Prepared for

SAGA PETROLEUM a.s.

A GEOCHEMICAL EVALUATION OF THE 34/7-22 WELL, NORTH SEA (NORWEGIAN SECTOR)

Report Number 94/8667/01/01

March 1994

INTRODUCTION

This report presents the results of a geochemical evaluation of well 34/7-22 drilled by Saga Petroleum a.s. in the Norwegian Sector of the North Sea.

The analytical format employed in this study was specified by the client and was designed to achieve the following objectives:

- to investigate the hydrocarbon source potential of twenty seven ditch cuttings samples from the intervals 2180 - 2225 metres and 2470 - 2506 metres In addition, four (4) core samples from 2236.55 metres and 2325.85 - 2328.95 metres were analysed

- to detect and characterise shows of migrated hydrocarbons within the interval 820 - 2506 metres and in particular, between 2226 - 2315.80 metres. A suite of core samples was included in the study for this purpose

- to test the correlation between the shows and to determine whether they were derived from any of the prospective source intervals identified.

Detailed discussions of Source Richness, Show Detection, Characterisation and Correlation are presented in the appropriate text chapters and have been integrated to form the Conclusions.

This project, which was performed according to the terms and conditions of Contract number K-FK-92-035, was closely supervised by Idar Horstad, Senior Geologist, Saga Petroleum a.s., Sandvika.

ANALYTICAL

One hundred and sixty one (161) canned ditch cuttings samples from the intervals 820

- 2225 metres and 2333 - 2506 metres arrived at the Geochem Group's Laboratories on the 22nd September 1993. In addition, forty five (45) core samples from 2226.00 - 2328.95 metres and sixteen (16) unwashed bagged ditch cuttings samples from the section between 2180 metres and 2225 metres were received in two batches on the 9th November and the 12th November 1993. Geochem were advised that the ditch cuttings samples were collected at ten metre intervals throughout the Tertiary, at five metre intervals through the Cretaceous and every three metres below the Cretaceous. The samples were assigned the Geochem job number 8667.

Geochem were authorised to perform headspace gas and occluded gas analyses for sixty three canned ditch cuttings samples from the interval between 820 metres and 2506 metres according to a detailed sampling programme supplied by Idar Horstad and to undertake total organic carbon and Rock Eval pyrolysis analyses for ditch cuttings samples (both canned and bagged) from 2180 - 2226 metres and 2455 - 2507 metres and for the core samples from 2236.55 metres and 2325.85 - 2328.95 metres. In addition, C_{15+} extraction with iatroscan was requested for the forty one cored sandstone samples from 2226.00 - 2315.80 metres. These data were forwarded by facsimile to Idar Horstad, Senior Geologist, Saga Petroleum a.s. who selected samples for GC, GC MS and stable carbon isotope analysis.

The following analyses were carried out during this study:

	Sample Type		
Analysis	**Cuttings**	**Core**	**SWC**
Headspace gas	63	-	-
Occluded gas	63	-	-
Sample preparation, description and picking	27	4	-
Total organic carbon content	27	4	-
Rock Eval pyrolysis	27	4	-

C_{15+} extraction	12	42	-
Asphaltene precipitation	4	11	-
Iatroscan	12	42	-
Liquid chromatographic separation	12	14	-
GC analysis - saturates fraction	12	14	-
GC analysis - aromatics fraction	12	14	-
GC MS - saturates fraction	4	14	-
GC MS - aromatics fraction	4	14	-
Carbon isotope (five fractions)	4	11	-

TABLE 1
ORGANIC CARBON RESULTS AND GROSS LITHOLOGIC DESCRIPTIONS

JOB 8667 GEOCHEM SAMPLE NUMBER	DEPTH/ IDENTITY	GROSS LITHOLOGIC DESCRIPTION	G S A COLOUR CODE	TOTAL ORGANIC CARBON (Wt. %)
WELL: 34/7-22				
8667-137	2180m	A 95% CLAYSTONE - platy to blocky, firm, non to sl calc, silty, medium grey. B 5% Chalky Limestone.	N5	1.10
8667-207	2180m	A 70% SAND - fine grained, sub-angular, no F, no C, very light grey. B 25% CLAYSTONE - blocky, firm, sl calc, silty, medium dark grey. C 5% Chalky limestone.	N8 N4	1.09
8667-208	2184m	A 80% SAND - as 207A, no F, no C, very light grey. B 15% CLAYSTONE - as 207B, medium dark grey. C 5% Chalky limestone.	N8 N4	1.07
8667-209	2187m	A 85% SAND - as 207A, no F, no C, very light grey. B 10% CLAYSTONE - as 207B, medium dark grey. C 5% Chalky limestone.	N8 N4	1.05
8667-138	2190m	A 95% CLAYSTONE - blocky, mod soft, non to mod calc, silty, medium olive grey. B 5% Chalky Limestone.	5Y5/1	1.35, 1.34
8667-210	2190m	A 85% SAND - fine grained, sub-angular, no F, no C, very light grey. B 15% CLAYSTONE - blocky, mod soft, calc, silty, olive grey.	N8 5Y4/1	1.25
8667-211	2193m	A 85% SAND - as 210A, no F, no C, very light grey. B 15% CLAYSTONE - as 210B, olive grey.	N8 5Y4/1	1.20
8667-212	2195m	A100% CLAYSTONE - as 210B, olive grey.	5Y4/1	1.34
8667-139	2198m	A 80% CLAYSTONE - blocky, mod soft, non to mod calc, silty, olive grey. B 20% SAND - fine grained, sub-angular, pyritic, glauconitic, no F, no C, white.	5Y4/1 N9	1.74
8667-213	2198m	A100% CLAYSTONE - blocky, mod soft, calc, silty, olive grey.	5Y4/1	1.61, 1.58
8667-214	2201m	A100% CLAYSTONE - as 213A, olive grey.	5Y4/1	1.63
8667-215	2204m	A100% CLAYSTONE - as 213A, olive grey.	5Y4/1	2.24

Abbreviations = arenaceous, argillaceous, calcareous, Cut, dolomite, Fluorescence, foraminifera fossiliferous, Lost Circulation Material, moderately, occasionally, slightly, very

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8667-140		2207m	A 95% CLAYSTONE - blocky, mod soft, sl calc, silty, olive grey. B 5% Sand.	5Y4/1	2.25
8667-216		2207m	A100% CLAYSTONE - blocky, mod soft, sl calc, silty, medium dark grey.	N4	1.71, 1.71
8667-217		2210m	A100% CLAYSTONE - as 216A, medium dark grey.	N4	1.97
8667-218		2213m	A100% CLAYSTONE - as 216A, medium dark grey.	N4	2.01
8667-141		2216m	A 95% CLAYSTONE - blocky, mod soft, sl calc, silty, medium dark grey. B 5% Sandstone.	N4	2.23, 2.27
8667-219		2216m	A100% CLAYSTONE - blocky, firm, calc, silty, medium dark grey.	N4	1.97, 2.02
8667-220		2219m	A100% CLAYSTONE - as 219A, medium dark grey.	N4	2.11
8667-221		2222m	A100% CLAYSTONE - as 219A, medium dark grey.	N4	1.83, 1.86
8667-142		2225m	A 85% CLAYSTONE - blocky, mod soft, sl calc, silty, olive grey. B 10% SAND - fine grained, sub-angular, pyritic, glauconitic, no F, no C, white. C 5% Sandstone.	5Y4/1 N9	2.88
8667-222		2225m	A100% CLAYSTONE - blocky, firm, sl calc, silty, medium dark grey.	N4	1.89, 1.92
8667-174	C	2236.55m	A100% COAL - immature, v light, woody, common inter-bedded micaceous sandstone, dark yellowish brown.	10YR4/2	57.50
8667-204	C	2325.85m	A100% CLAYSTONE - platy, hard, non-calc, silty, v micaceous, medium dark grey.	N4	2.46
8667-205	C	2327.00m	A100% CLAYSTONE - platy, hard, non-calc, silty, v micaceous, common sandy lenses, medium dark grey.	N4	2.68
8667-206	C	2328.95m	A100% CLAYSTONE - fissile to platy, mod hard, non-calc, silty, v micaceous, common sandy lenses, medium dark grey.	N4	3.47, 3.43

Abbreviations = arenaceous, argillaceous, calcareous, Cut, dolomite, Fluorescence, foraminifera fossiliferous, Lost Circulation Material, moderately, occasionally, slightly, very

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JOB 8667 GEOCHEM SAMPLE NUMBER	DEPTH/ IDENTITY	GROSS LITHOLOGIC DESCRIPTION	G S A COLOUR CODE	TOTAL ORGANIC CARBON (Wt. %)
8667-143	2333m	A 60% CLAYSTONE - fissile, firm, non-calc, micromicaceous, medium dark grey.	N4	3.69
		B 35% LIGNITE - blocky, firm, sub-vitreous, black.	N1	53.80
		C 5% Sandstone.		
8667-156	2460m	A 60% SANDSTONE - as 155A, no F, no C, yellowish grey.	5Y8/1	
		B 40% CLAYSTONE - blocky, soft, non-calc, medium grey.	N5	1.38
8667-157	2470m	A 95% CLAYSTONE - blocky, soft, non-calc, silty, medium light grey.	N6	1.45
		B 5% Sandstone.		
8667-158	2479m	A 80% CLAYSTONE - as 157A, medium light grey.	N6	1.58
		B 20% SAND - fine to med grained, sub-angular, trace pyrite, no F, no C, very pale orange.	10YR8/2	
8667-159	2488m	A100% CLAYSTONE - platy, firm, non-calc, silty, medium grey.	N5	1.45
8667-160	2497m	A100% CLAYSTONE - as 159A, medium grey.	N5	1.34
8667-161	2506m	A100% CLAYSTONE - as 159A, medium grey.	N5	1.42

Abbreviations = arenaceous, argillaceous, calcareous, Cut, dolomite, Fluorescence, foraminifera fossiliferous, Lost Circulation Material, moderately, occasionally, slightly, very

TABLE 2
ROCKEVAL PYROLYSIS DATA

TOB 8667 GEOCHEM SAMPLE NUMBER		DEPTH/ IDENTITY	TOC (%)	S1 (mg/g)	S2 (mg/g)	S3 (mg/g)	PRODUCTION INDEX	HYDROGEN INDEX	OXYGEN INDEX	TMAX (°C)
WELL: 34/7-22										
8667-137A		2180m	1.10	0.35	1.60	0.65	0.18	145.5	59.1	375
8667-207B		2180m	1.09	0.64	2.73	0.53	0.19	250.5	48.6	367
8667-208B		2184m	1.07	1.23	2.99	0.41	0.29	279.4	38.3	367
8667-209B		2187m	1.05	0.83	2.61	0.34	0.24	248.6	32.4	363
8667-138A		2190m	1.35	0.79	2.83	0.91	0.22	209.6	67.4	437
8667-210B		2190m	1.25	1.65	3.04	0.20	0.35	243.2	16.0	430
8667-211B		2193m	1.20	1.28	3.31	0.19	0.28	275.8	15.8	370
8667-212A		2195m	1.34	2.03	2.86	0.27	0.42	213.4	20.1	352
8667-139A		2198m	1.74	1.00	3.15	0.76	0.24	181.0	43.7	433
8667-213A		2198m	1.60	5.53	4.22	0.30	0.57	263.8	18.8	356
8667-214A		2201m	1.63	4.50	3.85	0.28	0.54	236.2	17.2	360
8667-215A		2204m	2.24	4.04	4.46	0.35	0.48	199.1	15.6	364
8667-140A		2207m	2.25	1.22	2.99	1.13	0.29	132.9	50.2	437
8667-140A		2207m	2.25	1.12	3.12	1.13	0.26	138.7	50.2	375
8667-216A		2207m	1.71	6.52	4.28	0.37	0.60	250.3	21.6	359
8667-217A		2210m	1.97	4.90	4.34	0.40	0.53	220.3	20.3	350
8667-218A		2213m	2.01	4.55	4.10	0.41	0.53	204.0	20.4	362
8667-141A		2216m	2.25	1.35	3.92	1.35	0.26	174.2	60.0	434
8667-219A		2216m	2.00	5.17	4.24	0.57	0.55	212.0	28.5	361
8667-220A		2219m	2.11	6.70	5.30	0.49	0.56	251.2	23.2	362
8667-221A		2222m	1.85	6.16	4.84	0.57	0.56	261.6	30.8	357
8667-142A		2225m	2.88	1.37	4.27	1.50	0.24	148.3	52.1	433
8667-222A		2225m	1.91	3.96	3.53	0.77	0.53	184.8	40.3	350
8667-174A	C	2236.55m	57.50	19.38	323.60	1.84	0.06	562.8	3.2	416
8667-204A	C	2325.85m	2.46	0.25	3.08	0.46	0.08	125.2	18.7	440
8667-205A	C	2327.00m	2.68	0.31	2.86	1.09	0.10	106.7	40.7	442
8667-206A	C	2328.95m	3.45	0.92	3.42	1.94	0.21	99.1	56.2	439
8667-157A		2470m	1.45	0.86	2.78	1.44	0.24	191.7	99.3	437
8667-158A		2479m	1.58	0.86	2.73	1.81	0.24	172.8	114.6	439
8667-159A		2488m	1.45	0.96	2.86	1.28	0.25	197.2	88.3	440
8667-160A		2497m	1.34	0.76	2.40	1.23	0.24	179.1	91.8	377
8667-161A		2506m	1.42	1.05	2.52	1.57	0.29	177.5	110.6	379
8667-161A		2506m	1.42	1.14	2.48	1.50	0.31	174.6	105.6	376

PRODUCTION INDEX = S1 / (S1 + S2) HYDROGEN INDEX = 100 x S2 / TOC
OXYGEN INDEX = 100 x S3 / TOC

TABLE 3
CONCENTRATION (µL GAS / Kg ROCK) OF C_1-C_7 HYDROCARBONS IN HEAD SPACE GAS

JOB 8667 GEOCHEM SAMPLE NUMBER	DEPTH/ IDENTITY	C_1 Methane	C_2 Ethane	C_3 Propane	iC_4 Isobutane	nC_4 Butane	TOTAL C_1-C_4	TOTAL C_2-C_4	% GAS WETNESS	TOTAL C_5-C_7	$\frac{iC_4}{nC_4}$
WELL: 34/7-22											
8667-001	820m	14380	23	34	11	23	14471	90	0.6	23	0.50
8667-005	860m	6722	18	18	18	28	6805	83	1.2	37	0.67
8667-010	910m	14850	76	19	10	38	14993	143	1.0	19	0.25
8667-015	960m	11004	48	18	0	6	11077	72	0.7	6	0.00
8667-020	1010m	26772	142	41	14	20	26989	217	0.8	34	0.67
8667-025	1060m	8965	42	12	12	18	9049	83	0.9	6	0.67
8667-030	1110m	11261	50	22	6	28	11366	105	0.9	11	0.20
8667-035	1160m	42583	21	36	7	7	42655	71	0.2	21	1.00
8667-040	1210m	3816	23	8	0	0	3848	31	0.8	8	0.00
8667-045	1260m	1552	13	4	0	0	1570	18	1.1	0	0.00
8667-050	1310m	2909	27	11	0	5	2952	43	1.5	5	0.00
8667-055	1360m	2611	24	28	5	14	2681	71	2.6	5	0.33
8667-060	1410m	890	12	12	6	12	934	44	4.7	19	0.50
8667-065	1460m	828	56	39	0	6	929	101	10.9	84	0.00
8667-070	1510m	2738	191	79	33	72	3114	375	12.1	737	0.45
8667-075	1560m	446	114	11	6	11	589	143	24.3	92	0.50
8667-080	1610m	2155	95	54	32	72	2408	253	10.5	334	0.44
8667-085	1660m	12620	5045	4806	2127	2465	27063	14442	53.4	3248	0.86
8667-090	1710m	6382	441	633	531	1367	9353	2971	31.8	3914	0.39
8667-095	1760m	2818	356	578	297	804	4853	2035	41.9	1387	0.37
8667-099	1800m	6927	785	887	272	785	9657	2729	28.3	1615	0.35
8667-101	1820m	3431	415	348	95	343	4632	1201	25.9	815	0.28
8667-103	1840m	4703	467	403	102	416	6091	1388	22.8	883	0.25
8667-105	1860m	10497	1657	1338	337	1278	15106	4610	30.5	2512	0.26
8667-107	1880m	8980	1614	1547	370	1784	14296	5315	37.2	3177	0.21
8667-109	1900m	4299	1187	1315	243	1168	8211	3913	47.6	1153	0.21
8667-111	1920m	4077	1696	2798	599	2697	11866	7789	65.6	2692	0.22
8667-113	1940m	8049	3421	5795	1114	5331	23710	15661	66.1	4350	0.21
8667-115	1960m	4027	1846	3424	661	3026	12983	8956	69.0	2297	0.22
8667-117	1980m	3779	1179	2053	347	1797	9155	5376	58.7	1497	0.19
8667-119	2000m	938	504	1106	210	957	3716	2778	74.7	551	0.22
8667-120	2010m	3444	1569	2821	486	2371	10691	7247	67.8	1692	0.21

TABLE 3
CONCENTRATION (µL GAS / Kg ROCK) OF C_1-C_7 HYDROCARBONS IN HEAD SPACE GAS

JOB 8667 GEOCHEM SAMPLE NUMBER	DEPTH/ IDENTITY	C_1 Methane	C_2 Ethane	C_3 Propane	iC_4 Isobutane	nC_4 Butane	TOTAL C_1-C_4	TOTAL C_2-C_4	% GAS WETNESS	TOTAL C_5-C_7	$\frac{iC_4}{nC_4}$
8667-122	2030m	2049	623	960	138	765	4535	2486	54.8	784	0.18
8667-123	2040m	5188	3568	7529	1095	5213	22593	17404	77.0	2983	0.21
8667-124	2050m	6850	2818	6039	885	4679	21271	14420	67.8	3745	0.19
8667-125	2060m	3739	2652	5581	1258	5807	19037	15297	80.4	3394	0.22
8667-126	2070m	3207	1327	2621	420	2250	9825	6618	67.4	1730	0.19
8667-127	2080m	5323	4670	9044	4195	18630	41862	36539	87.3	15437	0.23
8667-128	2090m	6650	7467	14707	5101	24138	58062	51412	88.5	14121	0.21
8667-129	2100m	9052	10116	20208	9140	38284	86801	77748	89.6	26596	0.24
8667-130	2110m	5373	5972	13591	1800	10169	36904	31531	85.4	8268	0.18
8667-131	2117m	4933	5859	10676	6386	24094	51947	47014	90.5	18287	0.27
8667-132	2130m	6093	6279	12166	4201	21295	50034	43941	87.8	12057	0.20
8667-133	2140m	8595	9124	21726	9905	37528	86877	78282	90.1	26695	0.26
8667-134	2150m	5656	5803	10820	5057	21940	49277	43621	88.5	14241	0.23
8667-135	2160m	11702	11450	20443	6983	33253	83831	72128	86.0	23814	0.21
8667-136	2170m	7614	7716	13800	4890	23538	57558	49944	86.8	13602	0.21
8667-137	2180m	10019	9367	18524	4473	24554	66939	56919	85.0	19885	0.18
8667-138	2190m	17105	16657	26890	8366	40521	109539	92434	84.4	24892	0.21
8667-139	2198m	36020	33208	40327	8614	45995	164164	128145	78.1	35060	0.19
8667-140	2207m	30508	28603	44722	9676	47555	161065	130557	81.1	29606	0.20
8667-141	2216m	32117	30226	47946	9394	49532	169214	137098	81.0	33184	0.19
8667-142	2225m	27258	26535	43367	11725	55453	164338	137080	83.4	37558	0.21
8667-143	2333m	68118	61082	58535	13836	64483	266055	197937	74.4	45082	0.21
8667-145	2351m	84016	68039	61356	8492	34749	256652	172637	67.3	31151	0.24
8667-147	2370m	19630	13797	10743	1804	6965	52938	33309	62.9	7109	0.26
8667-149	2390m	14301	4442	4014	649	3203	26609	12308	46.3	4575	0.20
8667-151	2410m	15012	4826	4243	632	3126	27839	12826	46.1	4308	0.20
8667-153	2430m	32193	8963	5789	896	3884	51726	19532	37.8	5154	0.23
8667-155	2450m	13032	7882	5163	876	2889	29842	16810	56.3	2118	0.30
8667-155	2450m	13032	7882	5163	876	2889	29842	16810	56.3	2118	0.30
8667-157	2470m	14597	7953	5430	616	1736	30332	15735	51.9	1343	0.35
8667-159	2488m	31071	9130	7104	787	2342	50433	19363	38.4	3444	0.34
8667-161	2506m	11590	3512	2643	259	647	18651	7061	37.9	813	0.40

TABLE 4
CONCENTRATION (µL GAS / Kg ROCK) OF C_1-C_7 HYDROCARBONS IN CUTTINGS GAS

JOB 8667 GEOCHEM SAMPLE NUMBER	DEPTH/ IDENTITY	C_1 Methane	C_2 Ethane	C_3 Propane	iC_4 Isobutane	nC_4 Butane	TOTAL C_1-C_4	TOTAL C_2-C_4	% GAS WETNESS	TOTAL C_5-C_7	$\frac{iC_4}{nC_4}$
WELL: 34/7-22											
8667-001	820m	1886	68	102	56	226	2338	452	19.3	1435	0.25
8667-005	860m	1370	46	74	28	101	1618	248	15.3	1297	0.27
8667-010	910m	553	76	114	57	143	944	391	41.4	572	0.40
8667-015	960m	640	36	60	18	54	809	169	20.9	435	0.33
8667-020	1010m	1193	27	41	7	27	1295	102	7.9	352	0.25
8667-025	1060m	727	48	72	30	95	972	244	25.2	876	0.31
8667-030	1110m	314	17	17	6	17	369	55	14.9	193	0.33
8667-035	1160m	836	57	79	21	50	1044	207	19.9	350	0.43
8667-040	1210m	289	31	39	23	47	430	141	32.7	391	0.50
8667-045	1260m	225	18	13	9	18	282	57	20.3	123	0.50
8667-050	1310m	279	27	27	21	54	408	129	31.6	225	0.40
8667-055	1360m	85	24	42	38	94	282	198	70.0	400	0.40
8667-060	1410m	112	19	44	62	162	398	286	71.9	143	0.38
8667-065	1460m	73	11	28	6	11	130	56	43.5	56	0.50
8667-070	1510m	53	20	53	13	26	165	112	68.0	276	0.50
8667-075	1560m	172	40	29	11	23	275	103	37.5	286	0.50
8667-080	1610m	45	23	36	9	14	127	81	64.3	488	0.67
8667-085	1660m	206	41	99	247	330	923	717	77.7	4072	0.75
8667-090	1710m	62	6	11	6	11	96	34	35.3	638	0.50
8667-095	1760m	151	32	54	32	130	399	248	62.2	4653	0.25
8667-099	1800m	95	13	19	44	247	418	323	77.3	1380	0.18
8667-101	1820m	176	29	24	14	91	334	157	47.1	1477	0.16
8667-103	1840m	70	6	13	19	147	256	186	72.5	915	0.13
8667-105	1860m	527	35	69	35	147	811	285	35.1	2313	0.24
8667-107	1880m	98	10	21	36	144	308	211	68.3	936	0.25
8667-109	1900m	124	10	24	38	124	319	195	61.2	2774	0.31
8667-111	1920m	48	5	38	57	374	522	474	90.8	6530	0.15
8667-113	1940m	491	40	80	172	796	1578	1087	68.9	13897	0.22
8667-115	1960m	73	5	63	58	540	739	666	90.1	10183	0.11
8667-117	1980m	86	10	109	90	837	1131	1046	92.4	7097	0.11
8667-119	2000m	65	9	79	61	546	761	696	91.4	8716	0.11
8667-120	2010m	124	18	87	50	638	917	793	86.5	6013	0.08

TABLE 4
CONCENTRATION (µL GAS / Kg ROCK) OF C_1-C_7 HYDROCARBONS IN CUTTINGS GAS

JOB 8667 GEOCHEM SAMPLE NUMBER	DEPTH/ IDENTITY	C_1 Methane	C_2 Ethane	C_3 Propane	iC_4 Isobutane	nC_4 Butane	TOTAL C_1-C_4	TOTAL C_2-C_4	% GAS WETNESS	TOTAL C_5-C_7	$\frac{iC_4}{nC_4}$
8667-122	2030m	67	29	57	52	323	528	461	87.4	4145	0.16
8667-123	2040m	127	24	141	146	1231	1669	1543	92.4	19137	0.12
8667-124	2050m	226	18	49	43	281	616	390	63.4	5966	0.15
8667-125	2060m	238	23	45	45	295	646	408	63.2	5926	0.15
8667-126	2070m	127	6	28	11	72	243	116	47.7	3588	0.15
8667-127	2080m	156	34	395	391	3166	4142	3987	96.2	46327	0.12
8667-128	2090m	247	63	1126	1068	8995	11499	11252	97.9	67245	0.12
8667-129	2100m	20	34	498	566	4831	5949	5929	99.7	70682	0.12
8667-130	2110m	248	314	4385	2286	21108	28342	28094	99.1	98496	0.11
8667-131	2117m	283	733	9557	4140	34877	49590	49307	99.4	113636	0.12
8667-132	2130m	289	747	9743	4737	38136	53653	53364	99.5	117465	0.12
8667-133	2140m	243	1032	13070	6565	53894	74805	74562	99.7	218429	0.12
8667-134	2150m	166	725	8418	4159	35189	48658	48492	99.7	162604	0.12
8667-135	2160m	108	421	4599	2540	23393	31062	30953	99.7	113761	0.11
8667-136	2170m	60	156	1860	942	8958	11976	11916	99.5	51468	0.11
8667-137	2180m	673	309	2419	904	9227	13532	12859	95.0	43065	0.10
8667-138	2190m	2988	5826	27095	6592	59736	102237	99249	97.1	96561	0.11
8667-139	2198m	1495	1361	10444	3481	36779	53561	52066	97.2	102837	0.09
8667-140	2207m	577	552	5916	2382	27400	36826	36249	98.4	72949	0.09
8667-141	2216m	3538	6588	25681	5307	53314	94428	90890	96.3	127460	0.10
8667-142	2225m	1553	1277	1064	3766	39664	47325	45771	96.7	121674	0.10
8667-143	2333m	20761	68946	138820	18498	155229	402254	381493	94.8	150468	0.12
8667-145	2351m	1912	4750	10836	2714	18835	39047	37135	95.1	42049	0.14
8667-147	2370m	606	698	3581	1172	10361	16417	15812	96.3	26265	0.11
8667-149	2390m	1638	517	2243	767	6730	11895	10257	86.2	21045	0.11
8667-151	2410m	1733	259	794	308	3255	6348	4615	72.7	30009	0.09
8667-153	2430m	710	1382	15798	7843	66328	92060	91351	99.2	281671	0.12
8667-155	2450m	2118	3425	8784	2183	15424	31934	29816	93.4	26653	0.14
8667-157	2470m	889	1043	2403	547	3489	8372	7482	89.4	8252	0.16
8667-159	2488m	748	708	2538	826	5451	10272	9524	92.7	25049	0.15
8667-161	2506m	1645	1645	4547	1128	7061	16026	14381	89.7	16267	0.16

TABLE 5
CONCENTRATION (µL GAS / Kg ROCK) OF C_1-C_7 HYDROCARBONS (A + B)

JOB 8667 GEOCHEM SAMPLE NUMBER	DEPTH/ IDENTITY	C_1 Methane	C_2 Ethane	C_3 Propane	iC_4 Isobutane	nC_4 Butane	TOTAL C_1-C_4	TOTAL C_2-C_4	% GAS WETNESS	TOTAL C_5-C_7	$\frac{iC_4}{nC_4}$
WELL: 34/7-22											
8667-001	820m	16267	90	136	68	249	16809	542	3.2	1457	0.27
8667-005	860m	8092	64	92	46	129	8424	331	3.9	1333	0.36
8667-010	910m	15403	153	133	67	181	15936	534	3.3	591	0.37
8667-015	960m	11644	85	79	18	60	11886	242	2.0	441	0.30
8667-020	1010m	27965	169	81	20	47	28284	319	1.1	386	0.43
8667-025	1060m	9692	89	83	42	113	10020	328	3.3	882	0.37
8667-030	1110m	11575	66	39	11	44	11735	160	1.4	204	0.25
8667-035	1160m	43420	79	114	29	57	43698	279	0.6	372	0.50
8667-040	1210m	4106	55	47	23	47	4278	172	4.0	399	0.50
8667-045	1260m	1777	31	18	9	18	1852	75	4.0	123	0.50
8667-050	1310m	3188	54	38	21	59	3359	172	5.1	231	0.36
8667-055	1360m	2696	47	71	42	108	2964	268	9.0	405	0.39
8667-060	1410m	1002	31	56	68	174	1332	330	24.8	162	0.39
8667-065	1460m	901	68	68	6	17	1059	158	14.9	141	0.33
8667-070	1510m	2791	211	132	46	99	3278	487	14.9	1014	0.47
8667-075	1560m	618	154	40	17	34	864	246	28.5	377	0.50
8667-080	1610m	2201	117	90	41	86	2535	334	13.2	822	0.47
8667-085	1660m	12826	5086	4905	2374	2794	27986	15159	54.2	7320	0.85
8667-090	1710m	6445	446	644	537	1378	9449	3005	31.8	4552	0.39
8667-095	1760m	2969	389	632	329	934	5252	2283	43.5	6041	0.35
8667-099	1800m	7022	798	906	317	1032	10074	3052	30.3	2995	0.31
8667-101	1820m	3608	443	372	110	434	4966	1358	27.4	2292	0.25
8667-103	1840m	4773	473	416	122	563	6347	1574	24.8	1798	0.22
8667-105	1860m	11023	1692	1407	371	1424	15918	4894	30.7	4825	0.26
8667-107	1880m	9078	1624	1568	406	1928	14604	5526	37.8	4112	0.21
8667-109	1900m	4423	1196	1339	281	1291	8530	4108	48.2	3927	0.22
8667-111	1920m	4125	1701	2836	656	3071	12388	8264	66.7	9222	0.21
8667-113	1940m	8540	3461	5875	1286	6127	25288	16748	66.2	18247	0.21
8667-115	1960m	4100	1851	3487	718	3566	13722	9622	70.1	12480	0.20
8667-117	1980m	3864	1188	2163	437	2633	10286	6422	62.4	8594	0.17
8667-119	2000m	1004	514	1186	271	1503	4477	3473	77.6	9267	0.18
8667-120	2010m	3568	1587	2908	537	3009	11608	8040	69.3	7705	0.18

TABLE 5
CONCENTRATION (µL GAS / Kg ROCK) OF C_1-C_7 HYDROCARBONS (A + B)

JOB 8667 GEOCHEM SAMPLE NUMBER	DEPTH/ IDENTITY	C_1 Methane	C_2 Ethane	C_3 Propane	iC_4 Isobutane	nC_4 Butane	TOTAL C_1-C_4	TOTAL C_2-C_4	% GAS WETNESS	TOTAL C_5-C_7	$\frac{iC_4}{nC_4}$
8667-122	2030m	2115	651	1017	190	1088	5062	2947	58.2	4929	0.17
8667-123	2040m	5315	3592	7670	1241	6444	24262	18947	78.1	22121	0.19
8667-124	2050m	7076	2837	6088	927	4959	21887	14811	67.7	9711	0.19
8667-125	2060m	3977	2674	5626	1303	6102	19682	15705	79.8	9320	0.21
8667-126	2070m	3334	1332	2648	431	2322	10068	6734	66.9	5319	0.19
8667-127	2080m	5479	4704	9439	4586	21797	46004	40526	88.1	61764	0.21
8667-128	2090m	6897	7529	15833	6168	33133	69561	62664	90.1	81366	0.19
8667-129	2100m	9072	10150	20706	9706	43115	92749	83677	90.2	97278	0.23
8667-130	2110m	5622	6286	17976	4086	31277	65246	59625	91.4	106764	0.13
8667-131	2117m	5216	6591	20233	10526	58971	101537	96321	94.9	131923	0.18
8667-132	2130m	6382	7026	21908	8939	59431	103686	97304	93.8	129523	0.15
8667-133	2140m	8838	10156	34796	16470	91422	161682	152844	94.5	245125	0.18
8667-134	2150m	5823	6528	19238	9217	57129	97935	92112	94.1	176845	0.16
8667-135	2160m	11811	11871	25042	9523	56646	114893	103082	89.7	137575	0.17
8667-136	2170m	7674	7872	15660	5832	32496	69534	61860	89.0	65070	0.18
8667-137	2180m	10693	9676	20943	5378	33781	80471	69778	86.7	62949	0.16
8667-138	2190m	20093	22483	53985	14957	100258	211776	191683	90.5	121452	0.15
8667-139	2198m	37515	34569	50771	12096	82774	217725	180210	82.8	137897	0.15
8667-140	2207m	31085	29155	50638	12058	74955	197891	166806	84.3	102555	0.16
8667-141	2216m	35655	36814	73627	14701	102846	263642	227988	86.5	160644	0.14
8667-142	2225m	28812	27812	44431	15491	95117	211663	182851	86.4	159231	0.16
8667-143	2333m	88879	130029	197356	32334	219711	668309	579430	86.7	195550	0.15
8667-145	2351m	85928	72789	72192	11206	53584	295699	209771	70.9	73200	0.21
8667-147	2370m	20235	14495	14324	2975	17326	69356	49120	70.8	33374	0.17
8667-149	2390m	15939	4959	6257	1417	9932	38504	22565	58.6	25620	0.14
8667-151	2410m	16745	5085	5037	939	6381	34187	17442	51.0	34317	0.15
8667-153	2430m	32903	10345	21587	8739	70212	143786	110883	77.1	286824	0.12
8667-155	2450m	15150	11307	13947	3059	18313	61776	46626	75.5	28770	0.17
8667-157	2470m	15487	8996	7833	1163	5225	38704	23217	60.0	9595	0.22
8667-159	2488m	31818	9839	9642	1614	7792	60705	28886	47.6	28493	0.21
8667-161	2506m	13235	5157	7191	1386	7708	34678	21442	61.8	17080	0.18

TABLE 6
CONCENTRATION (PPM) OF EXTRACTED C_{15+} MATERIAL IN ROCK

JOB 8667	LITHO	DEPTH/ IDENTITY	TOTAL EXTRACT	HYDROCARBONS			NON HYDROCARBONS			
GEOCHEM SAMPLE NUMBER				Saturates	Aromatics	TOTAL	Preciptd. Asphaltenes	Eluted NSO's	Non-Eluted NSO's	TOTAL
WELL: 34/7-22										
8667-085A		1660m	2371	745	706	1451	323	593	3	920
8667-113A		1940m	1273	214	268	481	268	521	2	792
8667-127A		2080m	2527	941	614	1555	348	619	5	972
8667-129A		2100m	2351	905	565	1470	250	628	3	881
8667-131A		2117m	3708	1825	867	2692	346	665	4	1016
8667-133A		2140m	3752	2100	660	2760	257	730	4	992
8667-138A		2190m	3101	441	1496	1937	290	871	4	1165
8667-139A		2198m	5013	652	2474	3126	422	1455	10	1887
8667-140A		2207m	4182	375	2735	3110	229	834	9	1071
8667-141A		2216m	3553	637	1475	2113	251	1185	4	1441
8667-162	C	2226.00m	34116	22366	9364	31730	432	1920	34	2386
8667-163	C	2227.00m	39779	25771	11039	36810	494	2396	79	2969
8667-164	C	2228.30m	24654	15849	6465	22313	531	1761	49	2341
8667-165	C	2229.00m	20718	13193	5695	18888	452	1358	20	1830
8667-166	C	2230.00m	22785	14332	6283	20615	426	1721	23	2170
8667-167	C	2231.00m	11159	6729	3018	9747	305	1096	11	1412
8667-168	C	2232.00m	19030	12026	5285	17310	356	1326	38	1720
8667-169	C	2233.00m	14708	9484	4061	13545	358	774	30	1163
8667-170	C	2233.50m	12180	7759	3070	10830	279	1059	13	1351
8667-171	C	2234.00m	10172	6405	2400	8805	257	1090	21	1368
8667-172	C	2235.00m	8501	4493	2467	6960	332	1192	17	1541
8667-173	C	2236.00m	10317	5716	3237	8953	358	956	50	1364
8667-174A	C	2236.55m	42759	6783	16650	23432	8499	10791	36	19326
8667-175	C	2237.00m	14872	8847	4481	13328	321	1193	30	1544
8667-176	C	2238.00m	13968	8552	3715	12267	458	1229	14	1702
8667-177	C	2239.00m	7613	4698	1863	6561	306	738	8	1052
8667-178	C	2240.00m	19535	11464	5847	17311	428	1777	20	2225
8667-179	C	2241.00m	4778	2585	1308	3893	251	629	5	885
8667-180	C	2242.00m	10881	6671	2767	9438	358	1073	12	1443
8667-181	C	2242.80m	12402	7849	3063	10912	528	950	13	1490
8667-182	C	2243.50m	8262	5024	2070	7094	387	771	10	1169
8667-183	C	2244.00m	3661	340	58	397	263	2997	4	3264

S-shale, SS sandstone, L limestone, D dolomite, M mixed, see Table 1.

TABLE 6
CONCENTRATION (PPM) OF EXTRACTED C_{15+} MATERIAL IN ROCK

JOB 8667	LITHO			HYDROCARBONS			NON HYDROCARBONS			
GEOCHEM SAMPLE NUMBER		DEPTH/ IDENTITY	TOTAL EXTRACT	Saturates	Aromatics	TOTAL	Preciptd. Asphaltenes	Eluted NSO's	Non-Eluted NSO's	TOTAL
8667-184	C	2245.00m	14845	9973	3097	13070	638	1108	30	1775
8667-185	C	2246.00m	2283	245	47	292	254	1734	3	1991
8667-186	C	2247.00m	15052	9050	3571	12621	709	1706	15	2431
8667-187	C	2248.00m	3554	1077	443	1520	386	1644	4	2034
8667-188	C	2249.00m	10541	6159	2805	8963	558	1008	11	1577
8667-189	C	2250.00m	1872	446	129	575	236	1056	4	1297
8667-190	C	2251.00m	3207	1005	121	1126	520	1556	6	2081
8667-191	C	2251.50m	4635	2295	1099	3393	221	1015	5	1241
8667-192	C	2253.00m	8142	3438	2351	5789	484	1853	16	2353
8667-193	C	2253.70m	3643	1888	875	2763	224	653	4	881
8667-194	C	2255.75m	5225	1919	1334	3253	426	1540	5	1972
8667-195	C	2257.00m	3632	338	20	357	349	2921	4	3274
8667-196	C	2261.00m	3304	295	9	303	294	2703	4	3001
8667-197	C	2266.00m	2717	619	9	628	408	1676	5	2090
8667-198	C	2270.00m	4102	694	211	905	576	2613	8	3197
8667-199	C	2294.00m	2476	336	353	689	374	1410	3	1787
8667-200	C	2308.80m	2337	490	59	549	368	1418	3	1788
8667-201	C	2309.70m	10372	5753	2599	8352	452	1557	10	2019
8667-202	C	2313.50m	1812	159	28	187	337	1285	3	1625
8667-203	C	2315.80m	2447	687	64	751	389	1305	3	1696
8667-143		2333m	15184	2018	4036	6054	3517	5588	25	9130
8667-153A		2430m	1405	246	148	394	316	693	2	1010

S-shale, SS sandstone, L limestone, D dolomite, M-mixed, see Table 1.

TABLE 7
COMPOSITION (NORMALISED %) OF C_{15+} MATERIAL

JOB 8667 / GEOCHEM SAMPLE NUMBER	LITHO	DEPTH/ IDENTITY	HYDROCARBONS		NON HYDROCARBONS		
			Saturates	Aromatics	Preciptd. Asphaltenes	Eluted NSO's	Non-Eluted NSO's
WELL: 34/7-22							
8667-085A		1660m	31.41	29.78	13.64	25.03	0.13
8667-113A		1940m	16.78	21.04	21.08	40.94	0.16
8667-127A		2080m	37.24	24.30	13.78	24.48	0.20
8667-129A		2100m	38.49	24.02	10.65	26.71	0.12
8667-131A		2117m	49.23	23.38	9.33	17.95	0.11
8667-133A		2140m	55.98	17.59	6.86	19.46	0.11
8667-138A		2190m	14.22	48.22	9.34	28.09	0.13
8667-139A		2198m	13.00	49.36	8.41	29.03	0.20
8667-140A		2207m	8.98	65.40	5.47	19.94	0.21
8667-141A		2216m	17.93	41.53	7.08	33.35	0.12
8667-162	C	2226.00m	65.56	27.45	1.27	5.63	0.10
8667-163	C	2227.00m	64.78	27.75	1.24	6.02	0.20
8667-164	C	2228.30m	64.28	26.22	2.15	7.14	0.20
8667-165	C	2229.00m	63.68	27.49	2.18	6.55	0.10
8667-166	C	2230.00m	62.90	27.57	1.87	7.55	0.10
8667-167	C	2231.00m	60.30	27.04	2.73	9.82	0.10
8667-168	C	2232.00m	63.19	27.77	1.87	6.97	0.20
8667-169	C	2233.00m	64.49	27.61	2.44	5.27	0.20
8667-170	C	2233.50m	63.70	25.21	2.29	8.70	0.10
8667-171	C	2234.00m	62.97	23.59	2.52	10.72	0.20
8667-172	C	2235.00m	52.85	29.02	3.90	14.03	0.20
8667-173	C	2236.00m	55.41	31.37	3.47	9.26	0.49
8667-174A	C	2236.55m	15.86	38.94	19.88	25.24	0.08
8667-175	C	2237.00m	59.49	30.13	2.16	8.02	0.20
8667-176	C	2238.00m	61.22	26.60	3.28	8.80	0.10
8667-177	C	2239.00m	61.71	24.47	4.02	9.69	0.10
8667-178	C	2240.00m	58.68	29.93	2.19	9.09	0.10
8667-179	C	2241.00m	54.10	27.38	5.25	13.17	0.11
8667-180	C	2242.00m	61.31	25.43	3.29	9.86	0.11
8667-181	C	2242.80m	63.29	24.70	4.25	7.66	0.10
8667-182	C	2243.50m	60.80	25.05	4.69	9.34	0.12
8667-183	C	2244.00m	9.27	1.57	7.18	81.86	0.11
8667-184	C	2245.00m	67.18	20.86	4.30	7.46	0.20
8667-185	C	2246.00m	10.75	2.04	11.12	75.98	0.12
8667-186	C	2247.00m	60.13	23.73	4.71	11.34	0.10
8667-187	C	2248.00m	30.30	12.47	10.86	46.25	0.11
8667-188	C	2249.00m	58.43	26.61	5.30	9.56	0.10
8667-189	C	2250.00m	23.84	6.88	12.63	56.42	0.21
8667-190	C	2251.00m	31.33	3.77	16.20	48.52	0.18
8667-191	C	2251.50m	49.51	23.70	4.77	21.90	0.11
8667-192	C	2253.00m	42.23	28.87	5.95	22.76	0.19
8667-193	C	2253.70m	51.81	24.02	6.14	17.92	0.11
8667-194	C	2255.75m	36.73	25.53	8.16	29.48	0.10
8667-195	C	2257.00m	9.31	0.54	9.60	80.44	0.11
8667-196	C	2261.00m	8.91	0.27	8.90	81.80	0.12
8667-197	C	2266.00m	22.77	0.33	15.02	61.69	0.19
8667-198	C	2270.00m	16.92	5.14	14.04	63.70	0.20
8667-199	C	2294.00m	13.57	14.26	15.11	56.96	0.11
8667-200	C	2308.80m	20.97	2.52	15.72	60.66	0.12
8667-201	C	2309.70m	55.47	25.06	4.36	15.01	0.10
8667-202	C	2313.50m	8.79	1.54	18.58	70.91	0.18
8667-203	C	2315.80m	28.09	2.60	15.88	53.33	0.11
8667-143		2333m	13.29	26.58	23.16	36.80	0.16

S-shale, SS-sandstone, L-limestone, D-dolomite, M-mixed, see Table 1.

TABLE 7
COMPOSITION (NORMALISED %) OF C_{15+} MATERIAL

JOB 8667 / GEOCHEM SAMPLE NUMBER	LITHO	DEPTH/ IDENTITY	HYDROCARBONS		NON HYDROCARBONS		
			Saturates	Aromatics	Preciptd. Asphaltenes	Eluted NSO's	Non-Eluted NSO's
8667-153A		2430m	17.54	10.54	22.48	49.30	0.15

S-shale, SS-sandstone, L-limestone, D-dolomite, M-mixed, see Table 1.

TABLE 8
SIGNIFICANT C_{15+} RATIOS

JOB 8667 GEOCHEM SAMPLE NUMBER	LITHO	DEPTH/ IDENTITY	TOC (%)	mg/g TOC						HYDROCARBONS % TOTAL EXTRACT	SATURATES AROMATICS
				TOTAL EXTRACT	SATURATES	AROMATICS	TOTAL HYDROCARBONS	ELUTED NSO's	ASPHALTENES		
WELL: 34/7-22											
8667-085A		1660m	0.59	401.84	126.23	119.67	245.91	100.59	54.83	61.19	1.05
8667-113A		1940m	0.54	235.74	39.55	49.60	89.15	96.52	49.70	37.81	0.80
8667-127A		2080m	0.79	319.85	119.11	77.73	196.84	78.30	44.08	61.54	1.53
8667-129A		2100m	0.81	290.31	111.75	69.74	181.49	77.54	30.91	62.52	1.60
8667-131A		2117m	0.79	469.37	231.06	109.75	340.81	84.23	43.79	72.61	2.11
8667-133A		2140m	0.91	412.27	230.77	72.53	303.30	80.25	28.26	73.57	3.18
8667-138A		2190m	1.23	252.15	35.85	121.59	157.45	70.83	23.56	62.44	0.29
8667-139A		2198m	1.60	313.32	40.74	154.65	195.39	90.94	26.34	62.36	0.26
8667-140A		2207m	2.12	197.24	17.70	129.00	146.71	39.33	10.79	74.38	0.14
8667-141A		2216m	1.76	201.88	36.20	83.83	120.03	67.32	14.29	59.46	0.43
8667-162	C	2226.00m	0.15	22743.82	14910.81	6242.51	21153.32	1279.95	287.76	93.01	2.39
8667-163	C	2227.00m	0.23	17295.21	11204.68	4799.55	16004.24	1041.69	214.72	92.54	2.33
8667-164	C	2228.30m	0.17	14502.39	9322.85	3802.72	13125.57	1035.68	312.07	90.51	2.45
8667-165	C	2229.00m	0.46	4503.96	2868.14	1237.99	4106.13	295.18	98.21	91.17	2.32
8667-166	C	2230.00m	0.36	6329.29	3981.23	1745.28	5726.51	478.15	118.29	90.48	2.28
8667-167	C	2231.00m	0.17	6564.36	3958.51	1775.04	5733.55	644.81	179.29	87.34	2.23
8667-168	C	2232.00m	0.34	5597.15	3536.97	1554.31	5091.29	389.86	104.79	90.96	2.28
8667-169	C	2233.00m	0.25	5883.11	3793.79	1624.29	5418.08	309.77	143.38	92.10	2.34
8667-170	C	2233.50m	0.23	5295.84	3373.66	1334.93	4708.59	460.49	121.22	88.91	2.53
8667-171	C	2234.00m	0.19	5353.93	3371.22	1262.90	4634.12	573.86	135.01	86.56	2.67
8667-172	C	2235.00m	1.00	850.05	449.26	246.69	695.96	119.22	33.19	81.87	1.82
8667-173	C	2236.00m	0.29	3557.64	1971.14	1116.09	3087.23	329.61	123.42	86.78	1.77
8667-174A	C	2236.55m	49.80	85.86	13.62	33.43	47.05	21.67	17.07	54.80	0.41
8667-175	C	2237.00m	0.71	2094.63	1246.03	631.17	1877.20	168.02	45.22	89.62	1.97
8667-176	C	2238.00m	0.33	4232.85	2591.40	1125.83	3717.23	372.47	138.87	87.82	2.30
8667-177	C	2239.00m	0.54	1409.78	870.02	345.01	1215.03	136.65	56.70	86.19	2.52
8667-178	C	2240.00m	0.10	19535.47	11464.11	5846.71	17310.81	1776.61	428.21	88.61	1.96
8667-179	C	2241.00m	0.31	1541.43	833.95	421.99	1255.94	202.95	80.87	81.48	1.98
8667-180	C	2242.00m	0.17	6400.54	3924.05	1627.86	5551.92	631.04	210.78	86.74	2.41
8667-181	C	2242.80m	0.14	8858.44	5606.13	2187.95	7794.08	678.36	376.83	87.98	2.56
8667-182	C	2243.50m	0.12	6885.26	4186.50	1724.77	5911.27	642.87	322.82	85.85	2.43
8667-183	C	2244.00m	0.08	4576.25	424.38	71.88	496.25	3746.25	328.75	10.84	5.90

S-shale, SS-sandstone, L-limestone, D dolomite, M-mixed, see Table 1.

TABLE 8
SIGNIFICANT C_{15+} RATIOS

JOB 8667 GEOCHEM SAMPLE NUMBER	LITHO	DEPTH/ IDENTITY	TOC (%)	mg/g TOC						HYDROCARBONS % TOTAL EXTRACT	SATURATES / AROMATICS
				TOTAL EXTRACT	SATURATES	AROMATICS	TOTAL HYDROCARBONS	ELUTED NSO's	ASPHALTENES		
8667-184	C	2245.00m	0.10	14845.14	9973.04	3096.72	13069.77	1107.82	637.95	88.04	3.22
8667-185	C	2246.00m	0.08	2853.38	306.74	58.17	364.90	2168.02	317.16	12.79	5.27
8667-186	C	2247.00m	0.08	18814.75	11312.61	4463.83	15776.43	2132.92	886.67	83.85	2.53
8667-187	C	2248.00m	0.10	3554.02	1076.92	443.31	1520.23	1643.84	385.95	42.77	2.43
8667-188	C	2249.00m	0.18	5855.84	3421.55	1558.16	4979.70	559.98	310.17	85.04	2.20
8667-189	C	2250.00m	0.04	4679.75	1115.88	322.08	1437.96	2640.51	591.24	30.73	3.46
8667-190	C	2251.00m	0.06	5344.77	1674.72	201.39	1876.11	2593.04	865.96	35.10	8.32
8667-191	C	2251.50m	0.08	5793.53	2868.51	1373.33	4241.84	1268.67	276.63	73.22	2.09
8667-192	C	2253.00m	0.05	16284.83	6876.54	4701.94	11578.48	3706.35	968.25	71.10	1.46
8667-193	C	2253.70m	0.09	4048.20	2097.28	972.42	3069.71	725.38	248.67	75.83	2.16
8667-194	C	2255.75m	0.10	5225.01	1919.28	1333.75	3253.03	1540.36	426.18	62.26	1.44
8667-195	C	2257.00m	0.14	2594.05	241.40	13.95	255.35	2086.77	249.15	9.84	17.31
8667-196	C	2261.00m	0.05	6608.43	589.11	17.56	606.67	5405.62	588.24	9.18	33.55
8667-197	C	2266.00m	0.15	1811.55	412.50	5.97	418.47	1117.50	272.09	23.10	69.04
8667-198	C	2270.00m	0.05	8203.54	1388.32	422.07	1810.39	5225.50	1151.58	22.07	3.29
8667-199	C	2294.00m	0.07	3536.72	479.96	504.17	984.13	2014.53	534.30	27.83	0.95
8667-200	C	2308.80m	0.09	2596.96	544.64	65.51	610.15	1575.38	408.37	23.49	8.31
8667-201	C	2309.70m	0.07	14816.50	8219.07	3712.71	11931.78	2224.47	645.62	80.53	2.21
8667-202	C	2313.50m	0.06	3020.29	265.41	46.40	311.80	2141.80	561.12	10.32	5.72
8667-203	C	2315.80m	0.08	3058.66	859.10	79.50	938.60	1631.03	485.75	30.69	10.81
8667-143		2333m	14.90	101.90	13.54	27.09	40.63	37.50	23.60	39.87	0.50
8667-153A		2430m	0.22	638.53	111.99	67.29	179.28	314.79	143.52	28.08	1.66

S-shale, SS sandstone, L limestone, D dolomite, M mixed, see Table 1.

TABLE 9

COMPOSITION (NORMALISED %) OF C_{15+} SATURATE (PARAFFIN - NAPHTHENE) HYDROCARBONS

GEOCHEM SAMPLE NUMBER	085	113	127	129	131	133
DEPTH	1660m	1940m	2080m	2100m	2117m	2140m
SAMPLE TYPE						
nC15	26.45	24.10	11.39	12.40	9.18	10.76
nC16	17.26	15.32	10.36	11.29	9.22	10.06
nC17	6.24	6.37	9.38	9.53	8.97	9.00
nC18	5.69	7.06	8.60	8.76	8.33	8.09
nC19	3.12	2.93	8.53	8.24	8.46	8.03
nC20	2.94	3.61	6.75	6.38	6.95	6.46
nC21	1.29	2.58	5.74	5.40	6.16	5.59
nC22	1.56	3.27	5.13	4.94	5.69	5.15
nC23	2.75	3.61	4.53	4.44	5.15	4.72
nC24	4.04	3.10	4.16	4.13	4.69	4.38
nC25	1.84	4.48	3.55	3.52	3.90	3.73
nC26	2.02	3.10	3.30	3.27	3.55	3.52
nC27	2.75	5.51	2.95	2.96	3.12	3.16
nC28	4.96	3.27	2.46	3.08	3.27	2.73
nC29	2.75	4.48	2.97	2.96	2.97	3.22
nC30	5.88	1.38	2.46	2.00	2.14	2.35
nC31	3.49	3.61	2.34	2.25	2.28	2.52
nC32	2.02	0.69	1.39	1.33	1.59	1.95
nC33	1.29	0.76	1.52	1.73	1.94	1.78
nC34	1.10	0.37	1.85	0.71	1.82	1.67
nC35	0.55	0.41	0.66	0.68	0.61	1.14
Paraffin	1.94	17.78	16.26	18.82	15.91	16.95
Isoprenoid	0.50	3.02	2.61	2.87	2.41	2.64
Naphthene	97.56	79.20	81.13	78.31	81.68	80.41
CPI 1 Index	0.75	1.25	0.99	0.97	0.97	0.99
CPI 2 Index	0.68	1.90	1.09	1.07	1.03	1.09
CPI 3 Index	0.79	1.73	1.02	0.93	0.92	1.01
Prist/Phytane	1.70	1.69	1.56	1.64	1.55	1.63
Prist/nC17	1.35	0.59	0.71	0.70	0.72	0.73
Phytane/nC18	0.87	0.32	0.49	0.46	0.50	0.50

Job Number : 8667

$$C.P.I.\ 1 = \frac{1}{2}\left[\frac{C21 + C23 + C25 + C27}{C20 + C22 + C24 + C26} + \frac{C21 + C23 + C25 + C27}{C22 + C24 + C26 + C28}\right]$$

$$C.P.I.\ 2 = \frac{1}{2}\left[\frac{C25 + C27 + C29 + C31}{C24 + C26 + C28 + C30} + \frac{C25 + C27 + C29 + C31}{C26 + C28 + C30 + C32}\right]$$

$$C.P.I.\ 3 = \frac{2x\ (C27)}{C26 + C28}$$

CT - ditch cuttings CO - core SWC - sidewall core

TABLE 9

COMPOSITION (NORMALISED %) OF C_{15+} SATURATE (PARAFFIN - NAPHTHENE) HYDROCARBONS

GEOCHEM SAMPLE NUMBER	138A	139A	140A	141A	162	165
DEPTH	2190m	2198m	2207m	2216m	2226m	2229m
SAMPLE TYPE						
nC15	35.18	16.99	21.99	16.63	4.05	3.30
nC16	13.23	12.88	16.09	11.30	6.43	5.79
nC17	6.22	6.98	6.44	6.86	8.10	7.69
nC18	4.27	5.66	4.47	4.95	8.17	8.16
nC19	4.27	6.05	3.40	4.32	9.17	9.42
nC20	3.25	4.42	3.30	3.94	7.75	7.96
nC21	2.91	3.65	3.01	3.94	6.86	7.12
nC22	2.70	3.80	2.83	3.72	6.48	6.55
nC23	3.18	4.03	3.59	4.29	6.02	6.07
nC24	2.56	3.34	2.86	3.35	5.58	5.47
nC25	3.38	4.58	4.93	4.25	4.52	5.44
nC26	2.32	3.03	2.82	2.86	4.22	4.25
nC27	4.51	5.35	6.26	4.46	3.63	3.68
nC28	1.71	2.48	3.47	2.67	3.83	3.24
nC29	3.49	4.27	4.40	4.14	3.36	3.58
nC30	1.44	2.17	1.69	3.35	2.40	2.49
nC31	1.68	4.11	3.99	5.55	2.59	2.77
nC32	0.85	1.55	0.95	2.91	1.51	1.67
nC33	1.50	2.56	2.26	3.03	2.40	2.36
nC34	0.44	0.85	0.31	2.23	2.23	2.27
nC35	0.89	1.24	0.94	1.23	0.70	0.72
Paraffin	17.03	11.49	17.67	14.47	15.03	15.32
Isoprenoid	3.46	2.82	3.56	2.68	2.20	2.15
Naphthene	79.51	85.69	78.77	82.85	82.77	82.53
CPI 1 Index	1.40	1.30	1.50	1.28	0.96	1.03
CPI 2 Index	1.85	1.82	2.00	1.53	1.03	1.16
CPI 3 Index	2.24	1.94	1.99	1.61	0.90	0.98
Prist/Phytane	2.31	1.50	2.00	1.27	1.38	1.31
Prist/nC17	0.91	0.70	0.78	0.61	0.81	0.83
Phytane/nC18	0.58	0.58	0.56	0.67	0.58	0.60

Job Number : 8667

$$C.P.I.\ 1 = \frac{1}{2}\left[\frac{C21 + C23 + C25 + C27}{C20 + C22 + C24 + C26} + \frac{C21 + C23 + C25 + C27}{C22 + C24 + C26 + C28}\right]$$

$$C.P.I.\ 2 = \frac{1}{2}\left[\frac{C25 + C27 + C29 + C31}{C24 + C26 + C28 + C30} + \frac{C25 + C27 + C29 + C31}{C26 + C28 + C30 + C32}\right]$$

$$C.P.I.\ 3 = \frac{2x\ (C27)}{C26 + C28}$$

CT - ditch cuttings CO - core SWC - sidewall core

TABLE 9

COMPOSITION (NORMALISED %) OF C_{15+} SATURATE (PARAFFIN - NAPHTHENE) HYDROCARBONS

GEOCHEM SAMPLE NUMBER	169	170	173	174A	177	179
DEPTH	2233m	2233.5m	2236m	2236.55m	2239m	2241m
SAMPLE TYPE						
nC15	3.64	2.30	2.59	25.39	1.72	4.08
nC16	6.24	4.12	4.85	15.22	3.90	6.13
nC17	8.03	5.84	6.89	10.51	6.14	7.61
nC18	8.38	6.84	7.75	8.00	7.37	8.09
nC19	9.36	8.61	9.24	7.50	9.13	9.26
nC20	7.82	7.58	8.08	5.74	8.05	7.88
nC21	6.93	7.25	7.47	4.76	7.34	6.96
nC22	6.39	6.97	7.00	4.08	6.98	6.61
nC23	5.84	6.50	6.45	3.55	6.46	6.11
nC24	5.33	6.03	5.89	3.01	5.96	5.69
nC25	5.12	5.45	4.85	2.35	5.92	4.75
nC26	4.12	4.79	4.53	2.18	4.69	4.49
nC27	3.52	4.21	4.00	1.65	4.13	3.78
nC28	3.92	4.68	4.10	1.72	3.60	4.10
nC29	3.32	4.15	3.53	1.44	4.03	3.60
nC30	2.48	2.91	2.53	0.84	2.81	2.28
nC31	2.59	3.13	2.85	0.61	3.24	2.49
nC32	1.67	1.77	1.66	0.45	2.02	1.41
nC33	2.32	2.71	2.59	0.67	2.88	2.12
nC34	2.11	3.24	2.40	0.19	2.67	2.01
nC35	0.87	0.91	0.76	0.13	0.95	0.55
Paraffin	15.04	15.15	12.69	11.79	15.32	13.55
Isoprenoid	2.20	1.89	1.80	2.01	1.77	2.13
Naphthene	82.76	82.96	85.51	86.20	82.91	84.32
CPI 1 Index	0.99	0.98	0.98	0.97	1.03	0.95
CPI 2 Index	1.06	1.06	1.04	0.97	1.17	1.04
CPI 3 Index	0.88	0.89	0.93	0.85	1.00	0.88
Prist/Phytane	1.34	1.23	1.29	1.90	1.19	1.37
Prist/nC17	0.82	0.95	0.88	0.78	0.86	0.87
Phytane/nC18	0.58	0.66	0.61	0.54	0.60	0.60

Job Number : 8667

$$C.P.I.\ 1 = \frac{1}{2}\left[\frac{C21 + C23 + C25 + C27}{C20 + C22 + C24 + C26} + \frac{C21 + C23 + C25 + C27}{C22 + C24 + C26 + C28}\right]$$

$$C.P.I.\ 2 = \frac{1}{2}\left[\frac{C25 + C27 + C29 + C31}{C24 + C26 + C28 + C30} + \frac{C25 + C27 + C29 + C31}{C26 + C28 + C30 + C32}\right]$$

$$C.P.I.\ 3 = \frac{2x\ (C27)}{C26 + C28}$$

CT - ditch cuttings CO - core SWC - sidewall core

TABLE 9

COMPOSITION (NORMALISED %) OF C_{15+} SATURATE (PARAFFIN - NAPHTHENE) HYDROCARBONS

GEOCHEM SAMPLE NUMBER	183	184	186	188	192	201
DEPTH	2244m	2245m	2247m	2249m	2253m	2309.7m
SAMPLE TYPE						
nC15	3.21	1.64	1.06	1.62	2.17	1.12
nC16	8.86	3.69	2.89	3.79	4.05	2.84
nC17	10.52	5.86	5.33	6.25	5.74	5.08
nC18	8.04	7.23	7.23	7.65	6.72	6.98
nC19	5.55	9.03	9.57	9.66	7.03	9.34
nC20	4.29	8.10	8.66	8.43	7.62	8.32
nC21	2.44	7.51	8.07	7.76	7.43	7.77
nC22	2.63	7.17	7.60	7.30	7.31	7.35
nC23	3.70	6.58	7.16	6.78	7.14	6.73
nC24	5.36	6.24	6.61	6.36	6.84	6.33
nC25	6.92	6.08	6.36	5.97	5.85	5.23
nC26	7.45	5.00	5.11	4.78	5.60	4.97
nC27	7.16	4.34	4.31	4.00	4.78	4.23
nC28	6.53	3.75	3.62	3.23	4.16	3.73
nC29	5.80	3.44	3.94	3.69	4.92	4.47
nC30	3.95	2.95	2.70	2.56	3.23	3.06
nC31	3.21	3.01	2.99	2.77	3.52	3.31
nC32	2.00	1.99	1.75	1.69	2.25	2.42
nC33	0.87	2.85	1.79	2.56	1.97	2.94
nC34	0.89	2.73	2.67	2.49	0.90	2.95
nC35	0.63	0.81	0.58	0.67	0.76	0.84
Paraffin	16.11	14.24	12.93	12.23	12.84	14.78
Isoprenoid	3.23	1.70	1.42	1.48	1.73	1.62
Naphthene	80.66	84.06	85.65	86.29	85.43	83.60
CPI 1 Index	0.97	1.02	1.03	1.02	0.99	0.98
CPI 2 Index	1.08	1.09	1.16	1.16	1.11	1.08
CPI 3 Index	1.02	0.99	0.99	1.00	0.98	0.97
Prist/Phytane	1.62	1.17	1.06	1.20	1.22	1.11
Prist/nC17	0.97	0.93	0.92	0.89	1.06	0.96
Phytane/nC18	0.78	0.64	0.64	0.61	0.74	0.63

Job Number : 8667

$$C.P.I.\ 1 = \frac{1}{2}\left[\frac{C21 + C23 - C25 + C27}{C20 + C22 + C24 + C26} + \frac{C21 + C23 + C25 + C27}{C22 + C24 + C26 + C28}\right]$$

$$C.P.I.\ 2 = \frac{1}{2}\left[\frac{C25 + C27 + C29 + C31}{C24 + C26 + C28 + C30} + \frac{C25 + C27 + C29 + C31}{C26 + C28 + C30 + C32}\right]$$

$$C.P.I.\ 3 = \frac{2x\ (C27)}{C26 + C28}$$

CT - ditch cuttings CO - core SWC - sidewall core

TABLE 9

COMPOSITION (NORMALISED %) OF C_{15+} SATURATE (PARAFFIN - NAPHTHENE) HYDROCARBONS

GEOCHEM SAMPLE NUMBER	143	153
DEPTH	2333m	2430m
SAMPLE TYPE		
nC15	4.54	15.59
nC16	3.73	11.73
nC17	2.31	4.02
nC18	3.65	3.37
nC19	4.74	1.93
nC20	4.50	2.65
nC21	5.55	2.14
nC22	3.61	3.03
nC23	9.44	3.02
nC24	6.12	2.74
nC25	15.36	3.50
nC26	7.17	2.59
nC27	10.74	3.63
nC28	6.49	2.25
nC29	4.62	5.06
nC30	2.35	3.39
nC31	1.95	5.63
nC32	0.77	4.35
nC33	1.18	6.70
nC34	0.41	6.60
nC35	0.77	6.10
Paraffin	7.77	8.03
Isoprenoid	1.95	1.88
Naphthene	90.28	90.09
CPI 1 Index	1.84	1.14
CPI 2 Index	1.71	1.52
CPI 3 Index	1.57	1.50
Prist/Phytane	8.80	0.98
Prist/nC17	7.11	0.69
Phytane/nC18	0.51	0.85

Job Number : 8667

$$C.P.I.\ 1 = \frac{1}{2}\left[\frac{C21 + C23 + C25 + C27}{C20 + C22 + C24 + C26} + \frac{C21 + C23 + C25 + C27}{C22 + C24 + C26 + C28}\right]$$

$$C.P.I.\ 2 = \frac{1}{2}\left[\frac{C25 + C27 + C29 + C31}{C24 + C26 + C28 + C30} + \frac{C25 + C27 + C29 + C31}{C26 + C28 + C30 + C32}\right]$$

$$P.I.\ 3 = \frac{2x\ (C27)}{C26 + C28}$$

CT - ditch cuttings CO - core SWC - sidewall core

TABLE 10

ADDITIONAL SATURATES RATIOS

GEOCHEM SAMPLE NUMBER	DEPTH	SAMPLE TYPE	A/B $A = \frac{Pr}{nC_{17}}$ $B = \frac{Ph}{nC_{18}}$	$\frac{nC_{17}}{nC_{17} + nC_{27}}$
8667-85A	1660m	Cuttings	1.55	0.69
8667-113A	1940m	Cuttings	1.84	0.54
8667-127A	2080m	Cuttings	1.45	0.76
8667-129A	2100m	Cuttings	1.52	0.76
8667-131A	2117m	Cuttings	1.44	0.74
8667-133A	2140m	Cuttings	1.46	0.74
8667-138A	2190m	Cuttings	1.57	0.58
8667-139A	2198m	Cuttings	1.21	0.57
8667-140A	2207m	Cuttings	1.39	0.51
8667-141A	2216m	Cuttings	0.91	0.61
8667-162	2226.00m	Core	1.40	0.69
8667-165	2229.00m	Core	1.38	0.68
8667-169	2233.00m	Core	1.41	0.70
8667-170	2233.50m	Core	1.44	0.58
8667-173	2236.00m	Core	1.44	0.63
8667-174A	2236.55m	Core	1.44	0.86
8667-177	2239.00m	Core	1.43	0.60
8667-179	2241.00m	Core	1.45	0.67
8667-183	2244.00m	Core	1.24	0.60
8667-184	2245.00m	Core	1.45	0.57
8667-188	2249.00m	Core	1.46	0.61
8667-186	2247.00m	Core	1.44	0.55
8667-192	2253.00m	Core	1.43	0.55
8667-201	2309.70m	Core	1.52	0.55
8667-143	2333m	Cuttings	13.94	0.18
8667-153A	2430m	Cuttings	0.81	0.53

TABLE 11

AROMATICS RATIOS

GEOCHEM SAMPLE NUMBER	DEPTH	SAMPLE TYPE	MPI 1	F1	F2
8667-085A	1660m	Cuttings	0.61	0.41	0.22
8667-113A	1940m	Cuttings	0.42	0.42	0.22
8667-127A	2080m	Cuttings	0.57	0.41	0.22
8667-129A	2100m	Cuttings	0.57	0.43	0.24
8667-131A	2117m	Cuttings	0.55	0.39	0.23
8667-133A	2140m	Cuttings	0.49	0.36	0.22
8667-138A	2190m	Cuttings	0.46	0.41	0.23
8667-139A	2198m	Cuttings	0.39	0.37	0.20
8667-140A	2207m	Cuttings	0.34	0.31	0.17
8667-141A	2216m	Cuttings	0.33	0.36	0.19
8667-162	2226.00m	Core	0.57	0.37	0.21
8667-165	2229.00m	Core	0.66	0.40	0.20
8667-169	2233.00m	Core	0.68	0.41	0.21
8667-170	2233.50m	Core	0.73	0.43	0.23
8667-173	2236.00m	Core	0.59	0.37	0.21
8667-174A	2236.55m	Core	0.63	0.41	0.19
8667-177	2239.00m	Core	0.71	0.41	0.21
8667-179	2241.00m	Core	0.71	0.43	0.23
8667-183	2244.00m	Core	0.50	0.40	0.21
8667-184	2245.00m	Core	0.69	0.40	0.21
8667-186	2247.00m	Core	0.73	0.41	0.21
8667-188	2249.00m	Core	0.66	0.39	0.18
8667-192	2253.00m	Core	0.61	0.38	0.20
8667-201	2309.70m	Core	0.74	0.41	0.23
8667-143	2333m	Cuttings	0.44	0.40	0.28
8667-153A	2430m	Cuttings	0.34	0.38	0.25

Ratios:

$$MPI\ 1 = \frac{3/2(2\text{-}MP + 3\text{-}MP)}{P + 1\text{-}MP + 9\text{-}MP}$$

$$F1 = \frac{3\text{-}MP + 2MP}{3\text{-}MP + 2\text{-}MP + 9\text{-}MP + 1\text{-}MP}$$

$$F2 = \frac{2\text{-}MP}{3\text{-}MP + 2\text{-}MP + 9\text{-}MP + 1\text{-}MP}$$

TABLE 12

BIOMARKER ABUNDANCES - STERANES (PEAK AREAS), M/Z 217

GEOCHEM SAMPLE NUMBER		8667-085A	8667-133A	8667-138A	8667-162	8667-165	8667-169	8667-170	8667-173	8667-174A
DEPTH (m)		1660	2140	2190	2226.00	2229.00	2233.00	2233.50	2236.00	2236.55
SAMPLE TYPE		Cuttings	Cuttings	Cuttings	Core	Core	Core	Core	Core	Core
PEAK	27dβS	6274	1383	3377	1105	1283	930	2867	2461	1197
	27dβR	3423	809	2647	780	913	637	2014	1802	841
	28dαR + 27$\alpha\alpha$S	2325	1218	3985	990	1125	843	2541	2515	1050
	27$\alpha\alpha$R	3074	898	3713	619	629	529	1454	1567	593
	29dβS + 27$\beta\beta$R	7984	1951	4897	1567	1850	1312	3968	3722	1425
	29dβR	6575	1374	3107	1043	1126	895	2507	2429	902
	29$\alpha\alpha$S	2870	836	1972	698	916	637	1955	1780	660
	29$\beta\beta$R	4471	1259	4025	966	1234	891	3105	2556	1095
	29$\beta\beta$S	2586	744	2231	762	885	729	1918	1680	700
	29$\alpha\alpha$R	4100	914	4604	705	677	507	1857	1727	763

TABLE 12

BIOMARKER ABUNDANCES - STERANES (PEAK AREAS), M/Z 217

GEOCHEM SAMPLE NUMBER		8667-177	8667-179	8667-183	8667-184	8667-186	8667-188	8667-192	8667-201	8667-153A
DEPTH (m)		2239.00	2241.00	2244.00	2245.00	2247.00	2249.00	2253.00	2309.70	2430
SAMPLE TYPE		Core	Core	Core	Core	Core	Core	Core	Core	Cuttings
PEAK	27dβS	2519	2234	469	3832	1465	1206	1065	3960	240
	27dβR	1848	1652	362	2826	930	918	730	2787	138
	28dαR + 27$\alpha\alpha$S	2085	2375	465	3208	1234	1125	1001	3136	397
	27$\alpha\alpha$R	1233	1514	319	2317	704	632	549	2138	337
	29dβS + 27$\beta\beta$R	3230	3334	751	5000	1970	1867	1513	5042	590
	29dβR	2203	2318	527	3599	1383	1164	982	3463	384
	29$\alpha\alpha$S	1675	1711	305	2728	852	773	698	2500	316
	29$\beta\beta$R	2493	2508	482	3866	1403	1049	1138	3460	614
	29$\beta\beta$S	1805	1642	308	2837	1072	988	838	2464	431
	29$\alpha\alpha$R	1670	1768	295	2498	768	687	693	2462	469

TABLE 13

BIOMARKER ABUNDANCES - STERANES (PEAK AREAS), M/Z 218

GEOCHEM SAMPLE NUMBER		8667-085A	8667-133A	8667-138A	8667-162	8667-165	8667-169	8667-170	8667-173	8667-174A
DEPTH (m)		1660	2140	2190	2226.00	2229.00	2233.00	2233.50	2236.00	2236.55
SAMPLE TYPE		Cuttings	Cuttings	Cuttings	Core	Core	Core	Core	Core	Core
PEAK	27ββR	4562	1456	3739	1342	1526	1139	3425	3297	1477
	27ββS	3666	1193	2806	983	1229	874	3012	2413	1126
	28ββR	2484	1038	2525	955	976	786	2511	2210	937
	28ββS	3957	1120	2628	1017	1066	902	2829	2292	962
	29ββR	4742	1228	3832	1217	1249	1024	3250	3072	1224
	29ββS	4337	1461	3812	1146	1470	1204	3577	2761	1089
	30ββR	1333	394	1556	285	347	292	1007	829	257
	30ββS	1109	364	1098	346	320	226	790	776	267

TABLE 13

BIOMARKER ABUNDANCES - STERANES (PEAK AREAS), M/Z 218

GEOCHEM SAMPLE NUMBER		8667-177	8667-179	8667-183	8667-184	8667-186	8667-188	8667-192	8667-201	8667-153A
DEPTH (m)		2239.00	2241.00	2244.00	2245.00	2247.00	2249.00	2253.00	2309.70	2430
SAMPLE TYPE		Core	Core	Core	Core	Core	Core	Core	Core	Cuttings
PEAK	27ββR	3035	2695	640	4653	1807	1580	1306	4434	580
	27ββS	2348	2279	530	3809	1261	1199	934	3523	528
	28ββR	2053	2173	446	3341	1144	1007	941	3153	424
	28ββS	2369	2276	511	3441	1186	1164	1067	3420	457
	29ββR	2876	2708	510	4066	1446	1245	1226	4373	804
	29ββS	2665	2280	563	4067	1749	1393	1221	3994	665
	30ββR	682	832	117	993	382	366	267	1103	53
	30ββS	875	793	109	1232	352	321	370	1162	44

TABLE 14

BIOMARKER ABUNDANCES - TRITERPANES (PEAK AREAS)

GEOCHEM SAMPLE NUMBER		8667-085A	8667-133A	8667-138A	8667-162	8667-165
DEPTH (m)		1660	2140	2190	2226.00	2229.00
SAMPLE TYPE		Cuttings	Cuttings	Cuttings	Core	Core
M/Z 191	23/3	2785	363	1409	308	283
	24/3	2060	294	1042	268	322
	25/3	2174	319	1144	268	278
	24/4	2015	357	1291	268	301
	26/3	2197	337	1306	231	236
	27Ts	4071	820	3533	591	799
	27Tm	4131	661	5288	486	532
	28$\alpha\beta$	5951	1318	2062	970	1194
	25 nor 30$\alpha\beta$	8754	0	1018	0	0
	29$\alpha\beta$	8714	1985	10686	1496	1573
	29Ts	5094	729	3446	658	860
	30d	2496	325	907	300	288
	29$\beta\alpha$	2133	389	6998	321	236
	Oleanane 30 O	1516	0	0	0	0
	30$\alpha\beta$	14830	3968	19291	3186	3396
	30$\beta\alpha$	2052	341	4995	185	313
	30G	956	146	1137	121	167
	31$\alpha\beta$S	5073	1446	5105	1289	1455
	31$\alpha\beta$R	3956	1193	13698	922	1085
	32$\alpha\beta$S + 32$\alpha\beta$R	2971/1960	792/556	1842/3254	822/511	917/606
	33$\alpha\beta$S + 33$\alpha\beta$R	2567/1202	486/329	1126/1293	670/373	667/345
	34$\alpha\beta$S + 34$\alpha\beta$R	1377/814	248/135	593/525	307/197	327/158
	35$\alpha\beta$S + 35$\alpha\beta$R	1023/712	151/105	487/310	217/129	166/133
M/Z 177	25 nor 28$\alpha\beta$	9239	1120	2124	989	1137
	25 nor 30$\alpha\beta$	5946	0	196	0	0

TABLE 14

BIOMARKER ABUNDANCES - TRITERPANES (PEAK AREAS)

GEOCHEM SAMPLE NUMBER		8667-169	8667-170	8667-173	8667-174A	8667-177
DEPTH (m)		2233.00	2233.50	2236.00	2236.55	2239.00
SAMPLE TYPE		Core	Core	Core	Core	Core
M/Z 191	23/3	218	590	655	628	627
	24/3	215	579	565	371	495
	25/3	248	628	530	320	556
	24/4	201	635	548	619	537
	26/3	200	584	540	328	485
	27Ts	627	1707	1530	1216	1533
	27Tm	499	1205	1202	853	1050
	28*αβ*	1037	2923	2662	1521	2554
	25 nor 30*αβ*	0	0	0	0	0
	29*αβ*	1256	4360	3880	2103	3417
	29Ts	619	1630	1589	885	1634
	30d	219	768	666	265	641
	29*βα*	176	678	641	331	666
	Oleanane 30 O	0	0	0	0	0
	30*αβ*	2981	9289	7751	3855	7772
	30*βα*	277	795	549	219	484
	30G	108	220	310	164	112
	31*αβ*S	1111	3576	3120	1448	2997
	31*αβ*R	773	2419	2197	1034	2160
	32*αβ*S + 32*αβ*R	678/437	2181/1512	1977/1414	744/528	1845/1353
	33*αβ*S + 33*αβ*R	537/306	1761/974	1565/958	549/329	1518/851
	34*αβ*S + 34*αβ*R	276/139	996/490	763/489	255/128	771/481
	35*αβ*S + 35*αβ*R	160/96	636/439	516/298	145/86	605/359
M/Z 177	25 nor 28*αβ*	841	2433	2367	1349	2273
	25 nor 30*αβ*	0	0	0	0	0

TABLE 14

BIOMARKER ABUNDANCES - TRITERPANES (PEAK AREAS)

GEOCHEM SAMPLE NUMBER		8667-179	8667-183	8667-184	8667-186	8667-188
DEPTH (m)		2241.00	2244.00	2245.00	2247.00	2249.00
SAMPLE TYPE		Core	Core	Core	Core	Core
M/Z 191	23/3	661	347	962	363	356
	24/3	515	204	850	337	305
	25/3	555	270	785	373	281
	24/4	558	186	810	329	285
	26/3	368	204	816	229	243
	27Ts	1523	379	2196	781	747
	27Tm	1124	371	1667	672	578
	28*αβ*	2656	434	3709	1249	1175
	25 nor 30*αβ*	0	160	0	0	0
	29*αβ*	3599	1216	5019	1986	1854
	29Ts	1434	358	2489	737	663
	30d	667	105	877	379	288
	29*βα*	610	154	882	275	289
	Oleanane 30 O	0	0	0	0	0
	30*αβ*	7923	1773	10699	3820	3736
	30*βα*	704	128	787	345	229
	30G	255	87	275	180	127
	31*αβ*S	3384	799	4219	1518	1417
	31*αβ*R	2388	577	2938	1077	1017
	32*αβ*S + 32*αβ*R	2003/1476	454/266	2556/2040	960/670	884/666
	33*αβ*S + 33*αβ*R	1631/1091	319/165	2130/1232	740/423	699/435
	34*αβ*S + 34*αβ*R	881/481	163/95	1069/621	340/228	382/225
	35*αβ*S + 35*αβ*R	727/432	131/74	806/516	291/153	241/185
M/Z 177	25 nor 28*αβ*	2275	416	3585	1197	1121
	25 nor 30*αβ*	0	78	0	0	0

TABLE 14

BIOMARKER ABUNDANCES - TRITERPANES (PEAK AREAS)

GEOCHEM SAMPLE NUMBER		8667-192	8667-201	8667-153A
DEPTH (m)		2253.00	2309.70	2430
SAMPLE TYPE		Core	Core	Cuttings
M/Z 191	23/3	299	952	676
	24/3	219	885	432
	25/3	263	886	462
	24/4	211	907	295
	26/3	182	788	424
	27Ts	591	2247	335
	27Tm	527	1568	558
	28$\alpha\beta$	1139	3593	407
	25 nor 30$\alpha\beta$	0	0	150
	29$\alpha\beta$	1583	5113	1424
	29Ts	771	2243	380
	30d	300	826	112
	29$\beta\alpha$	263	891	284
	Oleanane 30 O	0	0	0
	30$\alpha\beta$	3341	10814	2053
	30$\beta\alpha$	275	724	301
	30G	61	349	172
	31$\alpha\beta$S	1157	4054	773
	31$\alpha\beta$R	830	2800	821
	32$\alpha\beta$S + 32$\alpha\beta$R	680/585	2472/1839	405/348
	33$\alpha\beta$S + 33$\alpha\beta$R	565/345	1866/1139	230/156
	34$\alpha\beta$S + 34$\alpha\beta$R	286/151	974/550	194/98
	35$\alpha\beta$S + 35$\alpha\beta$R	181/76	678/331	165/99
M/Z 177	25 nor 28$\alpha\beta$	892	3341	263
	25 nor 30$\alpha\beta$	0	0	47

TABLE 15

BIOMARKER ABUNDANCES (PEAK AREAS) - MONOAROMATIC STERANES (M/Z 253)

GEOCHEM SAMPLE NUMBER		8667-085A	8667-133A	8667-138A	8667-162	8667-165	8667-169	8667-170	8667-173	8667-174A
DEPTH (m)		1660	2140	2190	2226.00	2229.00	2233.00	2233.50	2236.00	2236.55
SAMPLE TYPE		Cuttings	Cuttings	Cuttings	Core	Core	Core	Core	Core	Core
PEAK	A1	3255	1246	3641	1209	1762	2023	1426	1394	180
	B1	1893	1011	3321	795	1363	1424	1293	1374	123
	C1	2150	1482	7062	1113	1833	2165	2730	2327	138
	D1	2182	1627	11225	1096	1926	2167	2794	2344	95
	E1	2889	3183	18244	2061	3468	3505	5131	4074	121
	F1	727	766	2205	330	612	412	865	573	32
	G1	5213	4757	32750	2919	5441	5681	7523	6441	160
	H1	3005	2391	24193	1370	2597	2847	3915	3284	152
	I1	370	416	1348	265	309	387	500	378	37

TABLE 15

BIOMARKER ABUNDANCES (PEAK AREAS) - MONOAROMATIC STERANES (M/Z 253)

GEOCHEM SAMPLE NUMBER		8667-177A	8667-179	8667-183	8667-184	8667-186	8667-188	8667-192	8667-201	8667-153A
DEPTH (m)		2239.00	2241.00	2244.00	2245.00	2247.00	2249.00	2253.00	2309.70	2430
SAMPLE TYPE		Core	Core	Core	Core	Core	Core	Core	Core	Cuttings
PEAK	A1	824	1902	888	2435	1377	1321	1359	2155	233
	B1	888	1822	682	1723	1208	1419	1167	1420	210
	C1	2292	2092	860	2350	1509	1698	1702	2107	692
	D1	2308	2086	941	2421	1549	1602	1566	1957	939
	E1	4293	3495	1665	4145	2754	3008	3035	3564	1890
	F1	718	591	290	809	356	393	603	665	469
	G1	6578	5688	2894	6385	4197	4626	4869	5387	4339
	H1	3157	2715	1495	3201	2218	2130	2257	2848	3212
	I1	513	445	176	415	210	238	307	394	197

TABLE 16

BIOMARKER ABUNDANCES (PEAK AREAS) - TRIAROMATIC STERANES (M/Z 231)

GEOCHEM SAMPLE NUMBER		8667-085A	8667-133A	8667-138A	8667-162	8667-165	8667-169	8667-170	8667-173	8667-174A
DEPTH (m)		1660	2140	2190	2226.00	2229.00	2233.00	2233.50	2236.00	2236.55
SAMPLE TYPE		Cuttings	Cuttings	Cuttings	Core	Core	Core	Core	Core	Core
PEAK	a1	7810	6007	8538	2139	4068	5301	4801	4506	1955
	b1	10031	6610	9048	2421	5081	6289	5746	5501	1642
	c1	5855	2890	3672	1293	3075	3940	3272	3396	237
	d1	18853	10393	11705	5220	10383	14927	12072	12680	844
	e1	10498	6205	7116	3385	6698	8844	7760	7466	415
	f1	10319	5926	6789	3094	6098	8529	7020	7314	469
	g1	9932	5441	6287	2723	5532	8219	6206	6527	332

TABLE 16

BIOMARKER ABUNDANCES (PEAK AREAS) - TRIAROMATIC STERANES (M/Z 231)

GEOCHEM SAMPLE NUMBER		8667-177A	8667-179	8667-183	8667-184	8667-186	8667-188	8667-192	8667-201	8667-153A
DEPTH (m)		2239.00	2241.00	2244.00	2245.00	2247.00	2249.00	2253.00	2309.70	2430
SAMPLE TYPE		Core	Core	Core	Core	Core	Core	Core	Core	Cuttings
PEAK	a1	3581	5047	1505	4260	3233	3074	2892	4561	693
	b1	4571	6228	1546	4781	3577	3697	3261	5696	686
	c1	2969	3562	1134	2843	2092	2139	2134	3616	299
	d1	10677	12291	3904	10693	8189	7508	7293	13338	1937
	e1	7070	7814	2529	6643	5021	4640	4659	8383	2140
	f1	6394	7399	2304	6201	4514	4329	4211	7733	1265
	g1	5941	6589	2137	5411	3998	3856	3602	6819	1635

TABLE 17

BIOMARKER MOLECULAR RATIOS

GEOCHEM SAMPLE NUMBER			8667 085A	8667 133A	8667 138A	8667 162	8667 165	8667 169	8667 170	8667 173	8667 174A
DEPTH (m)			1660	2140	2190	2226.00	2229.00	2233.00	2233.50	2236.00	2236.55
M/Z	PEAKS	IDENTITY									
191	27 Tm/27 Ts		101	0.81	1.50	0.82	0.67	0.80	0.71	0.79	0.70
191	32 $\alpha\beta$S/(31$\alpha\beta$S+31$\alpha\beta$R)	C_{31}hH-S/R	0.56	0.55	0.27	0.58	0.57	0.59	0.60	0.59	0.58
178 192	MPI 1	MP Index	0.57	0.66	0.63	0.75	0.76	0.74	0.68	0.71	0.64
178 192	MPI 2	MP Index	0.59	0.73	0.73	0.81	0.84	0.82	0.74	0.80	0.71
217	29$\alpha\alpha$S/29$\alpha\alpha$R	C_{29} $\alpha\alpha$ St	0.70	0.91	0.43	0.99	1.35	1.26	1.05	1.03	0.87
217	29$\beta\beta$/(29$\alpha\alpha$+29$\beta\beta$)	C_{29} St	0.50	0.53	0.49	0.55	0.57	0.59	0.57	0.55	0.56
191	29$\alpha\beta$/30$\alpha\beta$	NorH	0.59	0.50	0.55	0.47	0.46	0.42	0.47	0.50	0.55
191	28$\alpha\beta$/30$\alpha\beta$	Bisnorh	0.40	0.33	0.11	0.30	0.35	0.35	0.31	0.34	0.39
191	hH/(27Ts,27Tm,29$\alpha\beta$ 30$\alpha\beta$)	hH/H	0.68	0.73	0.73	0.94	0.93	0.84	0.90	0.93	0.65
191	Tricyclic Terpanes (27Ts, 27Tm,29$\alpha\beta$,30$\alpha\beta$)		0.35	0.22	0.16	0.23	0.23	0.20	0.18	0.20	0.28
191	24/4:23/3	C_{24}/C_{23}	0.72	0.98	0.92	0.87	1.06	0.92	1.08	0.84	0.99
191	35$\alpha\beta$/34$\alpha\beta$	35/34 hH	0.79	0.67	0.71	0.69	0.62	0.62	0.72	0.65	0.60
218	27$\beta\beta$:28$\beta\beta$:29$\beta\beta$	$\beta\beta$ St	35:27:38	35:29:36	34:27:40	35:30:35	37:27:36	34:28:38	35:29:37	36:28:36	38:28:34
191 217	(27Ts,27Tm,29$\alpha\beta$,30$\alpha\beta$) 27$\alpha\beta$S→30$\alpha\alpha$R	H/St	0.73	0.65	1.12	0.62	0.59	0.68	0.68	0.65	0.87

hH = Homohopanes H = Hopanes M = methyl

TABLE 17

BIOMARKER MOLECULAR RATIOS

GEOCHEM SAMPLE NUMBER			8667 177	8667 179	8667 183	8667 184	8667 186	8667 188	8667 192	8667 201	8667 153
DEPTH (m)			2239.00	2241.00	2244.00	2245.00	2247.00	2249.00	2253.00	2309.70	2430
M/Z	PEAKS	IDENTITY									
191	27 Tm/27 Ts		0.68	0.74	0.98	0.76	0.86	0.77	0.89	0.70	1.67
191	32 $\alpha\beta$S/(31$\alpha\beta$S+31$\alpha\beta$R)	C_{31}hH-S/R	0.58	0.59	0.58	0.59	0.58	0.58	0.58	0.59	0.48
178 192	MPI 1	MP Index	0.63	0.60	0.62	0.62	0.75	0.63	0.78	0.76	0.59
178 192	MPI 2	MP Index	0.76	0.63	0.66	0.65	0.78	0.65	0.82	0.84	0.71
217	29$\alpha\alpha$S/29$\alpha\alpha$R	C_{29} $\alpha\alpha$ St	1.00	0.97	1.03	1.09	1.11	1.13	1.01	1.02	0.67
217	29$\beta\beta$/(29$\alpha\alpha$+29$\beta\beta$)	C_{29} St	0.56	0.54	0.57	0.56	0.60	0.58	0.59	0.54	0.57
191	29$\alpha\beta$/30$\alpha\beta$	NorH	0.44	0.45	0.69	0.47	0.52	0.50	0.47	0.47	0.69
191	28$\alpha\beta$/30$\alpha\beta$	Bisnorh	0.33	0.34	0.24	0.35	0.33	0.31	0.34	0.33	0.20
191	hH/(27Ts,27Tm,29$\alpha\beta$,30$\alpha\beta$)	hH/H	0.94	1.02	0.81	0.93	0.88	0.89	0.80	0.85	0.75
191	Tricyclic Terpanes/(27Ts, 27Tm,29$\alpha\beta$, 30$\alpha\beta$)	Tricyclics	0.20	0.19	0.32	0.22	0.22	0.21	0.19	0.22	0.52
191	24/4:23/3	C_{24}/C_{23}	0.86	0.84	0.54	0.84	0.91	0.80	0.71	0.95	0.44
191	35$\alpha\beta$/34$\alpha\beta$	35/34 hH	0.77	0.85	0.79	0.78	0.78	0.70	0.59	0.66	0.90
218	27$\beta\beta$:28$\beta\beta$:29$\beta\beta$	$\beta\beta$ St	35:29:36	35:31:35	37:30:34	36:29:35	36:27:37	37:29:35	33:30:37	35:29:37	32:25:42
191 217	(27Ts,27Tm,29$\alpha\beta$,30$\alpha\beta$) 27$\alpha\beta$S→30$\alpha\alpha$R	H/St	0.66	0.67	0.87	0.60	0.62	0.66	0.66	0.63	1.12

hH = Homohopanes H = Hopanes M = methyl

TABLE 18
CARBON ISOTOPE COMPOSITIONS (‰,PDB)

JOB 8667 GEOCHEM SAMPLE NUMBER		DEPTH/ IDENTITY	TOTAL EXTRACT WHOLE OIL	SATURATES	AROMATICS	NSO	ASPHALTENES	KEROGEN	PYROLYSATE (S2)
WELL: 34/7-22									
8667-085A		1660m	-29.22	-29.27	-28.97	-29.25	-29.27		
8667-133A		2140m	-29.24	-29.66	-29.19	-29.21	-28.73		
8667-138A		2190m	-28.74	-28.53	-28.46	-29.55	-28.26		
8667-162	C	2226.00m	-29.41	-29.83	-29.04	-29.05	-29.31		
8667-169	C	2233.00m	-29.42	-29.72	-29.01	-28.89	-29.17		
8667-170	C	2233.50m	-29.37	-29.67	-28.98	-29.00	-28.88		
8667-170	C	2233.50m					-28.83		
8667-173	C	2236.00m	-29.27	-29.70	-29.15	29.00	-29.31		
8667-174A	C	2236.55m	-27.97	-29.52	-28.26	-28.00	-26.63		
8667-179	C	2241.00m	-29.43	-29.63	-28.97	-29.11	-29.38		
8667-183	C	2244.00m	-29.50	-28.95	-28.90	-29.20	-28.98		
8667-184	C	2245.00m	-29.41	-29.62	-28.82	-29.07	-29.32		
8667-188	C	2249.00m	-29.43	-29.54	-28.99	-29.15	-29.47		
8667-192	C	2253.00m	-29.38	-29.68	-29.08	-29.35	-28.99		
8667-201	C	2309.70m	-29.43	-29.74	-29.01	-29.37	-29.25		
8667-153		2430m	-27.93	-28.03	-27.91	-28.89	-26.70		
8667-153		2430m				-28.91			