.40	27 M/T	\$ 10027.80
Caustic Soda	\$ 20.20	6 sx	\$ 121.20
			<u>Total: \$ 10149.00</u>

Interval: 12-1/4" hole, 26" underreamer

Depth : 199.5 - 992 meters

<u>PRODUCT</u>	<u>UNIT PRICE</u>	<u>UNIT AMOUNT</u>	<u>COST</u>
Barite	\$ 138.50	301 M/T	\$ 41688.50
Bentonite	\$ 371.40	184 M/T	\$ 68337.60
Caustic Soda	\$ 20.20	41 sx	\$ 828.20
Spersene	\$ 18.45	22 sx	\$ 405.90
CMC Hi-Vis	\$ 62.70	5 sx	\$ 313.50
Lime	\$ 4.10	9 sx	\$ 36.90
Mica course	\$ 19.38	263 sx	\$ 5096.94
Nut Plug	\$ 21.30	58 sx	\$ 1235.40
Soda Ash	\$ 20.50	1 sx	\$ 20.50
			<u>Total: \$ 117963.44</u>



MATERIAL CONSUMPTION BY INTERVAL

Statoil, 24/12-2

Interval: 17-1/2" hole

Depth : 992 - 2872.5 meters

<u>PRODUCT</u>	<u>UNIT PRICE</u>	<u>UNIT AMOUNT</u>	<u>COST</u>
Barite	\$ 138.50	902 M/T	\$ 124927.00
Bentonite	\$ 371.40	315 M/T	\$ 116991.00
Caustic Soda	\$ 20.20	701 sx	\$ 14160.20
Spersene	\$ 18.45	712 sx	\$ 13136.40
Gypsum	\$ 9.80	2732 sx	\$ 26773.60
CMC L.V.	\$ 60.37	568 sx	\$ 34290.16
CMC H.V.	\$ 62.70	765 sx	\$ 47965.50
Soda Ash	\$ 20.50	29 sx	\$ 594.50
Lime	\$ 4.10	40 sx	\$ 164.00
Pipe Lax	\$ 942.00	2 sx	\$ 1884.00
D.D.	\$ 535.00	1 sx	\$ 535.00
Nut Plug	\$ 21.30	20 sx	\$ 426.00
So tex	\$ 86.94	450 sx	\$ 39123.00

Total: \$ 420970.36

Total volume used: 19500 bbl

Total cost per bbl: \$ 21.59



MATERIAL CONSUMPTION BY INTERVAL

Statoil, 24/12-2

Interval: 12-1/4" hole

Depth : 2872.59 - 3966.19 meters

<u>PRODUCT</u>	<u>UNIT PRICE</u>	<u>UNIT AMOUNT</u>	<u>COST</u>
Barite	\$ 138.50	549 M/T	\$ 76036.50
Bentonite	\$ 371.40	20 M/T	\$ 7428.00
Spersene	\$ 18.45	688 sx	\$ 12693.60
XP-20	\$ 30.05	291 sx	\$ 8744.55
Caustic Soda	\$ 20.20	257 sx	\$ 5191.40
CMC L.V.	\$ 60.37	40 sx	\$ 2414.80
CMC H.V.	\$ 62.70	1 sx	\$ 62.70
Soda Ash	\$ 20.50	40 sx	\$ 820.00
Lime	\$ 4.10	120 sx	\$ 492.00

Total: \$ -113883.55

Total volume used: 5500 bbls

Cost per bbl : \$ 20.71



MATERIAL CONSUMPTION BY INTERVAL

Statoil, 24/12-2

Interval: 8-1/2" hole

Depth : 3966 - 5100 meters

<u>PRODUCT</u>	<u>UNIT PRICE</u>	<u>UNIT AMOUNT</u>	<u>COST</u>
Barite	\$ 138.50	846 M/T	\$ 117171.00
Bentonite	\$ 371.40	12 M/T	\$ 4456.80
Spersene	\$ 18.45	631 sx	\$ 11641.95
XP - 20	\$ 30.05	388 sx	\$ 11659.40
Caustic Soda	\$ 20.20	313 sx	\$ 6322.60
Resinex	\$ 70.93	295 sx	\$ 20924.35
Lime	\$ 4.10	10 sx	\$ 41.00
			<u>\$ 172217.10</u>

Repeat Formation Tester (RFT)

Two RFT runs were completed

Run no. 1a:

Time at bottom: 09:00 hrs, 1/1-82.

Depth (mRKB)	Corrected pressure (bar, g/cc)	Comments
4956.5	935.548 1.925	
4958.5		tight
4961.5		tight
4963.3		tight
4966		tight
4967.5		tight
4971.3	936.996 1.928	

Run no. 1b:

Time at bottom: 01:00 hrs, 6/1-82.

The purpose of this run was sampling, but was not successful due to tight formation. The lower sample chamber was opened at 4956.8, 4956.1, 4971.5, 4961.3 and 4963.7 m RKB.

MATURATION

ment

Well no: 24/12-2
Company: STATOIL

VISUAL KEROGEN

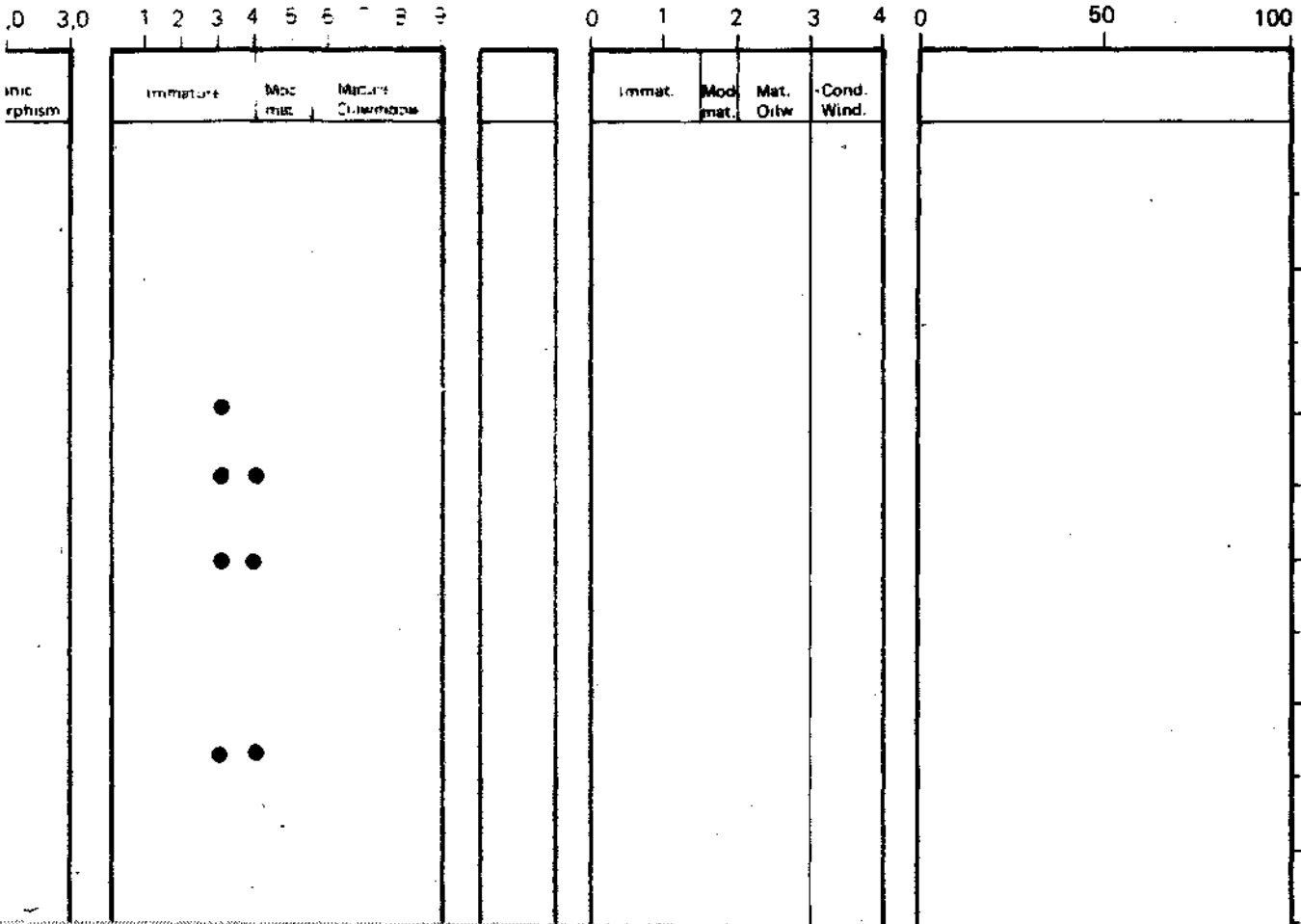
COLORATION AND COMPOSITION OF ORGANIC RESIDUE

Fluorescence

Zone

Maturation index

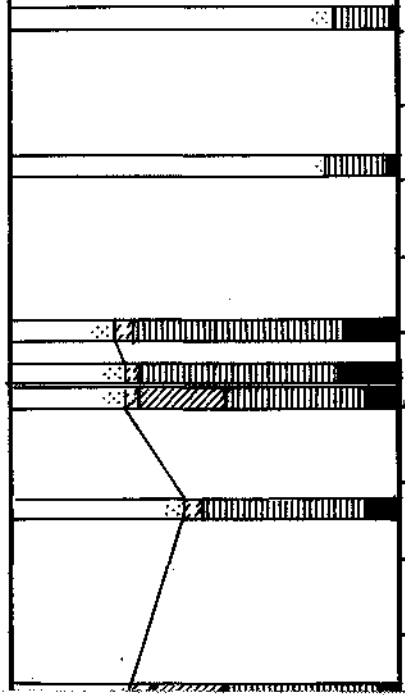
Composition of organic residue

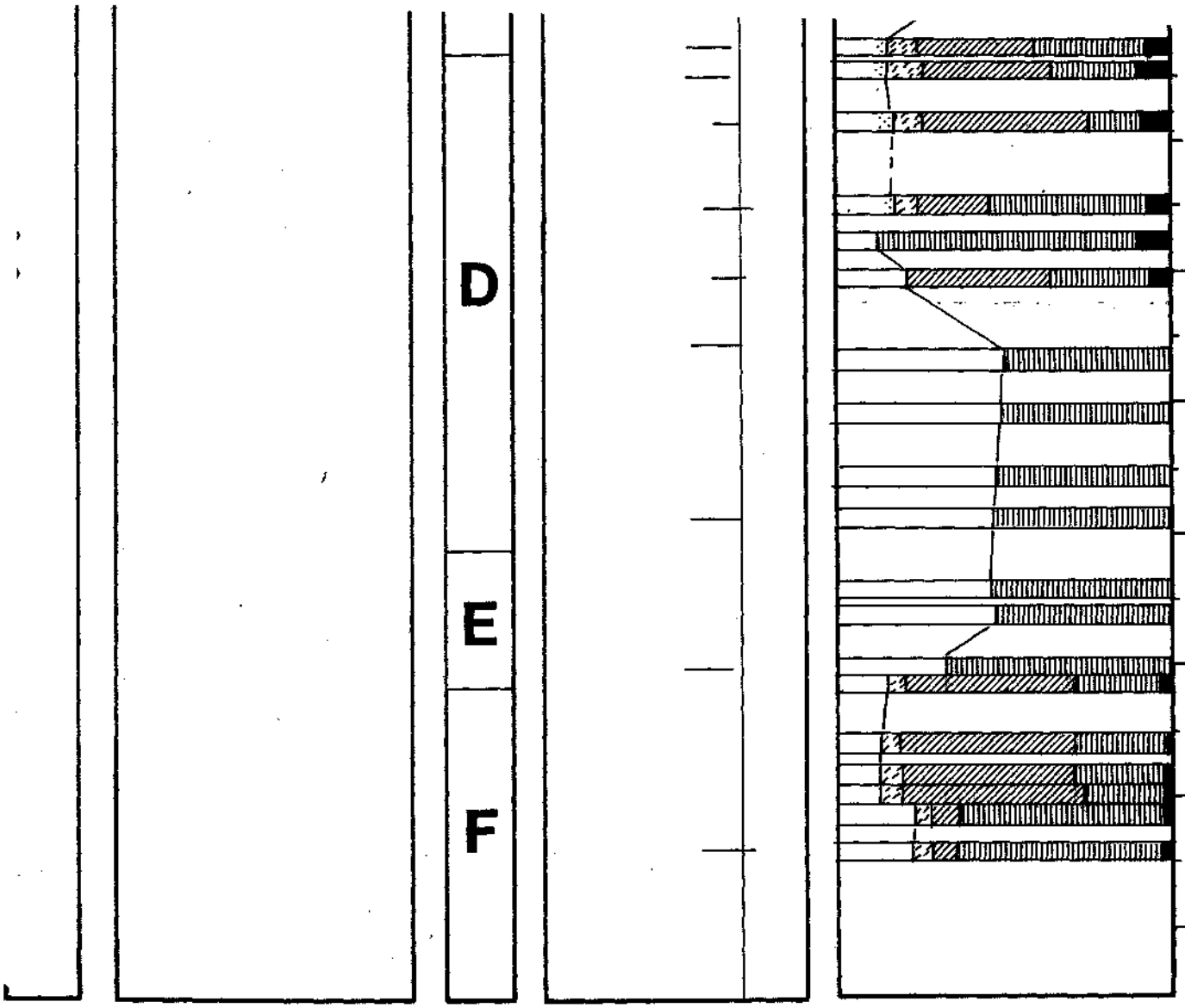






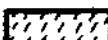



A

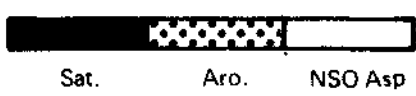
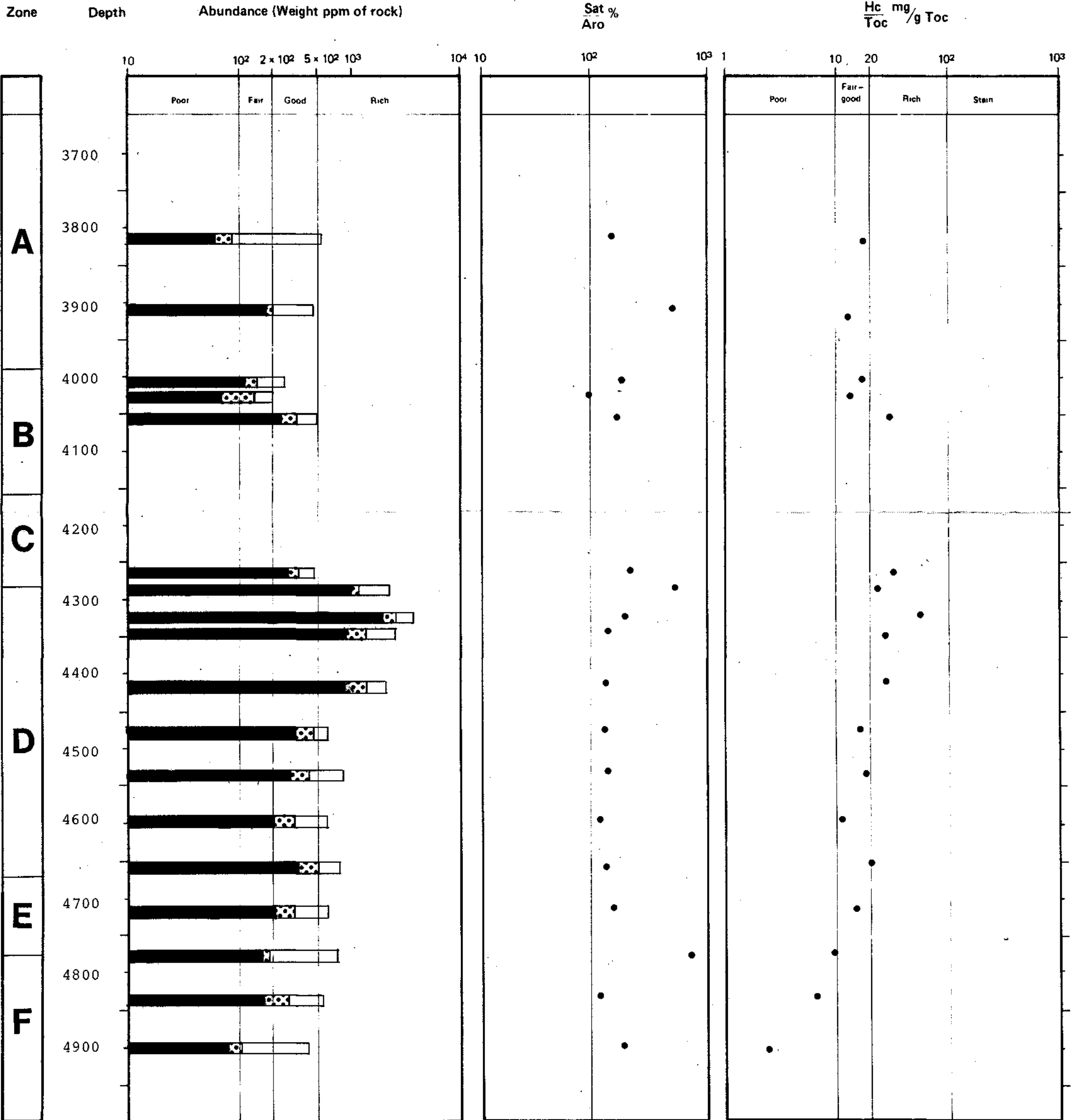
B

C





- | | | | |
|---|--------------------------------|--|--|
|  | Amorphous material,
Saproel |  | Wood remains |
|  | Algal |  | Undifferentiated disperse
herbaceous material |
|  | Spores and pollen |  | Black coal fragments |
|  | Cuticles |  | |



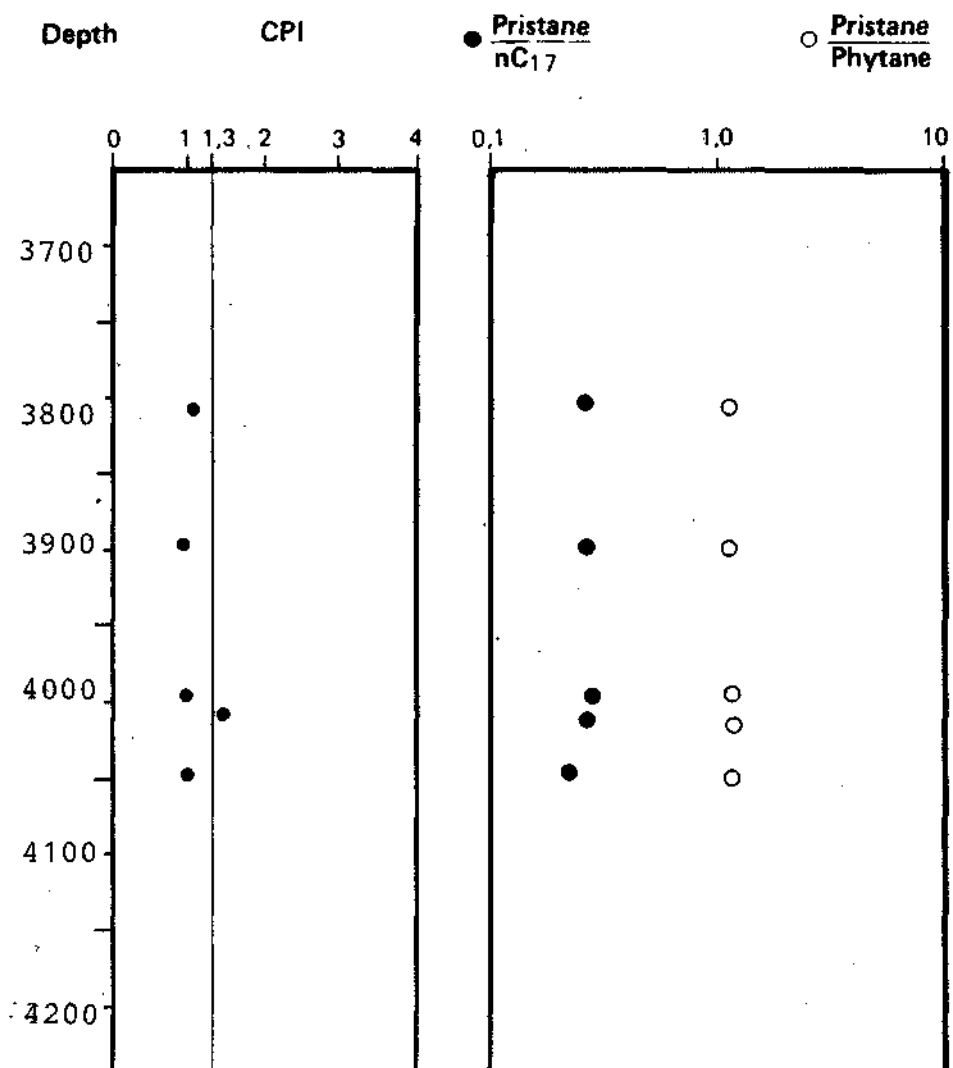
Sat: Saturated Hydrocarbons
 Aro: Aromatic Hydrocarbons
 Asp: Asphaltenes
 TOC: Total Organic Carbon
 HC: Hydrocarbons
 NSO: Nitrogen, Sulphur and Oxygen containing compounds



C₁₅⁺ SATURATED HYDROCARBONS Presentation of Analytical Data

Well no: 24/12-2

Company: STATOIL



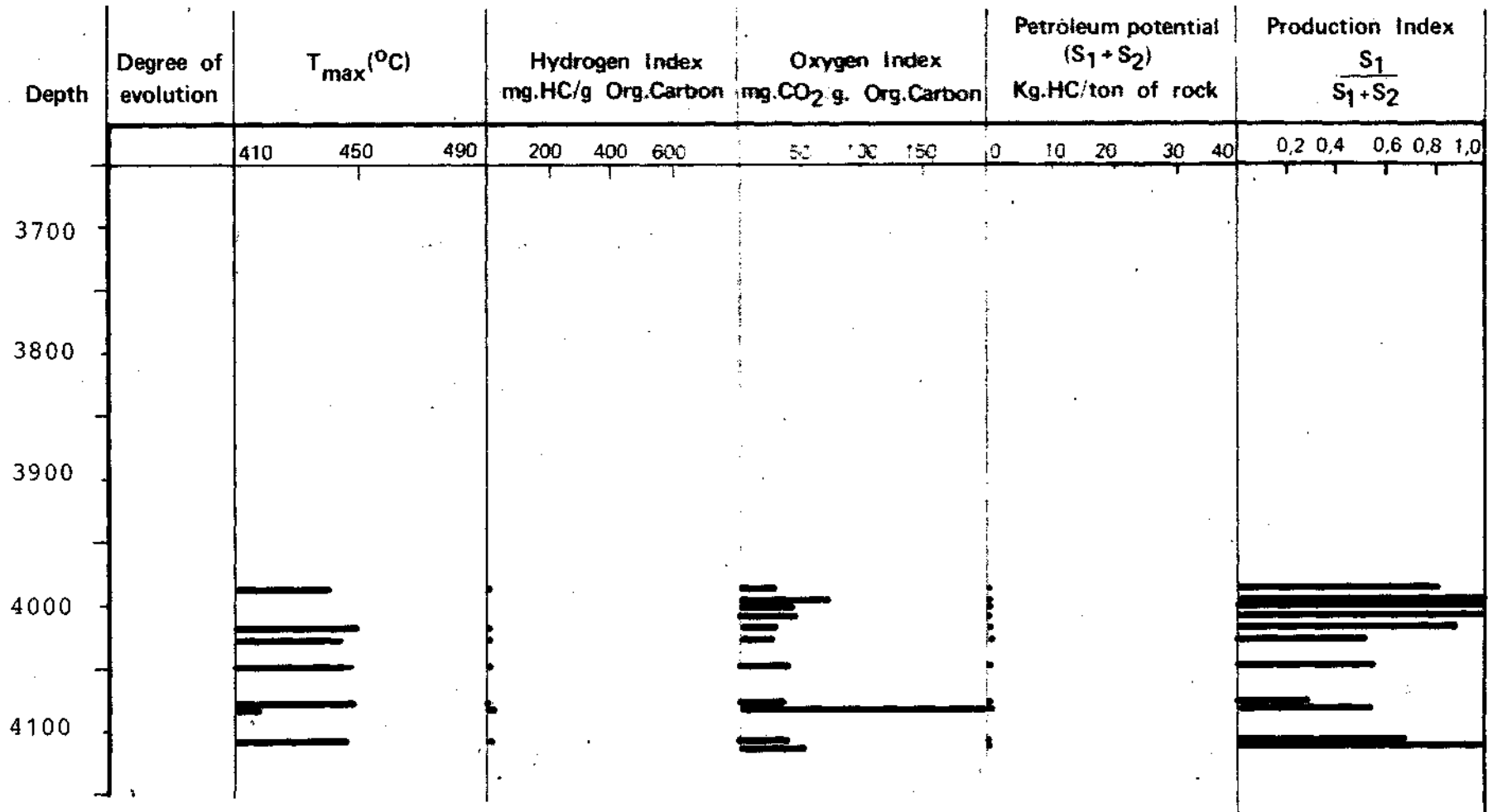
IKU



Organic Geochemistry Department.

ROCK-EVAL PYROLYSIS

Well no.: 24/12-2
Company: STATOIL





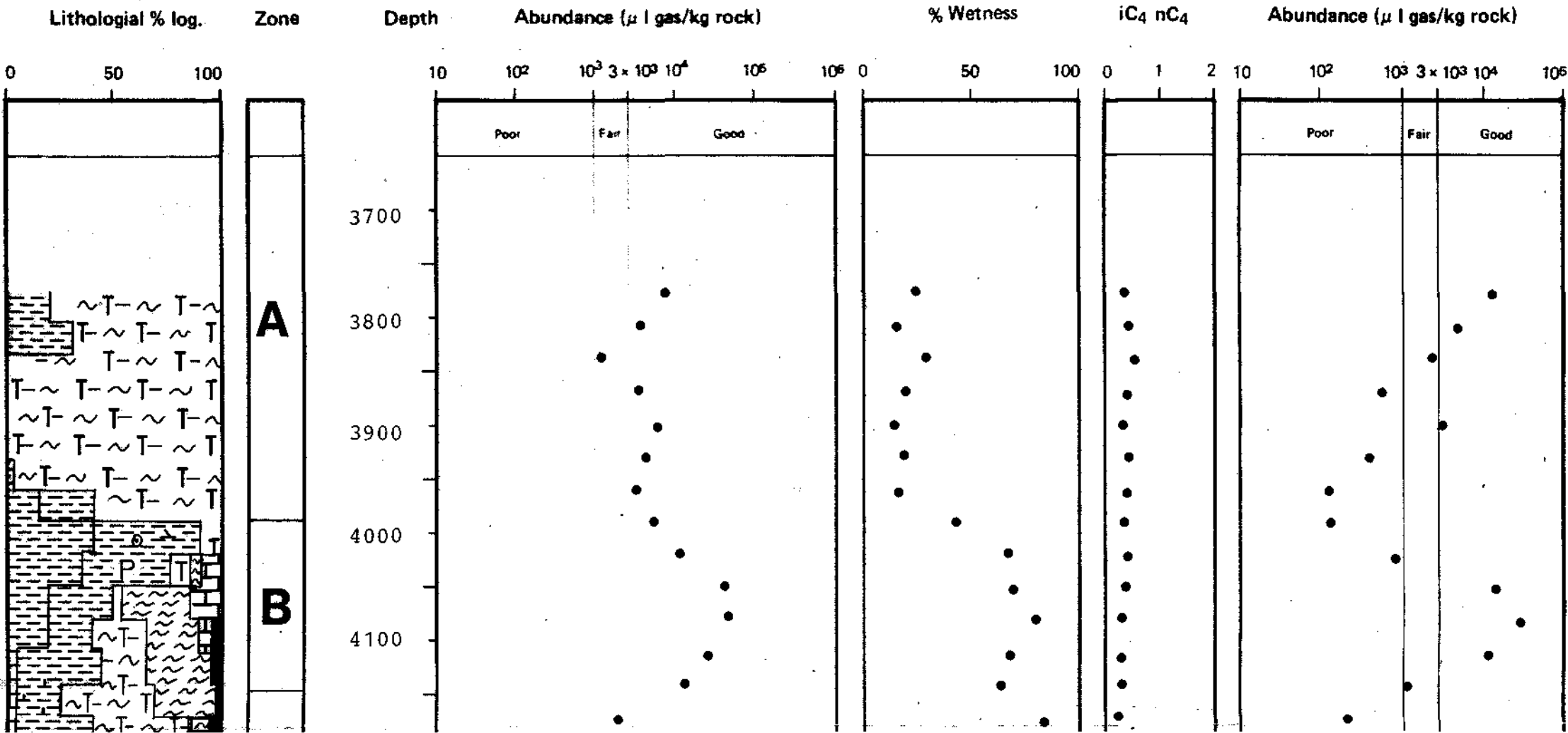
C₁ - C₇ HYDROCARBONS Presentation of Analytical Data

Well no: 24/12-2

Company: STATOIL

C₁ - C₄ HYDROCARBONS

C₅ - C₇ HYDROCARBONS



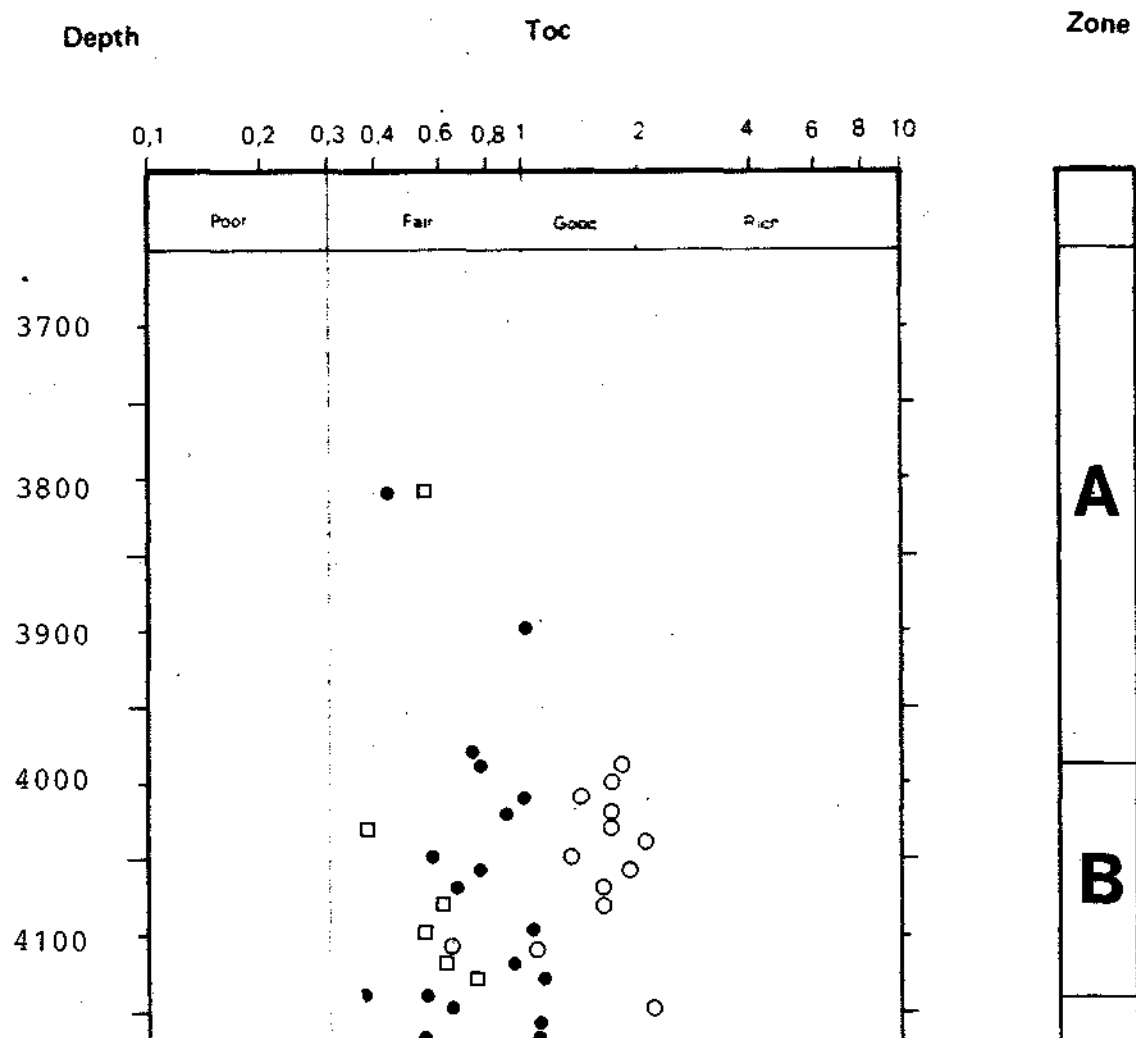


TOTAL ORGANIC CARBON (TOC)

Presentation of Analytical Data

Well no: 24/12-2

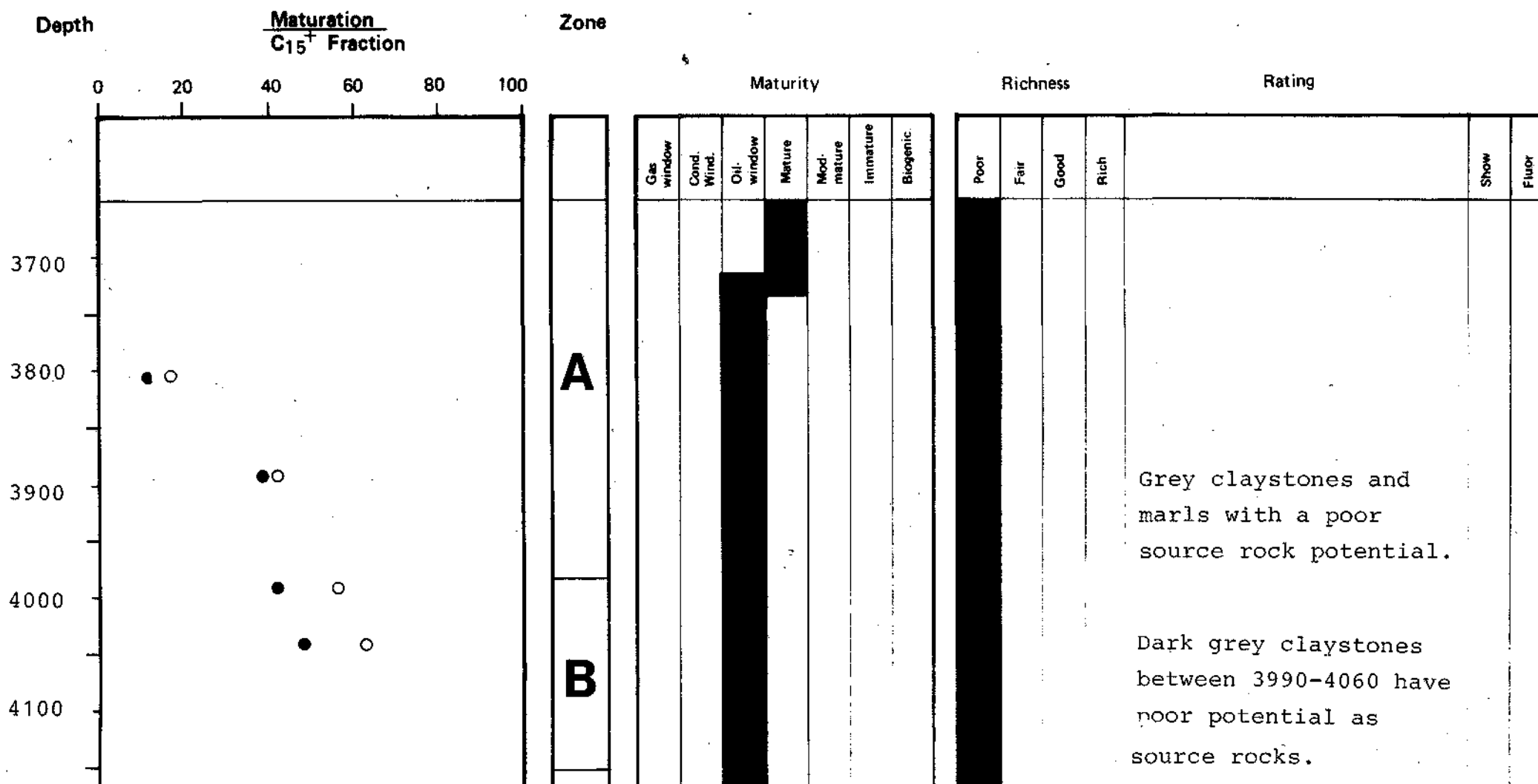
Company: STATOIL





Well no: 24/12-2
Company: STATOIL

SUMMARY OF SOURCE POTENTIAL



GEOCHEMICAL DATA REPORT

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TITLE

GEOCHEMICAL DATA REPORT ON RESIDUAL HYDROCARBONS IN WELL 24/12-2

AUTHOR(S)

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GEOLAB PROJECT NO.

62633

DATE

14/05/03

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REPORT NO./FILE

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Experimental Procedures

Total Organic Carbon (TOC) and Total Carbon Analysis

This analysis is performed using a LECO CS244 Carbon Analyser. Hand-picked lithologies from cuttings samples are crushed with a mortar and pestle and approximately 200 mg (50 mg for coals) are accurately weighed into LECO crucibles. The samples are then treated three times with 10 % hydrochloric acid to remove oxidized (carbonate) carbon, and washed four times with distilled water. The samples are dried on a hotplate at 60 - 70°C before analysis of total organic carbon.

Solvent Extraction of Organic Matter (EOM)

The samples are extracted using a Tecator Soxtec HT-System. Carefully weighed samples are taken in a pre-extracted thimble. Some activated copper is added to the extraction cup and dichloromethane/methanol (93/7) is used as an extraction solvent. The samples are boiled for 1 hour and then rinsed for 2 hours. If the samples contain more than 10 % TOC, then the whole procedure is repeated once. The resulting solution is transferred to a flask and the solvent removed by rotary evaporation (200 mb, 30°C). The amount of EOM is gravimetrically established.

Removal of Asphaltenes

The EOM is dissolved in n-pentane in a flask to precipitate the asphaltenes by ultrasonic bath for 3 min. The solution is then stored in the dark and at ambient temperature for at least 8 hours. The solution is then filtered (Baker 10-spe system) and the precipitated asphaltenes returned to the original flask by dissolution in dichloromethane. The solvent is removed by rotary evaporation at 200 mB and 30°C.

Iatroscan

Saturates, aromatics and polars are qualitatively and quantitatively assessed using Iatroscan TLC-FID and employing Chromarod S-III rods. EOM was dissolved in DCM/MeOH. 1-3 µl of the solution is spotted on the pre-activated rods, using an auto-spotter. The rods are developed in n-hexane (35 mins), followed by toluene (14 mins) and DCM/MeOH (4 mins) with 2 mins air-drying between every stage. The developed rods are introduced in a 60°C oven for 90 seconds. The rods are analysed using the Iatroscan and the data are collected and processed using Multichrom data system.

Chromatographic Separation of deasphalted EOM

Chromatographic separation is performed using an MPLC system developed by the company. The EOM (minus asphaltenes) is injected into the MPLC and separated using hexane as an eluent. The saturated and aromatic hydrocarbon fractions are collected and the solvent removed using a rotary evaporator at 30°C. The fractions are then transferred to small pre-weighed vials and evaporated to dryness overnight. The vials are re-weighed to obtain the weights of both the saturated and the aromatic fractions. The weight of the NSO fraction which is retained on the column, is obtained by weight difference.

Gas Chromatographic Analyses

EOM:

Analysis of extracted organic matter is performed on a Dani 8500 Gas Chromatograph fitted with a 25 m OV-1 Fused Silica column with 0.25 mm internal diameter. The temperature program on the column has an initial temperature of 50°C (hold time 1 min), a heating rate of 10°C/min up to 310°C held for 15 mins. The detectors are standard FIDs. Correlation is achieved by use of external standards. Quantification is achieved using squalane as internal standard. Chromatographic data is processed using the Multichrom data acquisition and processing system.

Saturated hydrocarbon fractions:

The instrument used for this analysis is a DANI 8510 Gas Chromatograph equipped with an FID detector and an OV1 (25m) column. The carrier gas is helium and the temperature program runs from 80°C to 300°C at a rate of 4°C/min. Final hold time is 20 mins. The saturated hydrocarbon fraction is diluted by 1:30 and a 1 microlitre aliquot of this is injected into the instrument.

Aromatic hydrocarbon fractions:

The instrument used is a Varian 3400 Gas Chromatograph with a 40 m SE 54 capillary column, split injector and a column splitter leading to FID and FPD detectors, which allows simultaneous analysis of co-eluting hydrocarbons and sulphur compounds. The carrier gas is helium and the temperature program runs from 40°C to 290°C at a rate of 4°C/min. Final hold time is 10 mins. The aromatic hydrocarbon fraction is diluted by 1:30 and a 1 microlitre aliquot of this is injected into the instrument.

Combined Gas Chromatography - Mass Spectrometry (GC-MS)

The GC-MS analyses are performed on a Autospec Ultima system interfaced to a Hewlett Packard 5890 gas chromatograph. The GC is fitted with a fused silica SE54 capillary column (40 m x 0.22 mm i.d.) directly into the ion source. Helium (12 psi) is used as carrier gas and the injections are performed in splitless mode. The GC oven is programmed from 45°C to 150°C at 35°C/min, at which point the programme rate is 2°C/min up to 310°C where the column is held isothermally for 15 min. For the aromatic hydrocarbons, the GC oven is programmed from 50°C to 310°C at 5°C/min. and held isothermally at 310°C for 15 min. The mass spectrometer is operated in electron impact (EI) mode at 70 eV electron energy, a trap current of 500 uA and a source temperature of 220°C. The instrument resolution used is 1500 (10 % value).

The data system used is a VG OPUS system. The samples are analysed in multiple ion detection mode (MID) at a scan cycle time of approximately 1.1 sec. Calculation of peak ratios is performed from peak heights in the appropriate mass fragmentograms.

Saturated Fractions

Terpanes

The most commonly used fragment ions for detection of terpanes are m/z 163 for detection of 25,28,30 trisnormoretane or 25,28,30 trisnorhopane, m/z 177 for detection of demethylated hopanes or moretanes, m/z 191 for detection of tricyclic, tetracyclic- and pentacyclic terpanes and m/z 205 for methylated hopanes or moretanes. The molecular ions m/z 370 and 384 are also recorded for identification of C₂₇ and C₂₈ triterpanes respectively.

Steranes

The most commonly used fragment ions for detection of steranes are m/z 149 to distinguish between 5 α and 5 β steranes, m/z 189 and 259 for detection of rearranged steranes, m/z 217 for detection of rearranged and normal steranes and m/z 218 for detection of 5 α (H)14 β (H) 17 β (H) steranes.

The m/z 231 fragment ion is used to detect methyl steranes.

The m/z 253 fragment ion is used to detect possible monoaromatic sterane contamination of the saturated fraction.

Norwegian Standard Guide Annotation

**Mass Fragmentograms representing Terpanes
(m/z 163, 177, 191, 205, 370, 384, 398, 412 and 426)**

Peak Identification: (α and β refer to hydrogen atoms at C-17 and C-21 respectively unless indicated otherwise).

27Ts	18 α trisnorneohopane (T _s)	C ₂₇ H ₄₄	(I)
27Tm	17 α trisnorhopane (T _m)	C ₂₇ H ₄₆	(II, R=H)
28 $\alpha\beta$	Bisnorhopane	C ₂₈ H ₄₈	(IV)
25nor30 $\alpha\beta$ *	norhopane	C ₂₉ H ₅₀	
29 $\alpha\beta$	$\alpha\beta$ norhopane	C ₂₉ H ₅₀	(II, R=C ₂ H ₅)
29Ts	norneohopane	C ₂₉ H ₅₀	
29 $\beta\alpha$	$\beta\alpha$ norhopane	C ₂₉ H ₅₀	(III, R=C ₂ H ₅)
30 $\alpha\beta$	$\alpha\beta$ hopane	C ₃₀ H ₅₂	(II, R=i-C ₃ H ₇)
30O	Oleanane	C ₃₀ H ₅₂	
30 $\beta\alpha$	$\beta\alpha$ hopane	C ₃₀ H ₅₂	(III, R=i-C ₃ H ₇)
31 $\alpha\beta$ S	22S $\alpha\beta$ homohopane	C ₃₁ H ₅₄	(II, R=i-C ₄ H ₉)
31 $\alpha\beta$ R	22R $\alpha\beta$ homohopane	C ₃₁ H ₅₄	(II, R=i-C ₄ H ₉)
30G	gammacerane	C ₃₀ H ₅₂	
31 $\beta\alpha$	$\beta\alpha$ homohopane	C ₃₁ H ₅₄	(III, R=i-C ₄ H ₉)
32 $\alpha\beta$ S	22S $\alpha\beta$ bishomohopane	C ₃₂ H ₅₆	(II, R=i-C ₅ H ₁₁)
32 $\alpha\beta$ R	22R $\alpha\beta$ bishomohopane	C ₃₂ H ₅₆	(II, R=i-C ₅ H ₁₁)
33 $\alpha\beta$ S	22S $\alpha\beta$ trishomohopane	C ₃₃ H ₅₆	(II, R=i-C ₅ H ₁₁)
33 $\alpha\beta$ R	22R $\alpha\beta$ trishomohopane	C ₃₃ H ₅₈	(II, R=i-C ₆ H ₁₃)
34 $\alpha\beta$ S	22S $\alpha\beta$ tetrakishomohopane	C ₃₄ H ₆₀	(II, R=i-C ₇ H ₁₅)
34 $\alpha\beta$ R	22R $\alpha\beta$ tetrakishomohopane	C ₃₄ H ₆₀	(II, R=i-C ₇ H ₁₅)
35 $\alpha\beta$ S	22S $\alpha\beta$ pentakishomohopane	C ₃₅ H ₆₂	(II, R=i-C ₈ H ₁₇)
35 $\alpha\beta$ R	22R $\alpha\beta$ pentakishomohopane	C ₃₅ H ₆₂	(II, R=i-C ₈ H ₁₇)
23/3	Tricyclic terpene	C ₂₃ H ₄₂	(V, R=i-C ₄ H ₉)
24/3	Tricyclic terpene	C ₂₄ H ₄₄	(V, R=i-C ₅ H ₁₁)
25/3	Tricyclic terpene (17R, 17S)	C ₂₅ H ₆₆	(V, R=i-C ₆ H ₁₃)
24/4	Tetracyclic terpene	C ₂₄ H ₄₂	(VI)
26/3	Tricyclic terpene (17R, 17S)	C ₂₆ H ₄₈	(V, R=i-C ₇ H ₁₅)
21/3	Tricyclic terpene	C ₂₁ H ₃₈	(V, R=C ₂ H ₅)
22/3	Tricyclic terpene	C ₂₂ H ₄₀	(V, R=C ₃ H ₇)
25nor28 *	25,28,30-trisnorhopane/moretane	C ₂₇ H ₄₆	(VII)
30d	Diahopane	C ₃₀ H ₅₂	(VIII)

* Also identified and quantified in m/z 177 fragmentograms

Mass Fragmentograms representing Steranes
(m/z 149, 189, 217, 218, 259, 372, 386, 400 and 414)

Peak Identifications: α and β refer to hydrogen atoms at C-5, C-14 and C-17 in regular steranes and at C-13 and C-17 in diasteranes.

21 α	5 α sterane	C ₂₁ H ₃₆	(VI, R=C ₂ H ₅)
22 α	5 α sterane	C ₂₂ H ₃₈	(VI, R=C ₃ H ₇)
27d β S	20S $\beta\alpha$ diacholestane	C ₂₇ H ₄₈	(I, R=H)
27d β R	20R $\beta\alpha$ diacholestane	C ₂₇ H ₄₈	(I, R=H)
27d α S	20S $\alpha\beta$ diacholestane	C ₂₇ H ₄₈	(II, R=H)
27d α R	20R $\alpha\beta$ diacholestane	C ₂₇ H ₄₈	(II, R=H)
28d β S	20S $\beta\alpha$ 24-methyl-diacholestane	C ₂₈ H ₅₀	(I, R=CH ₃)
28d β R	20R $\beta\alpha$ 24-methyl-diacholestane	C ₂₈ H ₅₀	(I, R=CH ₃)
28d α R	20R $\alpha\beta$ 24-methyl-diacholestane	C ₂₈ H ₅₀	(II, R=CH ₃)
27 $\alpha\alpha$ S	+ 20S $\alpha\alpha\alpha$ cholestane	C ₂₇ H ₄₈	(III, R=H)
29d β S	20S $\beta\alpha$ 24-ethyl-diacholestane	C ₂₉ H ₅₂	(II, R=C ₂ H ₅)
27 $\beta\beta$ R*	+ 20R $\alpha\beta\beta$ cholestane	C ₂₇ H ₄₈	(IV, R=H)
27 $\beta\beta$ S*	20S $\alpha\beta\beta$ cholestane	C ₂₇ H ₄₈	(IV, R=H)
28d α S	+ 20S $\alpha\beta$ 24-methyl-diacholestane	C ₂₈ H ₅₀	(II, R=CH ₃)
27 $\alpha\alpha$ R	20R $\alpha\alpha\alpha$ cholestane	C ₂₇ H ₄₈	(III, R=H)
29d β R	20R $\beta\alpha$ 24-ethyl-diacholestane	C ₂₉ H ₅₂	(I, R=C ₂ H ₅)
29d α R	20R $\alpha\beta$ 24-ethyl-diacholestane	C ₂₉ H ₅₂	(II, R=C ₂ H ₅)
28 $\alpha\alpha$ S	20S $\alpha\alpha\alpha$ 24-methyl-cholestane	C ₂₈ H ₅₀	(III, R=CH ₃)
28 $\beta\beta$ R*	20R $\alpha\beta\beta$ 24-methyl-cholestane	C ₂₈ H ₅₀	(IV, R=CH ₃)
29d α S	+ 20S $\alpha\beta$ 24-ethyl-diacholestane	C ₂₉ H ₅₂	(II, R=C ₂ H ₅)
28 $\beta\beta$ S*	20S $\alpha\beta\beta$ 24-methyl-cholestane	C ₂₈ H ₅₀	(IV, R=CH ₃)
28 $\alpha\alpha$ R	20R $\alpha\alpha\alpha$ 24-methyl-cholestane	C ₂₈ H ₅₀	(III, R=CH ₃)
29 $\alpha\alpha$ S	20S $\alpha\alpha\alpha$ 24-ethyl-cholestane	C ₂₉ H ₅₂	(III, R=C ₂ H ₅)
29 $\beta\beta$ R*	20R $\alpha\beta\beta$ 24-ethyl-cholestane	C ₂₉ H ₅₂	(IV, R=C ₂ H ₅)
29 $\beta\beta$ S*	20S $\alpha\beta\beta$ 24-ethyl-cholestane	C ₂₉ H ₅₂	(IV, R=C ₂ H ₅)
29 $\alpha\alpha$ R	20R $\alpha\alpha\alpha$ 24-ethyl-cholestane	C ₂₉ H ₅₂	(III, R=C ₂ H ₅)
M30 $\alpha\alpha$	$\alpha\alpha$ 4-methyl-24-ethyl-cholestane	C ₃₀ H ₅₄	
M30D	$\alpha\alpha$ 4,23,24-trimethyl-cholestane	C ₃₀ H ₅₄	
30 $\alpha\alpha$ S	20S $\alpha\alpha\alpha$ 24-propyl-cholestane	C ₃₀ H ₅₄	(IV, R=C ₃ H ₇)
30 $\beta\beta$ R*	20R $\alpha\beta\beta$ 24-propyl-cholestane	C ₃₀ H ₅₄	(V, R=C ₃ H ₇)
30 $\beta\beta$ S*	20S $\alpha\beta\beta$ 24-propyl-cholestane	C ₃₀ H ₅₄	(IV, R=C ₃ H ₇)
30 $\alpha\alpha$ R	20R $\alpha\alpha\alpha$ 24-propyl-cholestane	C ₃₀ H ₅₄	(IV, R=C ₃ H ₇)

- Compounds identified and quantified in m/z 218 fragmentograms

Abbreviations

List of abbreviations used for lithology description

(sorted alphabetically)

ang	= angular
bar	= Baryte (mud additive)
bit	= bituminous
bl	= blue/blueish
blk	= black
br	= brittle
brn	= brown/brownish
Ca	= Carbonate (limestone/chalk/dolomite/siderite)
calc	= calcareous
carb	= carbonaceous
cem	= cement used as additive (under "cont") or to describe cemented S/Sst
Chert	= Chert
chk	= Chalk/chalky
cly	= clayey/shaly
cngl	= conglomeratic
Coal	= Coal
Coal-ad	= Coal-like additive (e.g. chromlignosulfonate)
Congl	= Conglomerat
Cont	= Contamination(s)
crs	= coarse grained
dd	= dried drilling mud
dol	= Dolomite/dolomitic
drk	= dark (colour)
dsk	= dusk/dusky (colour)
evap	= Salt/Gypsum/Halite (natural "Other" or as additive "Cont")
f	= fine grained
fe	= ferruginous
fib	= fibres (mud additive/contamination)
fis	= fissile
fos	= fossiliferous
glauc	= glauconite/glauconitic
gn	= green/greenish
gy	= grey/greyish
hd	= hard
ign	= Igneous (material derived from igneous source)
Kaolin	= Kaolin(ite)
kln	= kaolinitic
l	= loose
lam	= laminated/laminae
lt	= light (colour)
m	= medium (colour or grain size)
Marl	= Marl (calcareous claystone/mudstone)
mic	= micaceous
Mica-ad	= Mica used as mud additive
mrl	= marly
No Mat.	= No material left over after washing
ns	= nutshells (mud additive)
ol	= olive
ool	= Oolite/oolitic
or	= orange
Other	= Other lithology/mineral, specified after this word
pi	= pink/pinkish
pl	= pale (colour)
prp	= paint/rust/plastic contaminations/additives
pu	= purple

pyr	=	Pyrite/pyritic
red	=	red/reddish
rnd	=	round/rounded
s	=	sandy
sft	=	soft
S/Sst	=	Sand and/or sandstone
Sh/Clst	=	Shale and/or claystone
sid	=	Siderite/sideritic
sil	=	siliceous/cherty
silt	=	silty
Siltst	=	siltstone
st	=	stained (with natural oil or oil-like additive)
tar-ad	=	Tar-like additive (e.g. "Black Magic")
trbfgs	=	turbodrilled fragments
Tuff	=	Tuff
tuff	=	tuffaceous
v col	=	various colours
w	=	white
wx	=	waxy
y	=	yellow/yellowish

General

EOM	=	Extractable Organic Matter
GC-MS	=	Gas Chromatograph - Mass Spectrometer
HC	=	Hydrocarbons
MPLC	=	Medium Pressure Liquid Chromatograph
NSO	=	Nitrogen-, Sulphur- and Oxygen-compounds
TOC	=	Total Organic Carbon
VRe	=	Vitrinite Reflectance equivalent

In GAS CHROMATOGRAPHY

FID	=	Flame Ionisation Detector
FPD	=	Flame Photometric Detector
GC	=	Gas Chromatograph
CPI	=	Carbon Preference Index, $0.5 \times \frac{C_{25}+C_{27}+C_{29}+C_{31}+C_{33} + C_{25}+C_{27}+C_{29}+C_{31}+C_{33}}{C_{24}+C_{26}+C_{28}+C_{30}+C_{32} \quad C_{26}+C_{28}+C_{30}+C_{32}+C_{34}}$
Bph	=	Biphenyl
P	=	phenanthrene
MP	=	methyl phenanthrene
MDBT	=	methyl dibenzothiophene
DBT	=	dibenzothiophene
MNR	=	2/1 methylnaphthalenes
ENR	=	2/1 ethylnaphthalenes
DMNR	=	2,6+2,7/1,5 dimethyl naphthalenes
BphR	=	Biphenyl/1,6 dimethylnaphthalene
MPI 1	=	methyl phenanthrene index, $1.5 \times (3MP+2MP) / P+9MP+1MP$
MPI 2	=	methyl phenanthrene index, $3 \times (2MP) / P+9MP+1MP$
(3+2/1)MDBT	=	3+2/1 methyl dibenzothiophenes
(4/1)MDBT	=	4/1 methyl dibenzothiophenes
Rc	=	$0.6 \text{ MPI } 1 + 0.4 \text{ (where } 2/1MP = <2.65)$

In GC-MS

Triterpanes

C_{30} diahopane/ C_{30} diahopane+ C_{29} $\beta\alpha$ hopane – peaks X/(X+D)

C_{30} diahopane/ C_{30} diahopane+ C_{30} $\alpha\beta$ hopane – peaks X/(X+E)

Ts/(Ts+Tm) - C_{27} 22,29,30 18 α trisnorneohopane / (C_{27} 22,29,30 17 α trisnorhopane + C_{27} 22,29,30 18 α trisnorneohopane) peaks A/(A+B)

Bisnorhopane/(bisnorhopane+ C_{29} $\alpha\beta$ hopane) – peaks Z/(Z+C)

Steranes

Ratio 1 C_{27} diasterane/ C_{27} Diasterane+ C_{27} $\alpha\alpha$ 20R - peaks a/(a+j)

Ratio 2 % C_{29} 20S - % 5 α 14 α 17 α 20S/(20S+20R) ethylcholestanes– peaks q/(q+t)

Ratio 4 C_{27}/C_{29} diasteranes (peaks a+b+c+d)/(h+k+l+n)

Ratio 6 ($C_{21}+C_{22}$)/ ($C_{21}+C_{22}+ 5\alpha$ 14 β 17 β + 5 α 14 α 17 α 20S+20R) – peaks (a+b)/(a+b+q+r+s+t)

Ratio 8 C_{29} $\beta\beta$ /($\alpha\alpha$ + $\beta\beta$) – 5 α 14 β 17 β / (5 α 14 β 17 β + 5 α 14 α 17 α) (20S+20R) ethylcholestanes – peaks (r+s)/(q+r+s+t)

Table 1: Analytical program for Hydrocarbon Analysis of sandstones from 24/12-2

Well	Sample Depth (m)	Sample Type	Sample Code	Extraction Clean-Up	Lithology Description	Picking for screening	Prøvepreparering	Leco TOC	RockEval	Thermal Extraction	Pyrolysis GC	Picking for Extraction	Iatroscan	Solvent Extraction	Topping	MPLC & Deasphaltene	EOM GC	Whole Oil GC	Sat GC (Quantitative)	Aro GC	Sat GCMS (Quantitative)	Aro GCMS (Quantitative)	Carbon isotope of fractions	Vitrinite Reflectance	Visual kerogen	API Gravity	Gas composition	GC-IRMS of oils	
	Table nos.:																												
24/12-2	2200	cuttings	V48/0340-2		X		X					X	X	X		X	X												
24/12-2	2205	cuttings	V48/0341-2		X		X					X	X	X		X	X												
24/12-2	2210	cuttings	V48/0342-2		X		X					X	X	X			X												
24/12-2	2215	cuttings	V48/0343-2		X		X					X	X	X			X												
24/12-2	2220	cuttings	V48/0344-2		X		X					X	X	X			X												
			Total		5		5					5	2	5		2	5												
cemented sandstone cuttings were picked where possible																													

Table 8a: Extraction and Fractionation (MPLC) Data (weights)

Well name	Lower depth (m)	Sample type	Description	% Lith.	whole rock (g) for								
					extraction	EOM (mg)	Sat (mg)	Aro (mg)	NSO (mg)	Asph (mg)	%TOC	HC	Non-HC
NOCS 24/12-2	2200	cut	sandstone/sand	5	3,54	9,2	3,88	1,69	2,53	1,1	0,89	5,57	3,63
NOCS 24/12-2	2205	cut	sandstone/sand	5	10,32	16	7,73	2,28	4,39	1,6	0,69	10,01	5,99
NOCS 24/12-2	2210	cut	sandstone/sand	5	11,57	8,4	-	-	-	-	-	-	-
NOCS 24/12-2	2215	cut	sandstone/sand	5	11,65	13,1	-	-	-	-	-	-	-
NOCS 24/12-2	2220	cut	sandstone/sand	5	11,5	15	-	-	-	-	-	-	-

Table 8b Extraction and Fractionation (MPLC) Data (ppm) of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	EOM (ppm)	Sat (ppm)	Aro (ppm)	NSO (ppm)	Asph (ppm)	HC	Non-HC	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	2599	1096	477	715	311	1573	1025	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	1550	749	221	425	155	970	580	V48/0341-2
NOCS 24/12-2	2210	cut	sandstone/sand	5	726	-	-	-	-	-	-	V48/0342-2
NOCS 24/12-2	2215	cut	sandstone/sand	5	1124	-	-	-	-	-	-	V48/0343-2
NOCS 24/12-2	2220	cut	sandstone/sand	5	1304	-	-	-	-	-	-	V48/0344-2

Table 8c Extraction and Fractionation (MPLC) Data (mg/gTOC) of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	EOM (mg/gTOC)	Sat (mg/gTOC)	Aro (mg/gTOC)	NSO (mg/gTOC)	Asph (mg/gTOC)	HC	Non-HC	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	292	123	54	80	35	177	115	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	225	109	32	62	22	141	84	V48/0341-2
NOCS 24/12-2	2210	cut	sandstone/sand	5	-	-	-	-	-	-	-	V48/0342-2
NOCS 24/12-2	2215	cut	sandstone/sand	5	-	-	-	-	-	-	-	V48/0343-2
NOCS 24/12-2	2220	cut	sandstone/sand	5	-	-	-	-	-	-	-	V48/0344-2

Table 8d: Fractionation Data from MPLC (fractions as a percentage of EOM) of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	Sat/ EOM	Aro/ EOM	Asph/ EOM	NSO/ EOM	HC/ EOM	Non-HC/ EOM	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	42,19	18,34	11,96	27,51	60,53	39,47	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	48,29	14,27	10,00	27,44	62,56	37,44	V48/0341-2

Table 8e Fractionation Data from MPLC (ratios) of Sandstones from 24/9-2 and 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	Sat/ Aro	HC/ Non- HC	ASP/ NSO	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	2,30	1,53	0,43	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	3,38	1,67	0,36	V48/0341-2

Table 8f: Iatroscan analysis (absolute data in mg) of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	%Lith.	EOM weighed	Sat.	Aro.	Resins	Asph.	Tot. HC	Tot. pol.	Tot. EOM (calc.)	Sample number
NDCS 24/12-2	2200	cut	sandstone/sand	5	26	1,53	0,45	0,31	0,31	1,97	0,63	26	V48/0340-2
NDCS 24/12-2	2205	cut	sandstone/sand	5	1,55	0,92	0,26	0,22	0,16	1,18	0,37	1,55	V48/0341-2

Table 8g: Iatroscan data % of EOM of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	Sat.	Aro.	Resins	Asph.	Tot. HC	Tot. pol.	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	58,76	17,17	12,11	11,96	75,93	24,07	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	59,09	16,87	14,04	10	75,96	24,04	V48/0341-2

Table 9Aa Saturated Hydrocarbon peak areas of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	nC15	nC16	Nor-pristane	nC17	Pristane	nC18	Phytane	nC19	nC20	nC21
NOCS 24/12-2	2200	cut	sandstone/sand	5	6540483	7121026	3066271	6285247	5273877	5057974	3727692	4163149	2945329	1658204
NOCS 24/12-2	2205	cut	sandstone/sand	5	7114359	6311106	2947435	5823987	4803128	4843140	3285281	3836329	2509206	1459542

Well name	Lower depth (m)	Sample type	Description	% Lith.	nC22	nC23	nC24	nC25	nC26	nC27	nC28	nC29	nC30	nC31
NOCS 24/12-2	2200	cut	sandstone/sand	5	970617	613912	419419	399070	236626	199354	234273	121525	94880	109641
NOCS 24/12-2	2205	cut	sandstone/sand	5	844502	526074	335344	307653	172577	141747	139070	88482	46938	93279

Well name	Lower depth (m)	Sample type	Description	% Lith.	nC32	nC33	nC34	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	63594	52528	46257	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	53264	46602	33090	V48/0341-2

Table 9Ab: Quantitative Analysis of Saturated Hydrocarbon Fraction of Sandstones from 21/12-2 (in mg/g)

Well name	Lower depth (m)	Sample type	Description	% Lith.	nC15	nC16	iC18	nC17	Pristane	nC18	Phytane	nC19	nC20
NOCS 24/12-2	2200	cut	sandstone/sand	5	50,92	55,44	23,87	48,93	41,06	39,38	29,02	32,41	22,93
NOCS 24/12-2	2205	cut	sandstone/sand	5	56,65	50,26	23,47	46,38	38,25	38,57	26,16	30,55	19,96

Well name	Lower depth (m)	Sample type	Description	% Lith.	nC25	nC26	nC27	nC28	nC29	nC30	nC31	nC32	nC33
NOCS 24/12-2	2200	cut	sandstone/sand	5	3,11	1,84	1,55	1,82	0,95	0,74	0,85	0,50	0,41
NOCS 24/12-2	2205	cut	sandstone/sand	5	2,45	1,37	1,13	1,11	0,70	0,37	0,74	0,42	0,37

Table 9b: Saturated Hydrocarbon Ratios (peak areas) of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	Prist./ nC17	Prist./ Phyt.	(Prist./nC17)/ (Phyt./nC18)	CPI 1	Phytane/ nC18	nC17/ (nC17+nC27)	(Pristane+Phytane)/ (nC17+nC18)	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	0,84	1,41	1,14	1,08	0,74	0,97	0,79	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	0,82	1,46	1,22	1,22	0,68	0,98	0,76	V48/0341-2

Table 9Ca: Aromatic Hydrocarbons (peak areas) of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	2MN	1MN	BPh	2EN	1EN	2.6+	2.7DMN	1.6DMN	1.5DMN	1.3.7TMN
NOCS 24/12-2	2200	cut	sandstone/sand	5	37561	50755	74869	71131	88590	432089	637607	252089	578845	
NOCS 24/12-2	2205	cut	sandstone/sand	5	262780	289985	229446	189770	266686	1012843	1324948	481060	939783	

Well name	Lower depth (m)	Sample type	Description	% Lith.	1.3.6TMN	1.3.5TMN	1.4.6+	2.3.6TMN	P	3MP	2MP	9MP	1MP	DBT
NOCS 24/12-2	2200	cut	sandstone/sand	5	822991	916571	602861	1113055	603180	768936	573947	568927	195074	
NOCS 24/12-2	2205	cut	sandstone/sand	5	1288594	1403503	882765	1770367	957110	1240123	951665	905704	341906	

Well name	Lower depth (m)	Sample type	Description	% Lith.	4MDBT	2+3 MDBT	1MDBT	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	1318477	211185	194860	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	3435198	445788	344617	V48/0341-2

Table 9Cc: Aromatic Ratios (peak area) of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	MNR	DMNR	BPhR	2'1MP	MP1	MP2	Rc	DBT/Ph	4/1 MDBT	(3+2)/1MDBT	F1	F2	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	0,74	1,71	0,12	1,35	0,91	1,02	0,95	0,18	6,77	1,08	0,55	0,31	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	0,91	2,11	0,17	1,37	0,91	1,03	0,95	0,19	9,97	1,29	0,54	0,31	V48/0341-2

Table 11a: Triterpane data from m/z 191 fragmentograms (Saturated Hydrocarbon Fraction GC-MS SIR analysis)
Triterpane Peak Heights of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	23/3 (P)	24/3 (Q)	25/3 (R)	24/4 (S)	26/3 (T)	27Ts (A)	27Tm (B)	28ab (Z)	25nor30ab (Z1)
NOCS 24/12-2	2200	cut	sandstone/sand	5	22460	12106	4633	8201	2493	10103	12719	67398	10607
NOCS 24/12-2	2205	cut	sandstone/sand	5	18403	10126	3374	6817	1780	7127	9694	59359	6308

Well name	Lower depth (m)	Sample type	Description	% Lith.	29ab (C)	29Ts (C1)	30d (X)	29ba (D)	30ab (E)	30ba (F)	31abS (G)	31abR (H)	31ba (I)	32abS (J1)
NOCS 24/12-2	2200	cut	sandstone/sand	5	33373	11077	2217	11919	60856	3995	12318	17847	5623	6864
NOCS 24/12-2	2205	cut	sandstone/sand	5	24887	9105	1732	11322	52777	4647	8930	17571	6140	4198

Well name	Lower depth (m)	Sample type	Description	% Lith.	32abR (J2)	33abS (K1)	33abR (K2)	34abS (L1)	34abR (L2)	35abS (M1)	35abR (M2)	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	5357	4328	3452	1958	1568	1700	1769,2	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	4286	2574	2532	1153	1232	1063,2	1364,2	V48/0341-2

Table 11b: Triterpanes data from m/z 177 fragmentograms (Saturated Hydrocarbon Fraction GC-MS SIR analysis)
Triterpane Peak Heights of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	25nor28ab	25nor30ab	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	62808,6	6645,9	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	45478,3	4493,7	V48/0341-2

Table 11c: Sterane data from m/z 217 fragmentograms (Saturated Hydrocarbon Fraction GC-MS SIR analysis)
Sterane Peak Heights of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	%Lith.	21a (u)	22a (v)	27dbS (a)	27dbR (b)	27daR (c)	27daS (d)	28dbS (e)	28dbR (f)
NOCS24/12-2	2200	cut	sandstone/sand	5	33632,3	10315,5	14048,4	9427,1	3193,6	5266,4	5997	3807,2
NOCS24/12-2	2205	cut	sandstone/sand	5	32713,7	9242,3	11471,8	7951,2	2878,4	4140,8	4670,9	3110,7

Well name	Lower depth (m)	Sample type	Description	%Lith.	28dbR +27aaS (g)	29dbS +27bbR (h)	28daS +27tbS (i)	27aaR (j)	29dbR (k)	29daR (l)	28aaS (m)	29dbR (n)	28tbS (o)
NOCS24/12-2	2200	cut	sandstone/sand	5	9210,7	12753,8	6821,3	28000,1	6485,7	2943,8	2806	8736,6	5668,2
NOCS24/12-2	2205	cut	sandstone/sand	5	7028,9	9714,3	5172,9	20076,4	5234,9	2421,3	2146,6	6474,5	3965,9

Well name	Lower depth (m)	Sample type	Description	% Lith.	28aaR (p)	29aaS (q)	29bbR (r)	29bbS (s)	29aaR (t)	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	14587,3	4061,2	9949	5495,3	24898,4	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	11630,7	3198,3	7499,9	3942,4	19556,8	V48/0341-2

Table 11d: Sterane data from m/z 218 fragmentograms (Saturated Hydrocarbon Fraction GC-MS SIR analysis)
 Sterane Peak Heights of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	27bbR (h)	27bbS (i)	28bbR (n)	28bbS (o)	29bbR (r)	29bbS (s)	30bbR (x)	30bbS (y)	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	14304	9526	10814	8686	11499	8901	2217	2348	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	9859	7035	8316	6644	8671	7063	1519	1794	V48/0341-2

Table 11e: Triterpane data from m/z 191 fragmentograms (Saturated Hydrocarbon Fraction GC-MS SIR analysis)
Amount of Triterpanes in ng/g sat (ppb) of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	23/3 (P)	24/3 (Q)	25/3 (R)	24/4 (S)	26/3 (T)	27Ts (A)	27Tm (B)	28ab (Z)
NOCS 24/12-2	2200	cut	sandstone/sand	5	28331	15271	5844	10344	3144	12744	16044	85015
NOCS 24/12-2	2205	cut	sandstone/sand	5	31865	17534	5842	11804	3083	12341	16784	102780

Well name	Lower depth (m)	Sample type	Description	% Lith.	25nor30ab (Z1)	29ab (C)	29Ts (C1)	30d (X)	29ba (D)	30ab (E)	30ba (F)	31abS (G)	31abR (H)
NOCS 24/12-2	2200	cut	sandstone/sand	5	13380	42096	13972	2796	15035	76889	5039	15538	22512
NOCS 24/12-2	2205	cut	sandstone/sand	5	10921	43082	15766	2999	19604	91383	8045	15463	30424

Well name	Lower depth (m)	Sample type	Description	% Lith.	31ba (I)	32abS (J1)	32abR (J2)	33abS (K1)	33abR (K2)	34abS (L1)	34abR (L2)	35abS (M1)	35abR (M2)
NOCS 24/12-2	2200	cut	sandstone/sand	5	7092	8658	6758	5459	4355	2470	1978	2144	2232
NOCS 24/12-2	2205	cut	sandstone/sand	5	10631	7269	7422	4457	4383	1997	2133	1841	2362

Table 11f: Triterpane data from m/z 177 fragmentograms (Saturated Hydrocarbon Fraction GC-MS SIR analysis)
Amount of Triterpanes in ng/g sat (ppb) of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	25nor28ab	25nor30ab	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	79226	8383	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	78745	7781	V48/0341-2

Table 11g: Sterane data from m/z 217 fragmentograms (Saturated Hydrocarbon Fraction GC-MS SIR analysis)
Amount of Steranes in ng/g sat (ppb) of Sandstones from 24/12-2

Well name	Lower	Sample type	Description	% Lith.	21a (u)	22a (v)	27dbS (a)	27dbR (b)	27daR (c)	27daS (d)	28dbS (e)	28dbR (f)	28daR
	depth (m)												+27aaS (g)
NOCS 24/12-2	2200	cut	sandstone/sand	5	42423	13012	17721	11891	4028	6643	7565	4802	11618
NOCS 24/12-2	2205	cut	sandstone/sand	5	56643	16003	19863	13767	4984	7170	8088	5386	12170

Well name	Lower	Sample type	Description	% Lith.	27aaR (j)	29dbR (k)	29daR (l)	28aaS (m)	29daS	28bbS (o)	28aaR (p)	29aaS (q)	29bbR (r)
	depth (m)								+28bbR (n)				
NOCS 24/12-2	2200	cut	sandstone/sand	5	35319	8181	3713	3542	11020	7150	18400	5123	12550
NOCS 24/12-2	2205	cut	sandstone/sand	5	34762	9064	4192	3717	11211	6919	20138	5538	12986

Well name	Lower	Sample type	Description	% Lith.	Sample
	depth (m)				number
NOCS 24/12-2	2200	cut	sandstone/sand	5	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	V48/0341-2

Table 11h: Sterane data from m/z 218 fragmentograms (Saturated Hydrocarbon Fraction GC-MS SIR analysis)
Sterane quantified in ng/g sat (ppb) of Sandstones from 24/12-2

Well name	Lower	Sample	Description	% Lith.	27bbR (h)	27bbS (i)	28bbR (n)	28bbS (o)	29bbR (r)	29bbS (s)	30bbR (x)	30bbS (y)	Sample
	depth (m)	type											number
NOCS 24/12-2	2200	cut	sandstone/sand	5	18043	12016	13641	10956	14505	11227	2797	2961	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	17071	12181	14399	11504	15013	12229	2630	3106	V48/0341-2

Table 11i: Amount of standard (d4 cholestne) and weight of sample of Sandstones from 24/12-2

Well name	Lower	Sample	Description	% Lith.	Standard	Amount	Weight	Sample
	depth (m)	type						number
NOCS 24/12-2	2200	cut	sandstone/sand	5	172343,4	2,0	9,2	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	72192,5	2,0	16,0	V48/0341-2

Table 11j: Triterpane data from m/z 191 fragmentograms (Saturated Hydrocarbon Fraction GC-MS SIR analysis)
Ratios from peak heights of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	%Lith.	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9	Ratio10
NOCS24/12-2	2200	cut	sandstone/sand	5	1,26	0,56	0,16	0,55	0,35	0,04	1,11	2,02	0,53	0,2
NOCS24/12-2	2205	cut	sandstone/sand	5	1,36	0,58	0,14	0,47	0,32	0,03	1,12	2,39	0,53	0,19

Well name	Lower depth (m)	Sample type	Description	% Lith.	Ratio 13	Ratio 14	27Ts/ (27Ts+27Tm)	30d/ (30d+29ba)	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	0,17	56,16	0,44	0,16	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	0,21	49,48	0,42	0,13	V48/0341-2

Table 11k: Triterpane data from m/z 217 fragmentograms (Saturated Hydrocarbon Fraction GC-MS SIR analysis)
Ratios from peak heights of Sandstones from 24/9-2 and 24/12-2

Well name	Lower depth (m)	Sample type	Description	%Lith.	Ratio 1	Ratio 2	Ratio 3	Ratio 4	Ratio 5	Ratio 6	Ratio 7	Ratio 8	Ratio 9	Ratio 10	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	0,33	14,02	51,61	1,03	0,79	0,5	0,41	0,35	0,16	0,62	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	0,36	14,06	50,14	1,11	0,78	0,55	0,47	0,33	0,16	0,59	V48/0341-2

Triterpane and Sterane ratios

ratio	Triterpanes	Steranes
Ratio 1	27Tm/27Ts	$27d\beta S / (27d\beta S + 27\alpha\alpha R)$
Ratio 2	27Tm/(27Tm·	$29\alpha\alpha S / (29\alpha\alpha S + 29\alpha\alpha R)$
Ratio 3	27Tm/(27Tm·	$2 \cdot (29\beta\beta R + 29\beta\beta S) / (29\alpha\alpha S + 29\alpha\alpha R + 2 \cdot [29\beta\beta R + 29\beta\beta S])$
Ratio 4	$29\alpha\beta / 30\alpha\beta$	$(27d\beta S + 27d\beta R + 27d\alpha R + 27d\alpha S) / (29d\beta S + 29d\beta R + 29d\alpha R + 29d\alpha S)$
Ratio 5	$29\alpha\beta / (29\alpha\beta +$	$(29\beta\beta R + 29\beta\beta S) / (29\alpha\alpha S + 29\beta\beta R + 29\beta\beta S)$
Ratio 6	$30d / 30\alpha\beta$	$21\alpha + 22\alpha / (21\alpha + 22\alpha + 29\alpha\alpha S + 29\beta\beta R + 29\beta\beta S + 29\alpha\alpha R)$
Ratio 7	$28\alpha\beta / 30\alpha\beta$	$21\alpha + 22\alpha / (21\alpha + 22\alpha + 28d\alpha S + 28\alpha\alpha S + 29d\alpha R + 29\alpha\alpha S + 29\beta\beta R + 29\beta\beta S + 29\alpha\alpha R)$
Ratio 8	$28\alpha\beta / 29\alpha\beta$	$(29\beta\beta R + 29\beta\beta S) / (29\alpha\alpha S + 29\beta\beta R + 29\beta\beta S + 29\alpha\alpha R)$
Ratio 9	$28\alpha\beta / (28\alpha\beta +$	$29\alpha\alpha S / 29\alpha\alpha R$
Ratio 10	24/3/30 $\alpha\beta$	$(29\beta\beta R + 29\beta\beta S) / 29\alpha\alpha R$
Ratio 11	$30\alpha\beta / (30\beta\alpha + 30\alpha\beta)$	
Ratio 12	$(29\alpha\beta + 29\beta\alpha) / (29\alpha\beta + 29\beta\alpha + 30\alpha\beta + 30\beta\alpha)$	
Ratio 13	$(29\beta\alpha + 30\beta\alpha) / (29\alpha\beta + 30\alpha\beta)$	
Ratio 14	$32\alpha\beta S / (32\alpha\beta S + 32\alpha\beta R)$	%

GEOCHEMICAL INTERPRETATION REPORT

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TITLE

GEOCHEMICAL REPORT ON RESIDUAL HYDROCARBONS IN WELLS 24/9-2 & 24/12-2

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62633

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Chapter 1

INTRODUCTION

1.1 General Well Information

The wells 24/9-2 and 24/12-2 are located in the South Viking Graben of the Norwegian sector of the North Sea.

The aims of the analytical program were to evaluate the possible migrated hydrocarbons of the Tertiary sequence in these two wells. For these purposes two sets of samples were sent for analysis.

- Four washed cuttings samples from 24/9-2
- Five unwashed cuttings samples from 24/12-2

A water based mud system was used in drilling these wells (information supplied by Statoil). The five unwashed cuttings samples from 24/12-2 required soaking in water overnight to soften the dried mud before washing.

Experimental Procedures

Total Organic Carbon (TOC) and Total Carbon Analysis

This analysis is performed using a LECO CS244 Carbon Analyser. Hand-picked lithologies from cuttings samples are crushed with a mortar and pestle and approximately 200 mg (50 mg for coals) are accurately weighed into LECO crucibles. The samples are then treated three times with 10 % hydrochloric acid to remove oxidized (carbonate) carbon, and washed four times with distilled water. The samples are dried on a hotplate at 60 - 70°C before analysis of total organic carbon.

Solvent Extraction of Organic Matter (EOM)

The samples are extracted using a Tecator Soxtec HT-System. Carefully weighed samples are taken in a pre-extracted thimble. Some activated copper is added to the extraction cup and dichloromethane/methanol (93/7) is used as an extraction solvent. The samples are boiled for 1 hour and then rinsed for 2 hours. If the samples contain more than 10 % TOC, then the whole procedure is repeated once. The resulting solution is transferred to a flask and the solvent removed by rotary evaporation (200 mb, 30°C). The amount of EOM is gravimetrically established.

Removal of Asphaltenes

The EOM is dissolved in n-pentane in a flask to precipitate the asphaltenes by ultrasonic bath for 3 min. The solution is then stored in the dark and at ambient temperature for at least 8 hours. The solution is then filtered (Baker 10-spe system) and the precipitated asphaltenes returned to the original flask by dissolution in dichloromethane. The solvent is removed by rotary evaporation at 200 mB and 30°C.

Iatroscan

Saturates, aromatics and polars are qualitatively and quantitatively assessed using Iatroscan TLC-FID and employing Chromarod S-III rods. EOM was dissolved in DCM/MeOH. 1-3 µl of the solution is spotted on the pre-activated rods, using an auto-spotter. The rods are developed in n-hexane (35 mins), followed by toluene (14 mins) and DCM/MeOH (4 mins) with 2 mins air-drying between every stage. The developed rods are introduced in a 60°C oven for 90 seconds. The rods are analysed using the Iatroscan and the data are collected and processed using Multichrom data system.

Chromatographic Separation of deasphalted EOM

Chromatographic separation is performed using an MPLC system developed by the company. The EOM (minus asphaltenes) is injected into the MPLC and separated using hexane as an eluent. The saturated and aromatic hydrocarbon fractions are collected and the solvent removed using a rotary evaporator at 30°C. The fractions are then transferred to small pre-weighed vials and evaporated to dryness overnight. The vials are re-weighed to obtain the weights of both the saturated and the aromatic fractions. The weight of the NSO fraction which is retained on the column, is obtained by weight difference.

Gas Chromatographic Analyses

EOM:

Analysis of extracted organic matter is performed on a Dani 8500 Gas Chromatograph fitted with a 25 m OV-1 Fused Silica column with 0.25 mm internal diameter. The temperature program on the column has an initial temperature of 50°C (hold time 1 min), a heating rate of 10°C/min up to 310°C held for 15 mins. The detectors are standard FIDs. Correlation is achieved by use of external standards. Quantification is achieved using squalane as internal standard. Chromatographic data is processed using the Multichrom data acquisition and processing system.

Saturated hydrocarbon fractions:

The instrument used for this analysis is a DANI 8510 Gas Chromatograph equipped with an FID detector and an OV1 (25m) column. The carrier gas is helium and the temperature program runs from 80°C to 300°C at a rate of 4°C/min. Final hold time is 20 mins. The saturated hydrocarbon fraction is diluted by 1:30 and a 1 microlitre aliquot of this is injected into the instrument.

Aromatic hydrocarbon fractions:

The instrument used is a Varian 3400 Gas Chromatograph with a 40 m SE 54 capillary column, split injector and a column splitter leading to FID and FPD detectors, which allows simultaneous analysis of co-eluting hydrocarbons and sulphur compounds. The carrier gas is helium and the temperature program runs from 40°C to 290°C at a rate of 4°C/min. Final hold time is 10 mins. The aromatic hydrocarbon fraction is diluted by 1:30 and a 1 microlitre aliquot of this is injected into the instrument.

Combined Gas Chromatography - Mass Spectrometry (GC-MS)

The GC-MS analyses are performed on a Autospec Ultima system interfaced to a Hewlett Packard 5890 gas chromatograph. The GC is fitted with a fused silica SE54 capillary column (40 m x 0.22 mm i.d.) directly into the ion source. Helium (12 psi) is used as carrier gas and the injections are performed in splitless mode. The GC oven is programmed from 45°C to 150°C at 35°C/min, at which point the programme rate is 2°C/min up to 310°C where the column is held isothermally for 15 min. For the aromatic hydrocarbons, the GC oven is programmed from 50°C to 310°C at 5°C/min. and held isothermally at 310°C for 15 min. The mass spectrometer is operated in electron impact (EI) mode at 70 eV electron energy, a trap current of 500 uA and a source temperature of 220°C. The instrument resolution used is 1500 (10 % value).

The data system used is a VG OPUS system. The samples are analysed in multiple ion detection mode (MID) at a scan cycle time of approximately 1.1 sec. Calculation of peak ratios is performed from peak heights in the appropriate mass fragmentograms.

Saturated Fractions

Terpanes

The most commonly used fragment ions for detection of terpanes are m/z 163 for detection of 25,28,30 trisnormoretane or 25,28,30 trisnorhopane, m/z 177 for detection of demethylated hopanes or moretanes, m/z 191 for detection of tricyclic, tetracyclic- and pentacyclic terpanes and m/z 205 for methylated hopanes or moretanes. The molecular ions m/z 370 and 384 are also recorded for identification of C₂₇ and C₂₈ triterpanes respectively.

Steranes

The most commonly used fragment ions for detection of steranes are m/z 149 to distinguish between 5 α and 5 β steranes, m/z 189 and 259 for detection of rearranged steranes, m/z 217 for detection of rearranged and normal steranes and m/z 218 for detection of 5 α (H)14 β (H) 17 β (H) steranes.

The m/z 231 fragment ion is used to detect methyl steranes.

The m/z 253 fragment ion is used to detect possible monoaromatic sterane contamination of the saturated fraction.

Norwegian Standard Guide Annotation

**Mass Fragmentograms representing Terpanes
(m/z 163, 177, 191, 205, 370, 384, 398, 412 and 426)**

Peak Identification: (α and β refer to hydrogen atoms at C-17 and C-21 respectively unless indicated otherwise).

27Ts	18 α trisnorhopane (T _s)	C ₂₇ H ₄₄	(I)
27Tm	17 α trisnorhopane (T _m)	C ₂₇ H ₄₆	(II, R=H)
28 $\alpha\beta$	Bisnorhopane	C ₂₈ H ₄₈	(IV)
25nor30 $\alpha\beta$ *	norhopane	C ₂₉ H ₅₀	
29 $\alpha\beta$	$\alpha\beta$ norhopane	C ₂₉ H ₅₀	(II, R=C ₂ H ₅)
29Ts	norhopane	C ₂₉ H ₅₀	
29 $\beta\alpha$	$\beta\alpha$ norhopane	C ₂₉ H ₅₀	(III, R=C ₂ H ₅)
30 $\alpha\beta$	$\alpha\beta$ hopane	C ₃₀ H ₅₂	(II, R=i-C ₃ H ₇)
30O	Oleanane	C ₃₀ H ₅₂	
30 $\beta\alpha$	$\beta\alpha$ hopane	C ₃₀ H ₅₂	(III, R=i-C ₃ H ₇)
31 $\alpha\beta$ S	22S $\alpha\beta$ homohopane	C ₃₁ H ₅₄	(II, R=i-C ₄ H ₉)
31 $\alpha\beta$ R	22R $\alpha\beta$ homohopane	C ₃₁ H ₅₄	(II, R=i-C ₄ H ₉)
30G	gammacerane	C ₃₀ H ₅₂	
31 $\beta\alpha$	$\beta\alpha$ homohopane	C ₃₁ H ₅₄	(III, R=i-C ₄ H ₉)
32 $\alpha\beta$ S	22S $\alpha\beta$ bishomohopane	C ₃₂ H ₅₆	(II, R=i-C ₅ H ₁₁)
32 $\alpha\beta$ R	22R $\alpha\beta$ bishomohopane	C ₃₂ H ₅₆	(II, R=i-C ₅ H ₁₁)
33 $\alpha\beta$ S	22S $\alpha\beta$ trishomohopane	C ₃₃ H ₅₆	(II, R=i-C ₅ H ₁₁)
33 $\alpha\beta$ R	22R $\alpha\beta$ trishomohopane	C ₃₃ H ₅₈	(II, R=i-C ₆ H ₁₃)
34 $\alpha\beta$ S	22S $\alpha\beta$ tetrakishomohopane	C ₃₄ H ₆₀	(II, R=i-C ₇ H ₁₅)
34 $\alpha\beta$ R	22R $\alpha\beta$ tetrakishomohopane	C ₃₄ H ₆₀	(II, R=i-C ₇ H ₁₅)
35 $\alpha\beta$ S	22S $\alpha\beta$ pentakishomohopane	C ₃₅ H ₆₂	(II, R=i-C ₈ H ₁₇)
35 $\alpha\beta$ R	22R $\alpha\beta$ pentakishomohopane	C ₃₅ H ₆₂	(II, R=i-C ₈ H ₁₇)
23/3	Tricyclic terpene	C ₂₃ H ₄₂	(V, R=i-C ₄ H ₉)
24/3	Tricyclic terpene	C ₂₄ H ₄₄	(V, R=i-C ₅ H ₁₁)
25/3	Tricyclic terpene (17R, 17S)	C ₂₅ H ₆₆	(V, R=i-C ₆ H ₁₃)
24/4	Tetracyclic terpene	C ₂₄ H ₄₂	(VI)
26/3	Tricyclic terpene (17R, 17S)	C ₂₆ H ₄₈	(V, R=i-C ₇ H ₁₅)
21/3	Tricyclic terpene	C ₂₁ H ₃₈	(V, R=C ₂ H ₅)
22/3	Tricyclic terpene	C ₂₂ H ₄₀	(V, R=C ₃ H ₇)
25nor28 *	25,28,30-trisnorhopane/moretane	C ₂₇ H ₄₆	(VII)
30d	Diahopane	C ₃₀ H ₅₂	(VIII)

* Also identified and quantified in m/z 177 fragmentograms

Mass Fragmentograms representing Steranes
(m/z 149, 189, 217, 218, 259, 372, 386, 400 and 414)

Peak Identifications: α and β refer to hydrogen atoms at C-5, C-14 and C-17 in regular steranes and at C-13 and C-17 in diasteranes.

21 α	5 α sterane	C ₂₁ H ₃₆	(VI, R=C ₂ H ₅)
22 α	5 α sterane	C ₂₂ H ₃₈	(VI, R=C ₃ H ₇)
27d β S	20S $\beta\alpha$ diacholestane	C ₂₇ H ₄₈	(I, R=H)
27d β R	20R $\beta\alpha$ diacholestane	C ₂₇ H ₄₈	(I, R=H)
27d α S	20S $\alpha\beta$ diacholestane	C ₂₇ H ₄₈	(II, R=H)
27d α R	20R $\alpha\beta$ diacholestane	C ₂₇ H ₄₈	(II, R=H)
28d β S	20S $\beta\alpha$ 24-methyl-diacholestane	C ₂₈ H ₅₀	(I, R=CH ₃)
28d β R	20R $\beta\alpha$ 24-methyl-diacholestane	C ₂₈ H ₅₀	(I, R=CH ₃)
28d α R	20R $\alpha\beta$ 24-methyl-diacholestane	C ₂₈ H ₅₀	(II, R=CH ₃)
27 $\alpha\alpha$ S	+ 20S $\alpha\alpha\alpha$ cholestane	C ₂₇ H ₄₈	(III, R=H)
29d β S	20S $\beta\alpha$ 24-ethyl-diacholestane	C ₂₉ H ₅₂	(II, R=C ₂ H ₅)
27 $\beta\beta$ R*	+ 20R $\alpha\beta\beta$ cholestane	C ₂₇ H ₄₈	(IV, R=H)
27 $\beta\beta$ S*	20S $\alpha\beta\beta$ cholestane	C ₂₇ H ₄₈	(IV, R=H)
28d α S	+ 20S $\alpha\beta$ 24-methyl-diacholestane	C ₂₈ H ₅₀	(II, R=CH ₃)
27 $\alpha\alpha$ R	20R $\alpha\alpha\alpha$ cholestane	C ₂₇ H ₄₈	(III, R=H)
29d β R	20R $\beta\alpha$ 24-ethyl-diacholestane	C ₂₉ H ₅₂	(I, R=C ₂ H ₅)
29d α R	20R $\alpha\beta$ 24-ethyl-diacholestane	C ₂₉ H ₅₂	(II, R=C ₂ H ₅)
28 $\alpha\alpha$ S	20S $\alpha\alpha\alpha$ 24-methyl-cholestane	C ₂₈ H ₅₀	(III, R=CH ₃)
28 $\beta\beta$ R*	20R $\alpha\beta\beta$ 24-methyl-cholestane	C ₂₈ H ₅₀	(IV, R=CH ₃)
29d α S	+ 20S $\alpha\beta$ 24-ethyl-diacholestane	C ₂₉ H ₅₂	(II, R=C ₂ H ₅)
28 $\beta\beta$ S*	20S $\alpha\beta\beta$ 24-methyl-cholestane	C ₂₈ H ₅₀	(IV, R=CH ₃)
28 $\alpha\alpha$ R	20R $\alpha\alpha\alpha$ 24-methyl-cholestane	C ₂₈ H ₅₀	(III, R=CH ₃)
29 $\alpha\alpha$ S	20S $\alpha\alpha\alpha$ 24-ethyl-cholestane	C ₂₉ H ₅₂	(III, R=C ₂ H ₅)
29 $\beta\beta$ R*	20R $\alpha\beta\beta$ 24-ethyl-cholestane	C ₂₉ H ₅₂	(IV, R=C ₂ H ₅)
29 $\beta\beta$ S*	20S $\alpha\beta\beta$ 24-ethyl-cholestane	C ₂₉ H ₅₂	(IV, R=C ₂ H ₅)
29 $\alpha\alpha$ R	20R $\alpha\alpha\alpha$ 24-ethyl-cholestane	C ₂₉ H ₅₂	(III, R=C ₂ H ₅)
M30 $\alpha\alpha$	$\alpha\alpha$ 4-methyl-24-ethyl-cholestane	C ₃₀ H ₅₄	
M30D	$\alpha\alpha$ 4,23,24-trimethyl-cholestane	C ₃₀ H ₅₄	
30 $\alpha\alpha$ S	20S $\alpha\alpha\alpha$ 24-propyl-cholestane	C ₃₀ H ₅₄	(IV, R=C ₃ H ₇)
30 $\beta\beta$ R*	20R $\alpha\beta\beta$ 24-propyl-cholestane	C ₃₀ H ₅₄	(V, R=C ₃ H ₇)
30 $\beta\beta$ S*	20S $\alpha\beta\beta$ 24-propyl-cholestane	C ₃₀ H ₅₄	(IV, R=C ₃ H ₇)
30 $\alpha\alpha$ R	20R $\alpha\alpha\alpha$ 24-propyl-cholestane	C ₃₀ H ₅₄	(IV, R=C ₃ H ₇)

- Compounds identified and quantified in m/z 218 fragmentograms

Abbreviations

List of abbreviations used for lithology description (sorted alphabetically)

ang	= angular
bar	= Baryte (mud additive)
bit	= bituminous
bl	= blue/blueish
blk	= black
br	= brittle
brn	= brown/brownish
Ca	= Carbonate (limestone/chalk/dolomite/siderite)
calc	= calcareous
carb	= carbonaceous
cem	= cement used as additive (under "cont") or to describe cemented S/Sst
Chert	= Chert
chk	= Chalk/chalky
cly	= clayey/shaly
cngl	= conglomeratic
Coal	= Coal
Coal-ad	= Coal-like additive (e.g. chromlignosulfonate)
Congl	= Conglomerat
Cont	= Contamination(s)
crs	= coarse grained
dd	= dried drilling mud
dol	= Dolomite/dolomitic
drk	= dark (colour)
dsk	= dusk/dusky (colour)
evap	= Salt/Gypsum/Halite (natural "Other" or as additive "Cont")
f	= fine grained
fe	= ferruginous
fib	= fibres (mud additive/contamination)
fis	= fissile
fos	= fossiliferous
glauc	= glauconite/glauconitic
gn	= green/greenish
gy	= grey/greyish
hd	= hard
ign	= Igneous (material derived from igneous source)
Kaolin	= Kaolin(ite)
kln	= kaolinitic
l	= loose
lam	= laminated/laminae
lt	= light (colour)
m	= medium (colour or grain size)
Marl	= Marl (calcareous claystone/mudstone)
mic	= micaceous
Mica-ad	= Mica used as mud additive
mrl	= marly
No Mat.	= No material left over after washing
ns	= nutshells (mud additive)
ol	= olive
ool	= Oolite/oolitic
or	= orange
Other	= Other lithology/mineral, specified after this word
pi	= pink/pinkish
pl	= pale (colour)
prp	= paint/rust/plastic contaminations/additives
pu	= purple

pyr	=	Pyrite/pyritic
red	=	red/reddish
rnd	=	round/rounded
s	=	sandy
sft	=	soft
S/Sst	=	Sand and/or sandstone
Sh/Clst	=	Shale and/or claystone
sid	=	Siderite/sideritic
sil	=	siliceous/cherty
silt	=	silty
Sltst	=	siltstone
st	=	stained (with natural oil or oil-like additive)
tar-ad	=	Tar-like additive (e.g. "Black Magic")
trbfgs	=	turbodrilled fragments
Tuff	=	Tuff
tuff	=	tuffaceous
v col	=	various colours
w	=	white
wx	=	waxy
y	=	yellow/yellowish

General

EOM	=	Extractable Organic Matter
GC-MS	=	Gas Chromatograph - Mass Spectrometer
HC	=	Hydrocarbons
MPLC	=	Medium Pressure Liquid Chromatograph
NSO	=	Nitrogen-, Sulphur- and Oxygen-compounds
TOC	=	Total Organic Carbon
VRe	=	Vitrinite Reflectance equivalent

In GAS CHROMATOGRAPHY

FID	=	Flame Ionisation Detector
FPD	=	Flame Photometric Detector
GC	=	Gas Chromatograph
CPI	=	Carbon Preference Index, $0.5 \times \frac{C_{25}+C_{27}+C_{29}+C_{31}+C_{33} + C_{25}+C_{27}+C_{29}+C_{31}+C_{33}}{C_{24}+C_{26}+C_{28}+C_{30}+C_{32} \quad C_{26}+C_{28}+C_{30}+C_{32}+C_{34}}$
Bph	=	Biphenyl
P	=	phenanthrene
MP	=	methyl phenanthrene
MDBT	=	methyl dibenzothiophene
DBT	=	dibenzothiophene
MNR	=	2/1 methylnaphthalenes
ENR	=	2/1 ethylnaphthalenes
DMNR	=	2,6+2,7/1,5 dimethyl naphthalenes
BphR	=	Biphenyl/1,6 dimethylnaphthalene
MPI 1	=	methyl phenanthrene index, $1.5 \times (3MP+2MP) / P+9MP+1MP$
MPI 2	=	methyl phenanthrene index, $3 \times (2MP) / P+9MP+1MP$
(3+2/1)MDBT	=	3+2/1 methyl dibenzothiophenes
(4/1)MDBT	=	4/1 methyl dibenzothiophenes
Rc	=	$0.6 \text{ MPI } 1 + 0.4 \text{ (where } 2/1\text{MP} = <2.65)$

In GC-MS

Triterpanes

C_{30} diahopane/ C_{30} diahopane+ C_{29} $\beta\alpha$ hopane – peaks X/(X+D)

C_{30} diahopane/ C_{30} diahopane+ C_{30} $\alpha\beta$ hopane – peaks X/(X+E)

Ts/(Ts+Tm) - C_{27} 22,29,30 18 α trisnorneohopane / (C_{27} 22,29,30 17 α trisnorhopane + C_{27} 22,29,30 18 α trisnorneohopane) peaks A/(A+B)

Bisnorhopane/(bisnorhopane+ C_{29} $\alpha\beta$ hopane) – peaks Z/(Z+C)

Steranes

Ratio 1 C_{27} diasterane/ C_{27} Diasterane+ C_{27} $\alpha\alpha$ 20R - peaks a/(a+j)

Ratio 2 % C_{29} 20S - % 5 α 14 α 17 α 20S/(20S+20R) ethylcholestanes– peaks q/(q+t)

Ratio 4 C_{27}/C_{29} diasteranes (peaks a+b+c+d)/(h+k+l+n)

Ratio 6 ($C_{21}+C_{22}$)/ ($C_{21}+C_{22}+ 5\alpha$ 14 β 17 β + 5 α 14 α 17 α 20S+20R) – peaks (a+b)/(a+b+q+r+s+t)

Ratio 8 C_{29} $\beta\beta$ /($\alpha\alpha$ + $\beta\beta$) – 5 α 14 β 17 β / (5 α 14 β 17 β + 5 α 14 α 17 α) (20S+20R) ethylcholestanes – peaks (r+s)/(q+r+s+t)

Table 1: Analytical Program for Hydrocarbon Analysis of Sandstones from 24/9-2 and 24/12-2

Well	Sample Depth(m)	Sample Type	Sample Code	Extraction Clean Up	Lithology Description	Picking for screening	Petrographic analysis	Leach TOC	Rock Eval	Thermal Extraction	Pyrolysis GC	Picking for Extraction	Lithology	Solvent Extraction	Typing	MPLC & Desphalens	GC/MS GC	Whole Cell GC	SAT GC (Qualitative)	Gas GC	SAT GCMS (Qualitative)	Gas GCMS (Qualitative)	Carbon isotope of fractions	Viscosity Refractive	Visual inspection	API Gravity	Gas composition	GC-IRMS TOFMS
	Table nos.:																	10	9	9	11	12; 10				17	18	
24/9-2	2100	cuttings	C49/0010-2	x		x					x	x		x	x	x	x	x	x	x	x							
24/9-2	2103	cuttings	C49/0011-2	x		x					x	x		x	x	x	x	x	x	x	x							
24/9-2	2109	cuttings	C49/0012-2	x		x					x	x		x	x	x	x	x	x	x	x							
24/9-2	2112	cuttings	C49/0013-2	x		x					x	x		x	x	x	x	x	x	x	x							
24/12-2	2200	cuttings	V48/0040-2	x		x					x	x		x	x	x	x	x	x	x	x							
24/12-2	2205	cuttings	V48/0041-2	x		x					x	x		x	x	x	x	x	x	x	x							
24/12-2	2210	cuttings	V48/0042-2	x		x					x	x		x	x	x	x	x	x	x	x							
24/12-2	2215	cuttings	V48/0043-2	x		x					x	x		x	x	x	x	x	x	x	x							
24/12-2	2220	cuttings	V48/0044-2	x		x					x	x		x	x	x	x	x	x	x	x							
			Total	9		9					9	4		9	4	9			4	4	4							
				cemented sandstone cuttings were picked where possible																								
				in 24/9-2 samples were bulk but all contaminants and coaly particles removed																								

24/9-2 Data Tables

Table 8a Extraction and Fractionation (MPLC) Data (weights) of Sandstones from 24/9-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	whole rock (g) for extraction	EOM (mg)	Sat (mg)	Aro (mg)	NSO (mg)	Asph (mg)	%TOC	HC	Non-HC	Sample number
NOCS 24/9-2	2100	cut	sandstone/sand	20	4,79	14,6	4,94	1,75	5,41	2,5	1,37	6,7	7,91	C48/0010-2
NOCS 24/9-2	2103	cut	sandstone/sand	25	3,72	10,2	3,61	0,86	4,13	1,6	1,23	4,5	5,73	C48/0011-2
NOCS 24/9-2	2109	cut	sandstone/sand	30	3,51	11,1	-	-	-	-	-	-	-	C48/0012-2
NOCS 24/9-2	2112	cut	sandstone/sand	30	3,44	11,4	-	-	-	-	-	-	-	C48/0013-2

Table 8b Extraction and Fractionation (MPLC) Data (ppm) of Sandstones from 24/9-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	EOM (ppm)	Sat (ppm)	Aro (ppm)	NSO (ppm)	Asph (ppm)	HC	Non-HC	Sample number
NOCS 24/9-2	2100	cut	sandstone/sand	20	3048	1031	365	1129	522	1397	1651	C48/0010-2
NOCS 24/9-2	2103	cut	sandstone/sand	25	2742	970	231	1110	430	1202	1540	C48/0011-2
NOCS 24/9-2	2109	cut	sandstone/sand	30	3162	-	-	-	-	-	-	C48/0012-2
NOCS 24/9-2	2112	cut	sandstone/sand	30	3314	-	-	-	-	-	-	C48/0013-2

Table 8c Extraction and Fractionation (MPLC) Data (mg/gTOC) of Sandstones from 24/9-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	EOM (mg/gTOC)	Sat (mg/gTOC)	Aro (mg/gTOC)	NSO (mg/gTOC)	Asph (mg/gTOC)	HC	Non-HC	Sample number
NOCS 24/9-2	2100	cut	sandstone/sand	20	222	75	27	82	38	102	121	C48/0010-2
NOCS 24/9-2	2103	cut	sandstone/sand	25	223	79	19	90	35	98	125	C48/0011-2
NOCS 24/9-2	2109	cut	sandstone/sand	30	-	-	-	-	-	-	-	C48/0012-2
NOCS 24/9-2	2112	cut	sandstone/sand	30	-	-	-	-	-	-	-	C48/0013-2

Table 8d Fractionation Data from MPLC (fractions as a percentage of EOM) of Sandstones from 24/9-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	Sat/ EOM	Aro/ EOM	Asph/ EOM	NSO/ EOM	HC/ EOM	Non-HC/ EOM	Sample number
NOCS 24/9-2	2100	cut	sandstone/sand	20	33,80	12,00	17,12	37,08	45,80	54,20	C48/0010-2
NOCS 24/9-2	2103	cut	sandstone/sand	25	35,41	8,43	15,69	40,47	43,84	56,16	C48/0011-2

Table 8e Fractionation Data from MPLC (ratios) of Sandstones from 24/9-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	Sat/ Aro	HC/ Non-HC	ASP/ NSO	Sample number
NOCS 24/9-2	2100	cut	sandstone/sand	20	2,82	0,85	0,46	C48/0010-2
NOCS 24/9-2	2103	cut	sandstone/sand	25	4,20	0,78	0,39	C48/0011-2

Table 8f Iatroscan analysis (absolute data in mg) of Sandstones from 24/9-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	EOM weighed	Sat.	Aro.	Resins	Asph.	Tot. HC	Tot. pol.	Tot. EOM (calc.)	Sample number
NOCS 24/9-2	2100	cut	sandstone/sand	20	3,05	1,54	0,39	0,6	0,52	1,93	1,12	3,05	C48/0010-2
NOCS 24/9-2	2103	cut	sandstone/sand	25	2,74	1,38	0,37	0,56	0,43	1,75	0,99	2,74	C48/0011-2

Table 8g Iatroscan data % of EOM of Sandstones from 24/9-2

Well name	Lower depth	Sample type	Description	% Lith.	Sat.	Aro.	Resins	Asph.	Tot. HC	Tot. pol.	Sample number
NOCS 24/9-2	2100	cut	sandstone/sand	20	50,47	12,74	19,67	17,12	63,21	36,79	C48/0010-2
NOCS 24/9-2	2103	cut	sandstone/sand	25	50,43	13,53	20,35	15,69	63,96	36,04	C48/0011-2

Table 9Aa Saturated Hydrocarbon peak areas of Sandstones from 24/9-2

Well name	Lower depth	Sample type	Description	% Lith.	nC15	nC16	Nor-pristane	nC17	Pristane	nC18	Phytane	nC19	nC20
NOCS 24/9-2	2100	cut	sandstone/sand	20	1625389	2353482	656381	2041816	1184484	1104360	542547	456709	237636
NOCS 24/9-2	2103	cut	sandstone/sand	25	7804786	9396257	2847489	6190615	4365399	2614483	1758746	978234	446759

Well name	Lower depth	Sample type	Description	% Lith.	nC21	nC22	nC23	nC24	nC25	nC26	nC27	nC28	nC29	nC30	nC31	nC32
NOCS 24/9-2	2100	cut	sandstone/sand	20	81857	39812	19039	0	0	0	0	0	0	0	0	0
NOCS 24/9-2	2103	cut	sandstone/sand	25	199991	137684	94417	80695	101142	77394	80317	0	0	0	0	0

Well name	Lower depth	Sample type	Description	% Lith.	nC33	nC34	Sample number
NOCS 24/9-2	2100	cut	sandstone/sand	20	0	0	C48/0010-2
NOCS 24/9-2	2103	cut	sandstone/sand	25	0	0	C48/0011-2

Table 9Ab: Quantitative Analysis of Saturated Hydrocarbon Fraction of Sandstones from 24/9-2 (in mg/g SAT)

Well name	Lower depth (m)	Sample type	Description	% Lith.	nC15	nC16	iC18	nC17	Pr	nC18	Ph	nC19	nC20	nC21	nC22	nC23	nC24
NOCS 24/9-2	2100	cut	sandstone/sand	20	51,02	73,87	20,60	64,09	37,18	34,66	17,03	14,33	7,46	2,57	1,25	0,60	0,00
NOCS 24/9-2	2103	cut	sandstone/sand	25	60,36	72,67	22,02	47,88	33,76	20,22	13,60	7,57	3,46	1,55	1,06	0,73	0,62

Well name	Lower depth (m)	Sample type	Description	% Lith.	nC25	nC26	nC27	nC28	nC29	nC30	nC31	nC32	nC33	nC34	Sample number
NOCS 24/9-2	2100	cut	sandstone/sand	20	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	C48/0010-2
NOCS 24/9-2	2103	cut	sandstone/sand	25	0,78	0,60	0,62	0,00	0,00	0,00	0,00	0,00	0,00	0,00	C48/0011-2

Table 9B: Saturated Hydrocarbon Ratios (peak areas) of Sandstones from 24/9-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	Prist./ nC17	Prist./ Phyt.	(Prist./nC17)/ (Phyt./nC18)	CPI 1	Phytane/ nC18	nC17/ (nC17+nC27)	(Pristane+Phytane)/ (nC17+nC18)	Sample number
NOCS 24/9-2	2100	cut	sandstone/sand	20	0,58	2,18	1,18	0	0,49	1	0,55	C48/0010-2
NOCS 24/9-2	2103	cut	sandstone/sand	25	0,71	2,48	1,05	1,75	0,67	0,99	0,7	C48/0011-2

Table 9Ca: Aromatic Hydrocarbons (peak areas) of Sandstones from 24/9-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	2.6+									
					2MN	1MN	BPh	2EN	1EN	2.7DMN	1.6DMN	1.5DMN	1.3.7TMN	1.3.6TMN
NOCS 24/9-2	2100	cut	sandstone/sand	20	154511	133857	142298	124109	120209	576068	646998	222315	450914	620568
NOCS 24/9-2	2103	cut	sandstone/sand	25	96211	89215	113071	103350	95045	489150	561588	192874	420168	580486

Well name	Lower depth (m)	Sample type	Description	% Lith.	1.4.6+									
					1.3.5TMN	2.3.6TMN	P	3MP	2MP	9MP	1MP	DBT	4MDBT	2+3 MDBT
NOCS 24/9-2	2100	cut	sandstone/sand	20	581234	529274	685110	305075	259119	239603	157189	162153	548011	134950
NOCS 24/9-2	2103	cut	sandstone/sand	25	540493	507826	609935	235826	212582	206052	133265	135965	447119	167060

Well name	Lower depth (m)	Sample type	Description	% Lith.	1MDBT	Sample
						number
NOCS 24/9-2	2100	cut	sandstone/sand	20	98630	C48/0010-2
NOCS 24/9-2	2103	cut	sandstone/sand	25	89665	C48/0011-2

Table 9Cc: Aromatic Ratios (peak area) of Sandstones from 24/9-2

Well name	Lower depth (m)	Sample type	Description	% Lith.											4/1		(3+2)/		Sample number
					MNR	DMNR	BPhR	2/1MP	MP11	MP12	Rc	DBT/Ph	MDBT	1MDBT	F1	F2			
NOCS 24/9-2	2100	cut	sandstone/sand	20	1,15	2,59	0,22	1,65	0,78	0,72	0,87	0,24	5,56	1,37	0,6	0,3	C48/0010-2		
NOCS 24/9-2	2103	cut	sandstone/sand	25	1,08	2,54	0,2	1,6	0,71	0,67	0,83	0,22	4,99	1,86	0,6	0,3	C48/0011-2		

Table 11a: Triterpane data from m/z 191 fragmentograms (Saturated Hydrocarbon Fraction GC-MS SIR analysis)
Triterpane Peak Heights of Sandstones from 24/9-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	23/3 (P)	24/3 (Q)	25/3 (R)	24/4 (S)	26/3 (T)	27Ts (A)	27Tm (B)	28ab (Z)	25nor30ab (Z1)
NOCS 24/9-2	2100	cut	sandstone/sand	20	57048	28637	11090	10940	5744	8841	9029	94102	16338
NOCS 24/9-2	2103	cut	sandstone/sand	25	72038	32867	11739	10177	5747	12831	11770	129845	21448

Well name	Lower depth (m)	Sample type	Description	% Lith.	29ab (C)	29Ts (C1)	30d (X)	29ba (D)	30ab (E)	30ba (F)	31abS (G)	31abR (H)	31ba (I)	32abS (J1)	32abR (J2)
NOCS 24/9-2	2100	cut	sandstone/sand	20	18015	9067	1641	7554	28874	2935	4718	7012	4230	2441	2334
NOCS 24/9-2	2103	cut	sandstone/sand	25	26688	12906	2417	11932	47415	4665	8885	12349	6239	4940	4199

Well name	Lower depth (m)	Sample type	Description	% Lith.	33abS (K1)	33abR (K2)	34abS (L1)	34abR (L2)	35abS (M1)	35abR (M2)	Sample number
NOCS 24/9-2	2100	cut	sandstone/sand	20	1800	1791	943	822	977	1060	C48/0010-2
NOCS 24/9-2	2103	cut	sandstone/sand	25	3610	3117	1874	1480	1470	1636	C48/0011-2

Table 11b: Triterpanes data from m/z 177 fragmentograms (Saturated Hydrocarbon Fraction GC-MS SIR analysis)
Triterpane Peak Heights of Sandstones from 24/9-2

NOCS 24/9-2	2100	cut	sandstone/sand	20	195128	10811	C48/10-2
NOCS 24/9-2	2103	cut	sandstone/sand	25	227804	14279	C48/11-2

Table 11c: Sterane data from m/z 217 fragmentograms (Saturated Hydrocarbon Fraction GC-MS SIR analysis)
Sterane Peak Heights of Sandstones from 24/9-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	21a (u)	22a (v)	27dbS (a)	27dbR (b)	27daR (c)	27daS (d)	28dbS (e)	28dbR (f)
NOCS 24/9-2	2100	cut	sandstone/sand	20	19012,7	8861	5506	4524	1762	3732	2742	2106
NOCS 24/9-2	2103	cut	sandstone/sand	25	25029,8	10856	8581	7022	2689	5702	4189	3087

Well name	Lower depth (m)	Sample type	Description	% Lith.	28daR +27aaS (g)	29dbS +27bbR (h)	28daS +27bbS (i)	27aaR (j)	29dbR (k)	29daR (l)	28aaS (m)	29daS +28bbR (n)	28bbS (o)
NOCS 24/9-2	2100	cut	sandstone/sand	20	4341	4251	3209	12091	2964	1403	1387	3959	2344
NOCS 24/9-2	2103	cut	sandstone/sand	25	6578	6902	4633	18455	4986	2061	2247	5865	3595

Well name	Lower depth (m)	Sample type	Description	% Lith.	28aaR (p)	29aaS (q)	29bbR (r)	29bbS (s)	29aaR (t)	Sample number
NOCS 24/9-2	2100	cut	sandstone/sand	20	7696	1792	4870	2167	12079	C48/0010-2
NOCS 24/9-2	2103	cut	sandstone/sand	25	10950	2762	7279	3623	17632	C48/0011-2

Table 11d: Sterane data from m/z 218 fragmentograms (Saturated Hydrocarbon Fraction GC-MS SIR analysis)
Sterane Peak Heights of Sandstones from 24/9-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	27bbR (h)	27bbS (i)	28bbR (n)	28bbS (o)	29bbR (r)	29bbS (s)	30bbR (x)	30bbS (y)	Sample number
NOCS 24/9-2	2100	cut	sandstone/sand	20	5080	3708	4559	3646	4896	3601	928	1013	C48/10-2
NOCS 24/9-2	2103	cut	sandstone/sand	25	7720	5578	7169	5999	7613	6043	1637	1650	C48/11-2

Table 11e: Triterpane data from m/z 191 fragmentograms (Saturated Hydrocarbon Fraction GC-MS SIR analysis)
Amount of Triterpanes in ng/g sat (ppb) of Sandstones from 24/9-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	23/3 (P)	24/3 (Q)	25/3 (R)	24/4 (S)	26/3 (T)	27Ts (A)	27Tm (B)	28ab (Z)
NOCS 24/9-2	2100	cut	sandstone/sand	20	145857	73217	28354	27970	14687	22604	23085	240596
NOCS 24/9-2	2103	cut	sandstone/sand	25	91819	41892	14963	12971	7325	16354	15002	165499

Well name	Lower depth (m)	Sample type	Description	% Lith.	25nor30ab (Z1)	29ab (C)	29Ts (C1)	30d (X)	29ba (D)	30ab (E)	30ba (F)	31abS (G)	31abR (H)
NOCS 24/9-2	2100	cut	sandstone/sand	20	41771	46060	23182	4196	19313	73823	7503	12062	17928
NOCS 24/9-2	2103	cut	sandstone/sand	25	27338	34016	16450	3081	15209	60435	5946	11325	15740

Well name	Lower depth (m)	Sample type	Description	% Lith.	31ba (I)	32abS (J1)	32abR (J2)	33abS (K1)	33abR (K2)	34abS (L1)	34abR (L2)	35abS (M1)	35abR (M2)	Sample number
NOCS 24/9-2	2100	cut	sandstone/sand	20	10816	6240	5967	4603	4580	2410	2102	2497	2710	C48/0010-2
NOCS 24/9-2	2103	cut	sandstone/sand	25	7952	6297	5353	4601	3973	2388	1886	1873	2086	C48/0011-2

Table 11f: Triterpane data from m/z 177 fragmentograms (Saturated Hydrocarbon Fraction GC-MS SIR analysis)
Amount of Triterpanes in ng/g sat (ppb) of Sandstones from 24/9-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	25nor28ab	25nor30ab	Sample number
NOCS 24/9-2	2100	cut	sandstone/sand	20	498893	27641	C48/10-2
NOCS 24/9-2	2103	cut	sandstone/sand	25	290358	18200	C48/11-2

Table 11g: Sterane data from m/z 217 fragmentograms (Saturated Hydrocarbon Fraction GC-MS SIR analysis)
Amount of Steranes in ng/g sat (ppb) of Sandstones from 24/9-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	21a (u)	22a (v)	27dbS (a)	27dbR (b)	27daR (c)	27daS (d)	28dbS (e)	28dbR (f)	28daR +27aaS (g)
NOCS 24/9-2	2100	cut	sandstone/sand	20	48611	22655	14079	11567	4504	9541	7010	5384	11100
NOCS 24/9-2	2103	cut	sandstone/sand	25	31903	13837	10937	8950	3427	7267	5340	3935	8384

Well name	Lower depth (m)	Sample type	Description	% Lith.	29dbS				29daS				
					+27bbR (h)	28daS +27bbS (i)	27aaR (j)	29dbR (k)	28aaS 29daR (l)	(m)	+28bbR (n)	28bbS (o)	28aaR (p)
NOCS 24/9-2	2100	cut	sandstone/sand	20	10869	8205	30914	7579	3586	3545	10122	5994	19675
NOCS 24/9-2	2103	cut	sandstone/sand	25	8798	5906	23522	6355	2627	2864	7475	4583	13957

Well name	Lower depth (m)	Sample type	Description	% Lith.	29aaS	29bbR	29bbS	29aaR	Sample
					(q)	(r)	(s)	(t)	number
NOCS 24/9-2	2100	cut	sandstone/sand	20	4580	12452	5540	30883	C48/0010-2
NOCS 24/9-2	2103	cut	sandstone/sand	25	3521	9278	4617	22474	C48/0011-2

Table 11h: Sterane data from m/z 218 fragmentograms (Saturated Hydrocarbon Fraction GC-MS SIR analysis)
Sterane quantified in ng/g sat (ppb) of Sandstones from 24/9-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	27bbR	27bbS	28bbR	28bbS	29bbR	29bbS	30bbR	30bbS	Sample
					(h)	(i)	(n)	(o)	(r)	(s)	(x)	(y)	number
NOCS 24/9-2	2100	cut	sandstone/sand	20	12987	9479	11655	9323	12519	9207	2372	2590	C48/10-2
NOCS 24/9-2	2103	cut	sandstone/sand	25	9840	7109	9138	7646	9703	7703	2086	2103	C48/11-2

Table 11i: Amount of standard (d4 cholestne) and weight of sample of Sandstones from 24/9-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	Standard	Amount	Weight	Sample
								number
NOCS 24/9-2	2100	cut	sandstone/sand	20	53578,4	2,0	14,6	C48/10-2
NOCS 24/9-2	2103	cut	sandstone/sand	25	153836,2	2,0	10,2	C48/11-2

Table 11j: Triterpane data from m/z 191 fragmentograms (Saturated Hydrocarbon Fraction GC-MS SIR analysis)
Ratios from peak heights of Sandstones from 24/9-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	Ratio 1	Ratio 2	Ratio 3	Ratio 4	Ratio 5	Ratio 6	Ratio 7	Ratio 8	Ratio 9	Ratio 10	Ratio 11	Ratio 12	Ratio 13	Ratio 14
NOCS 24/9-2	2100	cut	sandstone/sand	20	1,02	0,51	0,22	0,62	0,38	0,06	3,26	5,22	0,77	0,99	0,91	0,45	0,22	51,12
NOCS 24/9-2	2103	cut	sandstone/sand	25	0,92	0,48	0,18	0,56	0,36	0,05	2,74	4,87	0,73	0,69	0,91	0,43	0,22	54,05

Well name	Lower depth (m)	Sample type	Description	% Lith.	27Ts/ (27Ts+27Tm)	30d/ (30d+29ba)	Sample number
NOCS 24/9-2	2100	cut	sandstone/sand	20	0,49	0,18	C48/0010-2
NOCS 24/9-2	2103	cut	sandstone/sand	25	0,52	0,17	C48/0011-2

Table 11k: Triterpane data from m/z 217 fragmentograms (Saturated Hydrocarbon Fraction GC-MS SIR analysis)

Ratios from peak heights of Sandstones from 24/9-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	Ratio 1	Ratio 2	Ratio 3	Ratio 4	Ratio 5	Ratio 6	Ratio 7	Ratio 8	Ratio 9	Ratio 10	Sample number
NOCS 24/9-2	2100	cut	sandstone/sand	20	0,31	12,92	50,36	1,23	0,8	0,57	0,49	0,34	0,15	0,58	C48/0010-2
NOCS 24/9-2	2103	cut	sandstone/sand	25	0,32	13,54	51,67	1,21	0,8	0,53	0,45	0,35	0,16	0,62	C48/0011-2

24/12-2 Data Tables

Table 8a: Extraction and Fractionation (MPLC) Data (weights)

Well name	Lower depth (m)	Sample type	Description	% Lith.	whole rock (g) for								
					EOM (mg)	Sat (mg)	Aro (mg)	NSO (mg)	Asph (mg)	%TOC	HC	Non-HC	
NOCS 24/12-2	2200	cut	sandstone/sand	5	3,54	9,2	3,88	1,69	2,53	1,1	0,89	5,57	3,63
NOCS 24/12-2	2205	cut	sandstone/sand	5	10,32	16	7,73	2,28	4,39	1,6	0,69	10,01	5,99
NOCS 24/12-2	2210	cut	sandstone/sand	5	11,57	8,4	-	-	-	-	-	-	-
NOCS 24/12-2	2215	cut	sandstone/sand	5	11,65	13,1	-	-	-	-	-	-	-
NOCS 24/12-2	2220	cut	sandstone/sand	5	11,5	15	-	-	-	-	-	-	-

Table 8b Extraction and Fractionation (MPLC) Data (ppm) of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	EOM (ppm)	Sat (ppm)	Aro (ppm)	NSO (ppm)	Asph (ppm)	HC	Non-HC	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	2599	1096	477	715	311	1573	1025	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	1550	749	221	425	155	970	580	V48/0341-2
NOCS 24/12-2	2210	cut	sandstone/sand	5	726	-	-	-	-	-	-	V48/0342-2
NOCS 24/12-2	2215	cut	sandstone/sand	5	1124	-	-	-	-	-	-	V48/0343-2
NOCS 24/12-2	2220	cut	sandstone/sand	5	1304	-	-	-	-	-	-	V48/0344-2

Table 8c Extraction and Fractionation (MPLC) Data (mg/gTOC) of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	EOM (mg/gTOC)	Sat (mg/gTOC)	Aro (mg/gTOC)	NSO (mg/gTOC)	Asph (mg/gTOC)	HC	Non-HC	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	292	123	54	80	35	177	115	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	225	109	32	62	22	141	84	V48/0341-2
NOCS 24/12-2	2210	cut	sandstone/sand	5	-	-	-	-	-	-	-	V48/0342-2
NOCS 24/12-2	2215	cut	sandstone/sand	5	-	-	-	-	-	-	-	V48/0343-2
NOCS 24/12-2	2220	cut	sandstone/sand	5	-	-	-	-	-	-	-	V48/0344-2

Table 8d: Fractionation Data from MPLC (fractions as a percentage of EOM) of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	Sat/ EOM	Aro/ EOM	Asph/ EOM	NSO/ EOM	HC/ EOM	Non-HC/ EOM	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	42,19	18,34	11,96	27,51	60,53	39,47	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	48,29	14,27	10,00	27,44	62,56	37,44	V48/0341-2

Table 8e Fractionation Data from MPLC (ratios) of Sandstones from 24/9-2 and 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	Sat/ Aro	HC/ Non- HC	ASP/ NSO	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	2,30	1,53	0,43	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	3,38	1,67	0,36	V48/0341-2

Table 8f: Iatroscan analysis (absolute data in mg) of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	%Lith.	EOM							Tot. EOM (calc)	Sample number
					weighed	Sat.	Aro.	Resins	Asph.	Tot. HC	Tot. pol.		
NOCS 24/12-2	2200	cut	sandstone/sand	5	26	1,53	0,45	0,31	0,31	1,97	0,63	26	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	1,55	0,92	0,26	0,22	0,16	1,18	0,37	1,55	V48/0341-2

Table 8g: Iatroscan data % of EOM of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	Sat.	Aro.	Resins	Asph.	Tot. HC	Tot. pol.	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	58,76	17,17	12,11	11,96	75,93	24,07	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	59,09	16,87	14,04	10	75,96	24,04	V48/0341-2

Table 9Aa Saturated Hydrocarbon peak areas of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	nC15	nC16	Nor-pristane	nC17	Pristane	nC18	Phytane	nC19	nC20	nC21
NOCS 24/12-2	2200	cut	sandstone/sand	5	6540483	7121026	3066271	6285247	5273877	5057974	3727692	4163149	2945329	1658204
NOCS 24/12-2	2205	cut	sandstone/sand	5	7114359	6311106	2947435	5823967	4803128	4843140	3285281	3836329	2509206	1459542

Well name	Lower depth (m)	Sample type	Description	% Lith.	nC22	nC23	nC24	nC25	nC26	nC27	nC28	nC29	nC30	nC31
NOCS 24/12-2	2200	cut	sandstone/sand	5	970617	613912	419419	399070	236626	199354	234273	121525	94880	109641
NOCS 24/12-2	2205	cut	sandstone/sand	5	844502	526074	335344	307653	172577	141747	139070	88482	46938	93279

Well name	Lower depth (m)	Sample type	Description	% Lith.	nC32	nC33	nC34	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	63594	52528	46257	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	53264	46602	33090	V48/0341-2

Table 9Ab: Quantitative Analysis of Saturated Hydrocarbon Fraction of Sandstones from 21/12-2 (in mg/g)

Well name	Lower depth (m)	Sample type	Description	% Lith.	nC15	nC16	iC18	nC17	Pristane	nC18	Phytane	nC19	nC20
NOCS 24/12-2	2200	cut	sandstone/sand	5	50,92	55,44	23,87	48,93	41,06	39,38	29,02	32,41	22,93
NOCS 24/12-2	2205	cut	sandstone/sand	5	56,65	50,26	23,47	46,38	38,25	38,57	26,16	30,55	19,98

Well name	Lower depth (m)	Sample type	Description	% Lith.	nC25	nC26	nC27	nC28	nC29	nC30	nC31	nC32	nC33
NOCS 24/12-2	2200	cut	sandstone/sand	5	3,11	1,84	1,55	1,82	0,95	0,74	0,85	0,50	0,41
NOCS 24/12-2	2205	cut	sandstone/sand	5	2,45	1,37	1,13	1,11	0,70	0,37	0,74	0,42	0,37

Table 9b: Saturated Hydrocarbon Ratios (peak areas) of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	Prist./ nC17	Prist./ Phyt.	(Prist./nC17)/ (Phyt./nC18)	CPI 1	Phytane/ nC18	nC17/ (nC17+nC27)	(Pristane+Phytane)/ (nC17+nC18)	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	0,84	1,41	1,14	1,08	0,74	0,97	0,79	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	0,82	1,46	1,22	1,22	0,68	0,98	0,76	V48/0341-2

Table 9Ca: Aromatic Hydrocarbons (peak areas) of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	2MN	1MN	BPh	2BN	1EN	2.6+	2.7DMN	1.6DMN	1.5DMN	1.3.7TMN
NOCS 24/12-2	2200	cut	sandstone/sand	5	37561	50755	74869	71131	88590		432089	637607	252069	578845
NOCS 24/12-2	2205	cut	sandstone/sand	5	262780	289985	229446	189770	266686		1012843	1324948	481060	939783

Well name	Lower depth (m)	Sample type	Description	% Lith.	1.3.6TMN	1.3.5TMN	1.4.6+	2.3.6TMN	P	3MP	2MP	9MP	1MP	DBT
NOCS 24/12-2	2200	cut	sandstone/sand	5	822991	916571		602861	1113055	603180	768936	573947	568927	195074
NOCS 24/12-2	2205	cut	sandstone/sand	5	1288594	1403503		882765	1770367	957110	1240123	951665	905704	341906

Well name	Lower depth (m)	Sample type	Description	% Lith.	4MDBT	2+3 MDBT	1MDBT	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	1318477	211185	194860	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	3435198	445788	344617	V48/0341-2

Table 9Cc: Aromatic Ratios (peak area) of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	MNR	DMNR	BPhR	2/1MP	MP1	MP2	Rc	DBT/Ph	4/1 MDBT	(3+2)/1MDBT	F1	F2	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	0,74	1,71	0,12	1,35	0,91	1,02	0,95	0,18	6,77	1,08	0,55	0,31	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	0,91	2,11	0,17	1,37	0,91	1,03	0,95	0,19	9,97	1,29	0,54	0,31	V48/0341-2

Table 11a: Triterpane data from m/z 191 fragmentograms (Saturated Hydrocarbon Fraction GC-MS SIR analysis)

Triterpane Peak Heights of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	23/3 (P)	24/3 (Q)	25/3 (R)	24/4 (S)	26/3 (T)	27Ts (A)	27Tm (B)	28ab (Z)	25nor30ab (Z1)
NOCS 24/12-2	2200	cut	sandstone/sand	5	22460	12106	4633	8201	2493	10103	12719	67398	10607
NOCS 24/12-2	2205	cut	sandstone/sand	5	18403	10126	3374	6817	1780	7127	9694	59359	6308

Well name	Lower depth (m)	Sample type	Description	% Lith.	29ab (C)	29Ts (C1)	30d (X)	29ba (D)	30ab (E)	30ba (F)	31abS (G)	31abR (H)	31ba (I)	32abS (J1)
NOCS 24/12-2	2200	cut	sandstone/sand	5	33373	11077	2217	11919	60856	3995	12318	17847	5623	6864
NOCS 24/12-2	2205	cut	sandstone/sand	5	24887	9105	1732	11322	52777	4647	8930	17571	6140	4198

Well name	Lower depth (m)	Sample type	Description	% Lith.	32abR (J2)	33abS (K1)	33abR (K2)	34abS (L1)	34abR (L2)	35abS (M1)	35abR (M2)	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	5357	4328	3452	1958	1568	1700	1769,2	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	4286	2574	2532	1153	1232	1063,2	1364,2	V48/0341-2

Table 11b: Triterpanes data from m/z 177 fragmentograms (Saturated Hydrocarbon Fraction GC-MS SIR analysis)
Triterpane Peak Heights of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	25nor28ab	25nor30ab	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	62808,6	6645,9	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	45478,3	4493,7	V48/0341-2

Table 11c: Sterane data from m/z 217 fragmentograms (Saturated Hydrocarbon Fraction GC-MS SIR analysis)
Sterane Peak Heights of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	21a (u)	22a (v)	27dbS (a)	27dbR (b)	27dbR (c)	27dbS (d)	28dbS (e)	28dbR (f)
NOCS 24/12-2	2200	cut	sandstone/sand	5	33632,3	10315,5	14048,4	9427,1	3193,6	5266,4	5997	3807,2
NOCS 24/12-2	2205	cut	sandstone/sand	5	32713,7	9242,3	11471,8	7951,2	2878,4	4140,8	4670,9	3110,7

Well name	Lower depth (m)	Sample type	Description	% Lith.	28dbR	29dbS	28dbS	29dbR (j)	29dbR (k)	29dbR (l)	28aaS (m)	+28bbR (n)	28bbS (o)
NOCS 24/12-2	2200	cut	sandstone/sand	5	9210,7	12753,8	6821,3	28000,1	6465,7	2943,8	2808	8736,6	5668,2
NOCS 24/12-2	2205	cut	sandstone/sand	5	7028,9	9714,3	5172,9	20076,4	5234,9	2421,3	2146,6	6474,5	3995,9

Well name	Lower depth (m)	Sample type	Description	% Lith.	28aaR (p)	29aaS (q)	29bbR (r)	29bbS (s)	29aaR (t)	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	14587,3	4061,2	9949	5495,3	24898,4	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	11630,7	3198,3	7499,9	3942,4	19556,8	V48/0341-2

Table 11d: Sterane data from m/z 218 fragmentograms (Saturated Hydrocarbon Fraction GC-MS SIR analysis)
 Sterane Peak Heights of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	27bbR (h)	27bbS (i)	28bbR (n)	28bbS (o)	29bbR (r)	29bbS (s)	30bbR (x)	30bbS (y)	Sample number
NOCS24/12-2	2200	cut	sandstone/sand	5	14304	9526	10814	8686	11499	8901	2217	2348	V48/0340-2
NOCS24/12-2	2205	cut	sandstone/sand	5	9859	7035	8316	6644	8671	7063	1519	1794	V48/0341-2

Table 11e: Triterpane data from m/z 191 fragmentograms (Saturated Hydrocarbon Fraction GC-MS SIR analysis)
Amount of Triterpanes in ng/g sat (ppb) of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	23/3 (P)	24/3 (Q)	25/3 (R)	24/4 (S)	26/3 (T)	27Ts (A)	27Tm (B)	28ab (Z)
NOCS 24/12-2	2200	cut	sandstone/sand	5	28331	15271	5844	10344	3144	12744	16044	85015
NOCS 24/12-2	2205	cut	sandstone/sand	5	31865	17534	5842	11804	3083	12341	16784	102780

Well name	Lower depth (m)	Sample type	Description	% Lith.	25nor30ab (Z1)	29ab (C)	29Ts (C1)	30d (X)	29ba (D)	30ab (E)	30ba (F)	31abS (G)	31abR (H)
NOCS 24/12-2	2200	cut	sandstone/sand	5	13380	42096	13972	2796	15036	76889	5039	15538	22512
NOCS 24/12-2	2205	cut	sandstone/sand	5	10921	43092	15766	2999	19604	91383	8045	15463	30424

Well name	Lower depth (m)	Sample type	Description	% Lith.	31ba (I)	32abS (J1)	32abR (J2)	33abS (K1)	33abR (K2)	34abS (L1)	34abR (L2)	35abS (M1)	35abR (M2)
NOCS 24/12-2	2200	cut	sandstone/sand	5	7092	8658	6758	5459	4355	2470	1978	2144	2232
NOCS 24/12-2	2205	cut	sandstone/sand	5	10631	7269	7422	4457	4383	1997	2133	1841	2362

Table 11f: Triterpane data from m/z 177 fragmentograms (Saturated Hydrocarbon Fraction GC-MS SIR analysis)
Amount of Triterpanes in ng/g sat (ppb) of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	25nor28ab	25nor30ab	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	79226	8383	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	78745	7781	V48/0341-2

Table 11g: Sterane data from m/z 217 fragmentograms (Saturated Hydrocarbon Fraction GC-MS SIR analysis)
Amount of Steranes in ng/g sat (ppb) of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	21a (u)	22a (v)	27dbS (a)	27dbR (b)	27daR (c)	27daS (d)	28dbS (e)	28dbR (f)	28daR +27aaS (g)
NOCS 24/12-2	2200	cut	sandstone/sand	5	42423	13012	17721	11891	4028	6643	7565	4802	11618
NOCS 24/12-2	2205	cut	sandstone/sand	5	56643	16003	19863	13767	4984	7170	8088	5386	12170

Well name	Lower depth (m)	Sample type	Description	% Lith.	27aaR (j)	29dbR (k)	29daR (l)	28aaS (m)	29daS +28bbR (n)	28bbS (o)	28aaR (p)	29aaS (q)	29bbR (r)
NOCS 24/12-2	2200	cut	sandstone/sand	5	35319	8181	3713	3542	11020	7150	18400	5123	12550
NOCS 24/12-2	2205	cut	sandstone/sand	5	34762	9064	4192	3717	11211	6919	20138	5538	12986

Well name	Lower depth (m)	Sample type	Description	% Lith.	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	V48/0341-2

Table 11h: Sterane data from m/z 218 fragmentograms (Saturated Hydrocarbon Fraction GC-MS SIR analysis)
Sterane quantified in ng/g sat (ppb) of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	27bbR (h)	27bbS (i)	28bbR (n)	28bbS (o)	29bbR (r)	29bbS (s)	30bbR (x)	30bbS (y)	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	18043	12016	13641	10956	14505	11227	2797	2961	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	17071	12181	14399	11504	15013	12229	2630	3106	V48/0341-2

Table 11i: Amount of standard (d4 cholestne) and weight of sample of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	% Lith.	Standard	Amount	Weight	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	172343,4	2,0	9,2	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	72192,5	2,0	16,0	V48/0341-2

Table 11j: Triterpane data from m/z 191 fragmentograms (Saturated Hydrocarbon Fraction GC-MS SIR analysis)
Ratios from peak heights of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	%Lith.	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9	Ratio10
NOCS24/12-2	2200	cut	sandstone/sand	5	1,26	0,56	0,16	0,55	0,35	0,04	1,11	2,02	0,53	0,2
NOCS24/12-2	2205	cut	sandstone/sand	5	1,36	0,58	0,14	0,47	0,32	0,03	1,12	2,39	0,53	0,19

Well name	Lower depth (m)	Sample type	Description	% Lith.	Ratio 13	Ratio 14	27Ts/ (27Ts+27Tm)	30d/ (30d+29ba)	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	0,17	56,16	0,44	0,16	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	0,21	49,48	0,42	0,13	V48/0341-2

Table 11k: Triterpane data from m/z 217 fragmentograms (Saturated Hydrocarbon Fraction GC-MS SIR analysis)
Ratios from peak heights of Sandstones from 24/12-2

Well name	Lower depth (m)	Sample type	Description	%Lith.	Ratio 1	Ratio 2	Ratio 3	Ratio 4	Ratio 5	Ratio 6	Ratio 7	Ratio 8	Ratio 9	Ratio 10	Sample number
NOCS 24/12-2	2200	cut	sandstone/sand	5	0,33	14,02	51,61	1,03	0,79	0,5	0,41	0,35	0,16	0,62	V48/0340-2
NOCS 24/12-2	2205	cut	sandstone/sand	5	0,36	14,06	50,14	1,11	0,78	0,55	0,47	0,33	0,16	0,59	V48/0341-2

Triterpane and Sterane ratios

ratio	Triterpanes	Steranes
Ratio 1	$27Tm/27Ts$	$27d\beta S/(27d\beta S+27\alpha\alpha R)$
Ratio 2	$27Tm/(27Tm \cdot 29\alpha\alpha S)$	$(29\alpha\alpha S+29\alpha\alpha R)$
Ratio 3	$27Tm/(27Tm \cdot 2 \cdot (29\beta\beta R+29\beta\beta S))$	$(29\alpha\alpha S+29\alpha\alpha R+2 \cdot [29\beta\beta R+29\beta\beta S])$
Ratio 4	$29\alpha\beta/30\alpha\beta$	$(27d\beta S+27d\beta R+27d\alpha R+27d\alpha S)/(29d\beta S+29d\beta R+29d\alpha R+29d\alpha S)$
Ratio 5	$29\alpha\beta/(29\alpha\beta+)$	$(29\beta\beta R+29\beta\beta S)/(29\alpha\alpha S+29\beta\beta R+29\beta\beta S)$
Ratio 6	$30d/30\alpha\beta$	$21\alpha+22\alpha/(21\alpha+22\alpha+29\alpha\alpha S+29\beta\beta R+29\beta\beta S+29\alpha\alpha R)$
Ratio 7	$28\alpha\beta/30\alpha\beta$	$21\alpha+22\alpha/(21\alpha+22\alpha+28d\alpha S+28\alpha\alpha S+29d\alpha R+29\alpha\alpha S+29\beta\beta R+29\beta\beta S+29\alpha\alpha R)$
Ratio 8	$28\alpha\beta/29\alpha\beta$	$(29\beta\beta R+29\beta\beta S)/(29\alpha\alpha S+29\beta\beta R+29\beta\beta S+29\alpha\alpha R)$
Ratio 9	$28\alpha\beta/(28\alpha\beta+)$	$29\alpha\alpha S/29\alpha\alpha R$
Ratio 10	$24/3/30\alpha\beta$	$(29\beta\beta R+29\beta\beta S)/29\alpha\alpha R$
Ratio 11	$30\alpha\beta/(30\beta\alpha+30\alpha\beta)$	
Ratio 12	$(29\alpha\beta+29\beta\alpha)/(29\alpha\beta+29\beta\alpha+30\alpha\beta+30\beta\alpha)$	
Ratio 13	$(29\beta\alpha+30\beta\alpha)/(29\alpha\beta+30\alpha\beta)$	
Ratio 14	$32\alpha\beta S/(32\alpha\beta S+32\alpha\beta R)$	%

REGIONAL PETROLEUM GEOCHEMISTRY
BLOCK 24/12 AND
SURROUNDING AREAS

Well NOCS 24/12-2
Part 1

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INTRODUCTION

A total of 190 cuttings and core samples was collected at the Norwegian Petroleum Directorate in Stavanger. The samples between 2210 m and 5100 m RKB were washed where necessary and lithologically described. The analysed interval is from 2210 m to 5095 m RKB

From the 190 samples examined, 93 lithologies from 93 samples were selected for screening analysis (TOC and Rock-Eval pyrolysis). Due to sample quality/quantity, the 18 Palaeocene samples were analysed directly by thermal extraction/pyrolysis gas chromatography. Based on the results of these, the following number of samples were selected for further analyses:

Thermal extraction - pyrolysis gas chromatography	65 samples
Extraction, MPLC fractionation, saturated and aromatic hydrocarbon - gas chromatography	17 samples
Vitrinite reflectance microscopy	14 samples
Visual kerogen composition	14 samples
Gas chromatography - mass spectrometry of saturated and aromatic hydrocarbons	6 samples

Stable carbon isotope
analysis of C₁₅+ fractions

3 samples

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
2210.00						0130
				60 Sh/Clst: brn gy to m gy to lt brn gy, slt, mic		0130-3L
				30 S/Sst : w to lt gy, l		0130-1L
				10 Sh/Clst: lt ol gy		0130-2L
2230.00						0131
				50 S/Sst : w to lt gy, l		0131-1L
				25 Sh/Clst: lt ol gy, slt, mic		0131-2L
				25 Sh/Clst: brn gy to m gy to lt brn gy, slt, mic		0131-3L
2250.00						0132
				80 S/Sst : w to lt gy, l		0132-1L
				20 Sh/Clst: brn gy to m gy to lt brn gy, slt, mic		0132-3L
				tr Sh/Clst: lt ol gy, slt, mic		0132-2L
				tr Other : pyr		0132-4L
2270.00						0133
				75 S/Sst : w to lt gy, l		0133-1L
				25 Sh/Clst: brn gy to m gy to lt brn gy, slt, mic		0133-3L
				tr Sh/Clst: lt ol gy, slt, mic		0133-2L
				tr Other : pyr		0133-4L
2290.00						0134
				60 S/Sst : w to lt gy, l		0134-1L
				30 Sh/Clst: lt ol gy, slt, mic		0134-2L
				10 Sh/Clst: brn gy to m gy to lt brn gy, slt, mic		0134-3L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
2310.00						0135
				85 S/Sst : w to lt gy, l		0135-1L
				10 Sh/Clst: lt ol gy, slt, mic		0135-2L
				5 Sh/Clst: brn gy to m gy to lt brn gy, slt, mic		0135-3L
				tr Other : pyr		0135-4L
				tr Ca : lt brn gy		0135-5L
				tr Coal : blk		0135-6L
				tr Cont : tar-ad		0135-7L
2330.00						0136
				70 S/Sst : w to lt gy, l		0136-1L
				20 Sh/Clst: lt ol gy, slt, mic		0136-2L
				10 Sh/Clst: brn gy to m gy to lt brn gy, slt, mic		0136-3L
				tr Ca : or gy to lt brn gy		0136-4L
2360.00						0137
				90 S/Sst : w to lt gy, l		0137-1L
				5 Sh/Clst: lt ol gy, slt, mic		0137-2L
				5 Sh/Clst: brn gy to m gy to lt brn gy, slt, mic		0137-3L
				tr Ca : or gy to lt brn gy		0137-4L
				tr Coal : blk		0137-5L
				tr Cont : prp, fib, evap		0137-6L
2380.00						0138
				95 S/Sst : w to lt gy, l		0138-1L
				5 Sh/Clst: brn gy to m gy to lt brn gy, slt, mic		0138-3L
				tr Sh/Clst: lt ol gy, slt, mic		0138-2L
				tr Coal : blk		0138-4L
				tr Cont : fib, evap		0138-5L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
2400.00						0139
				40 Sh/Clst: brn gy, slt, mic		0139-3L
				35 Sh/Clst: lt ol gy, slt, mic		0139-2L
				25 S/Sst : w to lt gy, l		0139-1L
				tr Cont : prp, fib		0139-4L
				tr Other : pyr		0139-5L
				tr Coal : blk		0139-6L
2490.00						0140
				60 S/Sst : w to lt gy, cem, l		0140-1L
				40 Sh/Clst: m gy to drk gn gy		0140-3L
				tr Sh/Clst: lt ol gy, slt, mic		0140-2L
				tr Cont : Mica-ad, prp		0140-4L
				tr Other : pyr		0140-5L
2500.00						0141
				60 S/Sst : w to lt gy, cem, l		0141-1L
				40 Sh/Clst: m gy to drk gn gy, slt, mic		0141-3L
				tr Sh/Clst: lt ol gy, brn gy, slt, mic		0141-2L
				tr Other : pyr		0141-4L
2510.00						0142
				55 S/Sst : w to lt gy, cem, l		0142-1L
				45 Sh/Clst: m gy to drk gn gy, slt, mic		0142-3L
				tr Sh/Clst: lt ol gy, brn gy, slt, mic		0142-2L
				tr Other : pyr		0142-4L
2520.00						0143
				70 S/Sst : w to lt gy, cem, l		0143-1L
				30 Sh/Clst: m gy to drk gn gy to gy gn, slt, mic		0143-3L
				tr Sh/Clst: lt ol gy, brn gy, slt, mic		0143-2L
				tr Other : pyr		0143-4L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
2530.00						0144
				70 Sh/Clst: m gy, slt		0144-3L
				20 Sh/Clst: drk gn gy to lt bl gn		0144-5L
				10 S/Sst : w to lt gy, cem, l		0144-1L
				tr Sh/Clst: lt ol gy, brn gy, slt, mic		0144-2L
				tr Other : pyr		0144-4L
2540.00						0145
				70 Sh/Clst: m gy, slt		0145-3L
				15 S/Sst : w to lt gy, cem, l		0145-1L
				15 Sh/Clst: drk gn gy to lt bl gn		0145-5L
				tr Sh/Clst: lt ol gy, brn gy, slt, mic		0145-2L
				tr Other : pyr		0145-4L
				tr Cont : fib		0145-6L
2580.00						0146
				50 S/Sst : w to lt gy, cem, l		0146-1L
				40 Sh/Clst: m gy, slt		0146-2L
				5 Sh/Clst: drk gn gy to lt bl gn		0146-4L
				5 Ca : w, chk		0146-6L
				tr Other : pyr		0146-3L
				tr Cont : fib		0146-5L
2600.00						0147
				55 Sh/Clst: m gy, slt		0147-2L
				30 S/Sst : w to lt gy, cem, l		0147-1L
				10 Sh/Clst: gn gy		0147-4L
				5 Ca : w, s, chk		0147-6L
				tr Other : pyr		0147-3L
				tr Cont : cem		0147-5L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
2610.00						0148
				70 S/Sst : w to lt gy, cem, l		0148-1L
				15 Sh/Clst: m gy		0148-2L
				10 Sh/Clst: gn gy		0148-4L
				5 Ca : w, s, chk		0148-5L
				tr Other : pyr		0148-3L
4250.00						0150
		0.90		70 Sh/Clst: m gy to drk gy, calc		0150-1L
				20 Ca : drk y brn		0150-2L
				5 Ca : w, chk		0150-3L
				5 Cont : Coal-ad, prp		0150-4L
4255.00						0151
				50 Sh/Clst: m gy to drk gy, calc		0151-1L
				50 Cont : cem		0151-3L
				tr Ca : drk y brn		0151-2L
4262.00						0152
		1.69		70 Sh/Clst: brn blk to drk brn		0152-3L
				30 Sh/Clst: m gy to drk gy, calc		0152-1L
				tr Ca : drk y brn		0152-2L
				tr Cont : Coal-ad, prp		0152-4L
4265.00						0153
	cvd			70 Sh/Clst: m gy to drk gy, calc		0153-1L
				30 Sh/Clst: brn blk to drk brn		0153-3L
	cvd			tr Ca : drk y brn		0153-2L
				tr Cont : Coal-ad, prp		0153-4L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
4270.00						0154
	cvd	4.42	80	Sh/Clst: brn blk to drk brn		0154-2L
			20	Sh/Clst: m gy to drk gy, calc		0154-1L
			tr	Cont : Coal-ad, prp		0154-3L
4275.00						0155
	cvd		90	Sh/Clst: brn blk to drk brn		0155-2L
			10	Sh/Clst: m gy to drk gy, calc		0155-1L
4280.00						0156
	cvd	4.28	90	Sh/Clst: brn blk to drk brn		0156-2L
			10	Sh/Clst: m gy to drk gy, calc		0156-1L
4285.00						0157
	cvd		90	Sh/Clst: brn blk to drk brn		0157-2L
			10	Sh/Clst: m gy to drk gy, calc		0157-1L
4290.00						0158
	cvd	5.58	90	Sh/Clst: brn blk to drk brn		0158-2L
			10	Sh/Clst: m gy to drk gy, calc		0158-1L
			tr	Cont : Coal-ad		0158-3L
4295.00						0159
	cvd		90	Sh/Clst: brn blk to drk brn		0159-2L
			10	Sh/Clst: m gy to drk gy, calc		0159-1L
			tr	Cont : Coal-ad		0159-3L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
4300.00						0160
	cvd	5.01	95	Sh/Clst: brn blk to drk brn 5 Ca : w to lt gy tr Sh/Clst: m gy to drk gy, calc tr Cont : Coal-ad		0160-2L 0160-4L 0160-1L 0160-3L
4305.00						0161
	cvd		95	Sh/Clst: brn blk to drk brn 5 Ca : w to lt gy tr Sh/Clst: m gy to drk gy, calc tr Cont : Coal-ad		0161-2L 0161-4L 0161-1L 0161-3L
4310.00						0162
	cvd	4.30	80	Sh/Clst: brn blk to drk brn 20 Ca : w to lt gy tr Sh/Clst: m gy to drk gy, calc tr Cont : Coal-ad		0162-2L 0162-4L 0162-1L 0162-3L
4315.00						0163
	cvd		80	Sh/Clst: brn blk to drk brn 20 Ca : w to lt gy tr Sh/Clst: m gy to drk gy, calc tr Cont : Coal-ad		0163-2L 0163-4L 0163-1L 0163-3L
4320.00						0164
	cvd	4.67	80	Sh/Clst: gy blk to brn blk 20 Ca : w to lt gy to drk gy tr Sh/Clst: m gy to drk gy, calc tr Cont : Coal-ad		0164-2L 0164-4L 0164-1L 0164-3L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
4325.00						0165
	cvd	0.59		80 Sh/Clst: gy blk to brn blk 20 Ca : w to lt gy to drk gy tr Sh/Clst: m gy to drk gy, calc tr Cont : Coal-ad		0165-2L 0165-4L 0165-1L 0165-3L
4330.00						0166
				50 Cont : Coal-ad, prp, dd, fib 30 Ca : w to lt gy to drk gy 20 Sh/Clst: gy blk to brn blk		0166-2L 0166-3L 0166-1L
4335.00						0167
		6.21		95 Sh/Clst: gy blk to brn blk 5 Ca : w to lt gy to drk gy tr Cont : Coal-ad		0167-1L 0167-3L 0167-2L
4340.00						0168
				95 Sh/Clst: gy blk to brn blk 5 Ca : w to lt gy to drk gy tr Cont : Coal-ad		0168-1L 0168-3L 0168-2L
4345.00						0169
		4.96		95 Sh/Clst: gy blk to brn blk 5 Ca : w to lt gy to drk gy tr Cont : Coal-ad		0169-1L 0169-3L 0169-2L
4350.00						0170
				95 Sh/Clst: gy blk to brn blk 5 Ca : w to lt gy to drk gy tr Cont : Coal-ad		0170-1L 0170-3L 0170-2L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
4355.00						0171
	5.46	75	Sh/Clst:	gy blk to brn blk		0171-1L
		15	Cont	: Coal-ad, fib		0171-2L
		10	Ca	: w to lt gy to drk gy		0171-3L
4360.00						0172
		75	Sh/Clst:	gy blk to brn blk		0172-1L
		15	Cont	: Coal-ad, fib		0172-2L
		10	Ca	: w to lt gy to drk gy		0172-3L
4365.00						0173
	1.28	95	Sh/Clst:	gy blk to brn blk		0173-1L
		5	Ca	: dsk y brn, dol, hd		0173-3L
		tr	Cont	: Coal-ad, fib		0173-2L
4370.00						0174
		95	Sh/Clst:	gy blk to brn blk		0174-1L
		5	Ca	: dsk y brn, dol, hd		0174-3L
		tr	Cont	: Coal-ad, fib		0174-2L
4375.00						0175
	3.28	95	Sh/Clst:	gy blk to brn blk		0175-1L
		5	Ca	: dsk y brn, dol, hd		0175-3L
		tr	Cont	: Coal-ad, fib		0175-2L
4380.00						0176
		95	Sh/Clst:	gy blk to brn blk		0176-1L
		5	Ca	: dsk y brn, dol, hd		0176-3L
		tr	Cont	: Coal-ad, fib		0176-2L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
4385.00						0177
	4.05	95	Sh/Clst:	gy blk to brn blk		0177-1L
		5	Ca	: dsk y brn, dol, hd		0177-3L
		tr	Cont	: Coal-ad, fib		0177-2L
4390.00						0178
		95	Sh/Clst:	gy blk to brn blk		0178-1L
		5	Ca	: dsk y brn, dol, hd		0178-3L
		tr	Cont	: Coal-ad, fib		0178-2L
4395.00						0179
	3.44	65	Sh/Clst:	gy blk to brn blk		0179-1L
		30	Ca	: lt gy to m gy		0179-4L
		5	Ca	: dsk y brn, dol, hd		0179-3L
		tr	Cont	: prp, fib		0179-2L
4400.00						0180
	0.58	65	Sh/Clst:	gy blk to brn blk		0180-1L
		30	Ca	: lt gy to m gy		0180-4L
		5	Ca	: dsk y brn, dol, hd		0180-3L
		tr	Cont	: prp, fib		0180-2L
4405.00						0181
	4.57	70	Sh/Clst:	gy blk to brn blk		0181-1L
		20	Ca	: lt gy to m gy		0181-4L
		10	Ca	: dsk y brn, dol, hd		0181-3L
		tr	Cont	: prp, fib		0181-2L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
4410.00						0182
				70 Sh/Clst: gy blk to brn blk		0182-1L
				20 Ca : lt gy to m gy		0182-4L
				10 Ca : dsk y brn, dol, hd		0182-3L
				tr Cont : prp, fib		0182-2L
4415.00						0183
				50 Sh/Clst: gy blk to brn blk		0183-1L
	0.68			40 Ca : lt brn to dsk y brn, dol, hd		0183-3L
				10 Ca : lt gy to m gy		0183-4L
				tr Cont : prp, fib		0183-2L
4420.00						0184
				50 Sh/Clst: gy blk to brn blk		0184-1L
				40 Ca : lt brn to dsk y brn, dol, hd		0184-3L
				10 Ca : lt gy to m gy		0184-4L
				tr Cont : prp, fib		0184-2L
4425.00						0185
				100 Sh/Clst: gy blk to brn blk		0185-1L
				tr Cont : prp, fib		0185-2L
				tr Ca : lt brn to dsk y brn, dol, hd		0185-3L
				tr Ca : lt gy to m gy		0185-4L
4430.00						0186
				100 Sh/Clst: gy blk to brn blk		0186-1L
				tr Cont : prp, fib		0186-2L
				tr Ca : lt brn to dsk y brn, dol, hd		0186-3L
				tr Ca : lt gy to m gy		0186-4L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
4435.00						0187
	3.22	90	Sh/Clst:	gy blk to brn blk		0187-1L
		10	Cont	: Coal-ad, fib		0187-2L
		tr	Ca	: lt brn to dsk y brn, dol, hd		0187-3L
		tr	Ca	: lt gy to m gy		0187-4L
4440.00						0188
		90	Sh/Clst:	gy blk to brn blk		0188-1L
		10	Cont	: Coal-ad, fib		0188-2L
		tr	Ca	: lt brn to dsk y brn, dol, hd		0188-3L
		tr	Ca	: lt gy to m gy		0188-4L
4445.00						0189
	5.14	95	Sh/Clst:	gy blk to brn blk		0189-1L
		5	Ca	: lt gy to m gy		0189-4L
		tr	Cont	: Coal-ad, fib		0189-2L
		tr	Ca	: lt brn to dsk y brn, dol, hd		0189-3L
4450.00						0190
		95	Sh/Clst:	gy blk to brn blk		0190-1L
		5	Ca	: lt gy to m gy		0190-4L
		tr	Cont	: Coal-ad, fib		0190-2L
		tr	Ca	: lt brn to dsk y brn, dol, hd		0190-3L
4455.00						0191
	3.63	85	Sh/Clst:	gy blk to brn blk		0191-1L
		15	Ca	: lt gy to m gy		0191-4L
		tr	Cont	: Coal-ad, fib		0191-2L
		tr	Ca	: lt brn to dsk y brn, dol, hd		0191-3L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
4460.00						0192
			85	Sh/Clst: gy blk to brn blk		0192-1L
			15	Ca : lt gy to m gy		0192-4L
			tr	Cont : Coal-ad, fib		0192-2L
			tr	Ca : lt brn to dsk y brn, dol, hd		0192-3L
4465.00						0193
	3.63		85	Sh/Clst: gy blk to brn blk		0193-1L
			15	Ca : lt gy to m gy		0193-4L
			tr	Cont : Coal-ad, fib		0193-2L
			tr	Ca : lt brn to dsk y brn, dol, hd		0193-3L
4470.00						0194
			85	Sh/Clst: gy blk to brn blk		0194-1L
			15	Ca : lt gy to m gy		0194-4L
			tr	Cont : Coal-ad, fib		0194-2L
			tr	Ca : lt brn to dsk y brn, dol, hd		0194-3L
4475.00						0195
	3.54		90	Sh/Clst: gy blk to brn blk		0195-1L
			10	Ca : lt gy to m gy		0195-3L
			tr	Cont : Coal-ad, fib		0195-2L
4480.00						0196
			90	Sh/Clst: gy blk to brn blk		0196-1L
			10	Ca : lt gy to m gy		0196-3L
			tr	Cont : Coal-ad, fib		0196-2L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
4485.00						0197
	3.73	95	Sh/Clst:	gy blk to brn blk		0197-1L
		5	Ca	: lt gy to m gy		0197-3L
		tr	Cont	: Coal-ad, fib		0197-2L
4490.00						0198
		95	Sh/Clst:	gy blk to brn blk		0198-1L
		5	Ca	: lt gy to m gy		0198-3L
		tr	Cont	: Coal-ad, fib		0198-2L
4495.00						0199
	5.38	95	Sh/Clst:	gy blk to brn blk		0199-1L
		5	Ca	: lt gy to m gy		0199-3L
		tr	Cont	: Coal-ad, fib		0199-2L
4500.00						0200
		95	Sh/Clst:	gy blk to brn blk		0200-1L
		5	Ca	: lt gy to m gy		0200-2L
4505.00						0201
	4.00	95	Sh/Clst:	gy blk to brn blk		0201-1L
		5	Ca	: lt gy to m gy		0201-2L
4510.00						0202
		95	Sh/Clst:	gy blk to brn blk		0202-1L
		5	Ca	: lt gy to m gy		0202-2L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
4515.00						0203
	5.71	95	Sh/Clst:	gy blk to brn blk		0203-1L
		5	Ca	: lt gy to m gy		0203-2L
4520.00						0204
		80	Ca	: lt gy to m gy		0204-2L
		20	Sh/Clst:	gy blk to brn blk		0204-1L
4525.00						0205
	0.51	50	Sh/Clst:	gy blk to brn blk		0205-1L
		50	Ca	: lt gy to m gy, st		0205-2L
4530.00						0206
		90	Sh/Clst:	gy blk to brn blk		0206-1L
		10	Ca	: lt gy to m gy, st		0206-2L
4535.00						0207
	6.04	90	Sh/Clst:	gy blk to brn blk		0207-1L
		10	Ca	: lt gy to m gy, st		0207-2L
4540.00						0208
		95	Sh/Clst:	gy blk to brn blk		0208-1L
		5	Ca	: lt gy to m gy, st		0208-2L
4545.00						0209
	8.86	95	Sh/Clst:	gy blk to brn blk		0209-1L
		5	Ca	: lt gy to m gy, st		0209-2L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample	
Int Cvd	TOC%	%	Lithology description				
4550.00						0210	
		95	Sh/Clst:	gy blk to brn blk		0210-1L	
		5	Ca	: lt gy to m gy, st		0210-2L	
4555.00						0211	
	7.99	95	Sh/Clst:	gy blk to brn blk		0211-1L	
		5	Ca	: lt gy to m gy, st		0211-2L	
4560.00						0212	
		85	Sh/Clst:	gy blk to brn blk		0212-1L	
		15	Ca	: lt gy to m gy, st		0212-2L	
4565.00						0213	
	4.49	85	Sh/Clst:	gy blk to brn blk		0213-1L	
		15	Ca	: lt gy to m gy, st		0213-2L	
4570.00						0214	
		95	Sh/Clst:	gy blk to brn blk		0214-1L	
		5	Cont	: prp, dd		0214-3L	
		tr	Ca	: lt gy to m gy, st		0214-2L	
4575.00						0215	
	5.33	95	Sh/Clst:	gy blk to brn blk		0215-1L	
		5	Cont	: prp, dd		0215-3L	
		tr	Ca	: lt gy to m gy, st		0215-2L	

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
4580.00						0216
				95 Sh/Clst: gy blk to brn blk		0216-1L
				5 Cont : prp, dd		0216-3L
				tr Ca : lt gy to m gy, st		0216-2L
4585.00						0217
	7.23			95 Sh/Clst: gy blk to brn blk		0217-1L
				5 Cont : prp, dd		0217-3L
				tr Ca : lt gy to m gy, st		0217-2L
4590.00						0218
				95 Sh/Clst: gy blk to brn blk		0218-1L
				5 Ca : lt gy to m gy, st		0218-2L
				tr Cont : prp, dd		0218-3L
4595.00						0219
	7.03			95 Sh/Clst: gy blk to brn blk		0219-1L
				5 Ca : lt gy to m gy, st		0219-2L
				tr Cont : prp, dd		0219-3L
4600.00						0220
				95 Sh/Clst: gy blk to brn blk		0220-1L
				5 Ca : lt gy to m gy		0220-2L
				tr Cont : prp, dd		0220-3L
4605.00						0221
	5.46			95 Sh/Clst: gy blk to brn blk		0221-1L
				5 Ca : lt gy to m gy		0221-2L
				tr Cont : prp, dd		0221-3L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
4610.00						0222
				95 Sh/Clst: gy blk to brn blk		0222-1L
				5 Ca : lt gy to m gy		0222-2L
				tr Cont : prp, dd		0222-3L
4615.00						0223
	5.69			95 Sh/Clst: gy blk to brn blk		0223-1L
				5 Ca : lt gy to m gy		0223-2L
				tr Cont : prp, dd		0223-3L
4620.00						0224
				95 Sh/Clst: gy blk to brn blk		0224-1L
				5 Ca : lt gy to m gy		0224-2L
				tr Cont : prp, dd		0224-3L
4625.00						0225
	5.09			90 Sh/Clst: gy blk to brn blk		0225-1L
				10 Ca : lt gy to m gy		0225-2L
				tr Cont : prp, dd		0225-3L
4630.00						0226
				90 Sh/Clst: gy blk to brn blk		0226-1L
				10 Ca : lt gy to m gy		0226-2L
				tr Cont : prp, dd		0226-3L
4635.00						0227
	5.51			90 Sh/Clst: gy blk to brn blk		0227-1L
				5 Ca : lt gy to m gy		0227-2L
				5 Cont : prp, dd		0227-3L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
4640.00						0228
			90	Sh/Clst: gy blk to brn blk		0228-1L
			5	Ca : lt gy to m gy		0228-2L
			5	Cont : prp, dd		0228-3L
4645.00						0229
	4.38		90	Sh/Clst: gy blk to brn blk		0229-1L
			10	Ca : lt gy to m gy		0229-2L
			tr	Cont : prp, dd		0229-3L
4650.00						0230
			90	Sh/Clst: gy blk to brn blk		0230-1L
			10	Ca : lt gy to m gy		0230-2L
			tr	Cont : prp, dd		0230-3L
4655.00						0231
	2.92		60	Sh/Clst: gy blk to brn blk		0231-1L
			30	Ca : lt gy to m gy		0231-2L
			10	Cont : prp, dd		0231-3L
4660.00						0232
			75	Sh/Clst: gy blk to brn blk		0232-1L
			20	Ca : lt gy to m gy		0232-2L
			5	Cont : Coal-ad, prp, dd		0232-3L
4665.00						0233
	4.71		75	Sh/Clst: gy blk to brn blk		0233-1L
			20	Ca : lt gy to m gy		0233-2L
			5	Cont : Coal-ad, prp, dd		0233-3L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
4670.00						0234
				75 Sh/Clst: gy blk to brn blk		0234-1L
				20 Ca : lt gy to m gy		0234-2L
				5 Cont : Coal-ad, prp, dd		0234-3L
4675.00						0235
				75 Sh/Clst: gy blk to brn blk		0235-1L
	0.35			20 Ca : lt gy to m gy		0235-2L
				5 Cont : Coal-ad, prp, dd		0235-3L
4680.00						0236
				85 Sh/Clst: gy blk to brn blk		0236-1L
				10 Ca : lt gy to m gy		0236-2L
				5 Cont : Coal-ad, prp, dd		0236-3L
4685.00						0237
				85 Sh/Clst: gy blk to brn blk		0237-1L
	4.68			10 Ca : lt gy to m gy		0237-2L
				5 Cont : Coal-ad, prp, dd		0237-3L
4690.00						0238
				90 Sh/Clst: gy blk to brn blk		0238-1L
				10 Ca : w to lt gy to m gy		0238-2L
				tr Cont : prp, dd		0238-3L
4695.00						0239
				90 Sh/Clst: gy blk to brn blk		0239-1L
	5.67			10 Ca : w to lt gy to m gy		0239-2L
				tr Cont : prp, dd		0239-3L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
4700.00						0240
	0.46	60	Ca	: w to lt gy to m gy to brn gy		0240-2L
		40	Sh/Clst:	gy blk to brn blk		0240-1L
			tr Cont	: prp, dd		0240-3L
4705.00						0241
	3.02	90	Sh/Clst:	gy blk to brn blk		0241-1L
		5	Ca	: w to lt gy to m gy to brn gy		0241-2L
		5	Cont	: Coal-ad, prp, dd		0241-3L
4710.00						0242
		90	Sh/Clst:	gy blk to brn blk		0242-1L
		5	Ca	: w to lt gy to m gy to brn gy		0242-2L
		5	Cont	: Coal-ad, prp, dd		0242-3L
4715.00						0243
	0.39	45	Sh/Clst:	gy blk to brn blk		0243-1L
		45	S/Sst	: lt gy to dsk y brn, dol		0243-4L
		5	Ca	: w to lt gy to m gy to brn gy		0243-2L
		5	Cont	: Coal-ad, prp, dd		0243-3L
4720.00						0244
		50	Sh/Clst:	gy blk to brn blk		0244-1L
		35	S/Sst	: lt gy to dsk y brn, dol		0244-4L
		10	Ca	: w to lt gy to m gy to brn gy		0244-2L
		5	Cont	: Coal-ad, prp, dd		0244-3L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
4725.00						0245
	3.10	75	Sh/Clst:	gy blk to brn blk		0245-1L
		10	Ca	: w to lt gy to m gy to brn gy		0245-2L
		10	S/Sst	: lt gy to dsk y brn, dol		0245-4L
		5	Cont	: Coal-ad, prp, dd		0245-3L
4730.00						0246
		50	Sh/Clst:	gy blk to brn blk		0246-1L
		25	Sltst	: brn gy		0246-5L
		10	Ca	: w to lt gy to m gy to brn gy		0246-2L
		10	S/Sst	: lt gy to dsk y brn, dol		0246-4L
		5	Cont	: Coal-ad, prp, dd		0246-3L
4735.00						0247
	1.24	50	Sh/Clst:	gy blk to brn blk		0247-1L
		25	Sltst	: brn gy		0247-5L
		10	Ca	: w to lt gy to m gy to brn gy		0247-2L
		10	S/Sst	: lt gy to dsk y brn, dol		0247-4L
		5	Cont	: Coal-ad, prp, dd		0247-3L
4740.00						0248
		50	Sh/Clst:	gy blk to brn blk		0248-1L
		25	Sltst	: brn gy		0248-5L
		10	Ca	: w to lt gy to m gy to brn gy		0248-2L
		10	S/Sst	: lt gy to dsk y brn, dol		0248-4L
		5	Cont	: Coal-ad, prp, dd		0248-3L
4745.00						0249
	2.08	50	Sh/Clst:	gy blk to brn blk		0249-1L
		35	S/Sst	: lt gy to dsk y brn, dol		0249-4L
		5	Ca	: w to lt gy to m gy to brn gy		0249-2L
		5	Cont	: Coal-ad, prp, dd		0249-3L
		5	Sltst	: brn gy		0249-5L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
4750.00						0250
				40 Sh/Clst: gy blk to brn blk		0250-1L
				40 S/Sst : lt gy to dsk y brn, dol		0250-4L
				20 Ca : w to lt gy to m gy to brn gy		0250-2L
				tr Cont : Coal-ad, prp, dd		0250-3L
				tr Sltst : brn gy		0250-5L
4755.00						0251
				40 Sh/Clst: gy blk to brn blk		0251-1L
		0.53		40 S/Sst : lt gy to dsk y brn, dol		0251-4L
				20 Ca : w to lt gy to m gy to brn gy		0251-2L
				tr Cont : Coal-ad, prp, dd		0251-3L
				tr Sltst : brn gy		0251-5L
4760.00						0252
				90 S/Sst : lt gy to dsk y brn, dol		0252-4L
				10 Sh/Clst: gy blk to brn blk		0252-1L
				tr Ca : w to lt gy to m gy to brn gy		0252-2L
				tr Cont : Coal-ad, prp, dd		0252-3L
4765.00						0253
				60 Sh/Clst: gy blk to brn blk		0253-1L
		6.31		40 S/Sst : lt gy to dsk y brn, dol		0253-4L
				tr Ca : w to lt gy to m gy to brn gy		0253-2L
				tr Cont : Coal-ad, prp, dd		0253-3L
4770.00						0254
				85 Sh/Clst: gy blk to brn blk		0254-1L
				10 S/Sst : w to lt gy to dsk y brn		0254-4L
				5 Ca : w to lt gy to m gy to brn gy		0254-2L
				tr Cont : Coal-ad, prp, dd		0254-3L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
4775.00						0255
	6.47	85	Sh/Clst:	gy blk to brn blk		0255-1L
		10	S/Sst	: w to lt gy to dsk y brn		0255-4L
		5	Ca	: w to lt gy to m gy to brn gy		0255-2L
		tr	Cont	: Coal-ad, prp, dd		0255-3L
4780.00						0256
		75	Sh/Clst:	gy blk		0256-1L
		20	S/Sst	: w to lt gy to dsk y brn		0256-4L
		5	Ca	: w to lt gy to m gy to brn gy		0256-2L
		tr	Cont	: Coal-ad, prp, dd		0256-3L
4785.00						0257
	0.49	75	Sh/Clst:	gy blk		0257-1L
		20	S/Sst	: w to lt gy to dsk y brn		0257-4L
		5	Ca	: w to lt gy to m gy to brn gy		0257-2L
		tr	Cont	: Coal-ad, prp, dd		0257-3L
4790.00						0258
		90	Sh/Clst:	gy blk		0258-1L
		10	S/Sst	: w to lt gy to dsk y brn		0258-4L
		tr	Ca	: w to lt gy to m gy to brn gy		0258-2L
		tr	Cont	: Coal-ad, prp, dd		0258-3L
4795.00						0259
	4.38	90	Sh/Clst:	gy blk		0259-1L
		10	S/Sst	: w to lt gy to dsk y brn		0259-4L
		tr	Ca	: w to lt gy to m gy to brn gy		0259-2L
		tr	Cont	: Coal-ad, prp, dd		0259-3L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample	
Int	Cvd	TOC%	Lithology description				
4800.00						0260	
			95	Sh/Clst:	gy blk	0260-1L	
			5	S/Sst	: w to lt gy to dsk y brn	0260-4L	
			tr	Ca	: w to lt gy to m gy to brn gy	0260-2L	
			tr	Cont	: Coal-ad, prp, dd	0260-3L	
4805.00						0261	
	5.70		95	Sh/Clst:	gy blk	0261-1L	
			5	S/Sst	: w to lt gy to dsk y brn	0261-4L	
			tr	Ca	: w to lt gy to m gy to brn gy	0261-2L	
			tr	Cont	: Coal-ad, prp, dd	0261-3L	
4810.00						0262	
			85	Sh/Clst:	gy blk to drk gy, mic	0262-1L	
			10	S/Sst	: w to lt gy to dsk y brn	0262-4L	
			5	Ca	: w to lt gy to m gy to brn gy	0262-2L	
			tr	Cont	: Coal-ad, prp, dd	0262-3L	
4815.00						0263	
	5.79		85	Sh/Clst:	gy blk to drk gy, mic	0263-1L	
			10	S/Sst	: w to lt gy to dsk y brn	0263-4L	
			5	Ca	: w to lt gy to m gy to brn gy	0263-2L	
			tr	Cont	: Coal-ad, prp, dd	0263-3L	
4820.00						0264	
			75	Sh/Clst:	gy blk to drk gy, mic	0264-1L	
			20	S/Sst	: lt gy to dsk y brn, dol	0264-4L	
			5	Ca	: w to lt gy to m gy to brn gy	0264-2L	
			tr	Cont	: Coal-ad, prp, dd	0264-3L	

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
4825.00						0265
	4.55	75	Sh/Clst:	gy blk to drk gy, mic		0265-1L
		20	S/Sst	: lt gy to dsk y brn, dol		0265-4L
		5	Ca	: w to lt gy to m gy to brn gy		0265-2L
		tr	Cont	: Coal-ad, prp, dd		0265-3L
4830.00						0266
		75	Sh/Clst:	gy blk to drk gy, mic		0266-1L
		20	S/Sst	: lt gy to dsk y brn, dol		0266-4L
		5	Ca	: w to lt gy to m gy to brn gy		0266-2L
		tr	Cont	: Coal-ad, prp, dd		0266-3L
4835.00						0267
	0.38	75	Sh/Clst:	gy blk to drk gy, mic		0267-1L
		20	S/Sst	: lt gy to dsk y brn, dol		0267-4L
		5	Ca	: w to lt gy to m gy to brn gy		0267-2L
		tr	Cont	: Coal-ad, prp, dd		0267-3L
4840.00						0268
		80	Sh/Clst:	gy blk to drk gy, mic		0268-1L
		15	S/Sst	: lt gy to dsk y brn, dol		0268-4L
		5	Ca	: w to lt gy to m gy to brn gy		0268-2L
		tr	Cont	: Coal-ad, prp, dd		0268-3L
4845.00						0269
	5.63	80	Sh/Clst:	gy blk to drk gy, mic		0269-1L
		15	S/Sst	: lt gy to dsk y brn, dol		0269-4L
		5	Ca	: w to lt gy to m gy to brn gy		0269-2L
		tr	Cont	: Coal-ad, prp, dd		0269-3L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
4850.00						0270
				50 Sh/Clst: gy blk to drk gy, mic		0270-1L
				45 S/Sst : lt gy to dsk y brn, dol		0270-4L
				5 Ca : w to lt gy to m gy to brn gy		0270-2L
				tr Cont : Coal-ad, prp, dd		0270-3L
4855.00						0271
	0.55			50 Sh/Clst: gy blk to drk gy, mic		0271-1L
				45 S/Sst : lt gy to dsk y brn, dol		0271-4L
				5 Ca : w to lt gy to m gy to brn gy		0271-2L
				tr Cont : Coal-ad, prp, dd		0271-3L
4860.00						0272
				50 Sh/Clst: gy blk to drk gy, mic		0272-1L
				45 S/Sst : lt gy to dsk y brn, dol		0272-4L
				5 Ca : w to lt gy to m gy to brn gy		0272-2L
				tr Cont : Coal-ad, prp, dd		0272-3L
4865.00						0273
	0.39			50 Sh/Clst: gy blk to drk gy, mic		0273-1L
				45 S/Sst : lt gy to dsk y brn, dol		0273-4L
				5 Ca : w to lt gy to m gy to brn gy		0273-2L
				tr Cont : Coal-ad, prp, dd		0273-3L
4870.00						0274
				70 Sh/Clst: gy blk to drk gy, mic		0274-1L
				25 S/Sst : lt gy to dsk y brn, dol		0274-4L
				5 Ca : w to lt gy to m gy to brn gy		0274-2L
				tr Cont : Coal-ad, prp, dd		0274-3L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample	
Int Cvd	TOC%	%	Lithology description				
4875.00						0275	
	5.28	70	Sh/Clst:	gy blk to drk gy, mic		0275-1L	
		25	S/Sst	: lt gy to dsk y brn, dol		0275-4L	
		5	Ca	: w to lt gy to m gy to brn gy		0275-2L	
		tr	Cont	: Coal-ad, prp, dd		0275-3L	
4880.00						0276	
		75	Sh/Clst:	gy blk to drk gy, mic		0276-1L	
		20	S/Sst	: lt gy to dsk y brn, dol		0276-4L	
		5	Ca	: w to lt gy to m gy to brn gy		0276-2L	
		tr	Cont	: Coal-ad, prp, dd		0276-3L	
4885.00						0277	
	5.03	75	Sh/Clst:	gy blk to drk gy, mic		0277-1L	
		20	S/Sst	: lt gy to dsk y brn, dol		0277-4L	
		5	Ca	: w to lt gy to m gy to brn gy		0277-2L	
		tr	Cont	: Coal-ad, prp, dd		0277-3L	
4890.00						0278	
		85	Sh/Clst:	gy blk to drk gy, mic		0278-1L	
		10	S/Sst	: lt gy to dsk y brn, dol		0278-3L	
		5	Ca	: w to lt gy to m gy to brn gy		0278-2L	
4895.00						0279	
	5.18	85	Sh/Clst:	gy blk to drk gy, mic		0279-1L	
		10	S/Sst	: lt gy to dsk y brn, dol		0279-3L	
		5	Ca	: w to lt gy to m gy to brn gy		0279-2L	

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
4900.00						0280
				90 Sh/Clst: gy blk to drk gy, mic		0280-1L
				5 Ca : w to lt gy to m gy to brn gy		0280-2L
				5 S/Sst : lt gy to dsk y brn, dol		0280-3L
4905.00						0281
	4.58			90 Sh/Clst: gy blk to drk gy, mic		0281-1L
				5 Ca : w to lt gy to m gy to brn gy		0281-2L
				5 S/Sst : lt gy to dsk y brn, dol		0281-3L
4910.00						0282
				90 Sh/Clst: gy blk to drk gy, mic		0282-1L
				5 Ca : w to lt gy to m gy to brn gy		0282-2L
				5 S/Sst : lt gy to dsk y brn, dol		0282-3L
4915.00						0283
	2.47			90 Sh/Clst: gy blk to drk gy, mic		0283-1L
				5 Ca : w to lt gy to m gy to brn gy		0283-2L
				5 S/Sst : lt gy to dsk y brn, dol		0283-3L
4920.00						0284
				85 Sh/Clst: gy blk to drk gy, mic		0284-1L
				5 Ca : w to lt gy to m gy to brn gy		0284-2L
				5 S/Sst : lt gy to dsk y brn, dol		0284-3L
				5 Cont : dd		0284-4L
4925.00						0285
	3.06			85 Sh/Clst: gy blk to drk gy, mic		0285-1L
				5 Ca : w to lt gy to m gy to brn gy		0285-2L
				5 S/Sst : lt gy to dsk y brn, dol		0285-3L
				5 Cont : dd		0285-4L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
4930.00						0286
				95 Sh/Clst: gy blk to drk gy, mic		0286-1L
				5 Cont : dd		0286-4L
				tr Ca : w to lt gy to m gy to brn gy		0286-2L
				tr S/Sst : lt gy to dsk y brn, dol		0286-3L
4935.00						0287
	1.40			60 Sh/Clst: gy blk to drk gy, mic		0287-1L
				30 Sltst : brn gy		0287-5L
				5 Ca : w to lt gy to m gy to brn gy		0287-2L
				5 S/Sst : lt gy to dsk y brn, dol		0287-3L
				tr Cont : dd		0287-4L
4940.00						0288
				60 Sh/Clst: gy blk to drk gy, mic		0288-1L
				30 Sltst : brn gy		0288-5L
				5 Ca : w to lt gy to m gy to brn gy		0288-2L
				5 S/Sst : lt gy to dsk y brn, dol		0288-3L
				tr Cont : dd		0288-4L
4945.00						0289
	0.28			60 Sh/Clst: gy blk to drk gy, mic		0289-1L
				40 S/Sst : lt gy to dsk y brn, dol		0289-3L
				tr Ca : w to lt gy to m gy to brn gy		0289-2L
				tr Cont : dd		0289-4L
				tr Sltst : brn gy		0289-5L
4950.00						0290
				60 Sh/Clst: gy blk to drk gy, mic		0290-1L
				40 S/Sst : lt gy to dsk y brn, dol		0290-3L
				tr Ca : w to lt gy to m gy to brn gy		0290-2L
				tr Cont : dd		0290-4L
				tr Sltst : brn gy		0290-5L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
4955.00						0291
	0.33	90	S/Sst	: lt gy to dsk y brn, dol		0291-3L
		5	Sh/Clst:	gy blk to drk gy, mic		0291-1L
		5	Ca	: w to lt gy to m gy to brn gy		0291-2L
		tr	Cont	: dd		0291-4L
4960.00						0292
		90	S/Sst	: lt gy to dsk y brn, dol		0292-3L
		5	Sh/Clst:	gy blk to drk gy, mic		0292-1L
		5	Ca	: w to lt gy to m gy to brn gy		0292-2L
		tr	Cont	: dd		0292-4L
4960.00	ccp					0321
	0.18	100	S/Sst	: m gy, slt, f		0321-1L
4962.50						0293
	0.28	70	S/Sst	: lt gy to dsk y brn, dol		0293-3L
		20	Ca	: w to lt gy to m gy to brn gy		0293-2L
		5	Sh/Clst:	gy blk to drk gy, mic		0293-1L
		5	Cont	: dd		0293-4L
4965.00	ccp					0322
	3.90	100	Sh/Clst:	drk gy, s, mic		0322-1L
4970.00						0294
		50	Sh/Clst:	gy blk to drk gy, mic		0294-1L
		30	S/Sst	: lt gy to dsk y brn, dol		0294-3L
		10	Ca	: w to lt gy to m gy to brn gy		0294-2L
		10	Slst	: brn gy		0294-5L
		tr	Cont	: dd		0294-4L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
4970.00	ccp					0323
		4.47	80	Sh/Clst: drk gy, s, mic		0323-1L
			20	S/Sst : lt y brn, cem		0323-2L
				bulk		0323-0B
4975.00						0295
		0.40	60	Sh/Clst: gy blk to drk gy, mic		0295-1L
			25	Ca : w to lt gy to m gy to brn gy		0295-2L
			10	S/Sst : lt gy to dsk y brn, dol		0295-3L
			5	Cont : dd		0295-4L
			tr	Slstst : brn gy		0295-5L
4975.00	ccp					0324
		3.89	100	Sh/Clst: drk gy, mic		0324-1L
4977.50	ccp					0325
		3.74	100	Sh/Clst: drk gy		0325-1L
4980.00						0296
			50	Sh/Clst: gy blk to drk gy, mic		0296-1L
			20	S/Sst : lt gy to dsk y brn, dol		0296-3L
			15	Slstst : brn gy		0296-5L
			10	Ca : w to lt gy to m gy to brn gy		0296-2L
			5	Cont : dd		0296-4L
4985.00						0297
		0.22	70	S/Sst : lt gy to dsk y brn, dol		0297-3L
			30	Sh/Clst: gy blk to drk gy, mic		0297-1L
			tr	Ca : w to lt gy to m gy to brn gy		0297-2L
			tr	Cont : dd		0297-4L
			tr	Slstst : brn gy		0297-5L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
4990.00						0298
				70 S/Sst : lt gy to dsk y brn, dol		0298-3L
				30 Sh/Clst: gy blk to drk gy, mic		0298-1L
				tr Ca : w to lt gy to m gy to brn gy		0298-2L
				tr Cont : dd		0298-4L
				tr Sltst : brn gy		0298-5L
4995.00						0299
	5.46			70 Sh/Clst: gy blk to drk gy, mic		0299-1L
				20 S/Sst : lt gy to dsk y brn, dol		0299-3L
				10 Sltst : brn gy		0299-4L
				tr Ca : w to lt gy to m gy to brn gy		0299-2L
5000.00						0300
				70 Sh/Clst: gy blk to drk gy, mic		0300-1L
				20 S/Sst : lt gy to dsk y brn, dol		0300-3L
				10 Sltst : brn gy		0300-4L
				tr Ca : w to lt gy to m gy to brn gy		0300-2L
5005.00						0301
	0.34			60 Sh/Clst: gy blk to drk gy, mic		0301-1L
				40 S/Sst : lt gy to dsk y brn, dol		0301-3L
				tr Ca : w to lt gy to m gy to brn gy		0301-2L
				tr Sltst : brn gy		0301-4L
5010.00						0302
				70 Sh/Clst: gy blk to drk gy, mic		0302-1L
				30 S/Sst : lt gy to dsk y brn, dol		0302-3L
				tr Ca : w to lt gy to m gy to brn gy		0302-2L
				tr Sltst : brn gy		0302-4L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
5015.00						0303
	5.91	70	Sh/Clst:	gy blk to drk gy, mic		0303-1L
		30	S/Sst	: lt gy to dsk y brn, dol		0303-3L
			tr Ca	: w to lt gy to m gy to brn gy		0303-2L
			tr Sltst	: brn gy		0303-4L
5020.00						0304
		80	Sh/Clst:	gy blk to drk gy, mic		0304-1L
		20	S/Sst	: lt gy to dsk y brn, dol		0304-3L
			tr Ca	: w to lt gy to m gy to brn gy		0304-2L
			tr Sltst	: brn gy		0304-4L
5025.00						0305
	6.04	80	Sh/Clst:	gy blk to drk gy, mic		0305-1L
		20	S/Sst	: lt gy to dsk y brn, dol		0305-3L
			tr Ca	: w to lt gy to m gy to brn gy		0305-2L
			tr Sltst	: brn gy		0305-4L
5030.00						0306
		90	Sh/Clst:	gy blk to drk gy, mic		0306-1L
		10	S/Sst	: lt gy to dsk y brn, dol		0306-3L
			tr Ca	: w to lt gy to m gy to brn gy		0306-2L
			tr Sltst	: brn gy		0306-4L
5035.00						0307
	5.89	90	Sh/Clst:	gy blk to drk gy, mic		0307-1L
		10	S/Sst	: lt gy to dsk y brn, dol		0307-3L
			tr Ca	: w to lt gy to m gy to brn gy		0307-2L
			tr Sltst	: brn gy		0307-4L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
5040.00						0308
				80 S/Sst : lt gy to dsk y brn, dol		0308-3L
				20 Sh/Clst: gy blk to drk gy, mic		0308-1L
				tr Ca : w to lt gy to m gy to brn gy		0308-2L
5045.00						0309
	0.36			80 S/Sst : lt gy to dsk y brn, dol		0309-3L
				20 Sh/Clst: gy blk to drk gy, mic		0309-1L
				tr Ca : w to lt gy to m gy to brn gy		0309-2L
5050.00						0310
				60 S/Sst : lt gy to dsk y brn, dol		0310-3L
				40 Sh/Clst: gy blk to drk gy, mic		0310-1L
				tr Ca : w to lt gy to m gy to brn gy		0310-2L
5055.00						0311
	0.34			60 S/Sst : lt gy to dsk y brn, dol		0311-3L
				40 Sh/Clst: gy blk to drk gy, mic		0311-1L
				tr Ca : w to lt gy to m gy to brn gy		0311-2L
5060.00						0312
				70 Sh/Clst: gy blk to drk gy, mic		0312-1L
				30 S/Sst : lt gy to dsk y brn, dol		0312-3L
				tr Ca : w to lt gy to m gy to brn gy		0312-2L
5065.00						0313
	4.55			70 Sh/Clst: gy blk to drk gy, mic		0313-1L
				30 S/Sst : lt gy to dsk y brn, dol		0313-3L
				tr Ca : w to lt gy to m gy to brn gy		0313-2L

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample	
Int Cvd	TOC%	%	Lithology description				
5070.00						0314	
			85	Sh/Clst:	gy blk to drk gy, mic	0314-1L	
			15	S/Sst	: lt gy to dsk y brn, dol	0314-3L	
			tr	Ca	: w to lt gy to m gy to brn gy	0314-2L	
5075.00						0315	
	5.94		85	Sh/Clst:	gy blk to drk gy, mic	0315-1L	
			15	S/Sst	: lt gy to dsk y brn, dol	0315-3L	
			tr	Ca	: w to lt gy to m gy to brn gy	0315-2L	
5080.00						0316	
			90	Sh/Clst:	gy blk to drk gy, mic, st	0316-1L	
			10	S/Sst	: lt gy to dsk y brn, dol	0316-3L	
			tr	Ca	: w to lt gy to m gy to brn gy	0316-2L	
5085.00						0317	
	4.52		90	Sh/Clst:	gy blk to drk gy, mic, st	0317-1L	
			10	S/Sst	: lt gy to dsk y brn, dol	0317-3L	
			tr	Ca	: w to lt gy to m gy to brn gy	0317-2L	
5090.00						0318	
			90	Sh/Clst:	gy blk to drk gy, mic, st	0318-1L	
			5	S/Sst	: lt gy to dsk y brn, dol	0318-3L	
			5	Sltst	: brn gy	0318-4L	
			tr	Ca	: w to lt gy to m gy to brn gy	0318-2L	
5095.00						0319	
	4.61		90	Sh/Clst:	gy blk to drk gy, mic, st	0319-1L	
			5	S/Sst	: lt gy to dsk y brn, dol	0319-3L	
			5	Sltst	: brn gy	0319-4L	
			tr	Ca	: w to lt gy to m gy to brn gy	0319-2L	

Table 1 : Lithology description for well NOCS 24/12-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample	
Int Cvd	TOC%	%	Lithology description				
5100.00						0320	
			90 Sh/Clst:	gy blk to drk gy, mic, st		0320-1L	
			10 S/Sst	: lt gy to dsk y brn, dol		0320-3L	
			tr Ca	: w to lt gy to m gy to brn gy		0320-2L	
			tr Sltst	: brn gy		0320-4L	

Table 2 : Rock-Eval table for well NOCS 24/12-2

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Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
4250.00	cut	Sh/Clst: m gy to drk gy	0.22	0.24	0.12	2.00	0.90	27	13	0.5	0.48	398	0150-1L
4262.00	cut	Sh/Clst: brn blk to drk brn	0.59	0.89	0.13	6.85	1.69	53	8	1.5	0.40	448	0152-3L
4270.00	cut	Sh/Clst: brn blk to drk brn	2.33	3.48	0.71	4.90	4.42	79	16	5.8	0.40	445	0154-2L
4280.00	cut	Sh/Clst: brn blk to drk brn	2.13	3.35	0.63	5.32	4.28	78	15	5.5	0.39	447	0156-2L
4290.00	cut	Sh/Clst: brn blk to drk brn	3.32	4.97	1.13	4.40	5.58	89	20	8.3	0.40	446	0158-2L
4300.00	cut	Sh/Clst: brn blk to drk brn	2.45	4.54	1.45	3.13	5.01	91	29	7.0	0.35	447	0160-2L
4310.00	cut	Sh/Clst: brn blk to drk brn	2.81	5.40	1.04	5.19	4.30	126	24	8.2	0.34	451	0162-2L
4320.00	cut	Sh/Clst: gy blk to brn blk	2.84	5.18	0.90	5.76	4.67	111	19	8.0	0.35	454	0164-2L
4325.00	cut	Ca : w to lt gy to drk gy	0.22	0.32	0.54	0.59	0.59	54	92	0.5	0.41	453	0165-4L
4335.00	cut	Sh/Clst: gy blk to brn blk	1.55	1.67	0.96	1.74	6.21	27	15	3.2	0.48	453	0167-1L
4345.00	cut	Sh/Clst: gy blk to brn blk	1.04	2.49	1.27	1.96	4.96	50	26	4.3	0.42	446	0169-1L
4355.00	cut	Sh/Clst: gy blk to brn blk	2.12	2.06	1.18	1.75	5.46	38	22	4.2	0.51	452	0171-1L
4365.00	cut	Sh/Clst: gy blk to brn blk	1.14	1.09	1.03	1.06	1.28	85	80	2.2	0.51	453	0173-1L
4375.00	cut	Sh/Clst: gy blk to brn blk	0.87	0.85	0.68	1.25	3.28	26	21	1.7	0.51	448	0175-1L
4385.00	cut	Sh/Clst: gy blk to brn blk	0.92	1.56	0.51	3.06	4.05	39	13	2.5	0.37	452	0177-1L

Table 2 : Rock-Eval table for well NOCS 24/12-2

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Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
4395.00	cut	Sh/Clst: gy blk to brn blk	1.79	2.72	0.58	4.69	3.44	79	17	4.5	0.40	455	0179-1L
4400.00	cut	Ca : lt gy to m gy	0.04	0.08	0.31	0.26	0.58	14	53	0.1	0.33	448	0180-4L
4405.00	cut	Sh/Clst: gy blk to brn blk	1.78	2.81	0.35	8.03	4.57	61	8	4.6	0.39	453	0181-1L
4415.00	cut	Ca : lt brn to dsk y brn	0.15	0.16	0.33	0.48	0.68	24	49	0.3	0.48	455	0183-3L
4425.00	cut	Sh/Clst: gy blk to brn blk	0.34	0.10	1.10	0.09	3.77	3	29	0.4	0.77	383	0185-1L
4435.00	cut	Sh/Clst: gy blk to brn blk	0.49	0.23	0.46	0.50	3.22	7	14	0.7	0.68	455	0187-1L
4445.00	cut	Sh/Clst: gy blk to brn blk	0.63	0.39	1.89	0.21	5.14	8	37	1.0	0.62	437	0189-1L
4455.00	cut	Sh/Clst: gy blk to brn blk	1.03	0.73	0.88	0.83	3.63	20	24	1.8	0.59	442	0191-1L
4465.00	cut	Sh/Clst: gy blk to brn blk	0.46	0.34	1.27	0.27	3.63	9	35	0.8	0.57	442	0193-1L
4475.00	cut	Sh/Clst: gy blk to brn blk	0.37	0.27	1.13	0.24	3.54	8	32	0.6	0.58	453	0195-1L
4485.00	cut	Sh/Clst: gy blk to brn blk	0.56	0.36	1.10	0.33	3.73	10	29	0.9	0.61	447	0197-1L
4495.00	cut	Sh/Clst: gy blk to brn blk	0.93	0.53	0.90	0.59	5.38	10	17	1.5	0.64	448	0199-1L
4505.00	cut	Sh/Clst: gy blk to brn blk	0.58	0.15	1.07	0.14	4.00	4	27	0.7	0.79	366	0201-1L
4515.00	cut	Sh/Clst: gy blk to brn blk	0.85	0.38	1.33	0.29	5.71	7	23	1.2	0.69	442	0203-1L
4525.00	cut	Ca : lt gy to m gy	0.03	0.08	0.32	0.25	0.51	16	63	0.1	0.27	455	0205-2L

Table 2 : Rock-Eval table for well NOCS 24/12-2

Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
4535.00	cut	Sh/Clst: gy blk to brn blk	0.71	0.86	2.14	0.40	6.04	14	35	1.6	0.45	431	0207-1L
4545.00	cut	Sh/Clst: gy blk to brn blk	0.93	0.93	2.05	0.45	8.86	10	23	1.9	0.50	418	0209-1L
4555.00	cut	Sh/Clst: gy blk to brn blk	0.80	0.67	2.42	0.28	7.99	8	30	1.5	0.54	426	0211-1L
4565.00	cut	Sh/Clst: gy blk to brn blk	0.75	0.27	1.45	0.19	4.49	6	32	1.0	0.74	390	0213-1L
4575.00	cut	Sh/Clst: gy blk to brn blk	0.68	0.40	2.34	0.17	5.33	8	44	1.1	0.63	391	0215-1L
4585.00	cut	Sh/Clst: gy blk to brn blk	0.73	0.49	1.88	0.26	7.23	7	26	1.2	0.60	439	0217-1L
4595.00	cut	Sh/Clst: gy blk to brn blk	0.59	0.35	2.02	0.17	7.03	5	29	0.9	0.63	434	0219-1L
4605.00	cut	Sh/Clst: gy blk to brn blk	0.75	0.46	1.67	0.28	5.46	8	31	1.2	0.62	378	0221-1L
4615.00	cut	Sh/Clst: gy blk to brn blk	0.37	0.33	2.69	0.12	5.69	6	47	0.7	0.53	434	0223-1L
4625.00	cut	Sh/Clst: gy blk to brn blk	0.51	0.40	4.16	0.10	5.09	8	82	0.9	0.56	440	0225-1L
4635.00	cut	Sh/Clst: gy blk to brn blk	0.43	0.34	4.54	0.07	5.51	6	82	0.8	0.56	427	0227-1L
4645.00	cut	Sh/Clst: gy blk to brn blk	0.48	0.37	1.95	0.19	4.38	8	45	0.9	0.56	441	0229-1L
4655.00	cut	Sh/Clst: gy blk to brn blk	0.33	0.69	1.01	0.68	2.92	24	35	1.0	0.32	448	0231-1L
4665.00	cut	Sh/Clst: gy blk to brn blk	0.49	0.79	1.81	0.44	4.71	17	38	1.3	0.38	443	0233-1L
4675.00	cut	Ca : lt gy to m gy	0.02	0.07	0.51	0.14	0.35	20	146	0.1	0.22	434	0235-2L

Table 2 : Rock-Eval table for well NOCS 24/12-2

Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
4685.00	cut	Sh/Clst: gy blk to brn blk	0.36	0.20	3.32	0.06	4.68	4	71	0.6	0.64	-	0237-1L
4695.00	cut	Sh/Clst: gy blk to brn blk	0.41	0.32	3.67	0.09	5.67	6	65	0.7	0.56	432	0239-1L
4700.00	cut	Ca : w to lt gy to m gy to brn gy	0.03	0.12	0.66	0.18	0.46	26	143	0.1	0.20	405	0240-2L
4705.00	cut	Sh/Clst: gy blk to brn blk	0.21	0.11	2.28	0.05	3.02	4	75	0.3	0.66	348	0241-1L
4715.00	cut	S/Sst : lt gy to dsk y brn	0.11	0.26	0.49	0.53	0.39	67	126	0.4	0.30	414	0243-4L
4725.00	cut	Sh/Clst: gy blk to brn blk	0.32	0.23	1.72	0.13	3.10	7	55	0.6	0.58	399	0245-1L
4735.00	cut	Sltst : brn gy	0.11	0.43	1.90	0.23	1.24	35	153	0.5	0.20	422	0247-5L
4745.00	cut	Sh/Clst: gy blk to brn blk	0.26	0.59	0.90	0.66	2.08	28	43	0.8	0.31	449	0249-1L
4755.00	cut	S/Sst : lt gy to dsk y brn	0.05	0.12	0.37	0.32	0.53	23	70	0.2	0.29	414	0251-4L
4765.00	cut	Sh/Clst: gy blk to brn blk	0.66	0.87	1.49	0.58	6.31	14	24	1.5	0.43	432	0253-1L
4775.00	cut	Sh/Clst: gy blk to brn blk	0.89	1.02	1.56	0.65	6.47	16	24	1.9	0.47	444	0255-1L
4785.00	cut	S/Sst : w to lt gy to dsk y brn	0.10	0.18	0.30	0.60	0.49	37	61	0.3	0.36	436	0257-4L
4795.00	cut	Sh/Clst: gy blk	0.43	0.41	2.28	0.18	4.38	9	52	0.8	0.51	440	0259-1L
4805.00	cut	Sh/Clst: gy blk	0.73	0.96	1.43	0.67	5.70	17	25	1.7	0.43	448	0261-1L

Table 2 : Rock-Eval table for well NOCS 24/12-2

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Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
4815.00	cut	Sh/Clst: gy blk to drk gy	0.92	1.29	1.04	1.24	5.79	22	18	2.2	0.42	458	0263-1L
4825.00	cut	Sh/Clst: gy blk to drk gy	0.75	1.35	0.81	1.67	4.55	30	18	2.1	0.36	457	0265-1L
4835.00	cut	S/Sst : lt gy to dsk y brn	0.04	0.05	0.19	0.26	0.38	13	50	0.1	0.44	373	0267-4L
4845.00	cut	Sh/Clst: gy blk to drk gy	0.82	1.50	1.41	1.06	5.63	27	25	2.3	0.35	452	0269-1L
4855.00	cut	S/Sst : lt gy to dsk y brn	0.10	0.11	0.16	0.69	0.55	20	29	0.2	0.48	459	0271-4L
4865.00	cut	S/Sst : lt gy to dsk y brn	0.05	0.08	0.24	0.33	0.39	21	62	0.1	0.38	345	0273-4L
4875.00	cut	Sh/Clst: gy blk to drk gy	0.59	0.88	1.02	0.86	5.28	17	19	1.5	0.40	459	0275-1L
4885.00	cut	Sh/Clst: gy blk to drk gy	0.42	0.76	0.99	0.77	5.03	15	20	1.2	0.36	450	0277-1L
4895.00	cut	Sh/Clst: gy blk to drk gy	0.36	0.64	1.15	0.56	5.18	12	22	1.0	0.36	459	0279-1L
4905.00	cut	Sh/Clst: gy blk to drk gy	0.28	0.58	1.36	0.43	4.58	13	30	0.9	0.33	464	0281-1L
4915.00	cut	Sh/Clst: gy blk to drk gy	0.22	0.46	1.26	0.37	2.47	19	51	0.7	0.32	450	0283-1L
4925.00	cut	Sh/Clst: gy blk to drk gy	0.19	0.06	2.22	0.03	3.06	2	73	0.3	0.76	360	0285-1L
4935.00	cut	Sltst : brn gy	0.32	0.80	2.38	0.34	1.40	57	170	1.1	0.29	424	0287-5L
4945.00	cut	S/Sst : lt gy to dsk y brn	0.03	0.04	0.24	0.17	0.28	14	86	0.1	0.43	405	0289-3L
4955.00	cut	S/Sst : lt gy to dsk y brn	0.05	0.06	0.26	0.23	0.33	18	79	0.1	0.45	435	0291-3L

Table 2 : Rock-Eval table for well NOCS 24/12-2

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Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
4960.00	ccp	S/Sst : m gy	0.17	0.01	0.36	0.03	0.18	6	200	0.2	0.94	439	0321-1L
4962.50	cut	S/Sst : lt gy to dsk y brn	0.13	0.13	0.32	0.41	0.28	46	114	0.3	0.50	339	0293-3L
4965.00	ccp	Sh/Clst: drk gy	0.12	0.67	0.28	2.39	3.90	17	7	0.8	0.15	521	0322-1L
4970.00	ccp	bulk	0.12	0.59	0.22	2.68	4.47	13	5	0.7	0.17	516	0323-0B
4975.00	cut	Ca : w to lt gy to m gy to brn gy	0.02	0.13	0.50	0.26	0.40	33	125	0.1	0.13	413	0295-2L
4975.00	ccp	Sh/Clst: drk gy	0.13	0.65	0.19	3.42	3.89	17	5	0.8	0.17	488	0324-1L
4977.50	ccp	Sh/Clst: drk gy	0.12	1.13	0.23	4.91	3.74	30	6	1.3	0.10	485	0325-1L
4985.00	cut	S/Sst : lt gy to dsk y brn	0.01	0.02	0.19	0.11	0.22	9	86	-	0.33	-	0297-3L
4995.00	cut	Sh/Clst: gy blk to drk gy	0.19	0.62	1.10	0.56	5.46	11	20	0.8	0.23	522	0299-1L
5005.00	cut	S/Sst : lt gy to dsk y brn	0.02	0.05	0.04	1.25	0.34	15	12	0.1	0.29	407	0301-3L
5015.00	cut	Sh/Clst: gy blk to drk gy	0.23	0.70	0.60	1.17	5.91	12	10	0.9	0.25	501	0303-1L
5025.00	cut	Sh/Clst: gy blk to drk gy	0.20	0.55	0.84	0.65	6.04	9	14	0.8	0.27	501	0305-1L
5035.00	cut	Sh/Clst: gy blk to drk gy	0.23	0.56	0.63	0.89	5.89	10	11	0.8	0.29	498	0307-1L
5045.00	cut	S/Sst : lt gy to dsk y brn	0.07	0.09	0.14	0.64	0.36	25	39	0.2	0.44	406	0309-3L

Table 2 : Rock-Eval table for well NOCS 24/12-2

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Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
5055.00	cut	S/Sst : lt gy to dsk y brn	0.01	0.02	0.14	0.14	0.34	6	41	-	0.33	439	0311-3L
5065.00	cut	Sh/Clst: gy blk to drk gy	0.40	0.75	0.34	2.21	4.55	16	7	1.1	0.35	487	0313-1L
5075.00	cut	Sh/Clst: gy blk to drk gy	0.28	0.46	0.60	0.77	5.94	8	10	0.7	0.38	488	0315-1L
5085.00	cut	Sh/Clst: gy blk to drk gy	0.50	0.50	0.73	0.68	4.52	11	16	1.0	0.50	488	0317-1L
5095.00	cut	Sh/Clst: gy blk to drk gy	0.21	0.44	1.07	0.41	4.61	10	23	0.6	0.32	476	0319-1L

Table 3 : Pyrolysis GC Data (S2 peak) as Percentage of Total Area for Well NOCS 24/12-2

Depth unit of measure: m

Depth	Typ	Lithology	C1	C2-C5	C6-C14	C15+	S2 from Rock-Eval	Sample
2210.00	cut	S/Sst : w to lt gy	-	-	-	-	-	0130-1L
2230.00	cut	S/Sst : w to lt gy	-	-	-	-	-	0131-1L
2250.00	cut	S/Sst : w to lt gy	-	-	-	-	-	0132-1L
2270.00	cut	S/Sst : w to lt gy	-	-	-	-	-	0133-1L
2290.00	cut	S/Sst : w to lt gy	-	-	-	-	-	0134-1L
2310.00	cut	S/Sst : w to lt gy	-	-	-	-	-	0135-1L
2330.00	cut	S/Sst : w to lt gy	-	-	-	-	-	0136-1L
2360.00	cut	S/Sst : w to lt gy	-	-	-	-	-	0137-1L
2380.00	cut	S/Sst : w to lt gy	-	-	-	-	-	0138-1L
2400.00	cut	S/Sst : w to lt gy	-	-	-	-	-	0139-1L
2490.00	cut	S/Sst : w to lt gy	-	-	-	-	-	0140-1L
2500.00	cut	S/Sst : w to lt gy	-	-	-	-	-	0141-1L
2510.00	cut	S/Sst : w to lt gy	-	-	-	-	-	0142-1L
2520.00	cut	S/Sst : w to lt gy	-	-	-	-	-	0143-1L

Table 3 : Pyrolysis GC Data (S2 peak) as Percentage of Total Area for Well NOCS 24/12-2

Depth unit of measure: m

Depth	Typ	Lithology	C1	C2-C5	C6-C14	C15+	S2 from Rock-Eval	Sample
2540.00	com	bulk	1.49	72.01	26.50	-	-	0149-0B
2580.00	cut	S/Sst : w to lt gy	14.24	48.12	37.65	-	-	0146-1L
2600.00	cut	S/Sst : w to lt gy	13.35	44.14	42.43	0.09	-	0147-1L
2610.00	cut	S/Sst : w to lt gy	4.80	40.29	27.60	27.31	-	0148-1L
4262.00	cut	Sh/Clst: brn blk to drk brn	8.56	31.23	52.28	7.93	0.89	0152-3L
4270.00	cut	Sh/Clst: brn blk to drk brn	8.17	20.99	44.15	26.69	3.48	0154-2L
4290.00	cut	Sh/Clst: brn blk to drk brn	4.71	15.57	49.90	29.82	4.97	0158-2L
4310.00	cut	Sh/Clst: brn blk to drk brn	7.86	27.12	48.15	16.87	5.40	0162-2L
4325.00	cut	Ca : w to lt gy to drk gy	7.37	31.18	47.83	13.63	0.32	0165-4L
4335.00	cut	Sh/Clst: gy blk to brn blk	7.94	40.12	43.21	8.73	1.67	0167-1L
4355.00	cut	Sh/Clst: gy blk to brn blk	8.72	30.16	48.50	12.35	2.06	0171-1L
4375.00	cut	Sh/Clst: gy blk to brn blk	5.86	37.17	46.91	10.06	0.85	0175-1L
4395.00	cut	Sh/Clst: gy blk to brn blk	9.57	24.70	43.65	22.09	2.72	0179-1L
4405.00	cut	Sh/Clst: gy blk to brn blk	11.08	27.33	45.46	16.14	2.81	0181-1L

Table 3 : Pyrolysis GC Data (S2 peak) as Percentage of Total Area for Well NOCS 24/12-2

Depth unit of measure: m

Depth	Typ	Lithology	C1	C2-C5	C6-C14	C15+	S2 from Rock-Eval	Sample
4425.00	cut	Sh/Clst: gy blk to brn blk	-	-	-	-	0.10	0185-1L
4445.00	cut	Sh/Clst: gy blk to brn blk	6.72	49.41	40.39	3.48	0.39	0189-1L
4465.00	cut	Sh/Clst: gy blk to brn blk	-	-	-	-	0.34	0193-1L
4485.00	cut	Sh/Clst: gy blk to brn blk	-	-	-	-	0.36	0197-1L
4505.00	cut	Sh/Clst: gy blk to brn blk	-	-	-	-	0.15	0201-1L
4535.00	cut	Sh/Clst: gy blk to brn blk	-	-	-	-	0.86	0207-1L
4545.00	cut	Sh/Clst: gy blk to brn blk	4.26	48.77	45.69	1.28	0.93	0209-1L
4555.00	cut	Sh/Clst: gy blk to brn blk	4.15	47.23	46.44	2.18	0.67	0211-1L
4575.00	cut	Sh/Clst: gy blk to brn blk	-	-	-	-	0.40	0215-1L
4595.00	cut	Sh/Clst: gy blk to brn blk	-	-	-	-	0.35	0219-1L
4615.00	cut	Sh/Clst: gy blk to brn blk	-	-	-	-	0.33	0223-1L
4635.00	cut	Sh/Clst: gy blk to brn blk	-	-	-	-	0.34	0227-1L
4645.00	cut	Sh/Clst: gy blk to brn blk	-	-	-	-	0.37	0229-1L
4655.00	cut	Sh/Clst: gy blk to brn blk	4.24	53.03	37.16	5.58	0.69	0231-1L

Table 3 : Pyrolysis GC Data (S2 peak) as Percentage of Total Area for Well NOCS 24/12-2

Depth unit of measure: m

Depth	Typ	Lithology	C1	C2-C5	C6-C14	C15+	S2 from Rock-Eval	Sample
4685.00	cut	Sh/Clst: gy blk to brn blk	-	-	-	-	0.20	0237-1L
4705.00	cut	Sh/Clst: gy blk to brn blk	-	-	-	-	0.11	0241-1L
4715.00	cut	S/Sst : lt gy to dsk y brn	0.37	4.27	93.77	1.59	0.26	0243-4L
4735.00	cut	Sltst : brn gy	0.89	45.41	51.68	2.02	0.43	0247-5L
4745.00	cut	Sh/Clst: gy blk to brn blk	0.35	62.26	36.58	0.81	0.59	0249-1L
4765.00	cut	Sh/Clst: gy blk to brn blk	13.13	49.21	36.66	1.00	0.87	0253-1L
4795.00	cut	Sh/Clst: gy blk	8.29	55.25	35.18	1.27	0.41	0259-1L
4815.00	cut	Sh/Clst: gy blk to drk gy	4.22	48.74	44.95	2.09	1.29	0263-1L
4845.00	cut	Sh/Clst: gy blk to drk gy	18.15	42.42	32.86	6.58	1.50	0269-1L
4855.00	cut	S/Sst : lt gy to dsk y brn	-	-	-	-	0.11	0271-4L
4875.00	cut	Sh/Clst: gy blk to drk gy	-	-	-	-	0.88	0275-1L
4895.00	cut	Sh/Clst: gy blk to drk gy	-	-	-	-	0.64	0279-1L
4915.00	cut	Sh/Clst: gy blk to drk gy	-	-	-	-	0.46	0283-1L
4935.00	cut	Sltst : brn gy	6.16	31.63	53.85	8.67	0.80	0287-5L

Table 3 : Pyrolysis GC Data (S2 peak) as Percentage of Total Area for Well NOCS 24/12-2

Depth unit of measure: m

Depth	Typ	Lithology	C1	C2-C5	C6-C14	C15+	S2 from Rock-Eval	Sample
4945.00	cut	S/Sst : lt gy to dsk y brn	-	-	-	-	0.04	0289-3L
4960.00	ccp	S/Sst : m gy	-	-	-	-	0.01	0321-1L
4965.00	ccp	Sh/Clst: drk gy	-	-	-	-	0.67	0322-1L
4975.00	ccp	Sh/Clst: drk gy	-	-	-	-	0.65	0324-1L
4995.00	cut	Sh/Clst: gy blk to drk gy	-	-	-	-	0.62	0299-1L
5015.00	cut	Sh/Clst: gy blk to drk gy	-	-	-	-	0.70	0303-1L
5035.00	cut	Sh/Clst: gy blk to drk gy	-	-	-	-	0.56	0307-1L
5065.00	cut	Sh/Clst: gy blk to drk gy	-	-	-	-	0.75	0313-1L
5085.00	cut	Sh/Clst: gy blk to drk gy	-	-	-	-	0.50	0317-1L

Table 4 a: Weight of EOM and Chromatographic Fraction for well NOCS 24/12-2

Depth unit of measure: m

Depth	Typ	Lithology	Rock Extracted (g)	EOM (mg)	Sat (mg)	Aro (mg)	Asph (mg)	NSO (mg)	HC (mg)	Non-HC (mg)	TOC(e) (%)	Sample
4290.00	com	Composite sample - see table 4 e	8.0	5.2	2.5	1.1	0.6	1.0	3.6	1.6	1.15	0326-0B
4320.00	com	Composite sample - see table 4 e	5.7	31.8	18.0	6.3	0.9	6.6	24.3	7.5	4.92	0327-0B
4395.00	com	Composite sample - see table 4 e	1.3	1.6	0.6	0.4	0.3	0.3	1.1	0.5	1.16	0328-0B
4445.00	com	Composite sample - see table 4 e	5.2	4.5	2.0	0.7	1.1	0.7	2.7	1.8	3.65	0329-0B
4515.00	com	Composite sample - see table 4 e	1.9	2.0	0.4	0.3	0.4	0.9	0.8	1.3	0.88	0330-0B
4555.00	com	Composite sample - see table 4 e	3.1	1.5	0.4	0.3	0.4	0.4	0.8	0.7	0.69	0331-0B
4635.00	com	Composite sample - see table 4 e	6.8	1.3	0.6	0.4	0.1	0.2	1.1	0.2	0.45	0332-0B
4695.00	com	Composite sample - see table 4 e	4.8	3.1	1.8	0.8	0.2	0.4	2.5	0.6	1.01	0333-0B
4775.00	com	Composite sample - see table 4 e	4.4	7.5	2.8	1.4	1.4	2.0	4.1	3.4	4.91	0334-0B
4825.00	com	Composite sample - see table 4 e	9.9	7.7	2.9	2.7	0.3	1.7	5.7	2.0	4.42	0335-0B
4895.00	com	Composite sample - see table 4 e	9.0	3.6	1.3	1.3	0.6	0.4	2.6	1.0	3.83	0336-0B
4960.00	ccp	S/Sst : m gy	8.5	0.7	0.3	0.2	0.1	0.2	0.5	0.2	0.14	0321-1L
4965.00	ccp	Sh/Clst: drk gy	9.5	4.0	-	1.2	2.0	0.8	1.2	2.8	1.88	0322-1L
4977.50	com	Composite sample - see table 4 e	9.7	4.4	0.4	1.6	1.3	1.0	2.1	2.3	5.18	0337-0B

Table 4 a: Weight of EOM and Chromatographic Fraction for well NOCS 24/12-2

Depth unit of measure: m

Depth	Typ	Lithology	Rock Extracted (g)	EOM (mg)	Sat (mg)	Aro (mg)	Asph (mg)	NSO (mg)	HC (mg)	Non-HC (mg)	TOC(e) (%)	Sample
5035.00	com	Composite sample - see table 4 e	10.0	4.3	1.0	1.6	0.6	1.0	2.7	1.6	5.67	0338-0B
5095.00	com	Composite sample - see table 4 c	7.7	2.8	0.6	1.0	0.2	1.0	1.6	1.1	3.57	0339-0B

Table 4 b: Concentration of EOM and Chromatographic Fraction (wt ppm rock) for well NOCS 24/12-2

Depth unit of measure: m

Depth	Typ	Lithology	EOM	Sat	Aro	Asph	NSO	HC	Non-HC	Sample
4290.00	com	Composite sample - see table 4 e	650	306	138	75	130	445	205	0326-0B
4320.00	com	Composite sample - see table 4 e	5620	3178	1123	159	1166	4302	1325	0327-0B
4395.00	com	Composite sample - see table 4 e	1221	458	343	229	190	801	419	0328-0B
4445.00	com	Composite sample - see table 4 e	868	391	131	212	133	523	345	0329-0B
4515.00	com	Composite sample - see table 4 e	1047	235	157	209	445	392	654	0330-0B
4555.00	com	Composite sample - see table 4 e	490	147	98	130	114	245	245	0331-0B
4635.00	com	Composite sample - see table 4 e	191	88	66	14	22	154	36	0332-0B
4695.00	com	Composite sample - see table 4 e	647	375	156	41	73	532	114	0333-0B
4775.00	com	Composite sample - see table 4 e	1685	620	310	314	440	930	755	0334-0B
4825.00	com	Composite sample - see table 4 e	776	296	276	30	173	573	203	0335-0B
4895.00	com	Composite sample - see table 4 e	399	144	144	66	44	288	111	0336-0B
4960.00	ccp	S/Sst : m gy	82	35	17	11	17	52	29	0321-1L
4965.00	ccp	Sh/Clst: drk gy	421	-	126	210	84	126	294	0322-1L
4977.50	com	Composite sample - see table 4 e	454	46	170	134	103	216	237	0337-0B

Depth unit of measure: m

Depth	Typ	Lithology	EOM	Sat	Aro	Asph	NSO	HC	Non-HC	Sample
5035.00	com	Composite sample - see table 4 e	430	105	164	60	100	270	160	0338-0B
5095.00	com	Composite sample - see table 4 e	366	78	137	26	124	215	150	0339-0B

Table 4 c: Concentration of EOM and Chromatographic Fraction (mg/g TOC(e)) for well NOCS 24/12-2

Depth unit of measure: m

Depth	Typ	Lithology	EOM	Sat	Aro	Asph	NSO	HC	Non-HC	Sample
4290.00	com	Composite sample - see table 4 e	56.59	26.66	12.08	6.53	11.32	38.74	17.85	0326-0B
4320.00	com	Composite sample - see table 4 e	114.40	64.61	22.84	3.24	23.71	87.45	26.94	0327-0B
4395.00	com	Composite sample - see table 4 e	105.29	39.48	29.61	19.74	16.45	69.10	36.19	0328-0B
4445.00	com	Composite sample - see table 4 e	23.80	10.74	3.60	5.82	3.65	14.33	9.47	0329-0B
4515.00	com	Composite sample - see table 4 e	118.99	26.77	17.85	23.80	50.57	44.62	74.37	0330-0B
4555.00	com	Composite sample - see table 4 e	71.04	21.31	14.21	18.94	16.58	35.52	35.52	0331-0B
4635.00	com	Composite sample - see table 4 e	42.61	19.67	14.75	3.28	4.92	34.41	8.19	0332-0B
4695.00	com	Composite sample - see table 4 e	64.08	37.21	15.50	4.13	7.23	52.71	11.37	0333-0B
4775.00	com	Composite sample - see table 4 e	34.33	12.63	6.32	6.41	8.97	18.95	15.38	0334-0B
4825.00	com	Composite sample - see table 4 e	17.58	6.71	6.26	0.68	3.93	12.97	4.61	0335-0B
4895.00	com	Composite sample - see table 4 e	10.44	3.77	3.77	1.74	1.16	7.54	2.90	0336-0B
4960.00	ccp	S/Sst : m gy	58.62	25.12	12.56	8.37	12.56	37.68	20.93	0321-1L
4965.00	ccp	Sh/Clst: drk gy	22.40	-	6.72	11.20	4.48	6.72	15.68	0322-1L
4977.50	com	Composite sample - see table 4 e	8.77	0.90	3.29	2.59	1.99	4.18	4.58	0337-0B

Table 4 c: Concentration of EOM and Chromatographic Fraction (mg/g TOC(e)) for well NOCS 24/12-2

Depth unit of measure: m

Depth	Typ	Lithology	EOM	Sat	Aro	Asph	NSO	HC	Non-HC	Sample
5035.00	com	Composite sample - see table 4 e	7.58	1.85	2.91	1.06	1.76	4.76	2.82	0338-0B
5095.00	com	Composite sample - see table 4 e	10.25	2.20	3.84	0.73	3.48	6.04	4.21	0339-0B

Depth unit of measure: m

Depth	Typ	Lithology	Sat	Aro	Asph	NSO	HC	Non-HC	Sat	HC	Sample
			EOM	EOM	EOM	EOM	EOM	EOM	EOM	Aro	
4290.00	com	Composite sample - see table 4 e	47.12	21.35	11.54	20.00	68.46	31.54	220.72	217.07	0326-0B
4320.00	com	Composite sample - see table 4 e	56.40	19.97	2.83	20.72	76.45	23.55	282.83	324.57	0327-0B
4395.00	com	Composite sample - see table 4 e	37.50	28.13	18.75	15.62	65.63	34.37	133.33	190.91	0328-0B
4445.00	com	Composite sample - see table 4 e	45.11	15.11	24.44	15.33	60.22	39.78	298.53	151.40	0329-0B
4515.00	com	Composite sample - see table 4 e	22.50	15.00	20.00	42.50	37.50	62.50	150.00	60.00	0330-0B
4555.00	com	Composite sample - see table 4 e	30.00	20.00	26.67	23.33	50.00	50.00	150.00	100.00	0331-0B
4635.00	com	Composite sample - see table 4 e	46.15	34.62	7.69	11.54	80.77	19.23	133.33	420.00	0332-0B
4695.00	com	Composite sample - see table 4 e	58.06	24.19	6.45	11.29	82.26	17.74	240.00	463.64	0333-0B
4775.00	com	Composite sample - see table 4 e	36.80	18.40	18.67	26.13	55.20	44.80	200.00	123.21	0334-0B
4825.00	com	Composite sample - see table 4 e	38.18	35.58	3.90	22.34	73.77	26.23	107.30	281.19	0335-0B
4895.00	com	Composite sample - see table 4 e	36.11	36.11	16.67	11.11	72.22	27.78	100.00	260.00	0336-0B
4960.00	ccp	S/Sst : m gy	42.86	21.43	14.29	21.43	64.29	35.71	200.00	180.00	0321-1L
4965.00	ccp	Sh/Clst: drk gy	-	30.00	50.00	20.00	30.00	70.00	-	42.86	0322-1L
4977.50	com	Composite sample - see table 4 e	10.23	37.50	29.55	22.73	47.73	52.27	27.27	91.30	0337-0B

Table 4 d: Composition of material extracted from the rock (%) for well NOCS 24/12-2

Depth unit of measure: m

Depth	Typ	Lithology	Sat	Aro	Asph	NSO	HC	Non-HC	Sat	HC	Sample
			EOM	EOM	EOM	EOM	EOM	EOM	Aro	Non-HC	
5035.00	com	Composite sample - see table 4 e	24.42	38.37	13.95	23.26	62.79	37.21	63.64	168.75	0338-0B
5095.00	com	Composite sample - see table 4 e	21.43	37.50	7.14	33.93	58.93	41.07	57.14	143.48	0339-0B

Depth unit of measure: m

NOTE: Depths shown in tables 4 a to d correspond to the composite samples' lower depth.

Upper depth	Lower depth	Typ	Sample	Depth	Typ	Lithology	Sample
4270.00	4290.00	com	0326-0B is composed of:	4270.00	cut	Sh/Clst: brn blk to drk brn	0154-2L
				4280.00	cut	Sh/Clst: brn blk to drk brn	0156-2L
				4290.00	cut	Sh/Clst: brn blk to drk brn	0158-2L
4310.00	4320.00	com	0327-0B is composed of:	4310.00	cut	Sh/Clst: brn blk to drk brn	0162-2L
				4320.00	cut	Sh/Clst: gy blk to brn blk	0164-2L
4375.00	4395.00	com	0328-0B is composed of:	4375.00	cut	Sh/Clst: gy blk to brn blk	0175-1L
				4385.00	cut	Sh/Clst: gy blk to brn blk	0177-1L
				4395.00	cut	Sh/Clst: gy blk to brn blk	0179-1L
4425.00	4445.00	com	0329-0B is composed of:	4425.00	cut	Sh/Clst: gy blk to brn blk	0185-1L
				4435.00	cut	Sh/Clst: gy blk to brn blk	0187-1L
				4445.00	cut	Sh/Clst: gy blk to brn blk	0189-1L
4485.00	4515.00	com	0330-0B is composed of:	4485.00	cut	Sh/Clst: gy blk to brn blk	0197-1L
				4495.00	cut	Sh/Clst: gy blk to brn blk	0199-1L
				4505.00	cut	Sh/Clst: gy blk to brn blk	0201-1L
				4515.00	cut	Sh/Clst: gy blk to brn blk	0203-1L
4535.00	4555.00	com	0331-0B is composed of:	4535.00	cut	Sh/Clst: gy blk to brn blk	0207-1L
				4545.00	cut	Sh/Clst: gy blk to brn blk	0209-1L
				4555.00	cut	Sh/Clst: gy blk to brn blk	0211-1L

Table 4 e: List of composite samples appearing in the extraction tables for well NOCS 24/12-2

Depth unit of measure: m

NOTE: Depths shown in tables 4 a to d correspond to the composite samples' lower depth.

Upper depth	Lower depth	Typ	Sample	Depth	Typ	Lithology	Sample
4605.00	4635.00	com	0332-0B is composed of:	4605.00	cut	Sh/Clst: gy blk to brn blk	0221-1L
				4615.00	cut	Sh/Clst: gy blk to brn blk	0223-1L
				4625.00	cut	Sh/Clst: gy blk to brn blk	0225-1L
				4635.00	cut	Sh/Clst: gy blk to brn blk	0227-1L
4685.00	4695.00	com	0333-0B is composed of:	4685.00	cut	Sh/Clst: gy blk to brn blk	0237-1L
				4695.00	cut	Sh/Clst: gy blk to brn blk	0239-1L
4765.00	4775.00	com	0334-0B is composed of:	4765.00	cut	Sh/Clst: gy blk to brn blk	0253-1L
				4775.00	cut	Sh/Clst: gy blk to brn blk	0255-1L
4805.00	4825.00	com	0335-0B is composed of:	4805.00	cut	Sh/Clst: gy blk	0261-1L
				4815.00	cut	Sh/Clst: gy blk to drk gy, mic	0263-1L
				4825.00	cut	Sh/Clst: gy blk to drk gy, mic	0265-1L
4875.00	4895.00	com	0336-0B is composed of:	4875.00	cut	Sh/Clst: gy blk to drk gy, mic	0275-1L
				4885.00	cut	Sh/Clst: gy blk to drk gy, mic	0277-1L
				4895.00	cut	Sh/Clst: gy blk to drk gy, mic	0279-1L
4975.00	4977.50	com	0337-0B is composed of:	4975.00	ccp	Sh/Clst: drk gy, mic	0324-1L
				4977.50	ccp	Sh/Clst: drk gy	0325-1L

Depth unit of measure: m

NOTE: Depths shown in tables 4 a to d correspond to the composite samples' lower depth.

Upper depth	Lower depth	Typ	Sample	Depth	Typ	Lithology	Sample
5015.00	5035.00	com	0338-0B is composed of:	5015.00	cut	Sh/Clst: gy blk to drk gy, mic	0303-1L
				5025.00	cut	Sh/Clst: gy blk to drk gy, mic	0305-1L
				5035.00	cut	Sh/Clst: gy blk to drk gy, mic	0307-1L
5065.00	5095.00	com	0339-0B is composed of:	5065.00	cut	Sh/Clst: gy blk to drk gy, mic	0313-1L
				5075.00	cut	Sh/Clst: gy blk to drk gy, mic	0315-1L
				5085.00	cut	Sh/Clst: gy blk to drk gy, mic, st	0317-1L
				5095.00	cut	Sh/Clst: gy blk to drk gy, mic, st	0319-1L

Table 5 : Saturated Hydrocarbon Ratios for well NOCS 24/12-2

Depth unit of measure: m

Depth	Typ	Lithology	Pristane	Pristane	Pristane + Phytane	Phytane	CPI	Sample
			nC17	Phytane	nC17 + nC18	nC18		
4290.00	com	bulk	0.40	1.47	0.37	0.33	1.09	0326-0B
4320.00	com	bulk	0.40	1.52	0.38	0.35	1.08	0327-0B
4395.00	com	bulk	0.34	1.61	0.32	0.29	1.11	0328-0B
4445.00	com	bulk	0.21	1.76	0.20	0.18	1.07	0329-0B
4515.00	com	bulk	0.29	1.09	0.28	0.28	1.13	0330-0B
4555.00	com	bulk	0.23	0.97	0.20	0.18	1.00	0331-0B
4635.00	com	bulk	0.34	1.23	0.33	0.31	0.88	0332-0B
4695.00	com	bulk	0.26	1.30	0.24	0.22	1.08	0333-0B
4775.00	com	bulk	0.48	1.61	0.44	0.39	1.15	0334-0B
4825.00	com	bulk	0.52	1.69	0.47	0.40	1.12	0335-0B
4895.00	com	bulk	0.49	1.59	0.46	0.42	1.06	0336-0B
4960.00	ccp	S/Sst : m gy	0.11	1.00	0.16	0.28	1.03	0321-1L
4965.00	ccp	Sh/Clst: drk gy	0.14	1.47	0.18	0.29	1.32	0322-1L
4977.50	com	bulk	0.13	1.62	0.14	0.17	1.23	0337-0B

Table 5 : Saturated Hydrocarbon Ratios for well NOCS 24/12-2

Depth unit of measure: m

Depth	Typ	Lithology	Pristane	Pristane	Pristane + Phytane	Phytane	CPI	Sample
			nC17	Phytane	nC17 + nC18	nC18		
5035.00	com	bulk	0.87	1.71	0.80	0.70	1.08	0338-0B
5095.00	com	bulk	0.60	1.73	0.56	0.50	1.06	0339-0B

Table 6 : Aromatic Hydrocarbon Ratios for well NOCS 24/12-2

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Depth unit of measure: m

Depth	Typ	Lithology	MNR	DMNR	BPhR	2/1MP	MPI1	MPI2	Rc	DBT/P	4/1MDBT	(3+2) /1MDBT	Sample
4290.00	com	bulk	-	-	-	0.76	0.62	0.67	0.77	0.29	-	-	0326-0B
4320.00	com	bulk	0.40	1.55	0.06	0.77	0.62	0.70	0.77	-	-	-	0327-0B
4395.00	com	bulk	-	-	-	1.65	1.06	1.51	1.04	-	-	-	0328-0B
4445.00	com	bulk	-	-	-	1.29	0.50	0.56	0.70	0.40	-	-	0329-0B
4515.00	com	bulk	-	-	-	0.76	0.66	0.76	0.80	-	-	-	0330-0B
4555.00	com	bulk	-	-	-	1.60	1.14	1.64	1.08	-	-	-	0331-0B
4635.00	com	bulk	-	-	-	0.71	0.56	0.63	0.74	-	-	-	0332-0B
4695.00	com	bulk	-	-	-	0.81	0.63	0.72	0.78	-	-	-	0333-0B
4775.00	com	bulk	-	-	-	1.21	0.98	1.13	0.99	0.19	-	-	0334-0B
4825.00	com	bulk	-	1.49	-	1.36	1.04	1.20	1.02	0.20	59.02	13.03	0335-0B
4895.00	com	bulk	-	-	-	1.68	1.15	1.38	1.09	0.14	-	-	0336-0B
4960.00	ccp	S/Sst : m gy	-	-	-	2.29	1.57	1.76	1.34	-	-	-	0321-1L
4965.00	ccp	Sh/Clst: drk gy	-	-	-	4.03	1.22	1.48	1.13	0.07	-	-	0322-1L
4977.50	com	bulk	-	-	-	3.18	1.18	1.43	1.11	0.08	427.88	73.12	0337-0B
5035.00	com	bulk	-	3.91	1.05	3.51	1.27	1.53	1.16	0.13	-	-	0338-0B

Table 6 : Aromatic Hydrocarbon Ratios for well NOCS 24/12-2

Depth unit of measure: m

Depth	Typ	Lithology	MNR	DMNR	BPhR	2/1MP	MP11	MP12	Rc	DBT/P	4/1MDBT	(3+2) /1MDBT	Sample
5095.00	com	bulk	-	-	-	2.92	1.14	1.37	1.08	0.12	82.48	14.23	0339-0B

Table 7 : Thermal Maturity Data for well NOCS 24/12-2

Depth unit of measure: m

Depth Typ Lithology	Vitrinite Reflectance (%)	Number of Readings	Standard Deviation	Spore Fluorescence Colour	SCI	T _{max} (°C)	Sample
4262.00 cut bulk	0.81	1	0.00	0	-	-	0152-0B
4270.00 cut Sh/Clst: brn blk to drk brn	-	-	-	-	NDP	445	0154-2L
4295.00 cut bulk	0.90	1	0.00	8 (?)	-	-	0159-0B
4320.00 cut Sh/Clst: gy blk to brn blk	-	-	-	-	7.5(?)	454	0164-2L
4360.00 cut bulk	0.83	2	0.04	0	-	-	0172-0B
4365.00 cut Sh/Clst: gy blk to brn blk	-	-	-	-	7.0-8.0	453	0173-1L
4405.00 cut Sh/Clst: gy blk to brn blk	-	-	-	-	7.5-8.0	453	0181-1L
4410.00 cut bulk	0.90	15	0.07	0	-	-	0182-0B
4455.00 cut Sh/Clst: gy blk to brn blk	-	-	-	-	7.5-8.0	442	0191-1L
4490.00 cut bulk	0.83	2	0.02	0	-	-	0198-0B
4535.00 cut Sh/Clst: gy blk to brn blk	-	-	-	-	8.0(?)	431	0207-1L
4540.00 cut bulk	0.88	13	0.11	0	-	-	0208-0B
4590.00 cut bulk	0.97	1	0.00	0	-	-	0218-0B
4635.00 cut Sh/Clst: gy blk to brn blk	-	-	-	-	8.0-8.5	427	0227-1L

Table 7 : Thermal Maturity Data for well NOCS 24/12-2

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Depth unit of measure: m

Depth	Typ Lithology	Vitrinite Reflectance (%)	Number of Readings	Standard Deviation	Spore Fluorescence Colour	SCI	T _{max} (°C)	Sample
4640.00	cut bulk	0.90	3	0.10	0	-	-	0228-0B
4690.00	cut bulk	1.09	5	0.06	0	-	-	0238-0B
4725.00	cut Sh/Clst: gy blk to brn blk	-	-	-	-	8.5-9.0(?)	399	0245-1L
4770.00	cut bulk	1.32	10	0.13	0	-	-	0254-0B
4805.00	cut Sh/Clst: gy blk	-	-	-	-	7.5	448	0261-1L
4845.00	cut bulk	1.34	8	0.15	0	-	-	0269-0B
4875.00	cut Sh/Clst: gy blk to drk gy	-	-	-	-	7.5-8.0	459	0275-1L
4930.00	cut bulk	NDP	-	-	0	-	-	0286-0B
4935.00	cut Sltst : brn gy	-	-	-	-	8.5	424	0287-5L
4965.00	ccp Sh/Clst: drk gy	-	-	-	-	8.0-8.5	521	0322-1L
4977.50	ccp Sh/Clst: drk gy	-	-	-	-	7.5-8.0	485	0325-1L
5020.00	cut bulk	1.68	15	0.14	0	-	-	0304-0B
5095.00	cut Sh/Clst: gy blk to drk gy	-	-	-	-	8.5(+)	476	0319-1L
5100.00	cut bulk	1.66	10	0.10	0	-	-	0320-0B

Table 8 : Visual Kerogen Composition Data for well NOCS 24/12-2

Depth unit of measure: m

Depth	Typ	Lithology	I P T %	A l t %	L t %	S p o c %	C o c %	R e s i d u e %	A l k a l i n e %	D i f f e r e n t i a l %	A r o m a t i c %	I n f u s i o n %	S e n s i t i v e %	M e t h o d %	S t r o n g %	V o l a t i l %	T e l l u r i c %	C o l l o i d %	V o l a t i l %	A r o m a t i c %	Sample
4270.00	cut	Sh/Clst: brn blk to drk brn	90	**	*		*	*	*	TR		*	**			10	*	*			0154-2L
4320.00	cut	Sh/Clst: gy blk to brn blk	60	**	*		*	*	*	TR		*	**			40	*		*		0164-2L
4365.00	cut	Sh/Clst: gy blk to brn blk	NDP							NDP						NDP					0173-1L
4405.00	cut	Sh/Clst: gy blk to brn blk	50	**	*	*		*	*	5	*	*				45	*	*	*		0181-1L
4455.00	cut	Sh/Clst: gy blk to brn blk	40	**	*		*	*		50	**	*				10	*		**		0191-1L
4535.00	cut	Sh/Clst: gy blk to brn blk	50	**	*		*	*	*	10		*				40	*	*	**		0207-1L
4635.00	cut	Sh/Clst: gy blk to brn blk	50	**	*	*		*	*	40	*	*				10	*	*			0227-1L
4725.00	cut	Sh/Clst: gy blk to brn blk	NDP							NDP						NDP					0245-1L
4805.00	cut	Sh/Clst: gy blk	35	**	**		*			15	*	**				50	**	**	*		0261-1L
4875.00	cut	Sh/Clst: gy blk to drk gy	25	**	**		*			25	*	**				50	**	*			0275-1L
4935.00	cut	Sltst : brn gy	35	**	*				*	25	*	*				40	*	*			0287-5L
4965.00	ccp	Sh/Clst: drk gy	15	*	*		*	*	*	45	*	**				40	**	*			0322-1L

Table 8 : Visual Kerogen Composition Data for well NOCS 24/12-2

Depth unit of measure: m

Depth	Typ	Lithology	L	A	L	S	C	R	A	D	I	S	I	M	S	V	C	V	A	Sample		
			%	L	t	l	l	n	e	l	t	L	%	n	s	t	n	o	I		%	n
4977.50	ccp	Sh/Clst: drk gy	30	**	*	*	*	*	*	35	*	**				35	**	*	*	0325-1L		
5095.00	cut	Sh/Clst: gy blk to drk gy	35	**	*	*	*	*	*	10	*	**				55	*	*	**	0319-1L		

Table 9B : Tabulation of cv values from carbon isotope data for well NOCS 24/12-2

Depth unit of measure: m

<u>Depth</u>	<u>Typ</u>	<u>Lithology</u>	<u>Saturated</u>	<u>Aromatic</u>	<u>cv value</u>	<u>Sample</u>
4320.00	com	Composite sample	-29.98	-28.95	-0.07	0327-0B
4445.00	com	Composite sample	-28.63	-27.80	-0.93	0329-0B
4895.00	com	Composite sample	-27.08	-25.65	-0.08	0336-0B

Table 9A : Tabulation of carbon isotope data for EOM/HOM - Fractions or Oils for well NOCS 24/12-2

Depth unit of measure: m

Depth	Typ Lithology	EOM/OIL	Saturated	Aromatic	NSO	Asphaltenes	Kerogen	Sample
4320.00	com Composite sample	-29.73	-29.98	-28.95	-29.11	-29.07	-	0327-0B
4445.00	com Composite sample	-28.61	-28.63	-27.80	-27.84	-27.91	-	0329-0B
4895.00	com Composite sample	-25.63	-27.08	-25.65	-26.08	-26.24	-	0336-0B

Table 10A: Variation in Triterpane Distribution for Well NOCS 24/12-2

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Depth unit of measure: m

Depth	Lithology	B/A	B/B+A	B		C/E	C/C+E	X/E	Z/E	Z/C	Z/Z+E	Q/E	E/E+F	C+D		J1		Sample
				B+E+F										C+D+E+F	D+F/C+E	J1+J2%		
4320.00	Sh/Clst	0.07	0.07	0.14		0.40	0.32	1.35	0.18	0.38	0.15	1.49	0.84	0.29	0.13	65.89	0327-0	
4395.00	Sh/Clst	0.48	0.33	0.16		0.83	0.45	0.25	0.21	0.25	0.18	0.62	0.95	0.47	0.09	65.63	0328-0	
4445.00	Sh/Clst	0.95	0.49	0.21		0.92	0.48	0.09	0.10	0.11	0.09	0.63	0.89	0.48	0.13	59.49	0329-0	
4635.00	Sh/Clst	1.06	0.52	0.21		0.99	0.50	0.10	0.18	0.18	0.15	0.64	0.91	0.51	0.13	56.72	0332-0	
4895.00	Sh/Clst	0.97	0.49	0.21		0.77	0.44	0.05	0.02	0.03	0.02	0.65	1.00	0.47	0.07	51.35	0336-0	
4960.00	S/Sst	1.05	0.51	0.15		0.76	0.43	0.02	0.03	0.04	0.03	0.45	0.94	0.44	0.07	63.25	0321-1	

Table 10B: Variation in Sterane Distribution (peak height) for Well NOCS 24/12-2

Depth unit of measure: m

Depth	Lithology	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9	Ratio10	Sample
4320.00	Sh/Clst	0.82	48.74	83.12	1.29	0.83	0.53	0.39	0.71	0.95	4.80	0327-0
4395.00	Sh/Clst	0.87	48.07	80.83	1.46	0.81	0.54	0.46	0.68	0.93	4.06	0328-0
4445.00	Sh/Clst	0.64	34.90	75.73	0.98	0.82	0.62	0.50	0.61	0.54	2.40	0329-0
4635.00	Sh/Clst	0.63	32.28	77.57	0.95	0.84	0.47	0.35	0.63	0.48	2.55	0332-0
4895.00	Sh/Clst	0.50	52.80	71.91	1.01	0.71	0.62	0.51	0.56	1.12	2.71	0336-0
4960.00	S/Sst	0.61	38.07	70.68	1.05	0.76	0.73	0.66	0.55	0.61	1.95	0321-1

Ratio1: $a / a + j$
 Ratio2: $q / q + t * 100\%$
 Ratio3: $2(r + s) / (q + t + 2(r + s)) * 100\%$
 Ratio4: $a + b + c + d / h + k + l + n$
 Ratio5: $r + s / r + s + q$

Ratio6: $u + v / u + v + q + r + s + t$
 Ratio7: $u + v / u + v + i + m + n + q + r + s + t$
 Ratio8: $r + s / q + r + s + t$
 Ratio9: q / t
 Ratio10: $r + s / t$

Table 10C: Raw GCMS triterpane data (peak height) for Well NOCS 24/12-2

Depth unit of measure: m

Depth	Lithology	p		q		r		s		t		a		b		z		c	Sample
		x		d		e		f		g		h		i		j1			
		j2	k1	k2	l1	l2	m1	m2											
4320.00	Sh/Clst	67.35	48.63	29.90	14.06	18.22	91.44	6.44	5.98	15.62	0327-0								
		44.00	0.00	32.64	6.10	13.33	12.27	16.01	17.75										
		9.19	19.70	3.47	0.00	0.00	0.00	0.00											
4395.00	Sh/Clst	25.78	15.29	10.17	5.69	4.33	10.61	5.11	5.21	20.48	0328-0								
		6.17	2.69	24.55	1.39	7.44	8.20	1.91	7.39										
		3.87	6.66	3.49	2.91	2.66	4.00	5.23											
4445.00	Sh/Clst	76.85	34.44	27.42	15.44	6.91	16.91	16.04	5.60	50.73	0329-0								
		4.99	6.98	54.85	6.45	20.99	19.64	3.78	16.23										
		11.05	11.43	6.86	9.02	6.69	7.81	4.99											
4635.00	Sh/Clst	184.07	84.73	66.93	34.13	30.17	37.40	39.73	23.78	131.45	0332-0								
		13.28	20.50	132.19	13.19	65.41	56.14	4.48	43.96										
		33.54	40.95	21.98	23.07	15.44	21.57	13.21											
4895.00	Sh/Clst	14.41	7.47	4.17	2.02	1.50	3.21	3.10	0.26	8.94	0336-0								
		0.58	1.36	11.54	0.00	5.37	3.64	0.00	2.47										
		2.34	3.12	1.08	0.00	0.00	0.00	0.00											

Table 10C: Raw GCMS triterpane data (peak height) for Well NOCS 24/12-2

Depth unit of measure: m

Depth	Lithology	p	q	r	s	t	a	b	z	c	Sample
		x	d	e	f	g	h	i	j1		
		j2	k1	k2	l1	l2	m1	m2			
4960.00	S/Sst	152.96	51.11	20.96	17.06	6.24	20.74	21.77	3.11	85.39	0321-1
		2.27	7.12	112.53	7.52	45.21	32.51	3.04	31.89		
		18.53	21.91	13.02	12.83	8.01	8.94	5.74			

Table 10D: Raw GCMS sterane data (peak height) for Well NOCS 24/12-2

Depth unit of measure: m

Depth	Lithology	u	v	a	b	c	d	e	f	g	Sample
		h	i	j	k	l	m	n	o		
		p	q	r	s	t					
4320.00	Sh/Clst	112.32 134.91 0.00	35.15 59.66 18.18	113.31 37.38 46.42	112.63 89.55 45.40	49.59 42.06 19.12	54.74 6.83	63.74 36.94	64.72 46.65	47.70	0327-0
4395.00	Sh/Clst	22.26 13.79 1.61	4.64 3.90 3.49	21.82 3.19 8.52	13.31 8.29 6.79	2.94 3.84 3.77	5.48 1.81	6.28 3.81	7.28 2.63	4.53	0328-0
4445.00	Sh/Clst	45.61 20.82 4.54	13.12 12.25 4.84	20.03 11.06 12.65	14.08 12.03 8.99	4.12 2.85 9.03	3.64 3.06	6.92 6.92	8.11 5.65	11.13	0329-0
4635.00	Sh/Clst	61.45 53.14 12.57	27.59 33.99 11.66	50.80 30.02 32.97	26.06 31.89 29.49	7.14 8.73 24.46	23.48 12.64	21.84 19.77	18.22 20.03	26.81	0332-0
4895.00	Sh/Clst	6.55 2.13 0.67	2.72 1.18 1.32	2.26 2.29 1.77	1.80 1.64 1.43	0.53 0.74 1.18	0.85 1.23	0.58 0.90	1.22 1.43	1.02	0336-0

Depth unit of measure: m

Depth	Lithology	u	v	a	b	c	d	e	f	g	Sample
		h	i	j	k	l	m	n	o		
		p	q	r	s	t					
4960.00	S/Sst	94.07	24.28	15.01	9.06	3.12	4.61	3.23	5.60	7.56	0321-1
		14.32	5.76	9.53	6.24	2.13	2.23	7.55	7.69		
		4.71	7.61	13.01	11.08	12.38					

Depth unit of measure: m

Depth	Lithology	Ratio1	Ratio2	Sample
4320.00	Sh/Clst	0.78	0.50	0327-0
4395.00	Sh/Clst	0.77	0.87	0328-0
4445.00	Sh/Clst	0.68	0.96	0329-0
4635.00	Sh/Clst	0.83	0.73	0332-0
4895.00	Sh/Clst	0.98	0.16	0336-0
4960.00	S/Sst	0.74	1.00	0321-1

$$\text{Ratio1: } \frac{\text{C1+D1+E1+F1+G1+H1+I1}}{\text{C1+D1+E1+F1+G1+H1+I1} + \text{c1+d1+e1+f1+g1}}$$

$$\text{Ratio2: } \text{g1} / \text{g1} + \text{I1}$$

Depth unit of measure: m

Depth	Lithology	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Sample
4320.00	Sh/Clst	0.96	0.93	0.87	0.88	0.93	0327-0
4395.00	Sh/Clst	0.89	0.83	0.74	0.78	0.85	0328-0
4445.00	Sh/Clst	0.79	0.73	0.55	0.57	0.68	0329-0
4635.00	Sh/Clst	0.94	0.87	0.78	0.81	0.87	0332-0
4895.00	Sh/Clst	0.87	0.86	0.71	0.67	0.78	0336-0
4960.00	S/Sst	0.68	0.51	0.38	0.45	0.56	0321-1

Ratio1: a1 / a1 + g1

Ratio2: b1 / b1 + g1

Ratio3: a1 + b1 / a1 + b1 + c1 + d1 + e1 + f1 + g1

Ratio4: a1 / a1 + e1 + f1 + g1

Ratio5: a1 / a1 + d1

Depth unit of measure: m

Depth	Lithology	Ratio1	Ratio2	Ratio3	Ratio4	Sample
4320.00	Sh/Clst	0.69	0.34	0.47	0.20	0327-0
4395.00	Sh/Clst	0.54	0.25	0.19	0.09	0328-0
4445.00	Sh/Clst	0.55	0.27	0.14	0.08	0329-0
4635.00	Sh/Clst	0.33	0.11	0.08	0.04	0332-0
4895.00	Sh/Clst	0.03	-	0.01	-	0336-0
4960.00	S/Sst	0.53	0.27	0.15	0.11	0321-1

Ratio1: Al / Al + E1
 Ratio2: B1 / B1 + E1

Ratio3: Al / Al + E1 + G1
 Ratio4: Al+B1 / Al+B1+C1+D1+E1+F1+G1+H1+I1

Table 10H: Raw GCMS trioaromatic sterane data (peak height) for Well NOCS 24/12-2

Depth unit of measure: m

Depth	Lithology	a1	b1	c1	d1	e1	f1	g1	Sample
4320.00	Sh/Clst	179.75	105.20	6.40	12.70	10.47	6.08	7.75	0327-0
4395.00	Sh/Clst	41.06	24.87	4.22	7.47	3.45	3.42	4.98	0328-0
4445.00	Sh/Clst	69.99	50.64	10.54	33.46	16.29	17.74	19.12	0329-0
4635.00	Sh/Clst	50.85	23.85	1.45	7.77	4.90	3.79	3.45	0332-0
4895.00	Sh/Clst	18.73	16.79	0.00	5.24	4.04	2.20	2.82	0336-0
4960.00	S/Sst	5.24	2.54	1.90	4.08	2.65	1.36	2.47	0321-1

Depth unit of measure: m

Depth	Lithology	al	bl	cl	dl	el	fl	gl	hl	il	Sample
4320.00	Sh/Clst	30.76	7.11	20.78	0.00	13.51	7.41	20.96	85.40	7.61	0327-0
4395.00	Sh/Clst	6.19	1.69	4.67	0.00	5.18	1.26	21.73	47.27	0.77	0328-0
4445.00	Sh/Clst	14.54	4.40	54.38	4.00	11.70	0.00	80.37	56.16	0.85	0329-0
4635.00	Sh/Clst	3.38	0.80	4.65	0.00	6.84	1.00	31.30	55.68	1.28	0332-0
4895.00	Sh/Clst	3.14	0.00	92.20	0.00	107.93	27.58	166.27	495.79	14.81	0336-0
4960.00	S/Sst	3.31	1.09	2.70	0.00	2.99	0.00	15.22	14.08	0.00	0321-1