

3.3

FMT pressures

Three FMT runs (Run 3A, 4B and 4C) were performed in the 8½" hole section. Run 3A was performed, after having drilled 10 metres into the reservoir, to check the reservoir pressure. Five pressure points were attempted, but no reliable pressure points were obtained; two were tight and three had seal problems.

Nineteen pressure points were attempted, in run 4B. Nine were good, one fair and nine points were tight. The HP gauge failed, after nine pressure measurements. Run 4B was therefore completed using the strain gauge. An oil gradient of 7.61 kPa/m (0.766 g/cm³) was calculated using the three pressure measurements at 3334.0 m, 3335.4 m and 3336.5 m RKB. Seven of the pressure measurements with the HP gauge seem to be good, but using all of them for calculation of a fluid gradient, gives 10.04 kPa/m (1.023 g/cm³), which is not in agreement with the results from drillstem test number 2, that produced oil. Using the same pressure points, measured with the strain gauge, a gradient of 15.50 kPa/m (1.58 g/cm³) is calculated, giving an overestimated gradient for water.

No oil-water contact was encountered in the well.

Run 4C was a sampling run.

SAMPLING

Two segregated samples were taken, one in run 4B and one in run 4C. Sampling depth for run 4B, was 3334.0 m RKB. A 2¾ gallon and a 1 gallon chamber were run. Both chambers were bled off at the wellsite, due to zero opening pressure on both. The 2¾ gallon chamber contained 10 litres water/mudfiltrate and the 1 gallon chamber contained 4 litres of water/mudfiltrate.

Other results:

CO₂ : 0.5 %

H₂S : 0 ppm

Cl⁻ : 11000 ppm (2¾ gallon chamber)

Cl⁻ : 16500 ppm (1 gallon chamber)

In run 4C a segregated sample was taken at 3335.4 m RKB. Two 2¾ gallon chambers were run and both chambers were bled off at the wellsite. The upper chamber filled in 4½ minutes and contained 9.1 litres of mudfiltrate/water. The opening pressure was zero.

Other results:

H₂S : 0 ppm
CO₂ : 0.5 %
Cl⁻ : 10000 ppm
Total hardness : 1280 ppm
Ca⁺⁺ : 1000 ppm
pH : 7.4

It took 3 minutes to fill the lower chamber which contained 9.5 litres mudfiltrate/water with a thin oil film on top (approximately 100 - 200 ml). The opening pressure was measured to 1400 kPa.

Other results:

H₂S : 0 ppm
CO₂ : 0.5 %
Salinity : 24400 ppm
Cl⁻ : 13890 ppm
Total hardness : 4000 ppm
pH : 7.23 at 23 °C
Oil density : 870 kg/m³

Traces of gas, was measured, with the following breakdown:

C₁ : 76094 ppm
C₂ : 34495 ppm
C₃ : 27895 ppm
C₄ : 11948 ppm
C₅ : 2259 ppm

All pressure measurements are summarized in table 3.3.1 on the next page and a graphical presentation is presented in figure 3.3.1. A graphical presentation of the HP gauge pressure measurements with the gradient interpretation is presented in figure 3.3.2.

FMT PRESSURES

Run no.	Depth m MD RKB	Hydr. press kPa	Form. press kPa	Comment
HP GAUGE				
3A	3329.0	64145	-	Lost seal
3A	3329.5	64245	-	Lost seal
3A	3328.0	64194	65512	Tight, supercharged
3A	3333.8	64338	65537	Tight, supercharged
3A	3316.0	63706	-	No seal
4B	3334.0	66880	63030	Good
4B	3335.4	66905	63041	Good
4B	3336.1	66937	63072	Fair
4B	3336.5	66920	63049	Good
4B	3337.2	66930	63059	Good
4B	3338.0	66898	63070	Good
4B	3338.5	66884	63074	Good
4B	3340.5	66914	63093	Good
4B	3343.5	66983	63396	Tight, supercharged
STRAIN GAUGE				
4B	3334.0	66880	63252	Good
4B	3335.4	66905	63230	Good
4B	3336.1	66937	63264	Fair
4B	3336.5	66920	63249	Good
4B	3337.2	66930	63269	Good
4B	3338.0	66898	63289	Good
4B	3338.5	66884	63295	Good
4B	3340.5	66914	63321	Good
4B	3343.5	66983	63642	Tight, supercharged
4B	3344.0	67231	63415	Good
4B	3345.9	67251	63401	Good
4B	3348.5	67312	65486	Tight, supercharged
4B	3349.5	67318	65580	Tight, supercharged
4B	3356.5	67506	67313	Tight, supercharged
4B	3356.4	67498	66670	Tight, supercharged
4B	3366.5	67792	-	Tight
4B	3370.5	67893	-	Tight
4B	3374.2	67967	66442	Tight, supercharged
4B	3374.4	67896	66715	Tight, supercharged
4B	3334.0	66582	63400	Segregated sample
4C	3335.4	66944	63020	Segregated sample

Table 3.3.1

WELL TESTING

In DST 1, two metres, from 3348 m to 3350 m RKB were perforated. No reservoir fluid was produced to surface, but oil was trapped between two valves in the test string and the string content was also reversed out and directed to tank. Approximately 15 litres of oil were recovered from the test.

The well was perforated from 3333 m to 3342 m RKB in DST number 2. It produced 784 Sm³/d of oil through a 24/64" (9.53 mm) choke, with a wellhead pressure of 15218 kPa and a temperature of 80 °C. The gas-oil ratio was measured to 20 Sm³/Sm³ with a separator pressure of 2032 - 2150 kPa and a separator temperature of 65 - 71 °C.

Anchor Drilling Fluids			Mud volume distribution summary							Anchor Drilling Fluids	
WELL: 7/7-2			AREA: NORTH SEA				RIG: DEEPSEA BERGEN				
Hole size	Hole From-to	Hole Length	Mud/brine Built	Dumped	Lost to Formation	Lost on surface equipment	Mud left between csg/csg plus left in hole	cuttings volume drilled	Mud transf. to next section	Mud type used for interval	
inch	m	m	m3	m3	m3	m3	m3	m3	m3		
36	105-168	63	955	672				41,37	283	CMC EHV/SEAWATER	
26	168-904	736	1887	2160				252,08	10	CMC EHV/SEAWATER	
17 1/2	904-2744	1840	2149	995		762	127	285,57	275	KCL/PHPA/PAC	
12 1/4	2744-3328	584	968	535	35	205	60	44,38	408	ANCOTHERM	
8 1/2	3328-3430	102	251	215		45		3,73	399	ANCOTHERM	
TEST, P & A	-	-	437	604		140	92	-	0	ANCOTHERM	
TOTALS											
Start volume:			0	m3	Total mud/Brine left/lost downhole:			314	m3		
Mud/Brine built:			6647	m3	Total mud/Brine to sea:			6333	m3		
Mud/Brine dumped:			5181	m3	Total cuttings volume drilled:			627,14	m3		
Mud/Brine lost to formation:			35	m3							
Mud/Brine lost over solids control equipment:			1152	m3	COMMENTS: 36" SECTION: Returns to seabed.						
Mud/Brine left between csg/csg plus left in hole:			279	m3	26" SECTION: Returns to seabed.						
Final volume:			0	m3	17 1/2" SECTION: 127 m3 left behind casing.						
					12 1/4" SECTION: 60 m3 left behind casing.						
					TEST, P & A SECTION: Net 92 m3 left in hole (162 m3 minus 70 m3 gained from behind casings on P & A).						

MUD PROPERTIES SUMMARY

DRILLING MUD PROPERTIES RECORD

WELL NO: 77-2 AREA: NORTH SEA

DAY no.	DATE 1992	DEPTH mtrs	HOLE SIZE Inch	MW S.G.	F.VIS s/qt.	VG-METER READINGS								AV cpe	PV cpe	YP Pa	GEL		pH	API ml	HTHP ml	Cl- mg/l	PI ml	MI ml	TOT. H mg/l	Ca++ mg/l	SOLIDS vol%	OIL vol%	SAND vol%	MBT kg/m3	KCL kg/m3	HGS kg/m3	LGS kg/m3
						600 rpm	300 rpm	200 rpm	100 rpm	60 rpm	30 rpm	6 rpm	3 rpm				10sec Pa	10min Pa															
90	15-apr	3377	TEST	2,00		70	42	33	21	17	12	6	5	35	28	7	4,5	25	9	3,5		6000	0,15	1,5	520	480	33	0	TR	35		1228	98
91	16-apr	3377	TEST	2,00	60	68	38	28	18	13	9	3	2	34	30	4	1,5	19	9	3		5000	0,05	1,8	560	560	33	0	TR	35		1228	98
92	17-apr	3377	TEST	2,00	45	64	36	26	15	12	8	4	3	32	28	4	1,5	12	9	3,2		5000	0,1	1,5	520	520	33	0	TR	35		1228	98
93	18-apr	3377	TEST	2,00		60	45	33	19	14	9	3	2	40	35	5	1	9	8,8	4,5		2800	0,2	2,4	520	520	33	0	TR	40		1228	98
94	19-apr		P & A	2,00	84	76	43	32	19	15	10	4	3	38	33	5	2	22	8,8	4,1		3000	0,1	2,2	520	520	33	0	TR	42		1228	98
95	20-apr		P & A	2,00		72	40	32	18	13	9	3	2	36	32	4	1,5	14	9,1	4		3000	0,3	2	520	520	33	0	TR	42		1228	98
96	21-apr		P & A	2,00	58	75	42	32	18	13	9	3	2	37,5	33	4,5	2	22	9,5	4,3		3000	0,4	2,5	480	480	33	0	TR	42		1228	98
97	22-apr		P & A	1,80	52	52	30	22	14	10	7	2	1	26	22	4	2	8	9,4	5,2		2400	0,3	2,4	320	320	23	0	TR	46			
98	23-apr		P & A	1,80	87	81	50	34	23	20	12	6	5	40,5	31	9,5	4	40	10,5	7,2		6500	0,5	1,2	350	350	23	0	TR	46			
99	24-apr		P & A	1,80	88	75	47	36	24	19	13	8	7	37,5	28	9,5	3	39	11,5	7,6		9800	0,6	2,4	440	440	23	0	TR	50			
100	25-apr		P & A																														

REPORT**EXPLORATION DIVISION**

Title: WELLSITE GEOCHEMICAL EVALUATION OF THE RESERVOIR, 7/7-2 <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;">BA-92-1250-1</div>	Reportno.:	
	Contractno/Projectno.:	
	Document-ID no.:	Budgetno.:

Security classification: NONE	24 JUN 1992 <div style="border: 1px solid black; padding: 5px; text-align: center;"> REGISTRERT OLJEDIREKTORATET </div>	Distribution: STATOIL AMARADA HESS AMOCO TOTAL NORWEGIAN PETROLEUM DIRECTORATE
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Date issues: 92.06.02	Number of examples:
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No. of pages:	No. of enclosures:	No. of copies: 7	Text operator: Kjell Øygard, UND LS
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Author(s) Source(s): Kjell Øygard, UND LS

Requested by: UND LS	Division giving approval: UND
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1 INTRODUCTION

One of the reasons for using the Geofina Hydrocarbon Meter (GHM) on well 7/7-2 was to give a rapid and reliable answer as to whether there were hydrocarbons both qualitatively (type of hydrocarbons) and quantitatively (S1 + S2-saturation). Another reason was to define the gas/oil/water contacts if there were hydrocarbons in the reservoir. This data is important to be able to make good plans for a test programme. Previous experience with GHM has shown that the saturation of hydrocarbons in the sample can be estimated within 10 minutes of the sample being taken, and after 70 minutes the type of hydrocarbon present can be determined. The analysis must be performed on cores, side wall cores or cuttings.

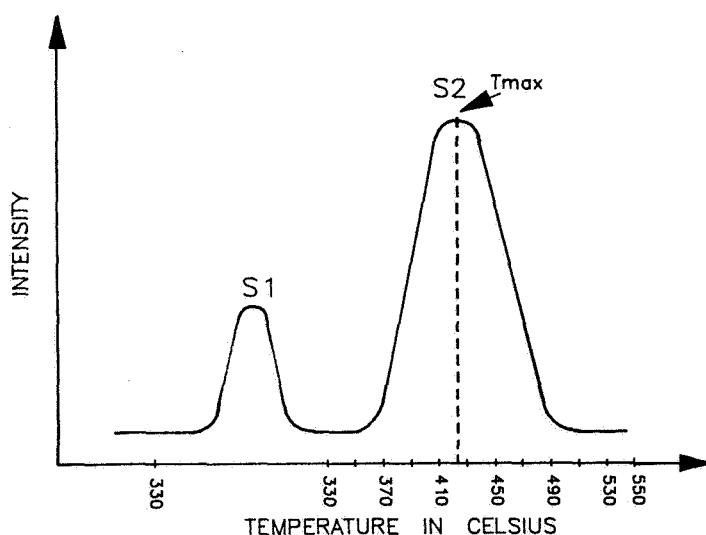
2 THERMAL EXTRACTION AND PYROLYSIS

Thermal extraction and pyrolysis is a technique developed as a laboratory instrument in the 1970's. Originally the instrument was developed for source rock analysis, to assess the potential a rock has to generate hydrocarbons. The simplest instruments can estimate the total thermal extractable organic matter and the total amount of pyrolysis product. In the early eighties various instrument companies connected a gas chromatographic column to the injector to get a gas chromatogram of the free hydrocarbons and the pyrolysis product, for example CDS, Pyran and GHM. The gas chromatogram can reveal the type of hydrocarbons present in the rock, and what type of hydrocarbons the rock has or will generate.

Most of the instruments are built up in a similar way:

About 30 mg of a rock is crushed and weighed into a crucible. The crucible is then placed in a heatingblock, which is subjected to a continuous flow of helium. The temperature in the heatingblock is 330 °C. At this temperature no cracking of chemical bonding occurs. However at this temperature the free hydrocarbons from C1 and up to ca. C35 are converted into a gas phase and carried by the helium flow to a detector. The hydrocarbons are registered as one peak, called S1, see figure 1.

Figure 1. Bulk pyrogram which shows S1, S2 and Tmax.



In nature the generation of hydrocarbons from kerogen occurs between temperatures of 60 - 170 °C over millions of years. To increase the reaction the temperature in the heating block is raised by 25 °C/min to about 550 °C. Chemical bonds in kerogen and asphaltenes are broken, and smaller molecules are generated. This artificial maturation is called pyrolysis. The new smaller molecules are in a gas phase and are carried by the stream of helium gas to the detector. The detector registers the amount of hydrocarbons generated through the temperature increase, and this peak is called S2, see figure 1. The temperature where there is maximum generation of hydrocarbons is called Tmax. Tmax is a parameter indicating maturity. The chemical bonds with the lowest activation energy are the first bonds which are broken. In a kerogen which has already been subjected to a high temperature history, the bonds with the lowest activation energies have already been broken. For such kerogen, higher energy (temperature) is required to break the remaining chemical bonds, which is the reason for the registered higher Tmax values in mature samples compared to immature samples.

To get a gas chromatogram of the free hydrocarbons, about 1/30 of the free hydrocarbons is collected and passed into a gas chromatographic column. The hydrocarbons are retained at the beginning of the column in liquid nitrogen (-196°C). The thermal extractable matter is processed in one column and the pyrolysate in another. After pyrolysis, the liquid nitrogen is recovered from the GC-oven. The hydrocarbons in the two columns are separated by increasing boiling point and registered at two separate detectors, see figure 2.

Figure 2. Flow diagram of the GHM system.

GEOFINA HYDROCARBON METER.

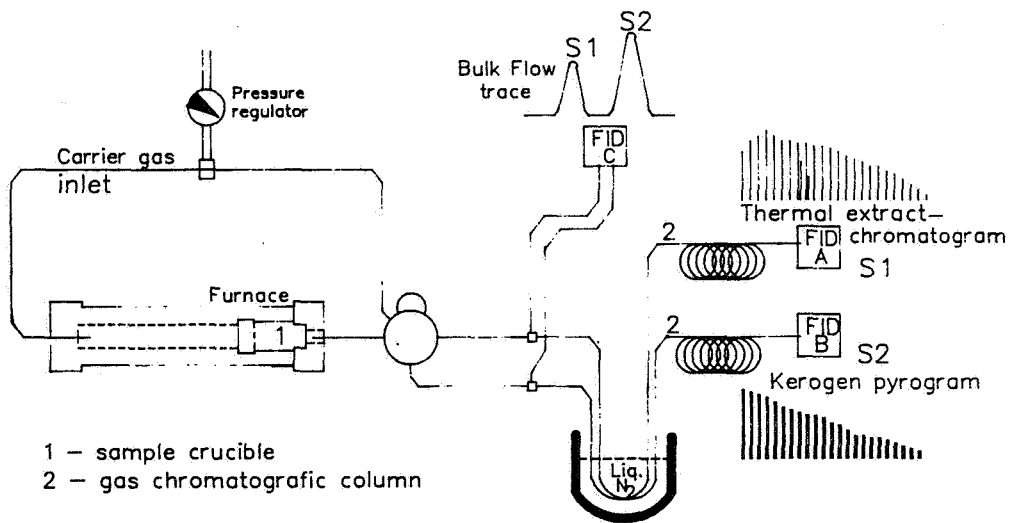


Table 3.1. The GHM results of samples from well 7/7-2.

Sample depth mRKB	Sample type	Lith.	S1 (kg HC/ton rock)	S2	PP	PI S1/PP	Tmax °C	He por.	S1+S2 satu.
	JUNK B.	SHALE	6.65	15.84	22.49	0.30	438		
3334	CUT	SST	6.81	4.59	11.40	0.60			
3335	CUT	SST	7.18	0.60	7.78	0.92			
3338	CUT	SST	7.07	3.91	10.98	0.64			
3338	CORE 3	SST	5.50	1.41	6.91	0.80	415	0.19	11.8
3339.2	CORE 3	SST	7.13	2.48	9.60	0.74	412	0.21	14.6
3341	CORE 3	SST	12.05	5.38	17.43	0.69	409	0.27	19.9
3343	CORE 3	SST	0.03	0.01	0.04	0.68		0.20	0.1
3345	CORE 3	SST	6.29	0.71	7.00	0.90	389	0.22	10.2
3346	CORE 3	SST	4.69	0.59	5.28	0.89		0.20	8.7
3347	CORE 3	SST	4.32	0.56	4.89	0.88	405		
3348	CORE 3	SST	0.01	0.01	0.03	0.54		0.15	0.1
3348.6	CORE 3	SST	0.05	0.06	0.12	0.45			
3350	CORE 4	SST	0.06	0.02	0.08	0.72			
3353	CORE 4	SST	0.02	0.01	0.03	0.55			
3357	CORE 4	SST	0.02	0.02	0.03	0.47			

Table 3.2. The ratio of n-C17, n-C18, pristane and phytane. The intensity of the peaks is measured by a ruler.

Sample depth mRKB	Sample type	Lith.	A = Pr/C17	B = Ph/C18	$\frac{A}{B}$	Pr/Ph
	JUNK B.	SHALE	0.76	0.60	1.26	1.57
3334	CUT	SST	0.77	0.80	0.95	1.08
3335	CUT	SST	0.51	0.54	0.94	1.00
3338	CUT	SST	0.56	0.58	0.95	0.96
3338	CORE 3	SST	0.54	0.56	0.97	1.03
3339.2	CORE 3	SST	0.61	0.63	0.98	1.04
3341	CORE 3	SST	0.64	0.66	0.98	1.05
3343	CORE 3	SST	0.54	0.66	0.81	0.69
3345	CORE 3	SST	0.52	0.56	0.92	0.99
3346	CORE 3	SST	0.47	0.55	0.85	0.95
3347	CORE 3	SST	0.54	0.58	0.92	1.00
3348	CORE 3	SST				
3348.6	CORE 3	SST				
3350	CORE 4	SST				
3353	CORE 4	SST				
3357	CORE 4	SST				



Report no.
GEOLAB
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SECTOR FOR PETROLEUM TECHNOLOGY
Geological laboratories

Grading

Title Geochemical analysis report for well NOCS 717-2	
Requested by Kjell Øygard, UND LS/BAS	Project
Date 22/10/92	No. of pages
	No. of enclosures

BA-92-2257-1
28 OKT. 1992
REGISTRERT
OLJESEKTOR/4127

Keywords

Organic geochemistry, source rocks, oil & gas analyses

[Empty box]

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Chapter 1

INTRODUCTION

1.1 General Comments

The organic geochemical study for NOCS 7/7-2 was performed on behalf of Statoil, with emphasis on detailed geochemical analyses of potential source rocks, as well as the migrated hydrocarbons.

Well NOCS 7/7-2 is situated in the northern part of the Ekofisk area, north-west of the Cod field (Figure 1). A total of 89 samples (40 cuttings, 32 side wall cores, 14 core chips, 2 oil samples and 1 gas sample) was received by Geolab Nor for geochemical analyses. First, the screening analyses were carried out on samples selected by Statoil; based on the results obtained, a detailed follow-up analytical program was chalked out by Statoil. For the detailed analytical program, side wall cores, core chips, cuttings, the two oils and the gas sample were used.

This report is presented chapter and section wise, in a chronological order of analyses carried out, beginning with lithologic descriptions, screening analyses and followed by the detailed geochemical analyses. Within each section the results are discussed in a stratigraphic context (top to bottom). However, the chapters including the aromatic hydrocarbon GC and GC-MS are divided in sections treating potential source rocks and migrated hydrocarbons separately.

1.2 Analytical Program

In accordance with the contract, sample availability and the screening analyses results, the following analytical program was executed for well NOCS 77-2 in the section from 1000 m to 3430 m (TD):

<u>Analysis type</u>	<u>No of samples</u>	<u>Figures</u>	<u>Tables</u>
Washing	38		
Lithology description	59		1
TOC analysis	45	2	2
Rock-Eval pyrolysis	30	3,4,5	2
Rock-Eval pyrolysis, extracted samples	7		2
Introspect	22		3a-b
Thermal extraction GC (GHM, S ₁)	8	6a-b	
Pyrolysis GC (GHM, S ₂)	8	7a-b,8	4
Gas analyses	1		5a-c
API gravity and topping	2		13
Soxhlet Extraction of organic matter	11		
MPLC/HPLC separation	13		6a-d
Saturated hydrocarbon GC	13	9a-e	7
Aromatic hydrocarbon GC	13	10a-j	8
Vitrinite reflectance	24	11	9
Visual kerogen microscopy	7	12	9,10
Isotope composition of C ₁₅ + fractions	2	13,14	11
GC - MS of saturated and aromatic HC	13	15a-p	12a-i

All the samples, including core chips, side wall cores, cuttings, oils and gas sample were supplied by Statoil.

- 1-

Table 1 : Lithology description for well NOCS 7/7-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description			
1000.00						0013
		100	Sh/Clst: m gy to drk gy, slt			0013-1L
1100.00						0014
	1.54	100	Sh/Clst: drk gy, slt			0014-1L
1200.00						0016
	4.77	65	Sh/Clst: drk gy to gy blk, pyr, slt			0016-1L
		35	Sh/Clst: lt gy to lt gn gy, slt, glauc			0016-2L
			tr Cont : prp			0016-3L
1300.00						0017
		90	Sh/Clst: brn gy to dsk y brn to m gy, pyr, slt			0017-1L
		10	Sh/Clst: lt gy to lt gn gy, slt, glauc			0017-2L
			tr Cont : prp			0017-3L
1400.00						0018
		100	Sh/Clst: dsk y brn to gy blk, pyr, slt			0018-1L
			tr Cont : prp			0018-2L
1500.00						0019
	5.07	100	Sh/Clst: dsk y brn to m gy, pyr, slt			0019-1L
			tr Ca : w, f			0019-2L

- 2-

Table 1 : Lithology description for well NOCS 7/7-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
1600.00						0020
				80 Sh/Clst: brn gy to m gy, slt		0020-1L
				15 Sh/Clst: lt gy to y gy, slt		0020-2L
				5 Other : gn gy to lt gn gy, glauc		0020-3L
				tr S/Sst : w, l		0020-4L
1700.00						0021
				90 Sh/Clst: dsk y brn to m gy, slt		0021-1L
				10 Sh/Clst: lt gy to y gy, slt		0021-2L
				tr Cont : prp		0021-3L
1800.00						0022
	2.34			95 Sh/Clst: m gy to dsk y brn, slt		0022-1L
				5 Sh/Clst: lt gy to y gy, slt		0022-2L
				tr Cont : prp		0022-3L
1900.00						0023
				95 Sh/Clst: m gy to dsk y brn, slt		0023-1L
				5 Sh/Clst: lt gy to y gy, slt		0023-2L
				tr Cont : prp		0023-3L
				tr Other : gy brn, dol		0023-4L
2000.00						0024
				95 Sh/Clst: m gy to dsk y brn, slt		0024-1L
				5 Sh/Clst: lt gy to y gy, slt		0024-2L
				tr Cont : prp, bar		0024-3L

- 3-

Table 1 : Lithology description for well NOCS 7/7-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
2100.00						0025
				100 Sh/Clst: m gy to dsk y brn, slt tr Cont : prp, bar		0025-1L 0025-2L
2200.00						0026
	4.35			90 Sh/Clst: brn gy to m gy, slt, fos 5 Sh/Clst: y gy, slt 5 Cont : bar, prp		0026-1L 0026-2L 0026-3L
2300.00						0027
	0.50			80 Sh/Clst: lt gy to lt ol gy, pyr, slt 20 Sh/Clst: brn gy, slt tr Cont : bar, prp		0027-1L 0027-2L 0027-3L
2400.00						0028
				70 Sh/Clst: lt gy to lt ol gy, pyr, slt 30 Sh/Clst: brn gy, slt tr Cont : bar, prp		0028-1L 0028-2L 0028-3L
2496.00						0029
				95 Sh/Clst: lt gy to lt ol gy, pyr, slt 5 Sh/Clst: brn gy, slt tr Cont : bar, prp		0029-1L 0029-2L 0029-3L
2601.00						0030
	1.78			90 Sh/Clst: m gy, pyr, slt 5 Sh/Clst: brn gy, slt 5 Sh/Clst: lt gy to lt gn gy tr Ca : lt gy w, f		0030-1L 0030-2L 0030-3L 0030-4L

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Table 1 : Lithology description for well NOCS 7/7-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
2700.00						0031
			45	Sh/Clst: m brn, slt		0031-1L
			30	Sh/Clst: m gy to brn gy, slt		0031-2L
			25	Sh/Clst: lt gy to lt gn gy, slt		0031-3L
2800.00						0032
			100	Ca : w, chk		0032-1L
2900.00						0033
	0.17		100	Ca : w, chk		0033-1L
			tr	Cont : prp		0033-2L
3000.00						0034
			100	Ca : w, chk		0034-1L
			tr	Sh/Clst: lt gy to m gy		0034-2L
3100.00						0035
			60	Ca : w, chk		0035-1L
			40	Ca : red brn to drk red brn, chk		0035-2L
			tr	Cont : prp		0035-3L
3200.00						0036
			85	Sh/Clst: m gy to drk gy to lt gy, slt		0036-1L
			15	Sh/Clst: m brn to drk brn, slt		0036-2L
			tr	Cont : prp		0036-3L

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Table 1 : Lithology description for well NOCS 7/7-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description			
3201.00	swc					0055
	0.48	95	Sh/Clst: drk gy to lt gy, slt			0055-1L
		5	Cont : dd			0055-2L
3238.00	swc					0056
	5.87	100	Sh/Clst: drk gy, slt			0056-1L
			tr Sltst : dd			0056-2L
3242.05	ccp					0051
	3.95	100	Sh/Clst: dsk y brn to drk gy, slt			0051-1L
			tr Cont : dd			0051-2L
3245.05	ccp					0052
	4.97	100	Sh/Clst: gy blk, slt			0052-1L
3248.00						0037
		85	Sh/Clst: m gy to drk gy to brn gy to lt gy, slt			0037-1L
		15	Sh/Clst: m brn to drk brn, slt			0037-2L
			tr Cont : prp			0037-3L
3251.00						0038
	0.42	90	Sh/Clst: m gy to drk gy to brn gy to lt gy, slt			0038-1L
		10	Sh/Clst: m brn to drk brn, slt			0038-2L

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Table 1 : Lithology description for well NOCS 7/7-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
3254.00						0039
	6.46	80	Sh/Clst:	brn gy to drk gy, slt, st		0039-1L
		15	Sh/Clst:	lt gy to m gy, slt		0039-2L
		5	Sh/Clst:	m brn to drk brn, slt		0039-3L
3257.00	swc					0057
	5.79	100	Sh/Clst:	drk gy, slt		0057-1L
			tr Sltst	: dd		0057-2L
3263.00	swc					0058
	6.45	95	Sh/Clst:	drk gy, slt		0058-1L
		5	Sltst	: dd		0058-2L
3266.00	swc					0059
	6.29	95	Sh/Clst:	drk gy, slt		0059-1L
		5	Sltst	: dd		0059-2L
3271.00	swc					0060
	4.34	95	Sh/Clst:	dsk y brn to drk gy, slt		0060-1L
		5	Sltst	: dd		0060-2L
3272.00						0040
	6.60	95	Sh/Clst:	dsk y brn to drk gy to gy blk,		0040-1L
				slt, st		
		5	Sh/Clst:	lt gy to m gy, slt		0040-2L
			tr Sh/Clst:	m brn to drk brn, slt		0040-3L

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Table 1 : Lithology description for well NOCS 7/7-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
3278.00						0041
	5.61	95	Sh/Clst:	dsk y brn to drk gy to gy blk, slt, st		0041-1L
		5	Sh/Clst:	lt gy to m gy, slt		0041-2L
3284.00						0042
	5.23	100	Sh/Clst:	dsk y brn to drk gy to gy blk, slt, st		0042-1L
			tr Sh/Clst:	lt gy to m gy, slt		0042-2L
3290.00						0043
	4.48	100	Sh/Clst:	dsk y brn to drk gy to gy blk, slt, st		0043-1L
			tr Sh/Clst:	lt gy to m gy, slt		0043-2L
			tr Sh/Clst:	m brn, slt		0043-3L
3296.00						0044
	5.13	75	Sh/Clst:	dsk y brn to drk gy to gy blk, slt, st		0044-1L
		15	Sh/Clst:	lt gy to m gy, slt		0044-2L
		10	Sh/Clst:	m brn, slt		0044-3L
3302.00						0045
	3.92	65	Sh/Clst:	gy blk to drk gy, slt, st		0045-1L
		25	Sh/Clst:	lt gy to m gy, slt		0045-2L
		10	Sh/Clst:	m brn, slt		0045-3L

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Table 1 : Lithology description for well NOCS 7/7-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description			
3308.00						0046
	3.29	70	Sh/Clst: gy blk to drk gy, slt, st			0046-1L
		20	Sh/Clst: lt gy to m gy, slt			0046-2L
		10	Sh/Clst: m brn to drk brn, slt			0046-3L
3314.00						0047
	4.01	65	Sh/Clst: gy blk to drk gy, slt, st			0047-1L
		20	Sh/Clst: lt gy to m gy, slt			0047-2L
		10	Sh/Clst: m brn to drk brn, slt			0047-3L
		5	Sltst : lt gy to m gy			0047-4L
3317.00						0062
		95	Sh/Clst: drk gy to gy blk to m gy, calc, pyr, slt			0062-1L
		5	Sh/Clst: m brn to brn gy, slt			0062-2L
		tr	Sltst : lt gy			0062-3L
3320.00						0048
	4.68	60	Sh/Clst: gy blk to brn gy to drk gy, slt			0048-1L
		20	Sh/Clst: lt gy to m gy, slt			0048-2L
		10	Sh/Clst: m brn to drk brn, slt			0048-3L
		10	Sltst : lt gy to m gy, glauc			0048-4L
3323.00						0064
		85	Sh/Clst: brn gy to drk gy to m gy, pyr, slt, glauc, st			0064-1L
		10	Sltst : lt gy w to lt gy, cly, glauc			0064-2L
		5	Sh/Clst: m brn to red brn			0064-3L

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Table 1 : Lithology description for well NOCS 7/7-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description			
3326.00						0049
	3.22	60	Sh/Clst: gy brn to drk gy to gy blk, slt			0049-1L
		20	Sh/Clst: lt gy to m gy, slt			0049-2L
		15	Slstst : lt gy to m gy, s, glauc			0049-3L
		5	Sh/Clst: m brn to drk brn, slt			0049-4L
3328.00						0050
	4.03	55	Sh/Clst: drk gy to gy blk to brn gy, slt			0050-1L
		20	Sh/Clst: lt gy to m gy, slt			0050-2L
		20	Slstst : lt gy to m gy, s, glauc			0050-3L
		5	Sh/Clst: m brn to drk brn, slt			0050-4L
3329.00						0065
		95	Slstst : y gy to lt gy, cly			0065-1L
		5	Sh/Clst: gy blk, slt			0065-2L
		tr	S/Sst : w, f, l			0065-3L
3333.00	swc					0066
		100	Slstst : y gy to lt gy, s, st			0066-1L
3334.00	swc					0067
		100	Slstst : y gy to lt gy, s, st			0067-1L
3335.00	swc					0068
		100	Slstst : y gy to lt gy, s, st			0068-1L

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Table 1 : Lithology description for well NOCS 7/7-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
3337.00	swc					0069
			100	sltst : y gy to lt gy to drk gy, s, cly, st		0069-1L
3341.83	ccp					0053
			100	S/Sst : w, cly, f, hd		0053-1L
3343.16	ccp					0054
			100	S/Sst : lt brn gy, carb, f, st, hd		0054-1L
3344.34	ccp					0001
			100	S/Sst : lt gy to lt brn gy, slt, cly, f, st		0001-1L
3344.80	ccp					0003
			100	S/Sst : brn gy to gy blk, slt, cly, f, st		0003-1L
3345.28	ccp					0004
			100	S/Sst : brn gy to gy blk, slt, cly, f, st		0004-1L
3346.10	ccp					0005
			100	S/Sst : brn gy to lt brn gy to gy blk, slt, cly, f, st		0005-1L

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Table 1 : Lithology description for well NOCS 7/7-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description			
3346.67	ccp					0007
		100	S/Sst	: lt brn gy to lt gy, slt, cly, f, st		0007-1L
3347.86	ccp					0006
		100	S/Sst	: w, pyr, cly, f		0006-1L
3348.71	ccp					0008
		100	S/Sst	: w to lt brn gy, pyr, slt, f, st		0008-1L
3349.51	ccp					0009
		100	S/Sst	: lt brn gy to w, pyr, slt, f, st		0009-1L
3350.18	ccp					0010
		90	S/Sst	: w to lt gy w, pyr, slt, f		0010-1L
		10	Sh/Clst:	lt gy to lt ol gy, pyr		0010-2L
3351.36	ccp					0011
		100	S/Sst	: w to lt gy w to lt gy, pyr, slt, f		0011-1L
3351.83	ccp					0012
		100	S/Sst	: w to lt gy w to lt gy, pyr, slt, f		0012-1L

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Table 1 : Lithology description for well NOCS 7/7-2

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description			
3398.00	swc					0061
	0.40	100	Sh/Clst: drk brn to red brn, slt			0061-1L

Table 2 : Rock-Eval table for well NOCS 7/7-2

Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
1100.00	cut	Sh/Clst: drk gy	0.23	1.36	0.93	1.46	1.54	88	60	1.6	0.14	430	0014-1L
1200.00	cut	Sh/Clst: drk gy to gy blk	0.40	7.20	2.61	2.76	4.77	151	55	7.6	0.05	424	0016-1L
1500.00	cut	Sh/Clst: dsk y brn to m gy	0.32	9.40	2.06	4.56	5.07	185	41	9.7	0.03	428	0019-1L
1800.00	cut	Sh/Clst: m gy to dsk y brn	0.11	3.35	1.75	1.91	2.34	143	75	3.5	0.03	435	0022-1L
2200.00	cut	Sh/Clst: brn gy to m gy	0.33	6.98	2.23	3.13	4.35	160	51	7.3	0.05	430	0026-1L
2300.00	cut	Sh/Clst: lt gy to lt ol gy	0.01	0.20	1.03	0.19	0.50	40	206	0.2	0.05	429	0027-1L
2601.00	cut	Sh/Clst: m gy	0.19	3.37	0.50	6.74	1.78	189	28	3.6	0.05	441	0030-1L
2900.00	cut	Ca : w	-	0.02	0.18	0.11	0.17	12	106	-	-	444	0033-1L
3201.00	swc	Sh/Clst: drk gy to lt gy	0.03	0.12	0.43	0.28	0.48	25	90	0.1	0.20	425	0055-1L
3238.00	swc	Sh/Clst: drk gy	4.94	31.20	0.27	115.56	5.87	532	5	36.1	0.14	442	0056-1L
3242.05	ccp	Sh/Clst: dsk y brn to drk gy	3.71	20.26	0.30	67.53	3.95	513	8	24.0	0.15	443	0051-1L
3242.05	ext	Sh/Clst: dsk y brn to drk gy	0.06	20.11	0.29	69.34	4.61	436	6	20.2	-	434	0072-0B
3245.05	ccp	Sh/Clst: gy blk	5.59	29.73	0.25	118.92	4.97	598	5	35.3	0.16	443	0052-1L
3245.05	ext	Sh/Clst: dsk y brn to drk gy	0.21	25.59	0.17	150.53	4.75	539	4	25.8	0.01	438	0073-0B
3251.00	cut	Sh/Clst: m gy to drk gy to brn gy to lt gy	0.04	0.07	0.17	0.41	0.42	17	40	0.1	0.36	442	0038-1L

Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
3254.00	cut	Sh/Clst: brn gy to drk gy	6.25	33.39	0.31	107.71	6.46	517	5	39.6	0.16	442	0039-1L
3254.00	ext	Sh/Clst: brn gy to drk gy	0.60	29.82	0.37	80.59	6.17	483	6	30.4	0.02	434	0074-0B
3257.00	swc	Sh/Clst: drk gy	8.52	24.73	0.29	85.28	5.79	427	5	33.3	0.26	436	0057-1L
3263.00	swc	Sh/Clst: drk gy	7.63	30.15	0.42	71.79	6.45	467	7	37.8	0.20	439	0058-1L
3266.00	swc	Sh/Clst: drk gy	6.05	31.67	0.44	71.98	6.29	503	7	37.7	0.16	440	0059-1L
3271.00	swc	Sh/Clst: dsk y brn to drk gy	4.31	18.16	0.43	42.23	4.34	418	10	22.5	0.19	437	0060-1L
3272.00	cut	Sh/Clst: dsk y brn to drk gy to gy blk	6.69	33.08	0.34	97.29	6.60	501	5	39.8	0.17	441	0040-1L
3272.00	ext	Sh/Clst: dsk y brn to drk gy to gy	2.72	31.89	0.40	79.72	7.74	412	5	34.6	0.08	433	0075-0B
3278.00	cut	Sh/Clst: dsk y brn to drk gy to gy blk	4.71	27.34	0.38	71.95	5.61	487	7	32.0	0.15	442	0041-1L
3284.00	cut	Sh/Clst: dsk y brn to drk gy to gy blk	5.21	26.00	0.42	61.90	5.23	497	8	31.2	0.17	441	0042-1L
3284.00	ext	Sh/Clst: dsk y brn to drk gy to gy	0.09	21.91	0.36	60.86	6.18	355	6	22.0	-	435	0076-0B
3290.00	cut	Sh/Clst: dsk y brn to drk gy to gy blk	4.08	19.76	0.42	47.05	4.48	441	9	23.8	0.17	442	0043-1L
3296.00	cut	Sh/Clst: dsk y brn to drk gy to gy blk	3.15	22.32	0.46	48.52	5.13	435	9	25.5	0.12	439	0044-1L

Table 2 : Rock-Eval table for well NOCS 7/7-2

Depth unit of measure: m

Depth	Typ	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
3296.00	ext	Sh/Clst: dsk y brn to drk gy to gy blk	0.11	15.92	0.54	29.48	4.73	337	11	16.0	0.01	433	0077-0B
3302.00	cut	Sh/Clst: gy blk to drk gy	1.62	11.52	0.69	16.70	3.92	294	18	13.1	0.12	441	0045-1L
3308.00	cut	Sh/Clst: gy blk to drk gy	1.83	11.95	0.52	22.98	3.29	363	16	13.8	0.13	445	0046-1L
3314.00	cut	Sh/Clst: gy blk to drk gy	2.14	15.60	0.67	23.28	4.01	389	17	17.7	0.12	439	0047-1L
3320.00	cut	Sh/Clst: gy blk to brn gy to drk gy	3.10	23.97	0.53	45.23	4.68	512	11	27.1	0.11	443	0048-1L
3320.00	ext	Sh/Clst: gy blk to brn gy to drk gy	0.02	22.74	0.26	87.46	4.64	490	6	22.8	-	435	0078-0B
3326.00	cut	Sh/Clst: gy brn to drk gy to gy blk	1.69	14.35	0.47	30.53	3.22	446	15	16.0	0.11	439	0049-1L
3328.00	cut	Sh/Clst: drk gy to gy blk to brn gy	2.58	17.72	0.55	32.22	4.03	440	14	20.3	0.13	441	0050-1L
3398.00	swc	Sh/Clst: drk brn to red brn	0.05	0.08	0.53	0.15	0.40	20	133	0.1	0.38	421	0061-1L

Depth unit of measure: m

Depth	S Tp	F Tp	Lithology	Sat HC	Aro HC	Resins	Asp	Tot HC	Tot Pol	Tot EOM	Sample
3317.00	cut	L	SHALE/CLAYSTONE	1.830	3.298	1.335	0.013	5.128	1.348	6.476	0062-1L
3320.00	cut	L	SHALE/CLAYSTONE	1.391	3.814	1.283	0.037	5.205	1.320	6.525	0048-1L
3323.00	cut	L	SHALE/CLAYSTONE	1.089	8.168	2.352	0.107	9.257	2.459	11.716	0064-1L
3326.00	cut	L	SHALE/CLAYSTONE	1.375	2.896	1.331	0.060	4.271	1.391	5.662	0049-1L
3329.00	cut	L	SILTSTONE	0.320	0.098	0.098	0.006	0.418	0.104	0.522	0065-1L
3333.00	swc	L	SILTSTONE	3.385	6.123	1.065	0.016	9.508	1.081	10.589	0066-1L
3334.00	swc	L	SILTSTONE	1.351	0.649	0.640	0.024	2.000	0.664	2.664	0067-1L
3335.00	swc	L	SILTSTONE	6.041	12.005	1.648	0.034	18.046	1.682	19.728	0068-1L
3337.00	swc	L	SILTSTONE	1.621	1.813	0.577	0.011	3.434	0.588	4.022	0069-1L
3341.83	ccp	L	SANDSTONE/SAND	3.390	3.703	1.566	0.021	7.093	1.587	8.680	0053-1L
3343.16	ccp	L	SANDSTONE/SAND	5.052	7.327	2.055	0.227	12.379	2.282	14.661	0054-1L
3344.34	ccp	L	SANDSTONE/SAND	3.704	5.389	1.647	0.181	9.093	1.828	10.921	0001-1L
3344.80	ccp	L	SANDSTONE/SAND	11.502	19.385	3.501	0.283	30.887	3.784	34.671	0003-1L
3345.28	ccp	L	SANDSTONE/SAND	10.801	18.361	3.474	0.385	29.162	3.859	33.021	0004-1L
3346.10	ccp	L	SANDSTONE/SAND	6.354	5.277	1.615	0.166	11.631	1.781	13.412	0005-1L
3346.67	ccp	L	SANDSTONE/SAND	3.817	5.182	1.812	0.220	8.999	2.032	11.031	0007-1L

Table 3a: Results of TLC-FID analysis: Absolute yields in mg/g rock for well NOCS 7/7-2

Depth unit of measure: m

<u>Depth</u>	<u>S Tp</u>	<u>F Tp</u>	<u>Lithology</u>	<u>Sat HC</u>	<u>Aro HC</u>	<u>Resins</u>	<u>Asp</u>	<u>Tot HC</u>	<u>Tot Pol</u>	<u>Tot EOM</u>	<u>Sample</u>
3347.86	ccp	L	SANDSTONE/SAND	0.235	0.039	0.038	0.005	0.274	0.043	0.317	0006-1L
3348.71	ccp	L	SANDSTONE/SAND	3.934	0.445	0.390	0.061	4.379	0.451	4.830	0008-1L
3349.51	ccp	L	SANDSTONE/SAND	2.821	3.142	1.476	0.238	5.963	1.714	7.677	0009-1L
3350.18	ccp	L	SANDSTONE/SAND	0.000	0.000	0.041	0.004	0.000	0.045	0.045	0010-1L
3351.36	ccp	L	SANDSTONE/SAND	0.082	0.000	0.050	0.003	0.082	0.053	0.135	0011-1L
3351.83	ccp	L	SANDSTONE/SAND	0.100	0.000	0.034	0.003	0.100	0.037	0.137	0012-1L

Depth unit of measure: m

<u>Depth</u>	<u>S Tp</u>	<u>F Tp</u>	<u>Lithology</u>	<u>Sat HC</u>	<u>Aro HC</u>	<u>Resins</u>	<u>Asp</u>	<u>Tot HC</u>	<u>Tot Pol</u>	<u>Sample</u>
3317.00	cut	L	SHALE/CLAYSTONE	28.26	50.93	20.61	0.20	79.18	20.82	0062-1L
3320.00	cut	L	SHALE/CLAYSTONE	21.32	58.45	19.66	0.57	79.77	20.23	0048-1L
3323.00	cut	L	SHALE/CLAYSTONE	9.29	69.72	20.08	0.91	79.01	20.99	0064-1L
3326.00	cut	L	SHALE/CLAYSTONE	24.28	51.15	23.51	1.06	75.43	24.57	0049-1L
3329.00	cut	L	SILTSTONE	61.30	18.77	18.77	1.15	80.08	19.92	0065-1L
3333.00	swc	L	SILTSTONE	31.97	57.82	10.06	0.15	89.79	10.21	0066-1L
3334.00	swc	L	SILTSTONE	50.71	24.36	24.02	0.90	75.08	24.92	0067-1L
3335.00	swc	L	SILTSTONE	30.62	60.85	8.35	0.17	91.47	8.53	0068-1L
3337.00	swc	L	SILTSTONE	40.30	45.08	14.35	0.27	85.38	14.62	0069-1L
3341.83	ccp	L	SANDSTONE/SAND	39.06	42.66	18.04	0.24	81.72	18.28	0053-1L
3343.16	ccp	L	SANDSTONE/SAND	34.46	49.98	14.02	1.55	84.43	15.57	0054-1L
3344.34	ccp	L	SANDSTONE/SAND	33.92	49.35	15.08	1.66	83.26	16.74	0001-1L
3344.80	ccp	L	SANDSTONE/SAND	33.17	55.91	10.10	0.82	89.09	10.91	0003-1L
3345.28	ccp	L	SANDSTONE/SAND	32.71	55.60	10.52	1.17	88.31	11.69	0004-1L
3346.10	ccp	L	SANDSTONE/SAND	47.38	39.35	12.04	1.24	86.72	13.28	0005-1L
3346.67	ccp	L	SANDSTONE/SAND	34.60	46.98	16.43	1.99	81.58	18.42	0007-1L

Table 3b: Results of TLC-FID analysis: Rel. percentages of sep. fractions for well NOCS 7/7-2

Depth unit of measure: m

<u>Depth</u>	<u>S Tp</u>	<u>F Tp</u>	<u>Lithology</u>	<u>Sat HC</u>	<u>Aro HC</u>	<u>Resins</u>	<u>Asp</u>	<u>Tot HC</u>	<u>Tot Pol</u>	<u>Sample</u>
3347.86	ccp	L	SANDSTONE/SAND	74.13	12.30	11.99	1.58	86.44	13.56	0006-1L
3348.71	ccp	L	SANDSTONE/SAND	81.45	9.21	8.07	1.26	90.66	9.34	0008-1L
3349.51	ccp	L	SANDSTONE/SAND	36.75	40.93	19.23	3.10	77.67	22.33	0009-1L
3350.18	ccp	L	SANDSTONE/SAND	0.00	0.00	91.11	8.89	0.00	100.00	0010-1L
3351.36	ccp	L	SANDSTONE/SAND	60.74	0.00	37.04	2.22	60.74	39.26	0011-1L
3351.83	ccp	L	SANDSTONE/SAND	72.99	0.00	24.82	2.19	72.99	27.01	0012-1L

Table 4 : Pyrolysis GC Data (S2 peak) as Percentage of Total Area for Well NOCS 7/7-2

Depth unit of measure: m

Depth	Typ	Lithology	C1	C2-C5	C6-C14	C15+	S2 from Rock-Eval	Sample
3242.05	ccp	Sh/Clst: dsk y brn to drk gy	2.70	12.66	29.46	55.18	20.26	0051-1L
3245.05	ccp	Sh/Clst: gy blk	3.12	13.22	27.40	56.25	29.73	0052-1L
3254.00	cut	Sh/Clst: brn gy to drk gy	2.85	13.34	28.12	55.70	33.39	0039-1L
3272.00	cut	Sh/Clst: dsk y brn to drk gy to gy blk	2.68	13.20	29.12	55.01	33.08	0040-1L
3284.00	cut	Sh/Clst: dsk y brn to drk gy to gy blk	2.53	13.17	30.04	54.27	26.00	0042-1L
3296.00	cut	Sh/Clst: dsk y brn to drk gy to gy blk	2.79	12.49	30.81	53.90	22.32	0044-1L
3302.00	cut	Sh/Clst: gy blk to drk gy	3.17	12.97	35.53	48.33	11.52	0045-1L
3320.00	cut	Sh/Clst: gy blk to brn gy to drk gy	2.77	13.62	30.20	53.41	23.97	0048-1L

Table 5a: Gaseous Hydrocarbons Data from Nocs 7/7-2

Sample: A-1480

Compound	Area	Time
Methane	17417900	2.629
Ethane	7283685	2.793
Ethene	63444	2.960
Propane	6014294	3.264
Isobutane	647371	4.589
Butane	1933391	4.751
Neopentane	0	
cyclopentane	29239	7.167
2-Methylbutane	404996	7.209
Pentane	466762	7.496
2,2-Dimethylbutane	0	
Cyclohexane	49185	10.049
Methylcyclopentane	19830	10.267
2-Methylpentane	84086	10.333
3-Methylpentane	54723	10.427
Hexane	102141	10.704
Methylcyclohexane	0	
2-Methylhexane	0	
Heptane	0	
Benzene	0	

Table 5b: Isotope GC Analysis of Reservoir Gas for 7/7-2 DST#2.

	n-C1	n-C2	n-C3	i-C4	n-C4	n-C5
7/7-2 DST#2	-50.6	-42.3	-35.9	-37.0	-33.6	-32.0

Table 5c: Hydrogen Isotope Values on Headspace Methane for
7/7-2 DST#2.

	H
7/7-2 DST#2	-299

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
3242.05	ccp	Sh/Clst: dsk y brn to drk gy	7.7	77.6	25.4	20.4	16.6	15.2	45.8	31.8	3.95	0051-1L
3245.05	ccp	Sh/Clst: gy blk	9.2	100.8	32.7	24.5	23.9	19.7	57.2	43.6	4.97	0052-1L
3254.00	cut	Sh/Clst: brn gy to drk gy	7.5	84.7	26.4	21.4	20.4	16.5	47.8	36.9	6.46	0039-1L
3272.00	cut	Sh/Clst: dsk y brn to drk gy to gy blk	8.6	43.6	13.6	12.9	8.1	9.0	26.5	17.1	6.60	0040-1L
3284.00	cut	Sh/Clst: dsk y brn to drk gy to gy blk	9.6	111.2	41.1	23.9	23.2	23.0	65.0	46.2	5.23	0042-1L
3296.00	cut	Sh/Clst: dsk y brn to drk gy to gy blk	9.4	78.9	27.2	15.5	17.0	19.2	42.7	36.2	5.13	0044-1L
3320.00	cut	Sh/Clst: gy blk to brn gy to drk gy	3.7	28.9	7.7	8.3	6.1	6.8	16.0	12.9	4.68	0048-1L
3342.00	oil	DST 2	-	68.6	33.2	19.4	7.9	8.1	52.6	16.0	-	0071-0B
3343.16	ccp	S/Sst : lt brn gy	7.4	78.0	38.8	17.8	12.1	9.3	56.6	21.4	0.91	0054-1L
3344.80	ccp	S/Sst : brn gy to gy blk	7.2	159.9	73.4	43.4	22.7	20.4	116.8	43.1	1.78	0003-1L
3345.28	ccp	S/Sst : brn gy to gy blk	8.1	145.0	68.2	39.0	19.1	18.7	107.2	37.8	1.54	0004-1L
3349.51	ccp	S/Sst : lt brn gy to w	7.9	56.8	22.5	13.9	12.5	7.9	36.4	20.4	0.60	0009-1L

Table 6 a: Weight of EOM and Chromatographic Fraction for well NOCS 7/1-2

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
3350.00	oil	DST 1	-	83.5	38.9	19.4	16.2	9.0	58.3	25.2	-	0070-0B

Depth unit of measure: m

Depth	Typ	Lithology	EOM	Sat	Aro	Asph	NSO	HC	Non-HC	Sample
3242.05	ccp	Sh/Clst: dsk y brn to drk gy	10104	3307	2656	2161	1979	5963	4140	0051-1L
3245.05	ccp	Sh/Clst: gy blk	10920	3542	2654	2589	2134	6197	4723	0052-1L
3254.00	cut	Sh/Clst: brn gy to drk gy	11323	3529	2860	2727	2205	6390	4933	0039-1L
3272.00	cut	Sh/Clst: dsk y brn to drk gy to gy blk	5040	1572	1491	936	1040	3063	1976	0040-1L
3284.00	cut	Sh/Clst: dsk y brn to drk gy to gy blk	11595	4285	2492	2419	2398	6777	4817	0042-1L
3296.00	cut	Sh/Clst: dsk y brn to drk gy to gy blk	8438	2909	1657	1818	2053	4566	3871	0044-1L
3320.00	cut	Sh/Clst: gy blk to brn gy to drk gy	7874	2098	2261	1662	1852	4359	3514	0048-1L
3342.00	oil	DST 2	-	-	-	-	-	-	-	0071-0B
3343.16	ccp	S/Sst : lt brn gy	10583	5264	2415	1641	1261	7679	2903	0054-1L
3344.80	ccp	S/Sst : brn gy to gy blk	22116	10152	6002	3139	2821	16154	5961	0003-1L
3345.28	ccp	S/Sst : brn gy to gy blk	17835	8388	4797	2349	2300	13185	4649	0004-1L
3349.51	ccp	S/Sst : lt brn gy to w	7171	2840	1755	1578	997	4595	2575	0009-1L

Table 6 b: Concentration of EOM and Chromatographic Fraction (wt ppm rock) for well NOCS 7/7-2

Depth unit of measure: m

Depth	Typ	Lithology	EOM	Sat	Aro	Asph	NSO	HC	Non-HC	Sample
3350.00	oil	DST 1	-	-	-	-	-	-	-	0070-0B

Table 6 c: Concentration of EOM and Chromatographic Fraction (mg/g TOC(e)) for well NOCS 7/7-2

Depth unit of measure: m

Depth	Typ	Lithology	EOM	Sat	Aro	Asph	NSO	HC	Non-HC	Sample
3242.05	ccp	Sh/Clst: dsk y brn to drk gy	255.80	83.73	67.25	54.72	50.11	150.98	104.83	0051-1L
3245.05	ccp	Sh/Clst: gy blk	219.74	71.28	53.41	52.10	42.94	124.69	95.04	0052-1L
3254.00	cut	Sh/Clst: brn gy to drk gy	175.29	54.63	44.29	42.22	34.15	98.92	76.36	0039-1L
3272.00	cut	Sh/Clst: dsk y brn to drk gy to gy blk	76.37	23.82	22.60	14.19	15.76	46.42	29.95	0040-1L
3284.00	cut	Sh/Clst: dsk y brn to drk gy to gy blk	221.71	81.94	47.65	46.26	45.86	129.60	92.11	0042-1L
3296.00	cut	Sh/Clst: dsk y brn to drk gy to gy blk	164.49	56.71	32.31	35.44	40.03	89.02	75.47	0044-1L
3320.00	cut	Sh/Clst: gy blk to brn gy to drk gy	168.26	44.83	48.32	35.52	39.59	93.16	75.11	0048-1L
3342.00	oil	DST 2	-	-	-	-	-	-	-	0071-0B
3343.16	ccp	S/Sst : lt brn gy	1163.02	578.53	265.41	180.42	138.67	843.93	319.08	0054-1L
3344.80	ccp	S/Sst : brn gy to gy blk	1242.48	570.35	337.23	176.39	158.52	907.58	334.90	0003-1L
3345.28	ccp	S/Sst : brn gy to gy blk	1158.13	544.72	311.50	152.55	149.36	856.22	301.91	0004-1L
3349.51	ccp	S/Sst : lt brn gy to w	1195.29	473.48	292.51	263.05	166.25	765.99	429.29	0009-1L

Table 6 c: Concentration of EOM and Chromatographic Fraction (mg/g TOC(e)) for well NOCS 7/7-2

Depth unit of measure: m

Depth	Typ	Lithology	EOM	Sat	Aro	Asph	NSO	HC	Non-HC	Sample
3350.00	oil	DST 1	-	-	-	-	-	-	-	0070-0B

Table 6 d: Composition of material extracted from the rock (%) for well NOCS 7/7-2

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	
3242.05	ccp	Sh/Clst: dsk y brn to drk gy	32.73	26.29	21.39	19.59	59.02	40.98	124.51	144.03	0051-1L
3245.05	ccp	Sh/Clst: gy blk	32.44	24.31	23.71	19.54	56.75	43.25	133.47	131.19	0052-1L
3254.00	cut	Sh/Clst: brn gy to drk gy	31.17	25.27	24.09	19.48	56.43	43.57	123.36	129.54	0039-1L
3272.00	cut	Sh/Clst: dsk y brn to drk gy to gy blk	31.19	29.59	18.58	20.64	60.78	39.22	105.43	154.97	0040-1L
3284.00	cut	Sh/Clst: dsk y brn to drk gy to gy blk	36.96	21.49	20.86	20.68	58.45	41.55	171.97	140.69	0042-1L
3296.00	cut	Sh/Clst: dsk y brn to drk gy to gy blk	34.47	19.65	21.55	24.33	54.12	45.88	175.48	117.96	0044-1L
3320.00	cut	Sh/Clst: gy blk to brn gy to drk gy	26.64	28.72	21.11	23.53	55.36	44.64	92.77	124.03	0048-1L
3342.00	oil	DST 2	48.40	28.28	11.52	11.81	76.68	23.32	171.13	328.75	0071-0B
3343.16	ccp	S/Sst : lt brn gy	49.74	22.82	15.51	11.92	72.56	27.44	217.98	264.49	0054-1L
3344.80	ccp	S/Sst : brn gy to gy blk	45.90	27.14	14.20	12.76	73.05	26.95	169.12	271.00	0003-1L
3345.28	ccp	S/Sst : brn gy to gy blk	47.03	26.90	13.17	12.90	73.93	26.07	174.87	283.60	0004-1L
3349.51	ccp	S/Sst : lt brn gy to w	39.61	24.47	22.01	13.91	64.08	35.92	161.87	178.43	0009-1L

Table 6 d: Composition of material extracted from the rock (%) for well NOCS 7/7-2

Depth unit of measure: m

Depth	Typ	Lithology	Sat	Aro	Asph	NSO	HC	Non-HC	Sat	HC	Sample
			EOM	EOM	EOM	EOM	EOM	EOM	EOM	Aro	
3350.00	oil	DST 1	46.59	23.23	19.40	10.78	69.82	30.18	200.52	231.35	0070-0B

Table 7 : Saturated Hydrocarbon Ratios for well NOCS 7/7-2

Depth unit of measure: m

Depth	Typ	Lithology	Pristane	Pristane	Pristane + Phytane	Phytane	CPI	Sample
			nC17	Phytane	nC17 + nC18	nC18		
3242.05	ccp	Sh/Clst: dsk y brn to drk gy	0.91	1.76	0.74	0.57	1.00	0051-1L
3245.05	ccp	Sh/Clst: gy blk	0.85	1.92	0.67	0.47	0.99	0052-1L
3254.00	cut	Sh/Clst: brn gy to drk gy	0.72	1.44	0.62	0.51	0.94	0039-1L
3272.00	cut	Sh/Clst: dsk y brn to drk gy to gy blk	0.70	1.59	0.61	0.51	0.91	0040-1L
3284.00	cut	Sh/Clst: dsk y brn to drk gy to gy blk	0.75	1.68	0.64	0.51	0.98	0042-1L
3296.00	cut	Sh/Clst: dsk y brn to drk gy to gy blk	0.89	1.51	0.75	0.61	1.00	0044-1L
3320.00	cut	Sh/Clst: gy blk to brn gy to drk gy	0.71	1.72	0.59	0.46	1.31	0048-1L
3342.00	oil	DST 2	0.47	1.06	0.48	0.49	0.91	0071-0B
3343.16	ccp	S/Sst : lt brn gy	0.47	1.06	0.48	0.48	0.92	0054-1L
3344.80	ccp	S/Sst : brn gy to gy blk	0.48	1.03	0.49	0.50	0.90	0003-1L
3345.28	ccp	S/Sst : brn gy to gy blk	0.48	1.03	0.49	0.50	0.94	0004-1L
3349.51	ccp	S/Sst : lt brn gy to w	0.50	0.95	0.53	0.55	0.93	0009-1L

Table 7 : Saturated Hydrocarbon Ratios for well NOCS 7/7-2

Depth unit of measure: m

Depth	Typ	Lithology	<u>Pristane</u>	<u>Pristane</u>	<u>Pristane + Phytane</u>	<u>Phytane</u>	CPI	Sample
			nC17	Phytane	nC17 + nC18	nC18		
3350.00	oil	DST 1	0.50	1.02	0.51	0.53	0.92	0070-0B

Table 8 : Aromatic Hydrocarbon Ratios for well NOCS 7/7-2

Depth unit of measure: m

Depth	Typ	Lithology	MNR	DMNR	BPhR	2/1MP	MPI1	MPI2	Rc	DBT/P	4/1MDBT	(3+2) /1MDBT	Sample
3242.05	ccp	Sh/Clst: dsk y brn to drk gy	1.03	1.33	-	0.79	0.67	0.71	0.80	0.30	1.46	0.34	0051-1L
3245.05	ccp	Sh/Clst: gy blk	1.01	1.30	-	0.77	0.64	0.67	0.78	0.33	1.38	0.36	0052-1L
3254.00	cut	Sh/Clst: brn gy to drk gy	0.91	1.15	-	0.66	0.61	0.62	0.77	0.37	1.79	0.32	0039-1L
3272.00	cut	Sh/Clst: dsk y brn to drk gy to gy blk	0.85	1.12	-	0.73	0.64	0.65	0.78	0.37	1.80	0.27	0040-1L
3284.00	cut	Sh/Clst: dsk y brn to drk gy to gy blk	0.93	1.27	0.13	0.75	0.64	0.67	0.78	0.22	2.74	0.28	0042-1L
3296.00	cut	Sh/Clst: dsk y brn to drk gy to gy blk	0.86	1.32	0.09	0.80	0.65	0.73	0.79	0.13	3.18	0.54	0044-1L
3320.00	cut	Sh/Clst: gy blk to brn gy to drk gy	0.82	1.06	0.16	0.76	0.66	0.65	0.80	-	2.09	0.27	0048-1L
3342.00	oil	DST 2	0.94	1.18	-	0.74	0.66	0.62	0.80	0.52	2.50	0.42	0071-0B
3343.16	ccp	S/Sst : lt brn gy	0.75	1.00	-	0.77	0.69	0.65	0.81	0.51	2.56	0.43	0054-1L
3344.80	ccp	S/Sst : brn gy to gy blk	0.80	0.97	-	0.80	0.70	0.67	0.82	0.54	2.57	0.41	0003-1L
3345.28	ccp	S/Sst : brn gy to gy blk	0.76	0.98	-	0.77	0.70	0.64	0.82	0.60	2.53	0.45	0004-1L
3349.51	ccp	S/Sst : lt brn gy to w	0.64	0.85	-	0.80	0.72	0.69	0.83	0.51	2.44	0.43	0009-1L
3350.00	oil	DST 1	0.92	1.20	-	0.78	0.70	0.65	0.82	0.53	2.48	0.43	0070-0B

Depth unit of measure: m

Depth	Typ Lithology	Vitrinite Reflectance (%)	Number of Readings	Standard Deviation	Spore Fluorescence Colour	SCI	T _{max} (°C)	Sample
1000.00	cut Sh/Clst: m gy to drk gy	0.39	2	0.01	4	-	-	0013-1L
1100.00	cut Sh/Clst: drk gy	0.40	10	0.03	4	-	430	0014-1L
1200.00	cut Sh/Clst: drk gy to gy blk	0.36	20	0.05	3-4	-	424	0016-1L
1300.00	cut Sh/Clst: brn gy to dsk y brn to m gy	0.38	20	0.05	3-4	-	-	0017-1L
1400.00	cut Sh/Clst: dsk y brn to gy blk	0.35	20	0.04	3-4	-	-	0018-1L
1500.00	cut Sh/Clst: dsk y brn to m gy	0.37	20	0.05	5	-	428	0019-1L
1600.00	cut Sh/Clst: brn gy to m gy	0.39	20	0.04	4	-	-	0020-1L
1700.00	cut Sh/Clst: dsk y brn to m gy	0.42	20	0.04	3-4	-	-	0021-1L
1800.00	cut Sh/Clst: m gy to dsk y brn	0.40	20	0.05	3-4	-	435	0022-1L
1900.00	cut Sh/Clst: m gy to dsk y brn	0.41	20	0.06	5	-	-	0023-1L
2000.00	cut Sh/Clst: m gy to dsk y brn	0.42	20	0.03	5	-	-	0024-1L
2100.00	cut Sh/Clst: m gy to dsk y brn	0.45	20	0.05	3-4	-	-	0025-1L
2200.00	cut Sh/Clst: brn gy to m gy	0.44	20	0.04	4+5	-	430	0026-1L

Table 9 : Thermal Maturity Data for well NOCS 7/7-2

Depth unit of measure: m

Depth	Typ Lithology	Vitrinite Reflectance (%)	Number of Readings	Standard Deviation	Spore Fluorescence Colour	SCI	T _{max} (°C)	Sample
2300.00	cut Sh/Clst: lt gy to lt ol gy	0.51	7	0.04	4-5	-	429	0027-1L
2400.00	cut Sh/Clst: lt gy to lt ol gy	0.48	3	0.07	5	-	-	0028-1L
2496.00	cut Sh/Clst: lt gy to lt ol gy	0.52	3	0.08	4	-	-	0029-1L
2601.00	cut Sh/Clst: m gy	0.50	20	0.06	4-5	-	441	0030-1L
2700.00	cut Sh/Clst: m gy to brn gy	0.48	20	0.05	4-5	-	-	0031-2L
3100.00	cut Ca : red brn to drk red brn	NDP	-	-	0	-	-	0035-2L
3201.00	swc Sh/Clst: drk gy to lt gy	NDP	-	-	5-6	-	425	0055-1L
3242.05	ccp Sh/Clst: dsk y brn to drk gy	0.56	10	0.07	5	6.5-7.0(?)	443	0051-1L
3245.05	ccp Sh/Clst: gy blk	-	-	-	-	7.0(?)	443	0052-1L
3254.00	cut Sh/Clst: brn gy to drk gy	-	-	-	-	7.0(??)	442	0039-1L
3271.00	swc Sh/Clst: dsk y brn to drk gy	0.56	4	0.03	4-5	-	437	0060-1L
3272.00	cut Sh/Clst: dsk y brn to drk gy to gy blk	-	-	-	-	6.5(??)	441	0040-1L
3284.00	cut Sh/Clst: dsk y brn to drk gy to gy blk	-	-	-	-	6.5-7.0	441	0042-1L

Depth unit of measure: m

Depth	Typ Lithology	Vitrinite Reflectance (%)	Number of Readings	Standard Deviation	Spore Fluorescence Colour	SCI	T _{max} (°C)	Sample
3296.00	cut Sh/Clst: dsk y brn to drk gy to gy blk	-	-	-	-	6.5-7.0(??)	439	0044-1L
3302.00	cut Sh/Clst: gy blk to drk gy	0.52	5	0.04	4-5	-	441	0045-1L
3320.00	cut Sh/Clst: gy blk to brn gy to drk gy	-	-	-	-	6.5(??)	443	0048-1L
3398.00	swc Sh/Clst: drk brn to red brn	NDP	-	-	0	-	421	0061-1L

Depth unit of measure: m

Depth	Typ	Lithology	L	A	L	S	C		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		%
3242.05	ccp	Sh/Clst: dsk y brn to drk gy	95	**	*	**	*				5	*				TR	*			0051-1L	
3245.05	ccp	Sh/Clst: gy blk	100	**	*	**	*				TR	*			TR	*				0052-1L	
3254.00	cut	Sh/Clst: brn gy to drk gy	95	**	*	**	*				5	*			TR	*				0039-1L	
3272.00	cut	Sh/Clst: dsk y brn to drk gy to gy blk	95	**	*	**	*				5	*			TR	*				0040-1L	
3284.00	cut	Sh/Clst: dsk y brn to drk gy to gy blk	95	**	*	**	*				5	*			TR	*				0042-1L	
3296.00	cut	Sh/Clst: dsk y brn to drk gy to gy blk	90	**	*	**	*				5	*			5	*				0044-1L	
3320.00	cut	Sh/Clst: gy blk to brn gy to drk gy	65	**	* *	*	*				35	* **			TR	*				0048-1L	

Table 11A: Tabulation of carbon isotope data for EOM/EOM - fractions for well NOCS 7/7-2

Depth unit of measure: m

<u>Depth</u>	<u>Typ</u>	<u>Lithology</u>	<u>EOM</u>	<u>Saturated</u>	<u>Aromatic</u>	<u>NSO</u>	<u>Asphaltenes</u>	<u>Kerogen</u>	<u>Sample</u>
3342.00	oil	DST 2	-30.59	-30.78	-29.95	-29.31	-29.83	-	0071-0
3350.00	oil	DST 1	-30.31	-30.47	-29.80	-29.22	-29.84	-	0070-0

Table 11B: Tabulation of cv values from carbon isotope data for well NOCS 7/7-2

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>
3342.00	oil	DST 2	-30.78	-29.95	-0.27	0071-0
3350.00	oil	DST 1	-30.47	-29.80	-0.72	0070-0

Table 12A: Variation in Triterpane Distribution (peak height) SIR for Well NOCS 7/7-2

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	C+D		J1		Sample
				B+E+F									E/E+F	C+D+E+F	D+F/C+E	J1+J2%	
3242.05	Sh/Clst	1.09	0.52	0.10		0.42	0.30	0.13	0.26	0.61	0.20	0.08	0.87	0.29	0.13	59.01	0051-1
3245.05	Sh/Clst	1.04	0.51	0.10		0.41	0.29	0.12	0.16	0.38	0.14	0.09	0.88	0.28	0.12	60.11	0052-1
3254.00	Sh/Clst	0.87	0.47	0.10		0.40	0.29	0.10	0.05	0.13	0.05	0.16	0.91	0.28	0.09	59.65	0039-1
3272.00	Sh/Clst	0.97	0.49	0.11		0.41	0.29	0.11	0.06	0.16	0.06	0.23	0.92	0.28	0.08	59.55	0040-1
3284.00	Sh/Clst	1.08	0.52	0.12		0.43	0.30	0.11	0.40	0.94	0.29	0.12	0.90	0.29	0.10	59.93	0042-1
3296.00	Sh/Clst	0.96	0.49	0.09		0.37	0.27	0.14	0.28	0.76	0.22	0.09	0.88	0.26	0.13	59.99	0044-1
3320.00	Sh/Clst	0.78	0.44	0.11		0.48	0.33	0.08	0.31	0.64	0.24	0.15	0.90	0.32	0.10	59.54	0048-1
3342.00	DST 2	0.79	0.44	0.12		0.43	0.30	0.10	0.29	0.68	0.22	0.30	0.94	0.30	0.06	59.73	0071-0
3343.16	S/Sst	0.74	0.43	0.13		0.47	0.32	0.10	0.28	0.59	0.22	0.29	0.93	0.32	0.07	59.28	0054-1
3344.80	S/Sst	0.73	0.42	0.12		0.45	0.31	0.11	0.29	0.64	0.22	0.31	0.94	0.31	0.06	59.69	0003-1
3345.28	S/Sst	0.78	0.44	0.13		0.44	0.31	0.10	0.30	0.67	0.23	0.33	0.94	0.31	0.06	59.15	0004-1
3349.51	S/Sst	1.00	0.50	0.14		0.45	0.31	0.09	0.33	0.73	0.25	0.34	0.94	0.31	0.07	59.27	0009-1
3350.00	DST 1	1.01	0.50	0.14		0.48	0.32	0.08	0.31	0.64	0.24	0.26	0.94	0.32	0.07	58.65	0070-0

Table 12B: Variation in Sterane Distribution (peak height) SIR for Well NOCS 7/7-2

Depth unit of measure: m

Depth	Lithology	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9	Ratio10	Sample
3242.05	Sh/Clst	0.79	46.01	72.85	1.62	0.74	0.40	0.26	0.57	0.85	2.48	0051-1
3245.05	Sh/Clst	0.79	45.45	73.28	1.59	0.75	0.45	0.31	0.58	0.83	2.51	0052-1
3254.00	Sh/Clst	0.78	45.85	75.49	1.46	0.77	0.48	0.33	0.61	0.85	2.84	0039-1
3272.00	Sh/Clst	0.76	45.53	75.71	1.39	0.77	0.47	0.33	0.61	0.84	2.86	0040-1
3284.00	Sh/Clst	0.77	47.56	74.32	1.49	0.75	0.45	0.32	0.59	0.91	2.76	0042-1
3296.00	Sh/Clst	0.79	48.59	72.16	1.59	0.73	0.36	0.25	0.56	0.95	2.52	0044-1
3320.00	Sh/Clst	0.74	49.21	72.45	1.58	0.73	0.50	0.36	0.57	0.97	2.59	0048-1
3342.00	DST 2	0.78	44.38	76.61	1.37	0.79	0.44	0.30	0.62	0.80	2.94	0071-0
3343.16	S/Sst	0.77	44.50	77.53	1.36	0.79	0.43	0.30	0.63	0.80	3.11	0054-1
3344.80	S/Sst	0.77	45.11	77.58	1.35	0.79	0.46	0.32	0.63	0.82	3.15	0003-1
3345.28	S/Sst	0.79	45.99	78.99	1.41	0.80	0.48	0.34	0.65	0.85	3.48	0004-1
3349.51	S/Sst	0.77	45.59	76.97	1.35	0.79	0.47	0.33	0.63	0.84	3.07	0009-1

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 12B: Variation in Sterane Distribution (peak height) SIR for Well NOCS 7/7-2

Depth unit of measure: m

<u>Depth</u>	<u>Lithology</u>	<u>Ratio1</u>	<u>Ratio2</u>	<u>Ratio3</u>	<u>Ratio4</u>	<u>Ratio5</u>	<u>Ratio6</u>	<u>Ratio7</u>	<u>Ratio8</u>	<u>Ratio9</u>	<u>Ratio10</u>	<u>Sample</u>
3350.00	DST 1	0.76	43.04	77.01	1.27	0.80	0.41	0.28	0.63	0.76	2.94	0070-0

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 12C: Variation in Triaromatic Sterane Distribution for Well Well NOCS 7/7-2

Depth unit of measure: m

Depth	Lithology	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Sample
3242.05	Sh/Clst	0.67	0.57	0.30	0.36	0.40	0051-1
3245.05	Sh/Clst	0.68	0.58	0.33	0.38	0.44	0052-1
3254.00	Sh/Clst	0.72	0.65	0.39	0.43	0.50	0039-1
3272.00	Sh/Clst	0.76	0.72	0.45	0.48	0.54	0040-1
3284.00	Sh/Clst	0.70	0.64	0.39	0.42	0.50	0042-1
3296.00	Sh/Clst	0.67	0.58	0.34	0.38	0.46	0044-1
3320.00	Sh/Clst	0.78	0.74	0.45	0.50	0.54	0048-1
3342.00	DST 2	0.75	0.70	0.47	0.48	0.56	0071-0
3343.16	S/Sst	0.77	0.72	0.47	0.49	0.57	0054-1
3344.80	S/Sst	0.76	0.72	0.47	0.48	0.56	0003-1
3345.28	S/Sst	0.75	0.71	0.48	0.48	0.58	0004-1
3349.51	S/Sst	0.71	0.67	0.42	0.42	0.51	0009-1
3350.00	DST 1	0.73	0.68	0.44	0.44	0.54	0070-0

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

Schlumberger

GECO-PRAKLA

GEOLAB NOR

Table 12D: Variation in Monoaromatic Sterane Distribution for Well NOCS 7/7-2

Depth unit of measure: m

<u>Depth</u>	<u>Lithology</u>	<u>Ratio1</u>	<u>Ratio2</u>	<u>Ratio3</u>	<u>Ratio4</u>	<u>Sample</u>
3242.05	Sh/Clst	0.40	0.28	0.28	0.24	0051-1
3245.05	Sh/Clst	0.46	0.35	0.33	0.28	0052-1
3254.00	Sh/Clst	0.51	0.39	0.38	0.32	0039-1
3272.00	Sh/Clst	0.54	0.49	0.39	0.35	0040-1
3284.00	Sh/Clst	0.61	0.50	0.47	0.41	0042-1
3296.00	Sh/Clst	0.47	0.33	0.34	0.27	0044-1
3320.00	Sh/Clst	0.51	0.42	0.37	0.31	0048-1
3342.00	DST 2	0.54	0.46	0.40	0.35	0071-0
3343.16	S/Sst	0.62	0.50	0.48	0.41	0054-1
3344.80	S/Sst	0.55	0.50	0.40	0.36	0003-1
3345.28	S/Sst	0.56	0.48	0.42	0.38	0004-1
3349.51	S/Sst	0.50	0.44	0.35	0.32	0009-1
3350.00	DST 1	0.60	0.51	0.45	0.40	0070-0

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 12E: Aromatisation of Steranes for Well NOCS 7/1-2

Depth unit of measure: m

<u>Depth</u>	<u>Lithology</u>	<u>Ratio1</u>	<u>Ratio2</u>	<u>Sample</u>
3242.05	Sh/Clst	0.27	0.97	0051-1
3245.05	Sh/Clst	0.25	0.98	0052-1
3254.00	Sh/Clst	0.26	0.98	0039-1
3272.00	Sh/Clst	0.26	0.98	0040-1
3284.00	Sh/Clst	0.19	0.98	0042-1
3296.00	Sh/Clst	0.26	0.96	0044-1
3320.00	Sh/Clst	0.33	0.93	0048-1
3342.00	DST 2	0.45	0.96	0071-0
3343.16	S/Sst	0.36	0.97	0054-1
3344.80	S/Sst	0.42	0.97	0003-1
3345.28	S/Sst	0.41	0.98	0004-1
3349.51	S/Sst	0.45	0.97	0009-1
3350.00	DST 1	0.38	0.98	0070-0

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

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

Table 12F: Raw GCMS triterpane data (peak height) SIR for Well NOCS 7/7-2

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			
3242.05	Sh/Clst	220899.3	102579.2	74048.0	100808.0	35399.3	162087.5	176635.0	342697.6	561917.5	0051-1
		167972.6	60104.0	1331168.0	191504.8	718393.9	480654.4	110766.3	501936.0		
		348606.3	507618.5	347039.9	358160.0	231100.3	416264.4	271816.0			
3245.05	Sh/Clst	343089.0	163237.7	107936.0	135192.0	51497.3	222564.0	231385.3	296741.6	785888.1	0052-1
		227241.1	64192.3	1900224.0	256686.2	962520.4	647384.0	140465.8	705394.1		
		468176.0	712225.3	489476.2	476604.9	313191.1	548794.1	350695.8			
3254.00	Sh/Clst	345446.0	200898.8	139349.6	105030.0	62835.7	183588.7	159622.8	66490.6	514112.0	0039-1
		132876.8	35379.1	1281034.5	123132.7	700536.1	473666.3	68649.4	529689.4		
		358247.6	558234.3	372149.3	334818.0	215116.9	464100.6	305960.1			
3272.00	Sh/Clst	743536.0	450319.2	308037.6	159827.0	127344.0	265504.0	258299.0	127067.7	797763.0	0040-1
		223542.9	47452.5	1968613.6	167909.6	1167780.6	775534.3	104530.8	907449.3		
		616304.0	856203.9	559040.0	512098.9	336160.0	680525.5	461019.4			
3284.00	Sh/Clst	307776.0	158990.0	112285.1	96192.0	45828.4	171508.4	185560.9	514964.7	547442.7	0042-1
		143063.1	41911.1	1275814.3	148716.5	720784.0	481032.0	98124.4	524225.4		
		350489.3	432614.8	278965.6	300490.9	188766.1	349850.3	226094.3			

Depth unit of measure: m

Depth	Lithology	p	q	r	s	t	a	b	z	c	Sample
		x	d	e	f	g	h	i	jl		
		j2	k1	k2	l1	l2	m1	m2			
3296.00	Sh/Clst	407948.8	194334.0	129286.4	114816.0	58578.9	255230.1	245711.0	597420.9	783209.3	0044-1
		297680.0	68512.0	2128547.8	301161.6	1231122.5	1009672.7	201460.3	931376.0		
		621303.9	687683.2	472888.0	507650.6	328880.0	472108.0	306414.0			
3320.00	Sh/Clst	709588.2	325163.2	243483.0	209966.2	102834.3	353784.8	276224.0	650820.0	1024447.0	0048-1
		160032.0	74262.3	2115623.0	224725.5	935819.8	647803.4	126704.3	694864.0		
		472278.8	593938.0	379994.5	399883.5	262501.9	504375.5	313587.0			
3342.00	DST 2	155246.8	151984.9	96875.2	56396.0	36352.0	94376.0	74521.6	147190.8	217206.4	0071-0
		52965.2	13114.7	510498.3	33208.4	291630.1	189928.4	21514.5	215873.2		
		145540.0	197482.8	129721.4	131852.2	86032.0	181291.8	116903.1			
3343.16	S/Sst	217834.6	190213.9	118232.0	97674.6	51181.7	136958.3	101551.2	181117.4	306754.0	0054-1
		66022.4	21008.0	653003.2	48069.8	371896.4	244981.6	28040.5	279193.6		
		191792.0	254320.0	170032.0	165198.5	109984.0	231616.0	151956.5			
3344.80	S/Sst	189456.0	179259.3	107329.7	67940.0	45486.6	113407.5	83336.9	165364.6	258073.0	0003-1
		60537.6	15808.0	575940.6	35942.5	324393.2	215776.0	23902.0	238698.9		
		161193.3	220958.8	148252.4	150449.4	96459.3	200780.9	124988.5			

Table 12F: Raw GCMS triterpane data (peak height) SIR for Well NOCS 7/7-2

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			
3345.28	S/Sst	159638.4	148195.4	90449.4	58025.8	37764.4	94285.3	73283.6	135029.6	200082.7	0004-1
		46904.0	11832.0	451008.7	30258.3	253128.0	163991.2	19211.4	187791.7		
		129706.7	174271.1	114056.0	110318.8	70096.0	160868.2	100986.7			
3349.51	S/Sst	158168.9	157717.3	93973.6	56573.1	34478.8	83335.1	83416.7	155121.9	212049.5	0009-1
		39742.9	13648.1	467496.9	31557.9	254460.0	165836.2	19124.0	179288.0		
		123224.4	161511.4	111312.4	107824.6	71234.8	155955.4	98096.3			
3350.00	DST 1	168948.0	161619.6	103002.4	63125.2	38858.0	106045.2	107459.2	193566.0	301609.0	0070-0
		48794.1	18675.2	627405.9	42256.0	355284.8	232917.3	25613.1	253408.0		
		178688.0	235934.8	161515.8	153203.1	99536.0	206249.4	135544.3			

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					
3242.05	Sh/Clst	273862.7	118613.2	782031.5	470505.1	192471.8	207696.7	367522.6	205625.8	221503.3	0051-1
		483263.3	282303.3	213040.0	294032.0	89019.4	84539.4	156795.4	194491.4		
		101599.2	113636.8	192338.0	139050.6	133364.8					
3245.05	Sh/Clst	465873.9	215670.9	1094776.0	680464.0	276679.5	295666.9	483063.3	276512.0	312098.3	0052-1
		719650.3	375714.3	295257.6	417356.8	132806.6	101076.3	202560.7	279360.7		
		135521.5	159978.8	275995.1	206698.7	192041.6					
3254.00	Sh/Clst	416501.7	194857.5	735156.8	461976.0	199065.9	203250.8	330098.8	191944.3	219832.8	0039-1
		535224.8	298040.8	202203.3	296071.0	89146.7	87846.3	175270.3	225510.3		
		98782.4	119786.6	226290.0	175949.2	141470.3					
3272.00	Sh/Clst	558614.4	297520.0	953826.0	614688.0	248403.5	260412.0	374204.0	211411.2	332979.5	0040-1
		731315.4	409523.5	303462.4	396339.2	117771.9	141884.8	247314.5	334226.5		
		133931.5	171597.8	327543.8	259733.3	205283.0					
3284.00	Sh/Clst	258041.4	127892.0	483410.5	291901.5	119024.8	128273.5	185042.3	109625.6	156555.9	0042-1
		338379.9	171083.9	141046.1	189067.9	58087.3	58023.3	99047.3	143207.3		
		63760.0	93275.4	163403.8	120324.2	102849.6					

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					
3296.00	Sh/Clst	252917.7	120693.2	754512.0	461005.4	198461.1	200739.0	306915.0	172411.3	234884.0	0044-1
		503172.0	249988.0	204789.3	297376.0	93154.3	78886.3	123618.3	187366.3		
		83302.4	142714.8	219400.1	161281.3	150983.3					
3320.00	Sh/Clst	728962.6	314002.9	1122480.9	708293.8	285353.5	295662.2	374969.6	185271.4	391356.7	0048-1
		787516.7	434748.7	387514.1	380654.0	112536.9	143988.1	246501.3	321450.1		
		149285.0	223001.5	348204.9	247653.0	230169.3					
3342.00	DST 2	176065.6	88647.0	316405.8	198421.9	75832.0	78252.2	130796.2	72379.0	100134.3	0071-0
		242086.3	137510.3	88860.4	126358.0	38285.5	50020.0	82072.7	110276.0		
		45188.0	56835.7	117287.8	92453.3	71223.4					
3343.16	S/Sst	214305.0	111198.0	403986.3	257032.9	99878.9	102982.1	160813.3	91340.5	127770.4	0054-1
		318234.4	174234.4	118665.6	161929.6	52053.1	60782.2	103790.2	129966.2		
		53621.3	69953.4	151968.0	119291.4	87248.2					
3344.80	S/Sst	216212.3	104874.9	366214.9	218836.3	85421.8	87685.1	138993.6	76149.8	115855.2	0003-1
		282319.2	154959.2	107915.9	142539.9	43240.8	56757.1	91989.1	122629.9		
		46996.3	61050.6	132939.1	101165.5	74289.5					

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					
3345.28	S/Sst	181198.6	93814.6	304512.0	175299.4	71137.7	73600.8	112023.2	63363.2	94908.4	0004-1
		224348.4	123036.4	80188.4	111516.4	32998.6	44062.0	72629.4	99052.9		
		37592.0	47680.3	106066.7	88786.7	55988.8					
3349.51	S/Sst	174363.4	92583.8	284657.1	171787.7	67250.2	66234.9	114284.6	59016.0	93081.1	0009-1
		220121.1	121241.1	84160.3	106336.3	33495.6	46402.0	75874.0	96482.0		
		40225.3	50961.3	102644.5	84163.5	60819.5					
3350.00	DST 1	185969.5	94440.8	335620.6	207945.9	76410.0	79059.5	133004.5	69872.6	117856.3	0070-0
		282283.1	156127.0	103456.3	135648.3	38777.7	57159.6	92519.6	119591.6		
		53080.0	64454.9	136962.1	113869.9	85298.5					

Table 12H: Raw GCMS triaromatic sterane data (peak height) for Well NOCS 7/7-2

Depth unit of measure: m

Depth	Lithology	a1	b1	c1	d1	e1	f1	g1	Sample
3242.05	Sh/Clst	1318183.6	866434.3	717795.3	1967329.0	698253.3	1033701.6	658920.0	0051-1
3245.05	Sh/Clst	1462390.5	943825.8	712090.0	1870565.3	740656.0	955276.8	682653.8	0052-1
3254.00	Sh/Clst	1390309.6	1010464.0	454938.2	1374003.0	568549.6	752020.5	551552.0	0039-1
3272.00	Sh/Clst	1117251.1	914414.3	281358.5	962678.9	376829.1	467285.6	355069.9	0040-1
3284.00	Sh/Clst	1250984.9	955882.9	479380.0	1274819.1	577462.1	642335.7	531113.2	0042-1
3296.00	Sh/Clst	1061805.6	730948.5	501263.9	1248456.0	589136.0	639600.1	533354.6	0044-1
3320.00	Sh/Clst	1279746.0	1018819.0	416803.0	1076899.9	468274.1	453780.5	366176.0	0048-1
3342.00	DST 2	552916.5	422535.1	75207.3	429294.0	198601.6	221652.0	181952.0	0071-0
3343.16	S/Sst	811559.4	616763.4	114997.4	611959.0	276339.2	336884.1	238848.0	0054-1
3344.80	S/Sst	636867.0	512531.3	85396.5	504428.0	222463.9	257184.0	202483.2	0003-1
3345.28	S/Sst	640443.4	514407.4	87072.7	468570.6	227130.0	264904.0	209395.8	0004-1
3349.51	S/Sst	653480.9	528458.7	96553.6	618026.9	287097.8	336287.3	262842.1	0009-1
3350.00	DST 1	611545.0	485832.3	86620.8	522375.0	248989.9	288487.0	226312.7	0070-0

Table 12I: Raw GCMS monoaromatic sterane data (peak height) for Well NOCS 7/7-2

Depth unit of measure: m

Depth	Lithology	a1	b1	c1	d1	e1	f1	g1	h1	i1	Sample
3242.05	Sh/Clst	374424.0	214813.0	334555.2	235232.0	550151.5	179404.5	389880.1	154104.4	20594.3	0051-1
3245.05	Sh/Clst	399520.0	248638.6	329830.7	220557.5	468148.9	156532.0	332495.9	146389.9	15052.5	0052-1
3254.00	Sh/Clst	389026.6	235405.8	264552.0	185704.0	375089.5	110578.0	265102.5	122231.6	9043.8	0039-1
3272.00	Sh/Clst	251535.9	212624.0	192291.7	135788.3	217705.8	75322.8	174592.7	76969.6	7826.9	0040-1
3284.00	Sh/Clst	345187.0	220927.0	162662.0	114042.7	224656.0	69026.8	162308.6	74914.5	12627.4	0042-1
3296.00	Sh/Clst	293396.0	167913.7	227742.4	165924.3	333679.4	108937.3	247839.0	112877.3	22428.0	0044-1
3320.00	Sh/Clst	351506.3	250545.9	309184.0	193043.7	341407.7	94215.4	265480.6	126321.2	27886.3	0048-1
3342.00	DST 2	272843.1	200412.0	184156.0	137486.2	230683.7	72484.4	182651.4	79198.4	6794.0	0071-0
3343.16	S/Sst	390061.2	237306.3	206832.0	118849.9	239516.7	69745.5	176622.2	71690.5	7677.8	0054-1
3344.80	S/Sst	289600.0	233146.3	192673.3	138339.2	233736.0	69531.3	191765.8	78975.6	6902.8	0003-1
3345.28	S/Sst	310416.0	223768.0	178666.3	134169.8	243786.5	63712.0	183344.0	75113.3	3788.8	0004-1
3349.51	S/Sst	348694.8	271237.8	278589.7	196013.5	346709.3	92142.6	288122.7	117342.4	6903.3	0009-1
3350.00	DST 1	335091.7	237418.1	171784.0	128800.7	225731.7	63862.0	179307.5	71244.2	4521.6	0070-0