Well: 25/6-3 Urd

Rig: Byford Dolphin

DRILLING FLUIDS PROGRAM

HOLE		CASING		MUD TYPE	MW	PV	10 sec.	10 min.	YP	Fann 3 rpm	Funnel Visc.	Silicate	API FL	HTHP FL	MBT	pH	KCl	Pm	Pf	Glycol
SIZE	TVD MD	SIZE	TVD MD		[SG]	[cP]	[Pa]	[Pa]	[Pa]	lb100sqft	[sec/l]	[% V/V]	[ml]	[ml]	[kg/m³]		[kg/m³]	[ml]	[ml]	[%]
36"	195.5 195.5	30"	192.6 192.6	Sea water/ Bentonite	1.03-1.35						100									
				Comments: Displaced to 1.35 SG bentonite mud prior to running 30" conductor																
17 1/2"	1215 1215	13 3/8"	1206 1206	Sea water/ Bentonite	1.03-1.25						min=126 max=131		7.2-7.4			9				
				Comments: Displaced to 1.25 SG bentonite/CMC mud prior to running casing. Kept fluid loss below 7.5 ml.																
8 1/2"	2475 2475	0	0 0	Sildril	1.28	11-20	3.5-8.0	4.5-10.0	11.5-15.8	7-12		6.5-8.0	2.3-6.0		<42	11.3-12.0	125-145	19-23	15-22	
				Comments:																

STATOIL

Standard geochemical study of well 25/6-3 (Urd prospect)

1 Summary

Two samples with high S1 values were found to be contaminated with Marcol 82, a refined oil used to drill plugs on the rig. Marcol 82 contains a large hump centred on n-C23, but it also has its own suite of biomarkers which are different to both the indigenous compounds and those in the drilling muds from the rig.

The Sildril mud as obtained from the drilling company was found to be free of organic additives, but the sample collected from the rig prior to drilling, plus the three mud samples collected during drilling, all contained two major components (alkenes?) plus a series of minor peaks including n-alkanes and oil window-mature biomarkers. The biomarkers from the drilling mud appear to have contaminated the sand sample from the Hermod Formation analysed by GCMS.

Thus no migrated hydrocarbons were identified, whilst in situ hydrocarbons were present in low abundance in the rock samples. The latter were also contaminated either by Marcol 82 (highly contaminated in two instances) or organics in the drilling mud (low level). Both the Marcol 82 and the drilling mud contain their own suite of biomarkers, which differ to those identified as being in situ in the shale.

3 Analytical programme

The full analytical programme is given in the Appendix, but Table 1 summarises the depth, formation and lithology of the samples analysed. All analytical work was carried out by Geolab Nor in accordance with the Norwegian Industry Guide to Organic Geochemical Analyses, 3rd Edition. The shales were analysed as controls for the sands, in order to help assess the relative contribution in the sands of hydrocarbons from local shales versus migrated petroleum. In addition, five mud samples were analysed (Table 1). These were a mud from the drilling company laboratory, a mud from the rig prior to use (referred to as "mud prior" in the Appendix), and three muds collected during drilling.

The rock samples were analysed by TOC and Rock Eval, whilst all samples were extracted (except for the Marcol 82 oil which was analysed as a whole oil) and run as whole extract/oil GCs. Four samples (one shale, one sand, one mud and the Marcol 82 oil) were analysed by whole extract/oil GCMS (Table 1).

4 Results and Discussion

All the data referred to here are provided in the Appendix.

4 .1 Mud samples

The mud sample from the laboratory gave an entirely featureless gas chromatogram, indicating no organic additives were present. However, GC of both the "mud prior" to drilling from the rig, and the three muds from the well, revealed two major peaks (probably alkenes based on GCMS) as well as a series of minor peaks including what appears to be a homologous series of n-alkanes (Fig. 2). This indicated quite clearly that organic components were added to the mud, presumably on the rig, after it left the laboratory.

Table 1. Samples analysed

Depth m MD RKB	Sample type	Lithology		Comment	Analysed by GCMS
2068.6	core	shale		control	✔
2082.07	core	sand			
2087.21	core	shale		control	
2087.24	core	sand			✔
2097.31	core	sand			
2277	cutt	shale		control	
2286	cutt	shale		control	
2295	cutt	sand			
2334	cutt	sand			
2344	swc	sand			
2349	swc	sand			
0	mud			Sildril mud from drilling co. lab	
0	mud			mud from rig before drilling ("prior")	✔
1260	mud				
2061	mud				
2310	mud				
0	Marcol 82 oil			used for drilling core plugs on rig	✔

Table 2. Biomarker ratios from GCMS analysis

	Sample type	Notes	20S	bb	22S	Ts/Tm	Ttx	30D	30AB-HOP	%C27	%C28	%C29	C30
	core shale		0.06	0.23	0.66	0.56	0.06	0.03	0.82	18	36	45	0.12
	core sand		0.18	0.33	0.49	0.59	0.39	0.11	0.85	34	31	36	0.32
	"mud prior"	mud sample from rig prior to use	0.51	0.55	0.62	1.12	0.00	0.00	0.93	40	32	28	-
	Marcol 82	oil used to drill core plugs on rig	0.50	0.66	0.62	2.53	0.45	0.06	0.94	49	25	26	0.03

	Sample type	Notes	Dia/reg	28ab/H	H/S	3R/H	4R/H	35/34H	29/30H	29/30H	O/H	G/H
	core shale		0.13	0.04	7.48	0.02	0.03	0.80	0.42	0.05	0.27	0.38
	core sand		0.72	0.00	5.19	0.69	0.22	-	0.65	0.08	0.21	0.07
	"mud prior"	mud sample from rig prior to use	0.85	0.12	3.19	0.80	0.23	-	0.66	0.09	0.09	0.03
	Marcol 82	oil used to drill core plugs on rig	5.19	0.07	2.70	5.52	2.05	0.72	1.34	0.05	0.00	0.02

GEOCHEMICAL DATA REPORT

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TITLE

Geochemical Data Report for Well NOCS 25/6-3

AUTHOR(S)

Ian L. Ferriday

GEOLAB PROJECT NO.	DATE
62530	February 29, 2000
PROJECT MANAGER	QA RESPONSIBLE
Ian L. Ferriday, Sr. Scientist	Sunil Bharati, Laboratory Manager
REPORT NO./FILE	FRONT PAGE
62530	1 of 1

Comments

Samples of core-plugs, sidewall cores and cuttings from well NOCS 25/6-3 over the interval 2068.60 - 2349 m were received for analysis. The cuttings samples were grouped into a more limited number of composite samples according to Statoil's instructions (see below). The resulting sample set was subjected to normal screening analyses, followed by solvent extraction with extract GC. These analyses curtailed the program, revealing either hydrocarbons of no economic interest or contaminant hydrocarbons. The origin of the latter was unknown, and subsequently additional samples of muds were analysed, the virgin mud (Sildril) having been already been analysed prior to drilling. A sample of oil used during the plugging process (Marcol-82) was also provided and requested analysed. A limited number of analysed core/cuttings samples were re-picked and re-analysed in order to eliminate the Geolab laboratory as the source of the contamination, which they did. Finally, limited whole-extract GC-MS was performed on two rock samples and one mud sample plus the Marcol oil.

Composite cuttings samples:
2277m = 2274 + 2277m
2286m = 2280 + 2283 + 2286m
2295m = 2289 + 2292 + 2295m
2334m = 2328 + 2331 + 2334m

Table 1: Analytical Program for Well NOCS 25/6-3

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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	MPLC & Deasphaltene	EOM GC	Whole Oil GC	Sat GC (Quantitative)	Aro GC (Non Quantitiative	EOM GCMS (Quantitative	Aro GCMS (Non-Q)	Isotope of EOM/fractions	Vitrinite Reflectance	Visual kerogen
Table nos.				3			5	5					8	8					11				
2068.60	pS			x	x		x	x					x		x				x				
2082.07	pR			x	xX			xX					x		x								
2087.21	pS			x	xX		x	xX					x		x								
2087.24	pR			x	xX			xX					x		x				x				
2097.31	pR			x	xX			xX					x		x								
2277.00	cS			x	x	x		x			x		x		x								
2286.00	cS			x	x	x		x			x		x		x								
2295.00	cR			x	x	x		x			x		x		x								
2334.00	cR			x	x	x		x			x		x		x								
2344.00	sR			x	x			x					x		x								
2349.00	sR			x	x			x					x		x								
(X = Re-analysed at Statoil's request/cost)																							
Muds / Additives:																							
		Sildril' mud, from laboratory													x								
0.00		Mud from rig prior to drilling											x		x				x				
1260.00		Mud sampled while drilling											x		x								
2061.00		Mud sampled while drilling											x		x								
2310.00		Mud sampled while drilling											x		x								
	Marcol-82	Oil used in plugging													x				x				
Totals				11	15	4	2	15			4		15		17				4				
Sample type: cS cuttings in source rock, pS coreplug in source rock,.																							
		cR cuttings in reservoir rock, pR coreplug in reservoir rock, sR sidewall core in reservoir rock																					

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Table 3 : Lithology description for well NOCS 25/6-3

Depth unit of measure: m

Depth Int	Depth Cvd	Type TOC%	%	Lithology description	Trb	Sample
2068.60		ccp				0001
			100	Sh/Clst: m gy to drk gy		0001-1L
2082.07		ccp				0002
			100	S/Sst : w to brn gy, cem		0002-1L
2087.21		ccp				0003
			100	Sh/Clst: m gy to drk gy		0003-1L
2087.24		ccp				0004
			100	S/Sst : lt gy		0004-1L
2097.31		ccp				0005
			100	S/Sst : lt gy		0005-1L
2277.00						0006
			100	Sh/Clst: lt gy to drk gy, slt		0006-1L
2286.00						0007
			100	Sh/Clst: lt gy to drk gy, slt		0007-1L
			tr	Ca : brn gy		0007-2L
			tr	Sh/Clst: gy red		0007-3L
2295.00						0008
			50	Sh/Clst: lt gy to m gy to lt brn gy to lt gy gn, slt		0008-1L
			50	S/Sst : w to lt gy, crs, l		0008-4L
			tr	Ca : brn gy		0008-2L
			tr	Sh/Clst: gy red		0008-3L

Table 3 : Lithology description for well NOCS 25/6-3

Depth unit of measure: m

Depth		Type			Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
2334.00						0009
			95	S/Sst : w to lt gy, crs, l		0009-4L
			5	Sh/Clst: lt gy to m gy to lt brn gy to lt gy gn, slt		0009-1L
			tr	Ca : brn gy		0009-2L
			tr	Sh/Clst: gy red		0009-3L
2344.00	swc					0010
			100	S/Sst : w to lt gy, crs, cem		0010-1L
2349.00	swc					0011
			100	S/Sst : w to lt gy, crs, cem		0011-1L

Table 5A: Rock-Eval table for well NOCS 25/6-3

Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
2068.60	ccp	Sh/Clst: m gy to drk gy	0.11	2.71	-	-	1.38	196	-	2.8	0.04	430	0001-1L
2082.07	ccp	S/Sst : w to brn gy	1.29	0.05	-	-	-	-	-	1.3	0.96	418	0002-1L
2087.21	ccp	Sh/Clst: m gy to drk gy	0.30	5.71	-	-	2.74	208	-	6.0	0.05	422	0003-1L
2087.24	ccp	S/Sst : lt gy	0.02	0.05	-	-	-	-	-	0.1	0.29	419	0004-1L
2097.31	ccp	S/Sst : lt gy	7.44	0.36	-	-	-	-	-	7.8	0.95	419	0005-1L
2277.00	cut	Sh/Clst: lt gy to drk gy	0.02	0.63	-	-	-	-	-	0.6	0.03	434	0006-1L
2286.00	cut	Sh/Clst: lt gy to drk gy	0.02	0.57	-	-	-	-	-	0.6	0.03	434	0007-1L
2295.00	cut	S/Sst : w to lt gy	0.01	0.03	-	-	-	-	-	0.0	0.25	424	0008-4L
2334.00	cut	S/Sst : w to lt gy	0.01	0.05	-	-	-	-	-	0.1	0.17	429	0009-4L
2344.00	swc	S/Sst : w to lt gy	0.02	0.10	-	-	-	-	-	0.1	0.17	610	0010-1L
2349.00	swc	S/Sst : w to lt gy	0.05	0.10	-	-	-	-	-	0.2	0.33	610	0011-1L

Results of Re-Analyses:

Sample	S1	S2
2082.07	1.23	0.09
2087.21	0.35	6.27
2087.24	0.01	0.05
2097.31	3.70	0.09

Table 5B: Rock-Eval table for well BLACK VEN MARL

Depth unit of measure: m

Depth	Typ	Form	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
1.00	n/a		bulk	0.31	18.96	-	-	-	-	-	19.3	0.02	421	0221-0B
2.00	n/a		bulk	0.33	18.90	-	-	-	-	-	19.2	0.02	418	0222-0B

Table 8a: MPLC Bulk Composition: Weight of EOM and Fraction for well NOCS 25/6-3

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
2068.60	ccp	Sh/Clst: m gy to drk gy	8.6	7.3	-	-	-	-	-	-	1.38	0001-1L
2082.07	ccp	S/Sst : w to brn gy	11.0	8.9	-	-	-	-	-	-	0.17	0002-1L
2087.21	ccp	Sh/Clst: m gy to drk gy	10.2	17.7	-	-	-	-	-	-	2.74	0003-1L
2087.24	ccp	S/Sst : lt gy	9.8	1.0	-	-	-	-	-	-	0.09	0004-1L
2097.31	ccp	S/Sst : lt gy	9.9	20.3	-	-	-	-	-	-	0.33	0005-1L
2277.00	cut	Sh/Clst: lt gy to drk gy	9.4	4.9	-	-	-	-	-	-	0.82	0006-1L
2286.00	cut	Sh/Clst: lt gy to drk gy	9.6	2.7	-	-	-	-	-	-	0.74	0007-1L
2295.00	cut	S/Sst : w to lt gy	4.2	0.2	-	-	-	-	-	-	0.07	0008-4L
2334.00	cut	S/Sst : w to lt gy	8.0	0.6	-	-	-	-	-	-	0.10	0009-4L
2344.00	swc	S/Sst : w to lt gy	4.0	0.5	-	-	-	-	-	-	0.07	0010-1L
2349.00	swc	S/Sst : w to lt gy	4.5	0.3	-	-	-	-	-	-	0.15	0011-1L

Table 8b: MPLC Bulk Composition: Concentration of EOM and Fraction (wt ppm rock) for well NOCS 25/6-3

Depth unit of measure: m

Depth	Typ	Lithology	EOM	Sat	Aro	Asph	NSO	HC	Non-HC	Sample
2068.60	ccp	Sh/Clst: m gy to drk gy	848	-	-	-	-	-	-	0001-1L
2082.07	ccp	S/Sst : w to brn gy	810	-	-	-	-	-	-	0002-1L
2087.21	ccp	Sh/Clst: m gy to drk gy	1731	-	-	-	-	-	-	0003-1L
2087.24	ccp	S/Sst : lt gy	101	-	-	-	-	-	-	0004-1L
2097.31	ccp	S/Sst : lt gy	2060	-	-	-	-	-	-	0005-1L
2277.00	cut	Sh/Clst: lt gy to drk gy	519	-	-	-	-	-	-	0006-1L
2286.00	cut	Sh/Clst: lt gy to drk gy	282	-	-	-	-	-	-	0007-1L
2295.00	cut	S/Sst : w to lt gy	47	-	-	-	-	-	-	0008-4L
2334.00	cut	S/Sst : w to lt gy	74	-	-	-	-	-	-	0009-4L
2344.00	swc	S/Sst : w to lt gy	124	-	-	-	-	-	-	0010-1L
2349.00	swc	S/Sst : w to lt gy	66	-	-	-	-	-	-	0011-1L

Table 8c: MPLC Bulk Composition: Concentration of EOM and Fraction (mg/g TOC(e)) for well NOCS 25/6-3

Depth unit of measure: m

Depth	Typ	Lithology	EOM	Sat	Aro	Asph	NSO	HC	Non-HC	Sample
2068.60	ccp	Sh/Clst: m gy to drk gy	61.51	-	-	-	-	-	-	0001-1L
2082.07	ccp	S/Sst : w to brn gy	476.80	-	-	-	-	-	-	0002-1L
2087.21	ccp	Sh/Clst: m gy to drk gy	63.21	-	-	-	-	-	-	0003-1L
2087.24	ccp	S/Sst : lt gy	113.15	-	-	-	-	-	-	0004-1L
2097.31	ccp	S/Sst : lt gy	624.52	-	-	-	-	-	-	0005-1L
2277.00	cut	Sh/Clst: lt gy to drk gy	63.30	-	-	-	-	-	-	0006-1L
2286.00	cut	Sh/Clst: lt gy to drk gy	38.21	-	-	-	-	-	-	0007-1L
2295.00	cut	S/Sst : w to lt gy	68.19	-	-	-	-	-	-	0008-4L
2334.00	cut	S/Sst : w to lt gy	74.91	-	-	-	-	-	-	0009-4L
2344.00	swc	S/Sst : w to lt gy	177.24	-	-	-	-	-	-	0010-1L
2349.00	swc	S/Sst : w to lt gy	44.64	-	-	-	-	-	-	0011-1L

Table 8d: MPLC Bulk Composition: Material extracted from the rock (%) for well NOCS 25/6-3

Depth unit of measure: m

Depth	Typ	Lithology	Sat	Aro	Asph	NSO	Total	HC	Non-HC	Recov. MPLC	Recov. Asph	Sample
2068.60	ccp	Sh/Clst: m gy to drk gy	-	-	-	-	-	-	-	-	-	0001-1L
2082.07	ccp	S/Sst : w to brn gy	-	-	-	-	-	-	-	-	-	0002-1L
2087.21	ccp	Sh/Clst: m gy to drk gy	-	-	-	-	-	-	-	-	-	0003-1L
2087.24	ccp	S/Sst : lt gy	-	-	-	-	-	-	-	-	-	0004-1L
2097.31	ccp	S/Sst : lt gy	-	-	-	-	-	-	-	-	-	0005-1L
2277.00	cut	Sh/Clst: lt gy to drk gy	-	-	-	-	-	-	-	-	-	0006-1L
2286.00	cut	Sh/Clst: lt gy to drk gy	-	-	-	-	-	-	-	-	-	0007-1L
2295.00	cut	S/Sst : w to lt gy	-	-	-	-	-	-	-	-	-	0008-4L
2334.00	cut	S/Sst : w to lt gy	-	-	-	-	-	-	-	-	-	0009-4L
2344.00	swc	S/Sst : w to lt gy	-	-	-	-	-	-	-	-	-	0010-1L
2349.00	swc	S/Sst : w to lt gy	-	-	-	-	-	-	-	-	-	0011-1L

Table 8e: MPLC Bulk Composition: Ratios for well NOCS 25/6-3

Depth unit of measure: m

Depth	Typ	Lithology	Sat Aro	HC Non-HC	Asp NSO	Sample
2068.60	ccp	Sh/Clst: m gy to drk gy	-	-	-	0001-1L
2082.07	ccp	S/Sst : w to brn gy	-	-	-	0002-1L
2087.21	ccp	Sh/Clst: m gy to drk gy	-	-	-	0003-1L
2087.24	ccp	S/Sst : lt gy	-	-	-	0004-1L
2097.31	ccp	S/Sst : lt gy	-	-	-	0005-1L
2277.00	cut	Sh/Clst: lt gy to drk gy	-	-	-	0006-1L
2286.00	cut	Sh/Clst: lt gy to drk gy	-	-	-	0007-1L
2295.00	cut	S/Sst : w to lt gy	-	-	-	0008-4L
2334.00	cut	S/Sst : w to lt gy	-	-	-	0009-4L
2344.00	swc	S/Sst : w to lt gy	-	-	-	0010-1L
2349.00	swc	S/Sst : w to lt gy	-	-	-	0011-1L

Table 11a: Variation in Triterpane Distribution (peak height) SIR for 25/6-3

Well	Descript.	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9	Rat.10	Rat.11	Rat.12	Rat.13	Rat.14	Sample
25/6-3	2068.60m	1.80	0.64	0.09	0.42	0.30	0.03	0.04	0.10	0.04	0.02	0.82	0.41	0.46	65.68	T74/0001
25/6-3	2087.24m	1.68	0.63	0.21	0.65	0.40	0.11	-	-	-	0.32	0.85	0.44	0.28	48.63	T74/0004
25/6-3	MUD "PRIOR	0.90	0.47	0.20	0.66	0.40	-	0.12	0.18	0.11	0.37	0.93	0.42	0.12	61.53	T78/0001
25/6-3	marcol-82	0.39	0.28	0.23	1.34	0.57	0.06	0.07	0.06	0.07	2.34	0.94	0.58	0.08	61.94	T78/0005

List of Triterpane Distribution Ratios

Ratio 1: 27Tm / 27Ts

Ratio 2: 27Tm / 27Tm+27Ts

Ratio 3: 27Tm / 27Tm+30aß+30ßa

Ratio 4: 29aß / 30aß

Ratio 5: 29aß / 29aß+30aß

Ratio 6: 30d / 30aß

Ratio 7: 28aß / 30aß

Ratio 8: 28aß / 29aß

Ratio 9: 28aß / 28aß+30aß

Ratio 10: 24/3 / 30aß

Ratio 11: 30aß / 30aß+30ßa

Ratio 12: 29aß+29ßa / 29aß+29ßa+30aß+30ßa

Ratio 13: 29ßa+30ßa / 29aß+30aß

Ratio 14: 32aßS / 32aßS+32aßR (%)

Table 11b: Variation in Sterane Distribution (peak height) SIR for 25/6-3

Well	Descript.	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9	Ratio10	Sample
25/6-3	2068.60m	0.08	5.89	37.57	0.67	0.84	0.07	0.06	0.23	0.06	0.32	T74/0001
25/6-3	2087.24m	0.37	17.95	49.29	1.35	0.73	0.42	0.34	0.33	0.22	0.59	T74/0004
25/6-3	MUD "PRIOR	0.44	50.57	70.99	1.23	0.71	0.65	0.50	0.55	1.02	2.47	T78/0001
25/6-3	marcol-82	0.89	49.88	79.58	2.95	0.80	0.90	0.81	0.66	1.00	3.89	T78/0005

List of Sterane Distribution Ratios

Ratio 1: 27dßS / 27dßS+27aaR

Ratio 2: 29aaS / 29aaS+29aaR (%)

Ratio 3: 2*(29ßßR+29ßßS) / (29aaS+29aaR + 2*(29ßßR+29ßßS)) (%)

Ratio 4: 27dßS+27dßR+27daR+27daS / 29dßS+29dßR+29daR+29daS

Ratio 5: 29ßßR+29ßßS / 29ßßR+29ßßS+29aaS

Ratio 6: 21a+22a / 21a+22a+29aaS+29ßßR+29ßßS+29aaR

Ratio 7: 21a+22a / 21a+22a+28daS+28aaS+29daR+29aaS+29ßßR+29ßßS+29aaR

Ratio 8: 29ßßR+29ßßS / 29aaS+29ßßR+29ßßS+29aaR

Ratio 9: 29aaS / 29aaR

Ratio 10: 29ßßR+29ßßS / 29aaR

Table 11c: Raw triterpane data (peak height) m/z 191 SIR for 25/6-3

Well	Descript.	23/3	24/3	25/3	24/4	26/3	27Ts	27Tm	28aß	25nor30aß	Sample
		29aß	29Ts	30d	29ßa	30O	30aß	30ßa	30G	31aßS	
		31aßR	32aßS	32aßR	33aßS	33aßR	34aßS	34aßR	35aßS	35aßR	
25/6-3	2068.60m	720.4	734.5	511.2	1037.8	353.5	2559.8	4595.6	1623.7	1926.5	T74/0001
		15736.0	6065.1	966.1	16210.1	10064.5	37326.0	8205.0	3553.8	4987.1	
		16759.0	8952.2	4677.4	1230.1	3325.4	2742.7	1853.2	780.0	2888.3	
25/6-3	2087.24m	239.4	112.7	39.1	75.4	23.1	63.3	106.4	0.0	27.1	T74/0004
		227.6	85.1	39.1	101.1	74.5	348.2	62.0	29.4	90.3	
		119.4	66.4	70.1	40.3	24.0	0.0	0.0	0.0	0.0	
25/6-3	MUD "PRIOR	131.1	61.4	21.1	38.0	20.7	50.4	45.2	19.6	14.9	T78/0001
		107.7	38.7	0.0	19.8	15.0	164.2	13.0	18.0	59.8	
		43.0	39.3	24.6	33.0	17.7	19.7	14.6	0.0	0.0	
25/6-3	marcol-82	35475.3	15047.1	5325.1	13166.1	2364.6	5274.1	2083.3	475.0	335.7	T78/0005
		8612.0	2170.8	355.3	788.6	0.0	6422.0	440.4	228.0	2270.7	
		1550.1	1064.7	654.2	509.3	327.0	201.2	134.7	150.6	92.5	

Table 11d: Raw sterane data (peak height) m/z 217 SIR for 25/6-3

Well	Descript.	21a	22a	27dßS	27dßR	27daR	27daS	28dßS	28dßR	28daR*	Sample
		29dßS*	28daS*	27aaR	29dßR	29daR	28aaS	29daS*	28ßßS		
		28aaR	29aaS	29ßßR	29ßßS	29aaR					
25/6-3	2068.60m	2989.6	726.3	2500.2	2491.1	1210.6	2708.0	1470.0	1746.7	8375.6	T74/0001
		2221.1	1729.3	29499.4	2762.9	1691.0	1924.2	6663.3	1671.0		
		20533.7	2105.3	8634.5	2120.9	33640.4					
25/6-3	2087.24m	147.3	46.5	77.1	56.9	32.1	34.9	42.4	34.9	56.1	T74/0004
		36.6	40.4	129.0	41.7	19.7	19.2	50.3	23.6		
		106.8	32.1	60.4	26.6	146.9					
25/6-3	MUD "PRIOR	81.7	63.9	46.9	38.2	17.4	24.1	25.6	17.2	39.0	T78/0001
		33.9	42.6	60.7	24.9	18.9	0.0	25.1	34.5		
		17.2	18.0	24.2	19.5	17.6					
25/6-3	marcol-82	19684.5	7240.6	8017.2	5256.8	2188.4	2036.6	2313.3	1555.0	1605.8	T78/0005
		2363.5	1829.8	951.3	1808.6	826.4	517.1	925.9	906.9		
		244.1	482.6	1058.9	826.2	484.9					

* 28daR coel with 27aaS, 29dßS coel with 27ßßR, 28daS coel with 27ßßS, 29daS coel with 28ßßR

Table 11e: Raw sterane data (peak height) m/z 218 SIR for 25/6-3

Well	Descript.	27ßßR	27ßßS	28ßßR	28ßßS	29ßßR	29ßßS	30ßßR	30ßßS	Sample
25/6-3	2068.60m	1777.6	1494.6	4011.5	2413.7	5141.1	2924.0	792.9	1391.2	T74/0001
25/6-3	2087.24m	43.1	42.2	38.4	39.4	54.0	37.2	43.4	38.0	T74/0004
25/6-3	MUD "PRIOR	39.1	43.1	23.2	42.3	27.9	29.0	0.0	0.0	T78/0001
25/6-3	marcol-82	3077.3	2437.2	1413.9	1441.7	1564.6	1380.9	200.7	175.1	T78/0005

Table 11f: Raw triterpane data (peak height) m/z 177 SIR for 25/6-3

Well	Descript.	25nor28aß	25nor30aß	Sample
25/6-3	2068.60m	2813.7	1090.5	T74/0001
25/6-3	2087.24m	98.6	0.0	T74/0004
25/6-3	MUD "PRIOR	0.0	0.0	T78/0001
25/6-3	marcol-82	933.1	260.8	T78/0005

Table 12a: Variation in Triaromatic Sterane Distribution (peak height) for 25/6-3

Well	Descript.	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Sample
25/6-3	2068.60m	0.33	0.39	0.24	0.19	0.31	T74/0001
25/6-3	2087.24m	0.45	0.48	0.28	0.23	0.41	T74/0004
25/6-3	MUD "PRIOR	0.47	0.52	0.36	0.27	0.58	T78/0001
25/6-3	marcol-82	-	-	-	-	-	T78/0005

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

Table 12b: Variation in Monoaromatic Sterane Distribution (peak height) for 25/6-3

Well	Descript.	Ratio1	Ratio2	Ratio3	Ratio4	Sample
25/6-3	2068.60m	0.18	0.11	0.07	0.06	T74/0001
25/6-3	2087.24m	0.43	0.27	0.24	0.19	T74/0004
25/6-3	MUD "PRIOR	0.54	0.33	0.36	0.27	T78/0001
25/6-3	marcol-82	-	-	-	-	T78/0005

Ratio1: A1 / A1 + E1
Ratio2: B1 / B1 + E1

Ratio3: A1 / A1 + E1 + G1
Ratio4: A1+B1 / A1+B1+C1+D1+E1+F1+G1+H1+I1

Table 12c: Aromatisation of Steranes (peak height) for 25/6-3

Well	Descript.	Ratio1	Ratio2	Sample
25/6-3	2068.60m	0.92	0.19	T74/0001
25/6-3	2087.24m	0.71	0.52	T74/0004
25/6-3	MUD "PRIOR	0.62	0.62	T78/0001
25/6-3	marcol-82	-	-	T78/0005

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

Ratio2: g1 / g1 + I1

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Table 12d: Raw monoaromatic sterane data (peak height) m/z 253 for 25/6-3

Well	Descript.	A1	B1	C1	D1	E1	F1	G1	H1	I1	Sample
25/6-3	2068.60m	2453.3	1422.0	1749.1	3923.6	11142.4	746.4	22086.0	16845.4	6288.0	T74/0001
25/6-3	2087.24m	56.4	27.8	27.9	47.6	75.2	0.0	104.2	75.2	29.4	T74/0004
25/6-3	MUD "PRIOR	32.3	13.5	15.3	19.5	27.1	0.0	29.1	18.1	13.2	T78/0001
25/6-3	marcol-82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T78/0005

Table 12e: Raw triaromatic sterane data (peak height) m/z 231 for 25/6-3

Well	Descript.	a1	b1	c1	d1	e1	f1	g1	Sample
25/6-3	2068.60m	754.1	972.1	606.7	1708.0	972.4	779.8	1522.7	T74/0001
25/6-3	2087.24m	26.4	29.4	18.9	37.6	27.8	28.6	31.9	T74/0004
25/6-3	MUD "PRIOR	19.2	23.4	10.1	13.8	10.2	18.6	21.8	T78/0001
25/6-3	marcol-82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T78/0005