STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES

Alaska Geologic Materials Center *Data Report No. 365*

No. 365: Hydrocarbon Extracts From Core Chip Samples: ***Ivishak Unit #1***, ***Susie #1***, ***Gubik Test #2***, ***Square Lake Test Well #1***

Received *June, 2009*

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Hydrocarbon Extracts From Core Chip Samples

Ivishak #1
Susie #1
Gubik #2
Square Lake #1

June 2009

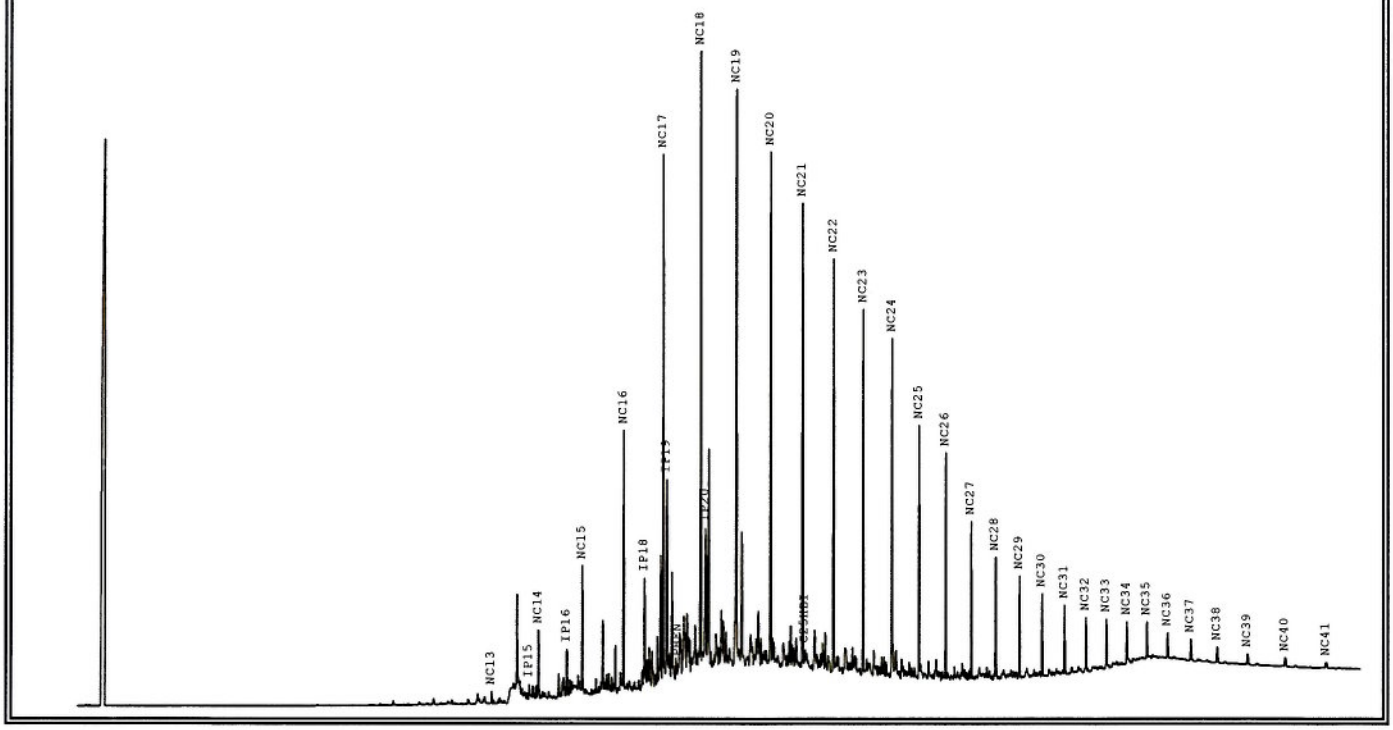
Weatherford LABORATORIES

WHOLE OIL GC

Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #1
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000738
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	SCHRADER BLUFF
Well Name:	IVISHAK NO. 1	Geologic Age:	
Latitude:	69.3	Top Depth:	2116 FT
Longitude:	148.3	Bottom Depth:	2117 FT

Whole Oil GC Trace

G6081454.D



WGC parameters	
Pristane/Phytane	1.36
Pristane/$n C_{17}$	0.58
Phytane/$n C_{18}$	0.36
$n C_{18}/(nC_{18}+n C_{19})$	0.51
$n C_{17}/(nC_{17}+n C_{29})$	0.82
CPI Hunt[4]	0.93
Normal Paraffins	39.8
Isoprenoids	5.4
Cycloparaffins	
Branched (iso-) Paraffins	
BTX aromatics	
Resolved unknowns	54.7

Thompson[1]	
A.	BZ/$n C_6$
B.	TOL/$n C_7$
C.	$(n C_6+n C_7)/(CH+MCH)$
I.	Isoheptane Value
F.	$n C_7$/MCH
U.	CH/MCP
R.	$n C_7$/2MH
S.	$n C_6$/22DMB
H.	Heptane Value
	MCH/$n C_7$
	mpXYL/$n C_8$

Mango[2]
P_1
P_2
P_3
$5N_1$
N_2
$6N_1$
K_1
K_2
$5N_1/6N_1$
P_3/N_2
ln(24DMP/23DMP)

Halpern[3]
Tr_1
Tr_2
Tr_3
Tr_4
Tr_5
Tr_7
Tr_8
C_1
C_2
C_3
C_4
C_5

[1]Thompson, K.F.M.,1983.GCA:V.47, p.303. [2]Mango, F.D.,1994.GCA: V.58, p.895. [3]Halpern,H.I.,1995,AAPG Bull.: V.79, p.801. [4]Hunt, 1979

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #1**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2116 - 2117 FT**	**Lab ID:**	**TM000738**
Sampling Point:		**File Name:**	**G6081454.D**

Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IC4	Iso-alkane C4					
NC4	Normal Alkane C4					
IC5	Iso-alkane C5					
NC5	Normal Alkane C5					
22DMB	2,2-Dimethylbutane					
CP	Cyclopentane					
23DMB	2,3-Dimethylbutane					
2MP	2-Methylpentane					
3MP	3-Methylpentane					
NC6	Normal Alkane C6					
22DMP	2,2-Dimethylpentane					
MCP	Methylcyclopentane					
24DMP	2,4-Dimethylpentane					
223TMB	2,2,3-Trimethylbutane					
BZ	Benzene					
33DMP	3,3-Dimethylpentane					
CH	Cyclohexane					
2MH	2-Methylhexane					
23DMP	2,3-Dimethylpentane					
11DMCP	1,1-Dimethylcyclopentane					
3MH	3-Methylhexane					
1C3DMCP	1-cis-3-Dimethylcyclopentane					
1T3DMCP	1-trans-3-Dimethylcyclopentane					
3EP	3-Ethylpentane					
1T2DMCP	1-trans-2-Dimethylcyclopentane					
NC7	Normal Alkane C7					
ISTD	Internal Standard					
MCH	Methylcyclohexane					
113TMCP	1,1,3,-Trimethylcyclopentane					
ECP	Ethylcyclopentane					
124TMCP	1,2,4-Trimethylcyclopentane					
123TMCP	1,2,3-Trimethylcyclopentane					
TOL	Toluene					
NC8	Normal Alkane C8					
IP9	Isoprenoid C9					
EB	Ethyl-benzene					
MXYL	*m*-xylene					
PXYL	*p*-xylene					
OXYL	*o*-xylene					
NC9	Normal Alkane C9					
IP10	Isoprenoid C10					
PB	Propyl-benzene					
NC10	Normal Alkane C10					
IP11	Isoprenoid C11					
NC11	Normal Alkane C11					
NC12	Normal Alkane C12					
IP13	Isoprenoid C13					
IP14	Isoprenoid C14					
NC13	Normal Alkane C13	41.304	2817	837		
IP15	Isoprenoid C15	44.741	4640	1148		
NC14	Normal Alkane C14	45.623	16448	4753		

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Sampling Point:		**File Name:**	**G6081454.D**

Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IP16	Isoprenoid C16	48.278	14750	3280		
NC15	Normal Alkane C15	49.693	29202	8824		
NC16	Normal Alkane C16	53.550	57514	17716		
IP18	Isoprenoid C18	55.478	36975	7510		
NC17	Normal Alkane C17	57.219	124144	35766		
IP19	Isoprenoid C19 (Pristane)	57.568	72073	13657		
PHEN	Phenanthrene	58.648	6636	1028		
NC18	Normal Alkane C18	60.693	148278	41802		
IP20	Isoprenoid C20 (Phytane)	61.130	52867	9535		
NC19	Normal Alkane C19	63.995	141671	39062		
NC20	Normal Alkane C20	67.133	129412	34812		
NC21	Normal Alkane C21	70.139	113400	31580		
C25HBI	Highly Branch Isoprenoid C25	70.366	6145	1358		
NC22	Normal Alkane C22	73.012	101692	28023		
NC23	Normal Alkane C23	75.766	87898	24766		
NC24	Normal Alkane C24	78.412	91913	22971		
NC25	Normal Alkane C25	80.950	62166	17132		
NC26	Normal Alkane C26	83.392	54255	15302		
NC27	Normal Alkane C27	85.750	38094	10712		
NC28	Normal Alkane C28	88.026	30086	8278		
NC29	Normal Alkane C29	90.225	26776	6940		
NC30	Normal Alkane C30	92.350	21216	5611		
NC31	Normal Alkane C31	94.408	17840	4701		
NC32	Normal Alkane C32	96.403	14237	3735		
NC33	Normal Alkane C33	98.337	14727	3390		
NC34	Normal Alkane C34	100.217	12364	2873		
NC35	Normal Alkane C35	102.042	10073	2509		
NC36	Normal Alkane C36	103.979	8185	1712		
NC37	Normal Alkane C37	106.134	7810	1491		
NC38	Normal Alkane C38	108.583	6531	1089		
NC39	Normal Alkane C39	111.383	5346	750		
NC40	Normal Alkane C40	114.625	5406	606		
NC41	Normal Alkane C41	118.400	4050	404		

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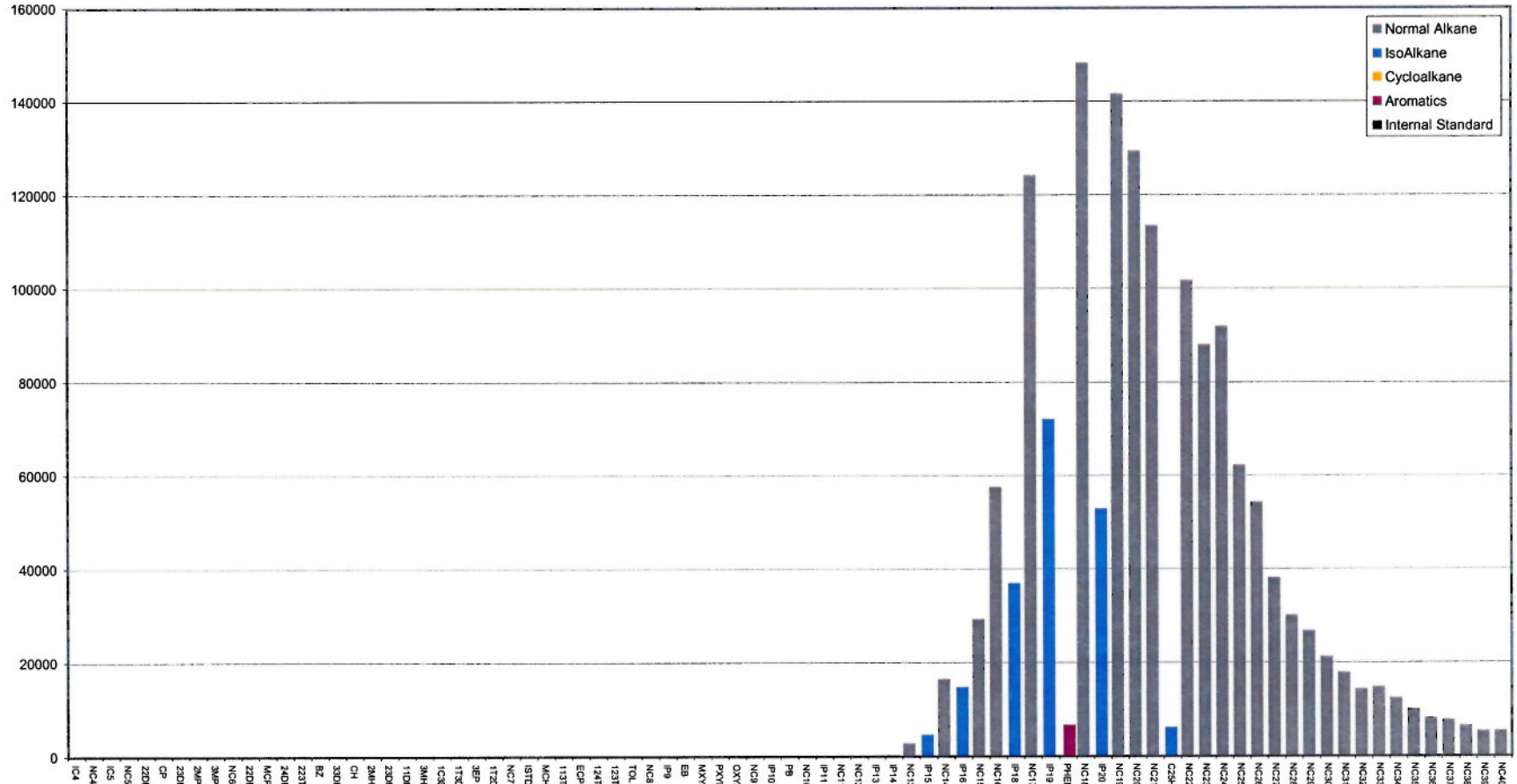
Sampling Point:		**File Name:**	**G6081454.D**

Histogram Based on Area



Weatherford Laboratories, 143 Vision Park Blvd., Shenandoah, Texas 77384 • Phone: 281-540-6050 • Fax: 281-681-0326 • Email: www.weatherfordlabs.com

Parameter	Formula
WGC Parameters	
Pristane/Phytane	IP19/IP20
Pristane/nC17	IP19/NC17
Phytane/nC18	IP20/NC18
$nC_{18}/(nC_{18}+nC_{19})$	NC18/(NC18+NC19)
$nC_{17}/(nC_{17}+nC_{29})$	NC17/(NC17+NC29)
CPI Hunt[4]	((NC23+NC25+NC27+NC29+NC31)+(NC25+NC27+NC29+NC31+NC33))/(2*(NC24+NC26+NC28+NC30+NC32))
Normal Paraffins	100*(NC4+NC5+NC6+NC7+NC8+NC9+NC10+NC11+NC12+NC13+NC14+NC15+NC16+NC17+NC18+NC19+NC20+NC21+NC22+NC23+NC24+NC25+NC26+NC27+NC28+NC29+NC30+NC31+NC32+NC33+NC34+NC35+NC36+NC37+NC38+NC39+NC40+NC41)/TOTAL_RESOLVED
Isoprenoids	100*(IP9+IP10+IP11+IP13+IP14+IP15+IP16+IP18+IP19+IP20+C25HBI)/TOTAL_RESOLVED
Cycloparaffins	100*(CP+MCP+CH+11DMCP+1T3DMCP+1T2DMCP+MCH+113TMCP+ECP+124TMCP+123TMCP+1C3DMCP+1C2DMCP)/TOTAL_RESOLVED
Branched (iso-) Paraffins	100*(IC4+IC5+22DMB+23DMB+2MP+3MP+22DMP+24DMP+223TMB+33DMP+2MH+23DMP+3MH+3EP)/TOTAL_RESOLVED
BTX aromatics	100*(BZ+TOL+MXYL+PXYL+OXYL)/TOTAL_RESOLVED (*OXYL added 05/21/2007)
Thompson[1]	
BZ/nC6	BZ/NC6
TOL/nC7	TOL/NC7
(nC6+nC7)/(CH+MCH)	(NC6+NC7)/(CH+MCH)
Isoheptane Value	(2MH+3MH)/(1C3DMCP+1T3DMCP+1T2DMCP)
nC7/MCH	NC7/MCH
CH/MCP	CH/MCP
nC7/2MH	NC7/2MH
nC6/22DMB	NC6/22DMB
Heptane Value	100*NC7/(CH+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+1T2DMCP+MCH+NC7)
MCH/nC7	MCH/NC7
mpXYL/nC8	(MXYL+PXYL)/NC8
Mango[2]	
P1	100*NC7/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
P2	100*(2MH+3MH)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
P3	100*(3EP+33DMP+23DMP+24DMP+22DMP+223TMB)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
5N1	100*(ECP+1T2DMCP)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
N2	100*(11DMCP+1C3DMCP+1T3DMCP)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
6N1	100*(MCH+TOL)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
K1	(2MH+23DMP)/(3MH+24DMP)
K2	(2MH+3MH)/(2MH+3MH+11DMCP+1C3DMCP+1T3DMCP)
5N1/6N1	(ECP+1T2DMCP)/(MCH+TOL)
P3/N2	(3EP+33DMP+23DMP+24DMP+22DMP+223TMB)/(11DMCP+1C3DMCP+1T3DMCP)
ln(24DMP/23DMP)	ln(24DMP/23DMP)
Halpern[3]	
Tr1	TOL/11DMCP
Tr2	NC7/11DMCP
Tr3	3MH/11DMCP
Tr4	2MH/11DMCP
Tr5	(2MH+3MH)/11DMCP
Tr7	1T3DMCP/11DMCP
Tr8	(2MH+3MH)/(22DMP+23DMP+24DMP+33DMP+3EP)
C1	22DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C2	23DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C3	24DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C4	33DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C5	3EP/(22DMP+23DMP+24DMP+33DMP+3EP)

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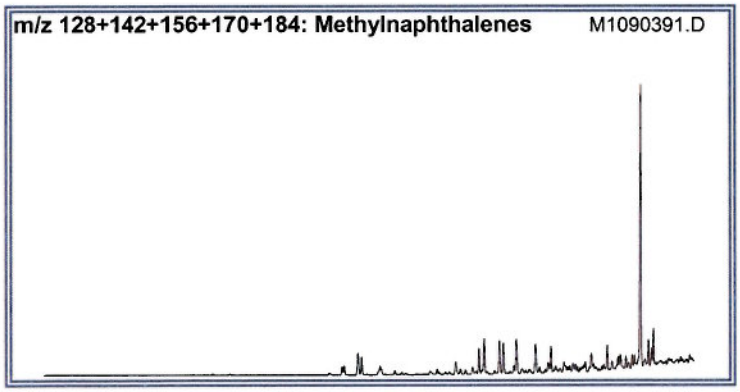
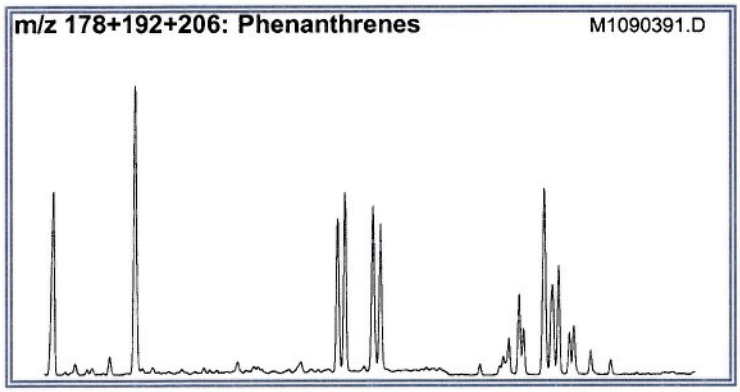
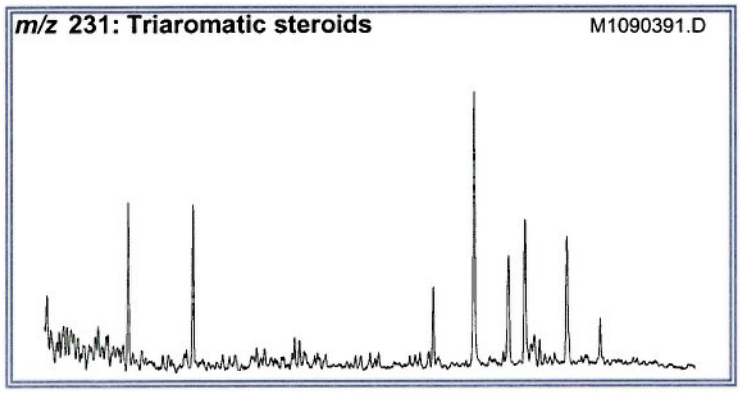
AROMATIC BIOMARKERS

Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #1
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000738
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	SCHRADER BLUFF
Well Name:	IVISHAK NO. 1	Geologic Age:	
Latitude:	69.3	Top Depth:	2116 FT
Longitude:	148.3	Bottom Depth:	2117 FT







RATIOS (on Areas)[1]		Appl[2]	TEV[3]
Mono- (MAS) and Triaromatic Steroids (TAS)			
(C20+C21)/Σ TAS	0.26	M	1.0 (1.3%)
TAS #1 20/20+27	0.48	M	
TAS #2 21/21+28	0.52	M	
%26 TAS	17.5	D	
%27 TAS	40.9	D	
%28 TAS	31.3	D	
%29 TAS	10.3	D	
C28/C26 20S TAS	1.99		
C28/C27 20R TAS	0.76		
Dia/Regular C27 MAS	0.87		
%27 MAS	30.9	D	
%28 MAS	44.1	D	
%29 MAS	25.0	D	
(C21+C22)/Σ MAS	0.29	M	1.0 (1.3%)
TAS/(MAS+TAS)	0.73	M	
TA28/(TA28+MA29)	0.79	M	1.0 (0.8%)
Triaromatic Methylsteroids			
Dinosteroid Index	0.38	A	
C4/C3+C4 Mester	0.54	A	
Phenanthrenes, Naphthalenes, and Dibenzothiophenes			
MPI-1	0.81	M	
Rc(a) if Ro < 1.3 (Ro%)	0.85	M	
Rc(b) if Ro > 1.3 (Ro%)	1.82	M	
MPI-2	0.85	M	
DNR-1	3.87	M	
DNR-2	1.41	M	
TNR1	0.92	M	
TDE-1	7.35	M	
TDE-2	0.22	M	
MDR	3.07	M	
Rm (Ro%)	0.75	M	
MDR23	0.37	M	
MDR1	0.32	M	
DBT/Phenanthrene	0.07	D	

[1]Definition and utility of the ratios can be found on our website www.BaselineDGSI.com

[2]A=Source Age; D=Depositional environment; M= Maturity

[3]Thermal equilibrium value of the biomarker ratio and in brackets the approximate VR value at which this value is reached

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Depth:	**2116 - 2117 FT**	**Lab ID:**	**TM000738**
Sampling Point:		**File Name:**	**M1090391.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
230	OTP	*Ortho-terphenyl* (internal standard)				0.0	0.0
128	NAPH	Naphthalene					
142	2MN	2-Methylnaphthalene	37.961	2590	428		
142	1MN	1-Methylnaphthalene	39.174	2647	434		
154	BP	Biphenyl	44.667	10754	1719		
156	2EN	2-Ethylnaphthalene	46.133	3733	568		
156	1EN	1-Ethylnaphthalene	46.217	1392	324		
156	26DMN	2,6-Dimethylnaphthalene	47.043	19296	3275		
156	27DMN	2,7-Dimethylnaphthalene	47.194	22121	3691		
156	1317DMN	1,3 & 1,7-Dimethylnaphthalenes	48.188	59108	8319		
156	16DMN	1,6-Dimethylnaphthalene	48.441	43826	7145		
156	23DMN	2,3-Dimethylnaphthalene	49.621	7154	1323		
156	14DMN	1,4-Dimethylnaphthalene	49.722	22284	3203		
156	15DMN	1,5-Dimethylnaphthalene	49.823	10709	2281		
156	12DMN	1,2-Dimethylnaphthalene	50.766	9785	1569		
168	2MBP	2-Methylbiphenyl	46.571	71	13		
168	DPM	Diphenylmethane	48.829	127	19		
168	3MBP	3-Methylbiphenyl	53.277	11237	1851		
168	4MBP	4-Methylbiphenyl	53.934	5445	875		
168	DBF	Dibenzofuran	55.366	1762	263		
170	BB_EMN	Ethyl-methyl-Naphthalene	55.114	30304	3965		
170	AB_EMN	Ethyl-methyl-Naphthalene	56.310	15205	2322		
170	137TMN	1,3,7-Trimethylnaphthalene	56.765	56893	9569		
170	136TMN	1,3,6-Trimethylnaphthalene	57.152	84095	13691		
170	146135T	(1,4,6+1,3,5)-Trimethylnaphthalenes	58.214	75509	11666		
170	236TMN	2,3,6-Trimethylnaphthalene	58.483	69179	12065		
170	127TMN	1,2,7-Trimethylnaphthalene	59.225	17031	2996		
170	167126T	(1,6,7+1,2,6)-Trimethylnaphthalenes	59.393	79191	12290		
170	124TMN	1,2,4-Trimethylnaphthalene	60.320	6514	1183		
170	125TMN	1,2,5-Trimethylnaphthalene	60.758	47874	8772		
178	PHEN	Phenanthrene	70.278	553703	112872		
184	1357	1,3,5,7-Tetramethylnaphthalene	64.718	37207	6585		
184	1367	1,3,6,7-Tetramethylnaphthalene	65.880	47994	9776		
184	1247	(1,2,4,7+1,2,4,6+1,4,6,7)-Tetramethylnaphthalenes	66.622	25851	4768		
184	1257	1,2,5,7-Tetramethylnaphthalene	66.807	22140	4319		
184	2367	2,3,6,7-Tetramethylnaphthalene	67.178	17365	3500		
184	1267	1,2,6,7-Tetramethylnaphthalene	67.616	17957	3629		
184	1237	1,2,3,7-Tetramethylnaphthalene	67.801	6446	1293		
184	1236	1,2,3,6-Tetramethylnaphthalene	68.071	14289	2775		
184	1256	1,2,5,6-Tetramethylnaphthalene	68.795	34990	7915		
184	DBT	Dibenzothiophene	68.997	37700	7619		
191	BH32	C32 Benzohopane	117.652	2056	309		
191	BH33	C33 Benzohopane	119.809	806	144		
191	BH34	C34 Benzohopane					
191	BH35	C35 Benzohopane					
192	3MP	3-Methylphenanthrene	75.198	278451	59950		
192	2MP	2-Methylphenanthrene	75.383	308796	69732		
192	9MP	9-Methylphenanthrene	76.074	288778	64224		
192	1MP	1-Methylphenanthrene	76.259	248986	57143		

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #1**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2116 - 2117 FT**	**Lab ID:**	**TM000738**
Sampling Point:		**File Name:**	**M1090391.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
198	CAD	Cadalene	66.217	35066	6251		
198	4MDBT	4 Methyl Dibenzothiophene	73.530	37364	8153		
198	23MDBT	2 & 3 Methyl Dibenzothiophenes	74.322	13790	2387		
198	1MDBT	1 Methyl Dibenzothiophene	75.114	12161	2569		
206	36DMP	3,6-Dimethylphenanthrene	79.425	67284	14236		
206	26DMP	2,6-Dimethylphenanthrene	79.678	133344	31395		
206	27DMP	2,7-Dimethylphenanthrene	79.779	74193	17894		
206	39DMP	(3,9+3,10+2,10+1,3)-Dimethylphenanthrenes	80.285	376101	72834		
206	29DMP	(2,9+1,6)-Dimethylphenanthrenes	80.487	208866	35164		
206	17DMP	1,7-Dimethylphenanthrene	80.639	175534	42514		
206	23DMP	2,3-Dimethylphenanthrene	80.909	67005	16355		
206	19DMP	1,9-Dimethylphenanthrene	81.027	85013	18979		
206	18DMP	1,8-Dimethylphenanthrene	81.448	39883	9306		
206	12DMP	1,2-Dimethylphenanthrene	81.954	24387	5680		
231	231A20	C20 Triaromatic Steroid	92.252	11711	2679		
231	231B21	C21 Triaromatic	94.746	10579	2600		
231	231C26	C26 20S Triaromatic	103.932	5523	1273		
231	231D26	C27 20S & C26 20R Triaromatic	105.516	21179	4380		
231	TADMD1	C28 23,24-Cholestane Triaromatic	106.123	899	152		
231	TADMD2	C28 23,24-Cholestane Triaromatic	106.629	830	233		
231	231E28	C28 20S Triaromatic	106.831	11003	1759		
231	231F27	C27 20R Triaromatic	107.455	12938	2343		
231	TADMD3	C28 23,24-Cholestane Triaromatic	107.556	695	283		
231	C29TA1	C29 Triaromatic	107.826	3104	507		
231	C29TA2	C29 Triaromatic	108.028	1794	432		
231	TADMD4	C28 23,24-Cholestane Triaromatic	108.871	236	67		
231	231G28	C28 20R Triaromatic	109.056	9889	2050		
231	TADMD5	C28 23,24-Cholestane Triaromatic	109.123	1388	533		
231	C29TA3	C29 Triaromatic	110.371	3266	755		
245	C3S	C27 20S 3-Methyl Triaromatic Steroid	106.595	912	194		
245	C4S	C27 20S 4-Methyl Triaromatic Steroid	107.219	1510	328		
245	E2S	C28 20S 2-Methyl Triaromatic Steroid	107.775	756	140		
245	E3SC3R	C28 20S 3-Methyl & C27 20R 3-Methyl TAS	108.112	3324	556		
245	E4SC4R	C28 20S 4-Methyl & C27 20R 4-Methyl TAS	108.702	5352	863		
245	S2S	C29 20S 2-Methyl Triaromatic Steroid	108.955	1108	149		
245	DA	Triaromatic Dinosteroid a	109.140	894	206		
245	S3S	C29 20S 3-Methyl Triaromatic Steroid	109.309	2414	280		
245	DB	Triaromatic Dinosteroid b	109.747	3294	677		
245	S4SE2R	C29 20S 4-Methyl & C28 20R 2-Methyl TAS	109.916	4054	562		
245	E3R	C28 20R 3-Methyl Triaromatic Steroid	110.050	2830	457		
245	E4R	C28 20R 4-Methyl Triaromatic Steroid	110.640	3224	629		
245	DC	Triaromatic Dinosteroid c	110.826	4021	821		
245	DD	Triaromatic Dinosteroid d	110.944	3518	783		
245	S2R	C29 20R 2-Methyl Triaromatic Steroid	111.348	748	164		
245	S3R	C29 20R 3-Methyl Triaromatic Steroid	111.584	2505	477		
245	DE	Triaromatic Dinosteroid e	111.719	3396	525		
245	S4R	C29 20R 4-Methyl Triaromatic Steroid	112.174	2497	499		
245	DF	Triaromatic Dinosteroid f	112.292	4103	848		

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #1**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2116 - 2117 FT**	**Lab ID:**	**TM000738**
Sampling Point:		**File Name:**	**M1090391.D**

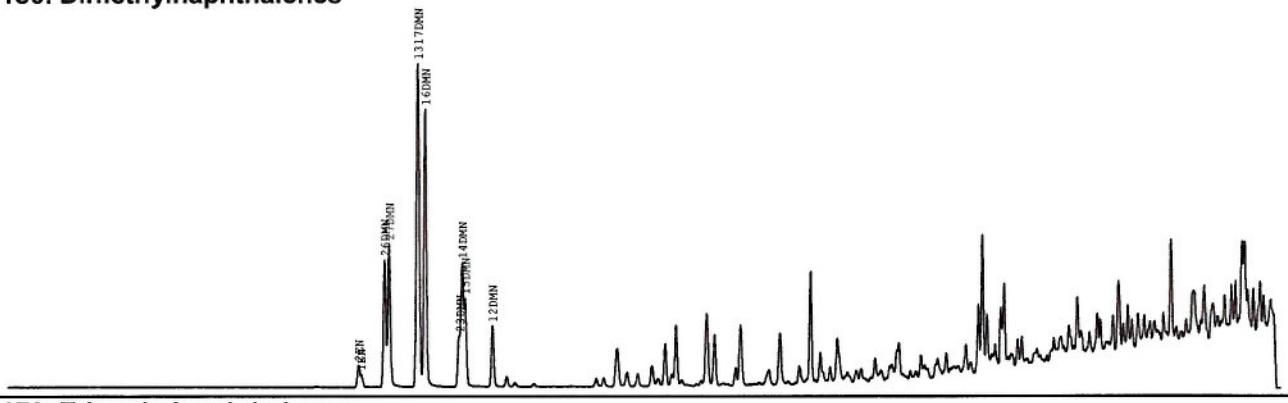
Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
253	S253A	C21 Ring-C Monoaromatic Steroid	84.499	6080	990		
253	S253B	C22 Monoaromatic steroid	86.959	3048	555		
253	S253C	C27 Reg 5β(H),10β(CH3) 20S	96.921	1635	339		
253	S253D	C27 Dia 10β(H),5β(CH3) 20S	97.072	1420	326		
253	S253E	C27 Dia10βH,5βCH3 20R+Reg5βH,10βCH3 20R	98.539	1869	405		
253	S253F	C27 Reg 5α(H),10β(CH3) 20S	98.707	1048	159		
253	S253G	C28 Dia 10αH,5αCH3 20s+Reg5βH,10βCH3 20S	99.078	3707	635		
253	S253H	C27 Reg 5α(H),10β(CH3) 20R	100.359	904	199		
253	S253I	C28 Reg 5α(H),10β(CH3) 20S	100.511	873	158		
253	S253J	C28 Dia 10αH,5αCH3 20R+Reg5βH,10βCH3 20R	100.696	3912	847		
253	S253K	C29 Dia 10βH,5βCH3 20S+Reg5βH,10βCH3 20S	100.831	2072	421		
253	S253L	C29 Reg 5α(H),10β(CH3) 20S	102.129	611	106		
253	S253M	C28 Reg 5α(H),10β(CH3) 20R	102.398	1323	188		
253	S253N	C29 Dia 10βH,5βCH3 20R+Reg5βH,10βCH3 20R	102.533	2184	397		
253	S253O	C29 Reg 5α(H),10β(CH3) 20R	104.134	698	94		
365	SH29	C29 8,14-secohopanoids	104.000	14426	2939		
365	SH30	C30 8,14-secohopanoids	105.988	11007	2572		

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #1**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2116 - 2117 FT**	**Lab ID:**	**TM000738**
Sampling Point:		**File Name:**	**M1090391.D**

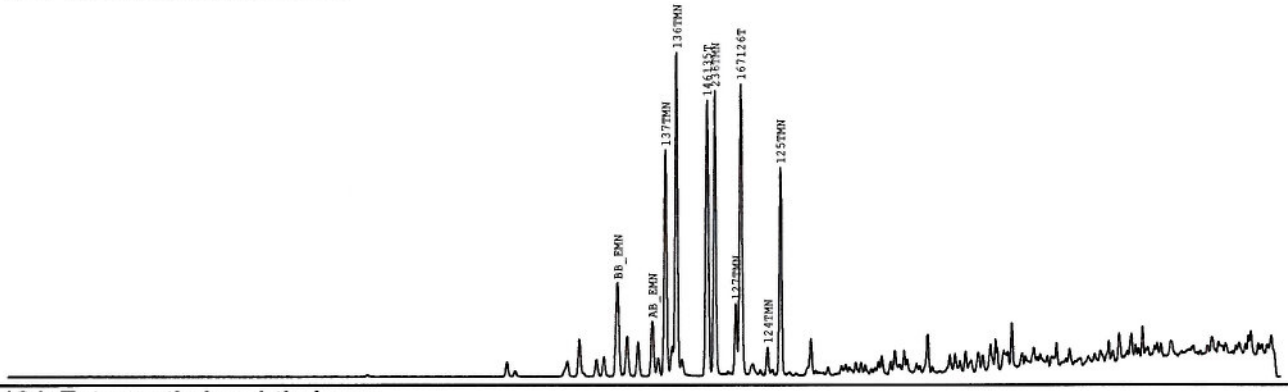
Miscellaneous Ratios	By Areas	By Heights
Triaromatic Steroids m/z 231		
(C20+C21)/Σ TAS	0.26	0.30
TAS #1 20/20+27	0.48	0.53
TAS #2 21/21+28	0.52	0.56
%26TAS	17.5	19.8
%27TAS	40.9	36.5
%28TAS	31.3	31.9
%29TAS	10.3	11.8
C28/C26 20S TAS	1.99	1.38
C28/C27 20R TAS	0.76	0.87
Monoaromatic Steroids m/z 253		
Dia/Regular C27 MAS	0.87	0.96
%27 MAS	30.9	33.4
%28 MAS	44.1	42.8
%29 MAS	25.0	23.8
(C21+C22)/Σ MAS	0.29	0.27
TAS/(MAS+TAS)	0.73	0.75
TA28/(TA28+MA29)	0.79	0.79
Triaromatic Methylsteroids m/z 245		
Dinosteroid Index	0.38	0.42
C4/C3+C4 Mester	0.54	0.56
Phenanthrenes and Naphthalenes		
MPI-1	0.81	0.83
MPI-2	0.85	0.89
MPI-3	1.09	1.07
Rc(a) if Ro < 1.3 (Ro%)	0.85	0.87
Rc(b) if Ro > 1.3 (Ro%)	1.82	1.80
DNR-1	3.87	3.05
DNR-2	1.41	1.54
TNR1	0.92	1.03
TDE-1	7.35	7.42
TDE-2	0.22	0.24
MDR	3.07	3.17
Rm (Ro%)	0.75	0.76
MDR23	0.37	0.31
MDR1	0.32	0.34
DBT/Phenanthrene	0.07	0.07

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #1**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2116 - 2117 FT**	**Lab ID:**	**TM000738**
Sampling Point:		**File Name:**	

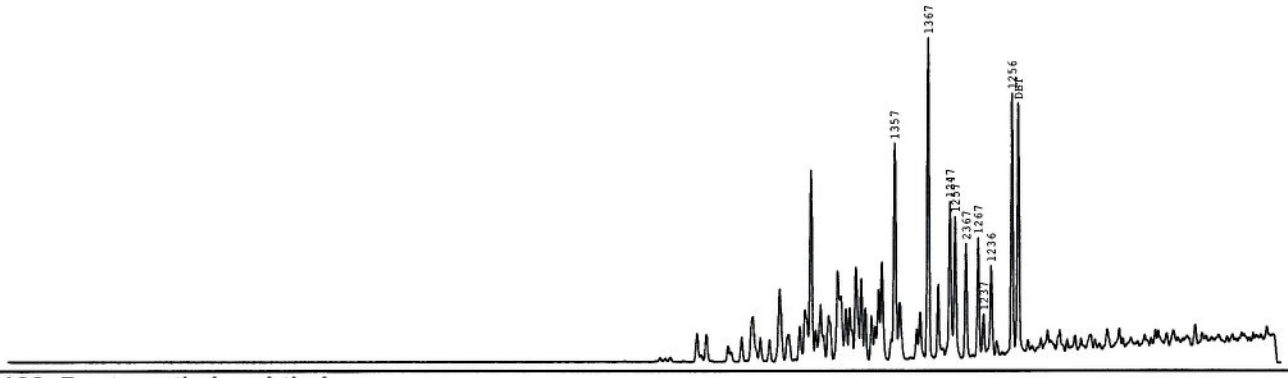
***m/z* 156: Dimethylnaphthalenes**



***m/z* 170: Trimethylnaphthalenes**



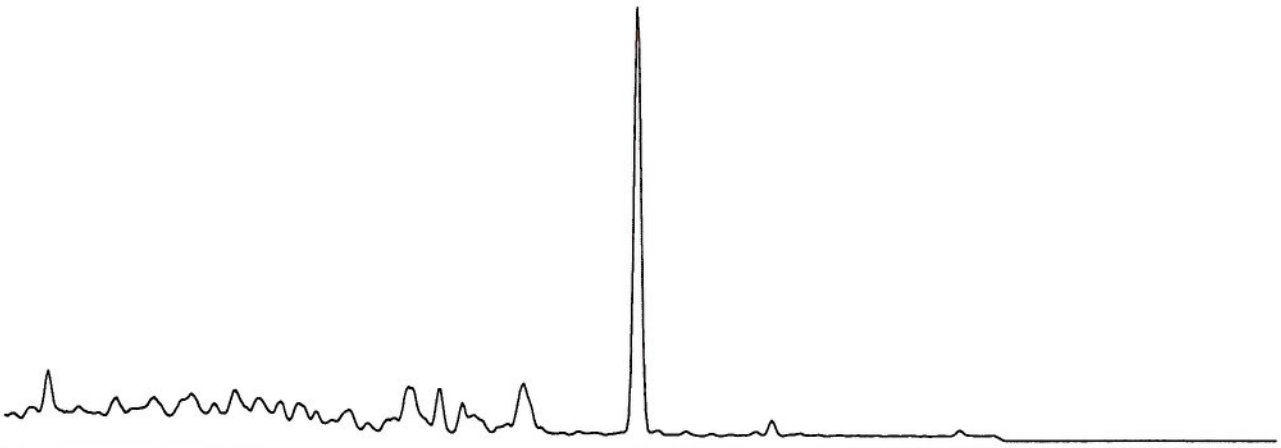
***m/z* 184: Tetramethylnaphthalenes**



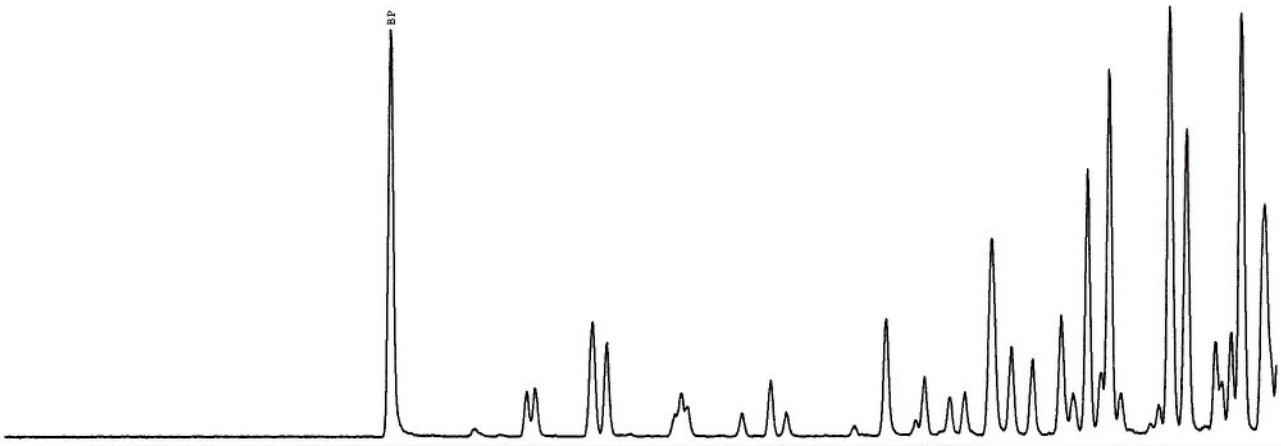
***m/z* 198: Pentamethylnaphthalenes**

Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #1
Well Name:	IVISHAK NO. 1	Project #:	08-1633-A
Depth:	2116 - 2117 FT	Lab ID:	TM000738
Sampling Point:		File Name:	M1090391.D

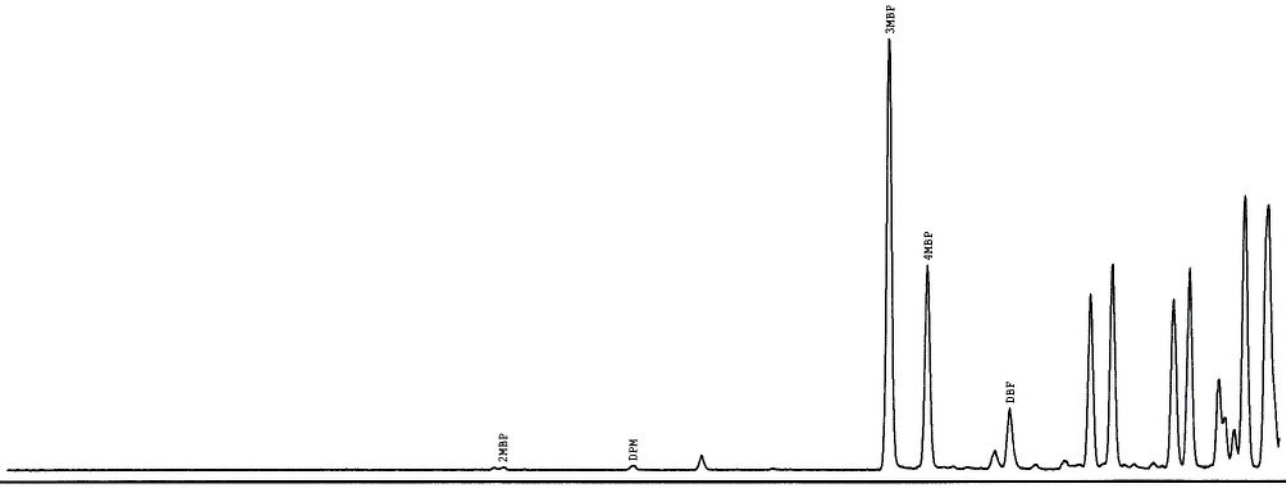
m/z 230: Ortho-Terphenyl (Inter. Std)



m/z 154: Biphenyl



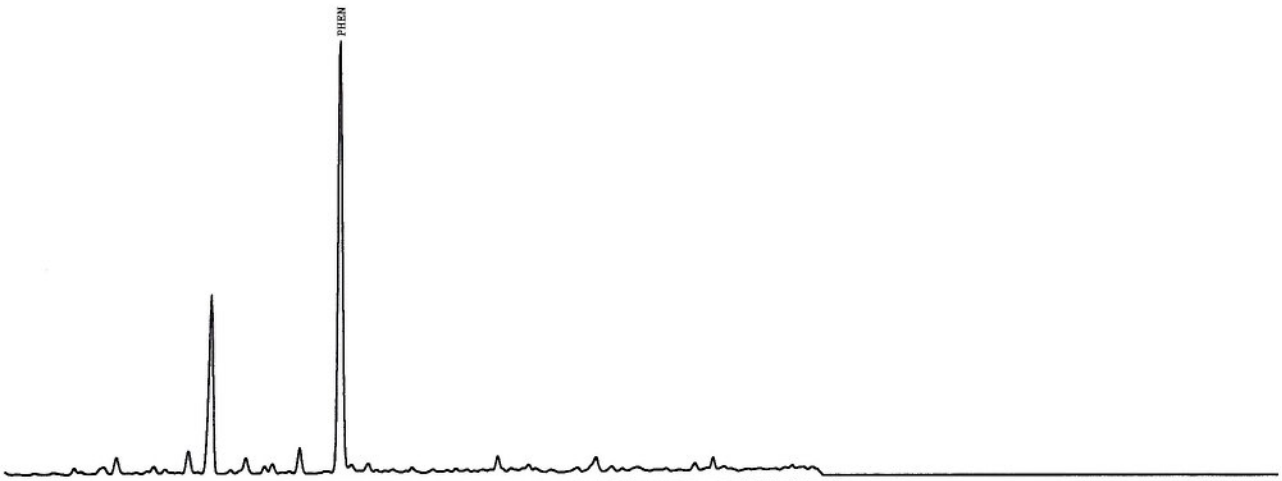
m/z 168: Methylbiphenyls (MBP)



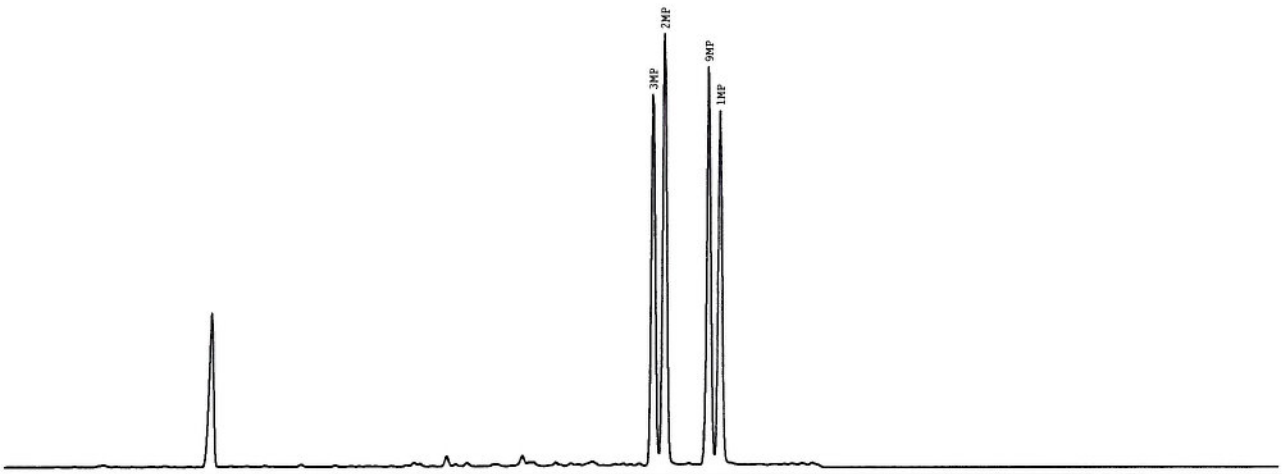
Geochemical Services Group, 143 Vision Park Blvd., Shenandoah, Texas 77384 • Phone: 281-681-2200 • Fax: 281-681-0326 • Email: geocheminfo@weatherfordlabs.com

Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #1
Well Name:	IVISHAK NO. 1	Project #:	08-1633-A
Depth:	2116 - 2117 FT	Lab ID:	TM000738
Sampling Point:		File Name:	M1090391.D

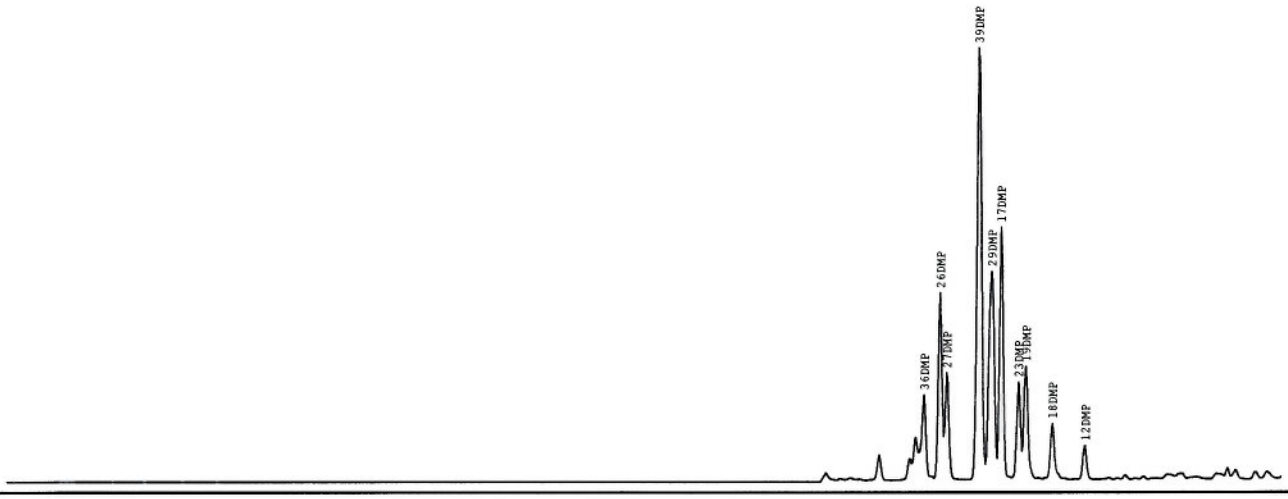
***m/z* 178: Phenanthrene**



***m/z* 192: Methylphenanthrenes**

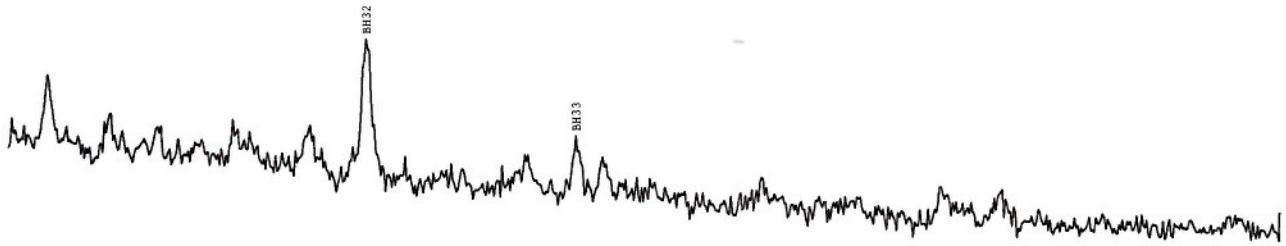


***m/z* 206: Dimethylpehnanthrenes**

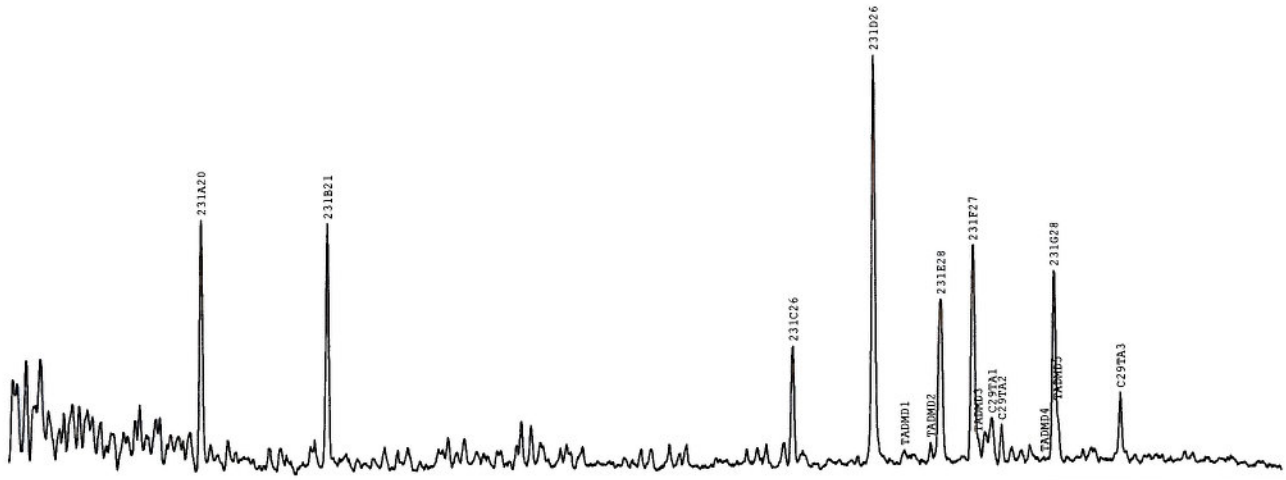


Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #1
Well Name:	IVISHAK NO. 1	Project #:	08-1633-A
Depth:	2116 - 2117 FT	Lab ID:	TM000738
Sampling Point:		File Name:	M1090391.D

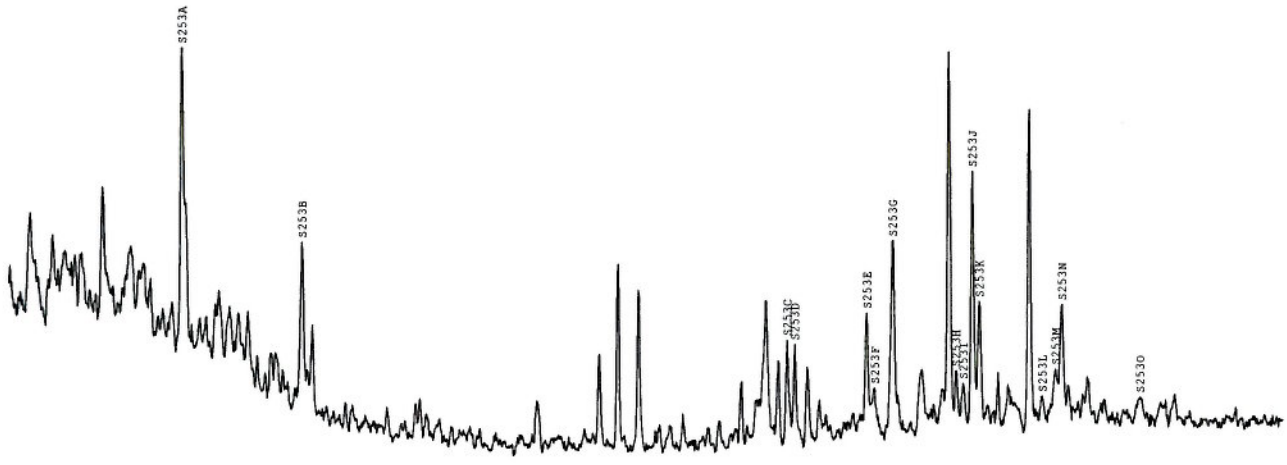
***m/z* 191: Benzohopanes**



***m/z* 231: Triaromatic Steranes**



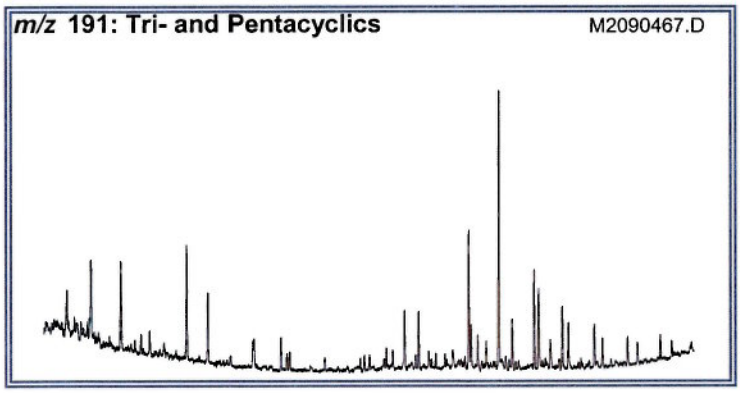
***m/z* 253: Monoaromatic Steranes**

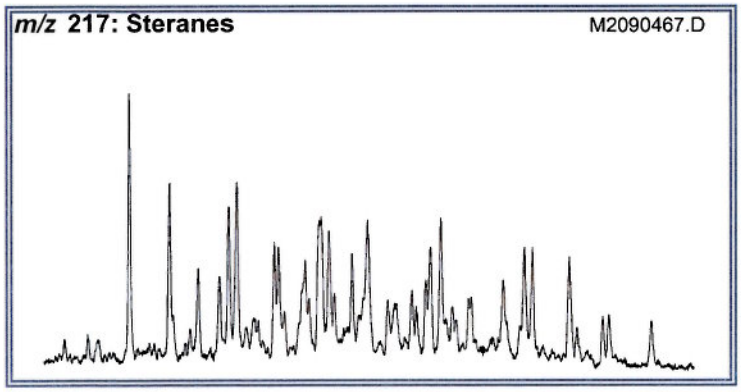


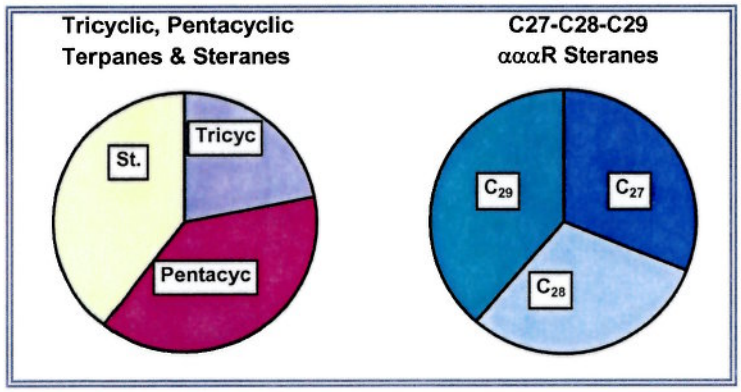
Weatherford LABORATORIES

SATURATE BIOMARKERS

Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #1
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000738
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	SCHRADER BLUFF
Well Name:	IVISHAK NO. 1	Geologic Age:	
Latitude:	69.3	Top Depth:	2116 FT
Longitude:	148.3	Bottom Depth:	2117 FT







RATIOS (on Areas)[1]		Appl[2]	TEV[3]
Steranes (*m/z* 217; 218)			
%C_{27} αββS (218)	27.4	D	
%C_{28} αββS (218)	38.5	D	
%C_{29} αββS (218)	34.1	D	
%C_{27} αααR (217)	31.0	D	
%C_{28} αααR (217)	30.3	D	
%C_{29} αααR (217)	38.7	D	
S/(S+R) (C_{29} ααα) (217)	0.39	M	0.55 (0.8%)
ββS/(ββS+ααR) (C29) (217)	0.48	M	0.70 (0.9%)
(C_{21}+C_{22})/(C_{27}+C_{28}+C_{29}) (217)	0.15		
C_{27}/C_{29} (αββS) (218)	0.80	D	
C_{28}/C_{29} (αββS) (218)	1.13	D	
Diaster/ααα Ster (C_{27}) (217)	1.82	M/D	1.00 (1.4%)
C30 αββS Sterane Index (218)	10.11	D	
C30 S+R Sterane Index (218)	9.95	D	
Terpanes (*m/z* 191)			
Oleanane/Hopane		D/A	
Gammacerane/Hopane	0.04	D	
Norhopane/Hopane	0.48	D	
Bisnorhopane/Hopane	0.10		
Diahopane/Hopane	0.11	M/D	
Moretane/Hopane	0.19	M	0.05 (0.7%)
25-*nor*-hopane/hopane		B	
Ts/(Ts+Tm) trisnorhopanes	0.49	M/D	1.00 (1.4%)
C29Ts/C29 Hopane	0.35	M	
H32 S/(R+S) Homohopanes	0.57	M	0.60 (0.6%)
H35/H34 Homohopanes	0.85	D	
C24 Tetracyclic/Hopane	0.11	D	
C24 Tetracyclic/C26 Tricyclics	0.79	D	
C23/C24 Tricyclic terpanes	1.70	D	
C19/C23 Tricyclic terpanes	0.43	D	
C26/C25 Tricyclic terpanes	0.68	D	
(C28+C29 Tricyclics)/Ts	1.21	A	
Various (*m/z* 191; 217)			
Steranes/Hopanes	1.05	D	
Tricyclic terpanes/Hopanes	0.60	M	1.00 (1.4%)
Tricyclic terpanes/Steranes	0.57	M/D	1.00 (1.4%)

[1]Definition and utility of the ratios can be found on our website www.brilabs.com

[2]A=Source Age; D=Depositional environment; M= Maturity; B=Possible Biodegradation

[3]Thermal equilibrium value of the biomarker ratio and in brackets the approximate VR value at which this value is reached

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #1**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2116 - 2117 FT**	**Lab ID:**	**TM000738**
Sampling Point:		**File Name:**	**M2090467.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
217	CHOL	*5β cholane (internal standard)*	42.107	8719	1254	100.0	100.0
125	BCAROT	β-carotane					
187	4MDIAM	4-methyldiamantane	9.226	714	259	8.2	20.7
187	1MDIAM	1-methyldiamantane	9.819	856	271	9.8	21.6
187	3MDIAM	3-methyldiamantane	10.202	725	229	8.3	18.3
188	DIAM	diamantane	9.069	417	145	4.8	11.6
191	TR19	C19 tricyclic terpane	18.759	2535	342	29.1	27.3
191	TR20	C20 tricyclic terpane	21.617	4367	593	50.1	47.3
191	TR21	C21 tricyclic terpane	24.945	5019	629	57.6	50.2
191	TR22	C22 tricyclic terpane	28.326	1359	184	15.6	14.7
191	TR23	C23 tricyclic terpane	32.570	5893	802	67.6	64.0
191	TR24	C24 tricyclic terpane	34.993	3459	493	39.7	39.3
191	DESAOL	des-A-oleanane	37.539	428	72	4.9	5.7
191	DESALU	des-A-lupane					
191	TR25A	C25 tricyclic terpane (a)	40.067	1495	196	17.1	15.6
191	TR25B	C25 tricyclic terpane (b)	40.171	1270	206	14.6	16.4
191	TET24	C24 tetracyclic terpane (TET)	43.292	1494	236	17.1	18.8
191	TR26A	C26 tricyclic terpane (a)	43.937	906	122	10.4	9.7
191	TR26B	C26 tricyclic terpane (b)	44.251	987	135	11.3	10.8
191	TR28A	C28 tricyclic terpane (a)	52.864	747	111	8.6	8.9
191	TR28B	C28 tricyclic terpane (b)	53.457	828	110	9.5	8.8
191	TR29A	C29 tricyclic terpane (a)	55.427	912	149	10.5	11.9
191	TR29B	C29 tricyclic terpane (b)	56.159	884	138	10.1	11.0
191	TR30A	C30 tricyclic terpane (a)	60.361	909	125	10.4	10.0
191	TR30B	C30 tricyclic terpane (b)	61.198	766	111	8.8	8.9
191	TS	Ts 18α(H)-trisnorhopane	57.537	2778	414	31.9	33.0
191	TM	Tm 17α(H)-trisnorhopane	59.176	2884	414	33.1	33.0
191	H28	C28 17α18α21β(H)-bisnorhopane	63.151	1334	136	15.3	10.8
191	NOR25H	C29 Nor-25-hopane					
191	H29	C29 Tm 17α(H)21β(H)-norhopane	64.964	6421	974	73.6	77.7
191	C29TS	C29 Ts 18α(H)-norneohopane	65.243	2269	317	26.0	25.3
191	DH30	C30 17α(H)-diahopane	65.993	1531	237	17.6	18.9
191	M29	C29 normoretane	66.969	1315	194	15.1	15.5
191	OLA	oleanane a					
191	OLB	oleanane b					
191	H30	C30 17α(H)-hopane	68.451	13498	1949	154.8	155.4
191	C30TS	C29 Ts 18α(H)-norneohopane	69.270	752	96	8.6	7.7
191	M30	C30 moretane	70.003	2577	362	29.6	28.9
191	H31S	C31 22S 17α(H) hopane	72.513	4801	706	55.1	56.3
191	H31R	C31 22R 17α(H) hopane	73.019	4159	572	47.7	45.6
191	GAM	gammacerane	73.437	551	73	6.3	5.8
191	H32S	C32 22S 17α(H) hopane	75.756	3248	451	37.3	36.0
191	H32R	C32 22R 17α(H) hopane	76.436	2437	339	28.0	27.0
191	H33S	C33 22S 17α(H) hopane	79.505	2106	311	24.2	24.8
191	H33R	C33 22R 17α(H) hopane	80.429	1662	214	19.1	17.1
191	H34S	C34 22S 17α(H) hopane	83.375	1444	212	16.6	16.9
191	H34R	C34 22R 17α(H) hopane	84.509	1052	162	12.1	12.9
191	H35S	C35 22S 17α(H) hopane	87.106	1234	185	14.2	14.8
191	H35R	C35 22R 17α(H) hopane	88.397	891	131	10.2	10.4

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #1**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2116 - 2117 FT**	**Lab ID:**	**TM000738**
Sampling Point:		**File Name:**	**M2090467.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
217	S21	C21 sterane	28.901	6029	701	69.1	55.9
217	S22	C22 sterane	33.616	2299	310	26.4	24.7
217	DIA27S	C27 βα 20S diasterane	48.296	4831	700	55.4	55.8
217	DIA27R	C27 βα 20R diasterane	49.865	3233	460	37.1	36.7
217	DIA28SA	C28 βα 20S diasterane a	52.097	3057	400	35.1	31.9
217	DIA28SB	C28 βα 20S diasterane b	52.376	3828	463	43.9	36.9
217	DIA28RA	C28 βα 20R diasterane a	53.823	2087	309	23.9	24.6
217	DIA28RB	C28 βα 20R diasterane b	53.980	2558	297	29.3	23.7
217	C27S	C27 αα 20S sterane	55.009	2222	265	25.5	21.1
217	BB_D29S	C27 ββ 20R + C29 dia20S	55.619	5346	377	61.3	30.1
217	C27BBS	C27 ββ 20S sterane	55.933	3019	341	34.6	27.2
217	C27R	C27 αα 20R sterane	56.804	2200	282	25.2	22.5
217	DIA29R	C29 βα 20R diasterane	57.397	4205	371	48.2	29.6
217	C28S	C28 αα 20S sterane	59.123	1722	188	19.8	15.0
217	C28BBR	C28 ββ 20R sterane(+5 βαα)	59.856	2794	301	32.0	24.0
217	C28BBS	C28 ββ 20S sterane	60.239	3516	377	40.3	30.1
217	C28R	C28 αα 20R sterane	61.407	2153	172	24.7	13.7
217	C29S	C29 αα 20S sterane	62.645	1756	218	20.1	17.4
217	C29BBR	C29 ββ 20R sterane(+5 βαα)	63.465	2830	305	32.5	24.3
217	C29BBS	C29 ββ 20S sterane	63.761	2498	303	28.7	24.2
217	C29R	C29 αα 20R sterane	65.173	2744	280	31.5	22.3
218	C27ABBR	C27 ββ 20R sterane	55.497	3798	441	43.6	35.2
218	C27ABBS	C27 ββ 20S sterane	55.915	2754	391	31.6	31.2
218	C28ABBR	C28 ββ 20R sterane	59.838	3444	414	39.5	33.0
218	C28ABBS	C28 ββ 20S sterane	60.239	3871	492	44.4	39.2
218	C29ABBR	C29 ββ 20R sterane	63.447	3325	426	38.1	34.0
218	C29ABBS	C29 ββ 20S sterane	63.778	3430	432	39.3	34.5
218	C30ABBR	C30 ββ 20R sterane	66.481	1148	156	13.2	12.4
218	C30ABBS	C30 ββ 20S sterane	66.707	1131	154	13.0	12.3
259	D27S	C27 βα 20S diasterane	48.296	3033	446	34.8	35.6
259	D27R	C27 βα 20R diasterane	49.865	2161	312	24.8	24.9
259	D28SA	C28 βα 20S diasterane a	52.114	2029	284	23.3	22.6
259	D28SB	C28 βα 20S diasterane b	52.393	2162	292	24.8	23.3
259	D28RA	C28 βα 20R diasterane a	53.823	1751	225	20.1	17.9
259	D28RB	C28 βα 20R diasterane b	53.997	1522	199	17.5	15.9
259	D29S	C29 βα 20S diasterane	55.601	2845	260	32.6	20.7
259	D29R	C29 βα 20R diasterane	57.397	2157	178	24.7	14.2
259	C30TP1	C30 tetracyclic polyprenoid	66.952	437	61	5.0	4.9
259	C30TP2	C30 tetracyclic polyprenoid	67.091	351	50	4.0	4.0

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #1**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2116 - 2117 FT**	**Lab ID:**	**TM000738**
Sampling Point:		**File Name:**	**M2090467.D**

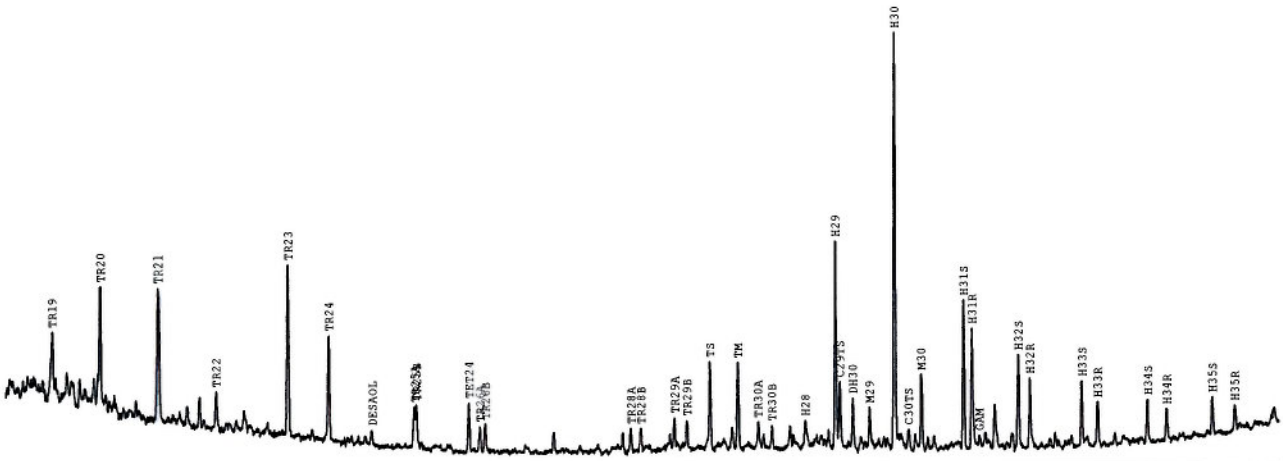
Miscellaneous Ratios	By Areas	By Heights
Terpanes (m/z 191)		
C19/C23 Tricyclic terpanes	0.43	0.43
C22/C21 Tricyclic terpanes	0.27	0.29
C22/C24 Tricyclic terpanes	0.39	0.37
C23/C24 Tricyclic terpanes	1.70	1.63
C24/C23 Tricyclic terpanes	0.59	0.61
C26/C25 Tricyclic terpanes	0.68	0.64
C24 Tetracyclic/C23 Tricyclic	0.25	0.29
C24 Tetracyclic/C26 Tricyclics	0.79	0.92
(C28+C29 Tricyclics)/Ts	1.21	1.23
Ts/Tm trisnorhopanes	0.96	1.00
Ts/(Ts+Tm) trisnorhopanes	0.49	0.50
25-nor-hopane/hopane		0.07
C29Ts/C29 Hopane	0.35	0.33
C29Ts/(C29TS+C29) Hopane	0.26	0.25
C23 Tricyclic/Hopane	0.44	0.41
C24 Tetracyclic/Hopane	0.11	0.12
Bisnorhopane/Hopane	0.10	0.07
Norhopane/Hopane	0.48	0.50
Diahopane/Hopane	0.11	0.12
Oleanane/Hopane		
Moretane/Hopane	0.19	0.19
Moretane/(Moretane+Hopane)	0.16	0.16
C30Ts/C30 Hopane	0.06	0.05
Gammacerane/Hopane	0.04	0.04
C32 S/(S+R) Homohopanes	0.57	0.57
Gammacerane/H31R Homohopane	0.13	0.13
C35/C34 Homohopanes	0.85	0.84
C35/C34 S Homohopanes	0.85	0.87
C35 Homohopane Index	0.09	0.10
Rel % C31 Homohopane	38.9	38.9
Rel % C32 Homohopane	24.7	24.1
Rel % C33Homohopane	16.4	16.0
Rel % C34 Homohopane	10.8	11.4
Rel % C35 Homohopane	9.2	9.6

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #1**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2116 - 2117 FT**	**Lab ID:**	**TM000738**
Sampling Point:		**File Name:**	**M2090467.D**

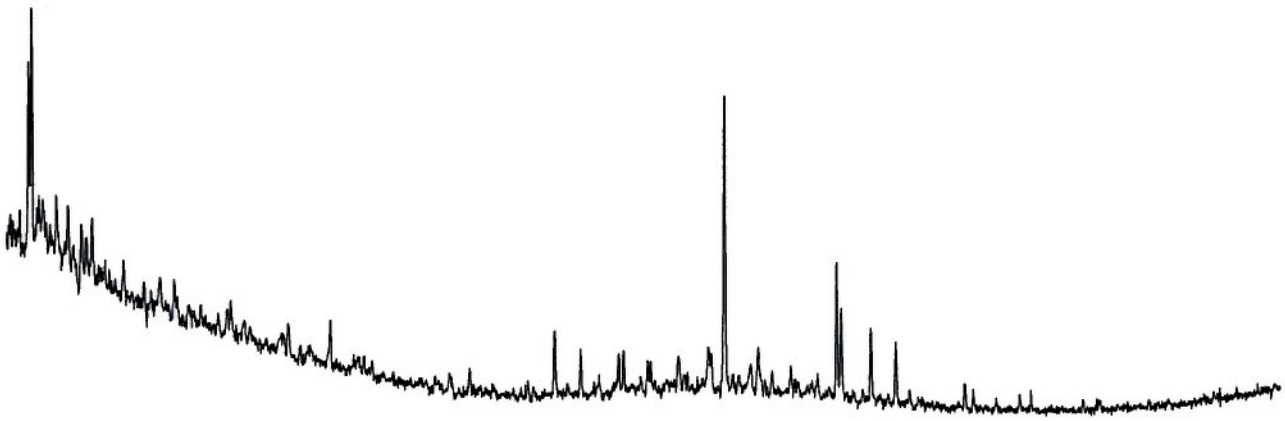
Miscellaneous Ratios	By Areas	By Heights
Steranes (m/z 217; 218)		
%C27 ααα*R* (217)	31.0	38.4
%C28 ααα*R* (217)	30.3	23.4
%C29 ααα*R* (217)	38.7	38.1
S/R (C_{29} ααα) (217)	0.64	0.78
S/(S+R) (C_{29} ααα) (217)	0.39	0.44
ββ/(αα+ββ) (C_{29}) (217)	0.54	0.55
ββS/(αα*R*+ββS) (C29) (217)	0.48	0.52
αββS/ααα*R* (C_{29}) (217)	0.91	1.08
(C_{21}+C_{22})/(C_{27}+C_{28}+C_{29}) (217)	0.15	0.16
Diaster/ααα Ster (C_{27}) (217)	1.82	2.12
Diaster/(Diaster+ααα) Ster (C_{27}) (217)	0.65	0.68
%C27 αββS (218)	27.4	29.7
%C28 αββS (218)	38.5	37.4
%C29 αββS (218)	34.1	32.9
%C27 αββ (R+S) (218)	31.8	32.0
%C28 αββ (R+S) (218)	35.5	34.9
%C29 αββ (R+S) (218)	32.8	33.1
C30 αββS Sterane Index (218)	10.1	10.5
C30 S+R Sterane Index (218)	10.0	10.7
C_{27}/C_{29} (αββS) (218)	0.80	0.91
C_{28}/C_{29} (αββS) (218)	1.13	1.14
C_{29}/C_{27} (αββS) (218)	1.25	1.10
C_{29}/C_{27} (αββ) (218)	1.03	1.03
Various (m/z 191; 217)		
Steranes/Hopanes	1.04	0.82
Tricyclic terpanes/Hopanes	0.59	0.57
Tricyclic terpanes/Steranes	0.57	0.69
Tricyclic/Pentacyclic Terpanes	57.4	55.4
Steranes/Terpanes	0.65	0.54
% Tricyclic Terpanes	22.0	23.1
% Pentacyclic Terpanes	38.40	23.13
% Steranes	39.6	35.1

Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #1
Well Name:	IVISHAK NO. 1	Project #:	08-1633-A
Depth:	2116 - 2117 FT	Lab ID:	TM000738
Sampling Point:		File Name:	M2090467.D

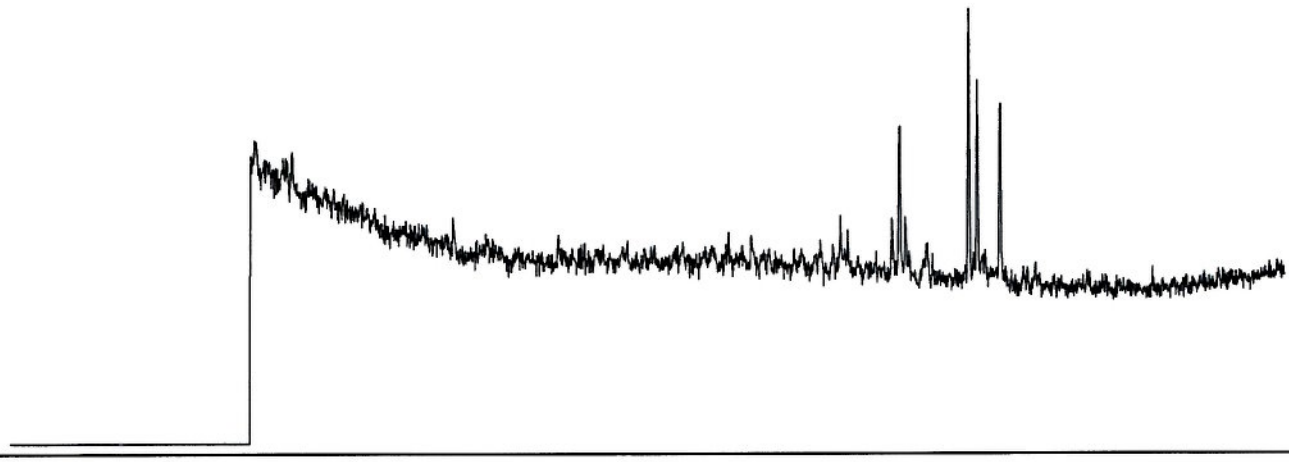
***m/z* 191:Tri-, tetra- and pentacyclic Terpanes**



***m/z* 177: Norhopanes**

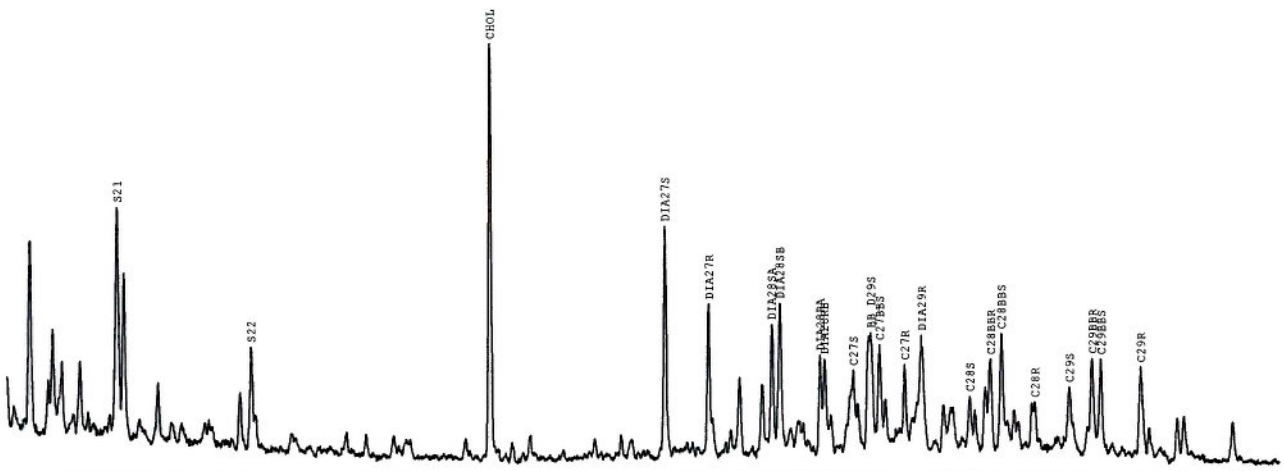


***m/z* 205**

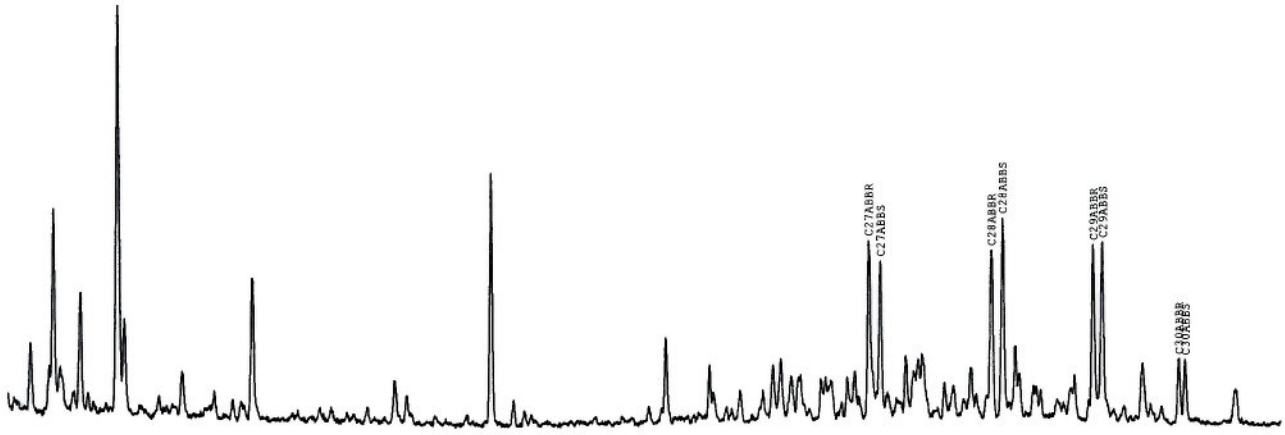


Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #1
Well Name:	IVISHAK NO. 1	Project #:	08-1633-A
Depth:	2116 - 2117 FT	Lab ID:	TM000738
Sampling Point:		File Name:	M2090467.D

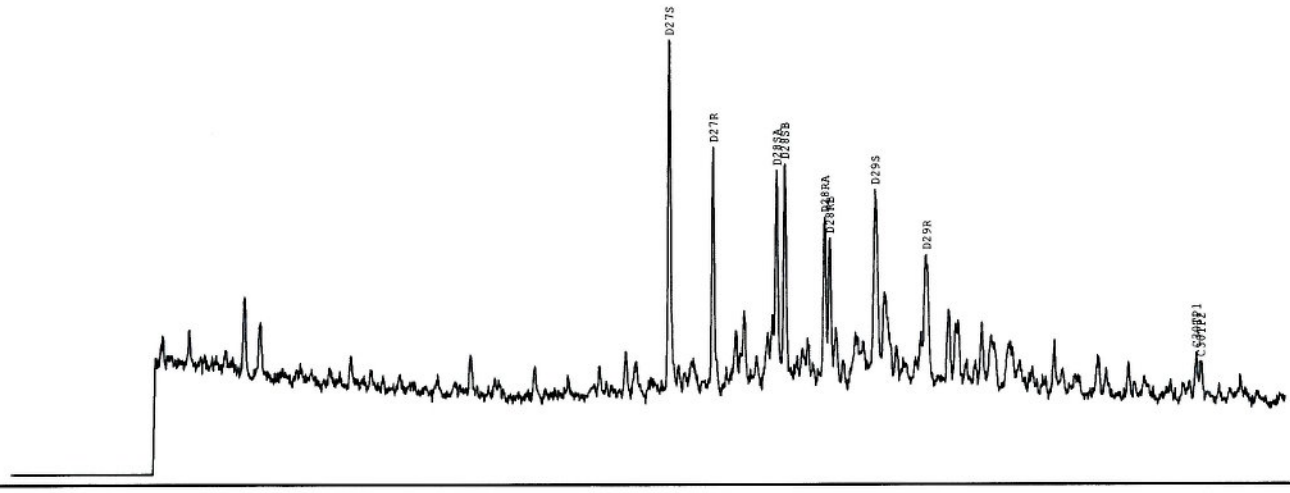
***m/z* 217: Steranes**



***m/z* 218: Steranes**



***m/z* 259: Diasteranes**



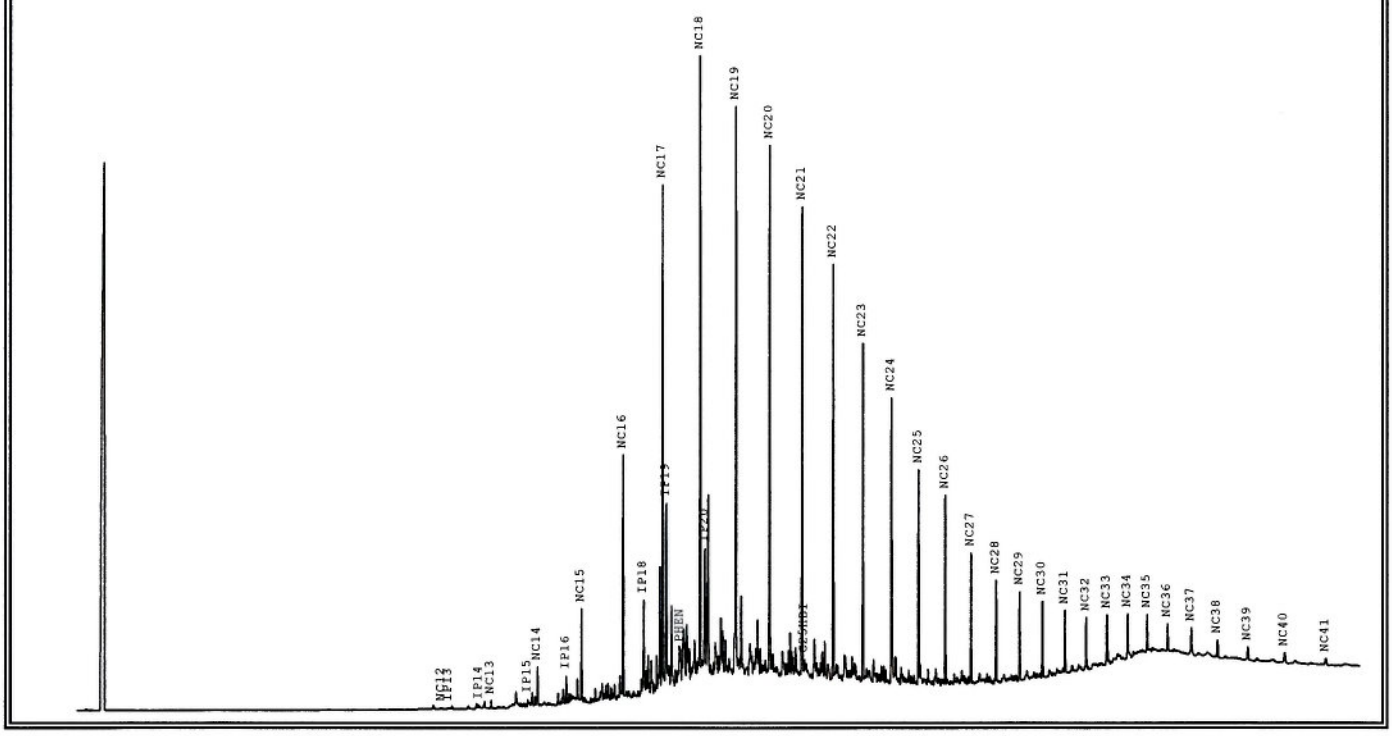
Weatherford LABORATORIES

WHOLE OIL GC

Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #1
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000739
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	SCHRADER BLUFF
Well Name:	IVISHAK NO. 1	Geologic Age:	
Latitude:	69.3	Top Depth:	2137 FT
Longitude:	148.3	Bottom Depth:	2138 FT

Whole Oil GC Trace

G6081461.D



WGC parameters	
Pristane/Phytane	1.35
Pristane/$n\,C_{17}$	0.53
Phytane/$n\,C_{18}$	0.32
$n\,C_{18}$/(nC_{18}+$n\,C_{19}$)	0.52
$n\,C_{17}$/(nC_{17}+$n\,C_{29}$)	0.84
CPI Hunt[4]	0.92
Normal Paraffins	42.3
Isoprenoids	5.2
Cycloparaffins	
Branched (iso-) Paraffins	
BTX aromatics	
Resolved unknowns	52.2

Thompson[1]	
A.	BZ/$n\,C_6$
B.	TOL/$n\,C_7$
C.	($n\,C_6$+$n\,C_7$)/(CH+MCH)
I.	Isoheptane Value
F.	$n\,C_7$/MCH
U.	CH/MCP
R.	$n\,C_7$/2MH
S.	$n\,C_6$/22DMB
H.	Heptane Value
	MCH/$n\,C_7$
	mpXYL/$n\,C_8$

Mango[2]
P_1
P_2
P_3
$5N_1$
N_2
$6N_1$
K_1
K_2
$5N_1/6N_1$
P_3/N_2
ln(24DMP/23DMP)

Halpern[3]
Tr_1
Tr_2
Tr_3
Tr_4
Tr_5
Tr_7
Tr_8
C_1
C_2
C_3
C_4
C_5

[1]Thompson, K.F.M.,1983.GCA:V.47, p.303. [2]Mango, F.D.,1994.GCA: V.58, p.895. [3]Halpern,H.I.,1995,AAPG Bull.: V.79, p.801. [4]Hunt, 1979

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #1**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2137 - 2138 FT**	**Lab ID:**	**TM000739**
Sampling Point:		**File Name:**	**G6081461.D**

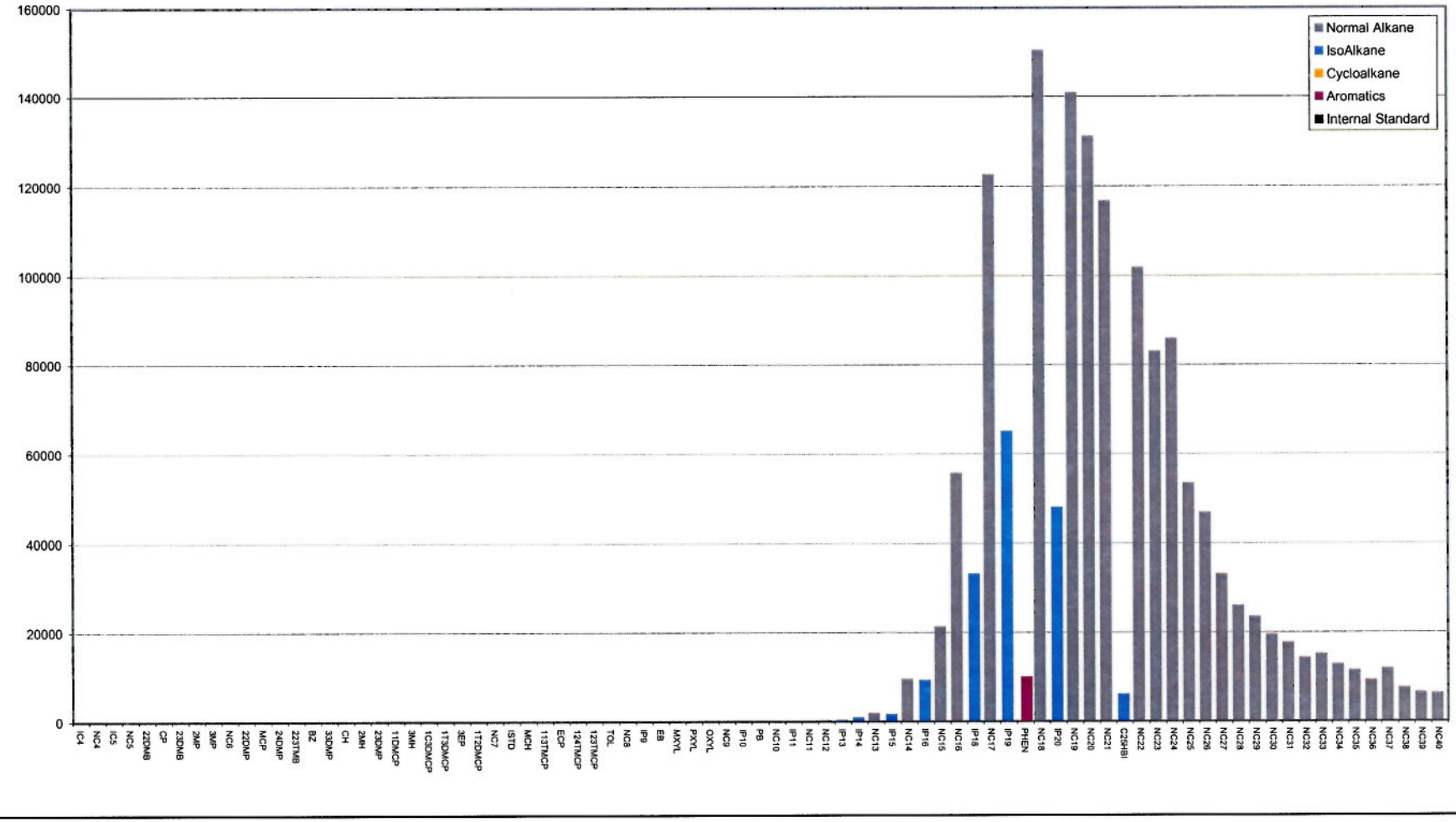
Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IC4	Iso-alkane C4					
NC4	Normal Alkane C4					
IC5	Iso-alkane C5					
NC5	Normal Alkane C5					
22DMB	2,2-Dimethylbutane					
CP	Cyclopentane					
23DMB	2,3-Dimethylbutane					
2MP	2-Methylpentane					
3MP	3-Methylpentane					
NC6	Normal Alkane C6					
22DMP	2,2-Dimethylpentane					
MCP	Methylcyclopentane					
24DMP	2,4-Dimethylpentane					
223TMB	2,2,3-Trimethylbutane					
BZ	Benzene					
33DMP	3,3-Dimethylpentane					
CH	Cyclohexane					
2MH	2-Methylhexane					
23DMP	2,3-Dimethylpentane					
11DMCP	1,1-Dimethylcyclopentane					
3MH	3-Methylhexane					
1C3DMCP	1-cis-3-Dimethylcyclopentane					
1T3DMCP	1-trans-3-Dimethylcyclopentane					
3EP	3-Ethylpentane					
1T2DMCP	1-trans-2-Dimethylcyclopentane					
NC7	Normal Alkane C7					
ISTD	Internal Standard					
MCH	Methylcyclohexane					
113TMCP	1,1,3,-Trimethylcyclopentane					
ECP	Ethylcyclopentane					
124TMCP	1,2,4-Trimethylcyclopentane					
123TMCP	1,2,3-Trimethylcyclopentane					
TOL	Toluene					
NC8	Normal Alkane C8					
IP9	Isoprenoid C9					
EB	Ethyl-benzene					
MXYL	*m*-xylene					
PXYL	*p*-xylene					
OXYL	*o*-xylene					
NC9	Normal Alkane C9					
IP10	Isoprenoid C10					
PB	Propyl-benzene					
NC10	Normal Alkane C10					
IP11	Isoprenoid C11					
NC11	Normal Alkane C11					
NC12	Normal Alkane C12	36.698	387	99		
IP13	Isoprenoid C13	37.383	438	73		
IP14	Isoprenoid C14	40.181	982	197		
NC13	Normal Alkane C13	41.286	1939	563		
IP15	Isoprenoid C15	44.719	1700	515		
NC14	Normal Alkane C14	45.601	9622	2761		

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #1**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2137 - 2138 FT**	**Lab ID:**	**TM000739**
Sampling Point:		**File Name:**	**G6081461.D**

Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IP16	Isoprenoid C16	48.257	9374	1994		
NC15	Normal Alkane C15	49.673	21288	6534		
NC16	Normal Alkane C16	53.529	55729	16870		
IP18	Isoprenoid C18	55.459	33297	6578		
NC17	Normal Alkane C17	57.198	122643	34963		
IP19	Isoprenoid C19 (Pristane)	57.546	65159	12841		
PHEN	Phenanthrene	58.870	10019	2481		
NC18	Normal Alkane C18	60.673	150525	42842		
IP20	Isoprenoid C20 (Phytane)	61.113	48090	8872		
NC19	Normal Alkane C19	63.974	140971	39149		
NC20	Normal Alkane C20	67.115	131198	36672		
NC21	Normal Alkane C21	70.119	116669	32562		
C25HBI	Highly Branch Isoprenoid C25	70.349	6153	1304		
NC22	Normal Alkane C22	72.993	101786	28647		
NC23	Normal Alkane C23	75.743	83015	23343		
NC24	Normal Alkane C24	78.388	85933	19746		
NC25	Normal Alkane C25	80.928	53469	14812		
NC26	Normal Alkane C26	83.373	46855	13120		
NC27	Normal Alkane C27	85.729	33152	9108		
NC28	Normal Alkane C28	88.006	26074	7119		
NC29	Normal Alkane C29	90.204	23564	6189		
NC30	Normal Alkane C30	92.333	19485	5275		
NC31	Normal Alkane C31	94.390	17688	4393		
NC32	Normal Alkane C32	96.385	14324	3651		
NC33	Normal Alkane C33	98.320	15242	3438		
NC34	Normal Alkane C34	100.201	12870	3101		
NC35	Normal Alkane C35	102.033	11499	2685		
NC36	Normal Alkane C36	103.961	9280	1942		
NC37	Normal Alkane C37	106.114	11891	1894		
NC38	Normal Alkane C38	108.567	7611	1258		
NC39	Normal Alkane C39	111.366	6568	922		
NC40	Normal Alkane C40	114.611	6399	725		
NC41	Normal Alkane C41	118.367	4733	478		

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #1**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2137 - 2138 FT**	**Lab ID:**	**TM000739**
Sampling Point:		**File Name:**	**G6081461.D**

Histogram Based on Area



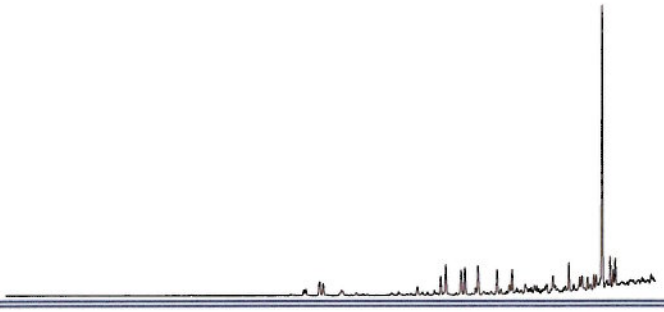
Parameter	Formula
WGC Parameters	
Pristane/Phytane	IP19/IP20
Pristane/nC17	IP19/NC17
Phytane/nC18	IP20/NC18
$nC_{18}/(nC_{18}+nC_{19})$	NC18/(NC18+NC19)
$nC_{17}/(nC_{17}+nC_{29})$	NC17/(NC17+NC29)
CPI Hunt[4]	((NC23+NC25+NC27+NC29+NC31)+(NC25+NC27+NC29+NC31+NC33))/(2*(NC24+NC26+NC28+NC30+NC32))
Normal Paraffins	100*(NC4+NC5+NC6+NC7+NC8+NC9+NC10+NC11+NC12+NC13+NC14+NC15+NC16+NC17+NC18+NC19+NC20+NC21+NC22+NC23+NC24+NC25+NC26+NC27+NC28+NC29+NC30+NC31+NC32+NC33+NC34+NC35+NC36+NC37+NC38+NC39+NC40+NC41)/TOTAL_RESOLVED
Isoprenoids	100*(IP9+IP10+IP11+IP13+IP14+IP15+IP16+IP18+IP19+IP20+C25HBI)/TOTAL_RESOLVED
Cycloparaffins	100*(CP+MCP+CH+11DMCP+1T3DMCP+1T2DMCP+MCH+113TMCP+ECP+124TMCP+123TMCP+1C3DMCP+1C2DMCP)/TOTAL_RESOLVED
Branched (iso-) Paraffins	100*(IC4+IC5+22DMB+23DMB+2MP+3MP+22DMP+24DMP+223TMB+33DMP+2MH+23DMP+3MH+3EP)/TOTAL_RESOLVED
BTX aromatics	100*(BZ+TOL+MXYL+PXYL+OXYL)/TOTAL_RESOLVED (*OXYL added 05/21/2007)
Thompson[1]	
BZ/nC6	BZ/NC6
TOL/nC7	TOL/NC7
(nC6+nC7)/(CH+MCH)	(NC6+NC7)/(CH+MCH)
Isoheptane Value	(2MH+3MH)/(1C3DMCP+1T3DMCP+1T2DMCP)
nC7/MCH	NC7/MCH
CH/MCP	CH/MCP
nC7/2MH	NC7/2MH
nC6/22DMB	NC6/22DMB
Heptane Value	100*NC7/(CH+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+1T2DMCP+MCH+NC7)
MCH/nC7	MCH/NC7
mpXYL/nC8	(MXYL+PXYL)/NC8
Mango[2]	
P1	100*NC7/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
P2	100*(2MH+3MH)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
P3	100*(3EP+33DMP+23DMP+24DMP+22DMP+223TMB)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
5N1	100*(ECP+1T2DMCP)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
N2	100*(11DMCP+1C3DMCP+1T3DMCP)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
6N1	100*(MCH+TOL)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
K1	(2MH+23DMP)/(3MH+24DMP)
K2	(2MH+3MH)/(2MH+3MH+11DMCP+1C3DMCP+1T3DMCP)
5N1/6N1	(ECP+1T2DMCP)/(MCH+TOL)
P3/N2	(3EP+33DMP+23DMP+24DMP+22DMP+223TMB)/(11DMCP+1C3DMCP+1T3DMCP)
ln(24DMP/23DMP)	ln(24DMP/23DMP)
Halpern[3]	
Tr1	TOL/11DMCP
Tr2	NC7/11DMCP
Tr3	3MH/11DMCP
Tr4	2MH/11DMCP
Tr5	(2MH+3MH)/11DMCP
Tr7	1T3DMCP/11DMCP
Tr8	(2MH+3MH)/(22DMP+23DMP+24DMP+33DMP+3EP)
C1	22DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C2	23DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C3	24DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C4	33DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C5	3EP/(22DMP+23DMP+24DMP+33DMP+3EP)

Weatherford LABORATORIES

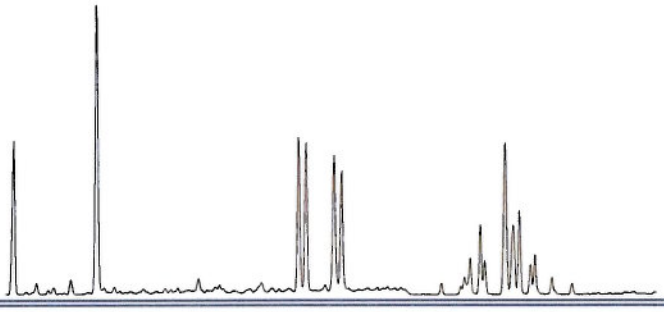
AROMATIC BIOMARKERS

Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #1
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000739
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	SCHRADER BLUFF
Well Name:	IVISHAK NO. 1	Geologic Age:	
Latitude:	69.3	Top Depth:	2137 FT
Longitude:	148.3	Bottom Depth:	2138 FT

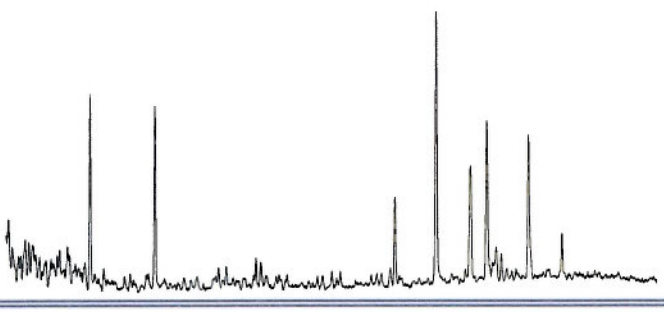
m/z 128+142+156+170+184: Methylnaphthalenes M1090393.D



m/z 178+192+206: Phenanthrenes M1090393.D



m/z 231: Triaromatic steroids M1090393.D



RATIOS (on Areas)[1]		Appl[2]	TEV[3]
Mono- (MAS) and Triaromatic Steroids (TAS)			
(C20+C21)/Σ TAS	0.27	M	1.0 (1.3%)
TAS #1 20/20+27	0.49	M	
TAS #2 21/21+28	0.52	M	
%26 TAS	18.3	D	
%27 TAS	40.6	D	
%28 TAS	32.2	D	
%29 TAS	9.0	D	
C28/C26 20S TAS	1.83		
C28/C27 20R TAS	0.79		
Dia/Regular C27 MAS	0.83		
%27 MAS	31.5	D	
%28 MAS	42.9	D	
%29 MAS	25.6	D	
(C21+C22)/Σ MAS	0.24	M	1.0 (1.3%)
TAS/(MAS+TAS)	0.74	M	
TA28/(TA28+MA29)	0.78	M	1.0 (0.8%)
Triaromatic Methylsteroids			
Dinosteroid Index	0.37	A	
C4/C3+C4 Mester	0.53	A	
Phenanthrenes, Naphthalenes, and Dibenzothiophenes			
MPI-1	0.79	M	
Rc(a) if Ro < 1.3 (Ro%)	0.85	M	
Rc(b) if Ro > 1.3 (Ro%)	1.82	M	
MPI-2	0.79	M	
DNR-1	3.80	M	
DNR-2	1.55	M	
TNR1	1.09	M	
TDE-1	7.00	M	
TDE-2	0.21	M	
MDR	3.13	M	
Rm (Ro%)	0.76	M	
MDR23	0.32	M	
MDR1	0.31	M	
DBT/Phenanthrene	0.05	D	

[1]Definition and utility of the ratios can be found on our website www.BaselineDGSI.com

[2]A=Source Age; D=Depositional environment; M= Maturity

[3]Thermal equilibrium value of the biomarker ratio and in brackets the approximate VR value at which this value is reached

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #1**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2137 - 2138 FT**	**Lab ID:**	**TM000739**
Sampling Point:		**File Name:**	**M1090393.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
230	OTP	*Ortho-terphenyl* (internal standard)				0.0	0.0
128	NAPH	Naphthalene					
142	2MN	2-Methylnaphthalene	37.947	939	149		
142	1MN	1-Methylnaphthalene	39.160	1067	162		
154	BP	Biphenyl	44.670	4663	720		
156	2EN	2-Ethylnaphthalene	46.136	1279	195		
156	1EN	1-Ethylnaphthalene	46.220	409	115		
156	26DMN	2,6-Dimethylnaphthalene	47.029	7466	1213		
156	27DMN	2,7-Dimethylnaphthalene	47.197	8414	1360		
156	1317DMN	1,3 & 1,7-Dimethylnaphthalenes	48.175	20923	3039		
156	16DMN	1,6-Dimethylnaphthalene	48.427	16432	2710		
156	23DMN	2,3-Dimethylnaphthalene	49.607	2227	463		
156	14DMN	1,4-Dimethylnaphthalene	49.708	8012	1157		
156	15DMN	1,5-Dimethylnaphthalene	49.809	4184	835		
156	12DMN	1,2-Dimethylnaphthalene	50.769	3689	591		
168	2MBP	2-Methylbiphenyl					
168	DPM	Diphenylmethane					
168	3MBP	3-Methylbiphenyl	53.263	4385	721		
168	4MBP	4-Methylbiphenyl	53.937	2179	366		
168	DBF	Dibenzofuran	55.369	821	128		
170	BB_EMN	Ethyl-methyl-Naphthalene	55.100	11720	1536		
170	AB_EMN	Ethyl-methyl-Naphthalene	56.313	5951	916		
170	137TMN	1,3,7-Trimethylnaphthalene	56.768	24225	4014		
170	136TMN	1,3,6-Trimethylnaphthalene	57.138	40101	6857		
170	146135T	(1,4,6+1,3,5)-Trimethylnaphthalenes	58.200	32493	5082		
170	236TMN	2,3,6-Trimethylnaphthalene	58.470	35504	6116		
170	127TMN	1,2,7-Trimethylnaphthalene	59.211	7995	1509		
170	167126T	(1,6,7+1,2,6)-Trimethylnaphthalenes	59.379	38464	5978		
170	124TMN	1,2,4-Trimethylnaphthalene	60.306	3335	639		
170	125TMN	1,2,5-Trimethylnaphthalene	60.761	23360	4249		
178	PHEN	Phenanthrene	70.247	365578	76379		
184	1357	1,3,5,7-Tetramethylnaphthalene	64.721	20441	3506		
184	1367	1,3,6,7-Tetramethylnaphthalene	65.866	29189	6389		
184	1247	(1,2,4,7+1,2,4,6+1,4,6,7)-Tetramethylnaphthalenes	66.608	15166	2908		
184	1257	1,2,5,7-Tetramethylnaphthalene	66.793	13060	2608		
184	2367	2,3,6,7-Tetramethylnaphthalene	67.164	10237	2148		
184	1267	1,2,6,7-Tetramethylnaphthalene	67.602	10990	2346		
184	1237	1,2,3,7-Tetramethylnaphthalene	67.787	3944	827		
184	1236	1,2,3,6-Tetramethylnaphthalene	68.057	8467	1728		
184	1256	1,2,5,6-Tetramethylnaphthalene	68.764	22321	5002		
184	DBT	Dibenzothiophene	68.983	19280	4114		
191	BH32	C32 Benzohopane	117.669	2020	317		
191	BH33	C33 Benzohopane	119.827	1113	149		
191	BH34	C34 Benzohopane	121.748	689	74		
191	BH35	C35 Benzohopane					
192	3MP	3-Methylphenanthrene	75.184	174066	40655		
192	2MP	2-Methylphenanthrene	75.369	173739	38975		
192	9MP	9-Methylphenanthrene	76.060	158626	35520		
192	1MP	1-Methylphenanthrene	76.245	133723	31214		

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #1**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2137 - 2138 FT**	**Lab ID:**	**TM000739**
Sampling Point:		**File Name:**	**M1090393.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
198	CAD	Cadalene	66.203	15078	2865		
198	4MDBT	4 Methyl Dibenzothiophene	73.516	18400	4155		
198	23MDBT	2 & 3 Methyl Dibenzothiophenes	74.308	6165	1059		
198	1MDBT	1 Methyl Dibenzothiophene	75.100	5888	1285		
206	36DMP	3,6-Dimethylphenanthrene	79.409	43098	9602		
206	26DMP	2,6-Dimethylphenanthrene	79.662	75313	18402		
206	27DMP	2,7-Dimethylphenanthrene	79.763	36967	8877		
206	39DMP	(3,9+3,10+2,10+1,3)-Dimethylphenanthrenes	80.269	202891	40055		
206	29DMP	(2,9+1,6)-Dimethylphenanthrenes	80.471	107309	18355		
206	17DMP	1,7-Dimethylphenanthrene	80.623	89033	22151		
206	23DMP	2,3-Dimethylphenanthrene	80.892	33573	7939		
206	19DMP	1,9-Dimethylphenanthrene	81.010	45279	10532		
206	18DMP	1,8-Dimethylphenanthrene	81.432	19674	4408		
206	12DMP	1,2-Dimethylphenanthrene	81.937	12081	2835		
231	231A20	C20 Triaromatic Steroid	92.236	8502	1996		
231	231B21	C21 Triaromatic	94.730	7846	1857		
231	231C26	C26 20S Triaromatic	103.916	4046	918		
231	231D26	C27 20S & C26 20R Triaromatic	105.517	14157	2776		
231	TADMD1	C28 23,24-Cholestane Triaromatic	106.107	509	99		
231	TADMD2	C28 23,24-Cholestane Triaromatic	106.630	478	136		
231	231E28	C28 20S Triaromatic	106.832	7401	1186		
231	231F27	C27 20R Triaromatic	107.455	8973	1640		
231	TADMD3	C28 23,24-Cholestane Triaromatic	107.573	426	166		
231	C29TA1	C29 Triaromatic	107.826	1912	350		
231	C29TA2	C29 Triaromatic	108.029	1136	279		
231	TADMD4	C28 23,24-Cholestane Triaromatic	108.821	332	58		
231	231G28	C28 20R Triaromatic	109.057	7111	1492		
231	TADMD5	C28 23,24-Cholestane Triaromatic	109.124	884	362		
231	C29TA3	C29 Triaromatic	110.371	1983	461		
245	C3S	C27 20S 3-Methyl Triaromatic Steroid	106.596	623	150		
245	C4S	C27 20S 4-Methyl Triaromatic Steroid	107.203	1094	274		
245	E2S	C28 20S 2-Methyl Triaromatic Steroid	107.742	425	94		
245	E3SC3R	C28 20S 3-Methyl & C27 20R 3-Methyl TAS	108.113	2304	412		
245	E4SC4R	C28 20S 4-Methyl & C27 20R 4-Methyl TAS	108.703	3707	580		
245	S2S	C29 20S 2-Methyl Triaromatic Steroid	108.972	779	122		
245	DA	Triaromatic Dinosteroid a	109.141	582	156		
245	S3S	C29 20S 3-Methyl Triaromatic Steroid	109.343	1901	214		
245	DB	Triaromatic Dinosteroid b	109.731	2231	479		
245	S4SE2R	C29 20S 4-Methyl & C28 20R 2-Methyl TAS	109.916	2885	402		
245	E3R	C28 20R 3-Methyl Triaromatic Steroid	110.051	2188	341		
245	E4R	C28 20R 4-Methyl Triaromatic Steroid	110.641	2445	443		
245	DC	Triaromatic Dinosteroid c	110.826	2449	534		
245	DD	Triaromatic Dinosteroid d	110.944	2581	523		
245	S2R	C29 20R 2-Methyl Triaromatic Steroid	111.349	672	136		
245	S3R	C29 20R 3-Methyl Triaromatic Steroid	111.585	2038	344		
245	DE	Triaromatic Dinosteroid e	111.720	2463	375		
245	S4R	C29 20R 4-Methyl Triaromatic Steroid	112.175	1901	389		
245	DF	Triaromatic Dinosteroid f	112.293	2971	591		

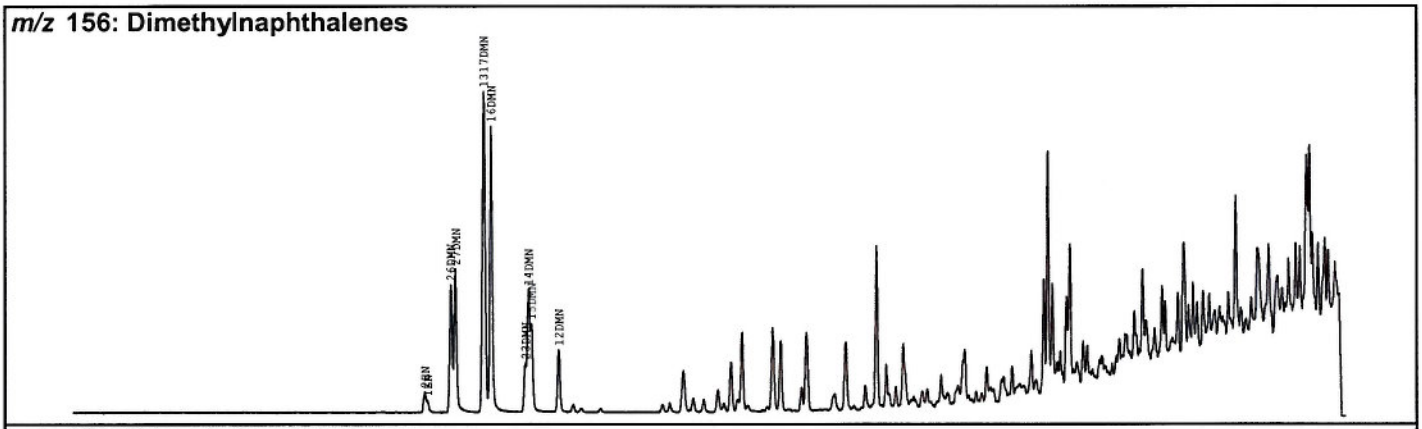
Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #1**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2137 - 2138 FT**	**Lab ID:**	**TM000739**
Sampling Point:		**File Name:**	**M1090393.D**

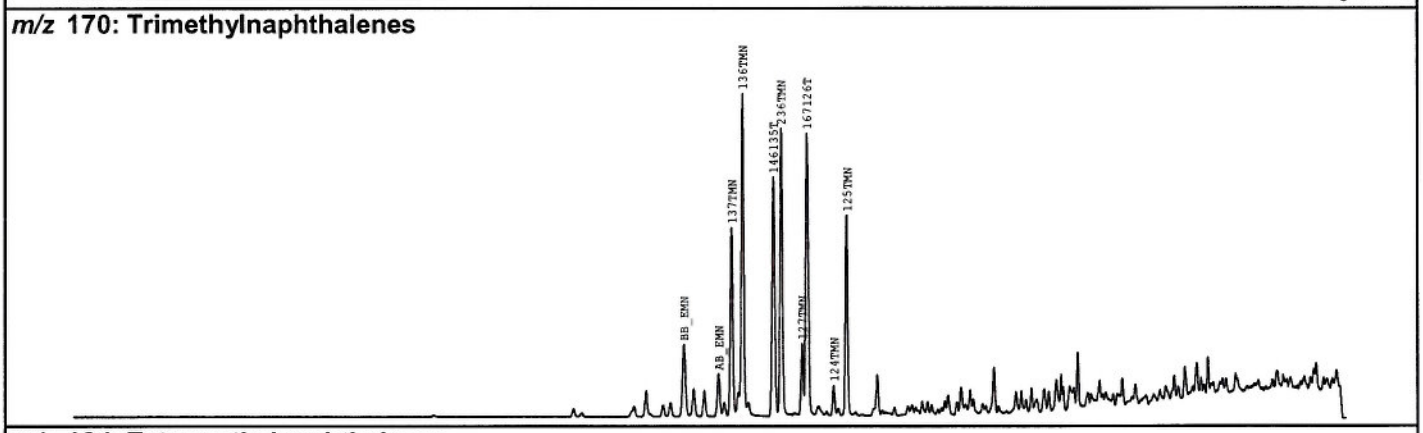
Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
253	S253A	C21 Ring-C Monoaromatic Steroid	84.499	3378	540		
253	S253B	C22 Monoaromatic steroid	86.960	1661	290		
253	S253C	C27 Reg 5β(H),10β(CH3) 20S	96.904	1113	220		
253	S253D	C27 Dia 10β(H),5β(CH3) 20S	97.073	925	189		
253	S253E	C27 Dia10βH,5βCH3 20R+Reg5βH,10βCH3 20R	98.539	1346	289		
253	S253F	C27 Reg 5α(H),10β(CH3) 20S	98.691	924	125		
253	S253G	C28 Dia 10αH,5αCH3 20s+Reg5βH,10βCH3 20S	99.079	2568	433		
253	S253H	C27 Reg 5α(H),10β(CH3) 20R	100.360	820	164		
253	S253I	C28 Reg 5α(H),10β(CH3) 20S	100.494	766	124		
253	S253J	C28 Dia 10αH,5αCH3 20R+Reg5βH,10βCH3 20R	100.697	2647	549		
253	S253K	C29 Dia 10βH,5βCH3 20S+Reg5βH,10βCH3 20S	100.832	1541	298		
253	S253L	C29 Reg 5α(H),10β(CH3) 20S	102.129	564	101		
253	S253M	C28 Reg 5α(H),10β(CH3) 20R	102.416	999	144		
253	S253N	C29 Dia 10βH,5βCH3 20R+Reg5βH,10βCH3 20R	102.517	1749	293		
253	S253O	C29 Reg 5α(H),10β(CH3) 20R	104.152	308	87		
365	SH29	C29 8,14-secohopanoids	104.000	9374	2064		
365	SH30	C30 8,14-secohopanoids	105.972	7026	1676		

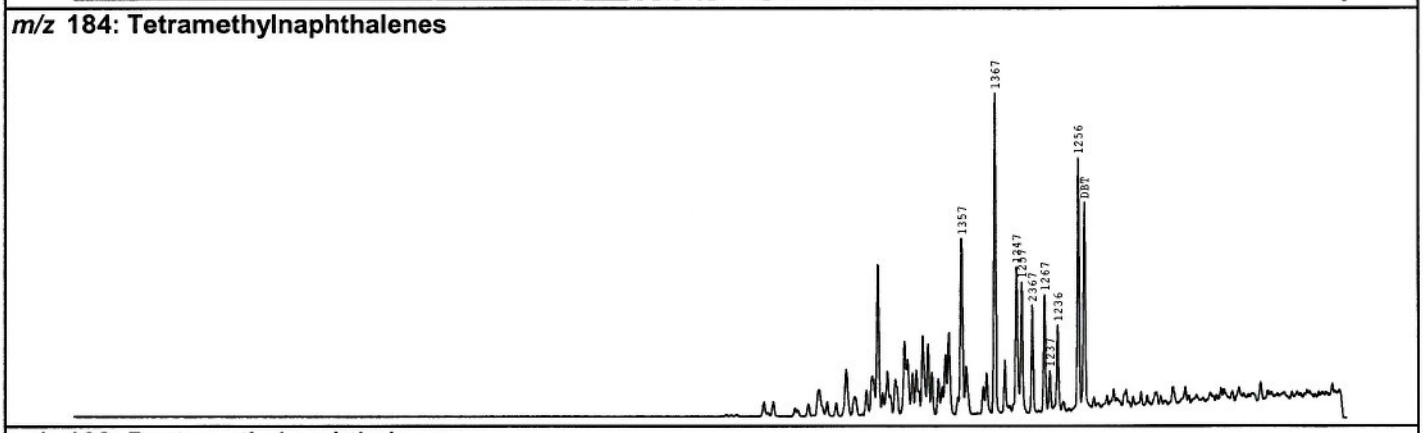
Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #1**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2137 - 2138 FT**	**Lab ID:**	**TM000739**
Sampling Point:		**File Name:**	**M1090393.D**

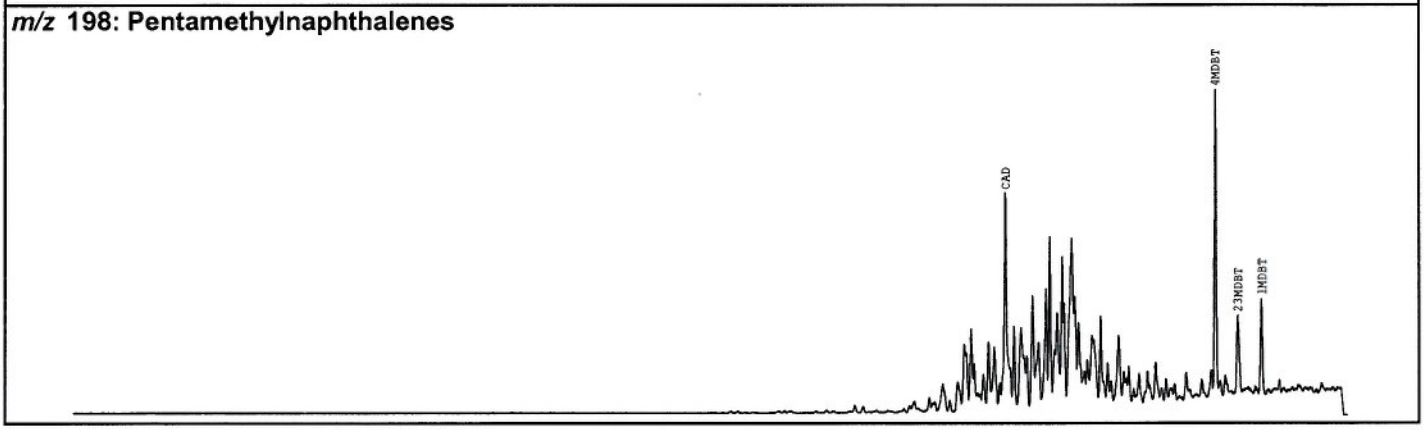
Miscellaneous Ratios	By Areas	By Heights
Triaromatic Steroids m/z 231		
(C20+C21)/Σ TAS	0.27	0.31
TAS #1 20/20+27	0.49	0.55
TAS #2 21/21+28	0.52	0.55
%26TAS	18.3	20.4
%27TAS	40.6	36.4
%28TAS	32.2	33.1
%29TAS	9.0	10.2
C28/C26 20S TAS	1.83	1.29
C28/C27 20R TAS	0.79	0.91
Monoaromatic Steroids m/z 253		
Dia/Regular C27 MAS	0.83	0.86
%27 MAS	31.5	32.7
%28 MAS	42.9	41.4
%29 MAS	25.6	25.8
(C21+C22)/Σ MAS	0.24	0.22
TAS/(MAS+TAS)	0.74	0.76
TA28/(TA28+MA29)	0.78	0.77
Triaromatic Methylsteroids m/z 245		
Dinosteroid Index	0.37	0.41
C4/C3+C4 Mester	0.53	0.57
Phenanthrenes and Naphthalenes		
MPI-1	0.79	0.83
MPI-2	0.79	0.82
MPI-3	1.19	1.19
Rc(a) if Ro < 1.3 (Ro%)	0.85	0.87
Rc(b) if Ro > 1.3 (Ro%)	1.82	1.80
DNR-1	3.80	3.08
DNR-2	1.55	1.59
TNR1	1.09	1.20
TDE-1	7.00	6.65
TDE-2	0.21	0.25
MDR	3.13	3.23
Rm (Ro%)	0.76	0.76
MDR23	0.32	0.26
MDR1	0.31	0.31
DBT/Phenanthrene	0.05	0.05

Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #1
Well Name:	IVISHAK NO. 1	Project #:	08-1633-A
Depth:	2137 - 2138 FT	Lab ID:	TM000739
Sampling Point:		File Name:	



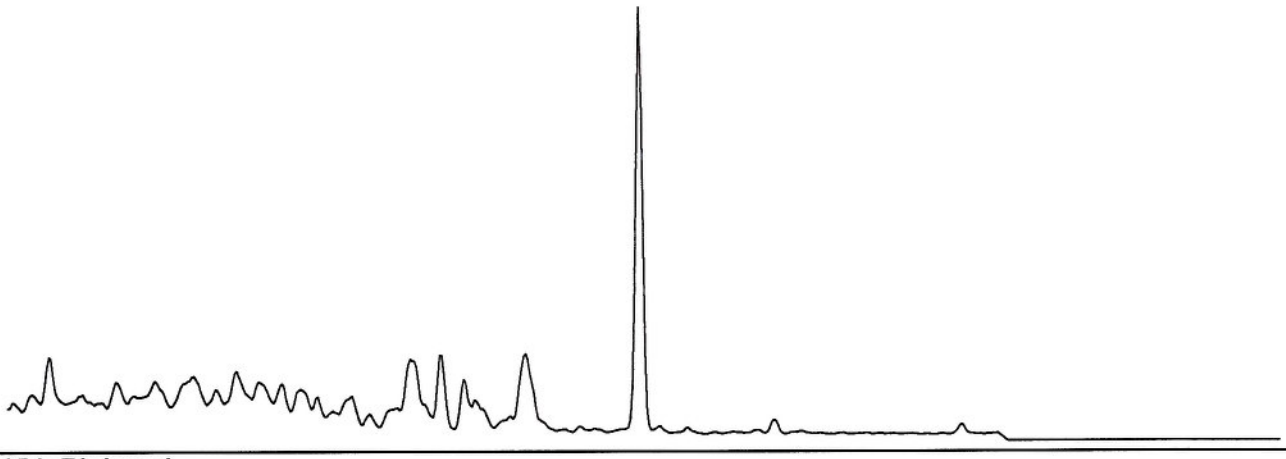




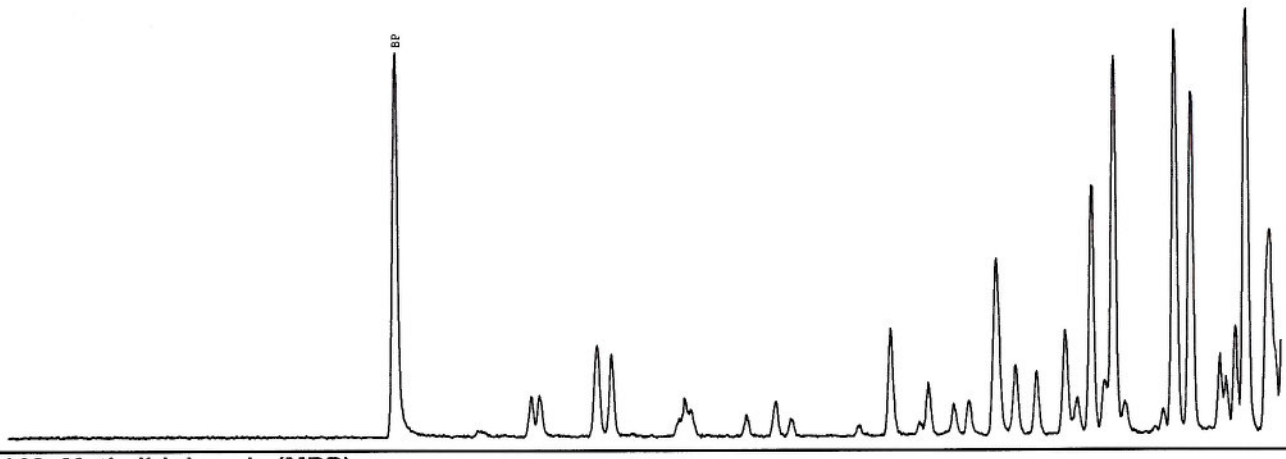


Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #1
Well Name:	IVISHAK NO. 1	Project #:	08-1633-A
Depth:	2137 - 2138 FT	Lab ID:	TM000739
Sampling Point:		File Name:	M1090393.D

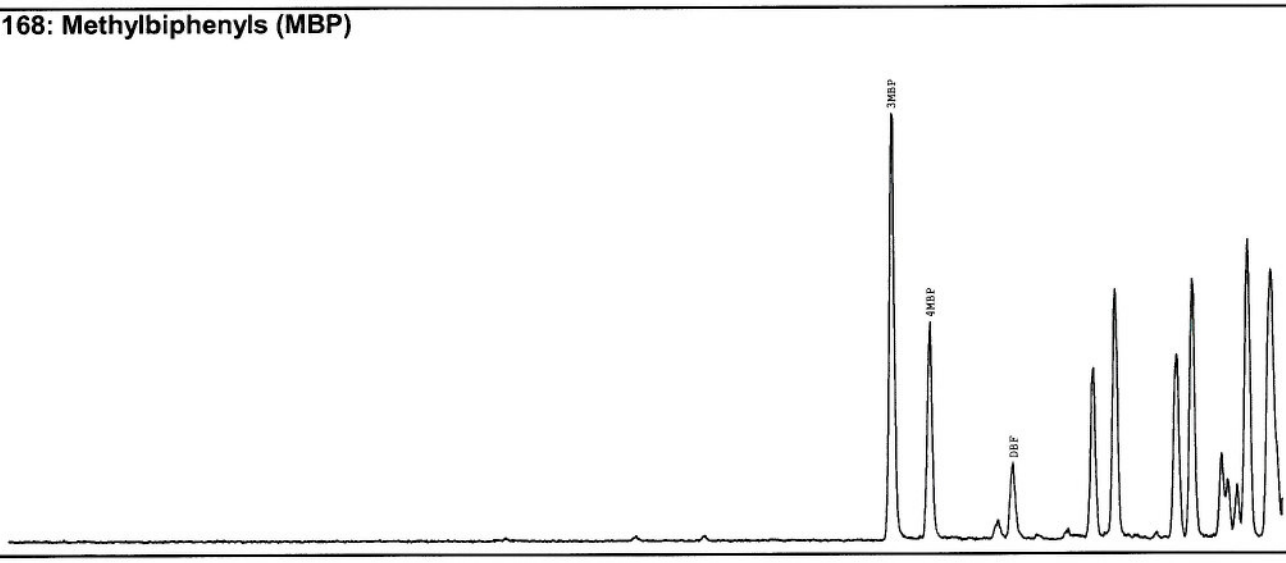
***m/z* 230: Ortho-Terphenyl (Inter. Std)**



***m/z* 154: Biphenyl**

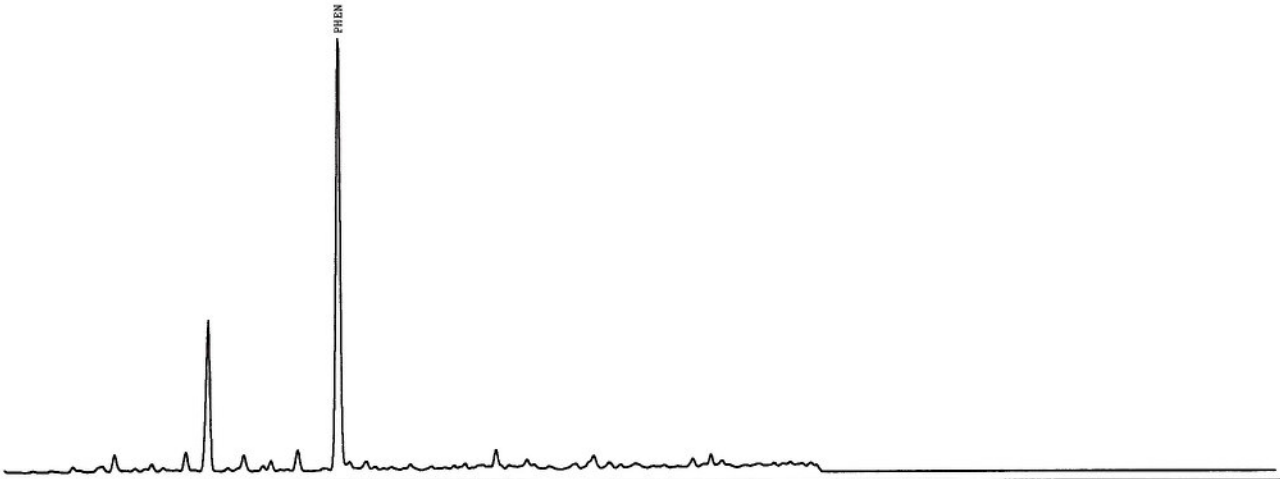


***m/z* 168: Methylbiphenyls (MBP)**

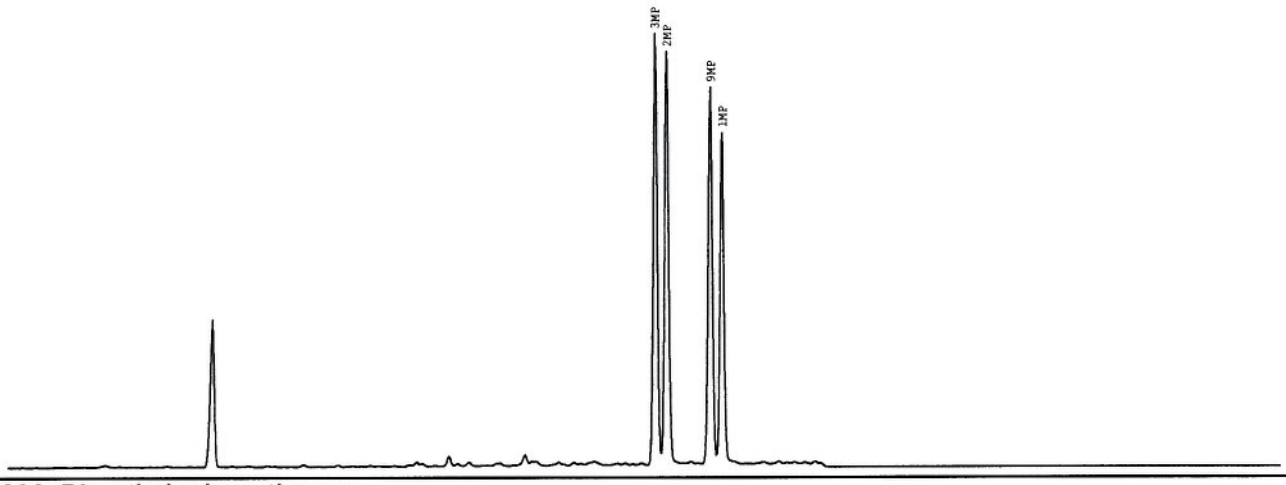


Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #1
Well Name:	IVISHAK NO. 1	Project #:	08-1633-A
Depth:	2137 - 2138 FT	Lab ID:	TM000739
Sampling Point:		File Name:	M1090393.D

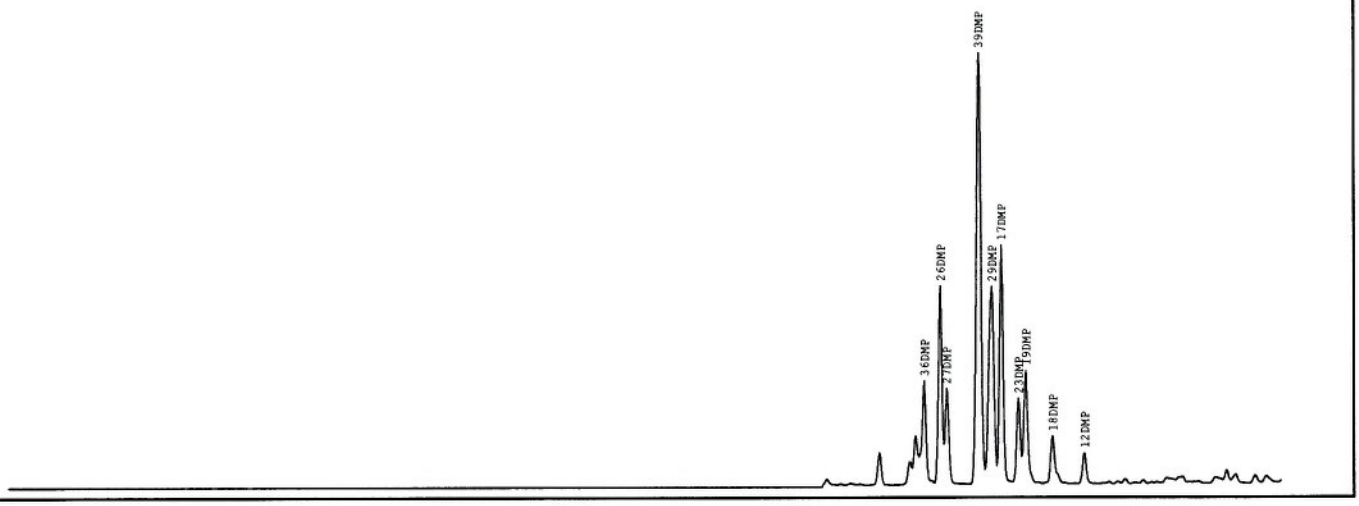
***m/z* 178: Phenanthrene**



***m/z* 192: Methylphenanthrenes**

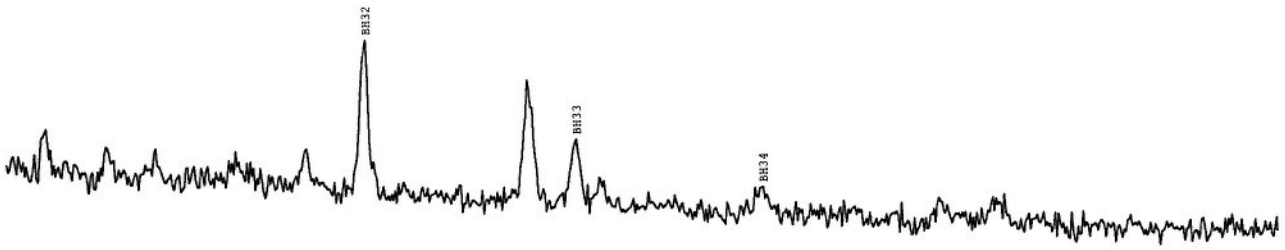


***m/z* 206: Dimethylpehnanthrenes**

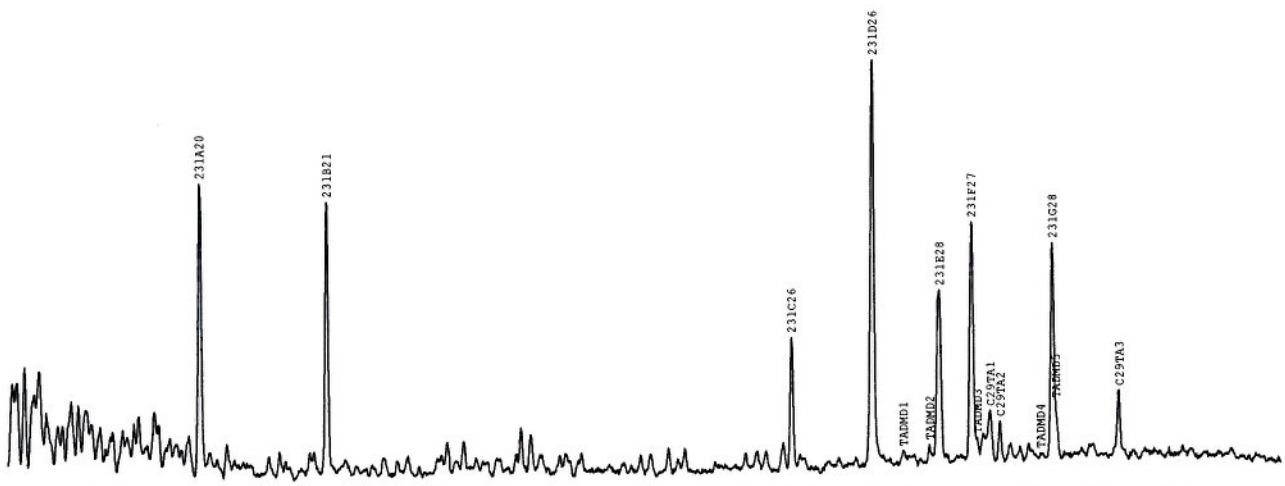


Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #1
Well Name:	IVISHAK NO. 1	Project #:	08-1633-A
Depth:	2137 - 2138 FT	Lab ID:	TM000739
Sampling Point:		File Name:	M1090393.D

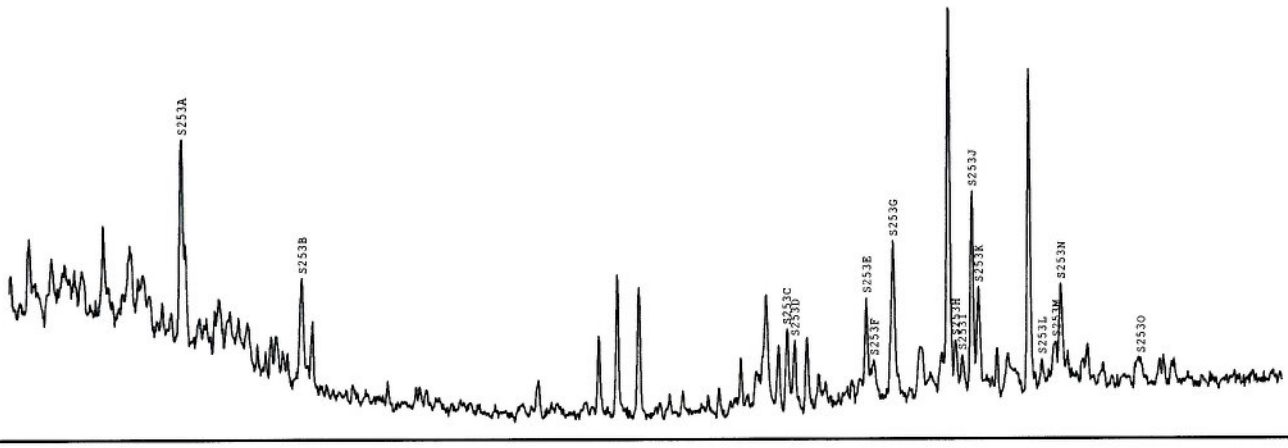
***m/z* 191: Benzohopanes**



***m/z* 231: Triaromatic Steranes**



***m/z* 253: Monoaromatic Steranes**

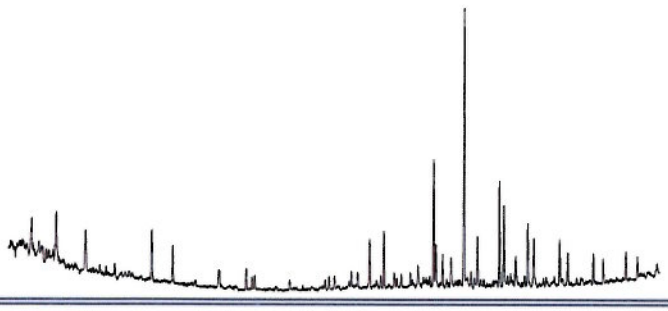


Weatherford LABORATORIES

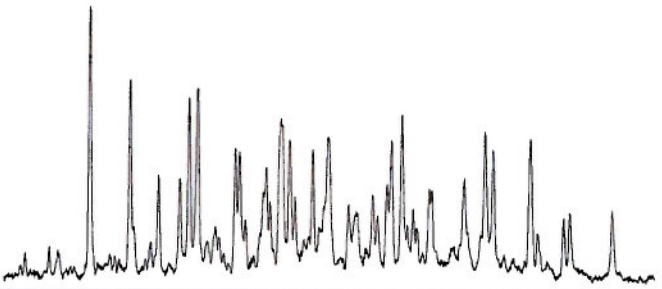
SATURATE BIOMARKERS

Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #1
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000739
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	SCHRADER BLUFF
Well Name:	IVISHAK NO. 1	Geologic Age:	
Latitude:	69.3	Top Depth:	2137 FT
Longitude:	148.3	Bottom Depth:	2138 FT

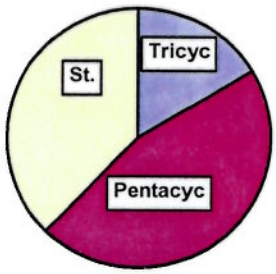
m/z 191: Tri- and Pentacyclics M2090458.D



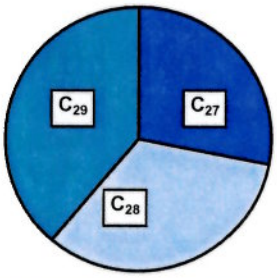
m/z 217: Steranes M2090458.D



Tricyclic, Pentacyclic Terpanes & Steranes



C27-C28-C29 αααR Steranes



RATIOS (on Areas)[1]		Appl[2]	TEV[3]
Steranes (*m/z* 217; 218)			
%C_{27} αββS (218)	25.6	D	
%C_{28} αββS (218)	39.1	D	
%C_{29} αββS (218)	35.3	D	
%C_{27} αααR (217)	28.0	D	
%C_{28} αααR (217)	33.1	D	
%C_{29} αααR (217)	38.9	D	
S/(S+R) (C_{29} ααα) (217)	0.41	M	0.55 (0.8%)
ββS/(ββS+ααR) (C29) (217)	0.44	M	0.70 (0.9%)
(C_{21}+C_{22})/(C_{27}+C_{28}+C_{29}) (217)	0.11		
C_{27}/C_{29} (αββS) (218)	0.72	D	
C_{28}/C_{29} (αββS) (218)	1.11	D	
Diaster/ααα Ster (C_{27}) (217)	1.87	M/D	1.00 (1.4%)
C30 αββS Sterane Index (218)	11.40	D	
C30 S+R Sterane Index (218)	10.67	D	
Terpanes (*m/z* 191)			
Oleanane/Hopane		D/A	
Gammacerane/Hopane	0.04	D	
Norhopane/Hopane	0.48	D	
Bisnorhopane/Hopane	0.11		
Diahopane/Hopane	0.12	M/D	
Moretane/Hopane	0.20	M	0.05 (0.7%)
25-*nor*-hopane/hopane		B	
Ts/(Ts+Tm) trisnorhopanes	0.48	M/D	1.00 (1.4%)
C29Ts/C29 Hopane	0.37	M	
H32 S/(R+S) Homohopanes	0.57	M	0.60 (0.6%)
H35/H34 Homohopanes	0.83	D	
C24 Tetracyclic/Hopane	0.08	D	
C24 Tetracyclic/C26 Tricyclics	0.76	D	
C23/C24 Tricyclic terpanes	1.53	D	
C19/C23 Tricyclic terpanes	0.45	D	
C26/C25 Tricyclic terpanes	0.82	D	
(C28+C29 Tricyclics)/Ts	1.16	A	
Various (*m/z* 191; 217)			
Steranes/Hopanes	0.87	D	
Tricyclic terpanes/Hopanes	0.37	M	1.00 (1.4%)
Tricyclic terpanes/Steranes	0.43	M/D	1.00 (1.4%)

[1]Definition and utility of the ratios can be found on our website www.brilabs.com

[2]A=Source Age; D=Depositional environment; M= Maturity; B=Possible Biodegradation

[3]Thermal equilibrium value of the biomarker ratio and in brackets the approximate VR value at which this value is reached

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #1**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2137 - 2138 FT**	**Lab ID:**	**TM000739**
Sampling Point:		**File Name:**	**M2090458.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
217	CHOL	*5β cholane (internal standard)*	42.141	14627	2205	100.0	100.0
125	BCAROT	β-carotane					
187	4MDIAM	4-methyldiamantane	9.244	492	158	3.4	7.2
187	1MDIAM	1-methyldiamantane	9.836	578	156	4.0	7.1
187	3MDIAM	3-methyldiamantane	10.202	484	130	3.3	5.9
188	DIAM	diamantane	9.087	296	98	2.0	4.4
191	TR19	C19 tricyclic terpane	18.811	2112	424	14.4	19.2
191	TR20	C20 tricyclic terpane	21.651	4902	590	33.5	26.8
191	TR21	C21 tricyclic terpane	24.997	4518	476	30.9	21.6
191	TR22	C22 tricyclic terpane	28.378	919	169	6.3	7.7
191	TR23	C23 tricyclic terpane	32.605	4680	571	32.0	25.9
191	TR24	C24 tricyclic terpane	35.028	3052	418	20.9	19.0
191	DESAOL	des-A-oleanane	37.539	534	73	3.7	3.3
191	DESALU	des-A-lupane					
191	TR25A	C25 tricyclic terpane (a)	40.084	1484	203	10.1	9.2
191	TR25B	C25 tricyclic terpane (b)	40.206	1180	203	8.1	9.2
191	TET24	C24 tetracyclic terpane (TET)	43.310	1653	239	11.3	10.8
191	TR26A	C26 tricyclic terpane (a)	43.972	1036	143	7.1	6.5
191	TR26B	C26 tricyclic terpane (b)	44.303	1140	162	7.8	7.3
191	TR28A	C28 tricyclic terpane (a)	52.864	1116	154	7.6	7.0
191	TR28B	C28 tricyclic terpane (b)	53.492	1287	169	8.8	7.7
191	TR29A	C29 tricyclic terpane (a)	55.444	1084	181	7.4	8.2
191	TR29B	C29 tricyclic terpane (b)	56.177	1072	173	7.3	7.8
191	TR30A	C30 tricyclic terpane (a)	60.396	1447	169	9.9	7.7
191	TR30B	C30 tricyclic terpane (b)	61.215	1045	150	7.1	6.8
191	TS	Ts 18α(H)-trisnorhopane	57.554	3928	551	26.9	25.0
191	TM	Tm 17α(H)-trisnorhopane	59.193	4306	638	29.4	28.9
191	H28	C28 17α18α21β(H)-bisnorhopane	63.186	2189	241	15.0	10.9
191	NOR25H	C29 Nor-25-hopane					
191	H29	C29 Tm 17α(H)21β(H)-norhopane	64.999	9921	1417	67.8	64.3
191	C29TS	C29 Ts 18α(H)-norneohopane	65.260	3699	485	25.3	22.0
191	DH30	C30 17α(H)-diahopane	66.027	2494	373	17.1	16.9
191	M29	C29 normoretane	67.004	2395	323	16.4	14.6
191	OLA	oleanane a					
191	OLB	oleanane b					
191	H30	C30 17α(H)-hopane	68.468	20762	3056	141.9	138.6
191	C30TS	C29 Ts 18α(H)-norneohopane	69.288	1111	164	7.6	7.4
191	M30	C30 moretane	70.037	4106	575	28.1	26.1
191	H31S	C31 22S 17α(H) hopane	72.548	7742	1178	52.9	53.4
191	H31R	C31 22R 17α(H) hopane	73.036	7035	902	48.1	40.9
191	GAM	gammacerane	73.472	856	135	5.9	6.1
191	H32S	C32 22S 17α(H) hopane	75.791	5312	711	36.3	32.2
191	H32R	C32 22R 17α(H) hopane	76.471	4021	546	27.5	24.8
191	H33S	C33 22S 17α(H) hopane	79.522	3561	517	24.3	23.4
191	H33R	C33 22R 17α(H) hopane	80.464	2903	368	19.8	16.7
191	H34S	C34 22S 17α(H) hopane	83.393	2623	347	17.9	15.7
191	H34R	C34 22R 17α(H) hopane	84.543	2068	281	14.1	12.7
191	H35S	C35 22S 17α(H) hopane	87.141	2080	320	14.2	14.5
191	H35R	C35 22R 17α(H) hopane	88.449	1806	266	12.3	12.1

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #1**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2137 - 2138 FT**	**Lab ID:**	**TM000739**
Sampling Point:		**File Name:**	**M2090458.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
217	S21	C21 sterane	28.953	6104	674	41.7	30.6
217	S22	C22 sterane	33.668	2216	268	15.2	12.2
217	DIA27S	C27 βα 20S diasterane	48.331	6208	834	42.4	37.8
217	DIA27R	C27 βα 20R diasterane	49.883	4278	605	29.2	27.4
217	DIA28SA	C28 βα 20S diasterane a	52.132	4206	549	28.8	24.9
217	DIA28SB	C28 βα 20S diasterane b	52.411	5098	579	34.9	26.3
217	DIA28RA	C28 βα 20R diasterane a	53.858	2896	393	19.8	17.8
217	DIA28RB	C28 βα 20R diasterane b	54.015	3062	383	20.9	17.4
217	C27S	C27 αα 20S sterane	55.026	2626	333	18.0	15.1
217	BB_D29S	C27 ββ 20R + C29 dia20S	55.601	6701	486	45.8	22.0
217	C27BBS	C27 ββ 20S sterane	55.950	3595	420	24.6	19.0
217	C27R	C27 αα 20R sterane	56.839	2993	389	20.5	17.6
217	DIA29R	C29 βα 20R diasterane	57.449	5778	427	39.5	19.4
217	C28S	C28 αα 20S sterane	59.141	1992	248	13.6	11.2
217	C28BBR	C28 ββ 20R sterane(+5 βαα)	59.873	3551	416	24.3	18.9
217	C28BBS	C28 ββ 20S sterane	60.274	4629	494	31.6	22.4
217	C28R	C28 αα 20R sterane	61.337	3544	266	24.2	12.1
217	C29S	C29 αα 20S sterane	62.680	2935	299	20.1	13.6
217	C29BBR	C29 ββ 20R sterane(+5 βαα)	63.464	3878	441	26.5	20.0
217	C29BBS	C29 ββ 20S sterane	63.778	3253	387	22.2	17.6
217	C29R	C29 αα 20R sterane	65.208	4169	418	28.5	19.0
218	C27ABBR	C27 ββ 20R sterane	55.549	4910	548	33.6	24.9
218	C27ABBS	C27 ββ 20S sterane	55.933	3406	490	23.3	22.2
218	C28ABBR	C28 ββ 20R sterane	59.873	4657	595	31.8	27.0
218	C28ABBS	C28 ββ 20S sterane	60.274	5214	662	35.6	30.0
218	C29ABBR	C29 ββ 20R sterane	63.464	4825	622	33.0	28.2
218	C29ABBS	C29 ββ 20S sterane	63.796	4707	620	32.2	28.1
218	C30ABBR	C30 ββ 20R sterane	66.516	1597	236	10.9	10.7
218	C30ABBS	C30 ββ 20S sterane	66.742	1715	220	11.7	10.0
259	D27S	C27 βα 20S diasterane	48.331	3818	537	26.1	24.4
259	D27R	C27 βα 20R diasterane	49.883	2693	399	18.4	18.1
259	D28SA	C28 βα 20S diasterane a	52.132	2644	360	18.1	16.3
259	D28SB	C28 βα 20S diasterane b	52.428	2731	366	18.7	16.6
259	D28RA	C28 βα 20R diasterane a	53.840	2174	275	14.9	12.5
259	D28RB	C28 βα 20R diasterane b	54.015	1742	254	11.9	11.5
259	D29S	C29 βα 20S diasterane	55.654	3438	310	23.5	14.1
259	D29R	C29 βα 20R diasterane	57.380	2512	207	17.2	9.4
259	C30TP1	C30 tetracyclic polyprenoid	66.986	682	105	4.7	4.8
259	C30TP2	C30 tetracyclic polyprenoid	67.143	512	90	3.5	4.1

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #1**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2137 - 2138 FT**	**Lab ID:**	**TM000739**
Sampling Point:		**File Name:**	**M2090458.D**

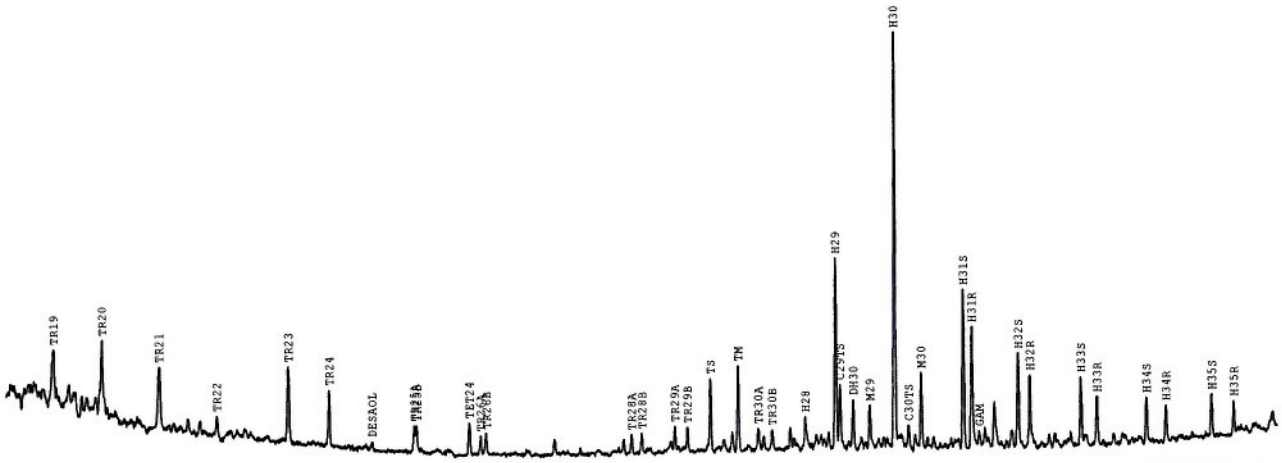
Miscellaneous Ratios	By Areas	By Heights
Terpanes (m/z 191)		
C19/C23 Tricyclic terpanes	0.45	0.74
C22/C21 Tricyclic terpanes	0.20	0.36
C22/C24 Tricyclic terpanes	0.30	0.40
C23/C24 Tricyclic terpanes	1.53	1.37
C24/C23 Tricyclic terpanes	0.65	0.73
C26/C25 Tricyclic terpanes	0.82	0.75
C24 Tetracyclic/C23 Tricyclic	0.35	0.42
C24 Tetracyclic/C26 Tricyclics	0.76	0.78
(C28+C29 Tricyclics)/Ts	1.16	1.23
Ts/Tm trisnorhopanes	0.91	0.86
Ts/(Ts+Tm) trisnorhopanes	0.48	0.46
25-nor-hopane/hopane		0.08
C29Ts/C29 Hopane	0.37	0.34
C29Ts/(C29TS+C29) Hopane	0.27	0.25
C23 Tricyclic/Hopane	0.23	0.19
C24 Tetracyclic/Hopane	0.08	0.08
Bisnorhopane/Hopane	0.11	0.08
Norhopane/Hopane	0.48	0.46
Diahopane/Hopane	0.12	0.12
Oleanane/Hopane		
Moretane/Hopane	0.20	0.19
Moretane/(Moretane+Hopane)	0.17	0.16
C30Ts/C30 Hopane	0.05	0.05
Gammacerane/Hopane	0.04	0.04
C32 S/(S+R) Homohopanes	0.57	0.57
Gammacerane/H31R Homohopane	0.12	0.15
C35/C34 Homohopanes	0.83	0.93
C35/C34 S Homohopanes	0.79	0.92
C35 Homohopane Index	0.10	0.11
Rel % C31 Homohopane	37.7	38.3
Rel % C32 Homohopane	23.8	23.1
Rel % C33Homohopane	16.5	16.3
Rel % C34 Homohopane	12.0	11.6
Rel % C35 Homohopane	9.9	10.8

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #1**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2137 - 2138 FT**	**Lab ID:**	**TM000739**
Sampling Point:		**File Name:**	**M2090458.D**

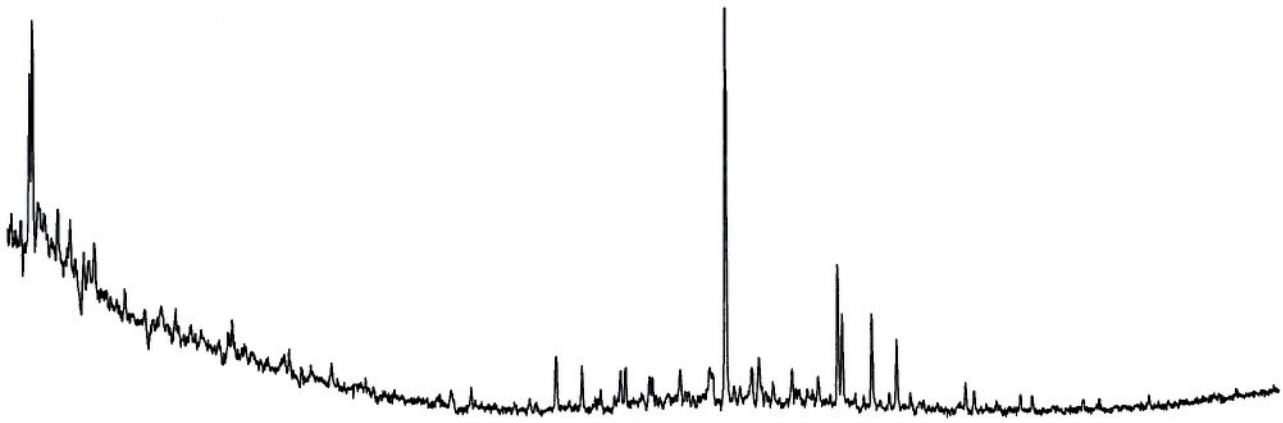
Miscellaneous Ratios	By Areas	By Heights
Steranes (m/z 217; 218)		
%C27 ααα*R* (217)	28.0	36.3
%C28 ααα*R* (217)	33.1	24.8
%C29 ααα*R* (217)	38.9	39.0
S/R (C_{29} ααα) (217)	0.70	0.72
S/(S+R) (C_{29} ααα) (217)	0.41	0.42
ββ/(αα+ββ) (C_{29}) (217)	0.50	0.54
ββ*S*/(αα*R*+ββ*S*) (C29) (217)	0.44	0.48
αββ*S*/αααR (C_{29}) (217)	0.78	0.93
(C_{21}+C_{22})/(C_{27}+C_{28}+C_{29}) (217)	0.11	0.11
Diaster/ααα Ster (C_{27}) (217)	1.87	1.99
Diaster/(Diaster+ααα) Ster (C_{27}) (217)	0.65	0.67
%C27 αββ*S* (218)	25.6	27.7
%C28 αββ*S* (218)	39.1	37.4
%C29 αββ*S* (218)	35.3	35.0
%C27 αββ (R+S) (218)	30.0	29.3
%C28 αββ (R+S) (218)	35.6	35.5
%C29 αββ (R+S) (218)	34.4	35.1
C30 αββ*S* Sterane Index (218)	11.4	11.0
C30 S+R Sterane Index (218)	10.7	11.4
C_{27}/C_{29} (αββ*S*) (218)	0.72	0.79
C_{28}/C_{29} (αββ*S*) (218)	1.11	1.07
C_{29}/C_{27} (αββ*S*) (218)	1.38	1.27
C_{29}/C_{27} (αββ) (218)	1.15	1.20
Various (m/z 191; 217)		
Steranes/Hopanes	0.86	0.68
Tricyclic terpanes/Hopanes	0.37	0.35
Tricyclic terpanes/Steranes	0.43	0.52
Tricyclic/Pentacyclic Terpanes	35.5	34.3
Steranes/Terpanes	0.61	0.50
% Tricyclic Terpanes	16.3	17.1
% Pentacyclic Terpanes	45.95	17.08
% Steranes	37.7	33.1

Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #1
Well Name:	IVISHAK NO. 1	Project #:	08-1633-A
Depth:	2137 - 2138 FT	Lab ID:	TM000739
Sampling Point:		File Name:	M2090458.D

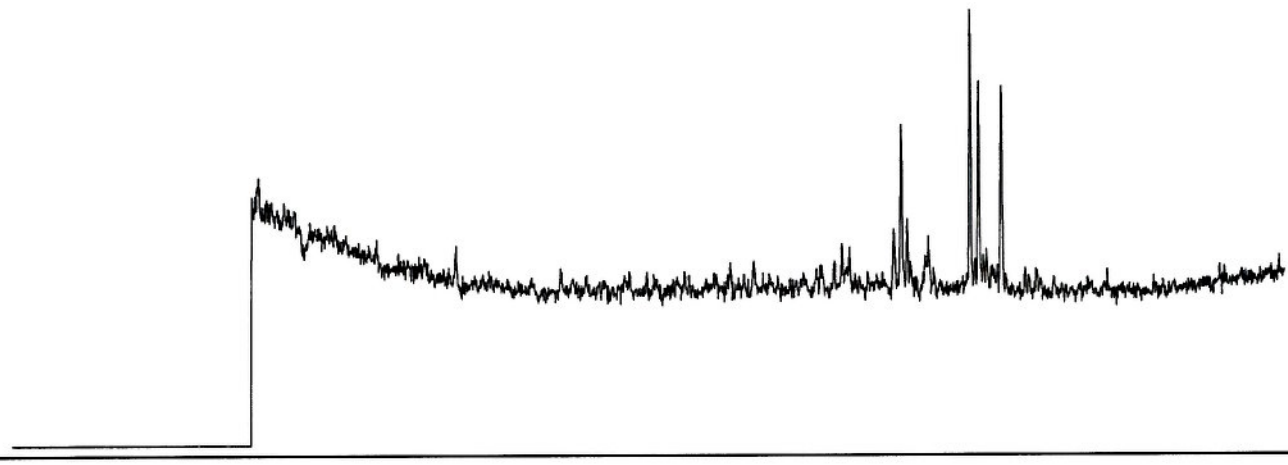
***m/z* 191:Tri-, tetra- and pentacyclic Terpanes**



***m/z* 177: Norhopanes**

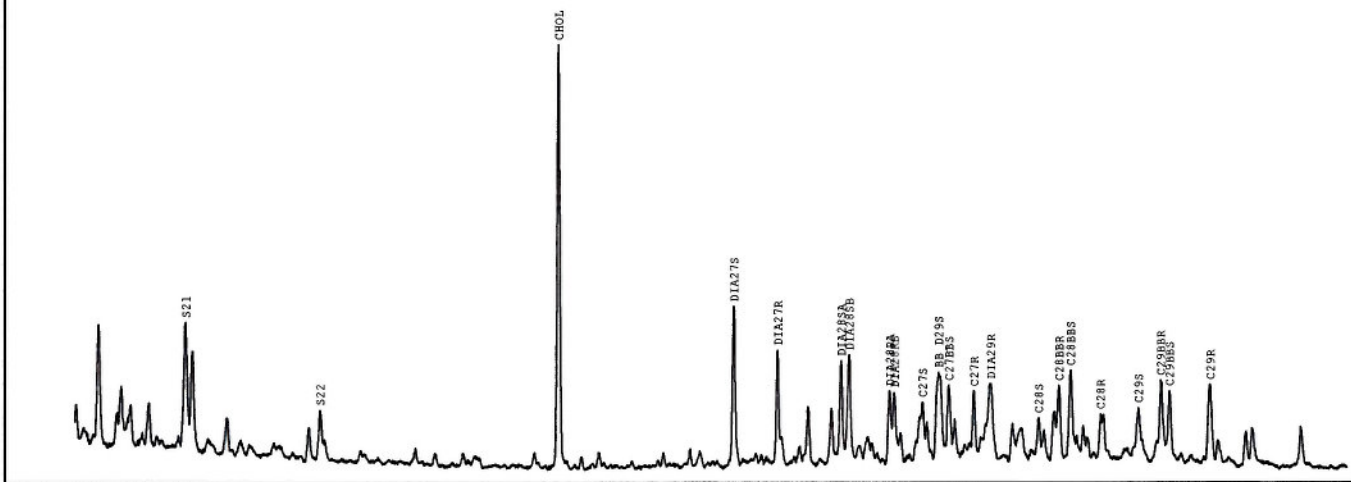


***m/z* 205**

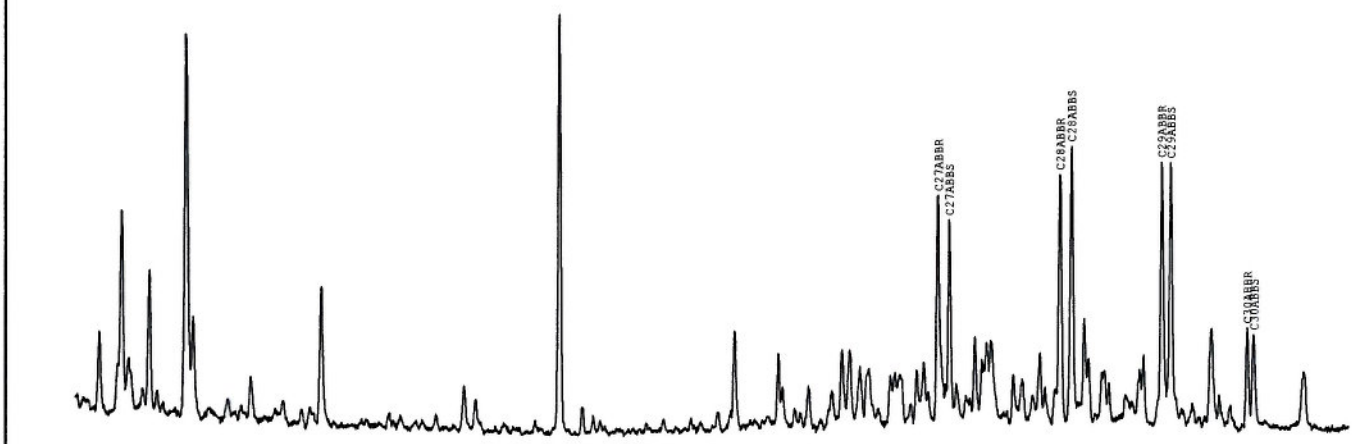


Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #1
Well Name:	IVISHAK NO. 1	Project #:	08-1633-A
Depth:	2137 - 2138 FT	Lab ID:	TM000739
Sampling Point:		File Name:	M2090458.D

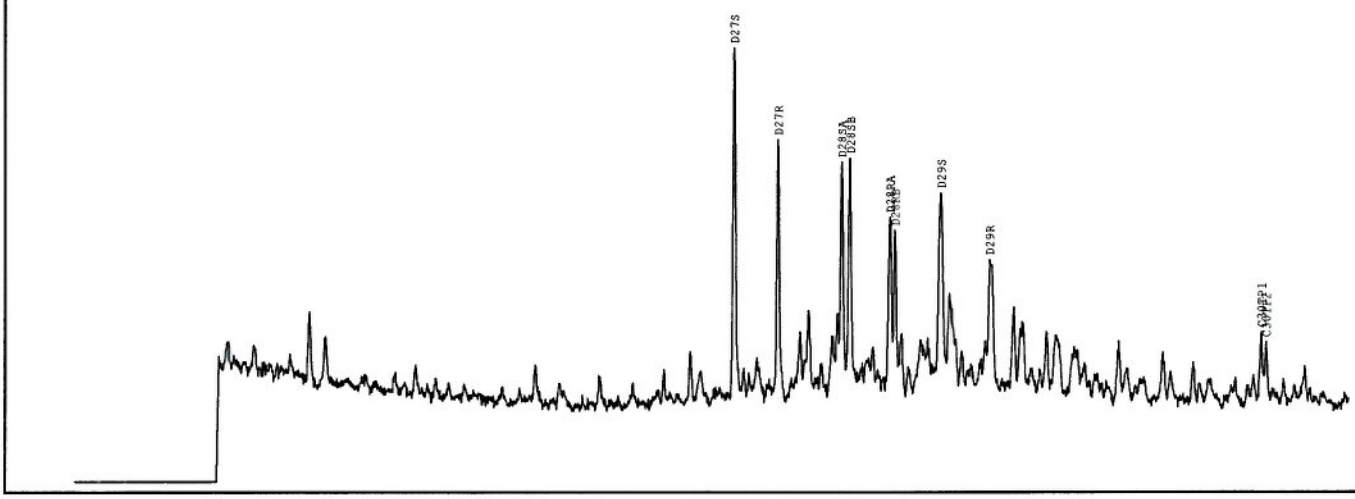
***m/z* 217: Steranes**



***m/z* 218: Steranes**



***m/z* 259: Diasteranes**



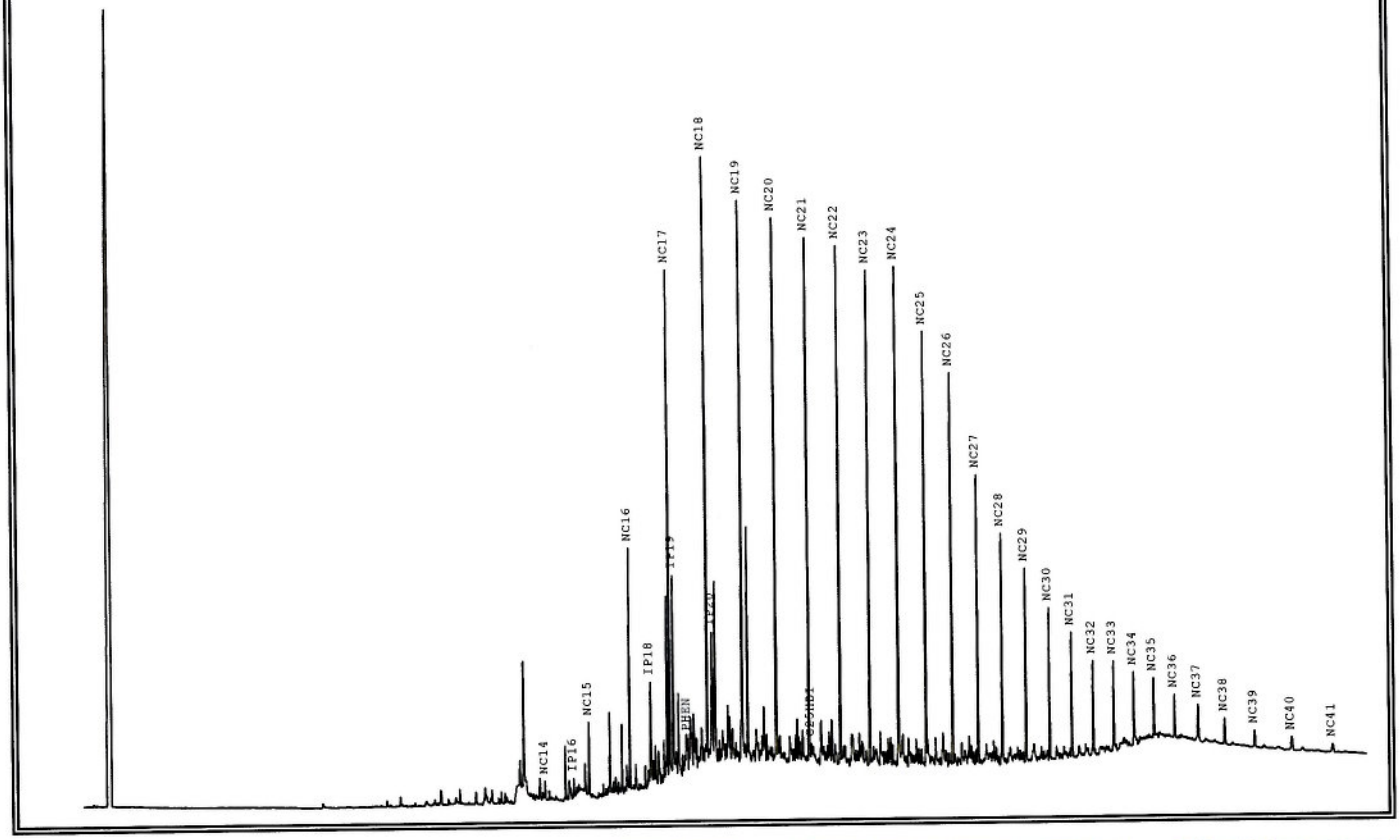
Weatherford LABORATORIES

WHOLE OIL GC

Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #2
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000740
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	SCHRADER BLUFF
Well Name:	IVISHAK NO. 1	Geologic Age:	
Latitude:	69.3	Top Depth:	2443 FT
Longitude:	148.3	Bottom Depth:	2444 FT

Whole Oil GC Trace

G6081456.D



WGC parameters	
Pristane/Phytane	1.41
Pristane/$n C_{17}$	0.60
Phytane/$n C_{18}$	0.36
$n C_{18}/(nC_{18}+n C_{19})$	0.51
$n C_{17}/(nC_{17}+n C_{29})$	0.70
CPI Hunt[4]	0.95
Normal Paraffins	40.8
Isoprenoids	4.1
Cycloparaffins	
Branched (iso-) Paraffins	
BTX aromatics	
Resolved unknowns	54.9

Thompson[1]	
A.	BZ/$n C_6$
B.	TOL/$n C_7$
C.	$(n C_6+n C_7)/(CH+MCH)$
I.	Isoheptane Value
F.	$n C_7$/MCH
U.	CH/MCP
R.	$n C_7$/2MH
S.	$n C_8$/22DMB
H.	Heptane Value
	MCH/$n C_7$
	mpXYL/$n C_8$

Mango[2]
P_1
P_2
P_3
$5N_1$
N_2
$6N_1$
K_1
K_2
$5N_1/6N_1$
P_3/N_2
ln(24DMP/23DMP)

Halpern[3]
Tr_1
Tr_2
Tr_3
Tr_4
Tr_5
Tr_7
Tr_8
C_1
C_2
C_3
C_4
C_5

[1]Thompson, K.F.M.,1983.GCA:V.47, p.303. [2]Mango, F.D.,1994.GCA: V.58, p.895. [3]Halpern,H.I.,1995,AAPG Bull.: V.79, p.801. [4]Hunt, 1979

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #2**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2443 - 2444 FT**	**Lab ID:**	**TM000740**
Sampling Point:		**File Name:**	**G6081456.D**

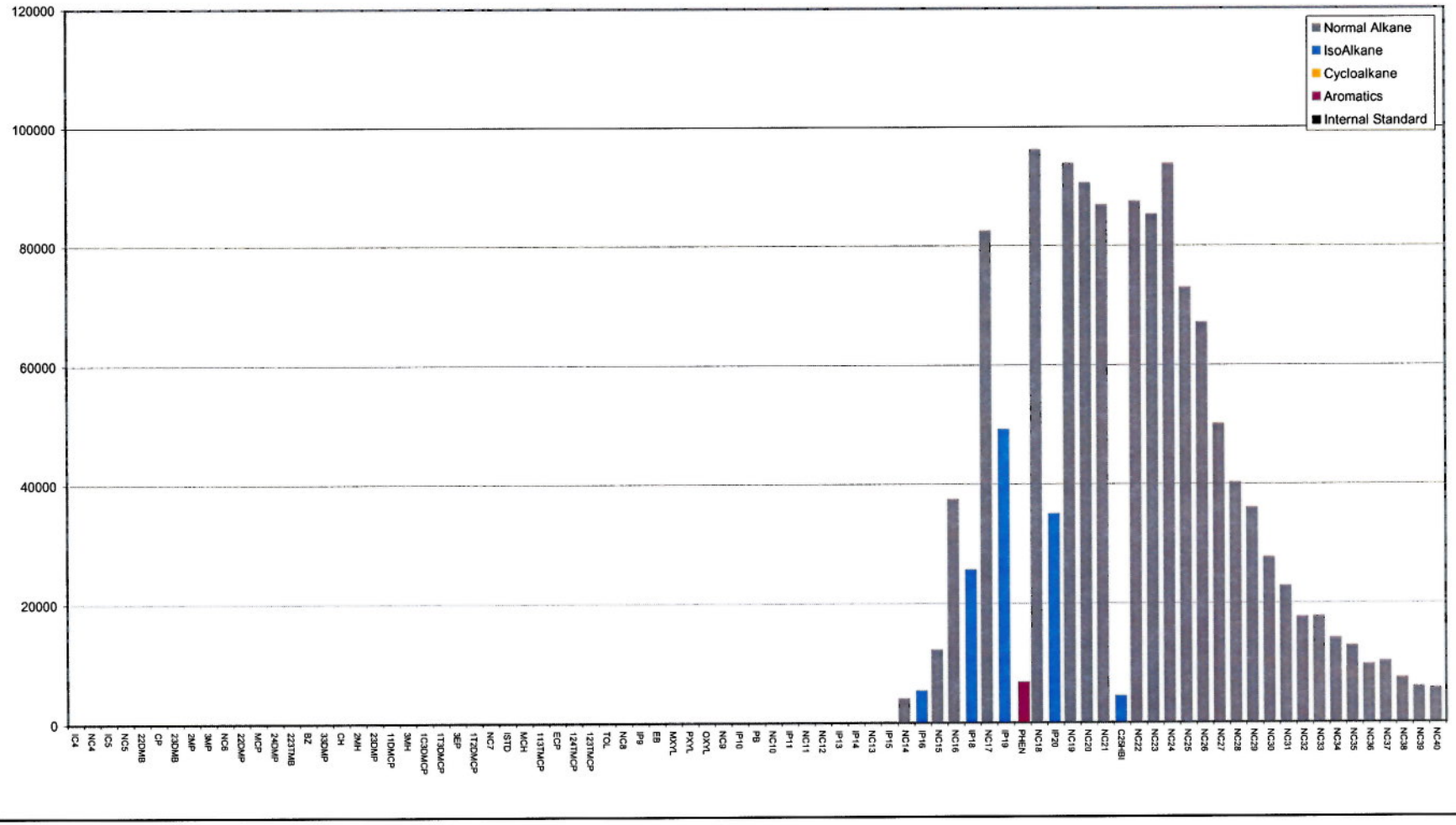
Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IC4	Iso-alkane C4					
NC4	Normal Alkane C4					
IC5	Iso-alkane C5					
NC5	Normal Alkane C5					
22DMB	2,2-Dimethylbutane					
CP	Cyclopentane					
23DMB	2,3-Dimethylbutane					
2MP	2-Methylpentane					
3MP	3-Methylpentane					
NC6	Normal Alkane C6					
22DMP	2,2-Dimethylpentane					
MCP	Methylcyclopentane					
24DMP	2,4-Dimethylpentane					
223TMB	2,2,3-Trimethylbutane					
BZ	Benzene					
33DMP	3,3-Dimethylpentane					
CH	Cyclohexane					
2MH	2-Methylhexane					
23DMP	2,3-Dimethylpentane					
11DMCP	1,1-Dimethylcyclopentane					
3MH	3-Methylhexane					
1C3DMCP	1-cis-3-Dimethylcyclopentane					
1T3DMCP	1-trans-3-Dimethylcyclopentane					
3EP	3-Ethylpentane					
1T2DMCP	1-trans-2-Dimethylcyclopentane					
NC7	Normal Alkane C7					
ISTD	Internal Standard					
MCH	Methylcyclohexane					
113TMCP	1,1,3,-Trimethylcyclopentane					
ECP	Ethylcyclopentane					
124TMCP	1,2,4-Trimethylcyclopentane					
123TMCP	1,2,3-Trimethylcyclopentane					
TOL	Toluene					
NC8	Normal Alkane C8					
IP9	Isoprenoid C9					
EB	Ethyl-benzene					
MXYL	*m*-xylene					
PXYL	*p*-xylene					
OXYL	*o*-xylene					
NC9	Normal Alkane C9					
IP10	Isoprenoid C10					
PB	Propyl-benzene					
NC10	Normal Alkane C10					
IP11	Isoprenoid C11					
NC11	Normal Alkane C11					
NC12	Normal Alkane C12					
IP13	Isoprenoid C13					
IP14	Isoprenoid C14					
NC13	Normal Alkane C13					
IP15	Isoprenoid C15					
NC14	Normal Alkane C14	45.608	4081	1005		

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #2**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2443 - 2444 FT**	**Lab ID:**	**TM000740**
Sampling Point:		**File Name:**	**G6081456.D**

Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IP16	Isoprenoid C16	48.263	5403	1018		
NC15	Normal Alkane C15	49.677	12286	3641		
NC16	Normal Alkane C16	53.532	37479	11632		
IP18	Isoprenoid C18	55.461	25689	4997		
NC17	Normal Alkane C17	57.195	82585	24284		
IP19	Isoprenoid C19 (Pristane)	57.541	49301	9673		
PHEN	Phenanthrene	58.870	6799	1700		
NC18	Normal Alkane C18	60.665	96240	28935		
IP20	Isoprenoid C20 (Phytane)	61.106	35059	6236		
NC19	Normal Alkane C19	63.966	93937	26632		
NC20	Normal Alkane C20	67.108	90654	25925		
NC21	Normal Alkane C21	70.113	86954	24963		
C25HBI	Highly Branch Isoprenoid C25	70.348	4499	985		
NC22	Normal Alkane C22	72.995	87546	24725		
NC23	Normal Alkane C23	75.749	85346	23594		
NC24	Normal Alkane C24	78.400	93865	23720		
NC25	Normal Alkane C25	80.940	73058	20644		
NC26	Normal Alkane C26	83.387	67207	18689		
NC27	Normal Alkane C27	85.742	50172	13829		
NC28	Normal Alkane C28	88.018	40234	11024		
NC29	Normal Alkane C29	90.215	36063	9263		
NC30	Normal Alkane C30	92.342	27707	7283		
NC31	Normal Alkane C31	94.397	22849	6010		
NC32	Normal Alkane C32	96.393	17663	4518		
NC33	Normal Alkane C33	98.326	17775	4309		
NC34	Normal Alkane C34	100.202	14160	3516		
NC35	Normal Alkane C35	102.032	12915	2952		
NC36	Normal Alkane C36	103.967	9728	2108		
NC37	Normal Alkane C37	106.115	10293	1785		
NC38	Normal Alkane C38	108.568	7460	1281		
NC39	Normal Alkane C39	111.361	6014	832		
NC40	Normal Alkane C40	114.601	5744	665		
NC41	Normal Alkane C41	118.364	4120	424		

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #2**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2443 - 2444 FT**	**Lab ID:**	**TM000740**
Sampling Point:		**File Name:**	**G6081456.D**

Histogram Based on Area



Weatherford Laboratories, 143 Vision Park Blvd., Shenandoah, Texas 77384 • Phone: 281-540-6050 • Fax: 281-681-0326 • Email: www.weatherfordlabs.com

Parameter	Formula
WGC Parameters	
Pristane/Phytane	IP19/IP20
Pristane/nC17	IP19/NC17
Phytane/nC18	IP20/NC18
$nC_{18}/(nC_{18}+nC_{19})$	NC18/(NC18+NC19)
$nC_{17}/(nC_{17}+nC_{29})$	NC17/(NC17+NC29)
CPI Hunt[4]	((NC23+NC25+NC27+NC29+NC31)+(NC25+NC27+NC29+NC31+NC33))/(2*(NC24+NC26+NC28+NC30+NC32))
Normal Paraffins	100*(NC4+NC5+NC6+NC7+NC8+NC9+NC10+NC11+NC12+NC13+NC14+NC15+NC16+NC17+NC18+NC19+NC20+NC21+NC22+NC23+NC24+NC25+NC26+NC27+NC28+NC29+NC30+NC31+NC32+NC33+NC34+NC35+NC36+NC37+NC38+NC39+NC40+NC41)/TOTAL_RESOLVED
Isoprenoids	100*(IP9+IP10+IP11+IP13+IP14+IP15+IP16+IP18+IP19+IP20+C25HBI)/TOTAL_RESOLVED
Cycloparaffins	100*(CP+MCP+CH+11DMCP+1T3DMCP+1T2DMCP+MCH+113TMCP+ECP+124TMCP+123TMCP+1C3DMCP+1C2DMCP)/TOTAL_RESOLVED
Branched (iso-) Paraffins	100*(IC4+IC5+22DMB+23DMB+2MP+3MP+22DMP+24DMP+223TMB+33DMP+2MH+23DMP+3MH+3EP)/TOTAL_RESOLVED
BTX aromatics	100*(BZ+TOL+MXYL+PXYL+OXYL)/TOTAL_RESOLVED (*OXYL added 05/21/2007)
Thompson[1]	
BZ/nC6	BZ/NC6
TOL/nC7	TOL/NC7
(nC6+nC7)/(CH+MCH)	(NC6+NC7)/(CH+MCH)
Isoheptane Value	(2MH+3MH)/(1C3DMCP+1T3DMCP+1T2DMCP)
nC7/MCH	NC7/MCH
CH/MCP	CH/MCP
nC7/2MH	NC7/2MH
nC6/22DMB	NC6/22DMB
Heptane Value	100*NC7/(CH+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+1T2DMCP+MCH+NC7)
MCH/nC7	MCH/NC7
mpXYL/nC8	(MXYL+PXYL)/NC8
Mango[2]	
P1	100*NC7/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
P2	100*(2MH+3MH)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
P3	100*(3EP+33DMP+23DMP+24DMP+22DMP+223TMB)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
5N1	100*(ECP+1T2DMCP)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
N2	100*(11DMCP+1C3DMCP+1T3DMCP)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
6N1	100*(MCH+TOL)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
K1	(2MH+23DMP)/(3MH+24DMP)
K2	(2MH+3MH)/(2MH+3MH+11DMCP+1C3DMCP+1T3DMCP)
5N1/6N1	(ECP+1T2DMCP)/(MCH+TOL)
P3/N2	(3EP+33DMP+23DMP+24DMP+22DMP+223TMB)/(11DMCP+1C3DMCP+1T3DMCP)
ln(24DMP/23DMP)	ln(24DMP/23DMP)
Halpern[3]	
Tr1	TOL/11DMCP
Tr2	NC7/11DMCP
Tr3	3MH/11DMCP
Tr4	2MH/11DMCP
Tr5	(2MH+3MH)/11DMCP
Tr7	1T3DMCP/11DMCP
Tr8	(2MH+3MH)/(22DMP+23DMP+24DMP+33DMP+3EP)
C1	22DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C2	23DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C3	24DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C4	33DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C5	3EP/(22DMP+23DMP+24DMP+33DMP+3EP)

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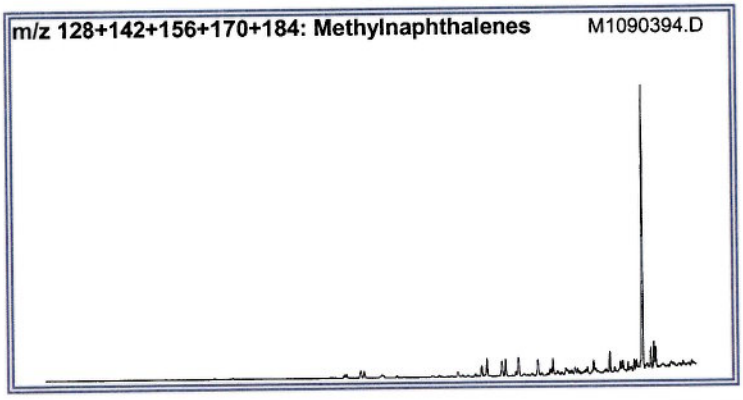
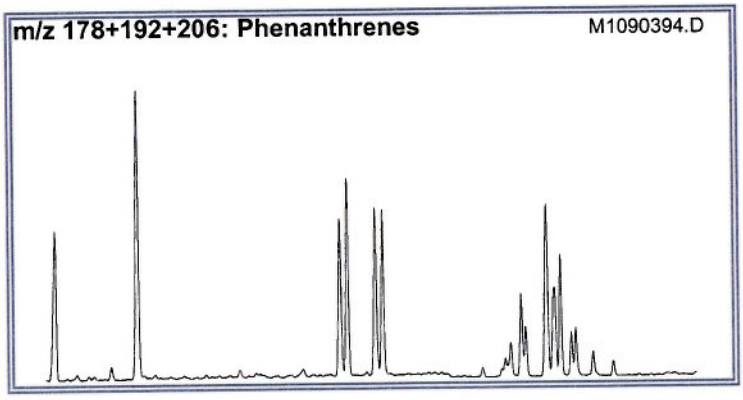
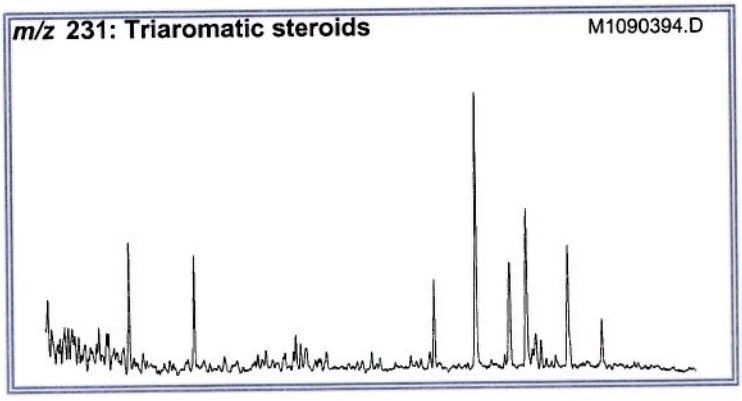
AROMATIC BIOMARKERS

Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #2
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000740
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	SCHRADER BLUFF
Well Name:	IVISHAK NO. 1	Geologic Age:	
Latitude:	69.3	Top Depth:	2443 FT
Longitude:	148.3	Bottom Depth:	2444 FT







RATIOS (on Areas)[1]		Appl[2]	TEV[3]
Mono- (MAS) and Triaromatic Steroids (TAS)			
(C20+C21)/Σ TAS	0.21	M	1.0 (1.3%)
TAS #1 20/20+27	0.40	M	
TAS #2 21/21+28	0.45	M	
%26 TAS	18.1	D	
%27 TAS	41.5	D	
%28 TAS	29.5	D	
%29 TAS	10.9	D	
C28/C26 20S TAS	1.75		
C28/C27 20R TAS	0.71		
Dia/Regular C27 MAS	1.07		
%27 MAS	30.9	D	
%28 MAS	45.8	D	
%29 MAS	23.4	D	
(C21+C22)/Σ MAS	0.24	M	1.0 (1.3%)
TAS/(MAS+TAS)	0.65	M	
TA28/(TA28+MA29)	0.72	M	1.0 (0.8%)
Triaromatic Methylsteroids			
Dinosteroid Index	0.41	A	
C4/C3+C4 Mester	0.50	A	
Phenanthrenes, Naphthalenes, and Dibenzothiophenes			
MPI-1	0.83	M	
Rc(a) if Ro < 1.3 (Ro%)	0.87	M	
Rc(b) if Ro > 1.3 (Ro%)	1.80	M	
MPI-2	0.91	M	
DNR-1	3.96	M	
DNR-2	1.71	M	
TNR1	1.15	M	
TDE-1	6.74	M	
TDE-2	0.22	M	
MDR	4.16	M	
Rm (Ro%)	0.81	M	
MDR23	0.32	M	
MDR1	0.22	M	
DBT/Phenanthrene	0.09	D	

[1]Definition and utility of the ratios can be found on our website www.BaselineDGSI.com

[2]A=Source Age; D=Depositional environment; M= Maturity

[3]Thermal equilibrium value of the biomarker ratio and in brackets the approximate VR value at which this value is reached

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #2**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2443 - 2444 FT**	**Lab ID:**	**TM000740**
Sampling Point:		**File Name:**	**M1090394.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
230	OTP	*Ortho-terphenyl* (internal standard)				0.0	0.0
128	NAPH	Naphthalene					
142	2MN	2-Methylnaphthalene	37.948	2968	486		
142	1MN	1-Methylnaphthalene	39.178	3104	517		
154	BP	Biphenyl	44.670	6995	1077		
156	2EN	2-Ethylnaphthalene	46.136	1562	258		
156	1EN	1-Ethylnaphthalene	46.204	752	158		
156	26DMN	2,6-Dimethylnaphthalene	47.046	8728	1420		
156	27DMN	2,7-Dimethylnaphthalene	47.198	9772	1576		
156	1317DMN	1,3 & 1,7-Dimethylnaphthalenes	48.175	22821	3216		
156	16DMN	1,6-Dimethylnaphthalene	48.428	18079	2915		
156	23DMN	2,3-Dimethylnaphthalene	49.624	2354	493		
156	14DMN	1,4-Dimethylnaphthalene	49.708	8461	1279		
156	15DMN	1,5-Dimethylnaphthalene	49.809	4675	875		
156	12DMN	1,2-Dimethylnaphthalene	50.770	4346	695		
168	2MBP	2-Methylbiphenyl	46.574	47	10		
168	DPM	Diphenylmethane	48.815	79	14		
168	3MBP	3-Methylbiphenyl	53.280	4788	800		
168	4MBP	4-Methylbiphenyl	53.937	2626	434		
168	DBF	Dibenzofuran	55.370	1127	160		
170	BB_EMN	Ethyl-methyl-Naphthalene	55.100	13592	1857		
170	AB_EMN	Ethyl-methyl-Naphthalene	56.313	6526	1046		
170	137TMN	1,3,7-Trimethylnaphthalene	56.768	27983	4517		
170	136TMN	1,3,6-Trimethylnaphthalene	57.139	46510	7850		
170	146135T	(1,4,6+1,3,5)-Trimethylnaphthalenes	58.200	38538	6012		
170	236TMN	2,3,6-Trimethylnaphthalene	58.487	44212	7389		
170	127TMN	1,2,7-Trimethylnaphthalene	59.211	10808	1942		
170	167126T	(1,6,7+1,2,6)-Trimethylnaphthalenes	59.397	49070	7427		
170	124TMN	1,2,4-Trimethylnaphthalene	60.307	4496	824		
170	125TMN	1,2,5-Trimethylnaphthalene	60.761	30309	5534		
178	PHEN	Phenanthrene	70.281	758583	152747		
184	1357	1,3,5,7-Tetramethylnaphthalene	64.721	32003	5562		
184	1367	1,3,6,7-Tetramethylnaphthalene	65.884	43522	8981		
184	1247	(1,2,4,7+1,2,4,6+1,4,6,7)-Tetramethylnaphthalenes	66.625	24988	4628		
184	1257	1,2,5,7-Tetramethylnaphthalene	66.810	19506	3800		
184	2367	2,3,6,7-Tetramethylnaphthalene	67.181	14585	3010		
184	1267	1,2,6,7-Tetramethylnaphthalene	67.619	17198	3422		
184	1237	1,2,3,7-Tetramethylnaphthalene	67.804	5557	1124		
184	1236	1,2,3,6-Tetramethylnaphthalene	68.074	13989	2693		
184	1256	1,2,5,6-Tetramethylnaphthalene	68.782	30686	6984		
184	DBT	Dibenzothiophene	69.001	66986	13953		
191	BH32	C32 Benzohopane	117.670	1670	325		
191	BH33	C33 Benzohopane	119.810	647	122		
191	BH34	C34 Benzohopane					
191	BH35	C35 Benzohopane					
192	3MP	3-Methylphenanthrene	75.218	386345	83151		
192	2MP	2-Methylphenanthrene	75.387	464562	104134		
192	9MP	9-Methylphenanthrene	76.077	408375	87689		
192	1MP	1-Methylphenanthrene	76.263	369706	86910		

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #2**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2443 - 2444 FT**	**Lab ID:**	**TM000740**
Sampling Point:		**File Name:**	**M1090394.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
198	CAD	Cadalene	66.221	23715	4511		
198	4MDBT	4 Methyl Dibenzothiophene	73.533	60907	13284		
198	23MDBT	2 & 3 Methyl Dibenzothiophenes	74.325	21346	4176		
198	1MDBT	1 Methyl Dibenzothiophene	75.117	14636	3125		
206	36DMP	3,6-Dimethylphenanthrene	79.426	86942	17770		
206	26DMP	2,6-Dimethylphenanthrene	79.679	184557	43423		
206	27DMP	2,7-Dimethylphenanthrene	79.780	109849	26097		
206	39DMP	(3,9+3,10+2,10+1,3)-Dimethylphenanthrenes	80.303	488220	90758		
206	29DMP	(2,9+1,6)-Dimethylphenanthrenes	80.488	288250	46918		
206	17DMP	1,7-Dimethylphenanthrene	80.640	265359	63993		
206	23DMP	2,3-Dimethylphenanthrene	80.910	98077	23324		
206	19DMP	1,9-Dimethylphenanthrene	81.028	115009	25592		
206	18DMP	1,8-Dimethylphenanthrene	81.449	58532	13006		
206	12DMP	1,2-Dimethylphenanthrene	81.955	32864	7627		
231	231A20	C20 Triaromatic Steroid	92.253	12758	2888		
231	231B21	C21 Triaromatic	94.747	10815	2571		
231	231C26	C26 20S Triaromatic	103.933	8200	1965		
231	231D26	C27 20S & C26 20R Triaromatic	105.518	30981	6075		
231	TADMD1	C28 23,24-Cholestane Triaromatic	106.124	1116	200		
231	TADMD2	C28 23,24-Cholestane Triaromatic	106.630	1306	303		
231	231E28	C28 20S Triaromatic	106.832	14317	2327		
231	231F27	C27 20R Triaromatic	107.473	18750	3510		
231	TADMD3	C28 23,24-Cholestane Triaromatic	107.557	797	364		
231	C29TA1	C29 Triaromatic	107.827	4787	767		
231	C29TA2	C29 Triaromatic	108.029	2677	626		
231	TADMD4	C28 23,24-Cholestane Triaromatic	108.922	462	76		
231	231G28	C28 20R Triaromatic	109.074	13360	2704		
231	TADMD5	C28 23,24-Cholestane Triaromatic	109.141	1506	672		
231	C29TA3	C29 Triaromatic	110.372	4916	1092		
245	C3S	C27 20S 3-Methyl Triaromatic Steroid	106.613	1404	302		
245	C4S	C27 20S 4-Methyl Triaromatic Steroid	107.220	1852	412		
245	E2S	C28 20S 2-Methyl Triaromatic Steroid	107.692	1309	204		
245	E3SC3R	C28 20S 3-Methyl & C27 20R 3-Methyl TAS	108.130	4933	870		
245	E4SC4R	C28 20S 4-Methyl & C27 20R 4-Methyl TAS	108.720	6356	1018		
245	S2S	C29 20S 2-Methyl Triaromatic Steroid	108.973	1391	195		
245	DA	Triaromatic Dinosteroid a	109.141	1670	293		
245	S3S	C29 20S 3-Methyl Triaromatic Steroid	109.344	2822	352		
245	DB	Triaromatic Dinosteroid b	109.748	4165	879		
245	S4SE2R	C29 20S 4-Methyl & C28 20R 2-Methyl TAS	109.917	4612	619		
245	E3R	C28 20R 3-Methyl Triaromatic Steroid	110.051	4018	644		
245	E4R	C28 20R 4-Methyl Triaromatic Steroid	110.658	4100	678		
245	DC	Triaromatic Dinosteroid c	110.844	5087	1104		
245	DD	Triaromatic Dinosteroid d	110.945	5281	1113		
245	S2R	C29 20R 2-Methyl Triaromatic Steroid	111.349	850	175		
245	S3R	C29 20R 3-Methyl Triaromatic Steroid	111.585	3312	598		
245	DE	Triaromatic Dinosteroid e	111.720	4917	819		
245	S4R	C29 20R 4-Methyl Triaromatic Steroid	112.175	2644	535		
245	DF	Triaromatic Dinosteroid f	112.310	6150	1178		

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #2**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2443 - 2444 FT**	**Lab ID:**	**TM000740**
Sampling Point:		**File Name:**	**M1090394.D**

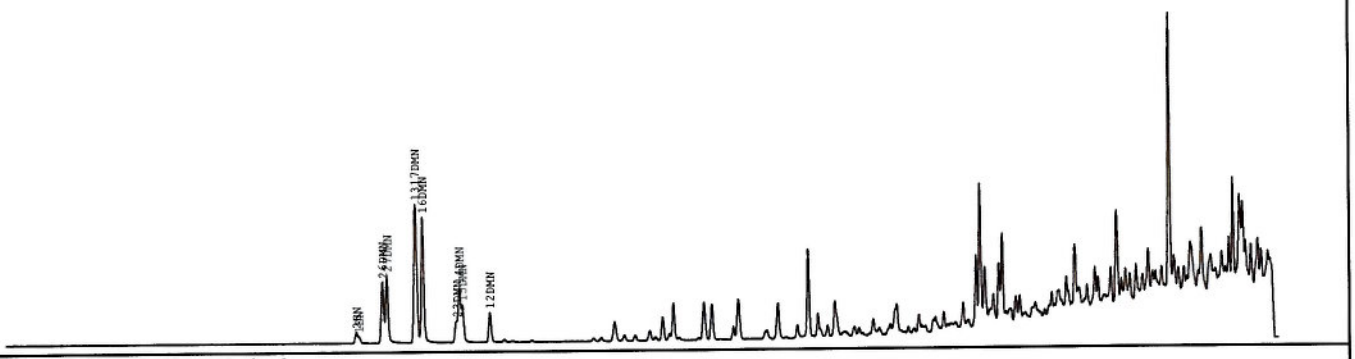
Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
253	S253A	C21 Ring-C Monoaromatic Steroid	84.500	10286	1744		
253	S253B	C22 Monoaromatic steroid	86.960	4591	847		
253	S253C	C27 Reg 5β(H),10β(CH3) 20S	96.922	2949	586		
253	S253D	C27 Dia 10β(H),5β(CH3) 20S	97.073	3142	638		
253	S253E	C27 Dia10βH,5βCH3 20R+Reg5βH,10βCH3 20R	98.540	4768	968		
253	S253F	C27 Reg 5α(H),10β(CH3) 20S	98.691	1780	307		
253	S253G	C28 Dia 10αH,5αCH3 20s+Reg5βH,10βCH3 20S	99.096	7670	1319		
253	S253H	C27 Reg 5α(H),10β(CH3) 20R	100.377	1775	371		
253	S253I	C28 Reg 5α(H),10β(CH3) 20S	100.529	1652	283		
253	S253J	C28 Dia 10αH,5αCH3 20R+Reg5βH,10βCH3 20R	100.697	9265	1970		
253	S253K	C29 Dia 10βH,5βCH3 20S+Reg5βH,10βCH3 20S	100.849	3822	705		
253	S253L	C29 Reg 5α(H),10β(CH3) 20S	102.147	1085	184		
253	S253M	C28 Reg 5α(H),10β(CH3) 20R	102.416	2803	416		
253	S253N	C29 Dia 10βH,5βCH3 20R+Reg5βH,10βCH3 20R	102.534	4639	791		
253	S253O	C29 Reg 5α(H),10β(CH3) 20R	104.119	1368	264		
365	SH29	C29 8,14-secohopanoids	104.017	18136	3811		
365	SH30	C30 8,14-secohopanoids	105.989	15077	3580		

Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #2
Well Name:	IVISHAK NO. 1	Project #:	08-1633-A
Depth:	2443 - 2444 FT	Lab ID:	TM000740
Sampling Point:		File Name:	M1090394.D

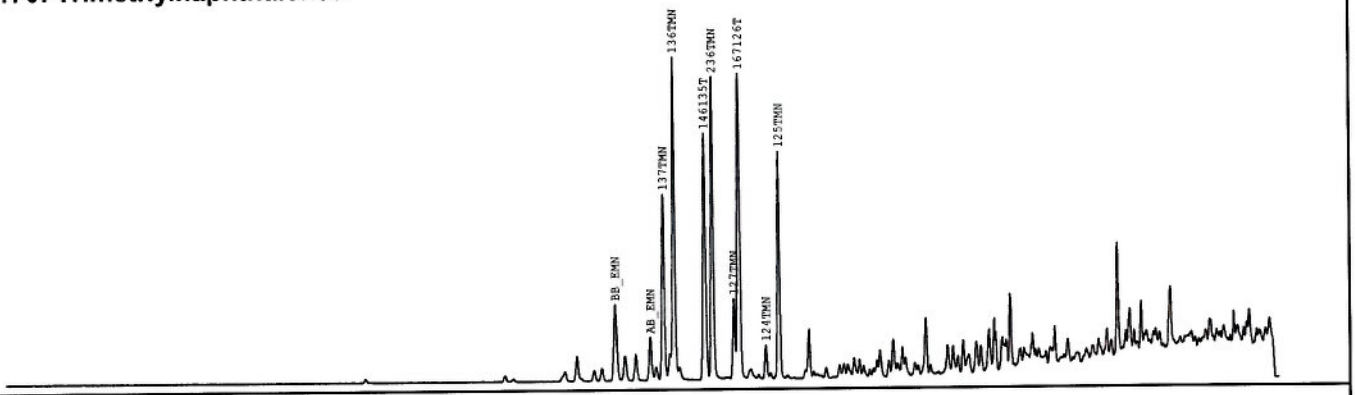
Miscellaneous Ratios	By Areas	By Heights
Triaromatic Steroids m/z 231		
(C20+C21)/Σ TAS	0.21	0.24
TAS #1 20/20+27	0.40	0.45
TAS #2 21/21+28	0.45	0.49
%26TAS	18.1	21.2
%27TAS	41.5	37.9
%28TAS	29.5	29.2
%29TAS	10.9	11.8
C28/C26 20S TAS	1.75	1.18
C28/C27 20R TAS	0.71	0.77
Monoaromatic Steroids m/z 253		
Dia/Regular C27 MAS	1.07	1.09
%27 MAS	30.9	32.6
%28 MAS	45.8	45.3
%29 MAS	23.4	22.1
(C21+C22)/Σ MAS	0.24	0.23
TAS/(MAS+TAS)	0.65	0.67
TA28/(TA28+MA29)	0.72	0.72
Triaromatic Methylsteroids m/z 245		
Dinosteroid Index	0.41	0.45
C4/C3+C4 Mester	0.50	0.51
Phenanthrenes and Naphthalenes		
MPI-1	0.83	0.86
MPI-2	0.91	0.95
MPI-3	1.09	1.07
Rc(a) if Ro < 1.3 (Ro%)	0.87	0.88
Rc(b) if Ro > 1.3 (Ro%)	1.80	1.79
DNR-1	3.96	3.42
DNR-2	1.71	1.69
TNR1	1.15	1.23
TDE-1	6.74	6.72
TDE-2	0.22	0.26
MDR	4.16	4.25
Rm (Ro%)	0.81	0.82
MDR23	0.32	0.30
MDR1	0.22	0.22
DBT/Phenanthrene	0.09	0.09

Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #2
Well Name:	IVISHAK NO. 1	Project #:	08-1633-A
Depth:	2443 - 2444 FT	Lab ID:	TM000740
Sampling Point:		File Name:	

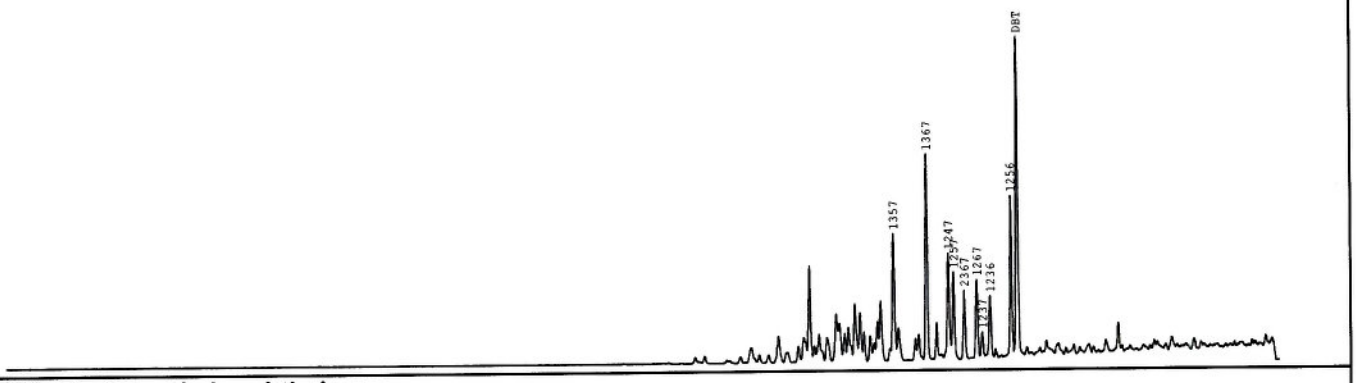
***m/z* 156: Dimethylnaphthalenes**



***m/z* 170: Trimethylnaphthalenes**



***m/z* 184: Tetramethylnaphthalenes**

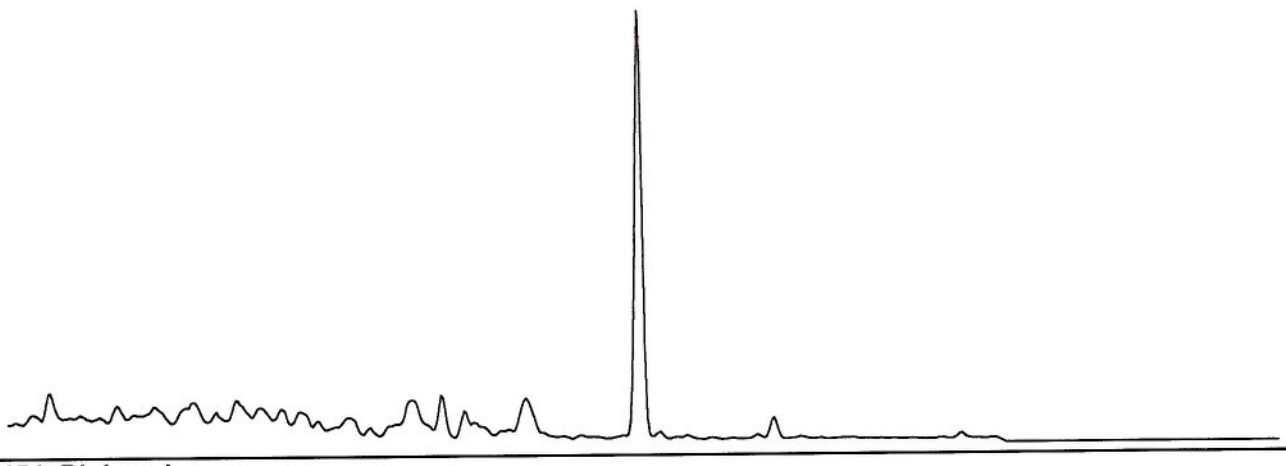


***m/z* 198: Pentamethylnaphthalenes**

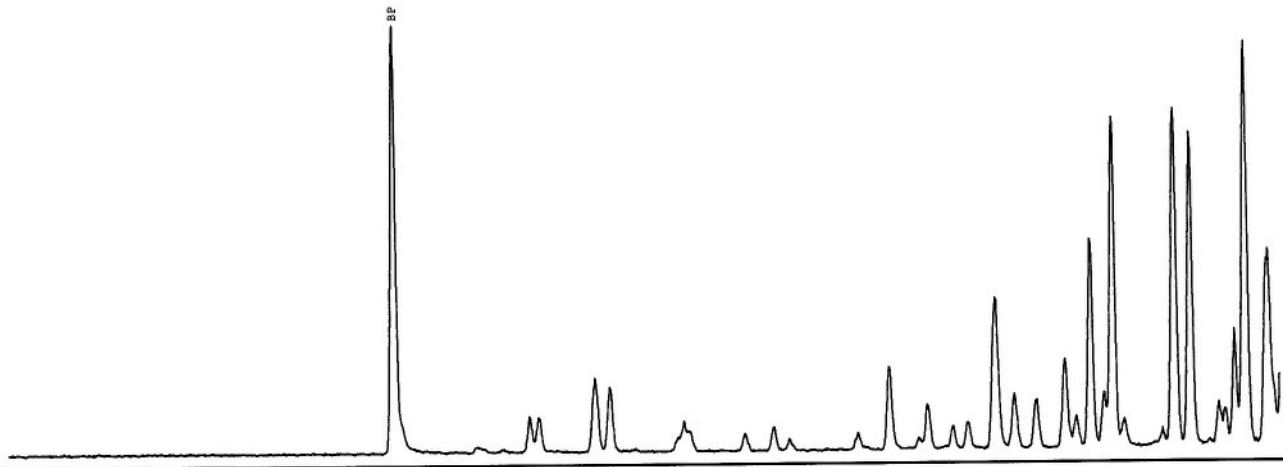
Geochemical Services Group, 143 Vision Park Blvd., Shenandoah, Texas 77384 • Phone: 281-681-2200 • Fax: 281-681-0326 • Email: geocheminfo@weatherfordlabs.com

Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #2
Well Name:	IVISHAK NO. 1	Project #:	08-1633-A
Depth:	2443 - 2444 FT	Lab ID:	TM000740
Sampling Point:		File Name:	M1090394.D

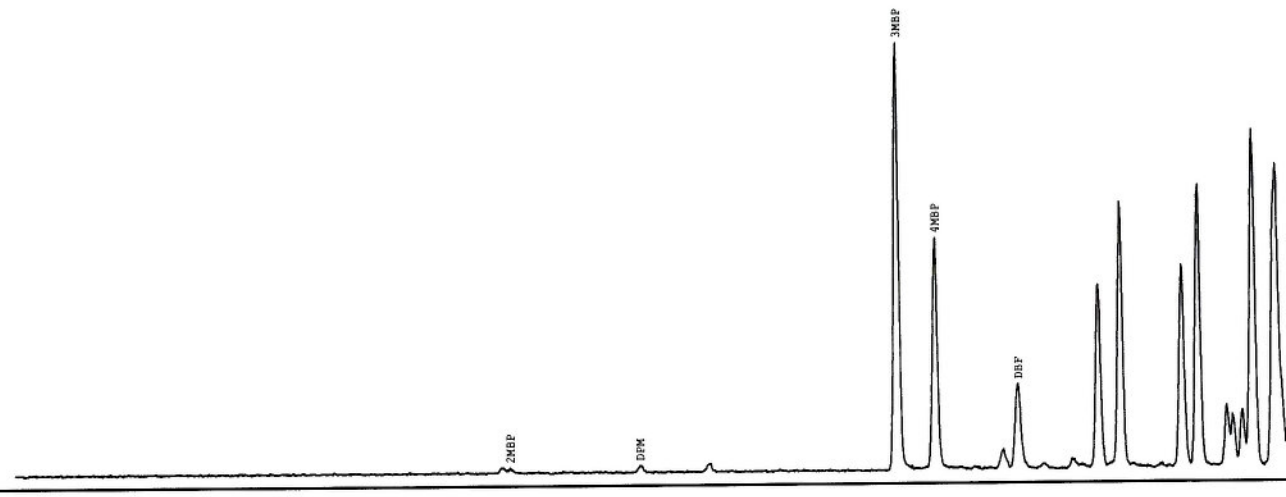
***m/z* 230: Ortho-Terphenyl (Inter. Std)**



***m/z* 154: Biphenyl**



***m/z* 168: Methylbiphenyls (MBP)**



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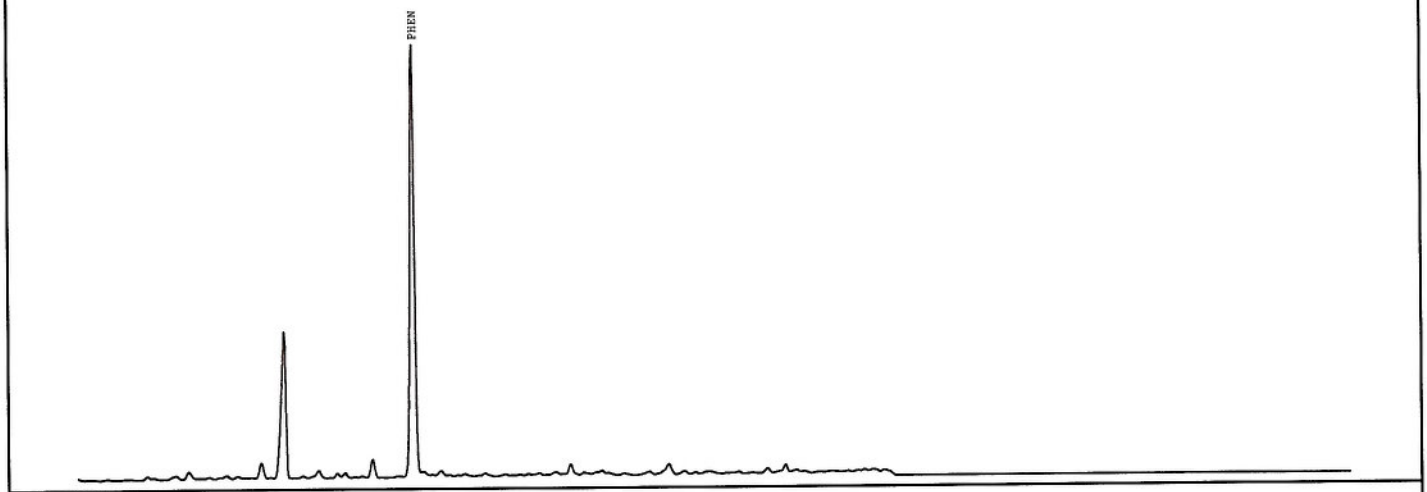
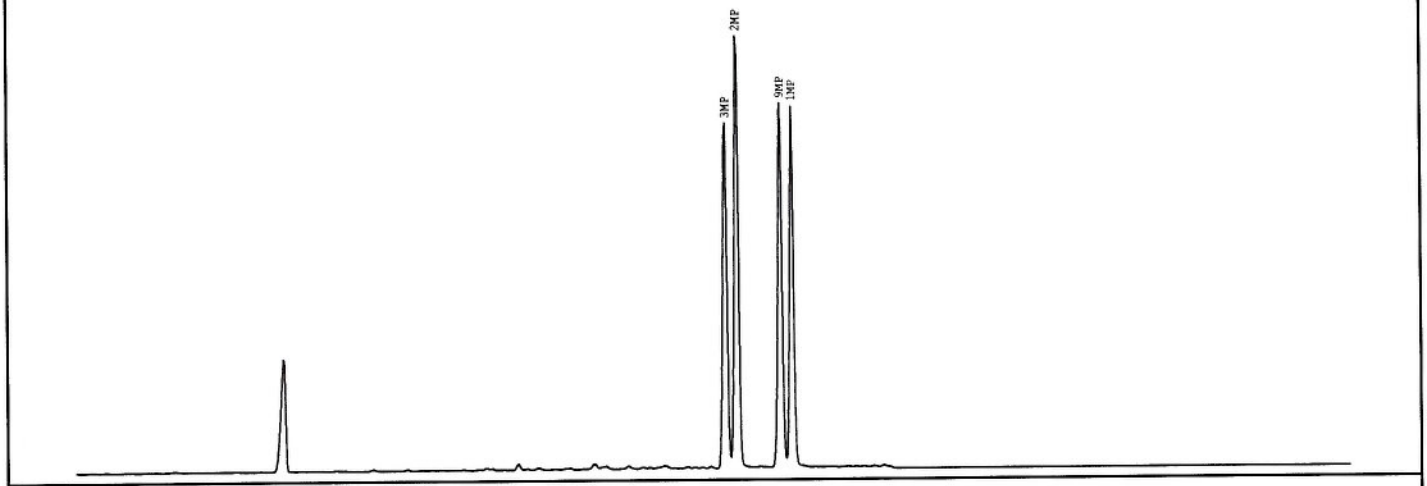
Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #2
Well Name:	IVISHAK NO. 1	Project #:	08-1633-A
Depth:	2443 - 2444 FT	Lab ID:	TM000740
Sampling Point:		File Name:	M1090394.D

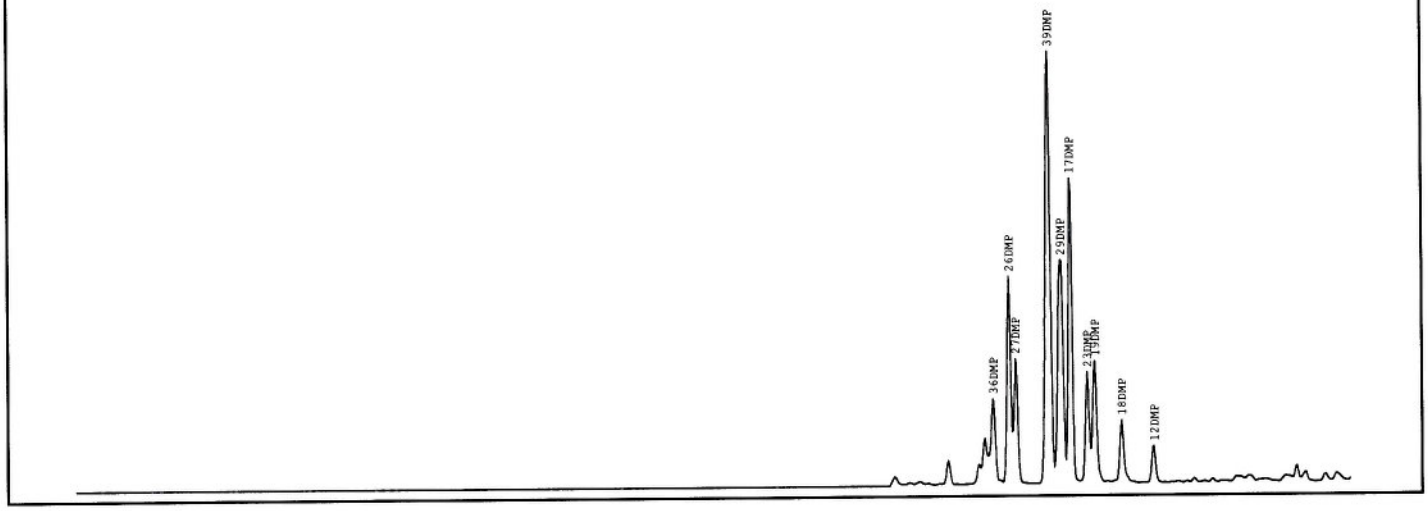
m/z 178: Phenanthrene



m/z 192: Methylphenanthrenes

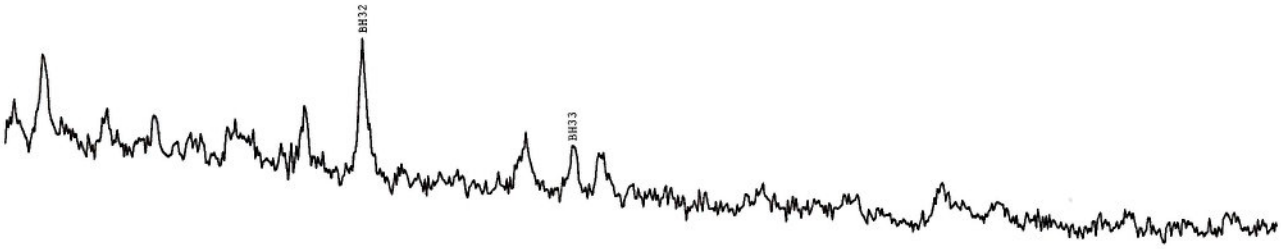


m/z 206: Dimethylpehnanthrenes

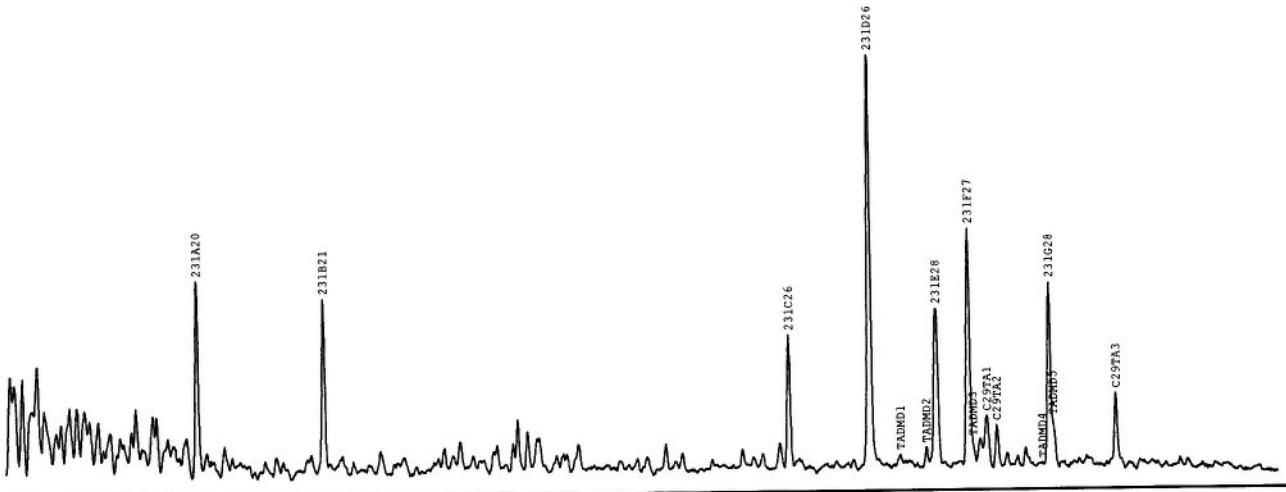


Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #2
Well Name:	IVISHAK NO. 1	Project #:	08-1633-A
Depth:	2443 - 2444 FT	Lab ID:	TM000740
Sampling Point:		File Name:	M1090394.D

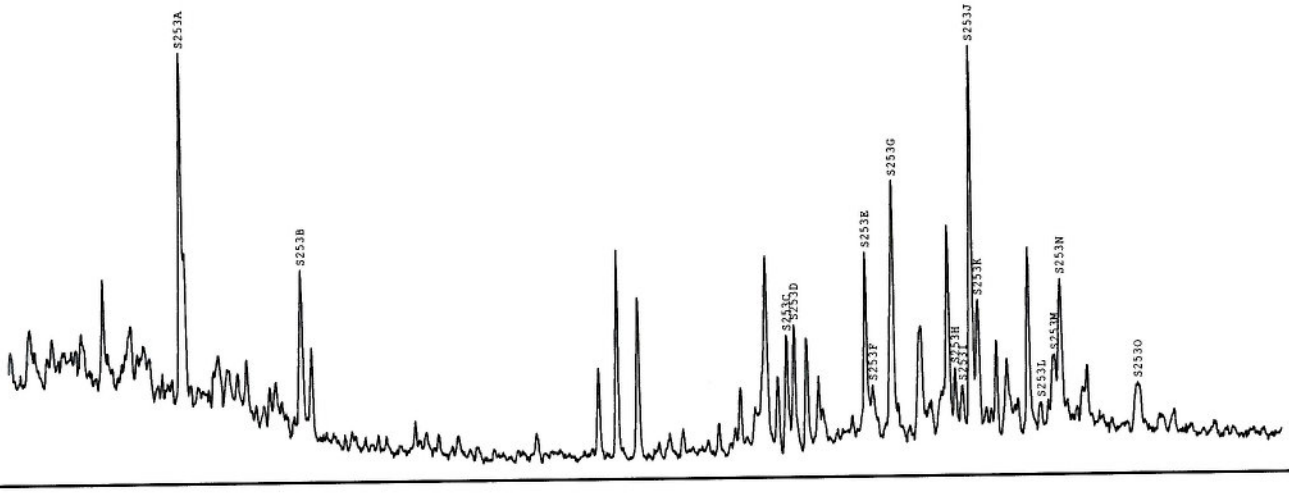
***m/z* 191: Benzohopanes**



***m/z* 231: Triaromatic Steranes**



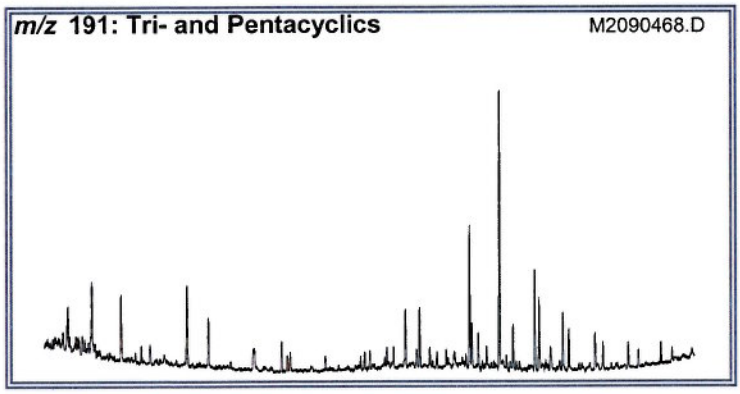
***m/z* 253: Monoaromatic Steranes**

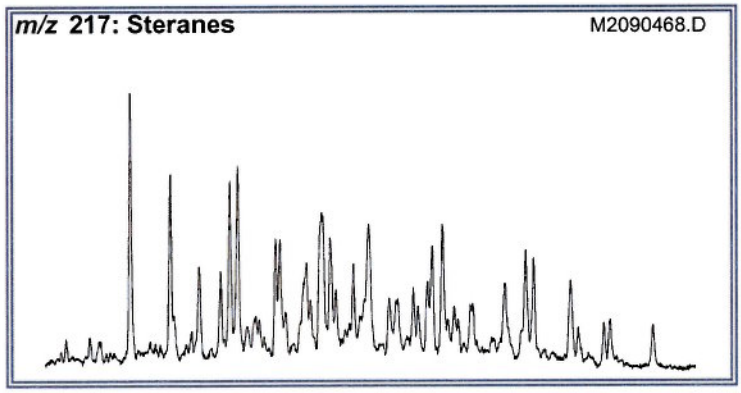


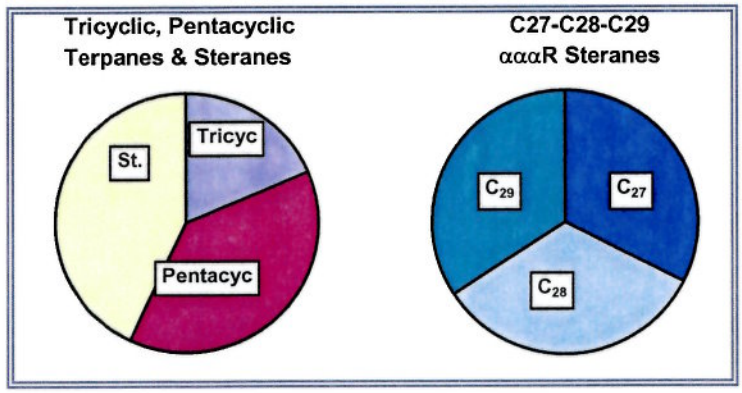
Weatherford LABORATORIES

SATURATE BIOMARKERS

Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #2
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000740
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	SCHRADER BLUFF
Well Name:	IVISHAK NO. 1	Geologic Age:	
Latitude:	69.3	Top Depth:	2443 FT
Longitude:	148.3	Bottom Depth:	2444 FT







RATIOS (on Areas)[1]		Appl[2]	TEV[3]
Steranes (*m/z* 217; 218)			
%C_{27} αββS (218)	27.2	D	
%C_{28} αββS (218)	38.8	D	
%C_{29} αββS (218)	34.1	D	
%C_{27} αααR (217)	32.6	D	
%C_{28} αααR (217)	33.4	D	
%C_{29} αααR (217)	34.1	D	
S/(S+R) (C_{29} ααα) (217)	0.49	M	0.55 (0.8%)
ββS/(ββS+ααR) (C29) (217)	0.52	M	0.70 (0.9%)
(C_{21}+C_{22})/(C_{27}+C_{28}+C_{29}) (217)	0.10		
C_{27}/C_{29} (αββS) (218)	0.80	D	
C_{28}/C_{29} (αββS) (218)	1.14	D	
Diaster/ααα Ster (C_{27}) (217)	2.31	M/D	1.00 (1.4%)
C30 αββS Sterane Index (218)	9.71	D	
C30 S+R Sterane Index (218)	9.60	D	
Terpanes (*m/z* 191)			
Oleanane/Hopane		D/A	
Gammacerane/Hopane	0.02	D	
Norhopane/Hopane	0.49	D	
Bisnorhopane/Hopane	0.10		
Diahopane/Hopane	0.13	M/D	
Moretane/Hopane	0.17	M	0.05 (0.7%)
25-*nor*-hopane/hopane		B	
Ts/(Ts+Tm) trisnorhopanes	0.49	M/D	1.00 (1.4%)
C29Ts/C29 Hopane	0.37	M	
H32 S/(R+S) Homohopanes	0.59	M	0.60 (0.6%)
H35/H34 Homohopanes	0.81	D	
C24 Tetracyclic/Hopane	0.12	D	
C24 Tetracyclic/C26 Tricyclics	0.79	D	
C23/C24 Tricyclic terpanes	1.69	D	
C19/C23 Tricyclic terpanes	0.41	D	
C26/C25 Tricyclic terpanes	0.91	D	
(C28+C29 Tricyclics)/Ts	1.33	A	
Various (*m/z* 191; 217)			
Steranes/Hopanes	1.19	D	
Tricyclic terpanes/Hopanes	0.50	M	1.00 (1.4%)
Tricyclic terpanes/Steranes	0.42	M/D	1.00 (1.4%)

[1]Definition and utility of the ratios can be found on our website www.brilabs.com

[2]A=Source Age; D=Depositional environment; M= Maturity; B=Possible Biodegradation

[3]Thermal equilibrium value of the biomarker ratio and in brackets the approximate VR value at which this value is reached

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #2**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2443 - 2444 FT**	**Lab ID:**	**TM000740**
Sampling Point:		**File Name:**	**M2090468.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
217	CHOL	*5β cholane (internal standard)*	42.107	8998	1364	100.0	100.0
125	BCAROT	β-carotane					
187	4MDIAM	4-methyldiamantane	9.225	63	22	0.7	1.6
187	1MDIAM	1-methyldiamantane	9.817	68	22	0.8	1.6
187	3MDIAM	3-methyldiamantane	10.201	63	19	0.7	1.4
188	DIAM	diamantane	9.068	54	17	0.6	1.2
191	TR19	C19 tricyclic terpane	18.757	1722	330	19.1	24.2
191	TR20	C20 tricyclic terpane	21.580	3584	554	39.8	40.6
191	TR21	C21 tricyclic terpane	24.926	3876	496	43.1	36.4
191	TR22	C22 tricyclic terpane	28.307	1126	152	12.5	11.1
191	TR23	C23 tricyclic terpane	32.553	4221	602	46.9	44.1
191	TR24	C24 tricyclic terpane	34.959	2504	364	27.8	26.7
191	DESAOL	des-A-oleanane	37.521	379	57	4.2	4.2
191	DESALU	des-A-lupane					
191	TR25A	C25 tricyclic terpane (a)	40.032	1122	163	12.5	12.0
191	TR25B	C25 tricyclic terpane (b)	40.154	1152	165	12.8	12.1
191	TET24	C24 tetracyclic terpane (TET)	43.275	1635	230	18.2	16.9
191	TR26A	C26 tricyclic terpane (a)	43.955	967	127	10.7	9.3
191	TR26B	C26 tricyclic terpane (b)	44.269	1102	149	12.2	10.9
191	TR28A	C28 tricyclic terpane (a)	52.864	904	132	10.0	9.7
191	TR28B	C28 tricyclic terpane (b)	53.474	1041	148	11.6	10.9
191	TR29A	C29 tricyclic terpane (a)	55.427	1124	168	12.5	12.3
191	TR29B	C29 tricyclic terpane (b)	56.159	1104	170	12.3	12.5
191	TR30A	C30 tricyclic terpane (a)	60.379	1202	164	13.4	12.0
191	TR30B	C30 tricyclic terpane (b)	61.216	937	128	10.4	9.4
191	TS	Ts 18α(H)-trisnorhopane	57.554	3135	443	34.8	32.5
191	TM	Tm 17α(H)-trisnorhopane	59.193	3272	455	36.4	33.4
191	H28	C28 17α18α21β(H)-bisnorhopane	63.221	1443	131	16.0	9.6
191	NOR25H	C29 Nor-25-hopane					
191	H29	C29 Tm 17α(H)21β(H)-norhopane	64.982	6936	1053	77.1	77.2
191	C29TS	C29 Ts 18α(H)-norneohopane	65.226	2536	339	28.2	24.9
191	DH30	C30 17α(H)-diahopane	66.010	1783	265	19.8	19.4
191	M29	C29 normoretane	66.969	1070	167	11.9	12.2
191	OLA	oleanane a					
191	OLB	oleanane b					
191	H30	C30 17α(H)-hopane	68.451	14161	2048	157.4	150.1
191	C30TS	C29 Ts 18α(H)-norneohopane	69.271	790	115	8.8	8.4
191	M30	C30 moretane	70.020	2341	342	26.0	25.1
191	H31S	C31 22S 17α(H) hopane	72.531	5020	744	55.8	54.5
191	H31R	C31 22R 17α(H) hopane	73.019	4079	544	45.3	39.9
191	GAM	gammacerane	73.472	331	61	3.7	4.5
191	H32S	C32 22S 17α(H) hopane	75.774	3156	437	35.1	32.0
191	H32R	C32 22R 17α(H) hopane	76.454	2237	316	24.9	23.2
191	H33S	C33 22S 17α(H) hopane	79.488	2011	280	22.3	20.5
191	H33R	C33 22R 17α(H) hopane	80.446	1417	216	15.7	15.8
191	H34S	C34 22S 17α(H) hopane	83.358	1427	200	15.9	14.7
191	H34R	C34 22R 17α(H) hopane	84.544	1066	142	11.8	10.4
191	H35S	C35 22S 17α(H) hopane	87.107	1227	173	13.6	12.7
191	H35R	C35 22R 17α(H) hopane	88.414	781	119	8.7	8.7

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #2**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2443 - 2444 FT**	**Lab ID:**	**TM000740**
Sampling Point:		**File Name:**	**M2090468.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
217	S21	C21 sterane	28.900	4479	527	49.8	38.6
217	S22	C22 sterane	33.616	1872	244	20.8	17.9
217	DIA27S	C27 βα 20S diasterane	48.296	5980	838	66.5	61.4
217	DIA27R	C27 βα 20R diasterane	49.865	3819	576	42.4	42.2
217	DIA28SA	C28 βα 20S diasterane a	52.115	3902	557	43.4	40.8
217	DIA28SB	C28 βα 20S diasterane b	52.394	4956	605	55.1	44.4
217	DIA28RA	C28 βα 20R diasterane a	53.823	2569	379	28.6	27.8
217	DIA28RB	C28 βα 20R diasterane b	54.015	2737	377	30.4	27.6
217	C27S	C27 αα 20S sterane	55.026	1725	307	19.2	22.5
217	BB_D29S	C27 ββ 20R + C29 dia20S	55.602	6591	463	73.3	33.9
217	C27BBS	C27 ββ 20S sterane	55.915	3433	384	38.2	28.2
217	C27R	C27 αα 20R sterane	56.822	2515	304	28.0	22.3
217	DIA29R	C29 βα 20R diasterane	57.415	5285	429	58.7	31.5
217	C28S	C28 αα 20S sterane	59.123	1998	233	22.2	17.1
217	C28BBR	C28 ββ 20R sterane(+5 βαα)	59.856	3101	363	34.5	26.6
217	C28BBS	C28 ββ 20S sterane	60.239	4002	431	44.5	31.6
217	C28R	C28 αα 20R sterane	61.407	2578	185	28.7	13.6
217	C29S	C29 αα 20S sterane	62.680	2565	249	28.5	18.3
217	C29BBR	C29 ββ 20R sterane(+5 βαα)	63.465	3066	355	34.1	26.0
217	C29BBS	C29 ββ 20S sterane	63.761	2904	331	32.3	24.3
217	C29R	C29 αα 20R sterane	65.191	2633	263	29.3	19.3
218	C27ABBR	C27 ββ 20R sterane	55.514	4254	508	47.3	37.2
218	C27ABBS	C27 ββ 20S sterane	55.915	3250	446	36.1	32.7
218	C28ABBR	C28 ββ 20R sterane	59.856	4114	529	45.7	38.8
218	C28ABBS	C28 ββ 20S sterane	60.239	4644	587	51.6	43.0
218	C29ABBR	C29 ββ 20R sterane	63.447	3858	524	42.9	38.4
218	C29ABBS	C29 ββ 20S sterane	63.779	4076	495	45.3	36.3
218	C30ABBR	C30 ββ 20R sterane	66.481	1282	167	14.2	12.2
218	C30ABBS	C30 ββ 20S sterane	66.743	1288	156	14.3	11.4
259	D27S	C27 βα 20S diasterane	48.314	3852	530	42.8	38.9
259	D27R	C27 βα 20R diasterane	49.865	2679	377	29.8	27.6
259	D28SA	C28 βα 20S diasterane a	52.115	2589	360	28.8	26.4
259	D28SB	C28 βα 20S diasterane b	52.394	2619	379	29.1	27.8
259	D28RA	C28 βα 20R diasterane a	53.823	2103	273	23.4	20.0
259	D28RB	C28 βα 20R diasterane b	54.015	1798	260	20.0	19.1
259	D29S	C29 βα 20S diasterane	55.636	3560	305	39.6	22.4
259	D29R	C29 βα 20R diasterane	57.380	2274	204	25.3	15.0
259	C30TP1	C30 tetracyclic polyprenoid	66.969	297	43	3.3	3.2
259	C30TP2	C30 tetracyclic polyprenoid	67.091	230	41	2.6	3.0

Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #2
Well Name:	IVISHAK NO. 1	Project #:	08-1633-A
Depth:	2443 - 2444 FT	Lab ID:	TM000740
Sampling Point:		File Name:	M2090468.D

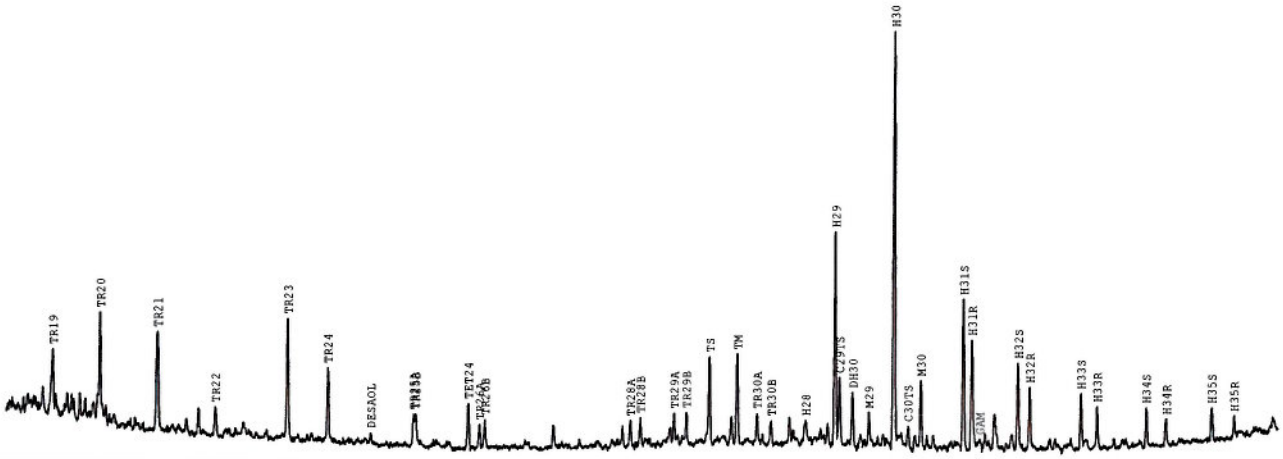
Miscellaneous Ratios	By Areas	By Heights
Terpanes (m/z 191)		
C19/C23 Tricyclic terpanes	0.41	0.55
C22/C21 Tricyclic terpanes	0.29	0.31
C22/C24 Tricyclic terpanes	0.45	0.42
C23/C24 Tricyclic terpanes	1.69	1.65
C24/C23 Tricyclic terpanes	0.59	0.60
C26/C25 Tricyclic terpanes	0.91	0.84
C24 Tetracyclic/C23 Tricyclic	0.39	0.38
C24 Tetracyclic/C26 Tricyclics	0.79	0.83
(C28+C29 Tricyclics)/Ts	1.33	1.40
Ts/Tm trisnorhopanes	0.96	0.97
Ts/(Ts+Tm) trisnorhopanes	0.49	0.49
25-nor-hopane/hopane		0.06
C29Ts/C29 Hopane	0.37	0.32
C29Ts/(C29TS+C29) Hopane	0.27	0.24
C23 Tricyclic/Hopane	0.30	0.29
C24 Tetracyclic/Hopane	0.12	0.11
Bisnorhopane/Hopane	0.10	0.06
Norhopane/Hopane	0.49	0.51
Diahopane/Hopane	0.13	0.13
Oleanane/Hopane		
Moretane/Hopane	0.17	0.17
Moretane/(Moretane+Hopane)	0.14	0.14
C30Ts/C30 Hopane	0.06	0.06
Gammacerane/Hopane	0.02	0.03
C32 S/(S+R) Homohopanes	0.59	0.58
Gammacerane/H31R Homohopane	0.08	0.11
C35/C34 Homohopanes	0.81	0.85
C35/C34 S Homohopanes	0.86	0.87
C35 Homohopane Index	0.09	0.09
Rel % C31 Homohopane	40.6	40.6
Rel % C32 Homohopane	24.1	23.7
Rel % C33Homohopane	15.3	15.6
Rel % C34 Homohopane	11.1	10.8
Rel % C35 Homohopane	9.0	9.2

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #2**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2443 - 2444 FT**	**Lab ID:**	**TM000740**
Sampling Point:		**File Name:**	**M2090468.D**

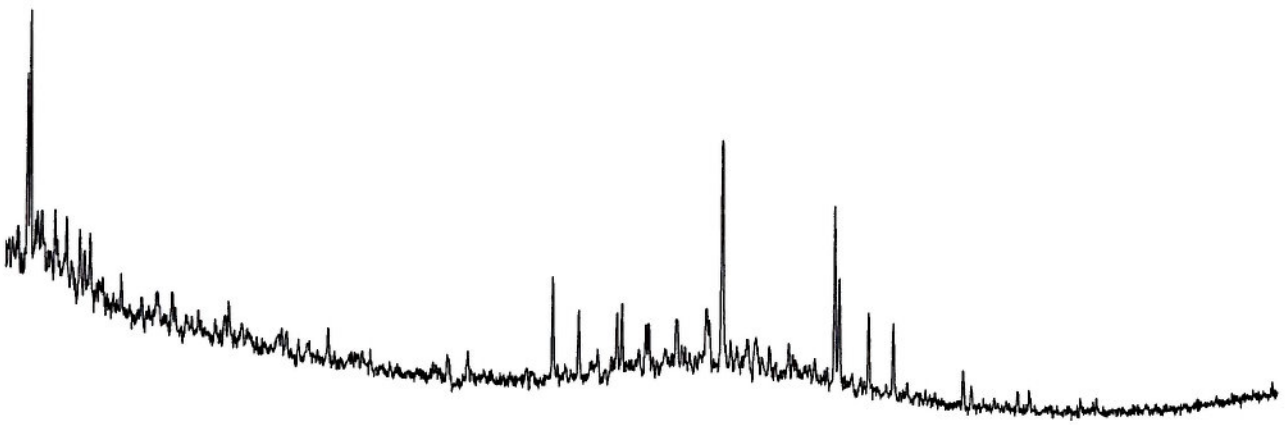
Miscellaneous Ratios	By Areas	By Heights
Steranes (m/z 217; 218)		
%C27 αααR (217)	32.6	40.4
%C28 αααR (217)	33.4	24.6
%C29 αααR (217)	34.1	35.0
S/R (C_{29} ααα) (217)	0.97	0.95
S/(S+R) (C_{29} ααα) (217)	0.49	0.49
ββ/(αα+ββ) (C_{29}) (217)	0.53	0.57
ββS/(ααR+ββS) (C29) (217)	0.52	0.56
αββS/αααR (C_{29}) (217)	1.10	1.26
(C_{21}+C_{22})/(C_{27}+C_{28}+C_{29}) (217)	0.10	0.10
Diaster/ααα Ster (C_{27}) (217)	2.31	2.31
Diaster/(Diaster+ααα) Ster (C_{27}) (217)	0.70	0.70
%C27 αββS (218)	27.2	29.2
%C28 αββS (218)	38.8	38.4
%C29 αββS (218)	34.1	32.4
%C27 αββ (R+S) (218)	31.0	30.9
%C28 αββ (R+S) (218)	36.2	36.1
%C29 αββ (R+S) (218)	32.8	33.0
C30 αββS Sterane Index (218)	9.7	9.3
C30 S+R Sterane Index (218)	9.6	9.5
C_{27}/C_{29} (αββS) (218)	0.80	0.90
C_{28}/C_{29} (αββS) (218)	1.14	1.19
C_{29}/C_{27} (αββS) (218)	1.25	1.11
C_{29}/C_{27} (αββ) (218)	1.06	1.07
Various (m/z 191; 217)		
Steranes/Hopanes	1.17	0.95
Tricyclic terpanes/Hopanes	0.49	0.50
Tricyclic terpanes/Steranes	0.42	0.53
Tricyclic/Pentacyclic Terpanes	48.7	49.4
Steranes/Terpanes	0.75	0.63
% Tricyclic Terpanes	18.7	20.3
% Pentacyclic Terpanes	38.36	20.34
% Steranes	43.0	38.5

Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #2
Well Name:	IVISHAK NO. 1	Project #:	08-1633-A
Depth:	2443 - 2444 FT	Lab ID:	TM000740
Sampling Point:		File Name:	M2090468.D

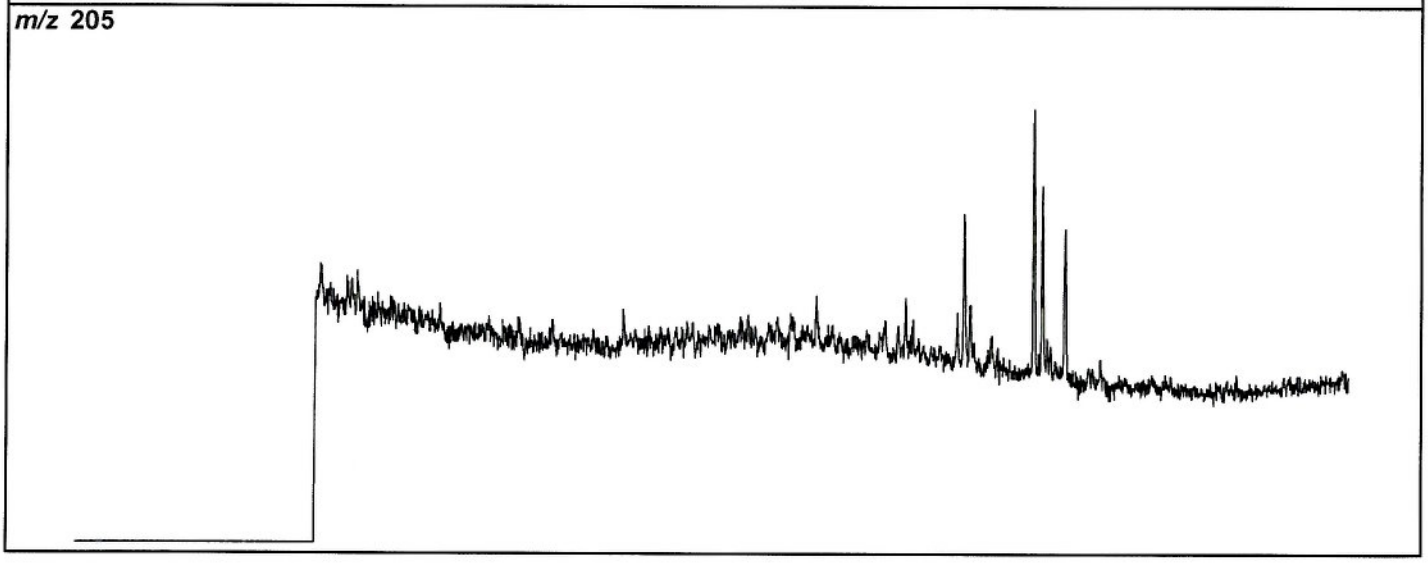
***m/z* 191:Tri-, tetra- and pentacyclic Terpanes**



***m/z* 177: Norhopanes**

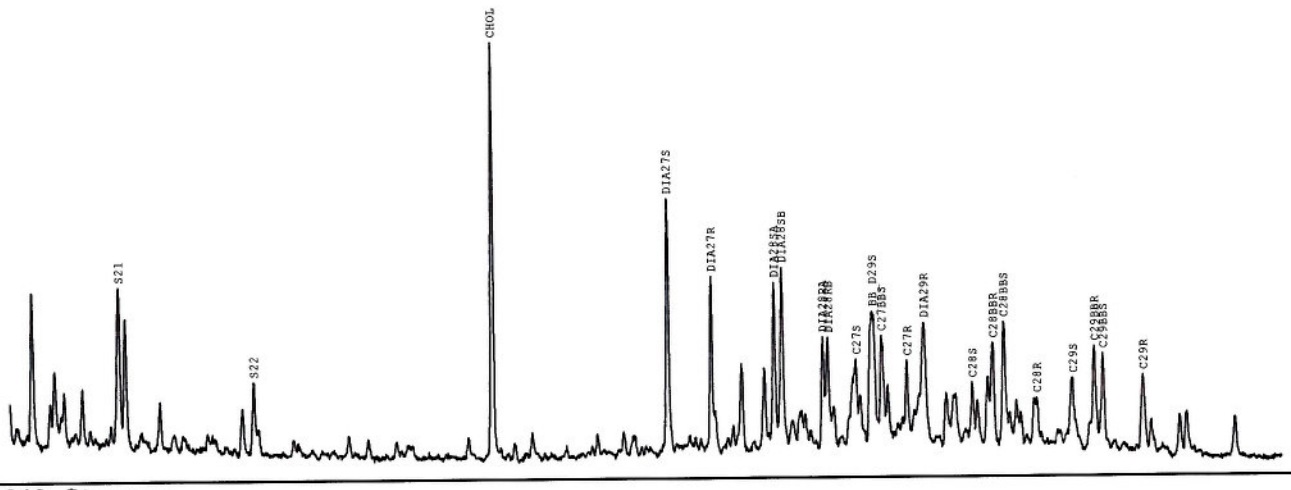


***m/z* 205**

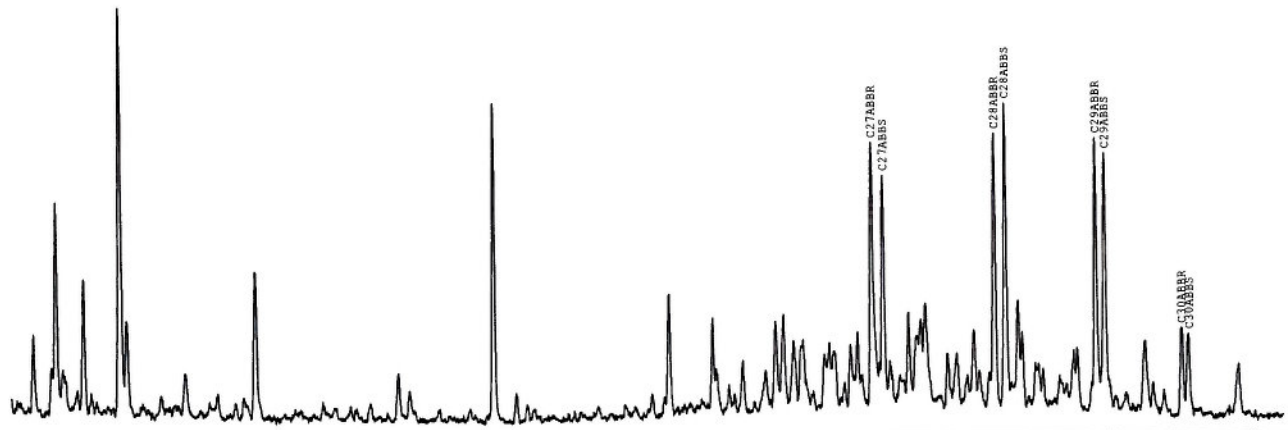


Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #2
Well Name:	IVISHAK NO. 1	Project #:	08-1633-A
Depth:	2443 - 2444 FT	Lab ID:	TM000740
Sampling Point:		File Name:	M2090468.D

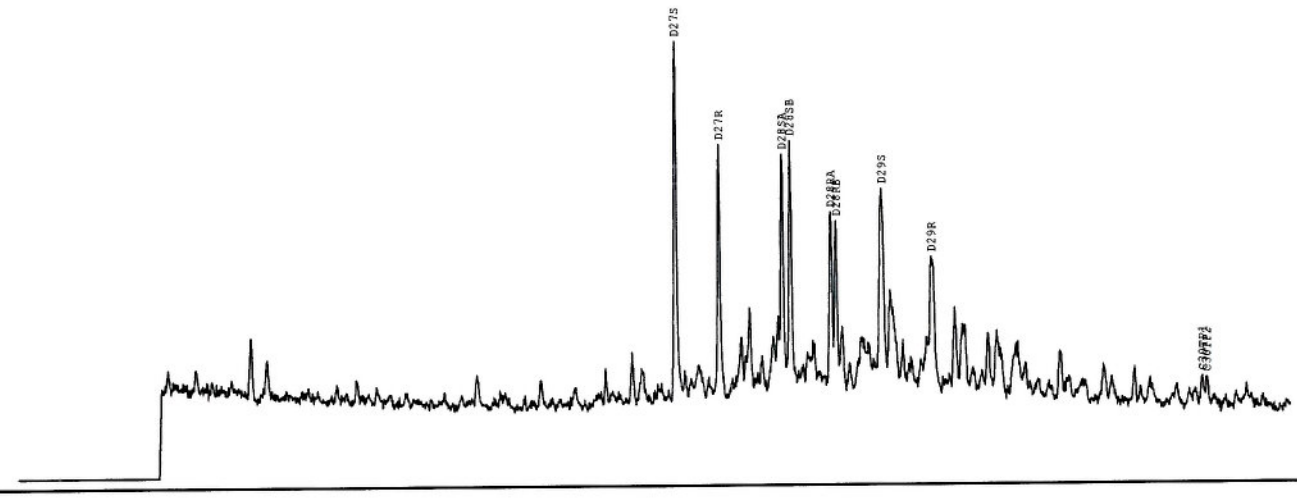
***m/z* 217: Steranes**



***m/z* 218: Steranes**



***m/z* 259: Diasteranes**



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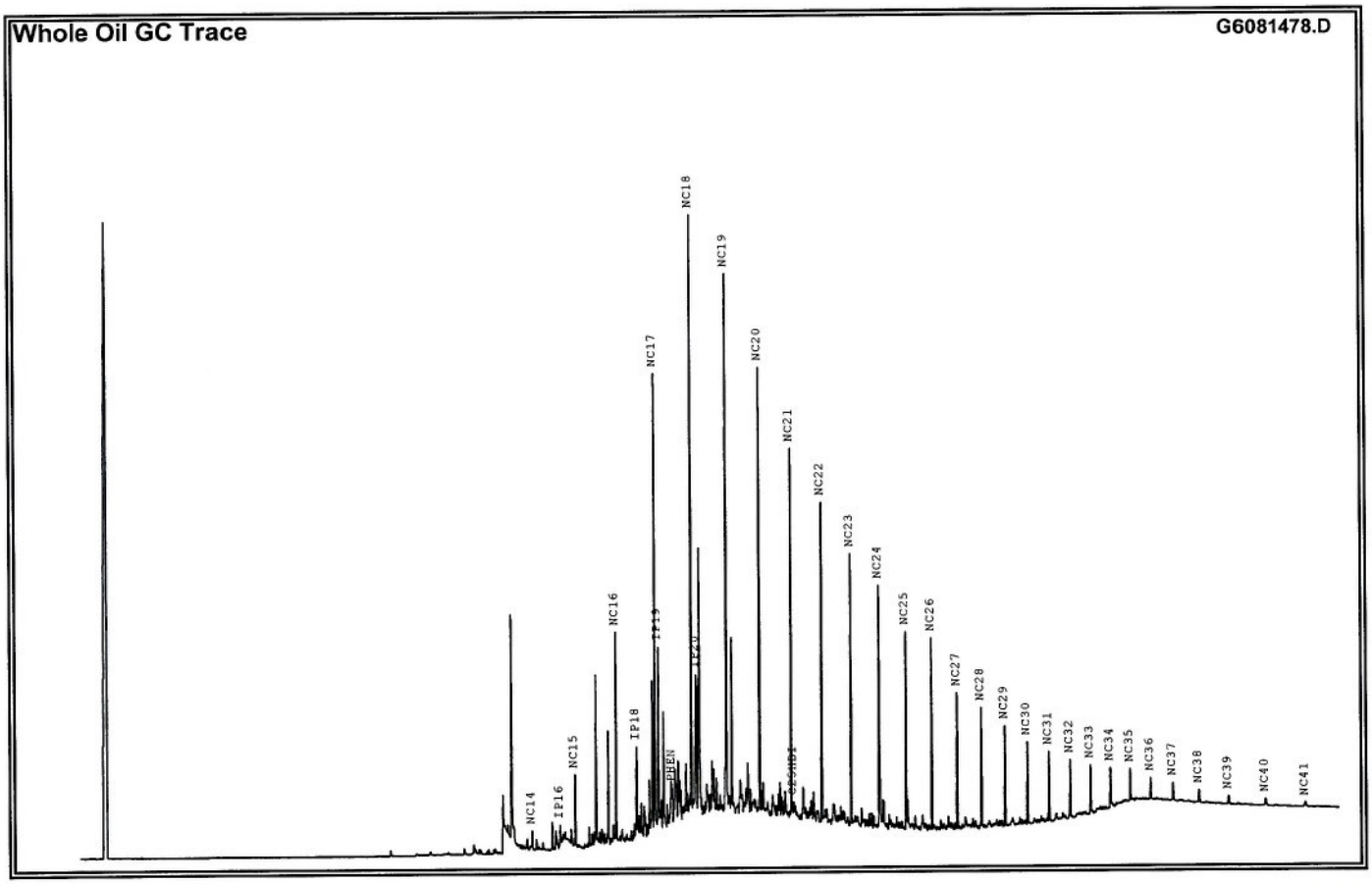
WHOLE OIL GC

Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #2
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000741
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	SCHRADER BLUFF
Well Name:	IVISHAK NO. 1	Geologic Age:	
Latitude:	69.3	Top Depth:	2462 FT
Longitude:	148.3	Bottom Depth:	2463 FT

Whole Oil GC Trace

G6081478.D



WGC parameters	
Pristane/Phytane	1.25
Pristane/$n C_{17}$	0.59
Phytane/$n C_{18}$	0.36
$n C_{18}/(nC_{18}+n C_{19})$	0.52
$n C_{17}/(nC_{17}+n C_{29})$	0.81
CPI Hunt[4]	0.92
Normal Paraffins	35.5
Isoprenoids	4.9
Cycloparaffins	
Branched (iso-) Paraffins	
BTX aromatics	
Resolved unknowns	59.2

Thompson[1]	
A.	BZ/$n C_6$
B.	TOL/$n C_7$
C.	($n C_6$+$n C_7$)/(CH+MCH)
I.	Isoheptane Value
F.	$n C_7$/MCH
U.	CH/MCP
R.	$n C_7$/2MH
S.	$n C_6$/22DMB
H.	Heptane Value
	MCH/$n C_7$
	mpXYL/$n C_8$

Mango[2]
P_1
P_2
P_3
$5N_1$
N_2
$6N_1$
K_1
K_2
$5N_1/6N_1$
P_3/N_2
ln(24DMP/23DMP)

Halpern[3]
Tr_1
Tr_2
Tr_3
Tr_4
Tr_5
Tr_7
Tr_8
C_1
C_2
C_3
C_4
C_5

[1]Thompson, K.F.M.,1983.GCA:V.47, p.303. [2]Mango, F.D.,1994.GCA: V.58, p.895. [3]Halpern,H.I.,1995,AAPG Bull.: V.79, p.801. [4]Hunt, 1979

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #2**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2462 - 2463 FT**	**Lab ID:**	**TM000741**
Sampling Point:		**File Name:**	**G6081478.D**

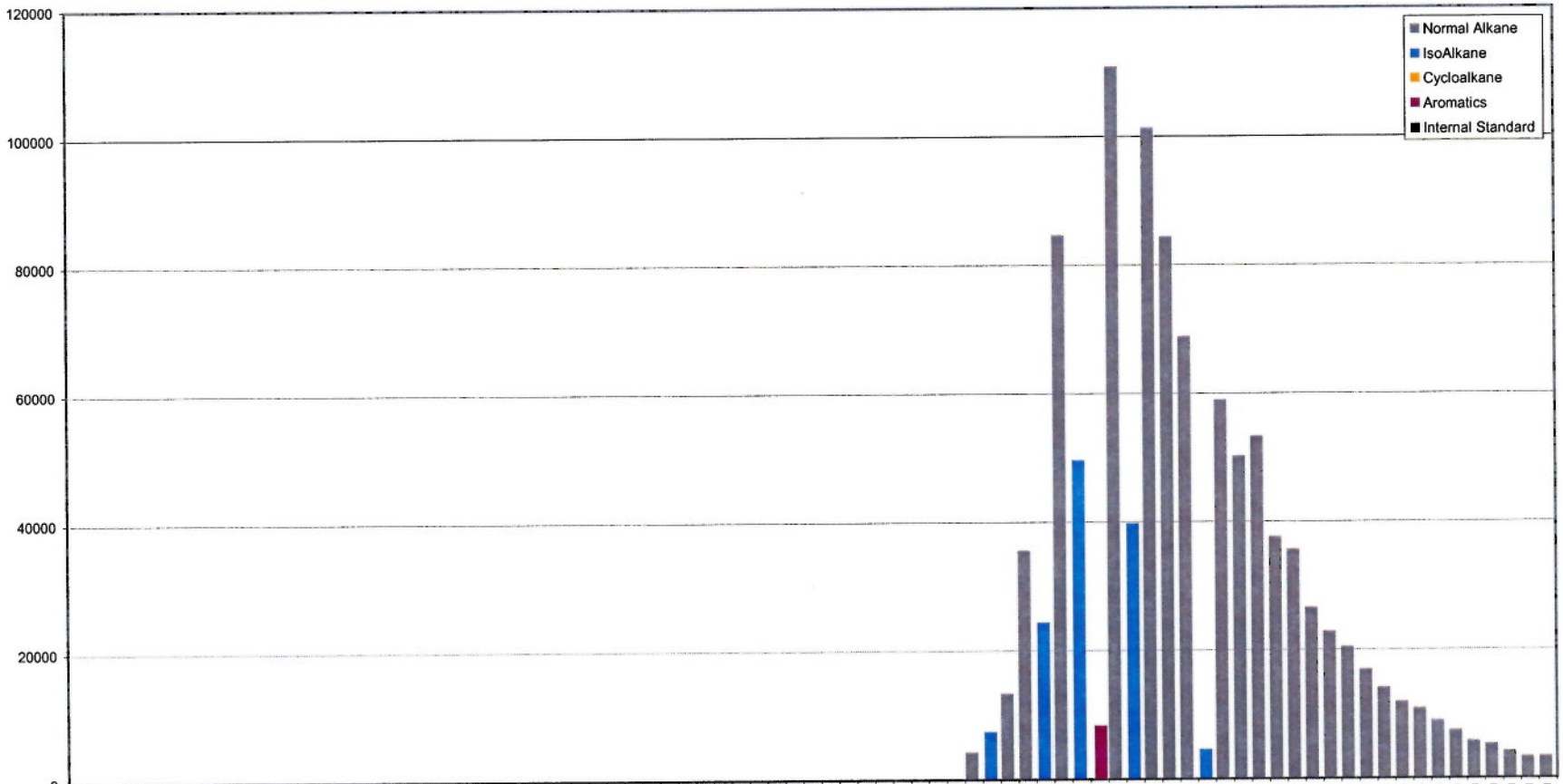
Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IC4	Iso-alkane C4					
NC4	Normal Alkane C4					
IC5	Iso-alkane C5					
NC5	Normal Alkane C5					
22DMB	2,2-Dimethylbutane					
CP	Cyclopentane					
23DMB	2,3-Dimethylbutane					
2MP	2-Methylpentane					
3MP	3-Methylpentane					
NC6	Normal Alkane C6					
22DMP	2,2-Dimethylpentane					
MCP	Methylcyclopentane					
24DMP	2,4-Dimethylpentane					
223TMB	2,2,3-Trimethylbutane					
BZ	Benzene					
33DMP	3,3-Dimethylpentane					
CH	Cyclohexane					
2MH	2-Methylhexane					
23DMP	2,3-Dimethylpentane					
11DMCP	1,1-Dimethylcyclopentane					
3MH	3-Methylhexane					
1C3DMCP	1-cis-3-Dimethylcyclopentane					
1T3DMCP	1-trans-3-Dimethylcyclopentane					
3EP	3-Ethylpentane					
1T2DMCP	1-trans-2-Dimethylcyclopentane					
NC7	Normal Alkane C7					
ISTD	Internal Standard					
MCH	Methylcyclohexane					
113TMCP	1,1,3,-Trimethylcyclopentane					
ECP	Ethylcyclopentane					
124TMCP	1,2,4-Trimethylcyclopentane					
123TMCP	1,2,3-Trimethylcyclopentane					
TOL	Toluene					
NC8	Normal Alkane C8					
IP9	Isoprenoid C9					
EB	Ethyl-benzene					
MXYL	*m*-xylene					
PXYL	*p*-xylene					
OXYL	*o*-xylene					
NC9	Normal Alkane C9					
IP10	Isoprenoid C10					
PB	Propyl-benzene					
NC10	Normal Alkane C10					
IP11	Isoprenoid C11					
NC11	Normal Alkane C11					
NC12	Normal Alkane C12					
IP13	Isoprenoid C13					
IP14	Isoprenoid C14					
NC13	Normal Alkane C13					
IP15	Isoprenoid C15					
NC14	Normal Alkane C14	45.583	4214	1123		

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #2**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2462 - 2463 FT**	**Lab ID:**	**TM000741**
Sampling Point:		**File Name:**	**G6081478.D**

Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IP16	Isoprenoid C16	48.237	7485	1322		
NC15	Normal Alkane C15	49.651	13361	3964		
NC16	Normal Alkane C16	53.507	35688	11196		
IP18	Isoprenoid C18	55.438	24466	4903		
NC17	Normal Alkane C17	57.169	84627	24390		
IP19	Isoprenoid C19 (Pristane)	57.526	49667	9794		
PHEN	Phenanthrene	58.848	8342	2023		
NC18	Normal Alkane C18	60.643	110836	32036		
IP20	Isoprenoid C20 (Phytane)	61.087	39767	7566		
NC19	Normal Alkane C19	63.943	101335	28676		
NC20	Normal Alkane C20	67.080	84374	23832		
NC21	Normal Alkane C21	70.085	68865	19759		
C25HBI	Highly Branch Isoprenoid C25	70.321	4570	948		
NC22	Normal Alkane C22	72.959	58955	17007		
NC23	Normal Alkane C23	75.715	50268	14523		
NC24	Normal Alkane C24	78.360	53344	12906		
NC25	Normal Alkane C25	80.902	37627	10514		
NC26	Normal Alkane C26	83.350	35696	10213		
NC27	Normal Alkane C27	85.709	26657	7287		
NC28	Normal Alkane C28	87.986	22846	6440		
NC29	Normal Alkane C29	90.183	20457	5356		
NC30	Normal Alkane C30	92.313	16984	4394		
NC31	Normal Alkane C31	94.375	14146	3749		
NC32	Normal Alkane C32	96.364	11927	3123		
NC33	Normal Alkane C33	98.305	10893	2615		
NC34	Normal Alkane C34	100.181	9008	2169		
NC35	Normal Alkane C35	102.008	7472	1785		
NC36	Normal Alkane C36	103.941	5817	1187		
NC37	Normal Alkane C37	106.093	5286	983		
NC38	Normal Alkane C38	108.530	4167	691		
NC39	Normal Alkane C39	111.339	3258	462		
NC40	Normal Alkane C40	114.573	3313	385		
NC41	Normal Alkane C41	118.336	2467	248		

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #2**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2462 - 2463 FT**	**Lab ID:**	**TM000741**
Sampling Point:		**File Name:**	**G6081478.D**

Histogram Based on Area



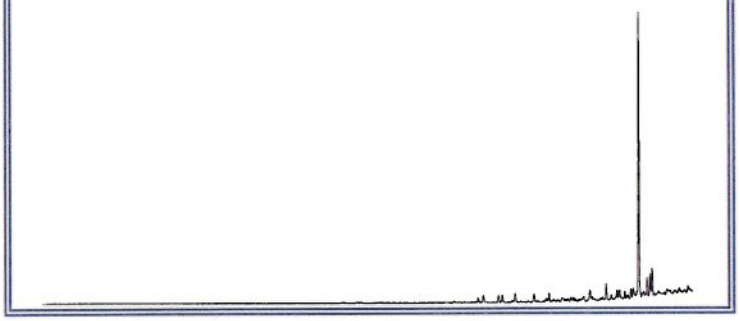
Parameter	Formula
WGC Parameters	
Pristane/Phytane	IP19/IP20
Pristane/nC17	IP19/NC17
Phytane/nC18	IP20/NC18
$nC_{18}/(nC_{18}+nC_{19})$	NC18/(NC18+NC19)
$nC_{17}/(nC_{17}+nC_{29})$	NC17/(NC17+NC29)
CPI Hunt[4]	((NC23+NC25+NC27+NC29+NC31)+(NC25+NC27+NC29+NC31+NC33))/(2*(NC24+NC26+NC28+NC30+NC32))
Normal Paraffins	100*(NC4+NC5+NC6+NC7+NC8+NC9+NC10+NC11+NC12+NC13+NC14+NC15+NC16+NC17+NC18+NC19+NC20+NC21+NC22+NC23+NC24+NC25+NC26+NC27+NC28+NC29+NC30+NC31+NC32+NC33+NC34+NC35+NC36+NC37+NC38+NC39+NC40+NC41)/TOTAL_RESOLVED
Isoprenoids	100*(IP9+IP10+IP11+IP13+IP14+IP15+IP16+IP18+IP19+IP20+C25HBI)/TOTAL_RESOLVED
Cycloparaffins	100*(CP+MCP+CH+11DMCP+1T3DMCP+1T2DMCP+MCH+113TMCP+ECP+124TMCP+123TMCP+1C3DMCP+1C2DMCP)/TOTAL_RESOLVED
Branched (iso-) Paraffins	100*(IC4+IC5+22DMB+23DMB+2MP+3MP+22DMP+24DMP+223TMB+33DMP+2MH+23DMP+3MH+3EP)/TOTAL_RESOLVED
BTX aromatics	100*(BZ+TOL+MXYL+PXYL+OXYL)/TOTAL_RESOLVED (*OXYL added 05/21/2007)
Thompson[1]	
BZ/nC6	BZ/NC6
TOL/nC7	TOL/NC7
(nC6+nC7)/(CH+MCH)	(NC6+NC7)/(CH+MCH)
Isoheptane Value	(2MH+3MH)/(1C3DMCP+1T3DMCP+1T2DMCP)
nC7/MCH	NC7/MCH
CH/MCP	CH/MCP
nC7/2MH	NC7/2MH
nC6/22DMB	NC6/22DMB
Heptane Value	100*NC7/(CH+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+1T2DMCP+MCH+NC7)
MCH/nC7	MCH/NC7
mpXYL/nC8	(MXYL+PXYL)/NC8
Mango[2]	
P1	100*NC7/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
P2	100*(2MH+3MH)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
P3	100*(3EP+33DMP+23DMP+24DMP+22DMP+223TMB)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
5N1	100*(ECP+1T2DMCP)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
N2	100*(11DMCP+1C3DMCP+1T3DMCP)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
6N1	100*(MCH+TOL)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
K1	(2MH+23DMP)/(3MH+24DMP)
K2	(2MH+3MH)/(2MH+3MH+11DMCP+1C3DMCP+1T3DMCP)
5N1/6N1	(ECP+1T2DMCP)/(MCH+TOL)
P3/N2	(3EP+33DMP+23DMP+24DMP+22DMP+223TMB)/(11DMCP+1C3DMCP+1T3DMCP)
ln(24DMP/23DMP)	ln(24DMP/23DMP)
Halpern[3]	
Tr1	TOL/11DMCP
Tr2	NC7/11DMCP
Tr3	3MH/11DMCP
Tr4	2MH/11DMCP
Tr5	(2MH+3MH)/11DMCP
Tr7	1T3DMCP/11DMCP
Tr8	(2MH+3MH)/(22DMP+23DMP+24DMP+33DMP+3EP)
C1	22DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C2	23DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C3	24DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C4	33DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C5	3EP/(22DMP+23DMP+24DMP+33DMP+3EP)

Weatherford LABORATORIES

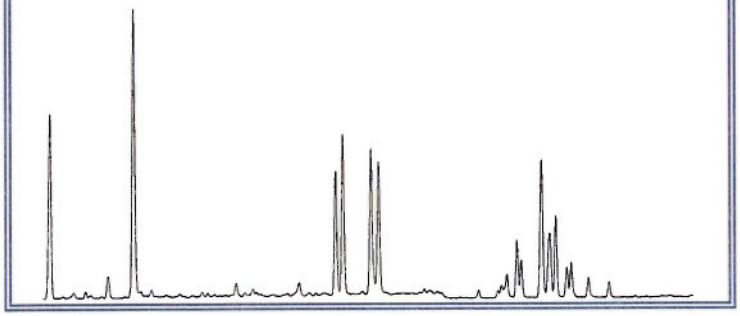
AROMATIC BIOMARKERS

Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #2
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000741
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	SCHRADER BLUFF
Well Name:	IVISHAK NO. 1	Geologic Age:	
Latitude:	69.3	Top Depth:	2462 FT
Longitude:	148.3	Bottom Depth:	2463 FT

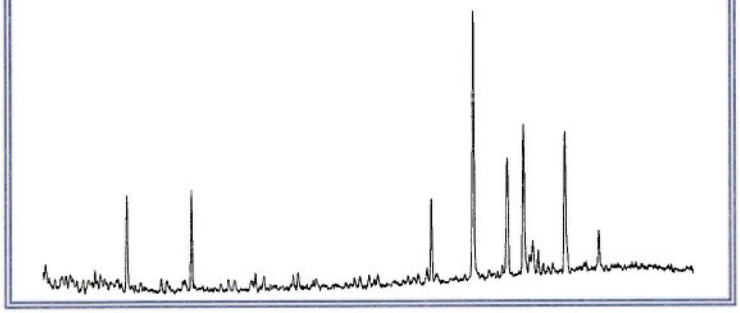
m/z 128+142+156+170+184: Methylnaphthalenes M1090395.D



m/z 178+192+206: Phenanthrenes M1090395.D



m/z 231: Triaromatic steroids M1090395.D



RATIOS (on Areas)[1]		Appl[2]	TEV[3]
Mono- (MAS) and Triaromatic Steroids (TAS)			
(C20+C21)/Σ TAS	0.17	M	1.0 (1.3%)
TAS #1 20/20+27	0.34	M	
TAS #2 21/21+28	0.36	M	
%26 TAS	17.4	D	
%27 TAS	38.7	D	
%28 TAS	33.9	D	
%29 TAS	10.1	D	
C28/C26 20S TAS	1.95		
C28/C27 20R TAS	0.88		
Dia/Regular C27 MAS	1.53		
%27 MAS	27.9	D	
%28 MAS	46.3	D	
%29 MAS	25.8	D	
(C21+C22)/Σ MAS	0.32	M	1.0 (1.3%)
TAS/(MAS+TAS)	0.69	M	
TA28/(TA28+MA29)	0.79	M	1.0 (0.8%)
Triaromatic Methylsteroids			
Dinosteroid Index	0.36	A	
C4/C3+C4 Mester	0.54	A	
Phenanthrenes, Naphthalenes, and Dibenzothiophenes			
MPI-1	0.73	M	
Rc(a) if Ro < 1.3 (Ro%)	0.81	M	
Rc(b) if Ro > 1.3 (Ro%)	1.86	M	
MPI-2	0.82	M	
DNR-1	1.89	M	
DNR-2	1.45	M	
TNR1	1.06	M	
TDE-1	6.21	M	
TDE-2	0.21	M	
MDR	3.09	M	
Rm (Ro%)	0.75	M	
MDR23	0.49	M	
MDR1	0.35	M	
DBT/Phenanthrene	0.10	D	

[1]Definition and utility of the ratios can be found on our website www.BaselineDGSI.com

[2]A=Source Age; D=Depositional environment; M= Maturity

[3]Thermal equilibrium value of the biomarker ratio and in brackets the approximate VR value at which this value is reached

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #2**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2462 - 2463 FT**	**Lab ID:**	**TM000741**
Sampling Point:		**File Name:**	**M1090395.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
230	OTP	*Ortho-terphenyl* (internal standard)				0.0	0.0
128	NAPH	Naphthalene					
142	2MN	2-Methylnaphthalene	37.962	131	24		
142	1MN	1-Methylnaphthalene	39.158	144	19		
154	BP	Biphenyl	44.651	94	14		
156	2EN	2-Ethylnaphthalene	46.167	62	11		
156	1EN	1-Ethylnaphthalene	46.201	33	8		
156	26DMN	2,6-Dimethylnaphthalene	47.060	260	43		
156	27DMN	2,7-Dimethylnaphthalene	47.195	250	44		
156	1317DMN	1,3 & 1,7-Dimethylnaphthalenes	48.189	749	97		
156	16DMN	1,6-Dimethylnaphthalene	48.442	631	91		
156	23DMN	2,3-Dimethylnaphthalene	49.604	98	23		
156	14DMN	1,4-Dimethylnaphthalene	49.705	254	45		
156	15DMN	1,5-Dimethylnaphthalene	49.823	270	39		
156	12DMN	1,2-Dimethylnaphthalene	50.784	207	34		
168	2MBP	2-Methylbiphenyl					
168	DPM	Diphenylmethane					
168	3MBP	3-Methylbiphenyl	53.261	334	54		
168	4MBP	4-Methylbiphenyl	53.935	227	36		
168	DBF	Dibenzofuran	55.367	60	9		
170	BB_EMN	Ethyl-methyl-Naphthalene	55.114	933	130		
170	AB_EMN	Ethyl-methyl-Naphthalene	56.310	567	85		
170	137TMN	1,3,7-Trimethylnaphthalene	56.765	2826	474		
170	136TMN	1,3,6-Trimethylnaphthalene	57.136	4588	762		
170	146135T	(1,4,6+1,3,5)-Trimethylnaphthalenes	58.214	4377	658		
170	236TMN	2,3,6-Trimethylnaphthalene	58.467	4619	785		
170	127TMN	1,2,7-Trimethylnaphthalene	59.208	1190	217		
170	167126T	(1,6,7+1,2,6)-Trimethylnaphthalenes	59.394	5702	862		
170	124TMN	1,2,4-Trimethylnaphthalene	60.304	579	108		
170	125TMN	1,2,5-Trimethylnaphthalene	60.742	3596	670		
178	PHEN	Phenanthrene	70.245	130097	28300		
184	1357	1,3,5,7-Tetramethylnaphthalene	64.701	6015	1064		
184	1367	1,3,6,7-Tetramethylnaphthalene	65.864	8067	1735		
184	1247	(1,2,4,7+1,2,4,6+1,4,6,7)-Tetramethylnaphthalenes	66.605	4963	946		
184	1257	1,2,5,7-Tetramethylnaphthalene	66.791	3782	785		
184	2367	2,3,6,7-Tetramethylnaphthalene	67.161	2704	581		
184	1267	1,2,6,7-Tetramethylnaphthalene	67.599	3347	717		
184	1237	1,2,3,7-Tetramethylnaphthalene	67.785	1214	247		
184	1236	1,2,3,6-Tetramethylnaphthalene	68.054	2798	567		
184	1256	1,2,5,6-Tetramethylnaphthalene	68.762	6471	1566		
184	DBT	Dibenzothiophene	68.981	12912	2712		
191	BH32	C32 Benzohopane	117.653	659	100		
191	BH33	C33 Benzohopane	119.810	515	70		
191	BH34	C34 Benzohopane					
191	BH35	C35 Benzohopane					
192	3MP	3-Methylphenanthrene	75.182	52545	12150		
192	2MP	2-Methylphenanthrene	75.350	66847	15703		
192	9MP	9-Methylphenanthrene	76.041	61715	14196		
192	1MP	1-Methylphenanthrene	76.226	54115	12942		

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #2**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2462 - 2463 FT**	**Lab ID:**	**TM000741**
Sampling Point:		**File Name:**	**M1090395.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
198	CAD	Cadalene	66.201	4765	951		
198	4MDBT	4 Methyl Dibenzothiophene	73.513	14087	3402		
198	23MDBT	2 & 3 Methyl Dibenzothiophenes	74.288	6279	1280		
198	1MDBT	1 Methyl Dibenzothiophene	75.097	4552	1014		
206	36DMP	3,6-Dimethylphenanthrene	79.392	10024	2328		
206	26DMP	2,6-Dimethylphenanthrene	79.645	23808	5688		
206	27DMP	2,7-Dimethylphenanthrene	79.763	14506	3677		
206	39DMP	(3,9+3,10+2,10+1,3)-Dimethylphenanthrenes	80.269	66356	13475		
206	29DMP	(2,9+1,6)-Dimethylphenanthrenes	80.471	36494	6278		
206	17DMP	1,7-Dimethylphenanthrene	80.606	33395	8023		
206	23DMP	2,3-Dimethylphenanthrene	80.876	13082	2915		
206	19DMP	1,9-Dimethylphenanthrene	80.994	14047	3413		
206	18DMP	1,8-Dimethylphenanthrene	81.415	8057	1934		
206	12DMP	1,2-Dimethylphenanthrene	81.921	6128	1503		
231	231A20	C20 Triaromatic Steroid	92.236	2577	603		
231	231B21	C21 Triaromatic	94.730	2509	622		
231	231C26	C26 20S Triaromatic	103.916	2291	530		
231	231D26	C27 20S & C26 20R Triaromatic	105.517	7899	1663		
231	TADMD1	C28 23,24-Cholestane Triaromatic	106.124	240	55		
231	TADMD2	C28 23,24-Cholestane Triaromatic	106.613	326	82		
231	231E28	C28 20S Triaromatic	106.815	4466	743		
231	231F27	C27 20R Triaromatic	107.456	5101	945		
231	TADMD3	C28 23,24-Cholestane Triaromatic	107.540	290	103		
231	C29TA1	C29 Triaromatic	107.810	1311	222		
231	C29TA2	C29 Triaromatic	108.029	668	164		
231	TADMD4	C28 23,24-Cholestane Triaromatic	108.871	198	35		
231	231G28	C28 20R Triaromatic	109.057	4467	887		
231	TADMD5	C28 23,24-Cholestane Triaromatic	109.141	358	174		
231	C29TA3	C29 Triaromatic	110.355	1335	263		
245	C3S	C27 20S 3-Methyl Triaromatic Steroid	106.596	507	109		
245	C4S	C27 20S 4-Methyl Triaromatic Steroid	107.203	659	145		
245	E2S	C28 20S 2-Methyl Triaromatic Steroid	107.742	280	71		
245	E3SC3R	C28 20S 3-Methyl & C27 20R 3-Methyl TAS	108.113	1419	282		
245	E4SC4R	C28 20S 4-Methyl & C27 20R 4-Methyl TAS	108.703	2223	356		
245	S2S	C29 20S 2-Methyl Triaromatic Steroid	108.956	539	69		
245	DA	Triaromatic Dinosteroid a	109.124	493	91		
245	S3S	C29 20S 3-Methyl Triaromatic Steroid	109.310	1161	143		
245	DB	Triaromatic Dinosteroid b	109.731	1303	279		
245	S4SE2R	C29 20S 4-Methyl & C28 20R 2-Methyl TAS	109.883	1797	230		
245	E3R	C28 20R 3-Methyl Triaromatic Steroid	110.051	1235	207		
245	E4R	C28 20R 4-Methyl Triaromatic Steroid	110.641	1478	245		
245	DC	Triaromatic Dinosteroid c	110.827	1498	329		
245	DD	Triaromatic Dinosteroid d	110.928	1503	300		
245	S2R	C29 20R 2-Methyl Triaromatic Steroid	111.349	652	108		
245	S3R	C29 20R 3-Methyl Triaromatic Steroid	111.568	1087	204		
245	DE	Triaromatic Dinosteroid e	111.703	1441	245		
245	S4R	C29 20R 4-Methyl Triaromatic Steroid	112.175	1169	215		
245	DF	Triaromatic Dinosteroid f	112.293	1735	341		

Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #2
Well Name:	IVISHAK NO. 1	Project #:	08-1633-A
Depth:	2462 - 2463 FT	Lab ID:	TM000741
Sampling Point:		File Name:	M1090395.D

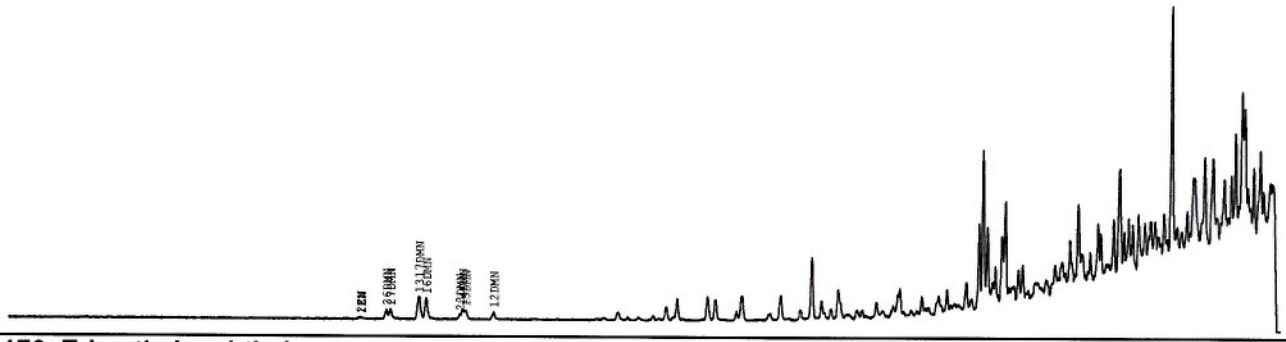
Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
253	S253A	C21 Ring-C Monoaromatic Steroid	84.483	3068	527		
253	S253B	C22 Monoaromatic steroid	86.943	1247	240		
253	S253C	C27 Reg 5β(H),10β(CH3) 20S	96.921	391	87		
253	S253D	C27 Dia 10β(H),5β(CH3) 20S	97.056	598	150		
253	S253E	C27 Dia10βH,5βCH3 20R+Reg5βH,10βCH3 20R	98.523	959	186		
253	S253F	C27 Reg 5α(H),10β(CH3) 20S	98.674	248	65		
253	S253G	C28 Dia 10αH,5αCH3 20s+Reg5βH,10βCH3 20S	99.079	1504	279		
253	S253H	C27 Reg 5α(H),10β(CH3) 20R	100.343	384	73		
253	S253I	C28 Reg 5α(H),10β(CH3) 20S	100.511	323	78		
253	S253J	C28 Dia 10αH,5αCH3 20R+Reg5βH,10βCH3 20R	100.680	1780	376		
253	S253K	C29 Dia 10βH,5βCH3 20S+Reg5βH,10βCH3 20S	100.832	842	166		
253	S253L	C29 Reg 5α(H),10β(CH3) 20S	102.130	241	47		
253	S253M	C28 Reg 5α(H),10β(CH3) 20R	102.416	666	90		
253	S253N	C29 Dia 10βH,5βCH3 20R+Reg5βH,10βCH3 20R	102.517	922	168		
253	S253O	C29 Reg 5α(H),10β(CH3) 20R	104.118	380	61		
365	SH29	C29 8,14-secohopanoids	104.000	7065	1527		
365	SH30	C30 8,14-secohopanoids	105.972	5108	1310		

Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #2
Well Name:	IVISHAK NO. 1	Project #:	08-1633-A
Depth:	2462 - 2463 FT	Lab ID:	TM000741
Sampling Point:		File Name:	M1090395.D

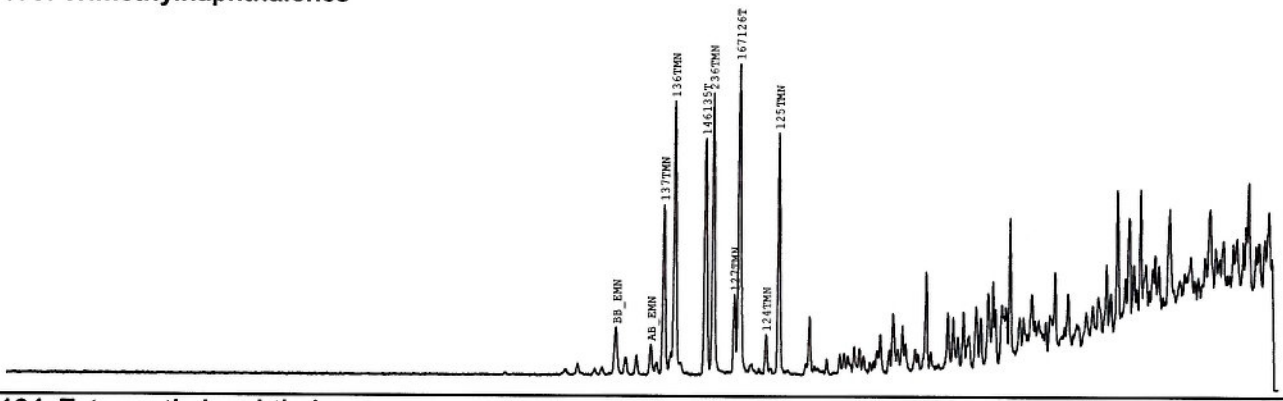
Miscellaneous Ratios	By Areas	By Heights
Triaromatic Steroids m/z 231		
(C20+C21)/Σ TAS	0.17	0.20
TAS #1 20/20+27	0.34	0.39
TAS #2 21/21+28	0.36	0.41
%26TAS	17.4	20.2
%27TAS	38.7	36.0
%28TAS	33.9	33.8
%29TAS	10.1	10.0
C28/C26 20S TAS	1.95	1.40
C28/C27 20R TAS	0.88	0.94
Monoaromatic Steroids m/z 253		
Dia/Regular C27 MAS	1.53	1.72
%27 MAS	27.9	30.7
%28 MAS	46.3	45.1
%29 MAS	25.8	24.2
(C21+C22)/Σ MAS	0.32	0.30
TAS/(MAS+TAS)	0.69	0.71
TA28/(TA28+MA29)	0.79	0.79
Triaromatic Methylsteroids m/z 245		
Dinosteroid Index	0.36	0.40
C4/C3+C4 Mester	0.54	0.54
Phenanthrenes and Naphthalenes		
MPI-1	0.73	0.75
MPI-2	0.82	0.85
MPI-3	1.03	1.03
Rc(a) if Ro < 1.3 (Ro%)	0.81	0.82
Rc(b) if Ro > 1.3 (Ro%)	1.86	1.85
DNR-1	1.89	2.23
DNR-2	1.45	1.28
TNR1	1.06	1.19
TDE-1	6.21	6.20
TDE-2	0.21	0.25
MDR	3.09	3.36
Rm (Ro%)	0.75	0.76
MDR23	0.49	0.47
MDR1	0.35	0.37
DBT/Phenanthrene	0.10	0.10

Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #2
Well Name:	IVISHAK NO. 1	Project #:	08-1633-A
Depth:	2462 - 2463 FT	Lab ID:	TM000741
Sampling Point:		File Name:	

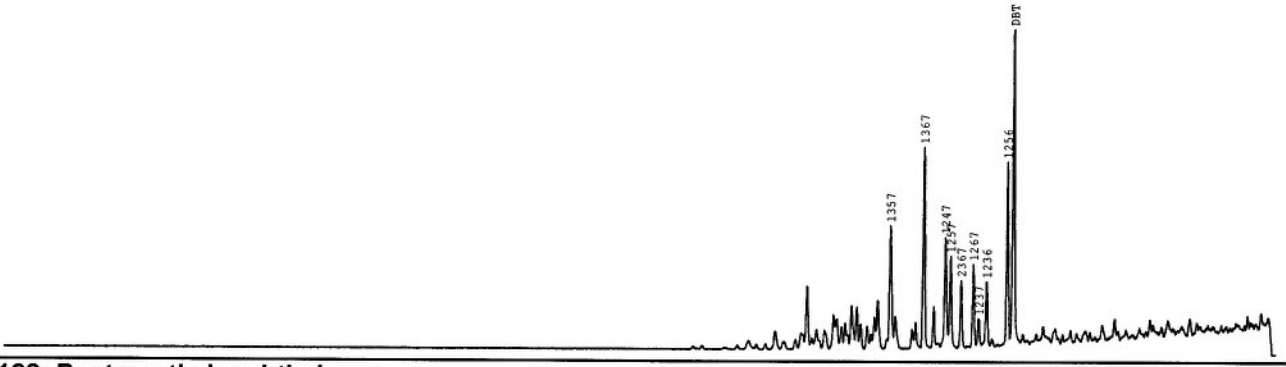
***m/z* 156: Dimethylnaphthalenes**



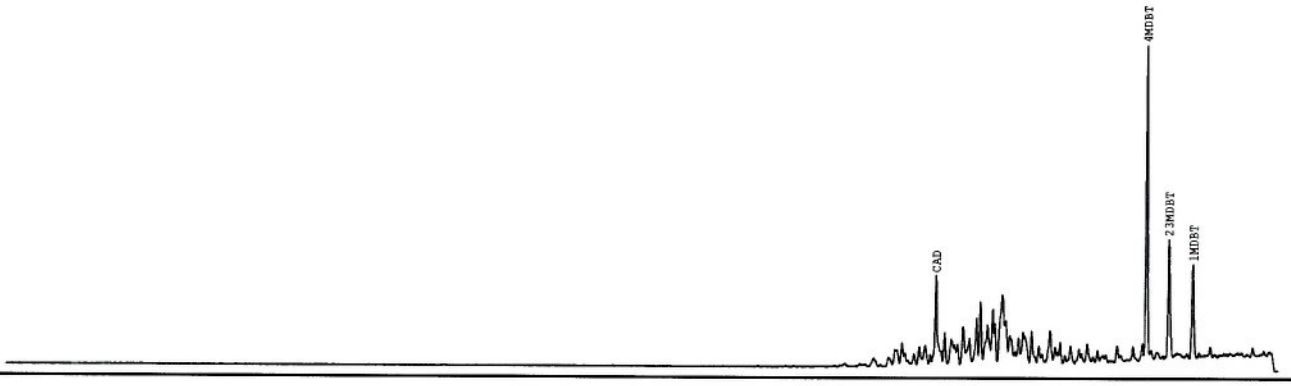
***m/z* 170: Trimethylnaphthalenes**



***m/z* 184: Tetramethylnaphthalenes**

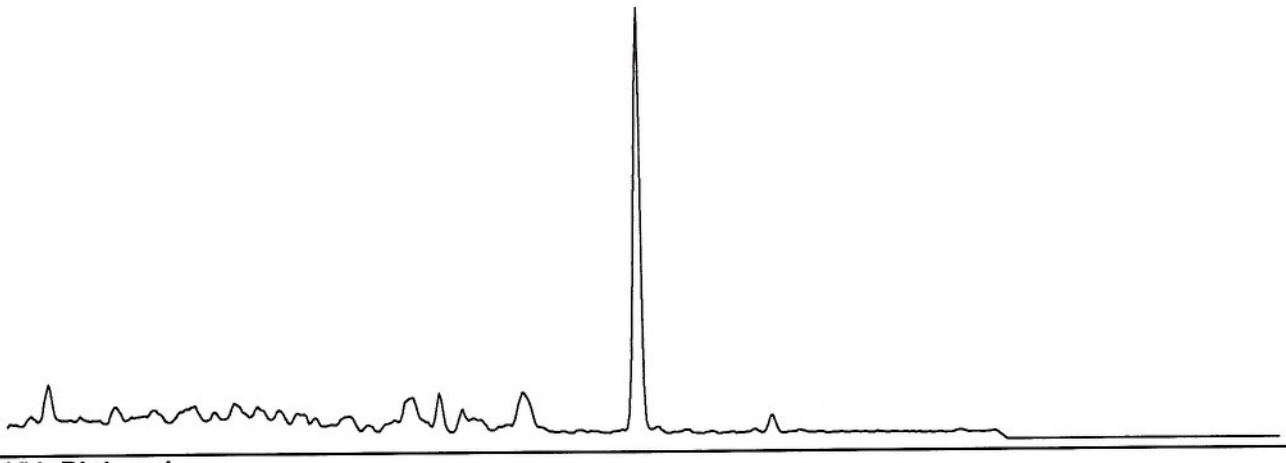


***m/z* 198: Pentamethylnaphthalenes**

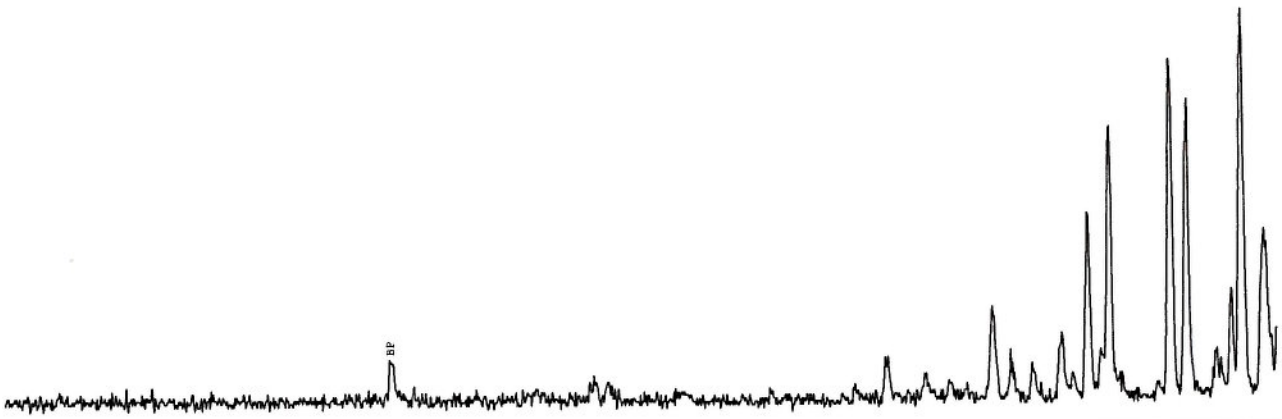


Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #2
Well Name:	IVISHAK NO. 1	Project #:	08-1633-A
Depth:	2462 - 2463 FT	Lab ID:	TM000741
Sampling Point:		File Name:	M1090395.D

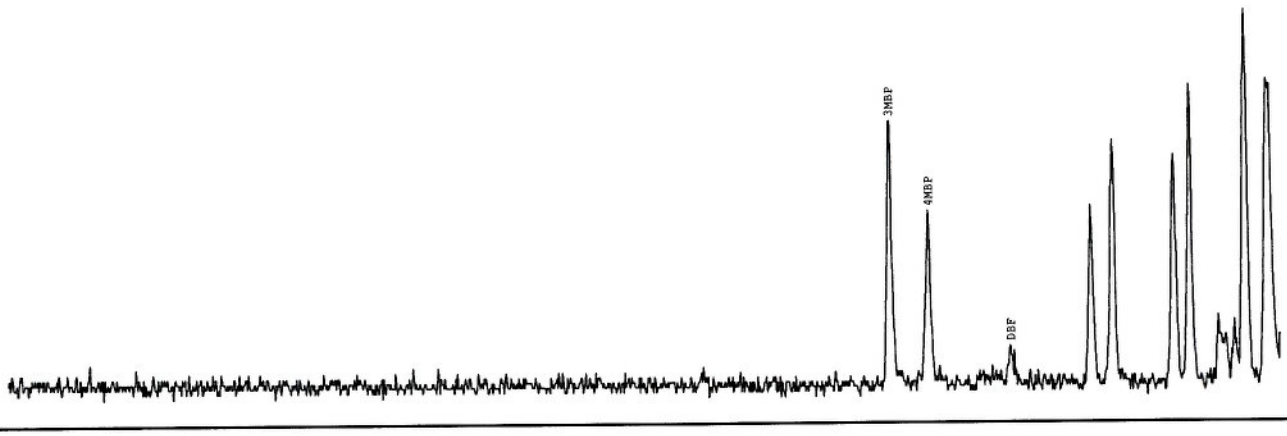
m/z 230: Ortho-Terphenyl (Inter. Std)



m/z 154: Biphenyl

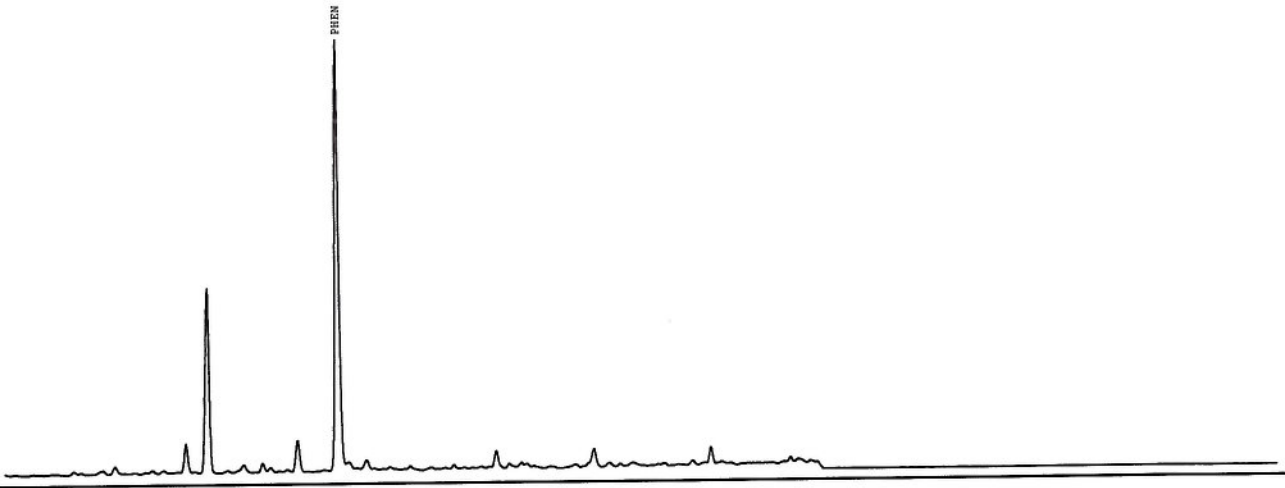


m/z 168: Methylbiphenyls (MBP)

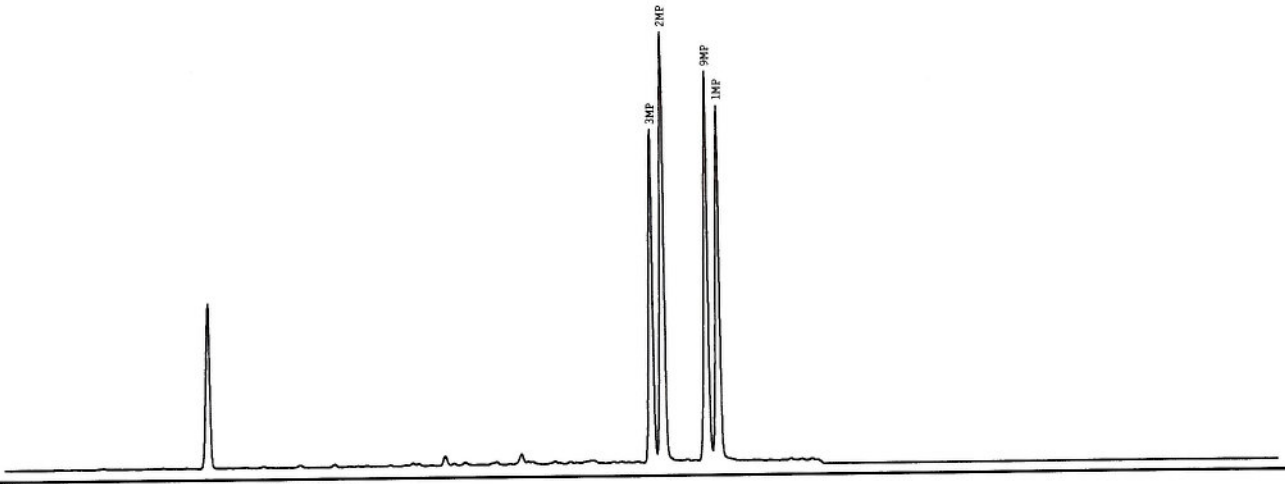


Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #2
Well Name:	IVISHAK NO. 1	Project #:	08-1633-A
Depth:	2462 - 2463 FT	Lab ID:	TM000741
Sampling Point:		File Name:	M1090395.D

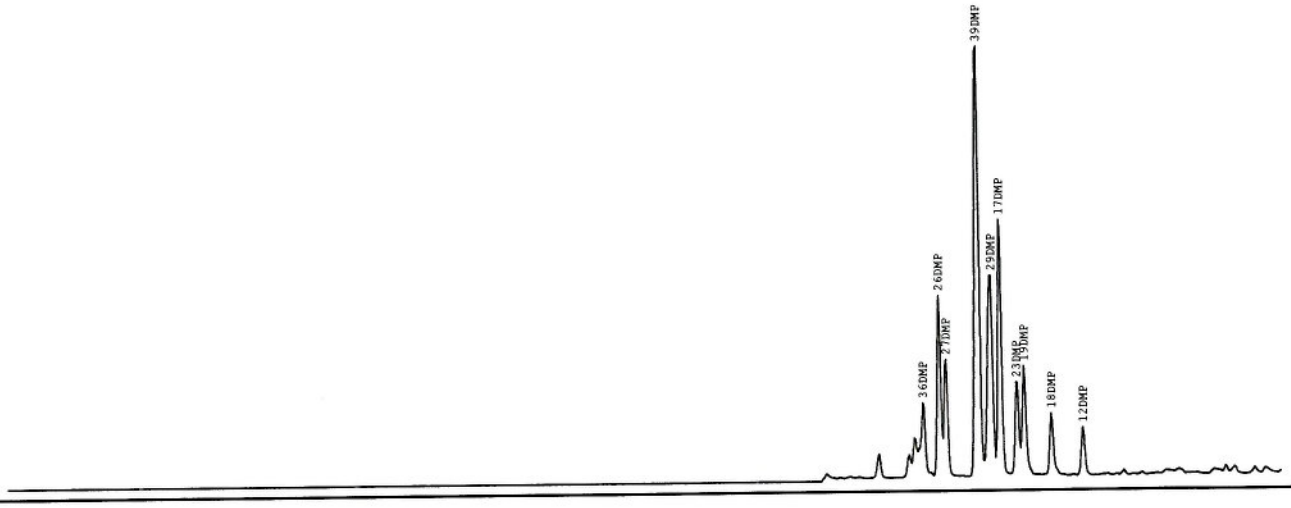
***m/z* 178: Phenanthrene**



***m/z* 192: Methylphenanthrenes**

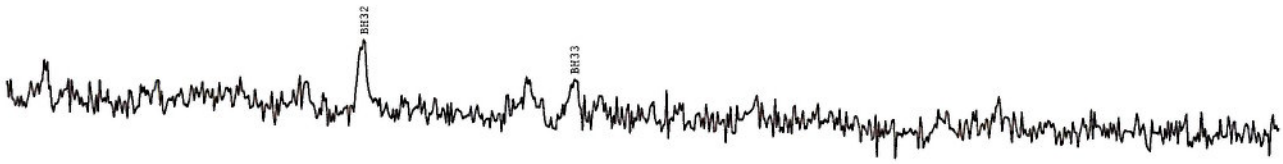


***m/z* 206: Dimethylpehnanthrenes**

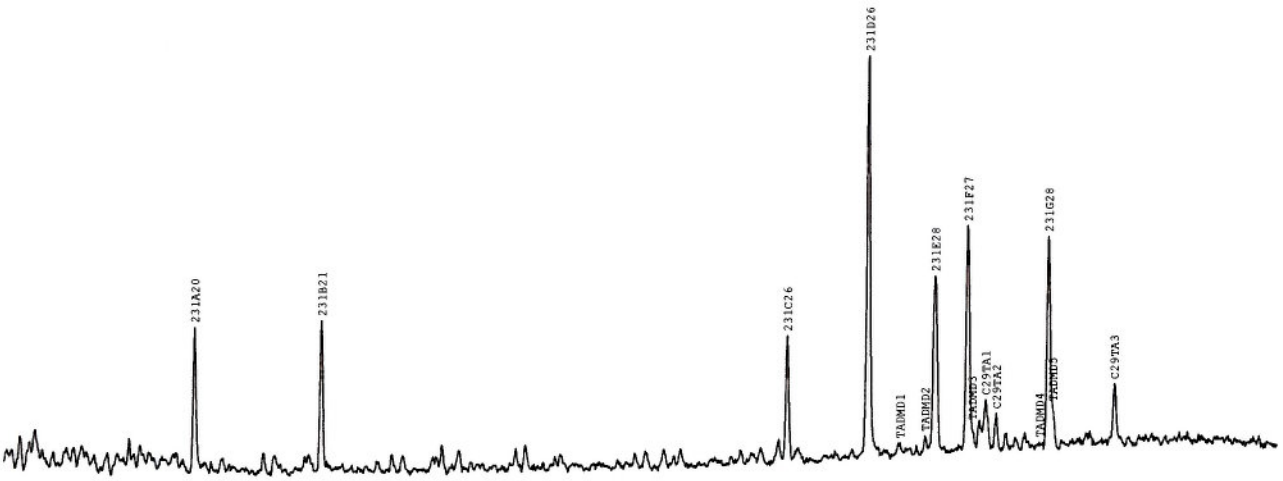


Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #2
Well Name:	IVISHAK NO. 1	Project #:	08-1633-A
Depth:	2462 - 2463 FT	Lab ID:	TM000741
Sampling Point:		File Name:	M1090395.D

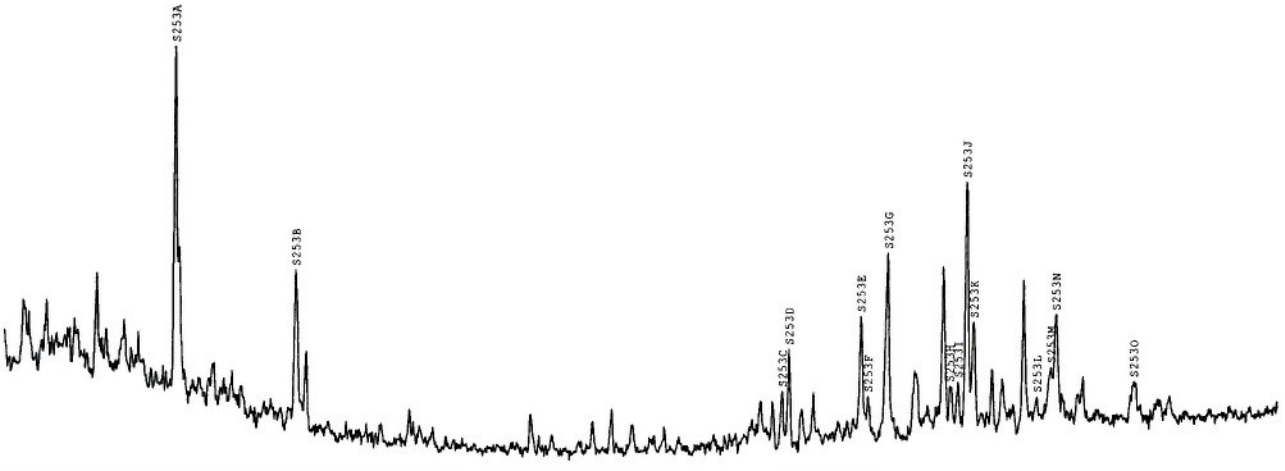
***m/z* 191: Benzohopanes**



***m/z* 231: Triaromatic Steranes**



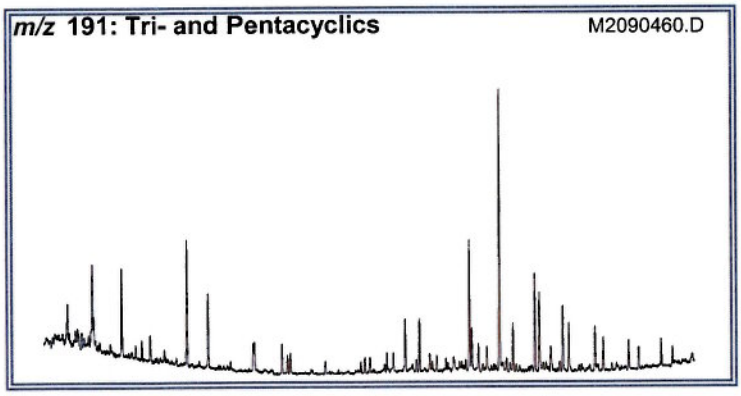
***m/z* 253: Monoaromatic Steranes**

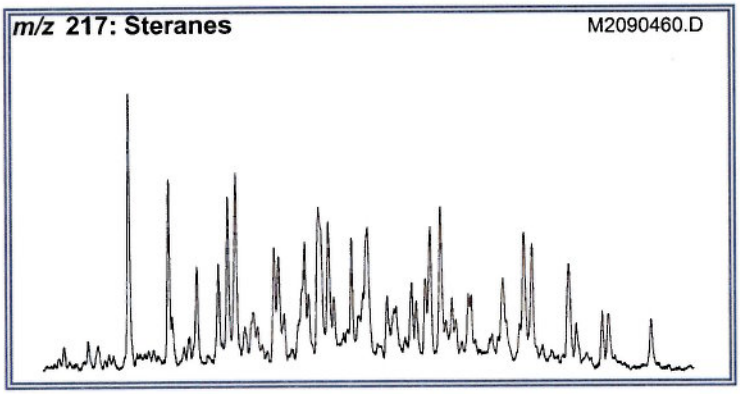


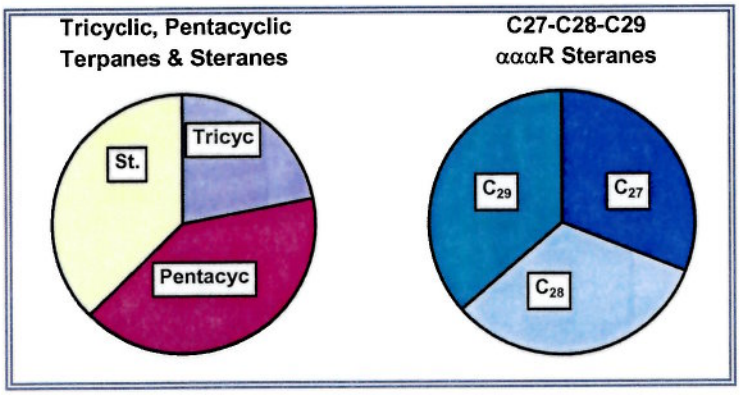
Weatherford LABORATORIES

SATURATE BIOMARKERS

Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #2
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000741
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	SCHRADER BLUFF
Well Name:	IVISHAK NO. 1	Geologic Age:	
Latitude:	69.3	Top Depth:	2462 FT
Longitude:	148.3	Bottom Depth:	2463 FT







RATIOS (on Areas)[1]		Appl[2]	TEV[3]
Steranes (*m/z* 217; 218)			
%C_{27} αββS (218)	28.0	D	
%C_{28} αββS (218)	38.2	D	
%C_{29} αββS (218)	33.8	D	
%C_{27} αααR (217)	31.0	D	
%C_{28} αααR (217)	32.7	D	
%C_{29} αααR (217)	36.3	D	
S/(S+R) (C_{29} ααα) (217)	0.46	M	0.55 (0.8%)
ββS/(ββS+ααR) (C29) (217)	0.51	M	0.70 (0.9%)
(C_{21}+C_{22})/(C_{27}+C_{28}+C_{29}) (217)	0.14		
C_{27}/C_{29} (αββS) (218)	0.83	D	
C_{28}/C_{29} (αββS) (218)	1.13	D	
Diaster/ααα Ster (C_{27}) (217)	1.84	M/D	1.00 (1.4%)
C30 αββS Sterane Index (218)	9.99	D	
C30 S+R Sterane Index (218)	9.73	D	
Terpanes (*m/z* 191)			
Oleanane/Hopane		D/A	
Gammacerane/Hopane	0.05	D	
Norhopane/Hopane	0.47	D	
Bisnorhopane/Hopane	0.09		
Diahopane/Hopane	0.10	M/D	
Moretane/Hopane	0.18	M	0.05 (0.7%)
25-*nor*-hopane/hopane	0.04	B	
Ts/(Ts+Tm) trisnorhopanes	0.49	M/D	1.00 (1.4%)
C29Ts/C29 Hopane	0.36	M	
H32 S/(R+S) Homohopanes	0.58	M	0.60 (0.6%)
H35/H34 Homohopanes	0.88	D	
C24 Tetracyclic/Hopane	0.11	D	
C24 Tetracyclic/C26 Tricyclics	0.76	D	
C23/C24 Tricyclic terpanes	1.76	D	
C19/C23 Tricyclic terpanes	0.23	D	
C26/C25 Tricyclic terpanes	0.70	D	
(C28+C29 Tricyclics)/Ts	1.34	A	
Various (*m/z* 191; 217)			
Steranes/Hopanes	0.93	D	
Tricyclic terpanes/Hopanes	0.57	M	1.00 (1.4%)
Tricyclic terpanes/Steranes	0.61	M/D	1.00 (1.4%)

[1]Definition and utility of the ratios can be found on our website www.brilabs.com

[2]A=Source Age; D=Depositional environment; M= Maturity; B=Possible Biodegradation

[3]Thermal equilibrium value of the biomarker ratio and in brackets the approximate VR value at which this value is reached

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #2**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2462 - 2463 FT**	**Lab ID:**	**TM000741**
Sampling Point:		**File Name:**	**M2090460.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
217	CHOL	*5β cholane (internal standard)*	42.106	15524	2434	100.0	100.0
125	BCAROT	β-carotane					
187	4MDIAM	4-methyldiamantane	9.223	45	15	0.3	0.6
187	1MDIAM	1-methyldiamantane	9.815	40	11	0.3	0.5
187	3MDIAM	3-methyldiamantane	10.198	48	15	0.3	0.6
188	DIAM	diamantane	9.083	31	10	0.2	0.4
191	TR19	C19 tricyclic terpane	18.790	2323	491	15.0	20.2
191	TR20	C20 tricyclic terpane	21.613	6380	1017	41.1	41.8
191	TR21	C21 tricyclic terpane	24.941	7723	1046	49.7	43.0
191	TR22	C22 tricyclic terpane	28.322	2297	327	14.8	13.4
191	TR23	C23 tricyclic terpane	32.569	9918	1507	63.9	61.9
191	TR24	C24 tricyclic terpane	34.975	5625	890	36.2	36.6
191	DESAOL	des-A-oleanane	37.504	715	109	4.6	4.5
191	DESALU	des-A-lupane					
191	TR25A	C25 tricyclic terpane (a)	40.049	2253	344	14.5	14.1
191	TR25B	C25 tricyclic terpane (b)	40.171	2298	355	14.8	14.6
191	TET24	C24 tetracyclic terpane (TET)	43.275	2430	362	15.7	14.9
191	TR26A	C26 tricyclic terpane (a)	43.937	1507	224	9.7	9.2
191	TR26B	C26 tricyclic terpane (b)	44.251	1682	250	10.8	10.3
191	TR28A	C28 tricyclic terpane (a)	52.846	1375	193	8.9	7.9
191	TR28B	C28 tricyclic terpane (b)	53.474	1463	197	9.4	8.1
191	TR29A	C29 tricyclic terpane (a)	55.427	1513	234	9.7	9.6
191	TR29B	C29 tricyclic terpane (b)	56.176	1418	233	9.1	9.6
191	TR30A	C30 tricyclic terpane (a)	60.361	1682	216	10.8	8.9
191	TR30B	C30 tricyclic terpane (b)	61.198	1361	201	8.8	8.3
191	TS	Ts 18α(H)-trisnorhopane	57.536	4295	636	27.7	26.1
191	TM	Tm 17α(H)-trisnorhopane	59.175	4414	643	28.4	26.4
191	H28	C28 17α18α21β(H)-bisnorhopane	63.150	1953	171	12.6	7.0
191	NOR25H	C29 Nor-25-hopane	63.813	830	123	5.3	5.1
191	H29	C29 Tm 17α(H)21β(H)-norhopane	64.981	10676	1565	68.8	64.3
191	C29TS	C29 Ts 18α(H)-norneohopane	65.243	3825	521	24.6	21.4
191	DH30	C30 17α(H)-diahopane	66.010	2334	335	15.0	13.8
191	M29	C29 normoretane	66.986	2018	298	13.0	12.2
191	OLA	oleanane a					
191	OLB	oleanane b					
191	H30	C30 17α(H)-hopane	68.451	22652	3347	145.9	137.5
191	C30TS	C29 Ts 18α(H)-norneohopane	69.270	1177	169	7.6	6.9
191	M30	C30 moretane	70.020	4174	601	26.9	24.7
191	H31S	C31 22S 17α(H) hopane	72.530	7880	1175	50.8	48.3
191	H31R	C31 22R 17α(H) hopane	73.019	6842	950	44.1	39.0
191	GAM	gammacerane	73.455	1043	119	6.7	4.9
191	H32S	C32 22S 17α(H) hopane	75.773	5536	792	35.7	32.5
191	H32R	C32 22R 17α(H) hopane	76.453	4072	593	26.2	24.4
191	H33S	C33 22S 17α(H) hopane	79.504	3844	539	24.8	22.1
191	H33R	C33 22R 17α(H) hopane	80.446	2863	415	18.4	17.1
191	H34S	C34 22S 17α(H) hopane	83.375	2656	367	17.1	15.1
191	H34R	C34 22R 17α(H) hopane	84.543	1932	272	12.4	11.2
191	H35S	C35 22S 17α(H) hopane	87.124	2391	345	15.4	14.2
191	H35R	C35 22R 17α(H) hopane	88.414	1625	248	10.5	10.2

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #2**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2462 - 2463 FT**	**Lab ID:**	**TM000741**
Sampling Point:		**File Name:**	**M2090460.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
217	S21	C21 sterane	28.915	8540	1038	55.0	42.6
217	S22	C22 sterane	33.633	3557	480	22.9	19.7
217	DIA27S	C27 βα 20S diasterane	48.313	6894	981	44.4	40.3
217	DIA27R	C27 βα 20R diasterane	49.848	4589	673	29.6	27.7
217	DIA28SA	C28 βα 20S diasterane a	52.097	4470	610	28.8	25.1
217	DIA28SB	C28 βα 20S diasterane b	52.393	5534	694	35.6	28.5
217	DIA28RA	C28 βα 20R diasterane a	53.823	3138	427	20.2	17.5
217	DIA28RB	C28 βα 20R diasterane b	53.997	3362	395	21.7	16.2
217	C27S	C27 αα 20S sterane	55.026	3052	447	19.7	18.4
217	BB_D29S	C27 ββ 20R + C29 dia20S	55.549	8310	571	53.5	23.5
217	C27BBS	C27 ββ 20S sterane	55.932	4599	519	29.6	21.3
217	C27R	C27 αα 20R sterane	56.804	3196	460	20.6	18.9
217	DIA29R	C29 βα 20R diasterane	57.432	5880	497	37.9	20.4
217	C28S	C28 αα 20S sterane	59.140	2674	298	17.2	12.2
217	C28BBR	C28 ββ 20R sterane(+5 βαα)	59.855	4326	499	27.9	20.5
217	C28BBS	C28 ββ 20S sterane	60.256	5204	569	33.5	23.4
217	C28R	C28 αα 20R sterane	61.320	3367	258	21.7	10.6
217	C29S	C29 αα 20S sterane	62.662	3226	314	20.8	12.9
217	C29BBR	C29 ββ 20R sterane(+5 βαα)	63.464	4262	477	27.5	19.6
217	C29BBS	C29 ββ 20S sterane	63.778	3911	436	25.2	17.9
217	C29R	C29 αα 20R sterane	65.190	3734	364	24.1	15.0
218	C27ABBR	C27 ββ 20R sterane	55.514	5704	744	36.7	30.6
218	C27ABBS	C27 ββ 20S sterane	55.915	4469	633	28.8	26.0
218	C28ABBR	C28 ββ 20R sterane	59.855	5360	698	34.5	28.7
218	C28ABBS	C28 ββ 20S sterane	60.256	6088	797	39.2	32.7
218	C29ABBR	C29 ββ 20R sterane	63.464	5300	673	34.1	27.7
218	C29ABBS	C29 ββ 20S sterane	63.778	5391	688	34.7	28.3
218	C30ABBR	C30 ββ 20R sterane	66.498	1713	243	11.0	10.0
218	C30ABBS	C30 ββ 20S sterane	66.707	1771	236	11.4	9.7
259	D27S	C27 βα 20S diasterane	48.313	4332	640	27.9	26.3
259	D27R	C27 βα 20R diasterane	49.848	2975	445	19.2	18.3
259	D28SA	C28 βα 20S diasterane a	52.097	2852	402	18.4	16.5
259	D28SB	C28 βα 20S diasterane b	52.393	2999	414	19.3	17.0
259	D28RA	C28 βα 20R diasterane a	53.805	2267	291	14.6	12.0
259	D28RB	C28 βα 20R diasterane b	54.014	1923	279	12.4	11.5
259	D29S	C29 βα 20S diasterane	55.636	3904	350	25.1	14.4
259	D29R	C29 βα 20R diasterane	57.362	2989	244	19.3	10.0
259	C30TP1	C30 tetracyclic polyprenoid	66.951	564	78	3.6	3.2
259	C30TP2	C30 tetracyclic polyprenoid	67.126	457	73	2.9	3.0

Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #2
Well Name:	IVISHAK NO. 1	Project #:	08-1633-A
Depth:	2462 - 2463 FT	Lab ID:	TM000741
Sampling Point:		File Name:	M2090460.D

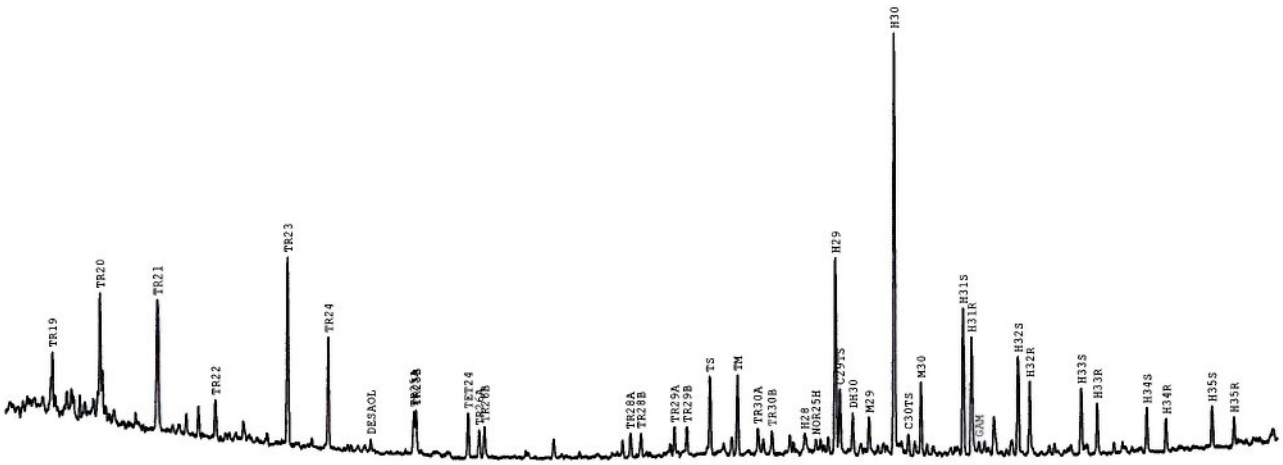
Miscellaneous Ratios	By Areas	By Heights
Terpanes (m/z 191)		
C19/C23 Tricyclic terpanes	0.23	0.33
C22/C21 Tricyclic terpanes	0.30	0.31
C22/C24 Tricyclic terpanes	0.41	0.37
C23/C24 Tricyclic terpanes	1.76	1.69
C24/C23 Tricyclic terpanes	0.57	0.59
C26/C25 Tricyclic terpanes	0.70	0.68
C24 Tetracyclic/C23 Tricyclic	0.25	0.24
C24 Tetracyclic/C26 Tricyclics	0.76	0.76
(C28+C29 Tricyclics)/Ts	1.34	1.35
Ts/Tm trisnorhopanes	0.97	0.99
Ts/(Ts+Tm) trisnorhopanes	0.49	0.50
25-nor-hopane/hopane	0.04	0.05
C29Ts/C29 Hopane	0.36	0.33
C29Ts/(C29TS+C29) Hopane	0.26	0.25
C23 Tricyclic/Hopane	0.44	0.45
C24 Tetracyclic/Hopane	0.11	0.11
Bisnorhopane/Hopane	0.09	0.05
Norhopane/Hopane	0.47	0.47
Diahopane/Hopane	0.10	0.10
Oleanane/Hopane		
Moretane/Hopane	0.18	0.18
Moretane/(Moretane+Hopane)	0.16	0.15
C30Ts/C30 Hopane	0.05	0.05
Gammacerane/Hopane	0.05	0.04
C32 S/(S+R) Homohopanes	0.58	0.57
Gammacerane/H31R Homohopane	0.15	0.13
C35/C34 Homohopanes	0.88	0.93
C35/C34 S Homohopanes	0.90	0.94
C35 Homohopane Index	0.10	0.10
Rel % C31 Homohopane	37.1	37.3
Rel % C32 Homohopane	24.2	24.3
Rel % C33Homohopane	16.9	16.7
Rel % C34 Homohopane	11.6	11.2
Rel % C35 Homohopane	10.1	10.4

Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #2**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2462 - 2463 FT**	**Lab ID:**	**TM000741**
Sampling Point:		**File Name:**	**M2090460.D**

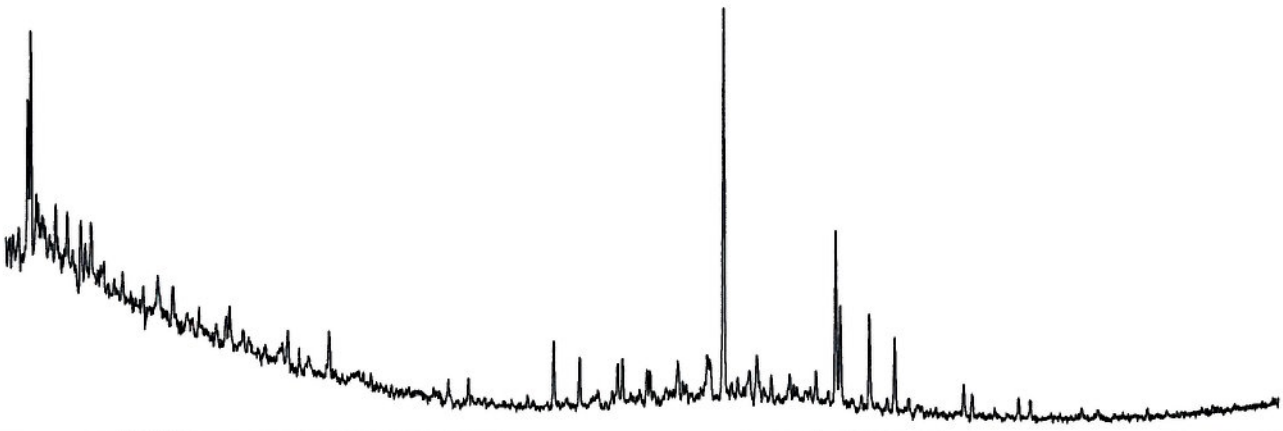
Miscellaneous Ratios	By Areas	By Heights
Steranes (m/z 217; 218)		
%C27 αααR (217)	31.0	42.5
%C28 αααR (217)	32.7	23.8
%C29 αααR (217)	36.3	33.6
S/R (C_{29} ααα) (217)	0.86	0.86
S/(S+R) (C_{29} ααα) (217)	0.46	0.46
ββ/(αα+ββ) (C_{29}) (217)	0.54	0.57
ββS/(ααR+ββS) (C29) (217)	0.51	0.55
αββS/αααR (C_{29}) (217)	1.05	1.20
(C_{21}+C_{22})/(C_{27}+C_{28}+C_{29}) (217)	0.14	0.16
Diaster/ααα Ster (C_{27}) (217)	1.84	1.82
Diaster/(Diaster+ααα) Ster (C_{27}) (217)	0.65	0.65
%C27 αββS (218)	28.0	29.9
%C28 αββS (218)	38.2	37.6
%C29 αββS (218)	33.8	32.5
%C27 αββ (R+S) (218)	31.5	32.5
%C28 αββ (R+S) (218)	35.4	35.3
%C29 αββ (R+S) (218)	33.1	32.2
C30 αββS Sterane Index (218)	10.0	10.0
C30 S+R Sterane Index (218)	9.7	10.2
C_{27}/C_{29} (αββS) (218)	0.83	0.92
C_{28}/C_{29} (αββS) (218)	1.13	1.16
C_{29}/C_{27} (αββS) (218)	1.21	1.09
C_{29}/C_{27} (αββ) (218)	1.05	0.99
Various (m/z 191; 217)		
Steranes/Hopanes	0.92	0.73
Tricyclic terpanes/Hopanes	0.56	0.59
Tricyclic terpanes/Steranes	0.61	0.81
Tricyclic/Pentacyclic Terpanes	53.8	56.9
Steranes/Terpanes	0.59	0.47
% Tricyclic Terpanes	22.0	24.6
% Pentacyclic Terpanes	40.88	24.59
% Steranes	37.1	32.2

Company:	TALISMAN ENERGY	Client ID:	IVISHAK #1/CORE #2
Well Name:	IVISHAK NO. 1	Project #:	08-1633-A
Depth:	2462 - 2463 FT	Lab ID:	TM000741
Sampling Point:		File Name:	M2090460.D

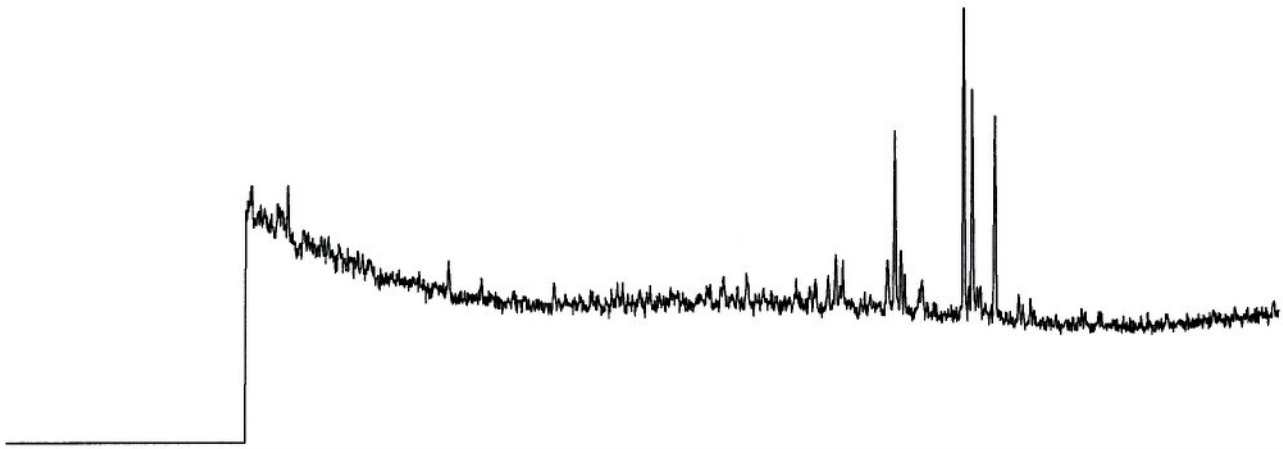
***m/z* 191:Tri-, tetra- and pentacyclic Terpanes**



***m/z* 177: Norhopanes**

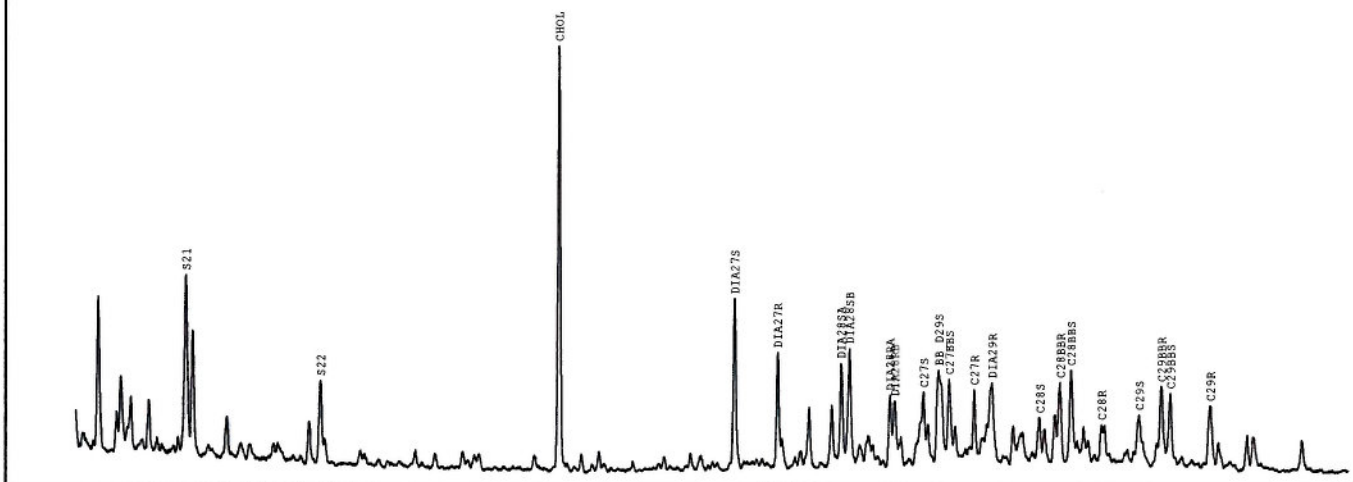


***m/z* 205**

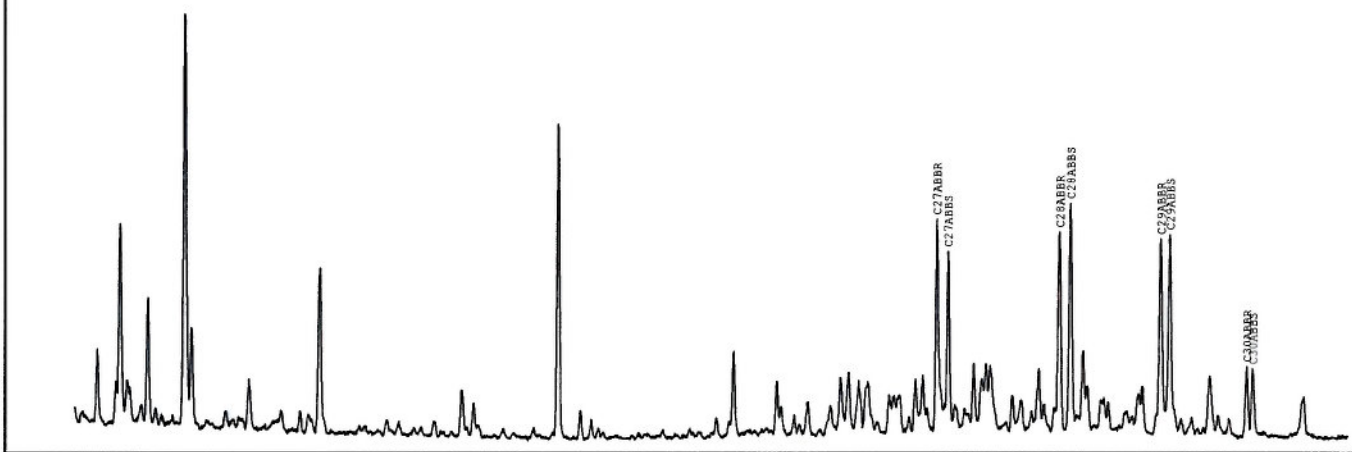


Company:	**TALISMAN ENERGY**	**Client ID:**	**IVISHAK #1/CORE #2**
Well Name:	**IVISHAK NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2462 - 2463 FT**	**Lab ID:**	**TM000741**
Sampling Point:		**File Name:**	**M2090460.D**

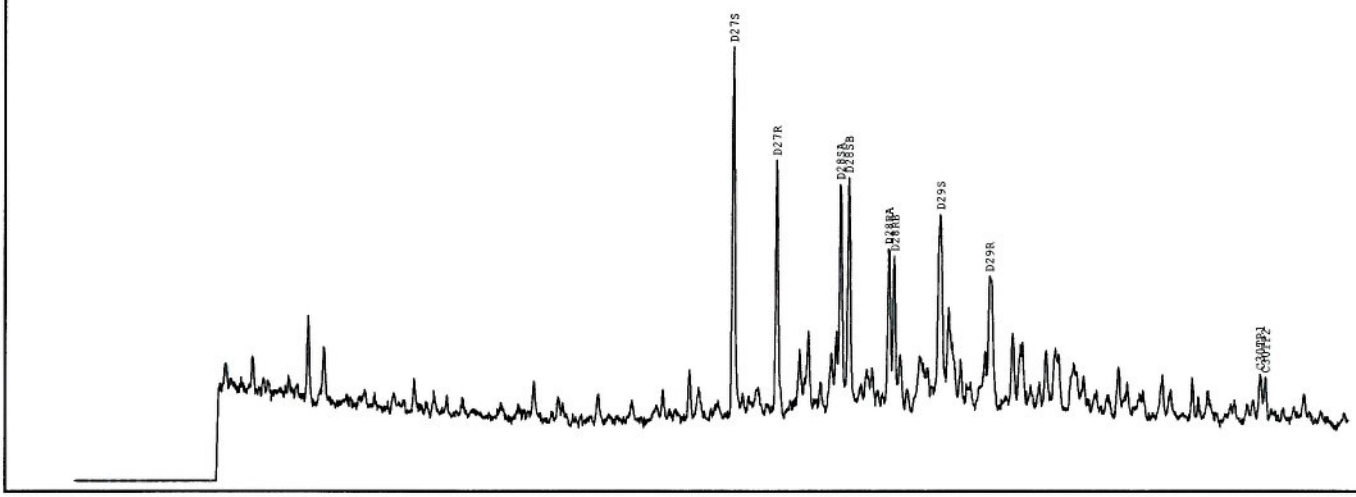
***m/z* 217: Steranes**



***m/z* 218: Steranes**



***m/z* 259: Diasteranes**



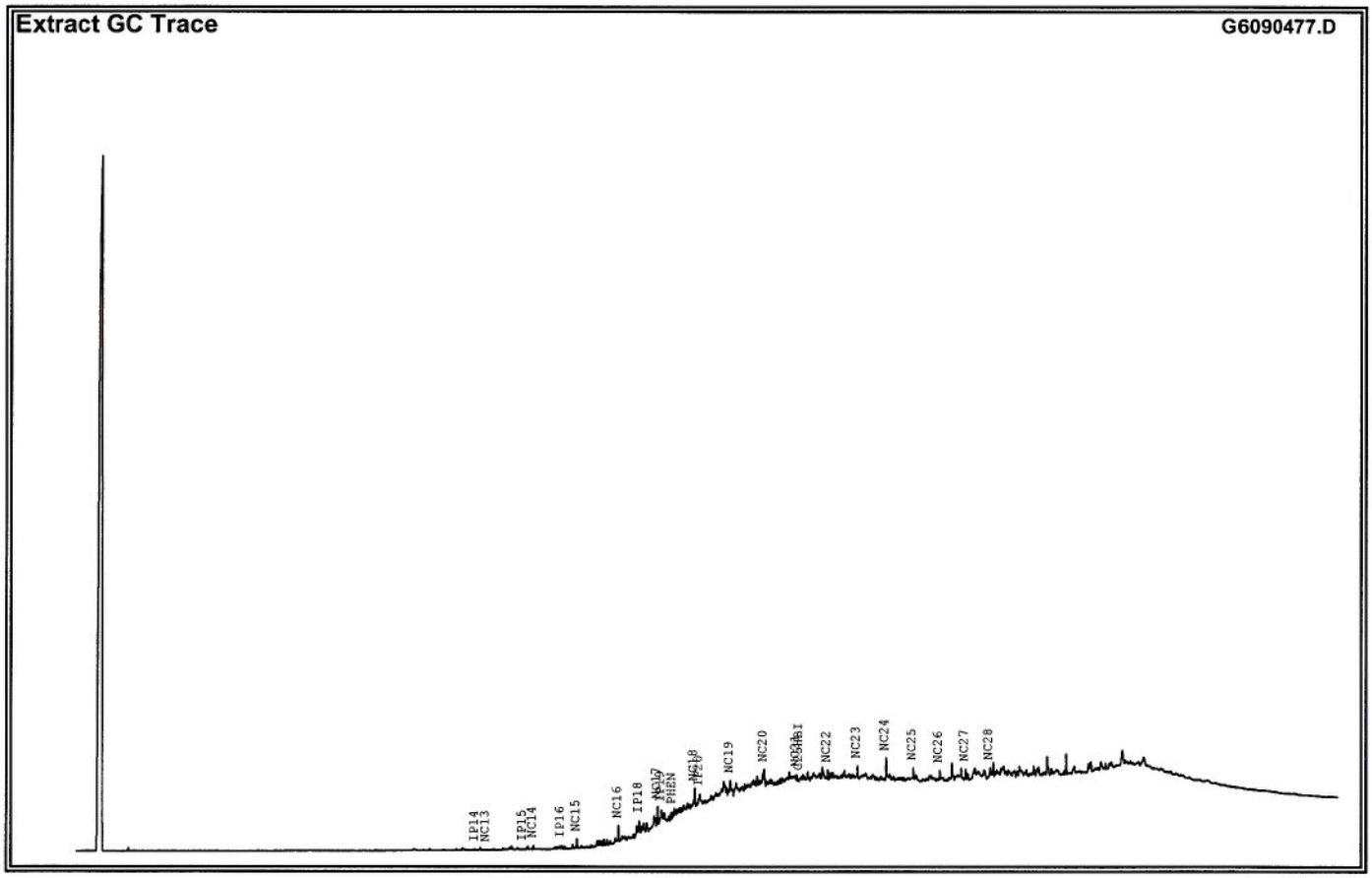
Parameter	Formula
WGC Parameters	
Pristane/Phytane	IP19/IP20
Pristane/nC17	IP19/NC17
Phytane/nC18	IP20/NC18
$nC_{18}/(nC_{18}+nC_{19})$	NC18/(NC18+NC19)
$nC_{17}/(nC_{17}+nC_{29})$	NC17/(NC17+NC29)
CPI Hunt[4]	((NC23+NC25+NC27+NC29+NC31)+(NC25+NC27+NC29+NC31+NC33))/(2*(NC24+NC26+NC28+NC30+NC32))
Normal Paraffins	100*(NC4+NC5+NC6+NC7+NC8+NC9+NC10+NC11+NC12+NC13+NC14+NC15+NC16+NC17+NC18+NC19+NC20+NC21+NC22+NC23+NC24+NC25+NC26+NC27+NC28+NC29+NC30+NC31+NC32+NC33+NC34+NC35+NC36+NC37+NC38+NC39+NC40+NC41)/TOTAL_RESOLVED
Isoprenoids	100*(IP9+IP10+IP11+IP13+IP14+IP15+IP16+IP18+IP19+IP20+C25HBI)/TOTAL_RESOLVED
Cycloparaffins	100*(CP+MCP+CH+11DMCP+1T3DMCP+1T2DMCP+MCH+113TMCP+ECP+124TMCP+123TMCP+1C3DMCP+1C2DMCP)/TOTAL_RESOLVED
Branched (iso-) Paraffins	100*(IC4+IC5+22DMB+23DMB+2MP+3MP+22DMP+24DMP+223TMB+33DMP+2MH+23DMP+3MH+3EP)/TOTAL_RESOLVED
BTX aromatics	100*(BZ+TOL+MXYL+PXYL+OXYL)/TOTAL_RESOLVED (*OXYL added 05/21/2007)
Thompson[1]	
BZ/nC6	BZ/NC6
TOL/nC7	TOL/NC7
(nC6+nC7)/(CH+MCH)	(NC6+NC7)/(CH+MCH)
Isoheptane Value	(2MH+3MH)/(1C3DMCP+1T3DMCP+1T2DMCP)
nC7/MCH	NC7/MCH
CH/MCP	CH/MCP
nC7/2MH	NC7/2MH
nC6/22DMB	NC6/22DMB
Heptane Value	100*NC7/(CH+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+1T2DMCP+MCH+NC7)
MCH/nC7	MCH/NC7
mpXYL/nC8	(MXYL+PXYL)/NC8
Mango[2]	
P1	100*NC7/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
P2	100*(2MH+3MH)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
P3	100*(3EP+33DMP+23DMP+24DMP+22DMP+223TMB)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
5N1	100*(ECP+1T2DMCP)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
N2	100*(11DMCP+1C3DMCP+1T3DMCP)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
6N1	100*(MCH+TOL)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
K1	(2MH+23DMP)/(3MH+24DMP)
K2	(2MH+3MH)/(2MH+3MH+11DMCP+1C3DMCP+1T3DMCP)
5N1/6N1	(ECP+1T2DMCP)/(MCH+TOL)
P3/N2	(3EP+33DMP+23DMP+24DMP+22DMP+223TMB)/(11DMCP+1C3DMCP+1T3DMCP)
ln(24DMP/23DMP)	ln(24DMP/23DMP)
Halpern[3]	
Tr1	TOL/11DMCP
Tr2	NC7/11DMCP
Tr3	3MH/11DMCP
Tr4	2MH/11DMCP
Tr5	(2MH+3MH)/11DMCP
Tr7	1T3DMCP/11DMCP
Tr8	(2MH+3MH)/(22DMP+23DMP+24DMP+33DMP+3EP)
C1	22DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C2	23DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C3	24DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C4	33DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C5	3EP/(22DMP+23DMP+24DMP+33DMP+3EP)

Weatherford LABORATORIES

EXTRACT GC

Company:	TALISMAN ENERGY	Client ID:	TM001507
Country:	UNITED STATES	Project #:	09-687-A
Basin:		Lab ID:	TM001507
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	TULUVAK SANDSTONE
Well Name:	GUBIK NO. 2	Geologic Age:	
Latitude:	0	Top Depth:	1863 FT
Longitude:	0	Bottom Depth:	FT

Extract GC Trace G6090477.D



WGC parameters	
Pristane/Phytane	1.24
Pristane/$n C_{17}$	0.75
Phytane/$n C_{18}$	0.75
$n C_{18}/(nC_{18}+n C_{19})$	0.43
$n C_{17}/(nC_{17}+n C_{29})$	1.00
CPI Hunt[4]	0.74
Normal Paraffins	7.3
Isoprenoids	2.0
Cycloparaffins	
Branched (iso-) Paraffins	
BTX aromatics	
Resolved unknowns	90.4

Thompson[1]	
A.	BZ/$n C_6$
B.	TOL/$n C_7$
C.	$(n C_6+n C_7)$/(CH+MCH)
I.	Isoheptane Value
F.	$n C_7$/MCH
U.	CH/MCP
R.	$n C_7$/2MH
S.	$n C_6$/22DMB
H.	Heptane Value
	MCH/$n C_7$
	mpXYL/$n C_8$

Mango[2]
P_1
P_2
P_3
$5N_1$
N_2
$6N_1$
K_1
K_2
$5N_1/6N_1$
P_3/N_2
ln(24DMP/23DMP)

Halpern[3]
Tr_1
Tr_2
Tr_3
Tr_4
Tr_5
Tr_7
Tr_8
C_1
C_2
C_3
C_4
C_5

[1]Thompson, K.F.M.,1983.GCA:V.47, p.303. [2]Mango, F.D.,1994.GCA: V.58, p.895. [3]Halpern,H.I.,1995,AAPG Bull.: V.79, p.801. [4]Hunt, 1979

Company:	**TALISMAN ENERGY**	**Client ID:**	**TM001507**
Well Name:	**GUBIK NO. 2**	**Project #:**	**09-687-A**
Depth:	**1863 - FT**	**Lab ID:**	**TM001507**
Sampling Point:		**File Name:**	**G6090477.D**

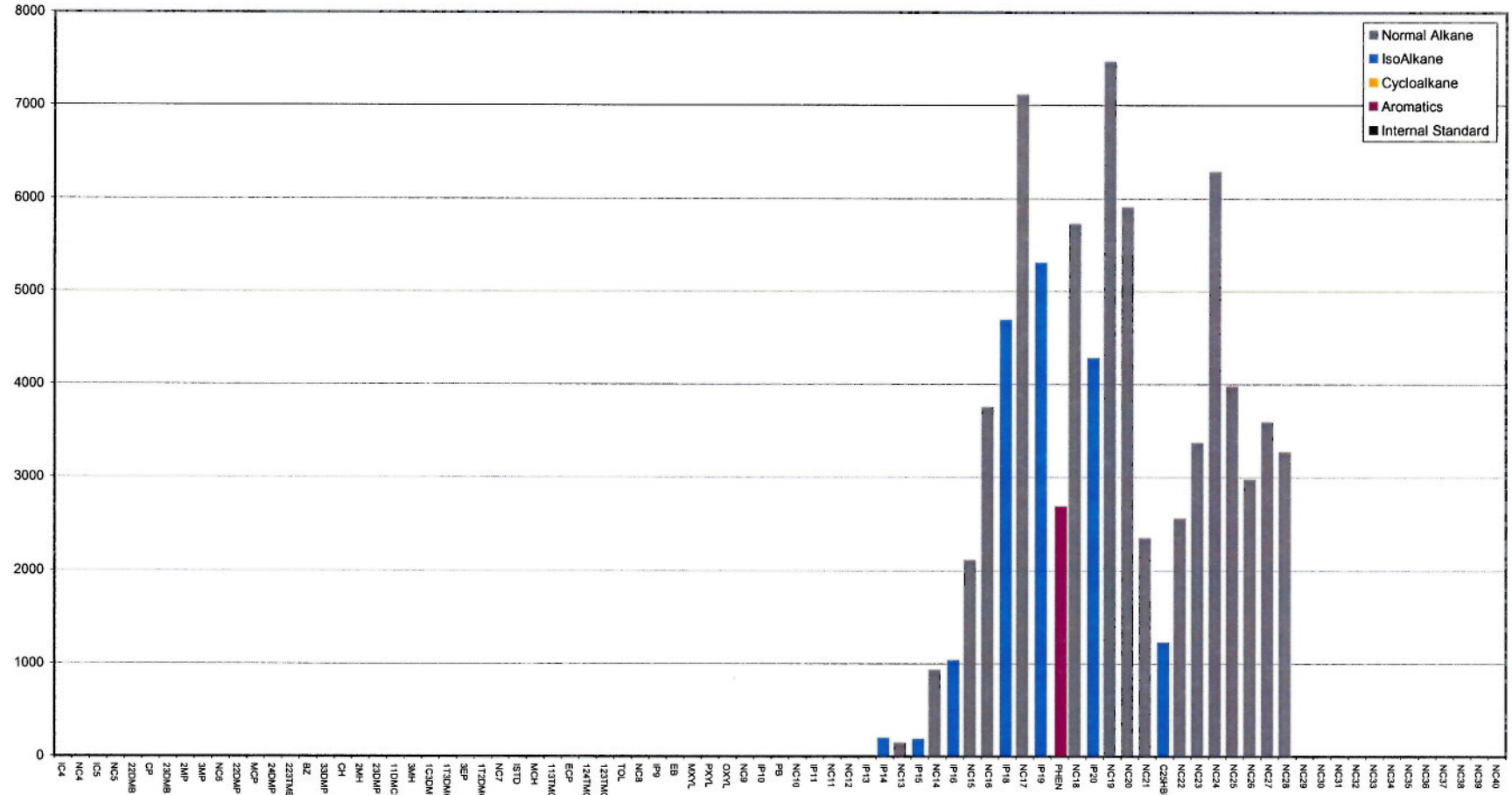
Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IC4	Iso-alkane C4					
NC4	Normal Alkane C4					
IC5	Iso-alkane C5					
NC5	Normal Alkane C5					
22DMB	2,2-Dimethylbutane					
CP	Cyclopentane					
23DMB	2,3-Dimethylbutane					
2MP	2-Methylpentane					
3MP	3-Methylpentane					
NC6	Normal Alkane C6					
22DMP	2,2-Dimethylpentane					
MCP	Methylcyclopentane					
24DMP	2,4-Dimethylpentane					
223TMB	2,2,3-Trimethylbutane					
BZ	Benzene					
33DMP	3,3-Dimethylpentane					
CH	Cyclohexane					
2MH	2-Methylhexane					
23DMP	2,3-Dimethylpentane					
11DMCP	1,1-Dimethylcyclopentane					
3MH	3-Methylhexane					
1C3DMCP	1-cis-3-Dimethylcyclopentane					
1T3DMCP	1-trans-3-Dimethylcyclopentane					
3EP	3-Ethylpentane					
1T2DMCP	1-trans-2-Dimethylcyclopentane					
NC7	Normal Alkane C7					
ISTD	Internal Standard					
MCH	Methylcyclohexane					
113TMCP	1,1,3,-Trimethylcyclopentane					
ECP	Ethylcyclopentane					
124TMCP	1,2,4-Trimethylcyclopentane					
123TMCP	1,2,3-Trimethylcyclopentane					
TOL	Toluene					
NC8	Normal Alkane C8					
IP9	Isoprenoid C9					
EB	Ethyl-benzene					
MXYL	*m*-xylene					
PXYL	*p*-xylene					
OXYL	*o*-xylene					
NC9	Normal Alkane C9					
IP10	Isoprenoid C10					
PB	Propyl-benzene					
NC10	Normal Alkane C10					
IP11	Isoprenoid C11					
NC11	Normal Alkane C11					
NC12	Normal Alkane C12					
IP13	Isoprenoid C13					
IP14	Isoprenoid C14	40.548	202	40		
NC13	Normal Alkane C13	41.622	147	42		
IP15	Isoprenoid C15	45.099	191	49		
NC14	Normal Alkane C14	45.982	937	251		

Company:	TALISMAN ENERGY	Client ID:	TM001507
Well Name:	GUBIK NO. 2	Project #:	09-687-A
Depth:	1863 - FT	Lab ID:	TM001507
Sampling Point:		File Name:	G6090477.D

Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IP16	Isoprenoid C16	48.659	1037	221		
NC15	Normal Alkane C15	50.095	2117	555		
NC16	Normal Alkane C16	53.987	3756	997		
IP18	Isoprenoid C18	55.960	4692	886		
NC17	Normal Alkane C17	57.680	7117	1224		
IP19	Isoprenoid C19 (Pristane)	58.043	5311	923		
PHEN	Phenanthrene	59.109	2687	489		
NC18	Normal Alkane C18	61.182	5729	1185		
IP20	Isoprenoid C20 (Phytane)	61.660	4283	694		
NC19	Normal Alkane C19	64.495	7472	957		
NC20	Normal Alkane C20	67.717	5907	1055		
NC21	Normal Alkane C21	70.749	2353	551		
C25HBI	Highly Branch Isoprenoid C25	71.037	1230	312		
NC22	Normal Alkane C22	73.663	2560	598		
NC23	Normal Alkane C23	76.458	3370	818		
NC24	Normal Alkane C24	79.153	6284	1329		
NC25	Normal Alkane C25	81.717	3976	849		
NC26	Normal Alkane C26	84.199	2978	662		
NC27	Normal Alkane C27	86.593	3595	677		
NC28	Normal Alkane C28	88.902	3273	689		
NC29	Normal Alkane C29					
NC30	Normal Alkane C30					
NC31	Normal Alkane C31					
NC32	Normal Alkane C32					
NC33	Normal Alkane C33					
NC34	Normal Alkane C34					
NC35	Normal Alkane C35					
NC36	Normal Alkane C36					
NC37	Normal Alkane C37					
NC38	Normal Alkane C38					
NC39	Normal Alkane C39					
NC40	Normal Alkane C40					
NC41	Normal Alkane C41					

Company:	**TALISMAN ENERGY**	**Client ID:**	**TM001507**
Well Name:	**GUBIK NO. 2**	**Project #:**	**09-687-A**
Depth:	**1863 - FT**	**Lab ID:**	**TM001507**
Sampling Point:		**File Name:**	**G6090477.D**

Histogram Based on Area



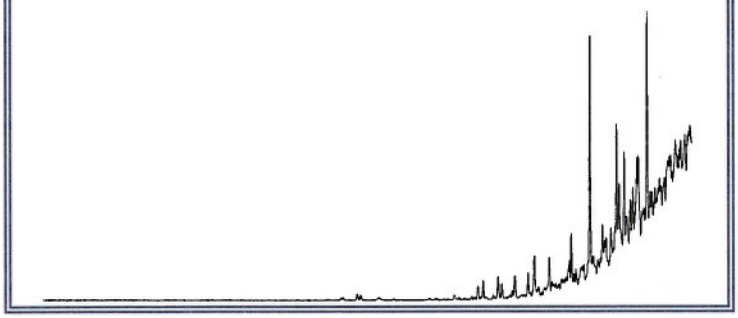
Geochemical Services Group, 143 Vision Park Blvd., Shenandoah, Texas 77384 • Phone: 281-681-2200 • Fax: 281-681-0326 • Email: geocheminfo@weatherfordlabs.com

Weatherford LABORATORIES

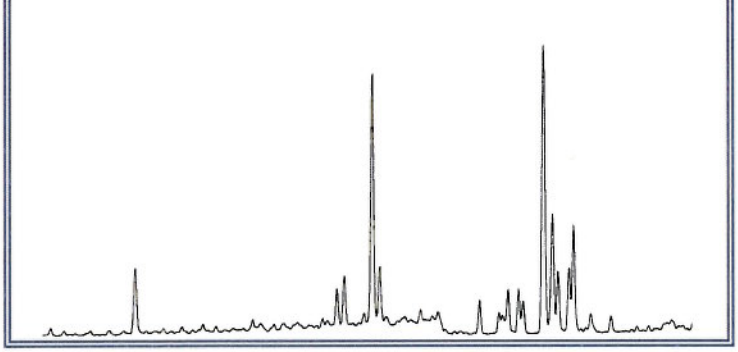
AROMATIC BIOMARKERS

Company:	TALISMAN ENERGY	Client ID:	TM001507
Country:	UNITED STATES	Project #:	09-687-A
Basin:		Lab ID:	TM001507
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	TULUVAK SANDSTONE
Well Name:	GUBIK NO. 2	Geologic Age:	
Latitude:	0	Top Depth:	1863 FT
Longitude:	0	Bottom Depth:	FT

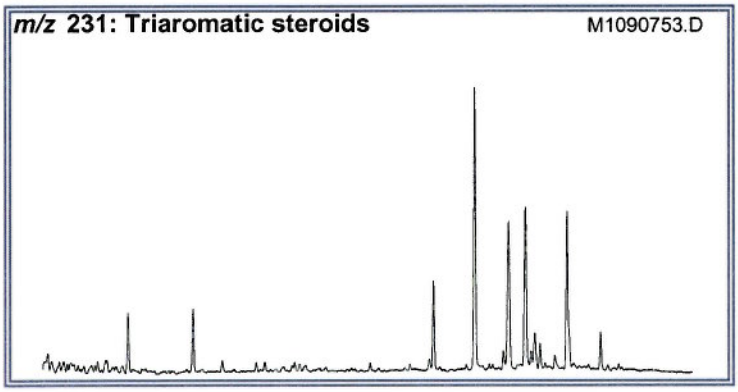
m/z 128+142+156+170+184: Methylnaphthalenes M1090753.D



m/z 178+192+206: Phenanthrenes M1090753.D



m/z 231: Triaromatic steroids M1090753.D



RATIOS (on Areas)[1]		Appl[2]	TEV[3]
Mono- (MAS) and Triaromatic Steroids (TAS)			
(C20+C21)/Σ TAS	0.11	M	1.0 (1.3%)
TAS #1 20/20+27	0.22	M	
TAS #2 21/21+28	0.26	M	
%26 TAS	16.6	D	
%27 TAS	40.1	D	
%28 TAS	35.7	D	
%29 TAS	7.7	D	
C28/C26 20S TAS	2.46		
C28/C27 20R TAS	0.89		
Dia/Regular C27 MAS	1.78		
%27 MAS	20.8	D	
%28 MAS	51.3	D	
%29 MAS	27.8	D	
(C21+C22)/Σ MAS	0.08	M	1.0 (1.3%)
TAS/(MAS+TAS)	0.50	M	
TA28/(TA28+MA29)	0.57	M	1.0 (0.8%)
Triaromatic Methylsteroids			
Dinosteroid Index	0.39	A	
C4/C3+C4 Mester	0.53	A	
Phenanthrenes, Naphthalenes, and Dibenzothiophenes			
MPI-1	0.33	M	
Rc(a) if Ro < 1.3 (Ro%)	0.57	M	
Rc(b) if Ro > 1.3 (Ro%)	2.10	M	
MPI-2	0.38	M	
DNR-1	3.47	M	
DNR-2	1.26	M	
TNR1	0.66	M	
TDE-1	1.54	M	
TDE-2	0.26	M	
MDR	0.06	M	
Rm (Ro%)	0.42	M	
MDR23	10.69	M	
MDR1	23.86	M	
DBT/Phenanthrene	0.01	D	

[1]Definition and utility of the ratios can be found on our website www.brilabs.com

[2]A=Source Age; D=Depositional environment; M= Maturity

[3]Thermal equilibrium value of the biomarker ratio and in brackets the approximate VR value at which this value is reached

Company:	**TALISMAN ENERGY**	**Client ID:**	**TM001507**
Well Name:	**GUBIK NO. 2**	**Project #:**	**09-687-A**
Depth:	**1863 - FT**	**Lab ID:**	**TM001507**
Sampling Point:		**File Name:**	**M1090753.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
230	OTP	*Ortho-terphenyl* (internal standard)	75.012	78118	18577	300.0	300.0
128	NAPH	Naphthalene					
142	2MN	2-Methylnaphthalene	37.994	154	22	0.6	0.4
142	1MN	1-Methylnaphthalene	39.224	131	26	0.5	0.4
154	BP	Biphenyl	44.700	212	32	0.8	0.5
156	2EN	2-Ethylnaphthalene	46.166	142	20	0.5	0.3
156	1EN	1-Ethylnaphthalene	46.267	102	27	0.4	0.4
156	26DMN	2,6-Dimethylnaphthalene	47.093	526	78	2.0	1.3
156	27DMN	2,7-Dimethylnaphthalene	47.244	569	87	2.2	1.4
156	1317DMN	1,3 & 1,7-Dimethylnaphthalenes	48.239	1479	206	5.7	3.3
156	16DMN	1,6-Dimethylnaphthalene	48.474	1165	181	4.5	2.9
156	23DMN	2,3-Dimethylnaphthalene	49.704	283	53	1.1	0.9
156	14DMN	1,4-Dimethylnaphthalene	49.772	587	103	2.3	1.7
156	15DMN	1,5-Dimethylnaphthalene	49.856	316	72	1.2	1.2
156	12DMN	1,2-Dimethylnaphthalene	50.817	297	47	1.1	0.8
168	2MBP	2-Methylbiphenyl					
168	DPM	Diphenylmethane					
168	3MBP	3-Methylbiphenyl	53.327	493	76	1.9	1.2
168	4MBP	4-Methylbiphenyl	53.984	331	51	1.3	0.8
168	DBF	Dibenzofuran					
170	BB_EMN	Ethyl-methyl-Naphthalene	55.164	964	124	3.7	2.0
170	AB_EMN	Ethyl-methyl-Naphthalene	56.360	563	88	2.2	1.4
170	137TMN	1,3,7-Trimethylnaphthalene	56.815	2691	405	10.3	6.5
170	136TMN	1,3,6-Trimethylnaphthalene	57.186	3857	607	14.8	9.8
170	146135T	(1,4,6+1,3,5)-Trimethylnaphthalenes	58.247	4532	673	17.4	10.9
170	236TMN	2,3,6-Trimethylnaphthalene	58.517	3008	495	11.6	8.0
170	127TMN	1,2,7-Trimethylnaphthalene	59.258	1093	201	4.2	3.2
170	167126T	(1,6,7+1,2,6)-Trimethylnaphthalenes	59.426	4248	647	16.3	10.4
170	124TMN	1,2,4-Trimethylnaphthalene	60.353	3756	663	14.4	10.7
170	125TMN	1,2,5-Trimethylnaphthalene	60.808	5770	977	22.2	15.8
178	PHEN	Phenanthrene	70.311	48323	9243	185.6	149.3
184	1357	1,3,5,7-Tetramethylnaphthalene	64.751	41912	7877	161.0	127.2
184	1367	1,3,6,7-Tetramethylnaphthalene	65.897	4222	877	16.2	14.2
184	1247	(1,2,4,7+1,2,4,6+1,4,6,7)-Tetramethylnaphthalenes	66.655	21108	3986	81.1	64.4
184	1257	1,2,5,7-Tetramethylnaphthalene	66.840	8385	1664	32.2	26.9
184	2367	2,3,6,7-Tetramethylnaphthalene	67.211	11978	2345	46.0	37.9
184	1267	1,2,6,7-Tetramethylnaphthalene	67.632	4208	777	16.2	12.5
184	1237	1,2,3,7-Tetramethylnaphthalene	67.834	5983	1210	23.0	19.5
184	1236	1,2,3,6-Tetramethylnaphthalene	68.104	11054	2027	42.5	32.7
184	1256	1,2,5,6-Tetramethylnaphthalene	68.812	29829	6151	114.6	99.3
184	DBT	Dibenzothiophene	69.047	704	199	2.7	3.2
191	BH32	C32 Benzohopane	117.838	6808	973	26.1	15.7
191	BH33	C33 Benzohopane	120.012	4589	703	17.6	11.4
191	BH34	C34 Benzohopane	121.933	2545	346	9.8	5.6
191	BH35	C35 Benzohopane	124.327	1458	188	5.6	3.0
192	3MP	3-Methylphenanthrene	75.248	23671	5026	90.9	81.2
192	2MP	2-Methylphenanthrene	75.433	31971	6699	122.8	108.2
192	9MP	9-Methylphenanthrene	76.124	170293	34639	654.0	559.4
192	1MP	1-Methylphenanthrene	76.309	33953	7199	130.4	116.3

Company:	**TALISMAN ENERGY**	**Client ID:**	**TM001507**
Well Name:	**GUBIK NO. 2**	**Project #:**	**09-687-A**
Depth:	**1863 - FT**	**Lab ID:**	**TM001507**
Sampling Point:		**File Name:**	**M1090753.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
198	CAD	Cadalene	66.250	10526	1850	40.4	29.9
198	4MDBT	4 Methyl Dibenzothiophene	73.580	1089	256	4.2	4.1
198	23MDBT	2 & 3 Methyl Dibenzothiophenes	74.405	7525	1550	28.9	25.0
198	1MDBT	1 Methyl Dibenzothiophene	75.147	16800	3452	64.5	55.7
206	36DMP	3,6-Dimethylphenanthrene	79.476	30564	6125	117.4	98.9
206	26DMP	2,6-Dimethylphenanthrene	79.729	28218	6234	108.4	100.7
206	27DMP	2,7-Dimethylphenanthrene	79.847	19973	4474	76.7	72.3
206	39DMP	(3,9+3,10+2,10+1,3)-Dimethylphenanthrenes	80.336	214174	40472	822.5	653.6
206	29DMP	(2,9+1,6)-Dimethylphenanthrenes	80.555	88772	16711	340.9	269.9
206	17DMP	1,7-Dimethylphenanthrene	80.690	40097	8567	154.0	138.3
206	23DMP	2,3-Dimethylphenanthrene	80.976	41901	8984	160.9	145.1
206	19DMP	1,9-Dimethylphenanthrene	81.077	72125	15003	277.0	242.3
206	18DMP	1,8-Dimethylphenanthrene	81.499	12545	2457	48.2	39.7
206	12DMP	1,2-Dimethylphenanthrene	82.004	10447	2210	40.1	35.7
231	231A20	C20 Triaromatic Steroid	92.336	22124	5073	85.0	81.9
231	231B21	C21 Triaromatic	94.831	23336	5320	89.6	85.9
231	231C26	C26 20S Triaromatic	104.017	31660	7515	121.6	121.4
231	231D26	C27 20S & C26 20R Triaromatic	105.618	117219	23690	450.2	382.6
231	TADMD1	C28 23,24-Cholestane Triaromatic	106.191	2067	503	7.9	8.1
231	TADMD2	C28 23,24-Cholestane Triaromatic	106.730	7388	1591	28.4	25.7
231	231E28	C28 20S Triaromatic	106.932	77747	12451	298.6	201.1
231	231F27	C27 20R Triaromatic	107.573	76270	13620	292.9	219.9
231	TADMD3	C28 23,24-Cholestane Triaromatic	107.674	1498	705	5.8	11.4
231	C29TA1	C29 Triaromatic	107.927	18479	3102	71.0	50.1
231	C29TA2	C29 Triaromatic	108.129	10147	2234	39.0	36.1
231	TADMD4	C28 23,24-Cholestane Triaromatic	108.972	1334	216	5.1	3.5
231	231G28	C28 20R Triaromatic	109.174	67884	13296	260.7	214.7
231	TADMD5	C28 23,24-Cholestane Triaromatic	109.242	7926	3493	30.4	56.4
231	C29TA3	C29 Triaromatic	110.472	14597	3191	56.1	51.5
245	C3S	C27 20S 3-Methyl Triaromatic Steroid	106.713	5873	1198	22.6	19.3
245	C4S	C27 20S 4-Methyl Triaromatic Steroid	107.320	7980	1594	30.6	25.7
245	E2S	C28 20S 2-Methyl Triaromatic Steroid	107.893	3442	589	13.2	9.5
245	E3SC3R	C28 20S 3-Methyl & C27 20R 3-Methyl TAS	108.213	21746	3402	83.5	54.9
245	E4SC4R	C28 20S 4-Methyl & C27 20R 4-Methyl TAS	108.820	28588	4515	109.8	72.9
245	S2S	C29 20S 2-Methyl Triaromatic Steroid	109.073	5369	667	20.6	10.8
245	DA	Triaromatic Dinosteroid a	109.242	8564	1505	32.9	24.3
245	S3S	C29 20S 3-Methyl Triaromatic Steroid	109.427	16030	1918	61.6	31.0
245	DB	Triaromatic Dinosteroid b	109.831	19761	3785	75.9	61.1
245	S4SE2R	C29 20S 4-Methyl & C28 20R 2-Methyl TAS	110.017	21197	2936	81.4	47.4
245	E3R	C28 20R 3-Methyl Triaromatic Steroid	110.152	16573	2446	63.6	39.5
245	E4R	C28 20R 4-Methyl Triaromatic Steroid	110.742	18083	3033	69.4	49.0
245	DC	Triaromatic Dinosteroid c	110.944	17066	3415	65.5	55.1
245	DD	Triaromatic Dinosteroid d	111.045	19399	4019	74.5	64.9
245	S2R	C29 20R 2-Methyl Triaromatic Steroid	111.450	3786	574	14.5	9.3
245	S3R	C29 20R 3-Methyl Triaromatic Steroid	111.669	12091	2245	46.4	36.3
245	DE	Triaromatic Dinosteroid e	111.820	18646	2999	71.6	48.4
245	S4R	C29 20R 4-Methyl Triaromatic Steroid	112.292	12294	2335	47.2	37.7
245	DF	Triaromatic Dinosteroid f	112.410	26292	5447	101.0	88.0

Company:	TALISMAN ENERGY	Client ID:	TM001507
Well Name:	GUBIK NO. 2	Project #:	09-687-A
Depth:	1863 - FT	Lab ID:	TM001507
Sampling Point:		File Name:	M1090753.D

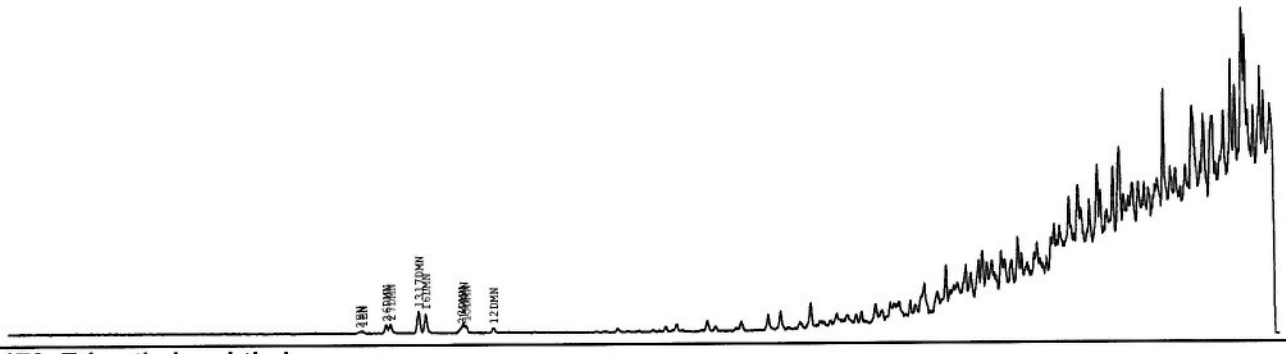
Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
253	S253A	C21 Ring-C Monoaromatic Steroid	84.549	20139	2934	77.3	47.4
253	S253B	C22 Monoaromatic steroid	87.027	15249	2979	58.6	48.1
253	S253C	C27 Reg 5β(H),10β(CH3) 20S	97.005	11292	2693	43.4	43.5
253	S253D	C27 Dia 10β(H),5β(CH3) 20S	97.157	20085	4643	77.1	75.0
253	S253E	C27 Dia10βH,5βCH3 20R+Reg5βH,10βCH3 20R	98.623	27604	5551	106.0	89.6
253	S253F	C27 Reg 5α(H),10β(CH3) 20S	98.775	11759	2673	45.2	43.2
253	S253G	C28 Dia 10αH,5αCH3 20s+Reg5βH,10βCH3 20S	99.162	72724	12887	279.3	208.1
253	S253H	C27 Reg 5α(H),10β(CH3) 20R	100.460	10911	2343	41.9	37.8
253	S253I	C28 Reg 5α(H),10β(CH3) 20S	100.595	25670	5753	98.6	92.9
253	S253J	C28 Dia 10αH,5αCH3 20R+Reg5βH,10βCH3 20R	100.780	68695	12787	263.8	206.5
253	S253K	C29 Dia 10βH,5βCH3 20S+Reg5βH,10βCH3 20S	100.915	37165	7256	142.7	117.2
253	S253L	C29 Reg 5α(H),10β(CH3) 20S	102.196	16400	3222	63.0	52.0
253	S253M	C28 Reg 5α(H),10β(CH3) 20R	102.500	34459	5221	132.3	84.3
253	S253N	C29 Dia 10βH,5βCH3 20R+Reg5βH,10βCH3 20R	102.618	36330	5810	139.5	93.8
253	S253O	C29 Reg 5α(H),10β(CH3) 20R	104.236	19416	3051	74.6	49.3
365	SH29	C29 8,14-secohopanoids	104.101	30818	6170	118.4	99.6
365	SH30	C30 8,14-secohopanoids	106.073	32266	7047	123.9	113.8

Company:	TALISMAN ENERGY	Client ID:	TM001507
Well Name:	GUBIK NO. 2	Project #:	09-687-A
Depth:	1863 - FT	Lab ID:	TM001507
Sampling Point:		File Name:	M1090753.D

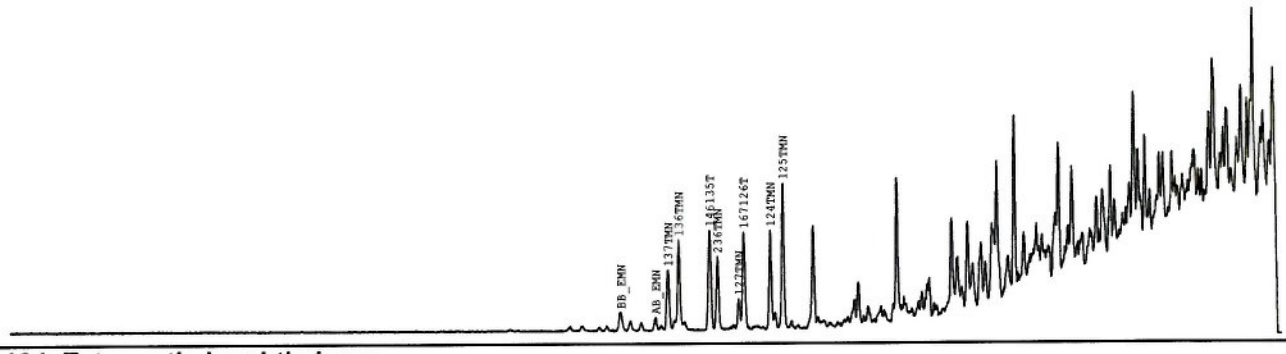
Miscellaneous Ratios	By Areas	By Heights
Triaromatic Steroids m/z 231		
(C20+C21)/Σ TAS	0.11	0.12
TAS #1 20/20+27	0.22	0.27
TAS #2 21/21+28	0.26	0.29
%26TAS	16.6	20.0
%27TAS	40.1	36.2
%28TAS	35.7	35.3
%29TAS	7.7	8.5
C28/C26 20S TAS	2.46	1.66
C28/C27 20R TAS	0.89	0.98
Monoaromatic Steroids m/z 253		
Dia/Regular C27 MAS	1.78	1.72
%27 MAS	20.8	24.2
%28 MAS	51.3	49.6
%29 MAS	27.8	26.2
(C21+C22)/Σ MAS	0.08	0.07
TAS/(MAS+TAS)	0.50	0.51
TA28/(TA28+MA29)	0.57	0.57
Triaromatic Methylsteroids m/z 245		
Dinosteroid Index	0.39	0.44
C4/C3+C4 Mester	0.53	0.54
Phenanthrenes and Naphthalenes		
MPI-1	0.33	0.34
MPI-2	0.38	0.39
MPI-3	0.27	0.28
Rc(a) if Ro < 1.3 (Ro%)	0.57	0.58
Rc(b) if Ro > 1.3 (Ro%)	2.10	2.09
DNR-1	3.47	2.29
DNR-2	1.26	1.06
TNR1	0.66	0.74
TDE-1	1.54	1.47
TDE-2	0.26	0.31
MDR	0.06	0.07
Rm (Ro%)	0.42	0.42
MDR23	10.69	7.79
MDR1	23.86	17.35
DBT/Phenanthrene	0.01	0.02

Company:	TALISMAN ENERGY	Client ID:	TM001507
Well Name:	GUBIK NO. 2	Project #:	09-687-A
Depth:	1863 - FT	Lab ID:	TM001507
Sampling Point:		File Name:	

***m/z* 156: Dimethylnaphthalenes**



***m/z* 170: Trimethylnaphthalenes**

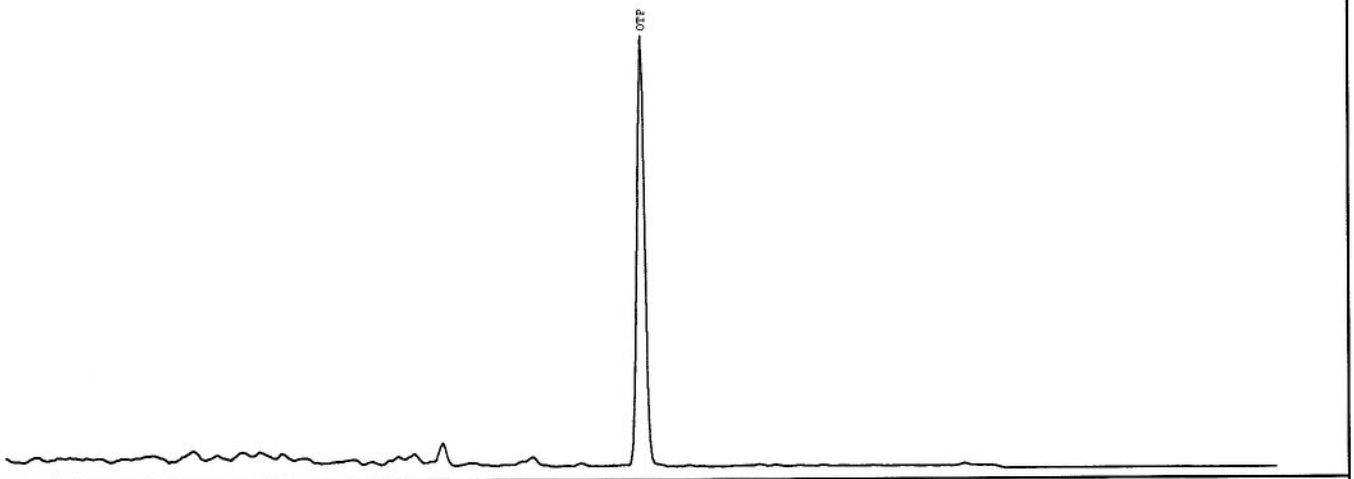


***m/z* 184: Tetramethylnaphthalenes**

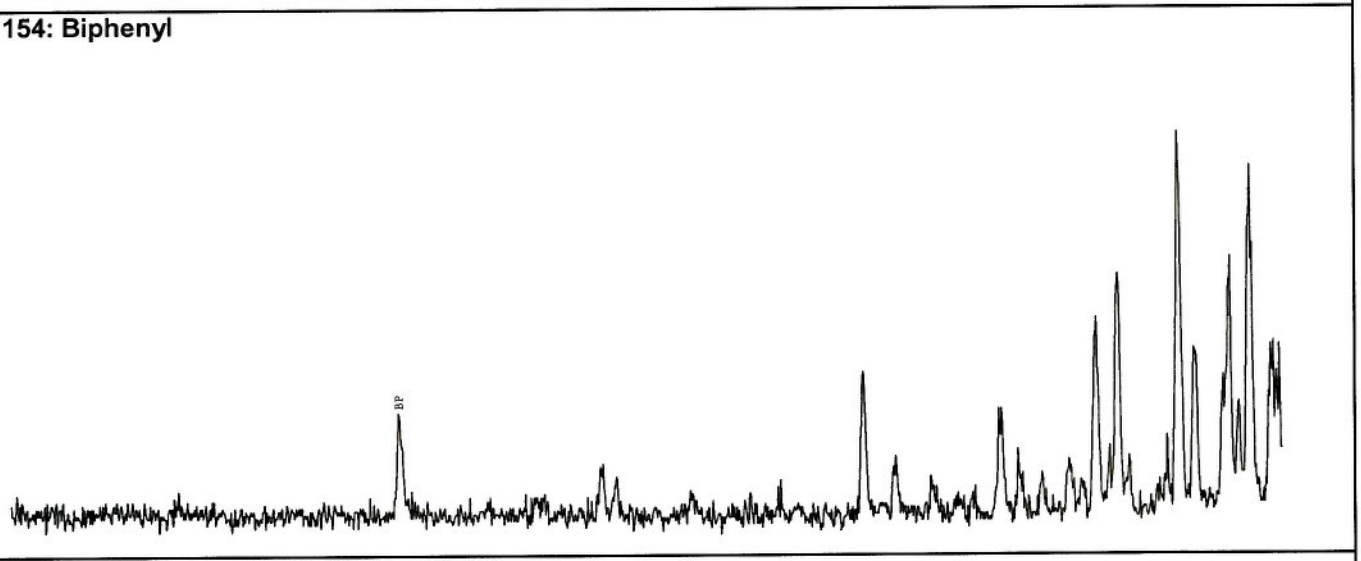
***m/z* 198: Pentamethylnaphthalenes**

Company:	TALISMAN ENERGY	Client ID:	TM001507
Well Name:	GUBIK NO. 2	Project #:	09-687-A
Depth:	1863 - FT	Lab ID:	TM001507
Sampling Point:		File Name:	M1090753.D

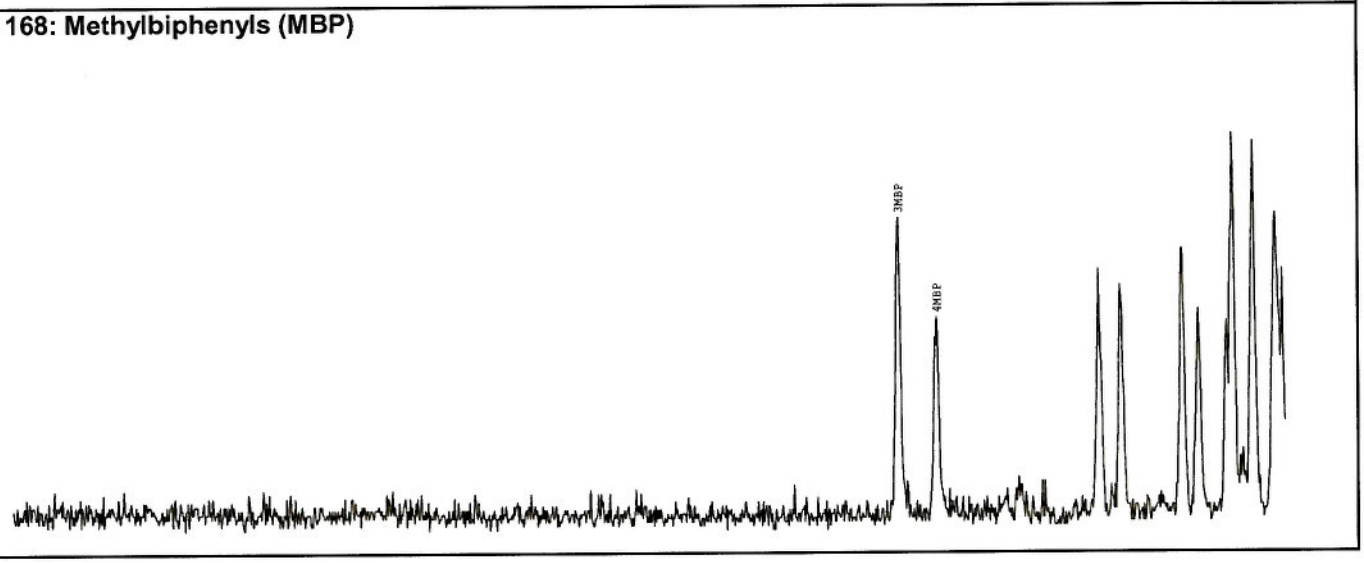
***m/z* 230: Ortho-Terphenyl (Inter. Std)**



***m/z* 154: Biphenyl**

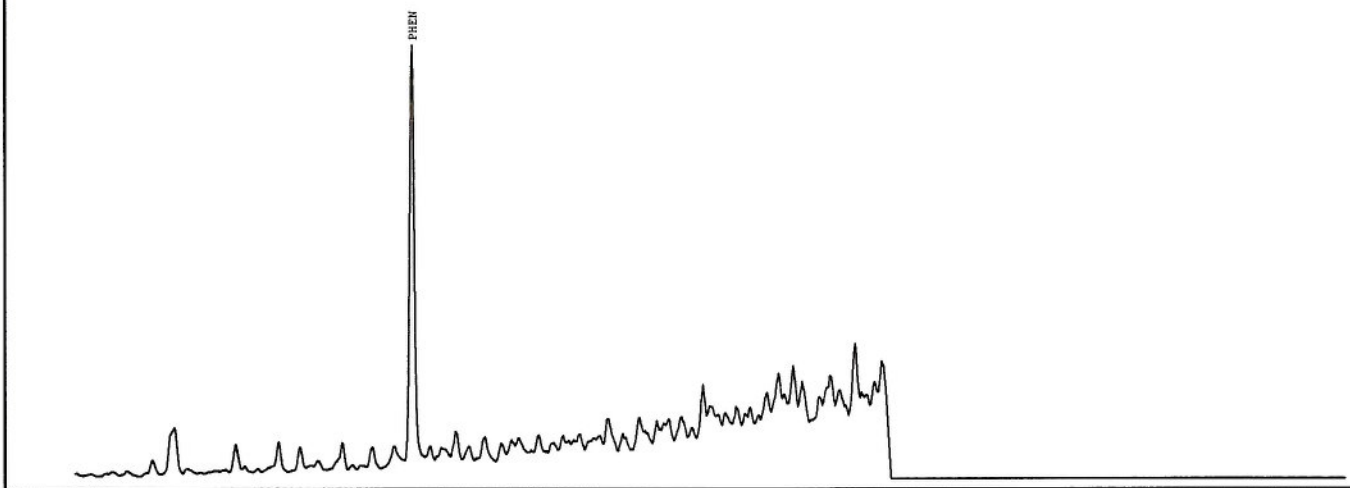


***m/z* 168: Methylbiphenyls (MBP)**

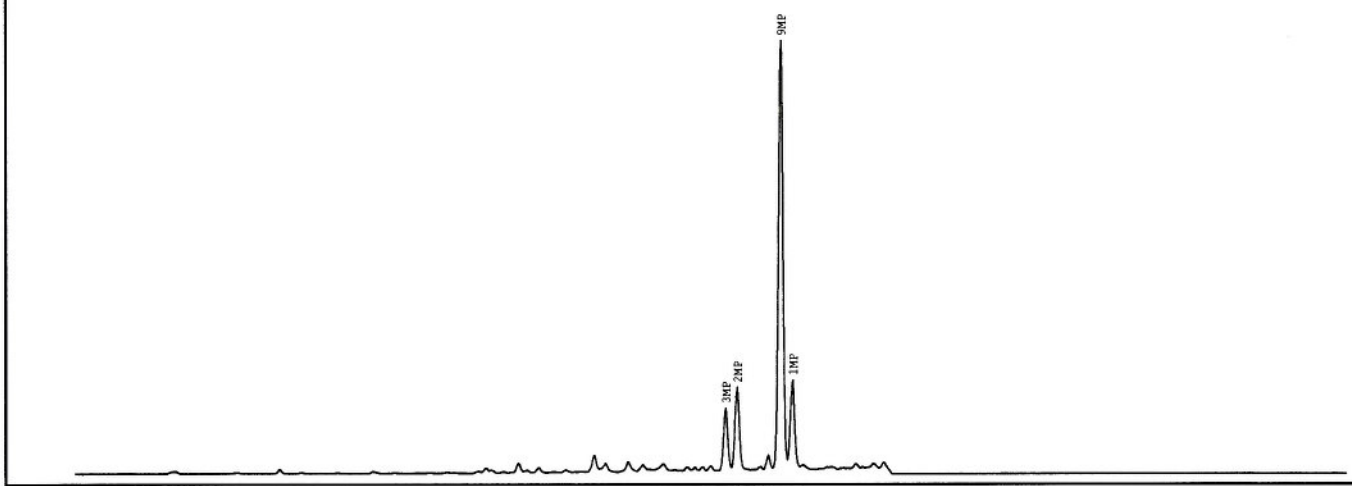


Company:	TALISMAN ENERGY	Client ID:	TM001507
Well Name:	GUBIK NO. 2	Project #:	09-687-A
Depth:	1863 - FT	Lab ID:	TM001507
Sampling Point:		File Name:	M1090753.D

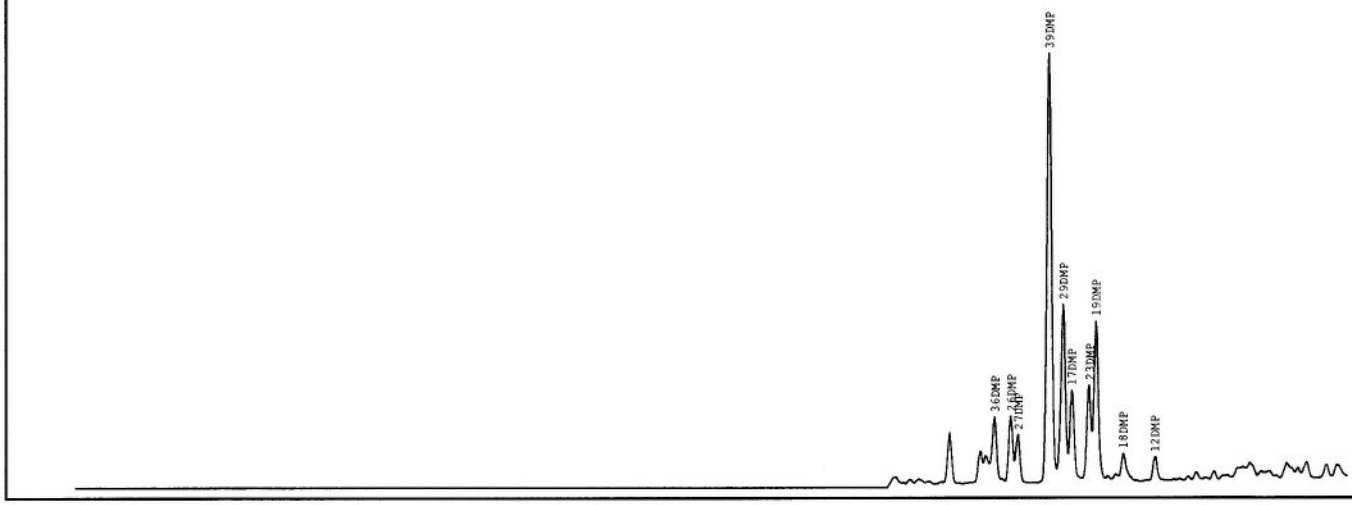
***m/z* 178: Phenanthrene**



***m/z* 192: Methylphenanthrenes**

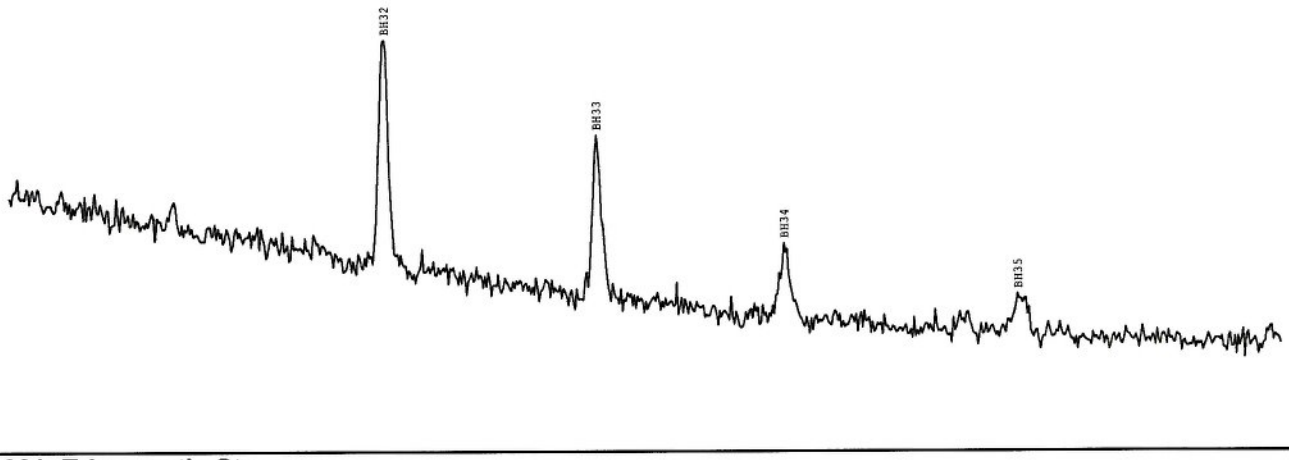


***m/z* 206: Dimethylpehnanthrenes**

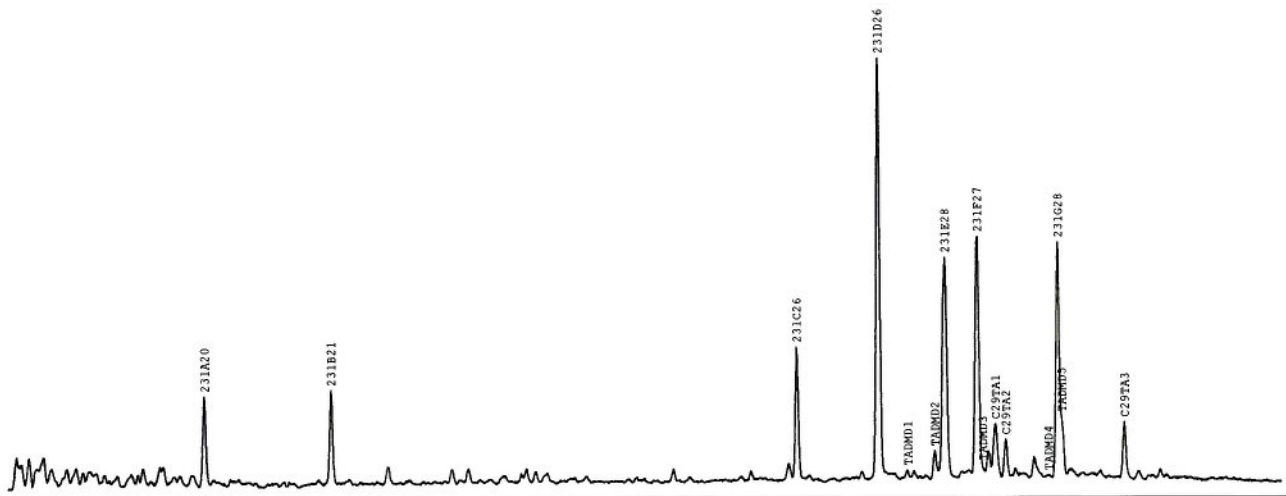


Company:	TALISMAN ENERGY	Client ID:	TM001507
Well Name:	GUBIK NO. 2	Project #:	09-687-A
Depth:	1863 - FT	Lab ID:	TM001507
Sampling Point:		File Name:	M1090753.D

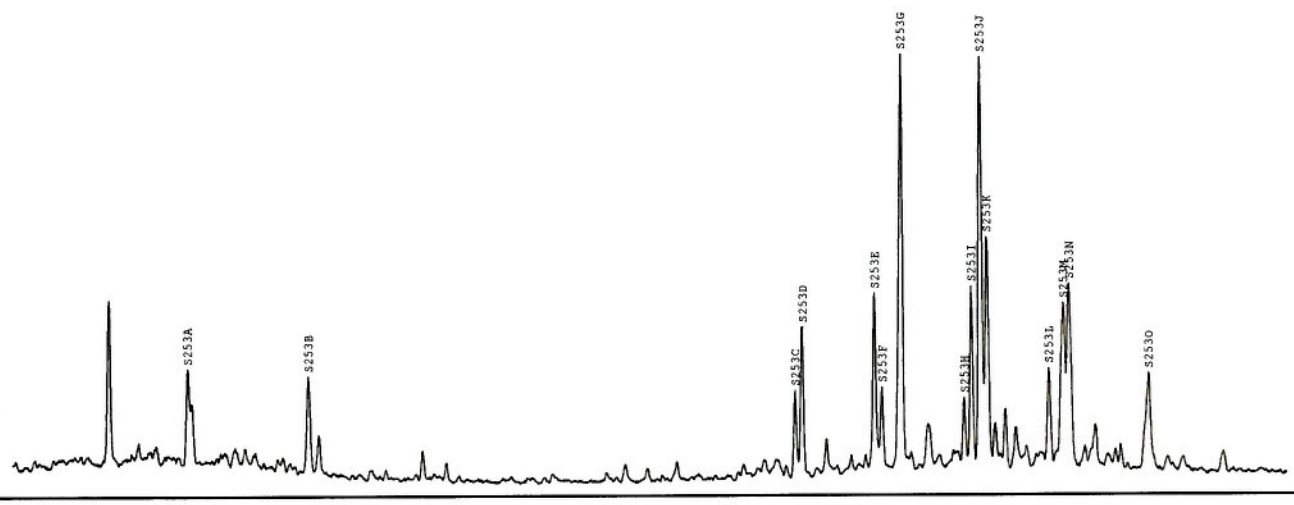
***m/z* 191: Benzohopanes**



***m/z* 231: Triaromatic Steranes**



***m/z* 253: Monoaromatic Steranes**



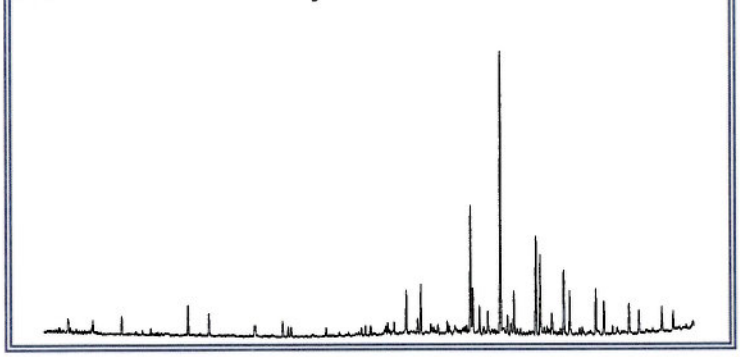
Parameter	Formula
Mono- (MAS) and Triaromatic Steroids (TAS)	
(C20+C21)/Σ TAS	(231A20+231B21)/(231A20+231B21+231C26+231D26+231E28+231F27+231G28+C29TA3)
TAS #1 20/20+27	(231A20)/(231A20+231F27)
TAS #2 21/21+28	(231B21)/(231B21+231G28)
%26 TAS	100*(231C26)/(231C26+231F27+231G28+C29TA3)
%27 TAS	100*(231F27)/(231C26+231F27+231G28+C29TA3)
%28 TAS	100*(231G28)/(231C26+231F27+231G28+C29TA3)
%29 TAS	100*(C29TA3)/(231C26+231F27+231G28+C29TA3)
C28/C26 20S TAS	(231E28)/(231C26)
C28/C27 20R TAS	(231G28)/(231F27)
Dia/Regular C27 MAS	(S253D)/(S253C)
%27 MAS	100*(S253C+S253D+S253E+S253F+S253H)/(S253C+S253D+S253E+S253F+S253G+S253H+S253I+S253J+S253K+S253L+S253M+S253N+S253O)
%28 MAS	100*(S253G+S253I+S253J+S253M)/(S253C+S253D+S253E+S253F+S253G+S253H+S253I+S253J+S253K+S253L+S253M+S253N+S253O)
%29 MAS	100*(S253K+S253L+S253N+S253O)/(S253C+S253D+S253E+S253F+S253G+S253H+S253I+S253J+S253K+S253L+S253M+S253N+S253O)
(C21+C22)/Σ MAS	(S253A+S253B)/(S253A+S253B+S253C+S253D+S253E+S253F+S253G+S253H+S253I+S253J+S253K+S253L+S253M+S253N+S253O)
TAS/(MAS+TAS)	(231A20+231B21+231C26+231D26+231E28+231F27+231G28+C29TA3)/((231A20+231B21+231C26+231D26+231E28+231F27+231G28+C29TA3)+(S253A+S253B+S253C+S253D+S253E+S253F+S253G+S253H+S253I+S253J+S253K+S253L+S253M+S253N+S253O))
TA28/(TA28+MA29)	(231E28+231G28)/(231E28+231G28+S253K+S253L+S253N+S253O)
Triaromatic Methylsteroids	
Dinosteroid Index	(DA+DB+DC+DD+DE+DF)/(C3S+C4S+E2S+E3SC3R+E4SC4R+S2S+DA+S3S+DB+S4SE2R+E3R+E4R+DC+DD+S2R+S3R+DE+S4R+DF)
C4/C3+C4 Mester	(C4S+E4R+S4R)/(C3S+C4S+E3R+E4R+S3R+S4R)
Phenanthrenes, Naphthalenes, and Dibenzothiophenes	
MPI-1	(1.5*(3MP+2MP))/(PHEN+9MP+1MP)
MPI-2	(3*(2MP))/(PHEN+9MP+1MP)
MPI-3	(3MP+2MP)/(9MP+1MP)
Rc(a) if Ro < 1.3 (Ro%)	(((.6)*(1.5*(2MP+3MP))/(PHEN+9MP+1MP))+.37)
Rc(b) if Ro > 1.3 (Ro%)	(((-.6)*(1.5*(2MP+3MP))/(PHEN+9MP+1MP))+2.3)
DNR-1	(26DMN+27DMN)/(15DMN)
DNR-2	(26DMN+27DMN)/(14DMN+23DMN)
TNR1	(236TMN)/(146135T)
TDE-1	(125TMN)/(124TMN)
TDE-2	(127TMN)/(167126T)
MDR	(4MDBT)/(1MDBT)
Rm (Ro%)	(0.40+0.30*(4MDBT/1MDBT)-0.094*(4MDBT/1MDBT)*(4MDBT/1MDBT)+0.011*(4MDBT/1MDBT)*(4MDBT/1MDBT)*(4MDBT/1MDBT))
MDR23	(23MDBT)/(DBT)
MDR1	(1MDBT)/(DBT)
DBT/Phenanthrene	(DBT)/(PHEN)

Weatherford LABORATORIES

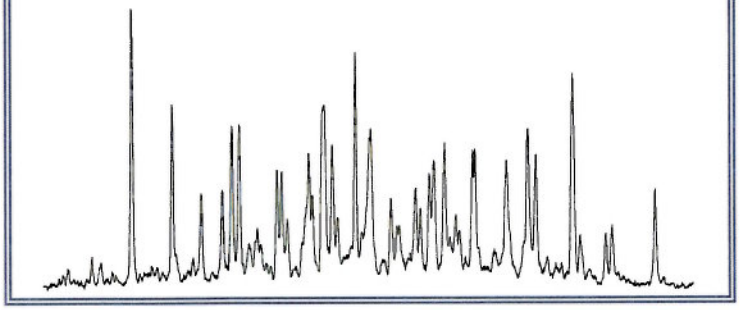
SATURATE BIOMARKERS

Company:	TALISMAN ENERGY	Client ID:	TM001507
Country:	UNITED STATES	Project #:	09-687-A
Basin:		Lab ID:	TM001507
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	TULUVAK SANDSTONE
Well Name:	GUBIK NO. 2	Geologic Age:	
Latitude:	0	Top Depth:	1863 FT
Longitude:	0	Bottom Depth:	FT

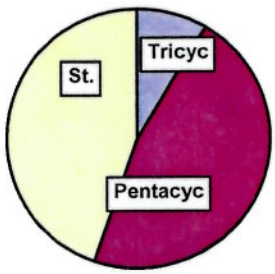
m/z 191: Tri- and Pentacyclics M2090874.D



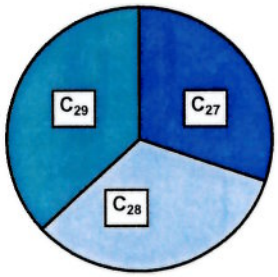
m/z 217: Steranes M2090874.D



Tricyclic, Pentacyclic Terpanes & Steranes



C27-C28-C29 ααα*R* Steranes



RATIOS (on Areas)[1]		Appl[2]	TEV[3]
Steranes (*m/z* 217; 218)			
%C_{27} αββS (218)	26.4	D	
%C_{28} αββS (218)	35.8	D	
%C_{29} αββS (218)	37.8	D	
%C_{27} αααR (217)	30.3	D	
%C_{28} αααR (217)	32.7	D	
%C_{29} αααR (217)	37.0	D	
S/(S+R) (C_{29} ααα) (217)	0.39	M	0.55 (0.8%)
ββS/(ββS+ααR) (C29) (217)	0.36	M	0.70 (0.9%)
(C_{21}+C_{22})/(C_{27}+C_{28}+C_{29}) (217)	0.05		
C_{27}/C_{29} (αββS) (218)	0.70	D	
C_{28}/C_{29} (αββS) (218)	0.95	D	
Diaster/ααα Ster (C_{27}) (217)	1.09	M/D	1.00 (1.4%)
C30 αββS Sterane Index (218)	9.61	D	
C30 S+R Sterane Index (218)	8.78	D	
Terpanes (*m/z* 191)			
Oleanane/Hopane		D/A	
Gammacerane/Hopane	0.03	D	
Norhopane/Hopane	0.45	D	
Bisnorhopane/Hopane			
Diahopane/Hopane	0.10	M/D	
Moretane/Hopane	0.16	M	0.05 (0.7%)
25-*nor*-hopane/hopane		B	
Ts/(Ts+Tm) trisnorhopanes	0.48	M/D	1.00 (1.4%)
C29Ts/C29 Hopane	0.39	M	
H32 S/(R+S) Homohopanes	0.57	M	0.60 (0.6%)
H35/H34 Homohopanes	0.82	D	
C24 Tetracyclic/Hopane	0.06	D	
C24 Tetracyclic/C26 Tricyclics	0.81	D	
C23/C24 Tricyclic terpanes	1.45	D	
C19/C23 Tricyclic terpanes	0.29	D	
C26/C25 Tricyclic terpanes	1.05	D	
(C28+C29 Tricyclics)/Ts	1.02	A	
Various (*m/z* 191; 217)			
Steranes/Hopanes	1.08	D	
Tricyclic terpanes/Hopanes	0.19	M	1.00 (1.4%)
Tricyclic terpanes/Steranes	0.17	M/D	1.00 (1.4%)

[1]Definition and utility of the ratios can be found on our website www.brilabs.com

[2]A=Source Age; D=Depositional environment; M= Maturity; B=Possible Biodegradation

[3]Thermal equilibrium value of the biomarker ratio and in brackets the approximate VR value at which this value is reached

Company:	**TALISMAN ENERGY**	**Client ID:**	**TM001507**
Well Name:	**GUBIK NO. 2**	**Project #:**	**09-687-A**
Depth:	**1863 - FT**	**Lab ID:**	**TM001507**
Sampling Point:		**File Name:**	**M2090874.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
217	CHOL	*5β cholane (internal standard)*	42.247	8595	1341	100.0	100.0
125	BCAROT	β-carotane					
187	4MDIAM	4-methyldiamantane	9.292	79	25	0.9	1.9
187	1MDIAM	1-methyldiamantane	9.884	89	26	1.0	1.9
187	3MDIAM	3-methyldiamantane	10.268	135	38	1.6	2.8
188	DIAM	diamantane	9.135	33	14	0.4	1.0
191	TR19	C19 tricyclic terpane	18.876	1895	388	22.0	28.9
191	TR20	C20 tricyclic terpane	21.717	2565	438	29.8	32.7
191	TR21	C21 tricyclic terpane	25.045	3656	600	42.5	44.7
191	TR22	C22 tricyclic terpane	28.479	1271	227	14.8	16.9
191	TR23	C23 tricyclic terpane	32.710	6464	973	75.2	72.6
191	TR24	C24 tricyclic terpane	35.116	4458	729	51.9	54.4
191	DESAOL	des-A-oleanane					
191	DESALU	des-A-lupane					
191	TR25A	C25 tricyclic terpane (a)	40.190	2339	368	27.2	27.4
191	TR25B	C25 tricyclic terpane (b)	40.329	1935	349	22.5	26.0
191	TET24	C24 tetracyclic terpane (TET)	43.433	3655	535	42.5	39.9
191	TR26A	C26 tricyclic terpane (a)	44.078	2053	358	23.9	26.7
191	TR26B	C26 tricyclic terpane (b)	44.391	2434	339	28.3	25.3
191	TR28A	C28 tricyclic terpane (a)	53.022	2140	329	24.9	24.5
191	TR28B	C28 tricyclic terpane (b)	53.615	2401	330	27.9	24.6
191	TR29A	C29 tricyclic terpane (a)	55.585	2375	381	27.6	28.4
191	TR29B	C29 tricyclic terpane (b)	56.317	2680	410	31.2	30.6
191	TR30A	C30 tricyclic terpane (a)	60.519	2551	336	29.7	25.1
191	TR30B	C30 tricyclic terpane (b)	61.356	2221	311	25.8	23.2
191	TS	Ts 18α(H)-trisnorhopane	57.712	9453	1420	110.0	105.9
191	TM	Tm 17α(H)-trisnorhopane	59.351	10365	1598	120.6	119.2
191	H28	C28 17α18α21β(H)-bisnorhopane					
191	NOR25H	C29 Nor-25-hopane					
191	H29	C29 Tm 17α(H)21β(H)-norhopane	65.122	27791	4122	323.3	307.4
191	C29TS	C29 Ts 18α(H)-norneohopane	65.383	10806	1459	125.7	108.8
191	DH30	C30 17α(H)-diahopane	66.168	6338	939	73.7	70.0
191	M29	C29 normoretane	67.144	5131	738	59.7	55.0
191	OLA	oleanane a					
191	OLB	oleanane b					
191	H30	C30 17α(H)-hopane	68.609	61317	9074	713.4	676.7
191	C30TS	C29 Ts 18α(H)-norneohopane	69.446	4487	627	52.2	46.8
191	M30	C30 moretane	70.178	9841	1417	114.5	105.7
191	H31S	C31 22S 17α(H) hopane	72.688	21696	3180	252.4	237.1
191	H31R	C31 22R 17α(H) hopane	73.177	18424	2602	214.4	194.0
191	GAM	gammacerane	73.630	2138	268	24.9	20.0
191	H32S	C32 22S 17α(H) hopane	75.914	14096	2104	164.0	156.9
191	H32R	C32 22R 17α(H) hopane	76.611	10550	1458	122.7	108.7
191	H33S	C33 22S 17α(H) hopane	79.662	10491	1494	122.1	111.4
191	H33R	C33 22R 17α(H) hopane	80.604	8400	1114	97.7	83.1
191	H34S	C34 22S 17α(H) hopane	83.533	7263	997	84.5	74.3
191	H34R	C34 22R 17α(H) hopane	84.666	5429	789	63.2	58.8
191	H35S	C35 22S 17α(H) hopane	87.264	5899	836	68.6	62.3
191	H35R	C35 22R 17α(H) hopane	88.554	4513	671	52.5	50.0

Company:	**TALISMAN ENERGY**	**Client ID:**	**TM001507**
Well Name:	**GUBIK NO. 2**	**Project #:**	**09-687-A**
Depth:	**1863 - FT**	**Lab ID:**	**TM001507**
Sampling Point:		**File Name:**	**M2090874.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
217	S21	C21 sterane	29.036	7420	949	86.3	70.8
217	S22	C22 sterane	33.791	4012	574	46.7	42.8
217	DIA27S	C27 βα 20S diasterane	48.436	16873	2576	196.3	192.1
217	DIA27R	C27 βα 20R diasterane	49.988	11555	1688	134.4	125.9
217	DIA28SA	C28 βα 20S diasterane a	52.255	10214	1487	118.8	110.9
217	DIA28SB	C28 βα 20S diasterane b	52.534	12299	1498	143.1	111.7
217	DIA28RA	C28 βα 20R diasterane a	53.963	7732	1083	90.0	80.8
217	DIA28RB	C28 βα 20R diasterane b	54.138	7527	1069	87.6	79.7
217	C27S	C27 αα 20S sterane	55.166	10546	1239	122.7	92.4
217	BB_D29S	C27 ββ 20R + C29 dia20S	55.776	23100	1688	268.8	125.9
217	C27BBS	C27 ββ 20S sterane	56.090	11247	1325	130.9	98.8
217	C27R	C27 αα 20R sterane	56.980	15578	2181	181.2	162.6
217	DIA29R	C29 βα 20R diasterane	57.572	17808	1470	207.2	109.6
217	C28S	C28 αα 20S sterane	59.298	8524	923	99.2	68.8
217	C28BBR	C28 ββ 20R sterane(+5 βαα)	59.996	11193	1179	130.2	87.9
217	C28BBS	C28 ββ 20S sterane	60.414	13184	1347	153.4	100.4
217	C28R	C28 αα 20R sterane	61.582	16798	1290	195.4	96.2
217	C29S	C29 αα 20S sterane	62.803	11910	1189	138.6	88.7
217	C29BBR	C29 ββ 20R sterane(+5 βαα)	63.622	15056	1480	175.2	110.4
217	C29BBS	C29 ββ 20S sterane	63.919	10729	1239	124.8	92.4
217	C29R	C29 αα 20R sterane	65.348	19015	2002	221.2	149.3
218	C27ABBR	C27 ββ 20R sterane	55.672	15645	1806	182.0	134.7
218	C27ABBS	C27 ββ 20S sterane	56.090	10311	1525	120.0	113.7
218	C28ABBR	C28 ββ 20R sterane	60.013	12904	1614	150.1	120.4
218	C28ABBS	C28 ββ 20S sterane	60.414	13940	1767	162.2	131.8
218	C29ABBR	C29 ββ 20R sterane	63.587	15788	1998	183.7	149.0
218	C29ABBS	C29 ββ 20S sterane	63.936	14734	1919	171.4	143.1
218	C30ABBR	C30 ββ 20R sterane	66.638	3878	511	45.1	38.1
218	C30ABBS	C30 ββ 20S sterane	66.883	4145	553	48.2	41.2
259	D27S	C27 βα 20S diasterane	48.454	10359	1562	120.5	116.5
259	D27R	C27 βα 20R diasterane	50.006	7377	1063	85.8	79.3
259	D28SA	C28 βα 20S diasterane a	52.255	6256	977	72.8	72.9
259	D28SB	C28 βα 20S diasterane b	52.534	7431	996	86.5	74.3
259	D28RA	C28 βα 20R diasterane a	53.981	5403	734	62.9	54.7
259	D28RB	C28 βα 20R diasterane b	54.138	4864	702	56.6	52.3
259	D29S	C29 βα 20S diasterane	55.794	12791	1091	148.8	81.4
259	D29R	C29 βα 20R diasterane	57.555	9457	767	110.0	57.2
259	C30TP1	C30 tetracyclic polyprenoid	67.127	932	138	10.8	10.3
259	C30TP2	C30 tetracyclic polyprenoid	67.266	739	108	8.6	8.1

Company:	**TALISMAN ENERGY**	**Client ID:**	**TM001507**
Well Name:	**GUBIK NO. 2**	**Project #:**	**09-687-A**
Depth:	**1863 - FT**	**Lab ID:**	**TM001507**
Sampling Point:		**File Name:**	**M2090874.D**

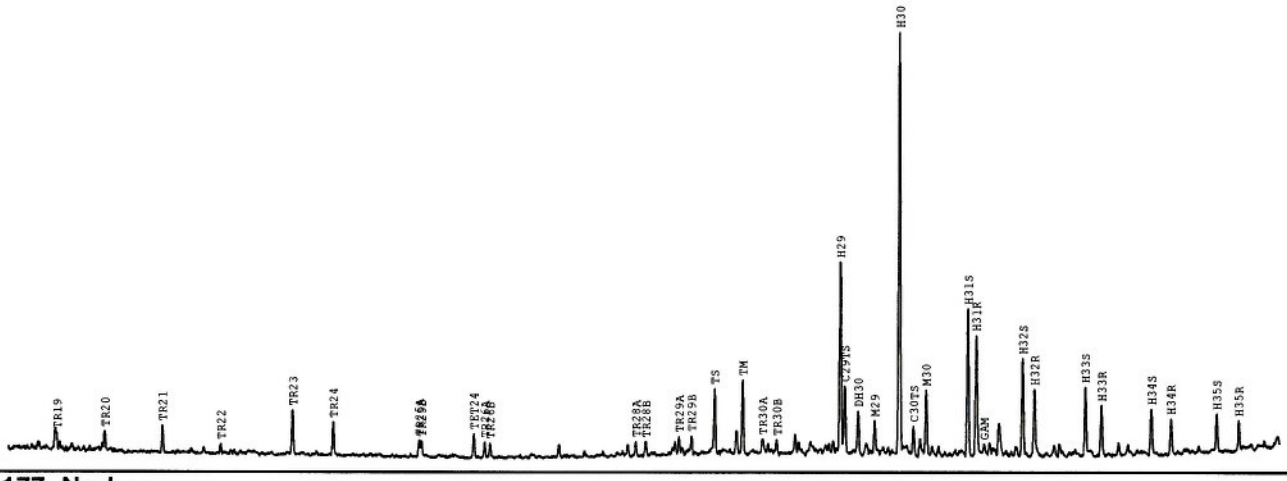
Miscellaneous Ratios	By Areas	By Heights
Terpanes (m/z 191)		
C19/C23 Tricyclic terpanes	0.29	0.40
C22/C21 Tricyclic terpanes	0.35	0.38
C22/C24 Tricyclic terpanes	0.29	0.31
C23/C24 Tricyclic terpanes	1.45	1.33
C24/C23 Tricyclic terpanes	0.69	0.75
C26/C25 Tricyclic terpanes	1.05	0.97
C24 Tetracyclic/C23 Tricyclic	0.57	0.55
C24 Tetracyclic/C26 Tricyclics	0.81	0.77
(C28+C29 Tricyclics)/Ts	1.02	1.02
Ts/Tm trisnorhopanes	0.91	0.89
Ts/(Ts+Tm) trisnorhopanes	0.48	0.47
25-nor-hopane/hopane		
C29Ts/C29 Hopane	0.39	0.35
C29Ts/(C29TS+C29) Hopane	0.28	0.26
C23 Tricyclic/Hopane	0.11	0.11
C24 Tetracyclic/Hopane	0.06	0.06
Bisnorhopane/Hopane		
Norhopane/Hopane	0.45	0.45
Diahopane/Hopane	0.10	0.10
Oleanane/Hopane		
Moretane/Hopane	0.16	0.16
Moretane/(Moretane+Hopane)	0.14	0.14
C30Ts/C30 Hopane	0.07	0.07
Gammacerane/Hopane	0.03	0.03
C32 S/(S+R) Homohopanes	0.57	0.59
Gammacerane/H31R Homohopane	0.12	0.10
C35/C34 Homohopanes	0.82	0.84
C35/C34 S Homohopanes	0.81	0.84
C35 Homohopane Index	0.10	0.10
Rel % C31 Homohopane	37.6	37.9
Rel % C32 Homohopane	23.1	23.4
Rel % C33Homohopane	17.7	17.1
Rel % C34 Homohopane	11.9	11.7
Rel % C35 Homohopane	9.8	9.9

Company:	TALISMAN ENERGY	Client ID:	TM001507
Well Name:	GUBIK NO. 2	Project #:	09-687-A
Depth:	1863 - FT	Lab ID:	TM001507
Sampling Point:		File Name:	M2090874.D

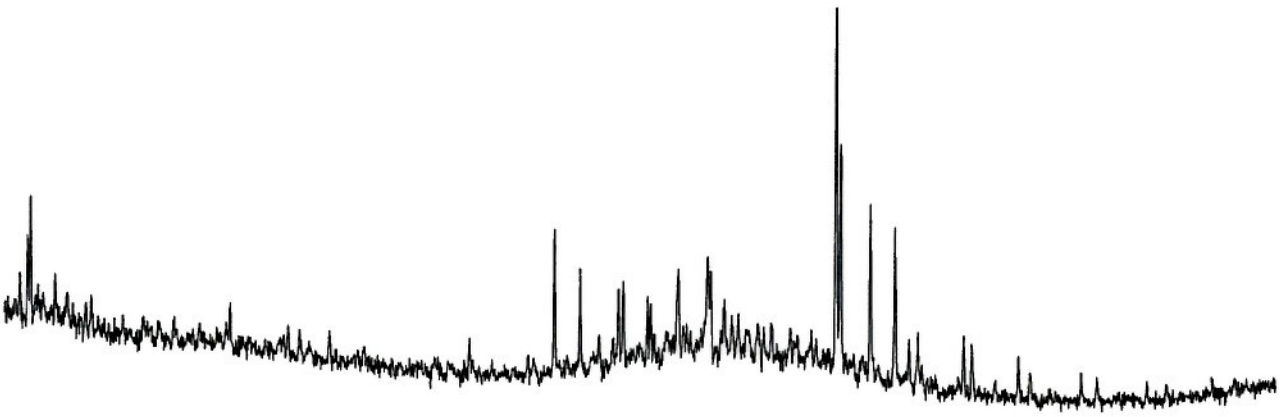
Miscellaneous Ratios	By Areas	By Heights
Steranes (m/z 217; 218)		
%C27 ααα*R* (217)	30.3	39.9
%C28 ααα*R* (217)	32.7	23.6
%C29 ααα*R* (217)	37.0	36.6
S/R (C_{29} ααα) (217)	0.63	0.59
S/(S+R) (C_{29} ααα) (217)	0.39	0.37
ββ/(αα+ββ) (C_{29}) (217)	0.45	0.46
ββ*S*/(αα*R*+ββ*S*) (C29) (217)	0.36	0.38
αββ*S*/ααα*R* (C_{29}) (217)	0.56	0.62
(C_{21}+C_{22})/(C_{27}+C_{28}+C_{29}) (217)	0.05	0.05
Diaster/ααα Ster (C_{27}) (217)	1.09	1.25
Diaster/(Diaster+ααα) Ster (C_{27}) (217)	0.52	0.55
%C27 αββ*S* (218)	26.4	29.3
%C28 αββ*S* (218)	35.8	33.9
%C29 αββ*S* (218)	37.8	36.8
%C27 αββ (R+S) (218)	31.2	31.3
%C28 αββ (R+S) (218)	32.2	31.8
%C29 αββ (R+S) (218)	36.6	36.9
C30 αββ*S* Sterane Index (218)	9.6	9.6
C30 S+R Sterane Index (218)	8.8	9.1
C_{27}/C_{29} (αββ*S*) (218)	0.70	0.79
C_{28}/C_{29} (αββ*S*) (218)	0.95	0.92
C_{29}/C_{27} (αββ*S*) (218)	1.43	1.26
C_{29}/C_{27} (αββ) (218)	1.18	1.18
Various (m/z 191; 217)		
Steranes/Hopanes	1.06	0.81
Tricyclic terpanes/Hopanes	0.18	0.20
Tricyclic terpanes/Steranes	0.17	0.25
Tricyclic/Pentacyclic Terpanes	18.5	20.1
Steranes/Terpanes	0.81	0.64
% Tricyclic Terpanes	8.6	10.2
% Pentacyclic Terpanes	46.60	10.18
% Steranes	44.8	39.1

Company:	TALISMAN ENERGY	Client ID:	TM001507
Well Name:	GUBIK NO. 2	Project #:	09-687-A
Depth:	1863 - FT	Lab ID:	TM001507
Sampling Point:		File Name:	M2090874.D

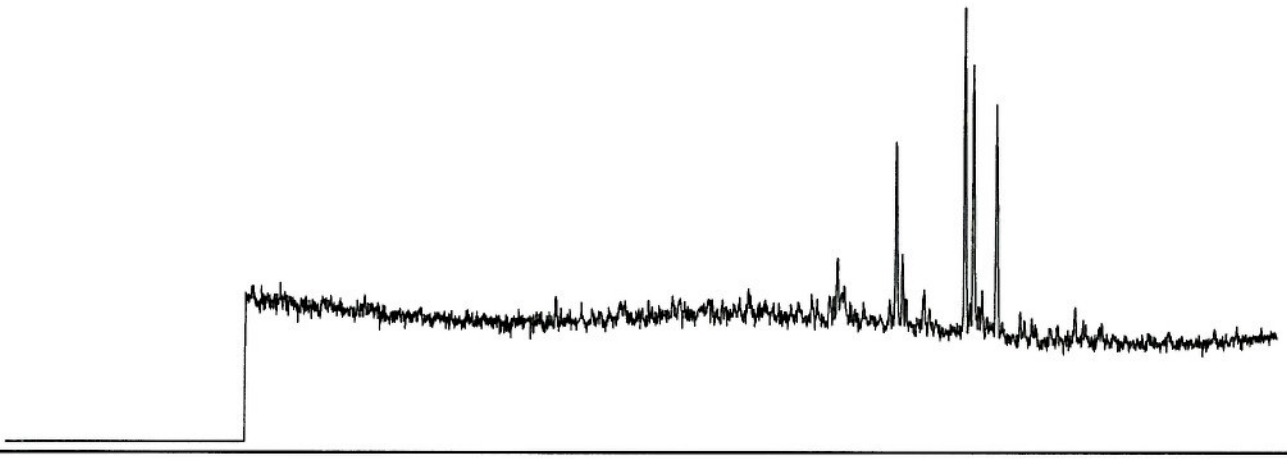
m/z 191:Tri-, tetra- and pentacyclic Terpanes



m/z 177: Norhopanes



m/z 205



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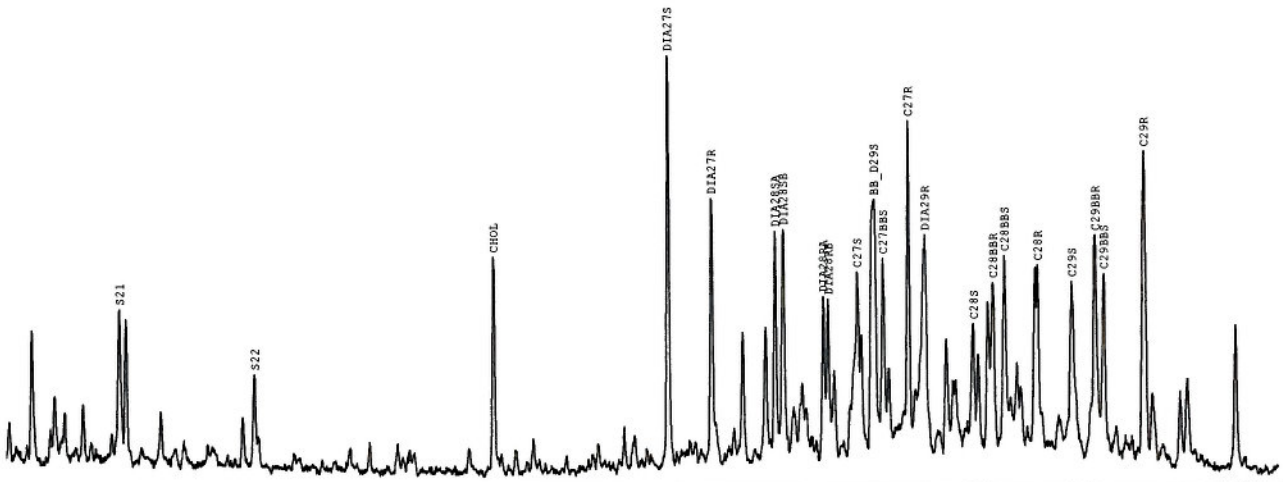
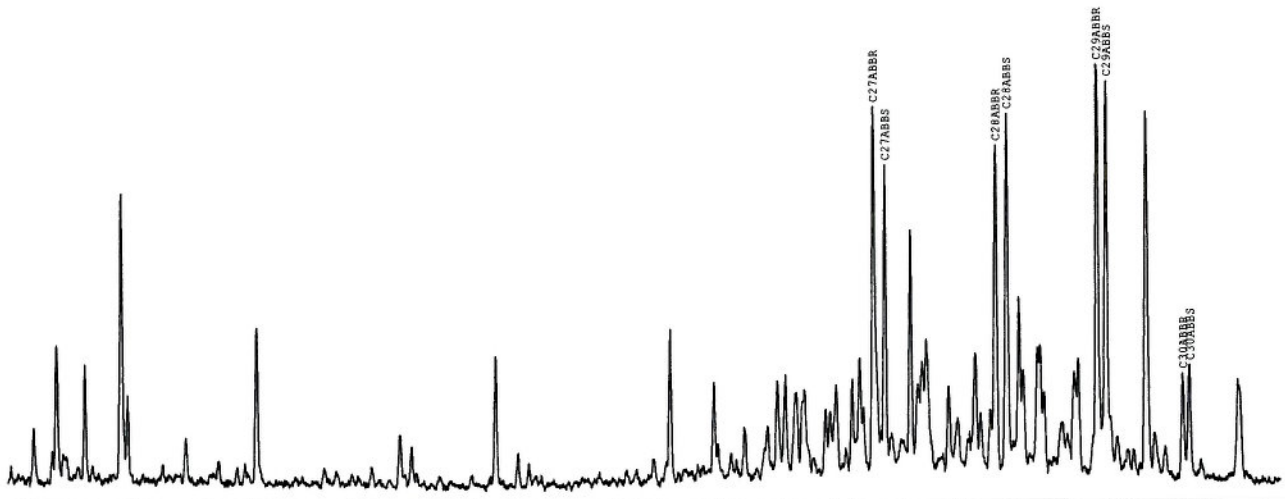
Company:	TALISMAN ENERGY	Client ID:	TM001507
Well Name:	GUBIK NO. 2	Project #:	09-687-A
Depth:	1863 - FT	Lab ID:	TM001507
Sampling Point:		File Name:	M2090874.D

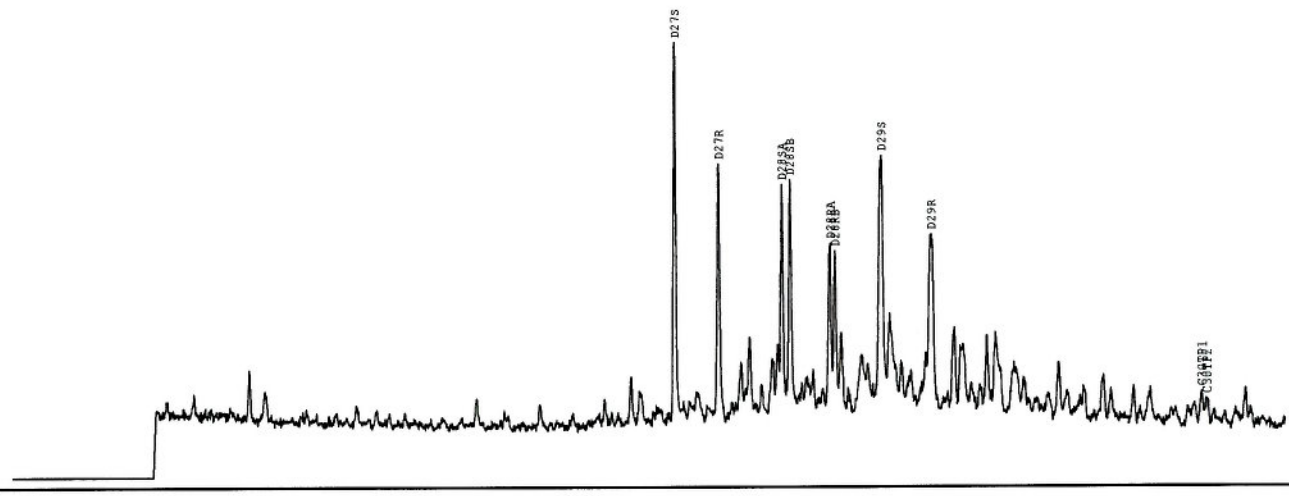
***m/z* 217: Steranes**



***m/z* 218: Steranes**



***m/z* 259: Diasteranes**



Parameter	Formula
Terpanes (*m/z* 191)	
C19/C23 Tricyclic terpanes	TR19/TR23
C22/C21 Tricyclic terpanes	TR22/TR21
C22/C24 Tricyclic terpanes	TR22/TR24
C23/C24 Tricyclic terpanes	TR23/TR24
C24/C23 Tricyclic terpanes	TR24/TR23
C26/C25 Tricyclic terpanes	(TR26A+TR26B)/(TR25A+TR25B)
C24 Tetracyclic/C23 Tricyclic	TET24/TR23
C24 Tetracyclic/C26 Tricyclics	TET24/(TR26A+TR26B)
(C28+C29 Tricyclics)/Ts	(TR28A+TR28B+TR29A+TR29B)/TS
Ts/Tm trisnorhopanes	TS/TM
Ts/(Ts+Tm) trisnorhopanes	TS/(TS+TM)
25-*nor*-hopane/hopane	NOR25H/H30
C29Ts/C29 Hopane	C29TS/H29
C29Ts/(C29TS+C29) Hopane	C29Ts/(C29TS+H29)
C23 Tricyclic/Hopane	TR23/H30
C24 Tetracyclic/Hopane	TET24/H30
Bisnorhopane/Hopane	H28/H30
Norhopane/Hopane	H29/H30
Diahopane/Hopane	DH30/H30
Oleanane/Hopane	(OLA+OLB)/H30
Moretane/Hopane	M30/H30
Moretane/(Moretane+Hopane)	M30/(M30+H30)
C30Ts/C30 Hopane	C30TS/H30
Gammacerane/Hopane	GAM/H30
C32 S/(S+R) Homohopanes	H32S/(H32R+H32S)
Gam/H31R Homohopane	GAM/H31R
C35/C34 Homohopanes	(H35R+H35S)/(H34R+H34S)
C35/C34 S Homohopanes	H35S/H34S
C35 Homohopane Index	(H35S+H35R)/(H31S+H31R+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)
Rel % C31 Homohopane	100*(H31S+H31R)/(H31S+H31R+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)
Rel % C32 Homohopane	100*(H32S+H32R)/(H31S+H31R+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)
Rel % C33Homohopane	100*(H33S+H33R)/(H31S+H31R+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)
Rel % C34 Homohopane	100*(H34S+H34R)/(H31S+H31R+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)
Rel % C35 Homohopane	100*(H35S+H35R)/(H31S+H31R+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)

Parameter	Formula
Steranes (*m/z* 217; 218)	
%C_{27} ααα R (217)	100*C27R/(C27R+C28R+C29R)
%C_{28} ααα R (217)	100*C28R/(C27R+C28R+C29R)
%C_{29} ααα R (217)	100*C29R/(C27R+C28R+C29R)
S/R (C_{29} ααα) (217)	C29S/C29R
S/(S+R) (C_{29} ααα) (217)	C29S/(C29S+C29R)
ββ/(αα+ββ) (C_{29}) (217)	(C29BBR+C29BBS)/(C29S+C29BBR+C29BBS+C29R)
ββS/(ααR+ββS) (C_{29}) (217)	(C29BBS+C29BBS)/(C29R+C29BBS+C29BBS+C29R)
αββS/αααR (C_{29}) (217)	C29BBS/C29R
(C_{21}+C_{22})/(C_{27}+C_{28}+C_{29}) (217)	(S21+S22)/(DIA27S+DIA27R+DIA28SA+DIA28SB+DIA28RA+DIA28RB+C27S+BB_D29S+C27BBS+C27R+DIA29R+C28S+C28BBR+C28BBS+C28R+C29S+C29BBR+C29BBS+C29R)
Diaster/ααα Ster (C_{27}) (217)	(DIA27S+DIA27R)/(C27S+C27R)
Dia/(Dia+ααα) Ster (C_{27})	(DIA27S+DIA27R)/(DIA27S+DIA27R+C27S+C27R)
C_{27}/C_{29} (αββS) (218)	C27ABBS/C29ABBS
C_{28}/C_{29} (αββS) (218)	C28ABBS/C29ABBS
C_{29}/C_{27} (αββS) (218)	C29ABBS/C27ABBS
Diaster/ααα Ster (C_{27}) (217)	(DIA27S+DIA27R)/(C27S+C27R)
C30 αββS Sterane Index (218)	100*(C30ABBS)/(C27ABBS+C28ABBS+C29ABBS+C30ABBS)
C30 S+R Sterane Index (218)	100*(C30ABBR+C30ABBS)/(C27ABBR+C27ABBS+C28ABBR+C28ABBS+C29ABBR+C29ABBS+C30ABBR+C30ABBS)
%C_{27} αββS (218)	100*C27ABBS/(C27ABBS+C28ABBS+C29ABBS)
%C_{28} αββS (218)	100*C28ABBS/(C27ABBS+C28ABBS+C29ABBS)
%C_{29} αββS (218)	100*C29ABBS/(C27ABBS+C28ABBS+C29ABBS)
%C_{27} αββ (R+S) (218)	100*(C27ABBR+C27ABBS)/(C27ABBR+C27ABBS+C28ABBR+C28ABBS+C29ABBR+C29ABBS)
%C_{28} αββ (R+S) (218)	100*(C28ABBR+C28ABBS)/(C27ABBR+C27ABBS+C28ABBR+C28ABBS+C29ABBR+C29ABBS)
%C_{29} αββ (R+S) (218)	100*(C29ABBR+C29ABBS)/(C27ABBR+C27ABBS+C28ABBR+C28ABBS+C29ABBR+C29ABBS)
C30 αββS Sterane Index (218)	100*(C30ABBS)/(C27ABBS+C28ABBS+C29ABBS+C30ABBS)
C30 S+R Sterane Index (218)	100*(C30ABBR+C30ABBS)/(C27ABBR+C27ABBS+C28ABBR+C28ABBS+C29ABBR+C29ABBS+C30ABBR+C30ABBS)
C_{27}/C_{29} (αββS) (218)	C27ABBS/C29ABBS
C_{28}/C_{29} (αββS) (218)	C28ABBS/C29ABBS
C_{29}/C_{27} (αββS) (218)	C29ABBS/C27ABBS
C_{29}/C_{27} (αββ) (218)	(C29ABBR+C29ABBS/)/(C27ABBR+C27ABBS)

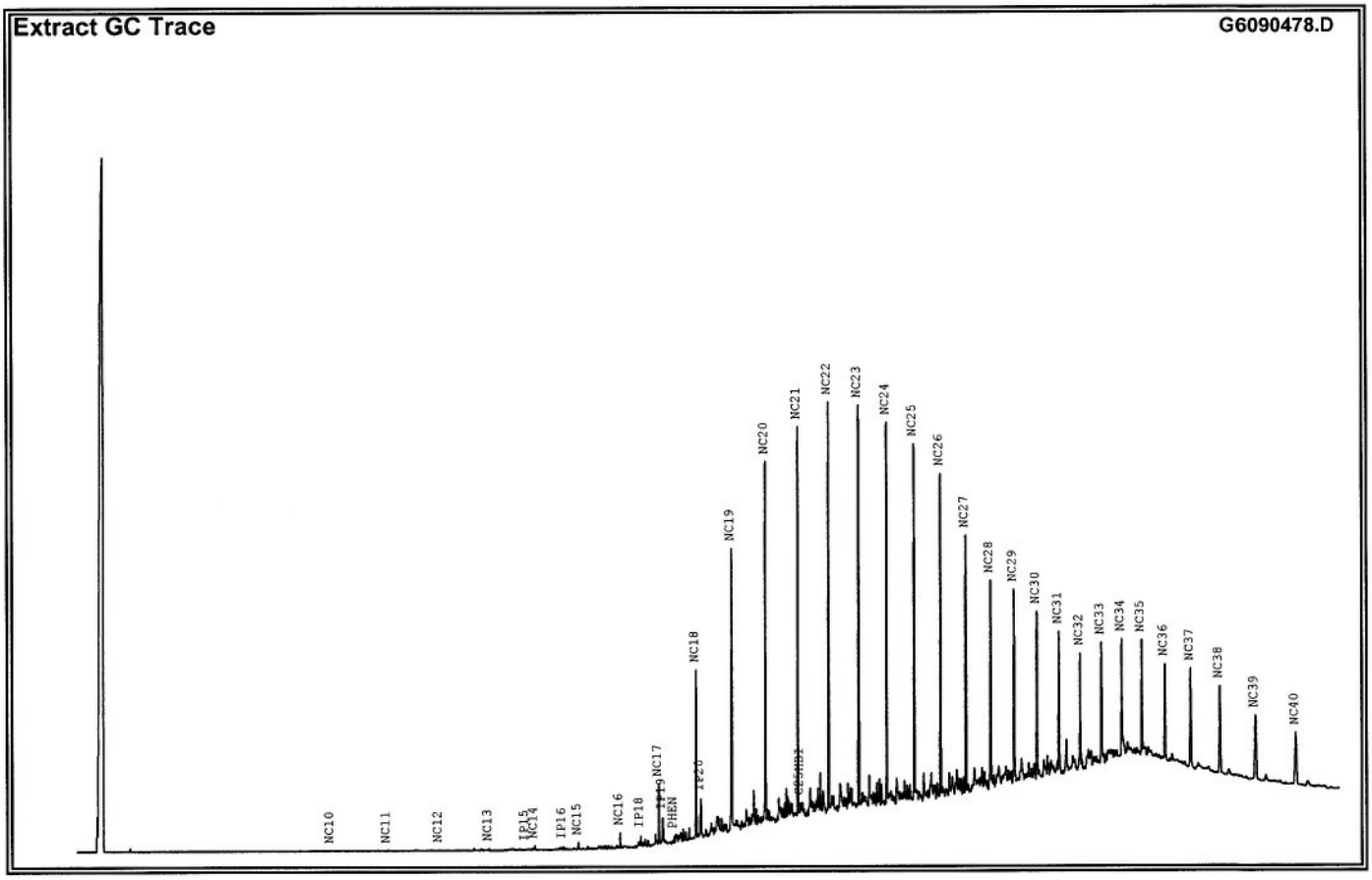
Parameter	Formula
Various (*m/z* 191; 217)	
Steranes/Hopanes	(DIA27S+DIA27R+DIA28SA+DIA28SB+DIA28RA+DIA28RB+C27S+BB_D29S+C27BBS+C27R+DIA29R+ C28S+C28BBR+C28BBS+C28R+C29S+C29BBR+C29BBS+C29R)/(TS+TM+H28+H29+C29TS+DH30+H30+ H31R+H31S+H32R+H32S+H33R+H33S+H34R+H34S+H35R+H35S)
Tricyclic terpanes/Hopanes	(TR19+TR20+TR21+TR22+TR23+TR24+TR25A+TR25B+TR26A+TR26B+TR28A+TR28B+TR29A+TR29B+ TR30A+TR30B)/(TS+TM+H28+H29+C29TS+DH30+H30+C30TS+H31R+H31S+H32R+H32S+H33R+H33S+ H34R+ H34S+H35R+H35S)
Tricyclic terpanes/Steranes	(TR19+TR20+TR21+TR22+TR23+TR24+TR25A+TR25B+TR26A+TR26B+TR28A+TR28B+TR29A+TR29B+ TR30A+TR30B)/(DIA27S+DIA27R+DIA28SA+DIA28SB+DIA28RA+DIA28RB+C27S+BB_D29S+C27BBS+ C27R+DIA29R+C28S+C28BBR+C28BBS+C28R+C29S+C29BBR+C29BBS+C29R)
Tricyclic/Pentacyclic Terpanes	100*(TR19+TR20+TR21+TR22+TR23+TR24+TR25A+TR25B+TET24+TR26A+TR26B+TR28A+TR28B+ TR29A+TR29B+TR30A+TR30B)/(TS+TM+H28+NOR25H+H29+C29TS+DH30+M29+OLA+OLB+H30+C30TS+M3 0+H31S+H31R+GAM+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)
Steranes/Terpanes	(S21+S22+DIA27S+DIA27R+DIA28SA+DIA28SB+DIA28RA+DIA28RB+C27S+BB_D29S+C27BBS+C27R+ C28S+C28BBR+C28BBS+C28R+C29S+C29BBR+C29BBS+C29R)/(TR19+TR20+TR21+TR22+TR23+TR24 +TR25A+TR25B+TET24+TR26A+TR26B+TR28A+TR28B+TR29A+TR29B+TR30A+TR30B+TS+TM+H28+ NOR25H+H29+C29TS+DH30+M29+OLA+OLB+H30+C30TS+M30+H31S+H31R+GAM+H32S+H32R+H33S+ H33R+H34S+H34R+H35S+H35R)
% Tricyclic Terpanes	100*(TR19+TR20+TR21+TR22+TR23+TR24+TR25A+TR25B+TET24+TR26A+TR26B+TR28A+TR28B+ TR29A+TR29B+TR30A+TR30B)/((TR19+TR20+TR21+TR22+TR23+TR24+TR25A+TR25B+TET24+TR26A+ TR26B+TR28A+TR28B+TR29A+TR29B+TR30A+TR30B+TS+TM+H28+NOR25H+H29+C29TS+DH30+M29+ OLA+OLB+H30+C30TS+M30+H31S+H31R+GAM+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)+ (S21+S22+DIA27S+DIA27R+DIA28SA+DIA28SB+DIA28RA+DIA28RB+C27S+BB_D29S+C27BBS+C27R +C28S+C28BBR+C28BBS+C28R+C29S+C29BBR+C29BBS+C29R))
% Pentacyclic Terpanes	100*(TS+TM+H28+NOR25H+H29+C29TS+DH30+M29+OLA+OLB+H30+C30TS+M30+H31S+H31R+GAM+ H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)/((TR19+TR20+TR21+TR22+TR23+TR24+TR25A+ TR25B+TET24+TR26A+TR26B+TR28A+TR28B+TR29A+TR29B+TR30A+TR30B+TS+TM+H28+NOR25H+ H29+C29TS+DH30+M29+OLA+OLB+H30+C30TS+M30+H31S+H31R+GAM+H32S+H32R+H33S+H33R+ H34S+H34R+H35S+H35R)+(S21+S22+DIA27S+DIA27R+DIA28SA+DIA28SB+DIA28RA+DIA28RB+C27S+ BB_D29S+C27BBS+C27R+C28S+C28BBR+C28BBS+C28R+C29S+C29BBR+C29BBS+C29R))
% Steranes	100*(S21+S22+DIA27S+DIA27R+DIA28SA+DIA28SB+DIA28RA+DIA28RB+C27S+BB_D29S+C27BBS+ C27R+C28S+C28BBR+C28BBS+C28R+C29S+C29BBR+C29BBS+C29R)/((TR19+TR20+TR21+TR22+TR23+TR 24+TR25A+TR25B+TET24+TR26A+TR26B+TR28A+TR28B+TR29A+TR29B+TR30A+TR30B+TS+TM+ H28+NOR25H+H29+C29TS+DH30+M29+OLA+OLB+H30+C30TS+M30+H31S+H31R+GAM+H32S+H32R+ H33S+H33R+H34S+H34R+H35S+H35R)+(S21+S22+DIA27S+DIA27R+DIA28SA+DIA28SB+DIA28RA+ DIA28RB+C27S+BB_D29S+C27BBS+C27R+C28S+C28BBR+C28BBS+C28R+C29S+C29BBR+C29BBS+ C29R))

Weatherford LABORATORIES

EXTRACT GC

Company:	TALISMAN ENERGY	Client ID:	TM001508
Country:	UNITED STATES	Project #:	09-687-A
Basin:		Lab ID:	TM001508
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	NANUSHUK/GRANDSTAND SANDSTC
Well Name:	GUBIK NO. 2	Geologic Age:	
Latitude:	0	Top Depth:	4235 FT
Longitude:	0	Bottom Depth:	FT

Extract GC Trace G6090478.D



WGC parameters	
Pristane/Phytane	0.68
Pristane/$n\,C_{17}$	0.66
Phytane/$n\,C_{18}$	0.37
$n\,C_{18}/(nC_{18}+n\,C_{19})$	0.36
$n\,C_{17}/(nC_{17}+n\,C_{29})$	0.21
CPI Hunt[4]	1.03
Normal Paraffins	49.5
Isoprenoids	1.2
Cycloparaffins	
Branched (iso-) Paraffins	
BTX aromatics	
Resolved unknowns	49.2

Thompson[1]	
A.	BZ/$n\,C_6$
B.	TOL/$n\,C_7$
C.	$(n\,C_6+n\,C_7)$/(CH+MCH)
I.	Isoheptane Value
F.	$n\,C_7$/MCH
U.	CH/MCP
R.	$n\,C_7$/2MH
S.	$n\,C_6$/22DMB
H.	Heptane Value
	MCH/$n\,C_7$
	mpXYL/$n\,C_8$

Mango[2]
P_1
P_2
P_3
$5N_1$
N_2
$6N_1$
K_1
K_2
$5N_1/6N_1$
P_3/N_2
ln(24DMP/23DMP)

Halpern[3]
Tr_1
Tr_2
Tr_3
Tr_4
Tr_5
Tr_7
Tr_8
C_1
C_2
C_3
C_4
C_5

[1]Thompson, K.F.M.,1983.GCA:V.47, p.303. [2]Mango, F.D.,1994.GCA: V.58, p.895. [3]Halpern,H.I.,1995,AAPG Bull.: V.79, p.801. [4]Hunt, 1979

Company:	**TALISMAN ENERGY**	**Client ID:**	**TM001508**
Well Name:	**GUBIK NO. 2**	**Project #:**	**09-687-A**
Depth:	**4235 - FT**	**Lab ID:**	**TM001508**
Sampling Point:		**File Name:**	**G6090478.D**

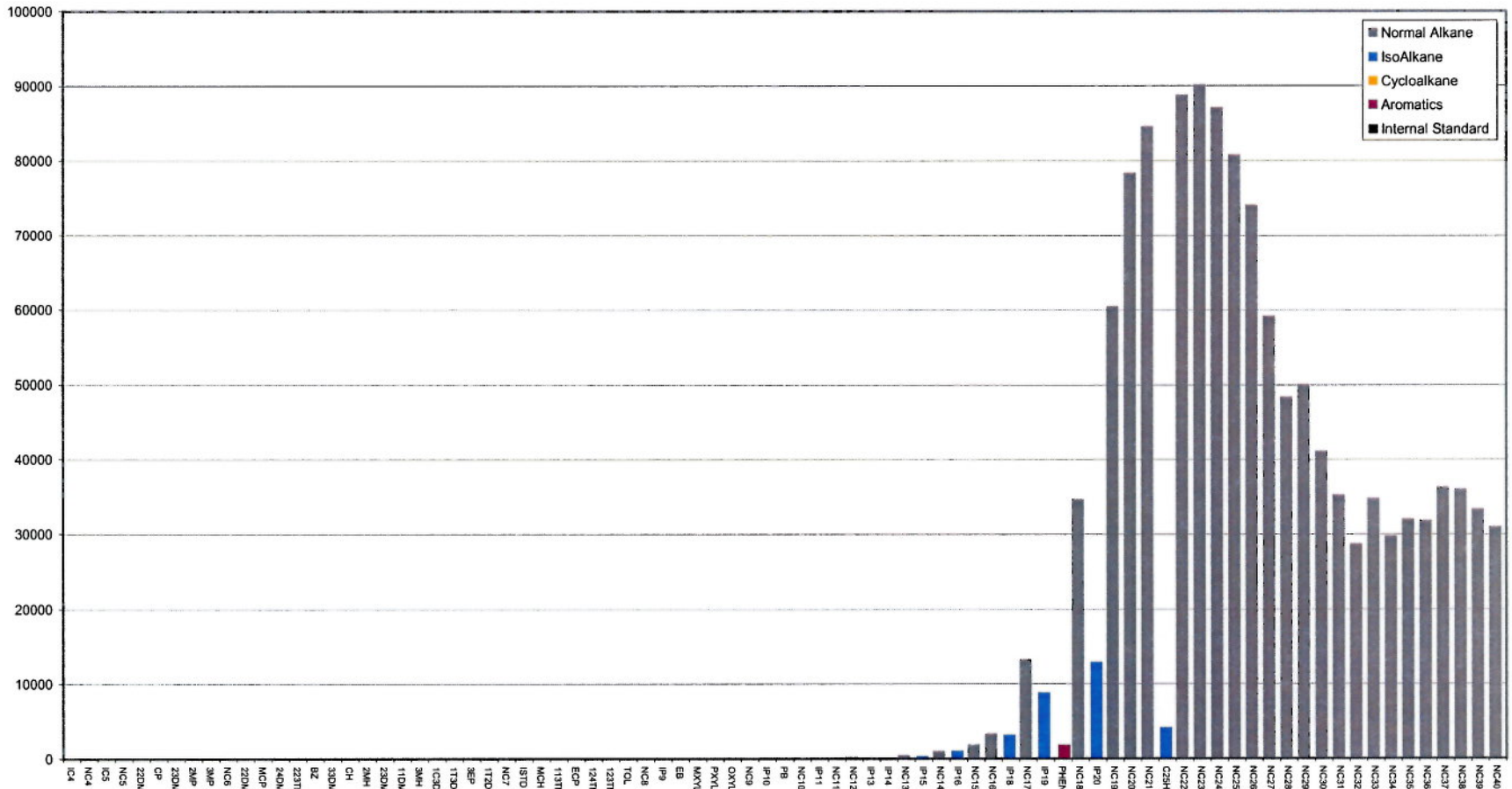
Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IC4	Iso-alkane C4					
NC4	Normal Alkane C4					
IC5	Iso-alkane C5					
NC5	Normal Alkane C5					
22DMB	2,2-Dimethylbutane					
CP	Cyclopentane					
23DMB	2,3-Dimethylbutane					
2MP	2-Methylpentane					
3MP	3-Methylpentane					
NC6	Normal Alkane C6					
22DMP	2,2-Dimethylpentane					
MCP	Methylcyclopentane					
24DMP	2,4-Dimethylpentane					
223TMB	2,2,3-Trimethylbutane					
BZ	Benzene					
33DMP	3,3-Dimethylpentane					
CH	Cyclohexane					
2MH	2-Methylhexane					
23DMP	2,3-Dimethylpentane					
11DMCP	1,1-Dimethylcyclopentane					
3MH	3-Methylhexane					
1C3DMCP	1-cis-3-Dimethylcyclopentane					
1T3DMCP	1-trans-3-Dimethylcyclopentane					
3EP	3-Ethylpentane					
1T2DMCP	1-trans-2-Dimethylcyclopentane					
NC7	Normal Alkane C7					
ISTD	Internal Standard					
MCH	Methylcyclohexane					
113TMCP	1,1,3,-Trimethylcyclopentane					
ECP	Ethylcyclopentane					
124TMCP	1,2,4-Trimethylcyclopentane					
123TMCP	1,2,3-Trimethylcyclopentane					
TOL	Toluene					
NC8	Normal Alkane C8					
IP9	Isoprenoid C9					
EB	Ethyl-benzene					
MXYL	*m*-xylene					
PXYL	*p*-xylene					
OXYL	*o*-xylene					
NC9	Normal Alkane C9					
IP10	Isoprenoid C10					
PB	Propyl-benzene					
NC10	Normal Alkane C10	26.737	104	26		
IP11	Isoprenoid C11					
NC11	Normal Alkane C11	32.031	127	37		
NC12	Normal Alkane C12	36.983	210	56		
IP13	Isoprenoid C13					
IP14	Isoprenoid C14					
NC13	Normal Alkane C13	41.623	449	122		
IP15	Isoprenoid C15	45.104	333	77		
NC14	Normal Alkane C14	45.983	1035	263		

Company:	**TALISMAN ENERGY**	**Client ID:**	**TM001508**
Well Name:	**GUBIK NO. 2**	**Project #:**	**09-687-A**
Depth:	**4235 - FT**	**Lab ID:**	**TM001508**
Sampling Point:		**File Name:**	**G6090478.D**

Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IP16	Isoprenoid C16	48.664	1041	173		
NC15	Normal Alkane C15	50.094	1893	426		
NC16	Normal Alkane C16	53.987	3367	928		
IP18	Isoprenoid C18	55.952	3199	663		
NC17	Normal Alkane C17	57.678	13299	3636		
IP19	Isoprenoid C19 (Pristane)	58.041	8828	1606		
PHEN	Phenanthrene	59.109	1804	426		
NC18	Normal Alkane C18	61.190	34720	9993		
IP20	Isoprenoid C20 (Phytane)	61.648	12931	2337		
NC19	Normal Alkane C19	64.536	60526	16713		
NC20	Normal Alkane C20	67.726	78381	21445		
NC21	Normal Alkane C21	70.772	84589	23158		
C25HBI	Highly Branch Isoprenoid C25	71.016	4193	921		
NC22	Normal Alkane C22	73.688	88786	24304		
NC23	Normal Alkane C23	76.481	90200	23868		
NC24	Normal Alkane C24	79.161	87076	22647		
NC25	Normal Alkane C25	81.737	80797	21196		
NC26	Normal Alkane C26	84.217	74108	19195		
NC27	Normal Alkane C27	86.606	59199	15264		
NC28	Normal Alkane C28	88.910	48402	12329		
NC29	Normal Alkane C29	91.141	50116	11540		
NC30	Normal Alkane C30	93.293	41146	9926		
NC31	Normal Alkane C31	95.380	35272	8521		
NC32	Normal Alkane C32	97.399	28758	6923		
NC33	Normal Alkane C33	99.363	34842	7233		
NC34	Normal Alkane C34	101.269	29768	6971		
NC35	Normal Alkane C35	103.191	32036	6866		
NC36	Normal Alkane C36	105.322	31831	5731		
NC37	Normal Alkane C37	107.742	36342	5915		
NC38	Normal Alkane C38	110.500	36043	5202		
NC39	Normal Alkane C39	113.706	33399	3859		
NC40	Normal Alkane C40	117.435	31037	3136		
NC41	Normal Alkane C41	121.531	18	16		

Company:	**TALISMAN ENERGY**	**Client ID:**	**TM001508**
Well Name:	**GUBIK NO. 2**	**Project #:**	**09-687-A**
Depth:	**4235 - FT**	**Lab ID:**	**TM001508**
Sampling Point:		**File Name:**	**G6090478.D**

Histogram Based on Area



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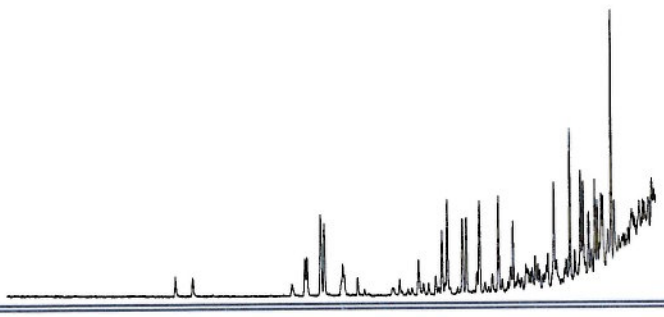
Weatherford LABORATORIES

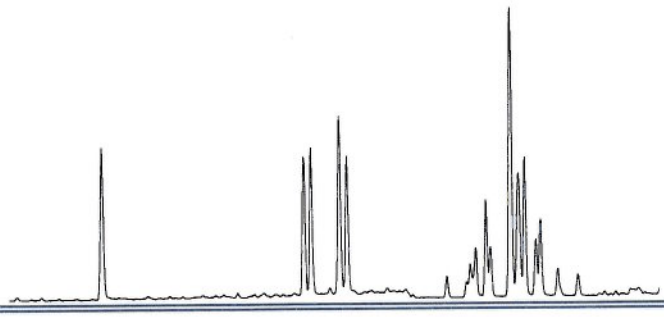
AROMATIC BIOMARKERS

Company:	TALISMAN ENERGY	Client ID:	TM001508
Country:	UNITED STATES	Project #:	09-687-A
Basin:		Lab ID:	TM001508
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	NANUSHUK/GRANDSTAND SANDSTC
Well Name:	GUBIK NO. 2	Geologic Age:	
Latitude:	0	Top Depth:	4235 FT
Longitude:	0	Bottom Depth:	FT

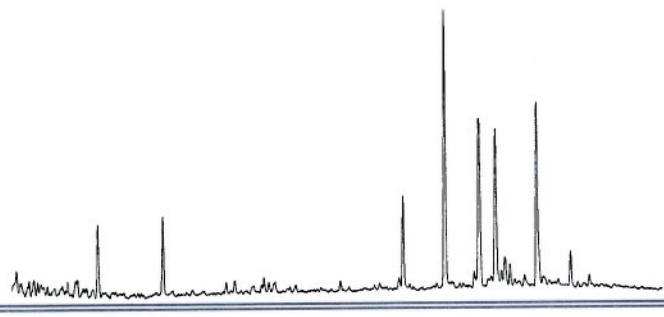
m/z 128+142+156+170+184: Methylnaphthalenes M1090754.D



m/z 178+192+206: Phenanthrenes M1090754.D



m/z 231: Triaromatic steroids M1090754.D



RATIOS (on Areas)[1]		Appl[2]	TEV[3]
Mono- (MAS) and Triaromatic Steroids (TAS)			
(C20+C21)/Σ TAS	0.12	M	1.0 (1.3%)
TAS #1 20/20+27	0.27	M	
TAS #2 21/21+28	0.27	M	
%26 TAS	17.6	D	
%27 TAS	36.4	D	
%28 TAS	39.6	D	
%29 TAS	6.4	D	
C28/C26 20S TAS	2.51		
C28/C27 20R TAS	1.09		
Dia/Regular C27 MAS	2.94		
%27 MAS	24.1	D	
%28 MAS	41.1	D	
%29 MAS	34.8	D	
(C21+C22)/Σ MAS	0.10	M	1.0 (1.3%)
TAS/(MAS+TAS)	0.70	M	
TA28/(TA28+MA29)	0.73	M	1.0 (0.8%)
Triaromatic Methylsteroids			
Dinosteroid Index	0.33	A	
C4/C3+C4 Mester	0.49	A	
Phenanthrenes, Naphthalenes, and Dibenzothiophenes			
MPI-1	0.91	M	
Rc(a) if Ro < 1.3 (Ro%)	0.92	M	
Rc(b) if Ro > 1.3 (Ro%)	1.75	M	
MPI-2	0.93	M	
DNR-1	5.73	M	
DNR-2	1.72	M	
TNR1	0.99	M	
TDE-1	5.18	M	
TDE-2	0.22	M	
MDR	0.71	M	
Rm (Ro%)	0.57	M	
MDR23	1.25	M	
MDR1	2.10	M	
DBT/Phenanthrene	0.04	D	

[1]Definition and utility of the ratios can be found on our website www.brilabs.com

[2]A=Source Age; D=Depositional environment; M= Maturity

[3]Thermal equilibrium value of the biomarker ratio and in brackets the approximate VR value at which this value is reached

Company:	**TALISMAN ENERGY**	**Client ID:**	**TM001508**
Well Name:	**GUBIK NO. 2**	**Project #:**	**09-687-A**
Depth:	**4235 - FT**	**Lab ID:**	**TM001508**
Sampling Point:		**File Name:**	**M1090754.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
230	OTP	*Ortho-terphenyl* (internal standard)	75.014	75778	17798	300.0	300.0
128	NAPH	Naphthalene					
142	2MN	2-Methylnaphthalene	37.996	1785	282	7.1	4.8
142	1MN	1-Methylnaphthalene	39.226	1632	262	6.5	4.4
154	BP	Biphenyl	44.702	1491	216	5.9	3.6
156	2EN	2-Ethylnaphthalene	46.185	669	116	2.6	2.0
156	1EN	1-Ethylnaphthalene	46.219	365	84	1.4	1.4
156	26DMN	2,6-Dimethylnaphthalene	47.078	2711	413	10.7	7.0
156	27DMN	2,7-Dimethylnaphthalene	47.247	2880	447	11.4	7.5
156	1317DMN	1,3 & 1,7-Dimethylnaphthalenes	48.224	6565	886	26.0	14.9
156	16DMN	1,6-Dimethylnaphthalene	48.477	5261	822	20.8	13.9
156	23DMN	2,3-Dimethylnaphthalene	49.656	885	165	3.5	2.8
156	14DMN	1,4-Dimethylnaphthalene	49.757	2368	332	9.4	5.6
156	15DMN	1,5-Dimethylnaphthalene	49.875	976	220	3.9	3.7
156	12DMN	1,2-Dimethylnaphthalene	50.802	1204	190	4.8	3.2
168	2MBP	2-Methylbiphenyl					
168	DPM	Diphenylmethane					
168	3MBP	3-Methylbiphenyl	53.329	972	151	3.8	2.5
168	4MBP	4-Methylbiphenyl	53.986	491	70	1.9	1.2
168	DBF	Dibenzofuran	55.402	329	46	1.3	0.8
170	BB_EMN	Ethyl-methyl-Naphthalene	55.132	2494	318	9.9	5.4
170	AB_EMN	Ethyl-methyl-Naphthalene	56.362	1146	176	4.5	3.0
170	137TMN	1,3,7-Trimethylnaphthalene	56.817	4231	675	16.8	11.4
170	136TMN	1,3,6-Trimethylnaphthalene	57.188	6347	1048	25.1	17.7
170	146135T	(1,4,6+1,3,5)-Trimethylnaphthalenes	58.249	5035	739	19.9	12.5
170	236TMN	2,3,6-Trimethylnaphthalene	58.519	5005	839	19.8	14.1
170	127TMN	1,2,7-Trimethylnaphthalene	59.260	1348	223	5.3	3.8
170	167126T	(1,6,7+1,2,6)-Trimethylnaphthalenes	59.429	6231	914	24.7	15.4
170	124TMN	1,2,4-Trimethylnaphthalene	60.338	949	166	3.8	2.8
170	125TMN	1,2,5-Trimethylnaphthalene	60.793	4915	898	19.5	15.1
178	PHEN	Phenanthrene	70.296	100941	20519	399.6	345.9
184	1357	1,3,5,7-Tetramethylnaphthalene	64.753	6086	1123	24.1	18.9
184	1367	1,3,6,7-Tetramethylnaphthalene	65.899	8037	1669	31.8	28.1
184	1247	(1,2,4,7+1,2,4,6+1,4,6,7)-Tetramethylnaphthalenes	66.640	5927	1126	23.5	19.0
184	1257	1,2,5,7-Tetramethylnaphthalene	66.825	4654	905	18.4	15.3
184	2367	2,3,6,7-Tetramethylnaphthalene	67.213	2620	539	10.4	9.1
184	1267	1,2,6,7-Tetramethylnaphthalene	67.634	3648	780	14.4	13.1
184	1237	1,2,3,7-Tetramethylnaphthalene	67.819	1534	323	6.1	5.4
184	1236	1,2,3,6-Tetramethylnaphthalene	68.089	3530	716	14.0	12.1
184	1256	1,2,5,6-Tetramethylnaphthalene	68.814	11515	2442	45.6	41.2
184	DBT	Dibenzothiophene	69.033	3602	660	14.3	11.1
191	BH32	C32 Benzohopane	117.838	12362	1878	48.9	31.7
191	BH33	C33 Benzohopane	120.029	9400	1274	37.2	21.5
191	BH34	C34 Benzohopane	121.967	4748	623	18.8	10.5
191	BH35	C35 Benzohopane	124.360	2149	245	8.5	4.1
192	3MP	3-Methylphenanthrene	75.233	89549	18668	354.5	314.7
192	2MP	2-Methylphenanthrene	75.418	92991	19732	368.1	332.6
192	9MP	9-Methylphenanthrene	76.109	114199	23817	452.1	401.5
192	1MP	1-Methylphenanthrene	76.295	84591	18230	334.9	307.3

Company:	**TALISMAN ENERGY**	**Client ID:**	**TM001508**
Well Name:	**GUBIK NO. 2**	**Project #:**	**09-687-A**
Depth:	**4235 - FT**	**Lab ID:**	**TM001508**
Sampling Point:		**File Name:**	**M1090754.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
198	CAD	Cadalene	66.252	3095	581	12.3	9.8
198	4MDBT	4 Methyl Dibenzothiophene	73.582	5350	1093	21.2	18.4
198	23MDBT	2 & 3 Methyl Dibenzothiophenes	74.391	4488	712	17.8	12.0
198	1MDBT	1 Methyl Dibenzothiophene	75.132	7550	1624	29.9	27.4
206	36DMP	3,6-Dimethylphenanthrene	79.459	31712	6556	125.5	110.5
206	26DMP	2,6-Dimethylphenanthrene	79.712	59496	13010	235.5	219.3
206	27DMP	2,7-Dimethylphenanthrene	79.830	28968	6670	114.7	112.4
206	39DMP	(3,9+3,10+2,10+1,3)-Dimethylphenanthrenes	80.336	208419	39038	825.1	658.0
206	29DMP	(2,9+1,6)-Dimethylphenanthrenes	80.538	100899	16646	399.5	280.6
206	17DMP	1,7-Dimethylphenanthrene	80.690	85033	18788	336.6	316.7
206	23DMP	2,3-Dimethylphenanthrene	80.959	36465	7665	144.4	129.2
206	19DMP	1,9-Dimethylphenanthrene	81.077	46552	10339	184.3	174.3
206	18DMP	1,8-Dimethylphenanthrene	81.499	17696	3609	70.1	60.8
206	12DMP	1,2-Dimethylphenanthrene	81.988	13772	2895	54.5	48.8
231	231A20	C20 Triaromatic Steroid	92.336	22549	4808	89.3	81.0
231	231B21	C21 Triaromatic	94.831	24048	5205	95.2	87.7
231	231C26	C26 20S Triaromatic	104.017	28794	6206	114.0	104.6
231	231D26	C27 20S & C26 20R Triaromatic	105.618	91965	18298	364.1	308.4
231	TADMD1	C28 23,24-Cholestane Triaromatic	106.191	1374	309	5.4	5.2
231	TADMD2	C28 23,24-Cholestane Triaromatic	106.730	5179	1091	20.5	18.4
231	231E28	C28 20S Triaromatic	106.916	72410	11097	286.7	187.0
231	231F27	C27 20R Triaromatic	107.573	59747	10444	236.5	176.0
231	TADMD3	C28 23,24-Cholestane Triaromatic	107.674	1594	813	6.3	13.7
231	C29TA1	C29 Triaromatic	107.927	13645	1984	54.0	33.4
231	C29TA2	C29 Triaromatic	108.129	7113	1550	28.2	26.1
231	TADMD4	C28 23,24-Cholestane Triaromatic	108.955	932	201	3.7	3.4
231	231G28	C28 20R Triaromatic	109.174	64927	12140	257.0	204.6
231	TADMD5	C28 23,24-Cholestane Triaromatic	109.259	3746	2242	14.8	37.8
231	C29TA3	C29 Triaromatic	110.472	10464	2364	41.4	39.8
245	C3S	C27 20S 3-Methyl Triaromatic Steroid	106.713	6453	1186	25.5	20.0
245	C4S	C27 20S 4-Methyl Triaromatic Steroid	107.320	7686	1615	30.4	27.2
245	E2S	C28 20S 2-Methyl Triaromatic Steroid	107.893	4276	696	16.9	11.7
245	E3SC3R	C28 20S 3-Methyl & C27 20R 3-Methyl TAS	108.230	21846	3258	86.5	54.9
245	E4SC4R	C28 20S 4-Methyl & C27 20R 4-Methyl TAS	108.820	25815	3975	102.2	67.0
245	S2S	C29 20S 2-Methyl Triaromatic Steroid	109.073	5589	783	22.1	13.2
245	DA	Triaromatic Dinosteroid a	109.242	5859	1056	23.2	17.8
245	S3S	C29 20S 3-Methyl Triaromatic Steroid	109.427	18993	2099	75.2	35.4
245	DB	Triaromatic Dinosteroid b	109.848	13457	2538	53.3	42.8
245	S4SE2R	C29 20S 4-Methyl & C28 20R 2-Methyl TAS	110.017	18215	2481	72.1	41.8
245	E3R	C28 20R 3-Methyl Triaromatic Steroid	110.152	16232	2353	64.3	39.7
245	E4R	C28 20R 4-Methyl Triaromatic Steroid	110.759	17461	2780	69.1	46.9
245	DC	Triaromatic Dinosteroid c	110.944	14617	2791	57.9	47.0
245	DD	Triaromatic Dinosteroid d	111.045	16144	3039	63.9	51.2
245	S2R	C29 20R 2-Methyl Triaromatic Steroid	111.483	5252	799	20.8	13.5
245	S3R	C29 20R 3-Methyl Triaromatic Steroid	111.686	14365	2616	56.9	44.1
245	DE	Triaromatic Dinosteroid e	111.820	14756	2256	58.4	38.0
245	S4R	C29 20R 4-Methyl Triaromatic Steroid	112.292	10427	2082	41.3	35.1
245	DF	Triaromatic Dinosteroid f	112.410	18910	3480	74.9	58.7

Company:	TALISMAN ENERGY	Client ID:	TM001508
Well Name:	GUBIK NO. 2	Project #:	09-687-A
Depth:	4235 - FT	Lab ID:	TM001508
Sampling Point:		File Name:	M1090754.D

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
253	S253A	C21 Ring-C Monoaromatic Steroid	84.549	8810	1190	34.9	20.1
253	S253B	C22 Monoaromatic steroid	87.010	7561	1412	29.9	23.8
253	S253C	C27 Reg 5β(H),10β(CH3) 20S	97.005	3782	777	15.0	13.1
253	S253D	C27 Dia 10β(H),5β(CH3) 20S	97.140	11108	2599	44.0	43.8
253	S253E	C27 Dia10βH,5βCH3 20R+Reg5βH,10βCH3 20R	98.623	12371	2349	49.0	39.6
253	S253F	C27 Reg 5α(H),10β(CH3) 20S	98.775	4232	799	16.8	13.5
253	S253G	C28 Dia 10αH,5αCH3 20s+Reg5βH,10βCH3 20S	99.163	25476	4640	100.9	78.2
253	S253H	C27 Reg 5α(H),10β(CH3) 20R	100.460	3468	599	13.7	10.1
253	S253I	C28 Reg 5α(H),10β(CH3) 20S	100.595	5604	1091	22.2	18.4
253	S253J	C28 Dia 10αH,5αCH3 20R+Reg5βH,10βCH3 20R	100.781	22036	4513	87.2	76.1
253	S253K	C29 Dia 10βH,5βCH3 20S+Reg5βH,10βCH3 20S	100.915	19219	3661	76.1	61.7
253	S253L	C29 Reg 5α(H),10β(CH3) 20S	102.196	5809	1024	23.0	17.3
253	S253M	C28 Reg 5α(H),10β(CH3) 20R	102.466	6565	1133	26.0	19.1
253	S253N	C29 Dia 10βH,5βCH3 20R+Reg5βH,10βCH3 20R	102.601	20030	3236	79.3	54.5
253	S253O	C29 Reg 5α(H),10β(CH3) 20R	104.236	5385	883	21.3	14.9
365	SH29	C29 8,14-secohopanoids	104.101	36130	7169	143.0	120.8
365	SH30	C30 8,14-secohopanoids	106.073	42396	8894	167.8	149.9

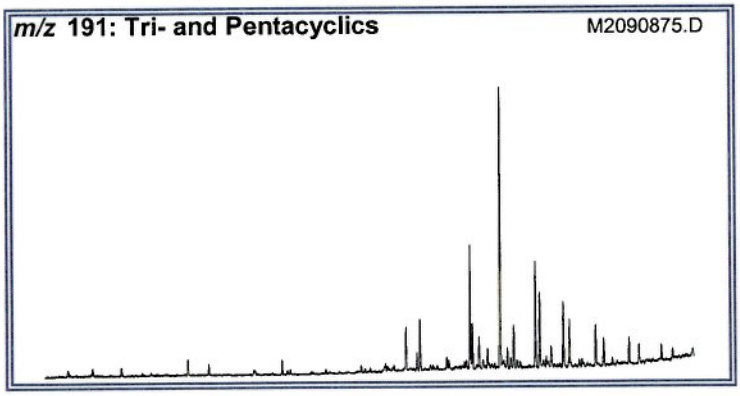
Company:	TALISMAN ENERGY	Client ID:	TM001508
Well Name:	GUBIK NO. 2	Project #:	09-687-A
Depth:	4235 - FT	Lab ID:	TM001508
Sampling Point:		File Name:	M1090754.D

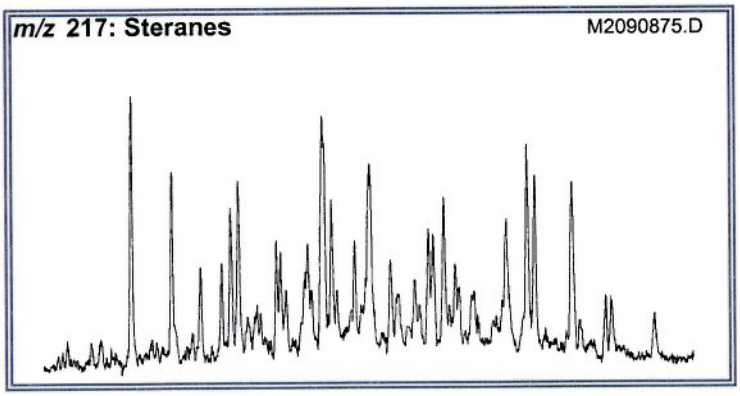
Miscellaneous Ratios	By Areas	By Heights
Triaromatic Steroids m/z 231		
(C20+C21)/Σ TAS	0.12	0.14
TAS #1 20/20+27	0.27	0.32
TAS #2 21/21+28	0.27	0.30
%26TAS	17.6	19.9
%27TAS	36.4	33.5
%28TAS	39.6	39.0
%29TAS	6.4	7.6
C28/C26 20S TAS	2.51	1.79
C28/C27 20R TAS	1.09	1.16
Monoaromatic Steroids m/z 253		
Dia/Regular C27 MAS	2.94	3.34
%27 MAS	24.1	26.1
%28 MAS	41.1	41.7
%29 MAS	34.8	32.2
(C21+C22)/Σ MAS	0.10	0.09
TAS/(MAS+TAS)	0.70	0.70
TA28/(TA28+MA29)	0.73	0.73
Triaromatic Methylsteroids m/z 245		
Dinosteroid Index	0.33	0.36
C4/C3+C4 Mester	0.49	0.51
Phenanthrenes and Naphthalenes		
MPI-1	0.91	0.92
MPI-2	0.93	0.95
MPI-3	0.92	0.91
Rc(a) if Ro < 1.3 (Ro%)	0.92	0.92
Rc(b) if Ro > 1.3 (Ro%)	1.75	1.75
DNR-1	5.73	3.91
DNR-2	1.72	1.73
TNR1	0.99	1.14
TDE-1	5.18	5.41
TDE-2	0.22	0.24
MDR	0.71	0.67
Rm (Ro%)	0.57	0.56
MDR23	1.25	1.08
MDR1	2.10	2.46
DBT/Phenanthrene	0.04	0.03

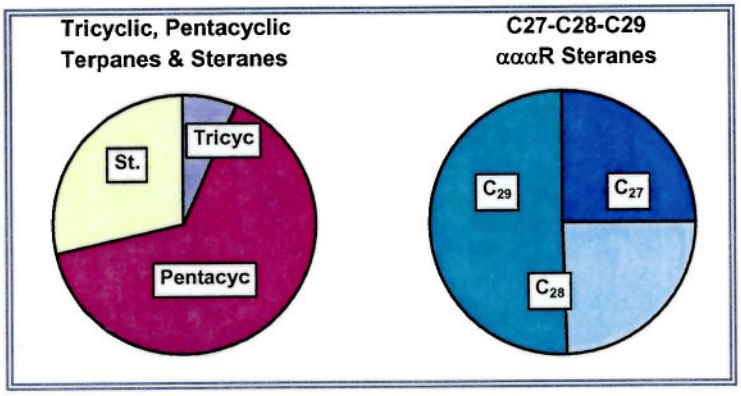
Weatherford LABORATORIES

SATURATE BIOMARKERS

Company:	TALISMAN ENERGY	Client ID:	TM001508
Country:	UNITED STATES	Project #:	09-687-A
Basin:		Lab ID:	TM001508
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	NANUSHUK/GRANDSTAND SANDSTO
Well Name:	GUBIK NO. 2	Geologic Age:	
Latitude:	0	Top Depth:	4235 FT
Longitude:	0	Bottom Depth:	FT







RATIOS (on Areas)[1]		Appl[2]	TEV[3]
Steranes (*m/z* 217; 218)			
%C_{27} αββS (218)	24.4	D	
%C_{28} αββS (218)	33.1	D	
%C_{29} αββS (218)	42.5	D	
%C_{27} αααR (217)	25.0	D	
%C_{28} αααR (217)	24.5	D	
%C_{29} αααR (217)	50.4	D	
S/(S+R) (C_{29} ααα) (217)	0.43	M	0.55 (0.8%)
ββS/(ββS+ααR) (C29) (217)	0.47	M	0.70 (0.9%)
(C_{21}+C_{22})/(C_{27}+C_{28}+C_{29}) (217)	0.05		
C_{27}/C_{29} (αββS) (218)	0.58	D	
C_{28}/C_{29} (αββS) (218)	0.78	D	
Diaster/ααα Ster (C_{27}) (217)	1.86	M/D	1.00 (1.4%)
C30 αββS Sterane Index (218)	8.86	D	
C30 S+R Sterane Index (218)	8.72	D	
Terpanes (*m/z* 191)			
Oleanane/Hopane		D/A	
Gammacerane/Hopane	0.04	D	
Norhopane/Hopane	0.44	D	
Bisnorhopane/Hopane			
Diahopane/Hopane	0.13	M/D	
Moretane/Hopane	0.16	M	0.05 (0.7%)
25-*nor*-hopane/hopane		B	
Ts/(Ts+Tm) trisnorhopanes	0.44	M/D	1.00 (1.4%)
C29Ts/C29 Hopane	0.39	M	
H32 S/(R+S) Homohopanes	0.58	M	0.60 (0.6%)
H35/H34 Homohopanes	0.65	D	
C24 Tetracyclic/Hopane	0.06	D	
C24 Tetracyclic/C26 Tricyclics	1.38	D	
C23/C24 Tricyclic terpanes	1.37	D	
C19/C23 Tricyclic terpanes	0.27	D	
C26/C25 Tricyclic terpanes	0.99	D	
(C28+C29 Tricyclics)/Ts	0.46	A	
Various (*m/z* 191; 217)			
Steranes/Hopanes	0.50	D	
Tricyclic terpanes/Hopanes	0.10	M	1.00 (1.4%)
Tricyclic terpanes/Steranes	0.20	M/D	1.00 (1.4%)

[1]Definition and utility of the ratios can be found on our website www.brilabs.com

[2]A=Source Age; D=Depositional environment; M= Maturity; B=Possible Biodegradation

[3]Thermal equilibrium value of the biomarker ratio and in brackets the approximate VR value at which this value is reached

Company:	**TALISMAN ENERGY**	**Client ID:**	**TM001508**
Well Name:	**GUBIK NO. 2**	**Project #:**	**09-687-A**
Depth:	**4235 - FT**	**Lab ID:**	**TM001508**
Sampling Point:		**File Name:**	**M2090875.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
217	CHOL	*5β cholane (internal standard)*	42.229	7708	1268	100.0	100.0
125	BCAROT	β-carotane					
187	4MDIAM	4-methyldiamantane					
187	1MDIAM	1-methyldiamantane					
187	3MDIAM	3-methyldiamantane					
188	DIAM	diamantane					
191	TR19	C19 tricyclic terpane	18.845	673	148	8.7	11.7
191	TR20	C20 tricyclic terpane	21.686	932	197	12.1	15.5
191	TR21	C21 tricyclic terpane	25.032	1476	216	19.1	17.0
191	TR22	C22 tricyclic terpane	28.413	613	87	8.0	6.9
191	TR23	C23 tricyclic terpane	32.657	2449	386	31.8	30.4
191	TR24	C24 tricyclic terpane	35.080	1786	283	23.2	22.3
191	DESAOL	des-A-oleanane					
191	DESALU	des-A-lupane					
191	TR25A	C25 tricyclic terpane (a)	40.171	912	128	11.8	10.1
191	TR25B	C25 tricyclic terpane (b)	40.259	816	128	10.6	10.1
191	TET24	C24 tetracyclic terpane (TET)	43.397	2370	364	30.7	28.7
191	TR26A	C26 tricyclic terpane (a)	44.059	799	117	10.4	9.2
191	TR26B	C26 tricyclic terpane (b)	44.373	917	138	11.9	10.9
191	TR28A	C28 tricyclic terpane (a)	52.986	663	101	8.6	8.0
191	TR28B	C28 tricyclic terpane (b)	53.596	747	112	9.7	8.8
191	TR29A	C29 tricyclic terpane (a)	55.549	857	133	11.1	10.5
191	TR29B	C29 tricyclic terpane (b)	56.281	799	154	10.4	12.1
191	TR30A	C30 tricyclic terpane (a)	60.501	976	143	12.7	11.3
191	TR30B	C30 tricyclic terpane (b)	61.337	826	126	10.7	9.9
191	TS	Ts 18α(H)-trisnorhopane	57.676	6685	1029	86.7	81.2
191	TM	Tm 17α(H)-trisnorhopane	59.315	8356	1230	108.4	97.0
191	H28	C28 17α18α21β(H)-bisnorhopane					
191	NOR25H	C29 Nor-25-hopane					
191	H29	C29 Tm 17α(H)21β(H)-norhopane	65.103	18917	2934	245.4	231.4
191	C29TS	C29 Ts 18α(H)-norneohopane	65.382	7402	1077	96.0	84.9
191	DH30	C30 17α(H)-diahopane	66.150	5459	776	70.8	61.2
191	M29	C29 normoretane	67.126	3468	487	45.0	38.4
191	OLA	oleanane a					
191	OLB	oleanane b					
191	H30	C30 17α(H)-hopane	68.590	42803	6659	555.3	525.2
191	C30TS	C29 Ts 18α(H)-norneohopane	69.410	3631	519	47.1	40.9
191	M30	C30 moretane	70.160	6984	1040	90.6	82.0
191	H31S	C31 22S 17α(H) hopane	72.670	16848	2522	218.6	198.9
191	H31R	C31 22R 17α(H) hopane	73.176	12441	1806	161.4	142.4
191	GAM	gammacerane	73.629	1583	200	20.5	15.8
191	H32S	C32 22S 17α(H) hopane	75.896	10767	1577	139.7	124.4
191	H32R	C32 22R 17α(H) hopane	76.593	7649	1163	99.2	91.7
191	H33S	C33 22S 17α(H) hopane	79.627	7105	1002	92.2	79.0
191	H33R	C33 22R 17α(H) hopane	80.586	5056	682	65.6	53.8
191	H34S	C34 22S 17α(H) hopane	83.497	4565	652	59.2	51.4
191	H34R	C34 22R 17α(H) hopane	84.665	3560	485	46.2	38.2
191	H35S	C35 22S 17α(H) hopane	87.228	2829	415	36.7	32.7
191	H35R	C35 22R 17α(H) hopane	88.571	2491	314	32.3	24.8

Company:	**TALISMAN ENERGY**	**Client ID:**	**TM001508**
Well Name:	**GUBIK NO. 2**	**Project #:**	**09-687-A**
Depth:	**4235 - FT**	**Lab ID:**	**TM001508**
Sampling Point:		**File Name:**	**M2090875.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
217	S21	C21 sterane	28.988	2683	372	34.8	29.3
217	S22	C22 sterane	33.755	1550	239	20.1	18.8
217	DIA27S	C27 βα 20S diasterane	48.436	5893	863	76.5	68.1
217	DIA27R	C27 βα 20R diasterane	49.970	3906	617	50.7	48.7
217	DIA28SA	C28 βα 20S diasterane a	52.219	3634	497	47.1	39.2
217	DIA28SB	C28 βα 20S diasterane b	52.498	4865	582	63.1	45.9
217	DIA28RA	C28 βα 20R diasterane a	53.945	2653	389	34.4	30.7
217	DIA28RB	C28 βα 20R diasterane b	54.119	2419	352	31.4	27.8
217	C27S	C27 αα 20S sterane	55.165	2653	375	34.4	29.6
217	BB_D29S	C27 ββ 20R + C29 dia20S	55.706	9606	782	124.6	61.7
217	C27BBS	C27 ββ 20S sterane	56.055	4148	514	53.8	40.5
217	C27R	C27 αα 20R sterane	56.961	2613	380	33.9	30.0
217	DIA29R	C29 βα 20R diasterane	57.537	7508	625	97.4	49.3
217	C28S	C28 αα 20S sterane	59.245	2002	251	26.0	19.8
217	C28BBR	C28 ββ 20R sterane(+5 βαα)	59.960	3358	392	43.6	30.9
217	C28BBS	C28 ββ 20S sterane	60.379	4638	510	60.2	40.2
217	C28R	C28 αα 20R sterane	61.564	2558	208	33.2	16.4
217	C29S	C29 αα 20S sterane	62.802	4035	436	52.3	34.4
217	C29BBR	C29 ββ 20R sterane(+5 βαα)	63.587	5508	669	71.5	52.8
217	C29BBS	C29 ββ 20S sterane	63.900	4730	572	61.4	45.1
217	C29R	C29 αα 20R sterane	65.330	5264	546	68.3	43.1
218	C27ABBR	C27 ββ 20R sterane	55.654	5553	697	72.0	55.0
218	C27ABBS	C27 ββ 20S sterane	56.055	3994	604	51.8	47.6
218	C28ABBR	C28 ββ 20R sterane	59.978	4534	593	58.8	46.8
218	C28ABBS	C28 ββ 20S sterane	60.379	5416	711	70.3	56.1
218	C29ABBR	C29 ββ 20R sterane	63.587	7269	943	94.3	74.4
218	C29ABBS	C29 ββ 20S sterane	63.900	6945	965	90.1	76.1
218	C30ABBR	C30 ββ 20R sterane	66.620	1632	236	21.2	18.6
218	C30ABBS	C30 ββ 20S sterane	66.864	1589	232	20.6	18.3
259	D27S	C27 βα 20S diasterane	48.436	3807	567	49.4	44.7
259	D27R	C27 βα 20R diasterane	49.970	2669	402	34.6	31.7
259	D28SA	C28 βα 20S diasterane a	52.219	2246	369	29.1	29.1
259	D28SB	C28 βα 20S diasterane b	52.515	2538	398	32.9	31.4
259	D28RA	C28 βα 20R diasterane a	53.945	1990	274	25.8	21.6
259	D28RB	C28 βα 20R diasterane b	54.119	1555	268	20.2	21.1
259	D29S	C29 βα 20S diasterane	55.758	5249	504	68.1	39.7
259	D29R	C29 βα 20R diasterane	57.554	4147	367	53.8	28.9
259	C30TP1	C30 tetracyclic polyprenoid	67.108	345	61	4.5	4.8
259	C30TP2	C30 tetracyclic polyprenoid	67.265	213	52	2.8	4.1

Company:	TALISMAN ENERGY	Client ID:	TM001508
Well Name:	GUBIK NO. 2	Project #:	09-687-A
Depth:	4235 - FT	Lab ID:	TM001508
Sampling Point:		File Name:	M2090875.D

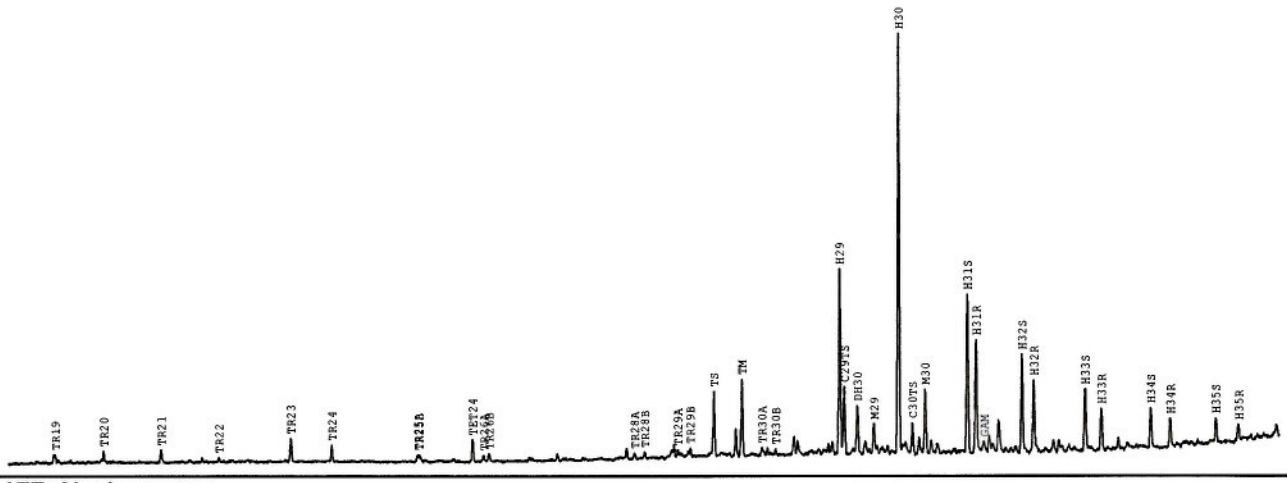
Miscellaneous Ratios	By Areas	By Heights
Terpanes (m/z 191)		
C19/C23 Tricyclic terpanes	0.27	0.38
C22/C21 Tricyclic terpanes	0.42	0.40
C22/C24 Tricyclic terpanes	0.34	0.31
C23/C24 Tricyclic terpanes	1.37	1.36
C24/C23 Tricyclic terpanes	0.73	0.73
C26/C25 Tricyclic terpanes	0.99	1.00
C24 Tetracyclic/C23 Tricyclic	0.97	0.94
C24 Tetracyclic/C26 Tricyclics	1.38	1.43
(C28+C29 Tricyclics)/Ts	0.46	0.49
Ts/Tm trisnorhopanes	0.80	0.84
Ts/(Ts+Tm) trisnorhopanes	0.44	0.46
25-nor-hopane/hopane		
C29Ts/C29 Hopane	0.39	0.37
C29Ts/(C29TS+C29) Hopane	0.28	0.27
C23 Tricyclic/Hopane	0.06	0.06
C24 Tetracyclic/Hopane	0.06	0.05
Bisnorhopane/Hopane		
Norhopane/Hopane	0.44	0.44
Diahopane/Hopane	0.13	0.12
Oleanane/Hopane		
Moretane/Hopane	0.16	0.16
Moretane/(Moretane+Hopane)	0.14	0.14
C30Ts/C30 Hopane	0.08	0.08
Gammacerane/Hopane	0.04	0.03
C32 S/(S+R) Homohopanes	0.58	0.58
Gammacerane/H31R Homohopane	0.13	0.11
C35/C34 Homohopanes	0.65	0.64
C35/C34 S Homohopanes	0.62	0.64
C35 Homohopane Index	0.07	0.07
Rel % C31 Homohopane	40.0	40.8
Rel % C32 Homohopane	25.1	25.8
Rel % C33Homohopane	16.6	15.9
Rel % C34 Homohopane	11.1	10.7
Rel % C35 Homohopane	7.3	6.9

Company:	**TALISMAN ENERGY**	**Client ID:**	**TM001508**
Well Name:	**GUBIK NO. 2**	**Project #:**	**09-687-A**
Depth:	**4235 - FT**	**Lab ID:**	**TM001508**
Sampling Point:		**File Name:**	**M2090875.D**

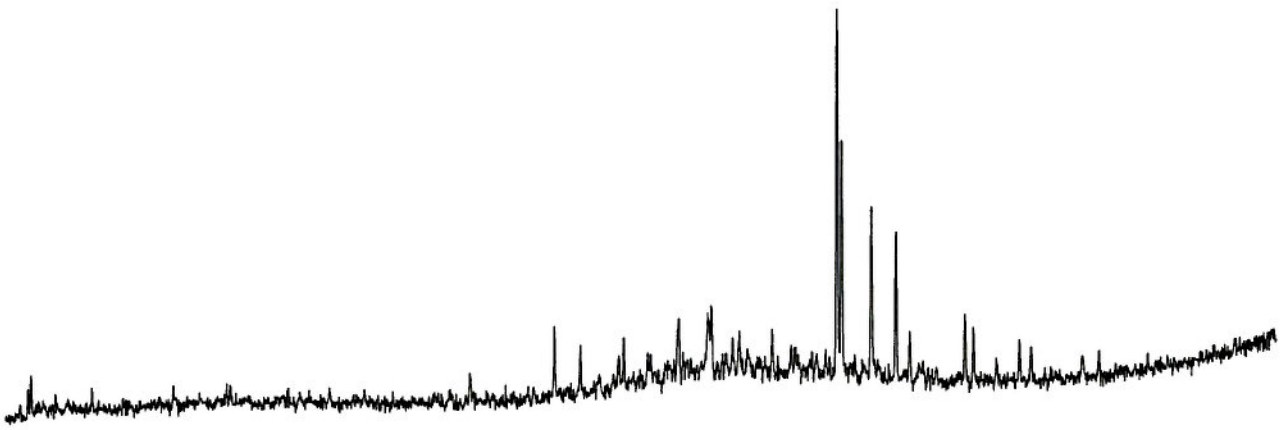
Miscellaneous Ratios	By Areas	By Heights
Steranes (m/z 217; 218)		
%C27 ααα*R* (217)	25.0	33.5
%C28 ααα*R* (217)	24.5	18.3
%C29 ααα*R* (217)	50.4	48.1
S/R (C_{29} ααα) (217)	0.77	0.80
S/(S+R) (C_{29} ααα) (217)	0.43	0.44
ββ/(αα+ββ) (C_{29}) (217)	0.52	0.56
ββ*S*/(αα*R*+ββ*S*) (C29) (217)	0.47	0.51
αββ*S*/ααα*R* (C_{29}) (217)	0.90	1.05
(C_{21}+C_{22})/(C_{27}+C_{28}+C_{29}) (217)	0.05	0.06
Diaster/ααα Ster (C_{27}) (217)	1.86	1.96
Diaster/(Diaster+ααα) Ster (C_{27}) (217)	0.65	0.66
%C27 αββ*S* (218)	24.4	26.5
%C28 αββ*S* (218)	33.1	31.2
%C29 αββ*S* (218)	42.5	42.3
%C27 αββ (R+S) (218)	28.3	28.8
%C28 αββ (R+S) (218)	29.5	28.9
%C29 αββ (R+S) (218)	42.2	42.3
C30 αββ*S* Sterane Index (218)	8.9	9.2
C30 S+R Sterane Index (218)	8.7	9.4
C_{27}/C_{29} (αββ*S*) (218)	0.58	0.63
C_{28}/C_{29} (αββ*S*) (218)	0.78	0.74
C_{29}/C_{27} (αββ*S*) (218)	1.74	1.60
C_{29}/C_{27} (αββ) (218)	1.49	1.47
Various (m/z 191; 217)		
Steranes/Hopanes	0.49	0.38
Tricyclic terpanes/Hopanes	0.10	0.10
Tricyclic terpanes/Steranes	0.20	0.27
Tricyclic/Pentacyclic Terpanes	10.4	11.1
Steranes/Terpanes	0.40	0.33
% Tricyclic Terpanes	6.7	7.5
% Pentacyclic Terpanes	64.73	7.53
% Steranes	28.5	24.9

Company:	TALISMAN ENERGY	Client ID:	TM001508
Well Name:	GUBIK NO. 2	Project #:	09-687-A
Depth:	4235 - FT	Lab ID:	TM001508
Sampling Point:		File Name:	M2090875.D

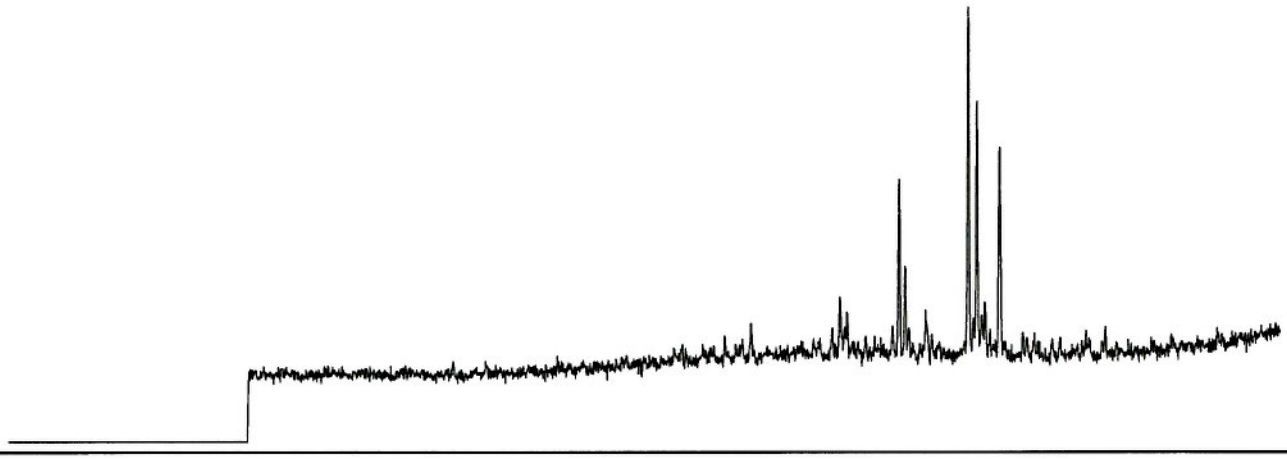
m/z 191:Tri-, tetra- and pentacyclic Terpanes



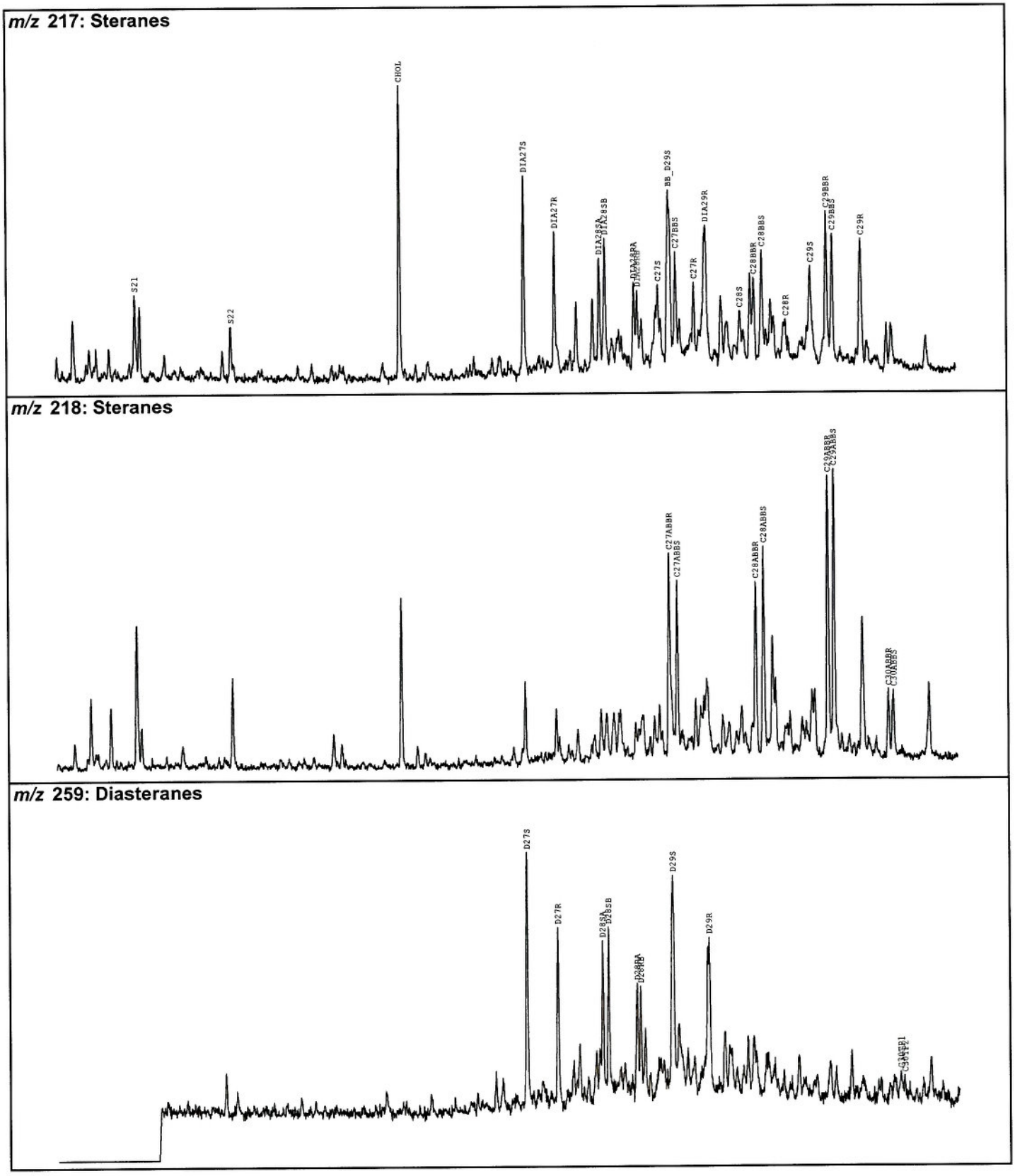
m/z 177: Norhopanes



m/z 205



Company:	TALISMAN ENERGY	Client ID:	TM001508
Well Name:	GUBIK NO. 2	Project #:	09-687-A
Depth:	4235 - FT	Lab ID:	TM001508
Sampling Point:		File Name:	M2090875.D



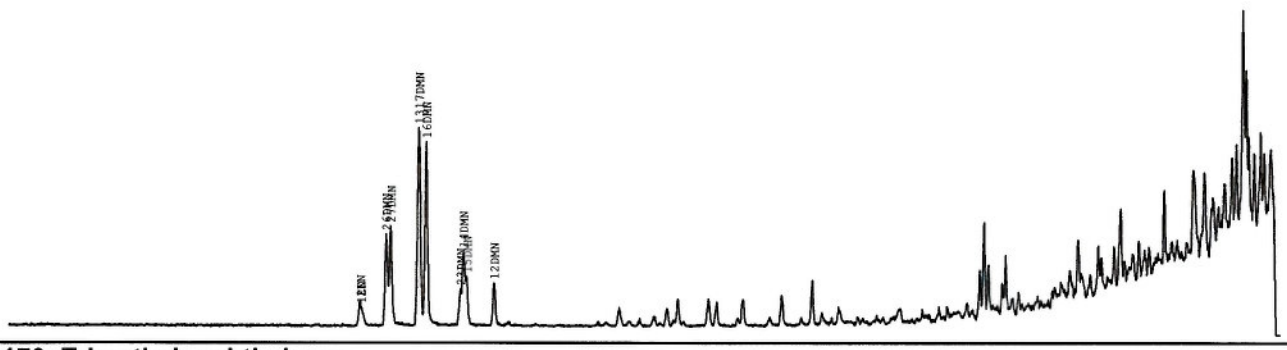
Parameter	Formula
Terpanes (*m/z* 191)	
C19/C23 Tricyclic terpanes	TR19/TR23
C22/C21 Tricyclic terpanes	TR22/TR21
C22/C24 Tricyclic terpanes	TR22/TR24
C23/C24 Tricyclic terpanes	TR23/TR24
C24/C23 Tricyclic terpanes	TR24/TR23
C26/C25 Tricyclic terpanes	(TR26A+TR26B)/(TR25A+TR25B)
C24 Tetracyclic/C23 Tricyclic	TET24/TR23
C24 Tetracyclic/C26 Tricyclics	TET24/(TR26A+TR26B)
(C28+C29 Tricyclics)/Ts	(TR28A+TR28B+TR29A+TR29B)/TS
Ts/Tm trisnorhopanes	TS/TM
Ts/(Ts+Tm) trisnorhopanes	TS/(TS+TM)
25-*nor*-hopane/hopane	NOR25H/H30
C29Ts/C29 Hopane	C29TS/H29
C29Ts/(C29TS+C29) Hopane	C29Ts/(C29TS+H29)
C23 Tricyclic/Hopane	TR23/H30
C24 Tetracyclic/Hopane	TET24/H30
Bisnorhopane/Hopane	H28/H30
Norhopane/Hopane	H29/H30
Diahopane/Hopane	DH30/H30
Oleanane/Hopane	(OLA+OLB)/H30
Moretane/Hopane	M30/H30
Moretane/(Moretane+Hopane)	M30/(M30+H30)
C30Ts/C30 Hopane	C30TS/H30
Gammacerane/Hopane	GAM/H30
C32 S/(S+R) Homohopanes	H32S/(H32R+H32S)
Gam/H31R Homohopane	GAM/H31R
C35/C34 Homohopanes	(H35R+H35S)/(H34R+H34S)
C35/C34 S Homohopanes	H35S/H34S
C35 Homohopane Index	(H35S+H35R)/(H31S+H31R+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)
Rel % C31 Homohopane	100*(H31S+H31R)/(H31S+H31R+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)
Rel % C32 Homohopane	100*(H32S+H32R)/(H31S+H31R+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)
Rel % C33Homohopane	100*(H33S+H33R)/(H31S+H31R+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)
Rel % C34 Homohopane	100*(H34S+H34R)/(H31S+H31R+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)
Rel % C35 Homohopane	100*(H35S+H35R)/(H31S+H31R+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)

Parameter	Formula
Steranes (*m/z* 217; 218)	
%C_{27} ααα R (217)	100*C27R/(C27R+C28R+C29R)
%C_{28} ααα R (217)	100*C28R/(C27R+C28R+C29R)
%C_{29} ααα R (217)	100*C29R/(C27R+C28R+C29R)
S/R (C_{29} ααα) (217)	C29S/C29R
S/(S+R) (C_{29} ααα) (217)	C29S/(C29S+C29R)
ββ/(αα+ββ) (C_{29}) (217)	(C29BBR+C29BBS)/(C29S+C29BBR+C29BBS+C29R)
ββS/(ααR+ββS) (C_{29}) (217)	(C29BBS+C29BBS)/(C29R+C29BBS+C29BBS+C29R)
αββS/αααR (C_{29}) (217)	C29BBS/C29R
(C_{21}+C_{22})/(C_{27}+C_{28}+C_{29}) (217)	(S21+S22)/(DIA27S+DIA27R+DIA28SA+DIA28SB+DIA28RA+DIA28RB+C27S+BB_D29S+C27BBS+C27R+DIA29R+C28S+C28BBR+C28BBS+C28R+C29S+C29BBR+C29BBS+C29R)
Diaster/ααα Ster (C_{27}) (217)	(DIA27S+DIA27R)/(C27S+C27R)
Dia/(Dia+ααα) Ster (C_{27})	(DIA27S+DIA27R)/(DIA27S+DIA27R+C27S+C27R)
C_{27}/C_{29} (αββS) (218)	C27ABBS/C29ABBS
C_{28}/C_{29} (αββS) (218)	C28ABBS/C29ABBS
C_{29}/C_{27} (αββS) (218)	C29ABBS/C27ABBS
Diaster/ααα Ster (C_{27}) (217)	(DIA27S+DIA27R)/(C27S+C27R)
C30 αββS Sterane Index (218)	100*(C30ABBS)/(C27ABBS+C28ABBS+C29ABBS+C30ABBS)
C30 S+R Sterane Index (218)	100*(C30ABBR+C30ABBS)/(C27ABBR+C27ABBS+C28ABBR+C28ABBS+C29ABBR+C29ABBS+C30ABBR+C30ABBS)
%C_{27} αββS (218)	100*C27ABBS/(C27ABBS+C28ABBS+C29ABBS)
%C_{28} αββS (218)	100*C28ABBS/(C27ABBS+C28ABBS+C29ABBS)
%C_{29} αββS (218)	100*C29ABBS/(C27ABBS+C28ABBS+C29ABBS)
%C_{27} αββ (R+S) (218)	100*(C27ABBR+C27ABBS)/(C27ABBR+C27ABBS+C28ABBR+C28ABBS+C29ABBR+C29ABBS)
%C_{28} αββ (R+S) (218)	100*(C28ABBR+C28ABBS)/(C27ABBR+C27ABBS+C28ABBR+C28ABBS+C29ABBR+C29ABBS)
%C_{29} αββ (R+S) (218)	100*(C29ABBR+C29ABBS)/(C27ABBR+C27ABBS+C28ABBR+C28ABBS+C29ABBR+C29ABBS)
C30 αββS Sterane Index (218)	100*(C30ABBS)/(C27ABBS+C28ABBS+C29ABBS+C30ABBS)
C30 S+R Sterane Index (218)	100*(C30ABBR+C30ABBS)/(C27ABBR+C27ABBS+C28ABBR+C28ABBS+C29ABBR+C29ABBS+C30ABBR+C30ABBS)
C_{27}/C_{29} (αββS) (218)	C27ABBS/C29ABBS
C_{28}/C_{29} (αββS) (218)	C28ABBS/C29ABBS
C_{29}/C_{27} (αββS) (218)	C29ABBS/C27ABBS
C_{29}/C_{27} (αββ) (218)	(C29ABBR+C29ABBS/)/(C27ABBR+C27ABBS)

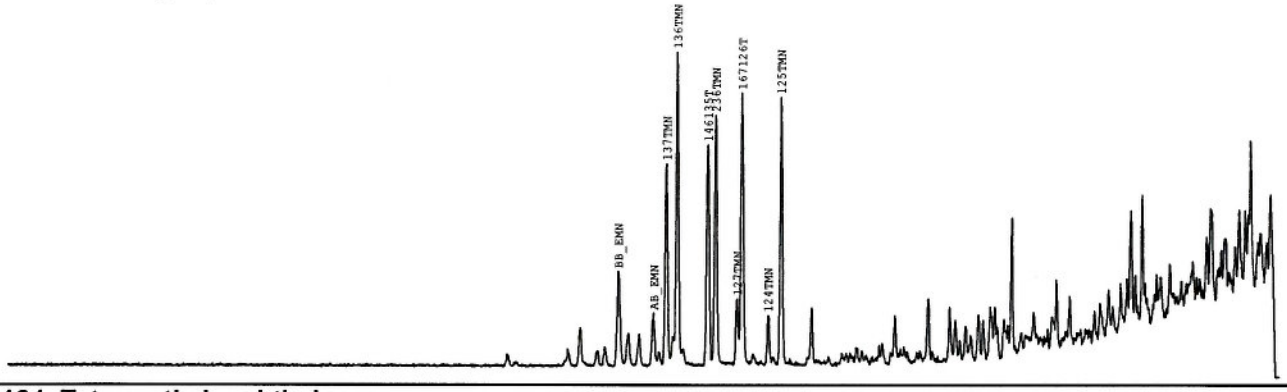
Parameter	Formula
Various (*m/z* 191; 217)	
Steranes/Hopanes	(DIA27S+DIA27R+DIA28SA+DIA28SB+DIA28RA+DIA28RB+C27S+BB_D29S+C27BBS+C27R+DIA29R+C28S+C28BBR+C28BBS+C28R+C29S+C29BBR+C29BBS+C29R)/(TS+TM+H28+H29+C29TS+DH30+H30+H31R+H31S+H32R+H32S+H33R+H33S+H34R+H34S+H35R+H35S)
Tricyclic terpanes/Hopanes	(TR19+TR20+TR21+TR22+TR23+TR24+TR25A+TR25B+TR26A+TR26B+TR28A+TR28B+TR29A+TR29B+TR30A+TR30B)/(TS+TM+H28+H29+C29TS+DH30+H30+C30TS+H31R+H31S+H32R+H32S+H33R+H33S+H34R+ H34S+H35R+H35S)
Tricyclic terpanes/Steranes	(TR19+TR20+TR21+TR22+TR23+TR24+TR25A+TR25B+TR26A+TR26B+TR28A+TR28B+TR29A+TR29B+TR30A+TR30B)/(DIA27S+DIA27R+DIA28SA+DIA28SB+DIA28RA+DIA28RB+C27S+BB_D29S+C27BBS+C27R+DIA29R+C28S+C28BBR+C28BBS+C28R+C29S+C29BBR+C29BBS+C29R)
Tricyclic/Pentacyclic Terpanes	100*(TR19+TR20+TR21+TR22+TR23+TR24+TR25A+TR25B+TET24+TR26A+TR26B+TR28A+TR28B+TR29A+TR29B+TR30A+TR30B)/(TS+TM+H28+NOR25H+H29+C29TS+DH30+M29+OLA+OLB+H30+C30TS+M30+H31S+H31R+GAM+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)
Steranes/Terpanes	(S21+S22+DIA27S+DIA27R+DIA28SA+DIA28SB+DIA28RA+DIA28RB+C27S+BB_D29S+C27BBS+C27R+C28S+C28BBR+C28BBS+C28R+C29S+C29BBR+C29BBS+C29R)/(TR19+TR20+TR21+TR22+TR23+TR24+TR25A+TR25B+TET24+TR26A+TR26B+TR28A+TR28B+TR29A+TR29B+TR30A+TR30B+TS+TM+H28+NOR25H+H29+C29TS+DH30+M29+OLA+OLB+H30+C30TS+M30+H31S+H31R+GAM+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)
% Tricyclic Terpanes	100*(TR19+TR20+TR21+TR22+TR23+TR24+TR25A+TR25B+TET24+TR26A+TR26B+TR28A+TR28B+TR29A+TR29B+TR30A+TR30B)/((TR19+TR20+TR21+TR22+TR23+TR24+TR25A+TR25B+TET24+TR26A+TR26B+TR28A+TR28B+TR29A+TR29B+TR30A+TR30B+TS+TM+H28+NOR25H+H29+C29TS+DH30+M29+OLA+OLB+H30+C30TS+M30+H31S+H31R+GAM+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)+(S21+S22+DIA27S+DIA27R+DIA28SA+DIA28SB+DIA28RA+DIA28RB+C27S+BB_D29S+C27BBS+C27R+C28S+C28BBR+C28BBS+C28R+C29S+C29BBR+C29BBS+C29R))
% Pentacyclic Terpanes	100*(TS+TM+H28+NOR25H+H29+C29TS+DH30+M29+OLA+OLB+H30+C30TS+M30+H31S+H31R+GAM+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)/((TR19+TR20+TR21+TR22+TR23+TR24+TR25A+TR25B+TET24+TR26A+TR26B+TR28A+TR28B+TR29A+TR29B+TR30A+TR30B+TS+TM+H28+NOR25H+H29+C29TS+DH30+M29+OLA+OLB+H30+C30TS+M30+H31S+H31R+GAM+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)+(S21+S22+DIA27S+DIA27R+DIA28SA+DIA28SB+DIA28RA+DIA28RB+C27S+BB_D29S+C27BBS+C27R+C28S+C28BBR+C28BBS+C28R+C29S+C29BBR+C29BBS+C29R))
% Steranes	100*(S21+S22+DIA27S+DIA27R+DIA28SA+DIA28SB+DIA28RA+DIA28RB+C27S+BB_D29S+C27BBS+C27R+C28S+C28BBR+C28BBS+C28R+C29S+C29BBR+C29BBS+C29R)/((TR19+TR20+TR21+TR22+TR23+TR24+TR25A+TR25B+TET24+TR26A+TR26B+TR28A+TR28B+TR29A+TR29B+TR30A+TR30B+TS+TM+H28+NOR25H+H29+C29TS+DH30+M29+OLA+OLB+H30+C30TS+M30+H31S+H31R+GAM+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)+(S21+S22+DIA27S+DIA27R+DIA28SA+DIA28SB+DIA28RA+DIA28RB+C27S+BB_D29S+C27BBS+C27R+C28S+C28BBR+C28BBS+C28R+C29S+C29BBR+C29BBS+C29R))

Company:	TALISMAN ENERGY	Client ID:	TM001508
Well Name:	GUBIK NO. 2	Project #:	09-687-A
Depth:	4235 - FT	Lab ID:	TM001508
Sampling Point:		File Name:	

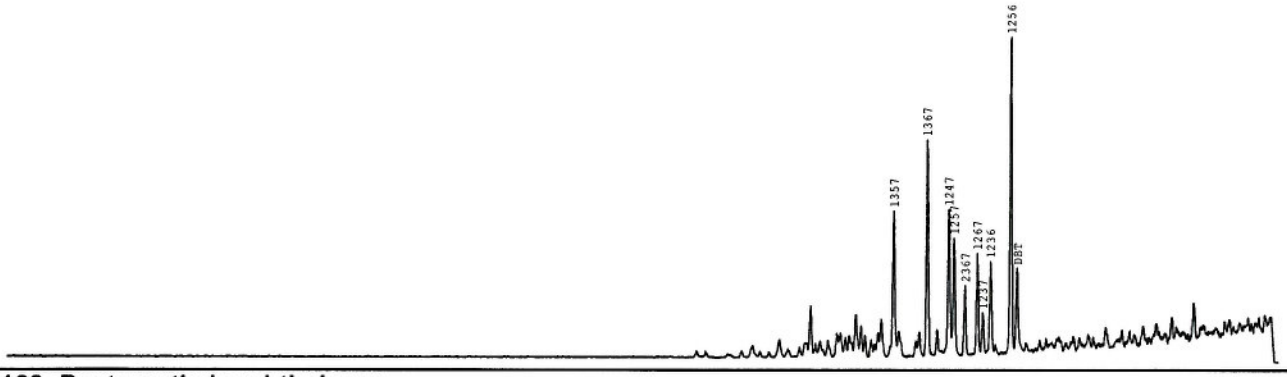
m/z 156: Dimethylnaphthalenes



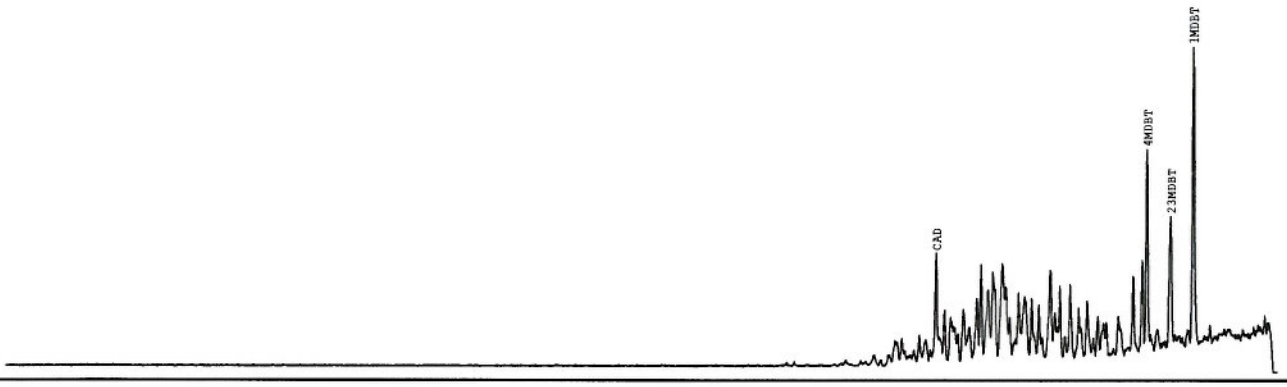
m/z 170: Trimethylnaphthalenes



m/z 184: Tetramethylnaphthalenes

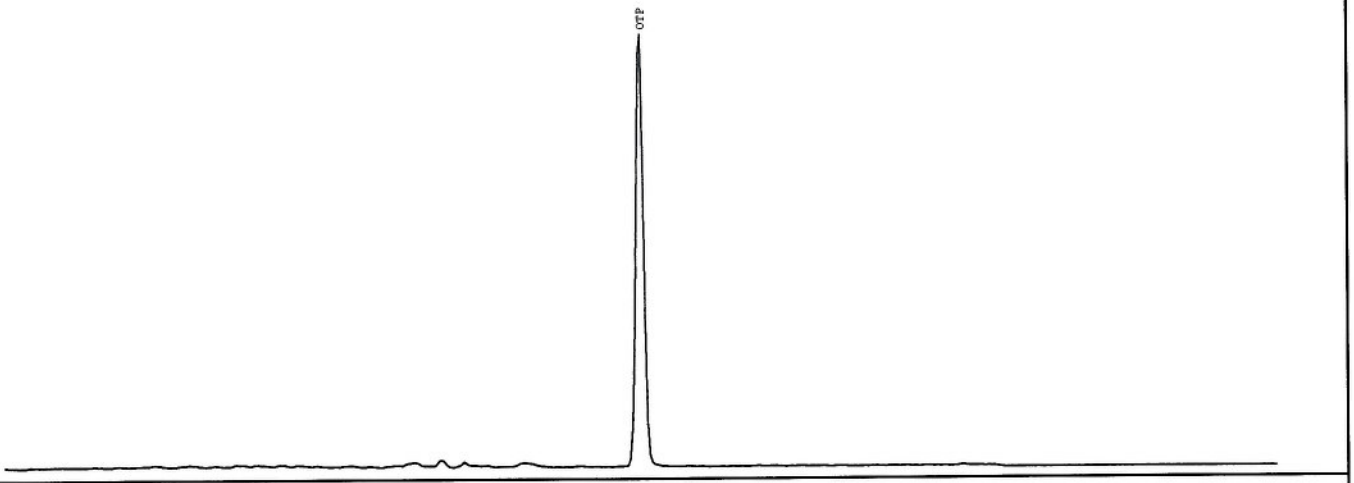


m/z 198: Pentamethylnaphthalenes

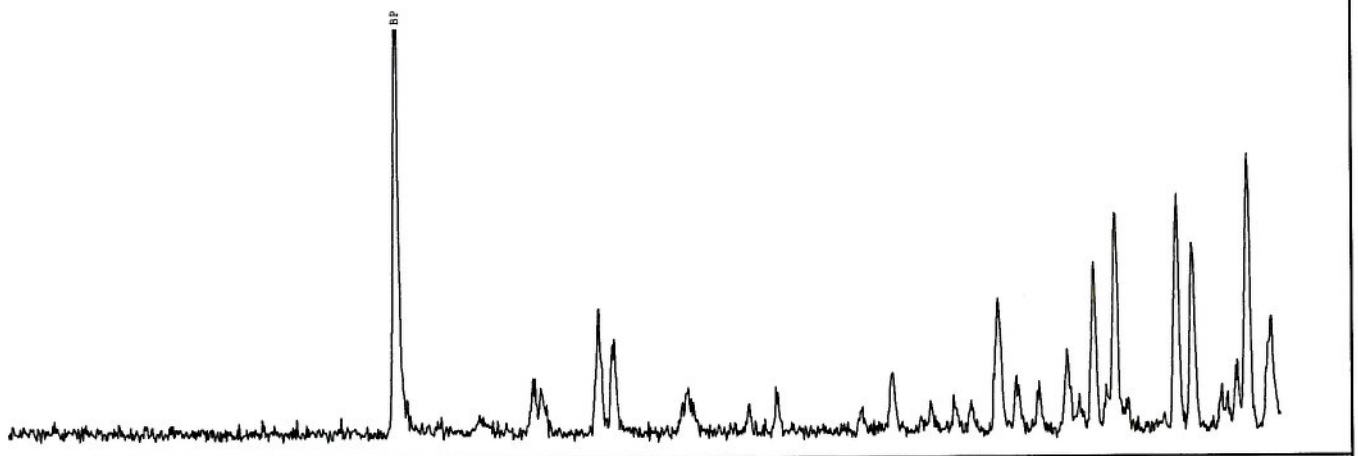


Company:	TALISMAN ENERGY	Client ID:	TM001508
Well Name:	GUBIK NO. 2	Project #:	09-687-A
Depth:	4235 - FT	Lab ID:	TM001508
Sampling Point:		File Name:	M1090754.D

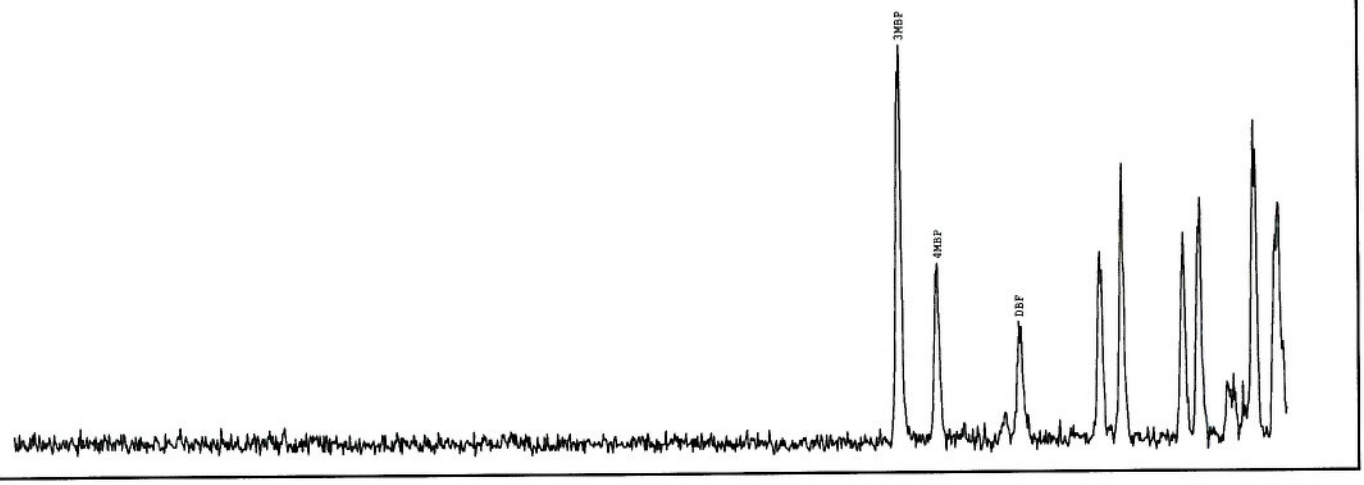
***m/z* 230: Ortho-Terphenyl (Inter. Std)**



***m/z* 154: Biphenyl**



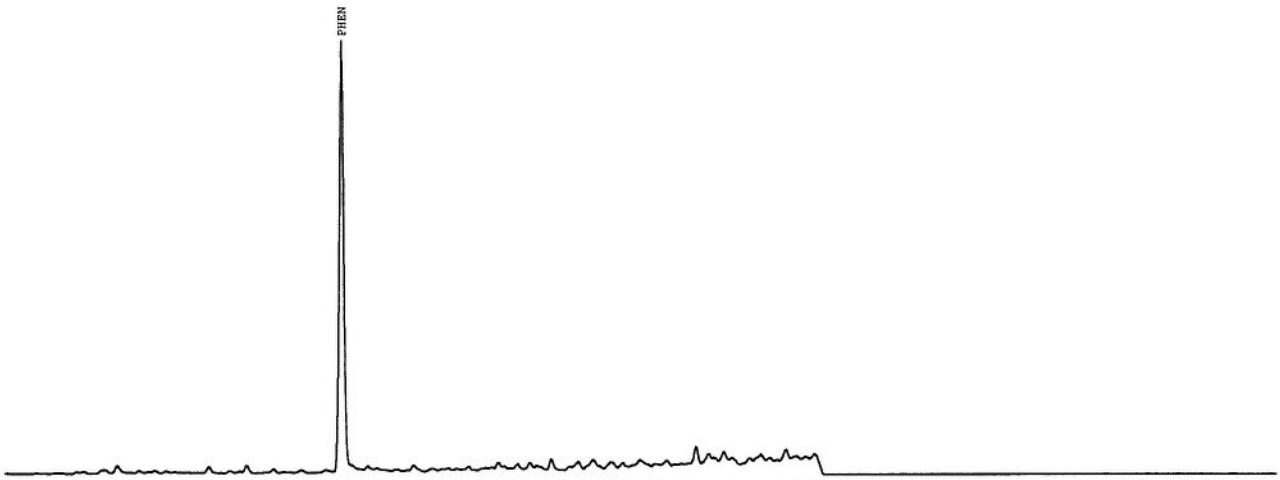
***m/z* 168: Methylbiphenyls (MBP)**



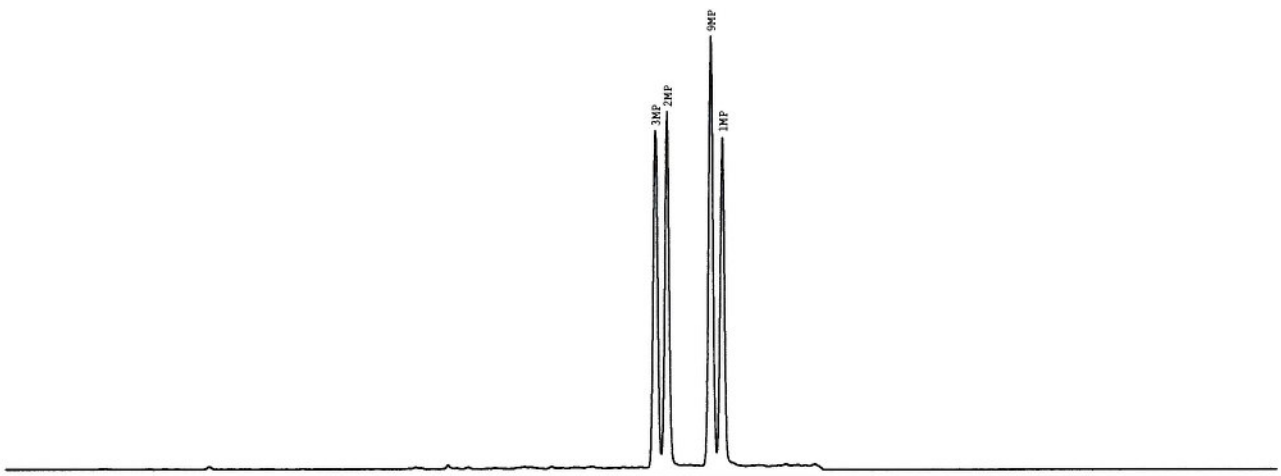
Geochemical Services Group, 143 Vision Park Blvd., Shenandoah, Texas 77384 • Phone: 281-681-2200 • Fax: 281-681-0326 • Email: geocheminfo@weatherfordlabs.com

Company:	TALISMAN ENERGY	Client ID:	TM001508
Well Name:	GUBIK NO. 2	Project #:	09-687-A
Depth:	4235 - FT	Lab ID:	TM001508
Sampling Point:		File Name:	M1090754.D

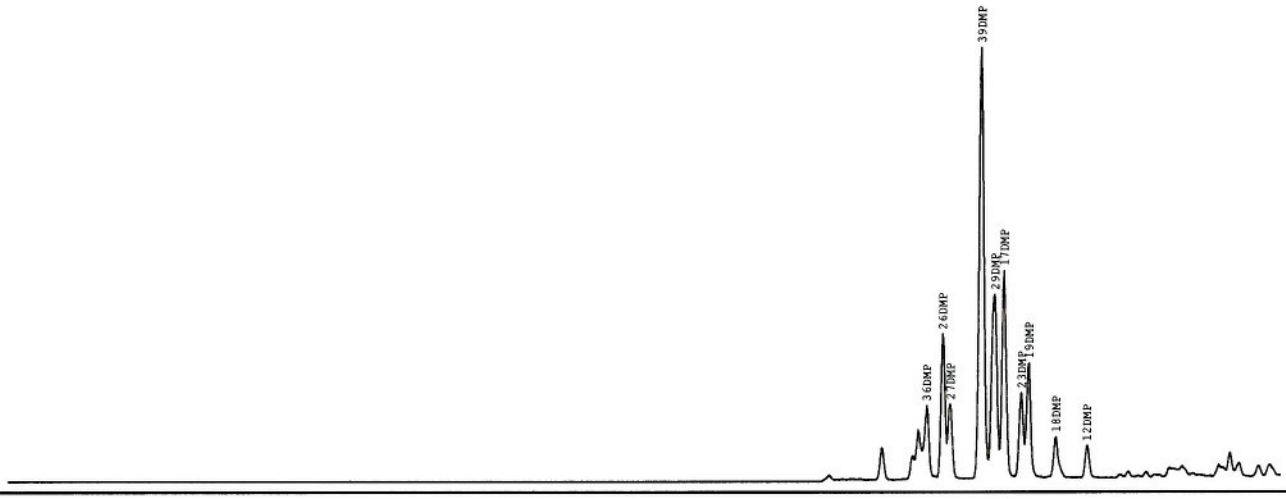
***m/z* 178: Phenanthrene**



***m/z* 192: Methylphenanthrenes**

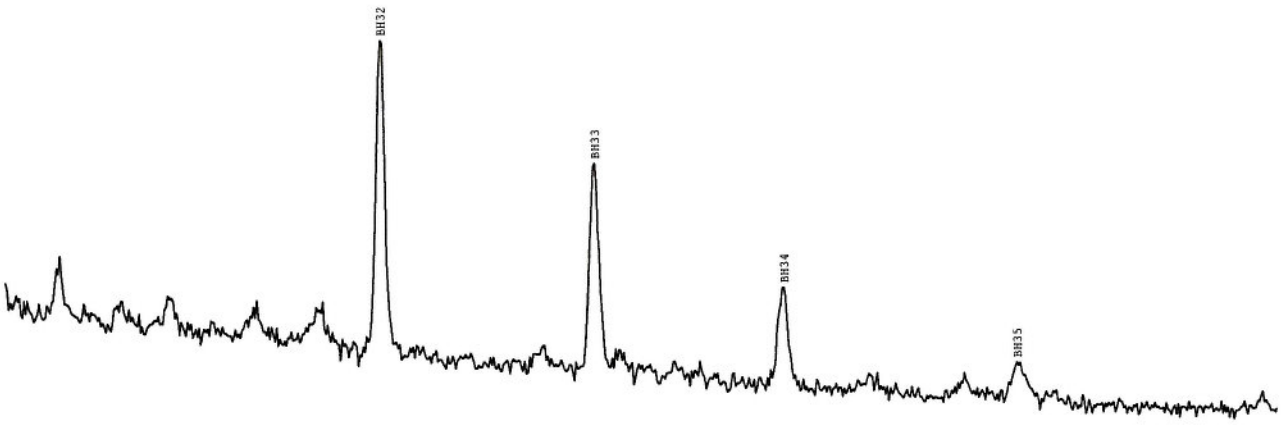


***m/z* 206: Dimethylpehnanthrenes**

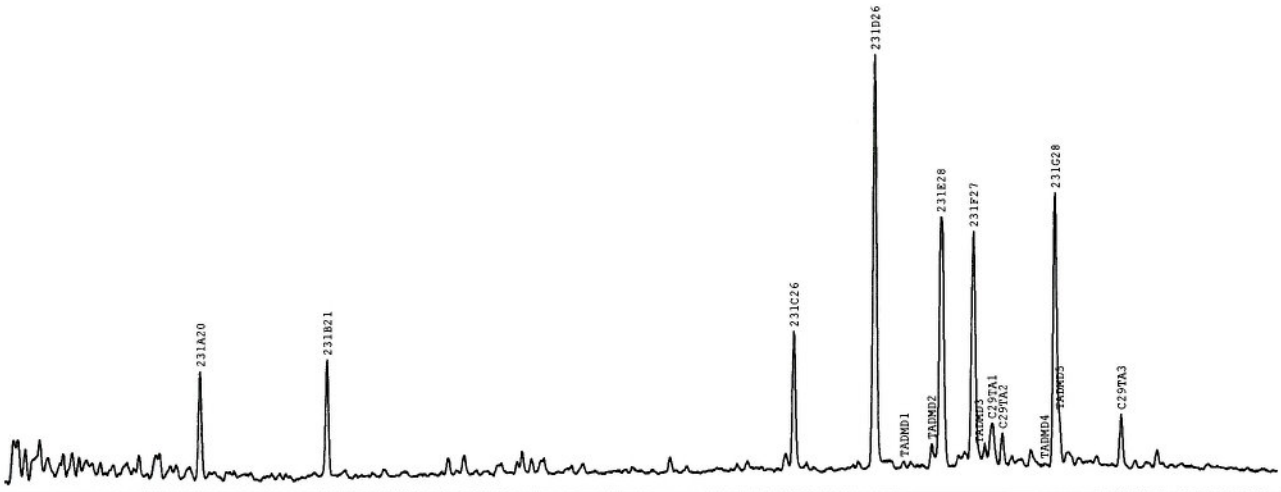


Company:	TALISMAN ENERGY	Client ID:	TM001508
Well Name:	GUBIK NO. 2	Project #:	09-687-A
Depth:	4235 - FT	Lab ID:	TM001508
Sampling Point:		File Name:	M1090754.D

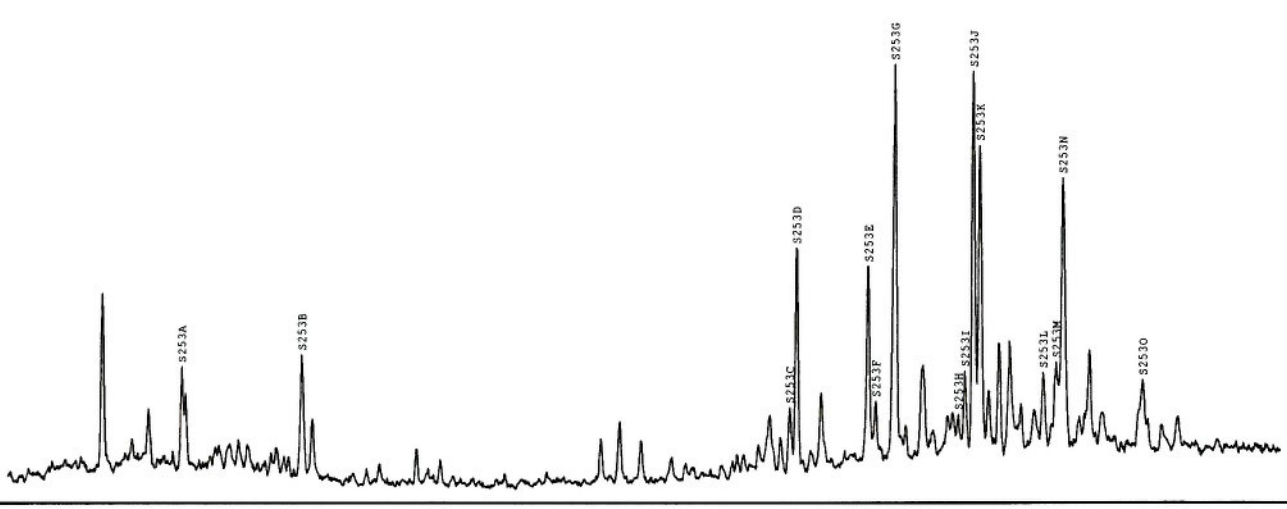
***m/z* 191: Benzohopanes**



***m/z* 231: Triaromatic Steranes**



***m/z* 253: Monoaromatic Steranes**



Parameter	Formula
Mono- (MAS) and Triaromatic Steroids (TAS)	
(C20+C21)/Σ TAS	(231A20+231B21)/(231A20+231B21+231C26+231D26+231E28+231F27+231G28+C29TA3)
TAS #1 20/20+27	(231A20)/(231A20+231F27)
TAS #2 21/21+28	(231B21)/(231B21+231G28)
%26 TAS	100*(231C26)/(231C26+231F27+231G28+C29TA3)
%27 TAS	100*(231F27)/(231C26+231F27+231G28+C29TA3)
%28 TAS	100*(231G28)/(231C26+231F27+231G28+C29TA3)
%29 TAS	100*(C29TA3)/(231C26+231F27+231G28+C29TA3)
C28/C26 20S TAS	(231E28)/(231C26)
C28/C27 20R TAS	(231G28)/(231F27)
Dia/Regular C27 MAS	(S253D)/(S253C)
%27 MAS	100*(S253C+S253D+S253E+S253F+S253H)/(S253C+S253D+S253E+S253F+S253G+S253H+S253I+S253J+S253K+S253L+S253M+S253N+S253O)
%28 MAS	100*(S253G+S253I+S253J+S253M)/(S253C+S253D+S253E+S253F+S253G+S253H+S253I+S253J+S253K+S253L+S253M+S253N+S253O)
%29 MAS	100*(S253K+S253L+S253N+S253O)/(S253C+S253D+S253E+S253F+S253G+S253H+S253I+S253J+S253K+S253L+S253M+S253N+S253O)
(C21+C22)/Σ MAS	(S253A+S253B)/(S253A+S253B+S253C+S253D+S253E+S253F+S253G+S253H+S253I+S253J+S253K+S253L+S253M+S253N+S253O)
TAS/(MAS+TAS)	(231A20+231B21+231C26+231D26+231E28+231F27+231G28+C29TA3)/((231A20+231B21+231C26+231D26+231E28+231F27+231G28+C29TA3)+(S253A+S253B+S253C+S253D+S253E+S253F+S253G+S253H+S253I+S253J+S253K+S253L+S253M+S253N+S253O))
TA28/(TA28+MA29)	(231E28+231G28)/(231E28+231G28+S253K+S253L+S253N+S253O)
Triaromatic Methylsteroids	
Dinosteroid Index	(DA+DB+DC+DD+DE+DF)/(C3S+C4S+E2S+E3SC3R+E4SC4R+S2S+DA+S3S+DB+S4SE2R+E3R+E4R+DC+DD+S2R+S3R+DE+S4R+DF)
C4/C3+C4 Mester	(C4S+E4R+S4R)/(C3S+C4S+E3R+E4R+S3R+S4R)
Phenanthrenes, Naphthalenes, and Dibenzothiophenes	
MPI-1	(1.5*(3MP+2MP))/(PHEN+9MP+1MP)
MPI-2	(3*(2MP))/(PHEN+9MP+1MP)
MPI-3	(3MP+2MP)/(9MP+1MP)
Rc(a) if Ro < 1.3 (Ro%)	(((.6)*(1.5*(2MP+3MP))/(PHEN+9MP+1MP))+.37)
Rc(b) if Ro > 1.3 (Ro%)	(((-.6)*(1.5*(2MP+3MP))/(PHEN+9MP+1MP))+2.3)
DNR-1	(26DMN+27DMN)/(15DMN)
DNR-2	(26DMN+27DMN)/(14DMN+23DMN)
TNR1	(236TMN)/(146135T)
TDE-1	(125TMN)/(124TMN)
TDE-2	(127TMN)/(167126T)
MDR	(4MDBT)/(1MDBT)
Rm (Ro%)	(0.40+0.30*(4MDBT/1MDBT)-0.094*(4MDBT/1MDBT)*(4MDBT/1MDBT)+0.011*(4MDBT/1MDBT)*(4MDBT/1MDBT)*(4MDBT/1MDBT))
MDR23	(23MDBT)/(DBT)
MDR1	(1MDBT)/(DBT)
DBT/Phenanthrene	(DBT)/(PHEN)

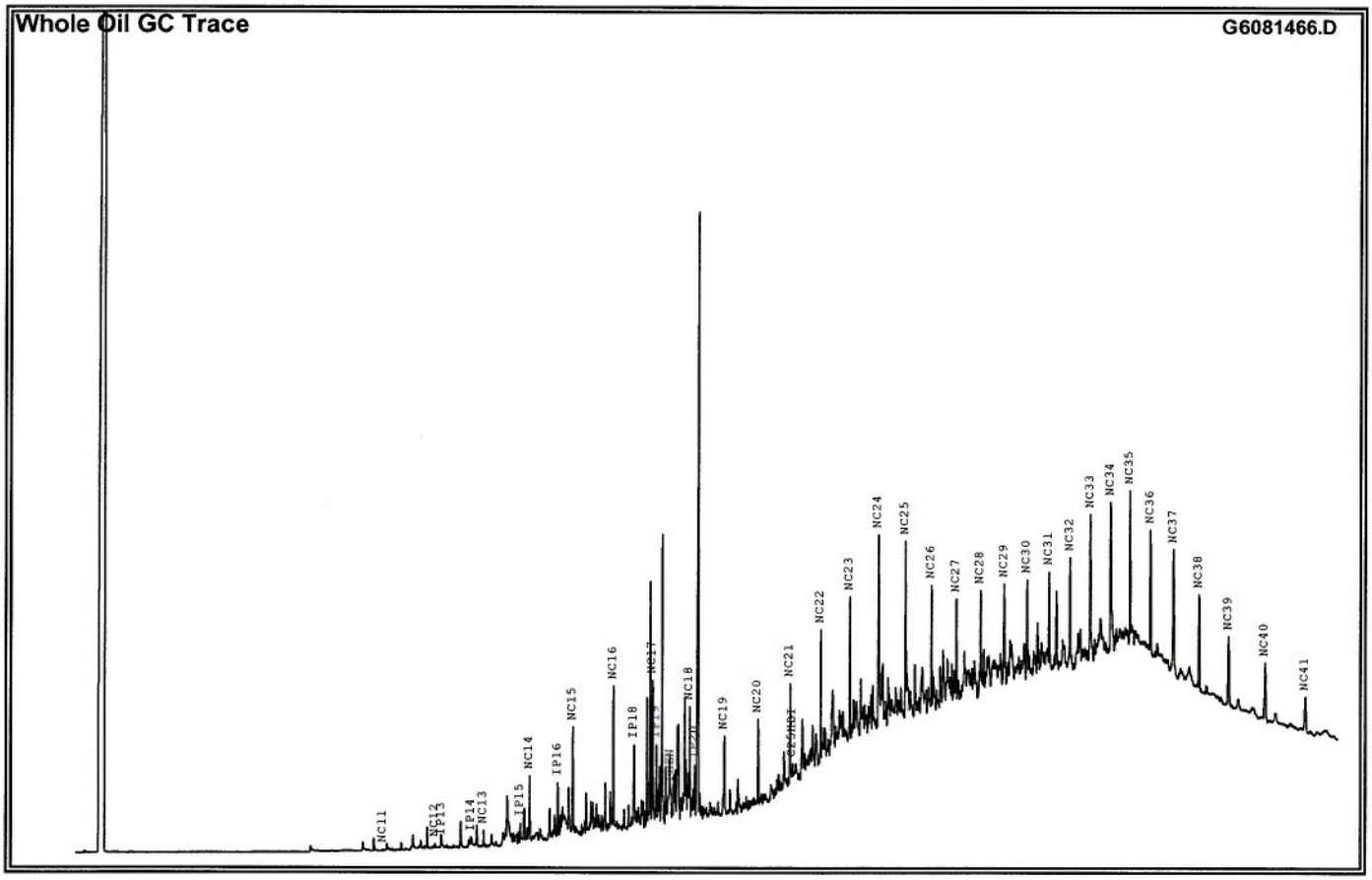
Weatherford LABORATORIES

WHOLE OIL GC

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #2
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000742
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	PRINCE CREEK
Well Name:	SUSIE NO. 1	Geologic Age:	
Latitude:	0	Top Depth:	2605 FT
Longitude:	0	Bottom Depth:	2606 FT

Whole Oil GC Trace

G6081466.D



WGC parameters	
Pristane/Phytane	1.33
Pristane/$n\,C_{17}$	0.75
Phytane/$n\,C_{18}$	0.69
$n\,C_{18}$/(nC_{18}+$n\,C_{19}$)	0.60
$n\,C_{17}$/(nC_{17}+$n\,C_{29}$)	0.52
CPI Hunt[4]	1.03
Normal Paraffins	18.3
Isoprenoids	2.1
Cycloparaffins	
Branched (iso-) Paraffins	
BTX aromatics	
Resolved unknowns	79.3

Thompson[1]	
A.	BZ/$n\,C_6$
B.	TOL/$n\,C_7$
C.	($n\,C_6$+$n\,C_7$)/(CH+MCH)
I.	Isoheptane Value
F.	$n\,C_7$/MCH
U.	CH/MCP
R.	$n\,C_7$/2MH
S.	$n\,C_6$/22DMB
H.	Heptane Value
	MCH/$n\,C_7$
	mpXYL/$n\,C_8$

Mango[2]
P_1
P_2
P_3
$5N_1$
N_2
$6N_1$
K_1
K_2
$5N_1/6N_1$
P_3/N_2
ln(24DMP/23DMP)

Halpern[3]
Tr_1
Tr_2
Tr_3
Tr_4
Tr_5
Tr_7
Tr_8
C_1
C_2
C_3
C_4
C_5

[1]Thompson, K.F.M.,1983.GCA:V.47, p.303. [2]Mango, F.D.,1994.GCA: V.58, p.895. [3]Halpern,H.I.,1995,AAPG Bull.: V.79, p.801. [4]Hunt, 1979

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2605 - 2606 FT**	**Lab ID:**	**TM000742**
Sampling Point:		**File Name:**	**G6081466.D**

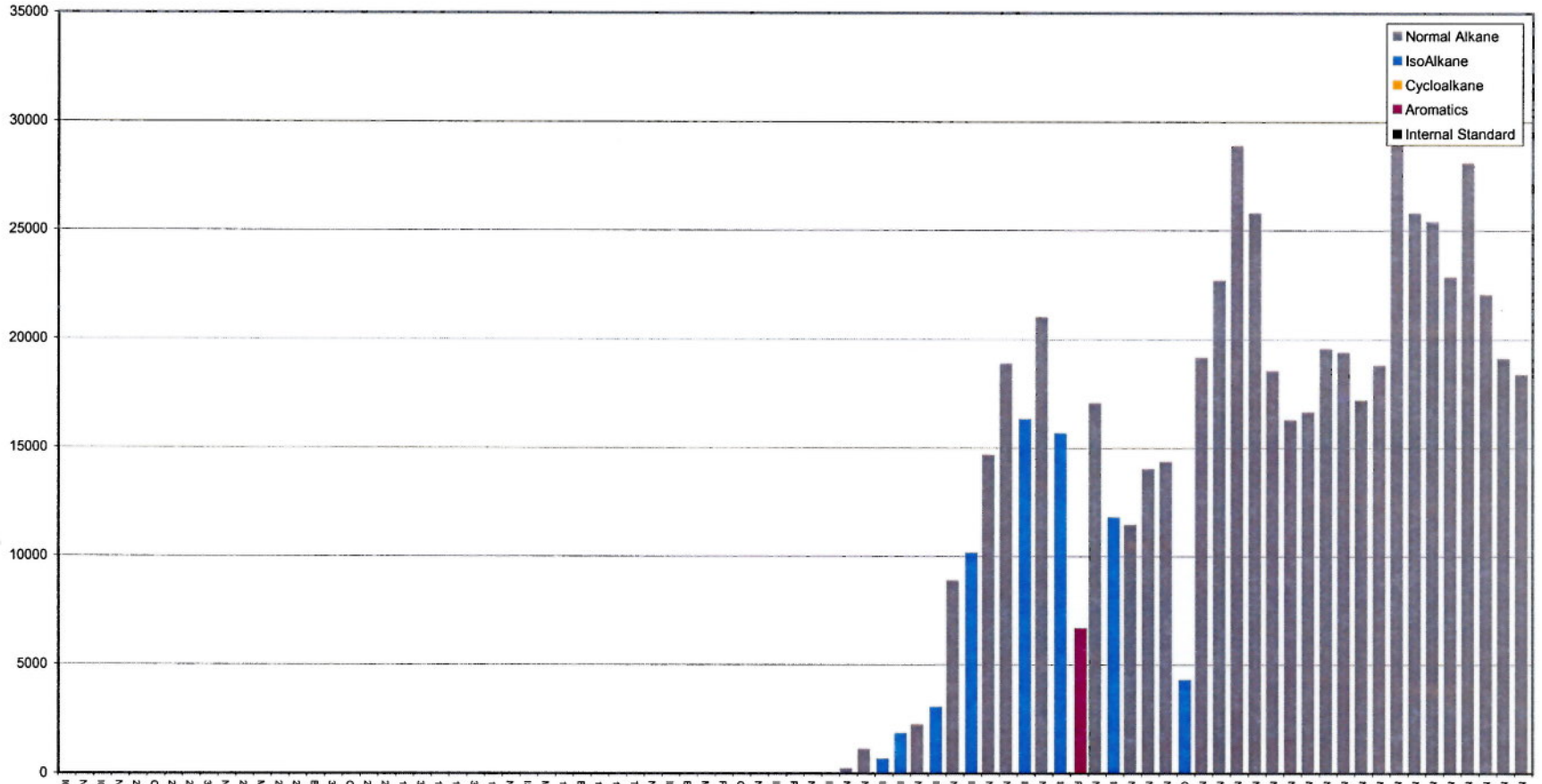
Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IC4	Iso-alkane C4					
NC4	Normal Alkane C4					
IC5	Iso-alkane C5					
NC5	Normal Alkane C5					
22DMB	2,2-Dimethylbutane					
CP	Cyclopentane					
23DMB	2,3-Dimethylbutane					
2MP	2-Methylpentane					
3MP	3-Methylpentane					
NC6	Normal Alkane C6					
22DMP	2,2-Dimethylpentane					
MCP	Methylcyclopentane					
24DMP	2,4-Dimethylpentane					
223TMB	2,2,3-Trimethylbutane					
BZ	Benzene					
33DMP	3,3-Dimethylpentane					
CH	Cyclohexane					
2MH	2-Methylhexane					
23DMP	2,3-Dimethylpentane					
11DMCP	1,1-Dimethylcyclopentane					
3MH	3-Methylhexane					
1C3DMCP	1-cis-3-Dimethylcyclopentane					
1T3DMCP	1-trans-3-Dimethylcyclopentane					
3EP	3-Ethylpentane					
1T2DMCP	1-trans-2-Dimethylcyclopentane					
NC7	Normal Alkane C7					
ISTD	Internal Standard					
MCH	Methylcyclohexane					
113TMCP	1,1,3,-Trimethylcyclopentane					
ECP	Ethylcyclopentane					
124TMCP	1,2,4-Trimethylcyclopentane					
123TMCP	1,2,3-Trimethylcyclopentane					
TOL	Toluene					
NC8	Normal Alkane C8					
IP9	Isoprenoid C9					
EB	Ethyl-benzene					
MXYL	*m*-xylene					
PXYL	*p*-xylene					
OXYL	*o*-xylene					
NC9	Normal Alkane C9					
IP10	Isoprenoid C10					
PB	Propyl-benzene					
NC10	Normal Alkane C10					
IP11	Isoprenoid C11					
NC11	Normal Alkane C11	31.790	223	61		
NC12	Normal Alkane C12	36.692	1133	222		
IP13	Isoprenoid C13	37.352	682	184		
IP14	Isoprenoid C14	40.167	1869	370		
NC13	Normal Alkane C13	41.281	2278	653		
IP15	Isoprenoid C15	44.717	3060	799		
NC14	Normal Alkane C14	45.597	8889	2574		

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2605 - 2606 FT**	**Lab ID:**	**TM000742**
Sampling Point:		**File Name:**	**G6081466.D**

Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IP16	Isoprenoid C16	48.254	10175	2168		
NC15	Normal Alkane C15	49.667	14690	4223		
NC16	Normal Alkane C16	53.517	18899	5577		
IP18	Isoprenoid C18	55.444	16349	3230		
NC17	Normal Alkane C17	57.166	21024	5608		
IP19	Isoprenoid C19 (Pristane)	57.526	15705	3120		
PHEN	Phenanthrene	58.849	6698	1376		
NC18	Normal Alkane C18	60.629	17087	4403		
IP20	Isoprenoid C20 (Phytane)	61.087	11826	2134		
NC19	Normal Alkane C19	63.926	11469	3079		
NC20	Normal Alkane C20	67.075	14036	3371		
NC21	Normal Alkane C21	70.085	14370	4036		
C25HBI	Highly Branch Isoprenoid C25	70.337	4311	891		
NC22	Normal Alkane C22	72.970	19182	5299		
NC23	Normal Alkane C23	75.735	22703	5818		
NC24	Normal Alkane C24	78.388	28892	7505		
NC25	Normal Alkane C25	80.931	25806	6915		
NC26	Normal Alkane C26	83.379	18558	4907		
NC27	Normal Alkane C27	85.739	16315	4107		
NC28	Normal Alkane C28	88.018	16687	4145		
NC29	Normal Alkane C29	90.222	19593	4029		
NC30	Normal Alkane C30	92.354	19412	3860		
NC31	Normal Alkane C31	94.409	17224	3981		
NC32	Normal Alkane C32	96.407	18822	4444		
NC33	Normal Alkane C33	98.342	30174	5764		
NC34	Normal Alkane C34	100.224	25804	5833		
NC35	Normal Alkane C35	102.050	25392	5996		
NC36	Normal Alkane C36	103.990	22877	4840		
NC37	Normal Alkane C37	106.144	28124	4852		
NC38	Normal Alkane C38	108.597	22088	3764		
NC39	Normal Alkane C39	111.401	19153	2747		
NC40	Normal Alkane C40	114.637	18399	2285		
NC41	Normal Alkane C41	118.421	14208	1431		

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2605 - 2606 FT**	**Lab ID:**	**TM000742**
Sampling Point:		**File Name:**	**G6081466.D**

Histogram Based on Area

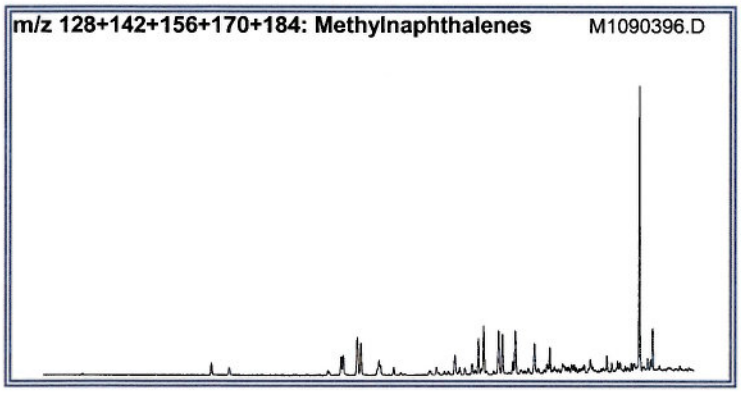


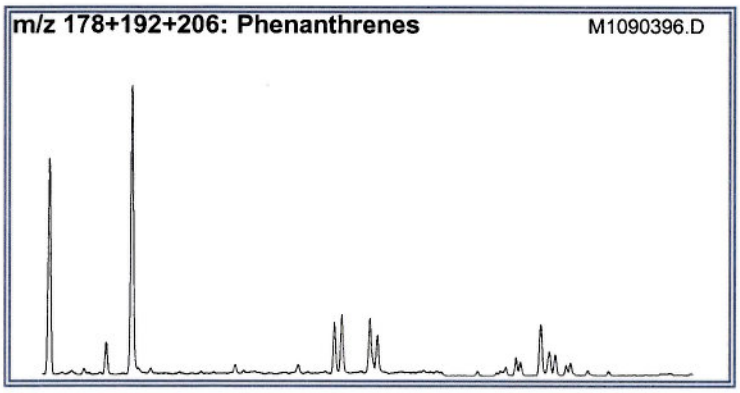
Parameter	Formula
WGC Parameters	
Pristane/Phytane	IP19/IP20
Pristane/nC17	IP19/NC17
Phytane/nC18	IP20/NC18
$nC_{18}/(nC_{18}+nC_{19})$	NC18/(NC18+NC19)
$nC_{17}/(nC_{17}+nC_{29})$	NC17/(NC17+NC29)
CPI Hunt[4]	((NC23+NC25+NC27+NC29+NC31)+(NC25+NC27+NC29+NC31+NC33))/(2*(NC24+NC26+NC28+NC30+NC32))
Normal Paraffins	100*(NC4+NC5+NC6+NC7+NC8+NC9+NC10+NC11+NC12+NC13+NC14+NC15+NC16+NC17+NC18+NC19+NC20+NC21+NC22+NC23+NC24+NC25+NC26+NC27+NC28+NC29+NC30+NC31+NC32+NC33+NC34+NC35+NC36+NC37+NC38+NC39+NC40+NC41)/TOTAL_RESOLVED
Isoprenoids	100*(IP9+IP10+IP11+IP13+IP14+IP15+IP16+IP18+IP19+IP20+C25HBI)/TOTAL_RESOLVED
Cycloparaffins	100*(CP+MCP+CH+11DMCP+1T3DMCP+1T2DMCP+MCH+113TMCP+ECP+124TMCP+123TMCP+1C3DMCP+1C2DMCP)/TOTAL_RESOLVED
Branched (iso-) Paraffins	100*(IC4+IC5+22DMB+23DMB+2MP+3MP+22DMP+24DMP+223TMB+33DMP+2MH+23DMP+3MH+3EP)/TOTAL_RESOLVED
BTX aromatics	100*(BZ+TOL+MXYL+PXYL+OXYL)/TOTAL_RESOLVED (*OXYL added 05/21/2007)
Thompson[1]	
BZ/nC6	BZ/NC6
TOL/nC7	TOL/NC7
(nC6+nC7)/(CH+MCH)	(NC6+NC7)/(CH+MCH)
Isoheptane Value	(2MH+3MH)/(1C3DMCP+1T3DMCP+1T2DMCP)
nC7/MCH	NC7/MCH
CH/MCP	CH/MCP
nC7/2MH	NC7/2MH
nC6/22DMB	NC6/22DMB
Heptane Value	100*NC7/(CH+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+1T2DMCP+MCH+NC7)
MCH/nC7	MCH/NC7
mpXYL/nC8	(MXYL+PXYL)/NC8
Mango[2]	
P1	100*NC7/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
P2	100*(2MH+3MH)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
P3	100*(3EP+33DMP+23DMP+24DMP+22DMP+223TMB)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
5N1	100*(ECP+1T2DMCP)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
N2	100*(11DMCP+1C3DMCP+1T3DMCP)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
6N1	100*(MCH+TOL)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
K1	(2MH+23DMP)/(3MH+24DMP)
K2	(2MH+3MH)/(2MH+3MH+11DMCP+1C3DMCP+1T3DMCP)
5N1/6N1	(ECP+1T2DMCP)/(MCH+TOL)
P3/N2	(3EP+33DMP+23DMP+24DMP+22DMP+223TMB)/(11DMCP+1C3DMCP+1T3DMCP)
ln(24DMP/23DMP)	ln(24DMP/23DMP)
Halpern[3]	
Tr1	TOL/11DMCP
Tr2	NC7/11DMCP
Tr3	3MH/11DMCP
Tr4	2MH/11DMCP
Tr5	(2MH+3MH)/11DMCP
Tr7	1T3DMCP/11DMCP
Tr8	(2MH+3MH)/(22DMP+23DMP+24DMP+33DMP+3EP)
C1	22DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C2	23DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C3	24DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C4	33DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C5	3EP/(22DMP+23DMP+24DMP+33DMP+3EP)

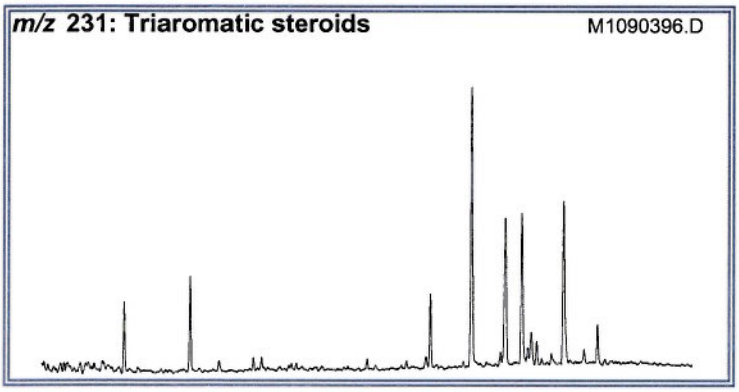
Weatherford LABORATORIES

AROMATIC BIOMARKERS

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #2
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000742
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	PRINCE CREEK
Well Name:	SUSIE NO. 1	Geologic Age:	
Latitude:	0	Top Depth:	2605 FT
Longitude:	0	Bottom Depth:	2606 FT







RATIOS (on Areas)[1]		Appl[2]	TEV[3]
Mono- (MAS) and Triaromatic Steroids (TAS)			
(C20+C21)/Σ TAS	0.14	M	1.0 (1.3%)
TAS #1 20/20+27	0.27	M	
TAS #2 21/21+28	0.33	M	
%26 TAS	14.3	D	
%27 TAS	38.4	D	
%28 TAS	39.0	D	
%29 TAS	8.3	D	
C28/C26 20S TAS	2.97		
C28/C27 20R TAS	1.02		
Dia/Regular C27 MAS	1.37		
%27 MAS	24.5	D	
%28 MAS	41.7	D	
%29 MAS	33.9	D	
(C21+C22)/Σ MAS	0.10	M	1.0 (1.3%)
TAS/(MAS+TAS)	0.81	M	
TA28/(TA28+MA29)	0.83	M	1.0 (0.8%)
Triaromatic Methylsteroids			
Dinosteroid Index	0.35	A	
C4/C3+C4 Mester	0.55	A	
Phenanthrenes, Naphthalenes, and Dibenzothiophenes			
MPI-1	0.39	M	
Rc(a) if Ro < 1.3 (Ro%)	0.61	M	
Rc(b) if Ro > 1.3 (Ro%)	2.06	M	
MPI-2	0.43	M	
DNR-1	4.86	M	
DNR-2	1.89	M	
TNR1	0.90	M	
TDE-1	5.47	M	
TDE-2	0.25	M	
MDR	1.96	M	
Rm (Ro%)	0.71	M	
MDR23	0.25	M	
MDR1	0.24	M	
DBT/Phenanthrene	0.06	D	

[1]Definition and utility of the ratios can be found on our website www.BaselineDGSI.com

[2]A=Source Age; D=Depositional environment; M= Maturity

[3]Thermal equilibrium value of the biomarker ratio and in brackets the approximate VR value at which this value is reached

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2605 - 2606 FT**	**Lab ID:**	**TM000742**
Sampling Point:		**File Name:**	**M1090396.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
230	OTP	*Ortho-terphenyl* (internal standard)	74.948	69261	17001	300.0	300.0
128	NAPH	Naphthalene	28.831	1378	223	6.0	3.9
142	2MN	2-Methylnaphthalene	37.947	10759	1758	46.6	31.0
142	1MN	1-Methylnaphthalene	39.160	6428	1036	27.8	18.3
154	BP	Biphenyl	44.670	8200	1229	35.5	21.7
156	2EN	2-Ethylnaphthalene	46.119	3085	458	13.4	8.1
156	1EN	1-Ethylnaphthalene	46.220	872	233	3.8	4.1
156	26DMN	2,6-Dimethylnaphthalene	47.029	13385	2199	58.0	38.8
156	27DMN	2,7-Dimethylnaphthalene	47.180	14148	2330	61.3	41.1
156	1317DMN	1,3 & 1,7-Dimethylnaphthalenes	48.174	30383	4348	131.6	76.7
156	16DMN	1,6-Dimethylnaphthalene	48.427	23848	3850	103.3	67.9
156	23DMN	2,3-Dimethylnaphthalene	49.590	3324	635	14.4	11.2
156	14DMN	1,4-Dimethylnaphthalene	49.708	11247	1663	48.7	29.3
156	15DMN	1,5-Dimethylnaphthalene	49.809	5666	1136	24.5	20.0
156	12DMN	1,2-Dimethylnaphthalene	50.769	5507	889	23.9	15.7
168	2MBP	2-Methylbiphenyl	46.574	49	9	0.2	0.2
168	DPM	Diphenylmethane	48.848	89	16	0.4	0.3
168	3MBP	3-Methylbiphenyl	53.263	4196	716	18.2	12.6
168	4MBP	4-Methylbiphenyl	53.920	2240	367	9.7	6.5
168	DBF	Dibenzofuran	55.352	1037	157	4.5	2.8
170	BB_EMN	Ethyl-methyl-Naphthalene	55.099	14109	1869	61.1	33.0
170	AB_EMN	Ethyl-methyl-Naphthalene	56.313	6575	1049	28.5	18.5
170	137TMN	1,3,7-Trimethylnaphthalene	56.751	23450	3988	101.6	70.4
170	136TMN	1,3,6-Trimethylnaphthalene	57.138	33456	5568	144.9	98.3
170	146135T	(1,4,6+1,3,5)-Trimethylnaphthalenes	58.200	29074	4469	125.9	78.9
170	236TMN	2,3,6-Trimethylnaphthalene	58.469	26262	4592	113.8	81.0
170	127TMN	1,2,7-Trimethylnaphthalene	59.211	7369	1371	31.9	24.2
170	167126T	(1,6,7+1,2,6)-Trimethylnaphthalenes	59.379	30001	4537	129.9	80.1
170	124TMN	1,2,4-Trimethylnaphthalene	60.306	2669	510	11.6	9.0
170	125TMN	1,2,5-Trimethylnaphthalene	60.744	14611	2685	63.3	47.4
178	PHEN	Phenanthrene	70.247	123975	26093	537.0	460.4
184	1357	1,3,5,7-Tetramethylnaphthalene	64.704	8391	1408	36.3	24.8
184	1367	1,3,6,7-Tetramethylnaphthalene	65.849	8701	1803	37.7	31.8
184	1247	(1,2,4,7+1,2,4,6+1,4,6,7)-Tetramethylnaphthalenes	66.607	5830	1186	25.3	20.9
184	1257	1,2,5,7-Tetramethylnaphthalene	66.793	4156	847	18.0	14.9
184	2367	2,3,6,7-Tetramethylnaphthalene	67.164	2194	470	9.5	8.3
184	1267	1,2,6,7-Tetramethylnaphthalene	67.602	3144	656	13.6	11.6
184	1237	1,2,3,7-Tetramethylnaphthalene	67.770	1178	230	5.1	4.1
184	1236	1,2,3,6-Tetramethylnaphthalene	68.040	2245	464	9.7	8.2
184	1256	1,2,5,6-Tetramethylnaphthalene	68.764	4978	1172	21.6	20.7
184	DBT	Dibenzothiophene	68.983	6933	1421	30.0	25.1
191	BH32	C32 Benzohopane	117.653	3486	545	15.1	9.6
191	BH33	C33 Benzohopane	119.827	1377	212	6.0	3.7
191	BH34	C34 Benzohopane	121.732	658	125	2.9	2.2
191	BH35	C35 Benzohopane					
192	3MP	3-Methylphenanthrene	75.167	19477	4608	84.4	81.3
192	2MP	2-Methylphenanthrene	75.352	22875	5309	99.1	93.7
192	9MP	9-Methylphenanthrene	76.043	21683	4838	93.9	85.4
192	1MP	1-Methylphenanthrene	76.228	15313	3373	66.3	59.5

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2605 - 2606 FT**	**Lab ID:**	**TM000742**
Sampling Point:		**File Name:**	**M1090396.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
198	CAD	Cadalene	66.203	9499	1965	41.1	34.7
198	4MDBT	4 Methyl Dibenzothiophene	73.516	3278	747	14.2	13.2
198	23MDBT	2 & 3 Methyl Dibenzothiophenes	74.291	1699	293	7.4	5.2
198	1MDBT	1 Methyl Dibenzothiophene	75.083	1673	364	7.2	6.4
206	36DMP	3,6-Dimethylphenanthrene	79.392	3265	787	14.1	13.9
206	26DMP	2,6-Dimethylphenanthrene	79.645	6461	1636	28.0	28.9
206	27DMP	2,7-Dimethylphenanthrene	79.746	5541	1209	24.0	21.3
206	39DMP	(3,9+3,10+2,10+1,3)-Dimethylphenanthrenes	80.252	23442	4640	101.5	81.9
206	29DMP	(2,9+1,6)-Dimethylphenanthrenes	80.454	12266	2156	53.1	38.0
206	17DMP	1,7-Dimethylphenanthrene	80.606	8340	1888	36.1	33.3
206	23DMP	2,3-Dimethylphenanthrene	80.876	4257	912	18.4	16.1
206	19DMP	1,9-Dimethylphenanthrene	80.994	4803	1156	20.8	20.4
206	18DMP	1,8-Dimethylphenanthrene	81.415	1909	444	8.3	7.8
206	12DMP	1,2-Dimethylphenanthrene	81.921	1578	373	6.8	6.6
231	231A20	C20 Triaromatic Steroid	92.236	6748	1595	29.2	28.1
231	231B21	C21 Triaromatic	94.730	8936	2120	38.7	37.4
231	231C26	C26 20S Triaromatic	103.916	6784	1652	29.4	29.2
231	231D26	C27 20S & C26 20R Triaromatic	105.517	28729	6202	124.4	109.4
231	TADMD1	C28 23,24-Cholestane Triaromatic	106.090	553	127	2.4	2.2
231	TADMD2	C28 23,24-Cholestane Triaromatic	106.630	1623	331	7.0	5.8
231	231E28	C28 20S Triaromatic	106.815	20116	3296	87.1	58.2
231	231F27	C27 20R Triaromatic	107.456	18237	3388	79.0	59.8
231	TADMD3	C28 23,24-Cholestane Triaromatic	107.557	600	224	2.6	4.0
231	C29TA1	C29 Triaromatic	107.826	4659	762	20.2	13.4
231	C29TA2	C29 Triaromatic	108.029	2459	555	10.7	9.8
231	TADMD4	C28 23,24-Cholestane Triaromatic	108.871	458	77	2.0	1.4
231	231G28	C28 20R Triaromatic	109.057	18534	3641	80.3	64.2
231	TADMD5	C28 23,24-Cholestane Triaromatic	109.141	1393	717	6.0	12.7
231	C29TA3	C29 Triaromatic	110.371	3939	890	17.1	15.7
245	C3S	C27 20S 3-Methyl Triaromatic Steroid	106.596	1533	340	6.6	6.0
245	C4S	C27 20S 4-Methyl Triaromatic Steroid	107.203	2524	536	10.9	9.5
245	E2S	C28 20S 2-Methyl Triaromatic Steroid	107.776	880	186	3.8	3.3
245	E3SC3R	C28 20S 3-Methyl & C27 20R 3-Methyl TAS	108.113	5649	946	24.5	16.7
245	E4SC4R	C28 20S 4-Methyl & C27 20R 4-Methyl TAS	108.703	7837	1214	33.9	21.4
245	S2S	C29 20S 2-Methyl Triaromatic Steroid	108.972	1404	198	6.1	3.5
245	DA	Triaromatic Dinosteroid a	109.141	1585	309	6.9	5.5
245	S3S	C29 20S 3-Methyl Triaromatic Steroid	109.310	4546	537	19.7	9.5
245	DB	Triaromatic Dinosteroid b	109.731	4072	853	17.6	15.1
245	S4SE2R	C29 20S 4-Methyl & C28 20R 2-Methyl TAS	109.883	7138	939	30.9	16.6
245	E3R	C28 20R 3-Methyl Triaromatic Steroid	110.051	3989	666	17.3	11.8
245	E4R	C28 20R 4-Methyl Triaromatic Steroid	110.641	4690	821	20.3	14.5
245	DC	Triaromatic Dinosteroid c	110.826	5017	1158	21.7	20.4
245	DD	Triaromatic Dinosteroid d	110.944	5655	1199	24.5	21.2
245	S2R	C29 20R 2-Methyl Triaromatic Steroid	111.349	1117	207	4.8	3.7
245	S3R	C29 20R 3-Methyl Triaromatic Steroid	111.568	3554	721	15.4	12.7
245	DE	Triaromatic Dinosteroid e	111.720	4565	730	19.8	12.9
245	S4R	C29 20R 4-Methyl Triaromatic Steroid	112.158	3824	747	16.6	13.2
245	DF	Triaromatic Dinosteroid f	112.293	5622	1141	24.4	20.1

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2605 - 2606 FT**	**Lab ID:**	**TM000742**
Sampling Point:		**File Name:**	**M1090396.D**

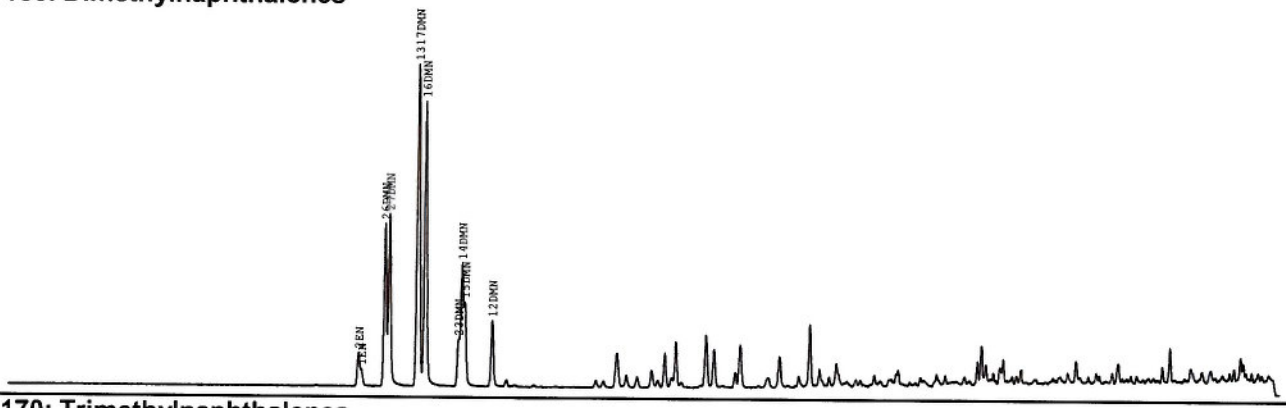
Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
253	S253A	C21 Ring-C Monoaromatic Steroid	84.483	1573	262	6.8	4.6
253	S253B	C22 Monoaromatic steroid	86.943	1160	210	5.0	3.7
253	S253C	C27 Reg 5β(H),10β(CH3) 20S	96.921	846	191	3.7	3.4
253	S253D	C27 Dia 10β(H),5β(CH3) 20S	97.056	1157	259	5.0	4.6
253	S253E	C27 Dia10βH,5βCH3 20R+Reg5βH,10βCH3 20R	98.539	2027	386	8.8	6.8
253	S253F	C27 Reg 5α(H),10β(CH3) 20S	98.674	817	132	3.5	2.3
253	S253G	C28 Dia 10αH,5αCH3 20s+Reg5βH,10βCH3 20S	99.079	3556	622	15.4	11.0
253	S253H	C27 Reg 5α(H),10β(CH3) 20R	100.360	954	188	4.1	3.3
253	S253I	C28 Reg 5α(H),10β(CH3) 20S	100.511	953	190	4.1	3.4
253	S253J	C28 Dia 10αH,5αCH3 20R+Reg5βH,10βCH3 20R	100.697	4043	814	17.5	14.4
253	S253K	C29 Dia 10βH,5βCH3 20S+Reg5βH,10βCH3 20S	100.832	2848	548	12.3	9.7
253	S253L	C29 Reg 5α(H),10β(CH3) 20S	102.129	1023	180	4.4	3.2
253	S253M	C28 Reg 5α(H),10β(CH3) 20R	102.416	1322	223	5.7	3.9
253	S253N	C29 Dia 10βH,5βCH3 20R+Reg5βH,10βCH3 20R	102.517	3265	547	14.1	9.7
253	S253O	C29 Reg 5α(H),10β(CH3) 20R	104.152	894	160	3.9	2.8
365	SH29	C29 8,14-secohopanoids	104.000	17705	3761	76.7	66.4
365	SH30	C30 8,14-secohopanoids	105.972	15390	3746	66.7	66.1

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #2
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	2605 - 2606 FT	Lab ID:	TM000742
Sampling Point:		File Name:	M1090396.D

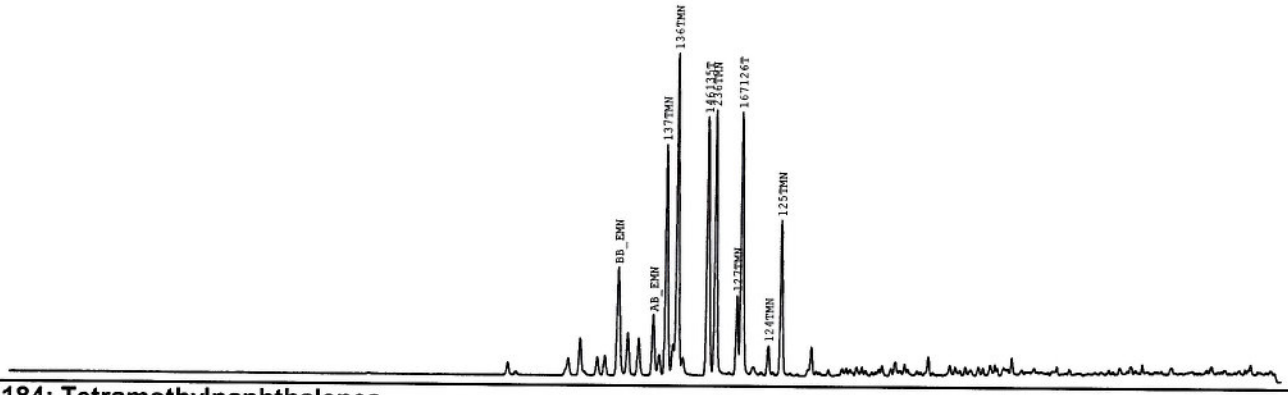
Miscellaneous Ratios	By Areas	By Heights
Triaromatic Steroids m/z 231		
(C20+C21)/Σ TAS	0.14	0.16
TAS #1 20/20+27	0.27	0.32
TAS #2 21/21+28	0.33	0.37
%26TAS	14.3	17.3
%27TAS	38.4	35.4
%28TAS	39.0	38.0
%29TAS	8.3	9.3
C28/C26 20S TAS	2.97	2.00
C28/C27 20R TAS	1.02	1.07
Monoaromatic Steroids m/z 253		
Dia/Regular C27 MAS	1.37	1.36
%27 MAS	24.5	26.0
%28 MAS	41.7	41.6
%29 MAS	33.9	32.3
(C21+C22)/Σ MAS	0.10	0.10
TAS/(MAS+TAS)	0.81	0.82
TA28/(TA28+MA29)	0.83	0.83
Triaromatic Methylsteroids m/z 245		
Dinosteroid Index	0.35	0.40
C4/C3+C4 Mester	0.55	0.55
Phenanthrenes and Naphthalenes		
MPI-1	0.39	0.43
MPI-2	0.43	0.46
MPI-3	1.14	1.21
Rc(a) if Ro < 1.3 (Ro%)	0.61	0.63
Rc(b) if Ro > 1.3 (Ro%)	2.06	2.04
DNR-1	4.86	3.99
DNR-2	1.89	1.97
TNR1	0.90	1.03
TDE-1	5.47	5.26
TDE-2	0.25	0.30
MDR	1.96	2.05
Rm (Ro%)	0.71	0.71
MDR23	0.25	0.21
MDR1	0.24	0.26
DBT/Phenanthrene	0.06	0.05

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #2
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	2605 - 2606 FT	Lab ID:	TM000742
Sampling Point:		File Name:	

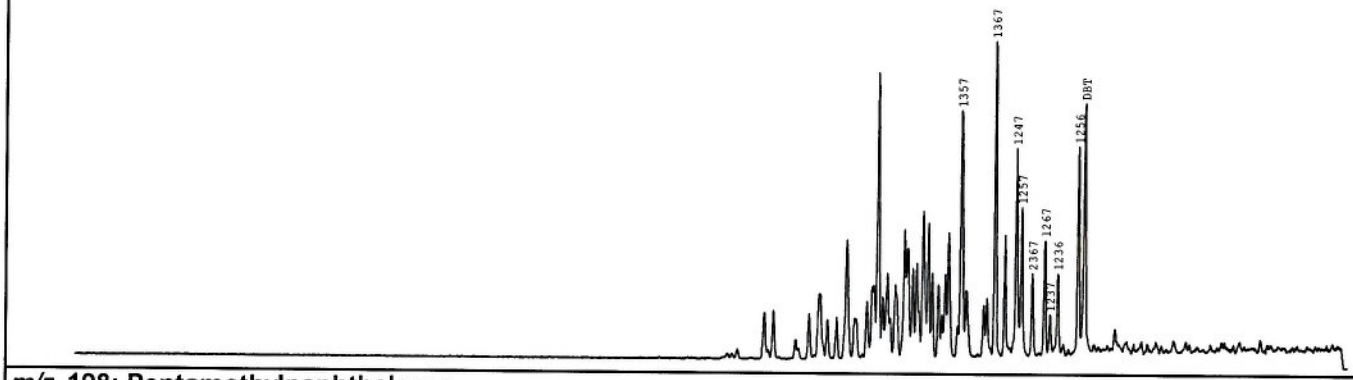
***m/z* 156: Dimethylnaphthalenes**



***m/z* 170: Trimethylnaphthalenes**



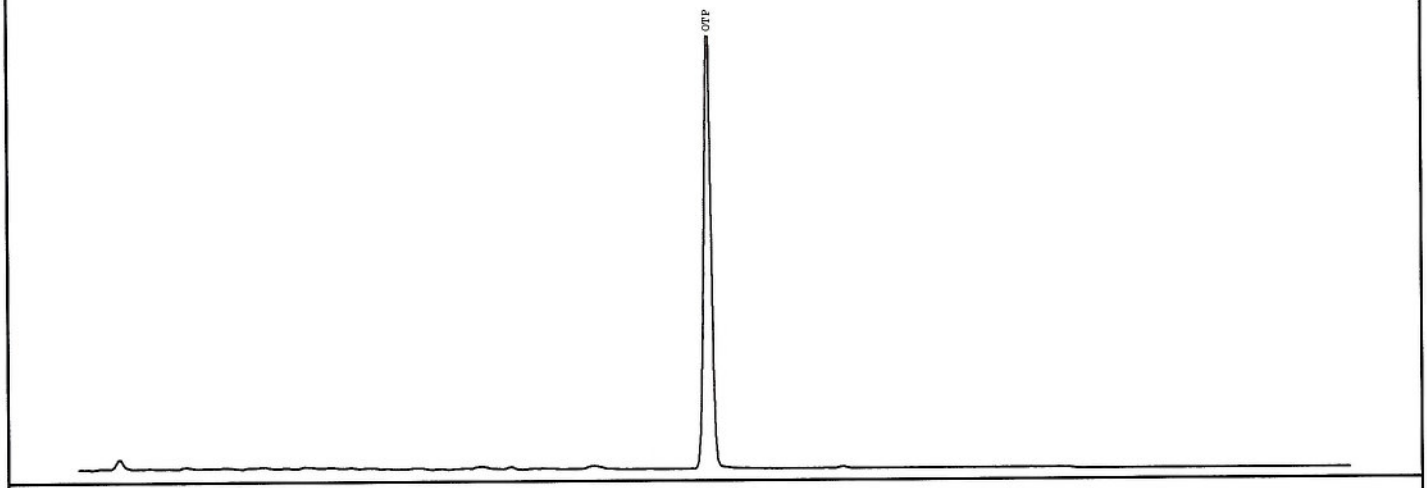
***m/z* 184: Tetramethylnaphthalenes**



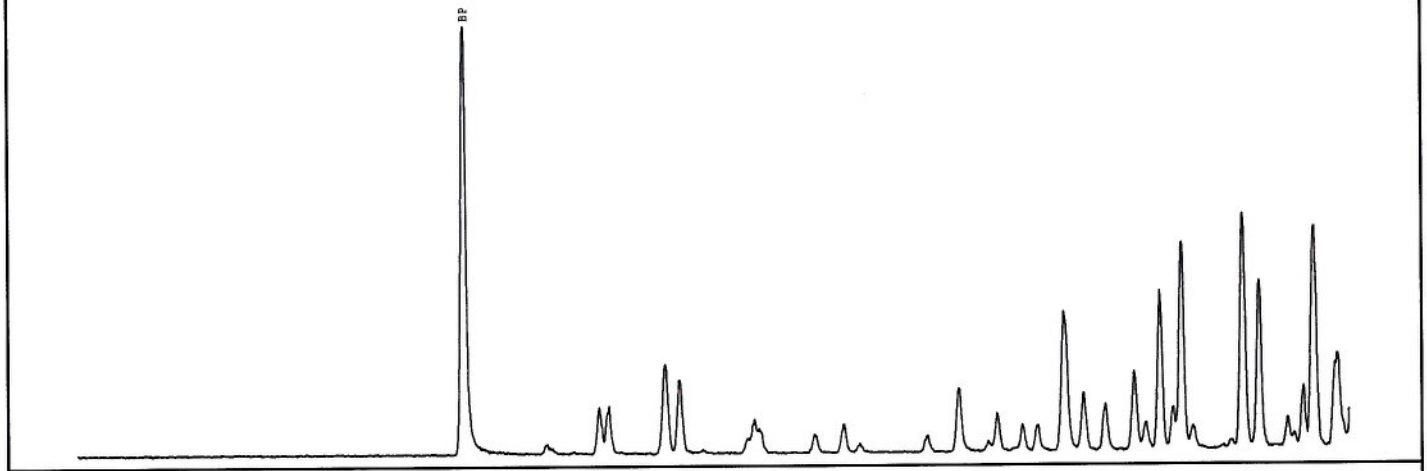
***m/z* 198: Pentamethylnaphthalenes**

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #2
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	2605 - 2606 FT	Lab ID:	TM000742
Sampling Point:		File Name:	M1090396.D

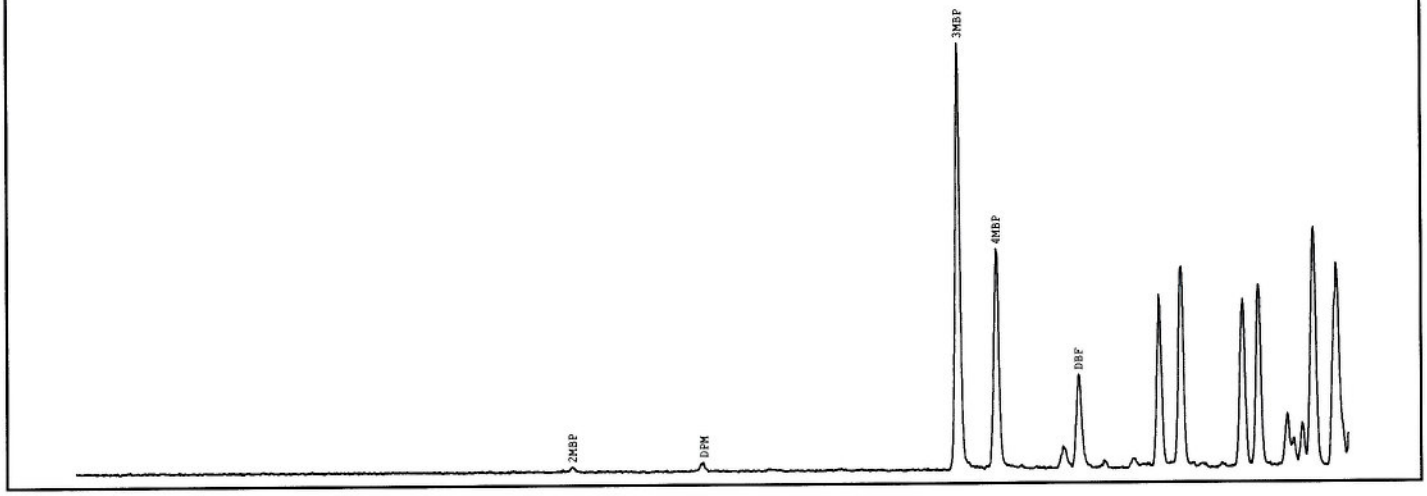
m/z 230: Ortho-Terphenyl (Inter. Std)



m/z 154: Biphenyl

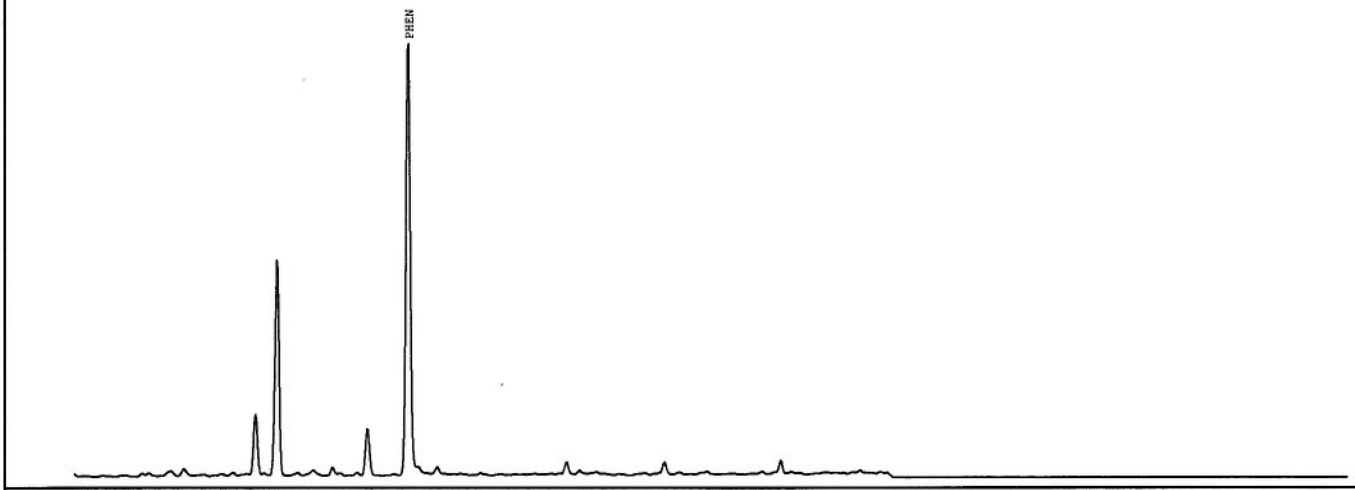


m/z 168: Methylbiphenyls (MBP)

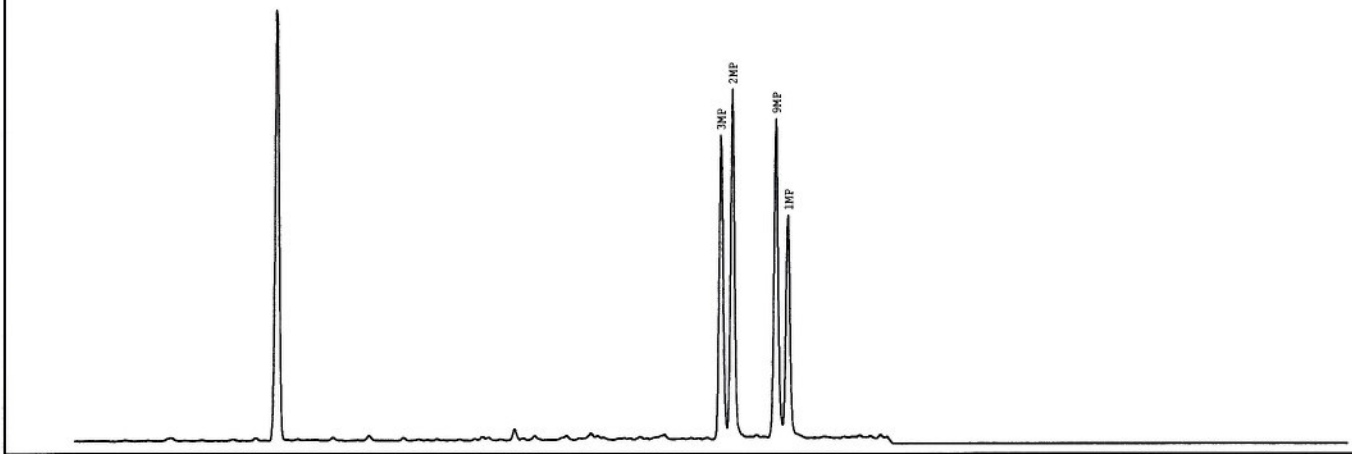


Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #2
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	2605 - 2606 FT	Lab ID:	TM000742
Sampling Point:		File Name:	M1090396.D

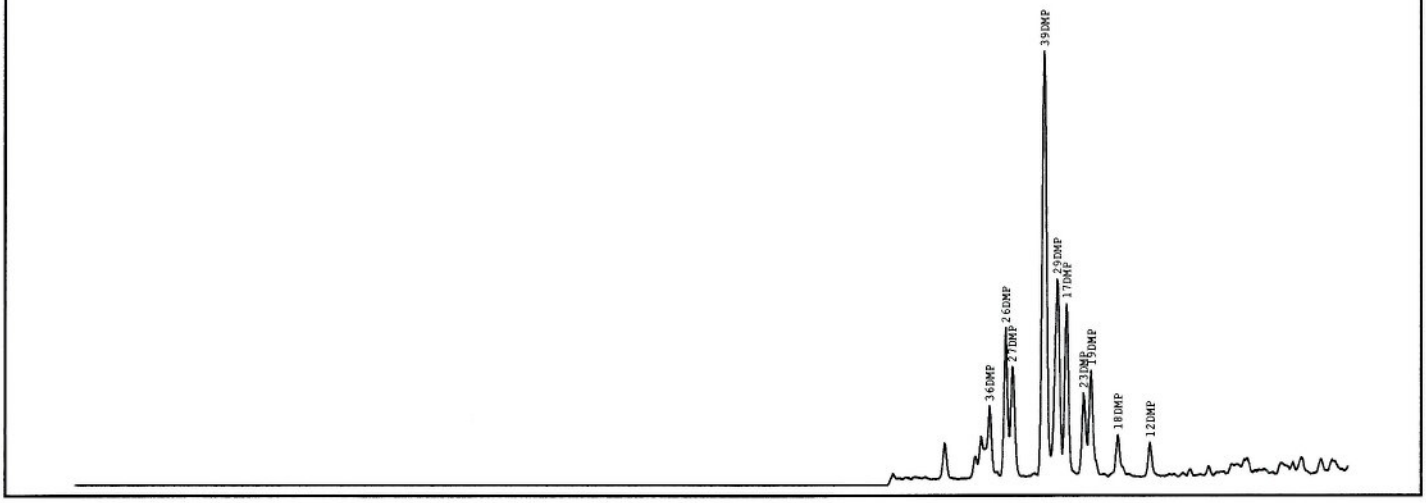
***m/z* 178: Phenanthrene**



***m/z* 192: Methylphenanthrenes**

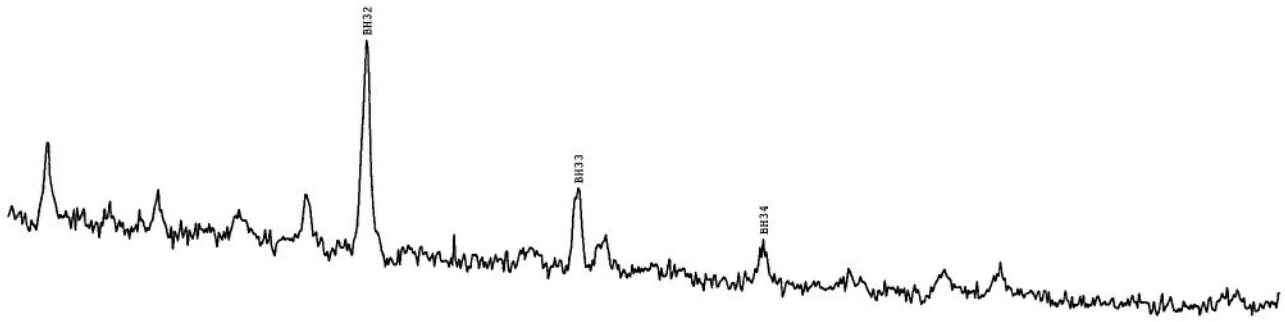


***m/z* 206: Dimethylpehnanthrenes**

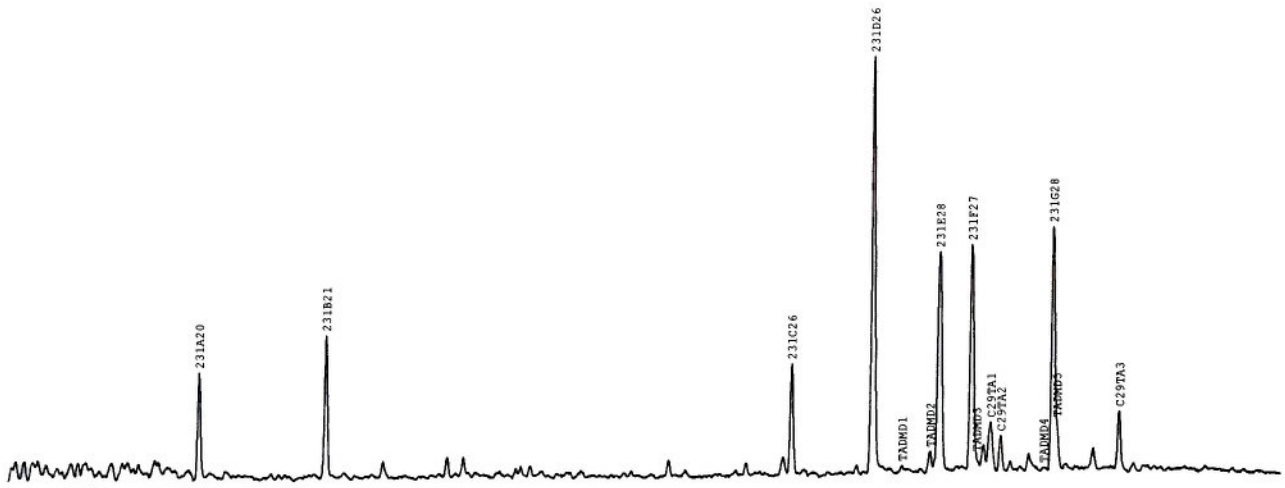


Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #2
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	2605 - 2606 FT	Lab ID:	TM000742
Sampling Point:		File Name:	M1090396.D

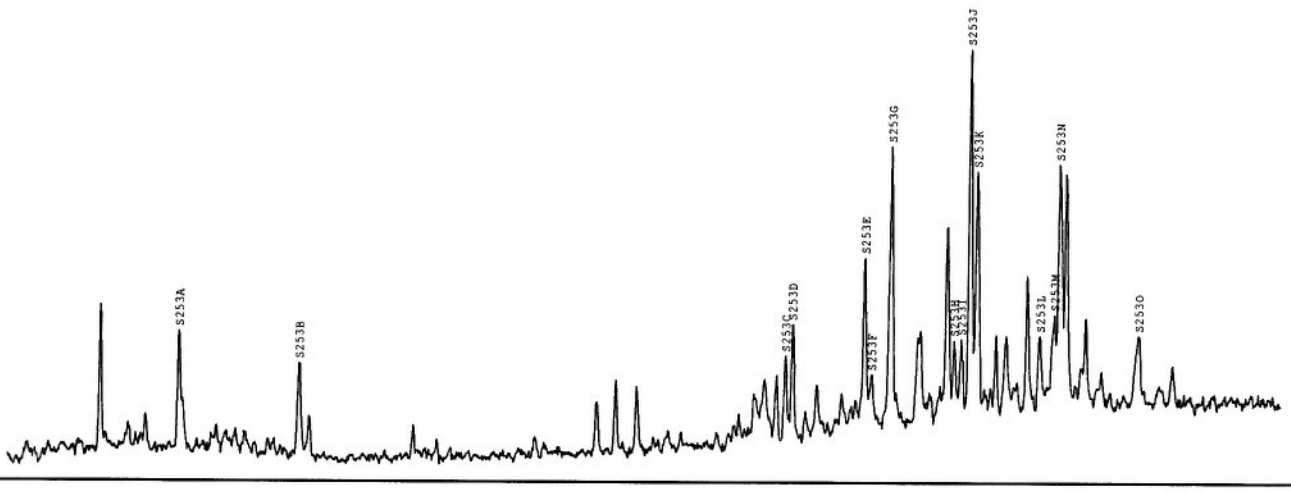
***m/z* 191: Benzohopanes**



***m/z* 231: Triaromatic Steranes**



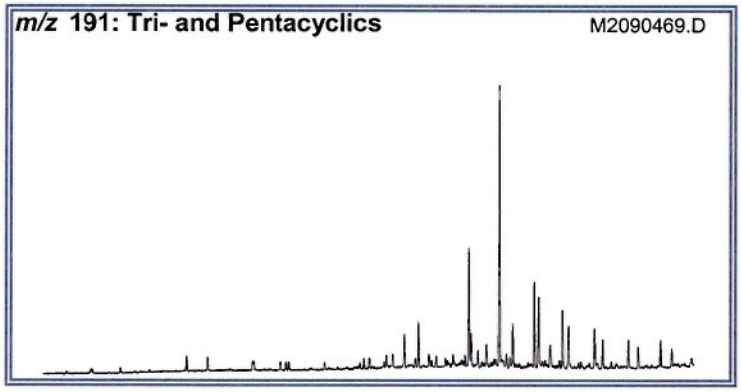
***m/z* 253: Monoaromatic Steranes**

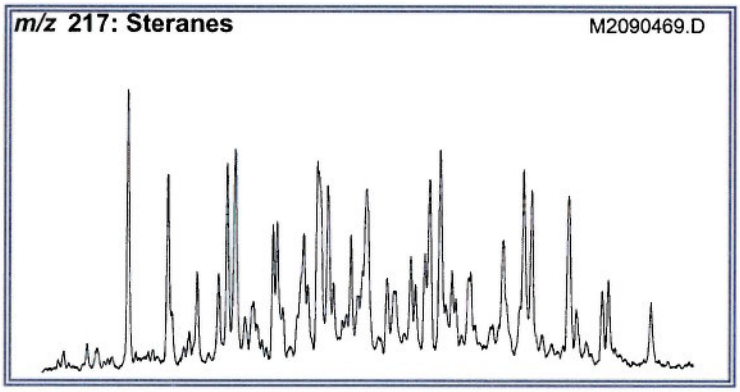


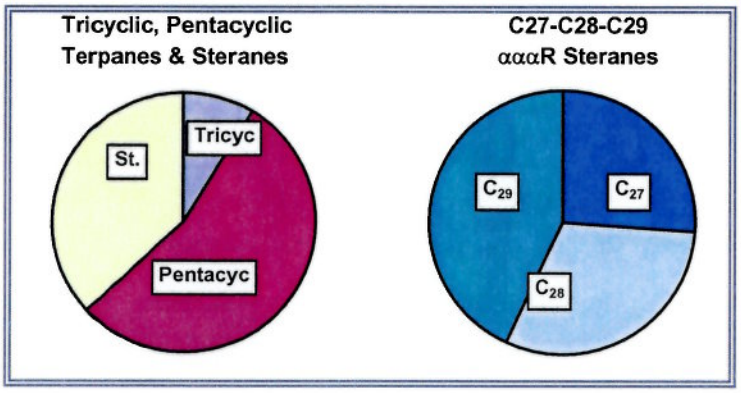
Weatherford LABORATORIES

SATURATE BIOMARKERS

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #2
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000742
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	PRINCE CREEK
Well Name:	SUSIE NO. 1	Geologic Age:	
Latitude:	0	Top Depth:	2605 FT
Longitude:	0	Bottom Depth:	2606 FT







RATIOS (on Areas)[1]		Appl[2]	TEV[3]
Steranes (*m/z* 217; 218)			
%C_{27} αββS (218)	26.2	D	
%C_{28} αββS (218)	39.2	D	
%C_{29} αββS (218)	34.5	D	
%C_{27} αααR (217)	26.0	D	
%C_{28} αααR (217)	31.0	D	
%C_{29} αααR (217)	42.9	D	
S/(S+R) (C_{29} ααα) (217)	0.44	M	0.55 (0.8%)
ββS/(ββS+ααR) (C29) (217)	0.47	M	0.70 (0.9%)
(C_{21}+C_{22})/(C_{27}+C_{28}+C_{29}) (217)	0.03		
C_{27}/C_{29} (αββS) (218)	0.76	D	
C_{28}/C_{29} (αββS) (218)	1.14	D	
Diaster/ααα Ster (C_{27}) (217)	1.59	M/D	1.00 (1.4%)
C30 αββS Sterane Index (218)	10.83	D	
C30 S+R Sterane Index (218)	10.60	D	
Terpanes (*m/z* 191)			
Oleanane/Hopane		D/A	
Gammacerane/Hopane	0.04	D	
Norhopane/Hopane	0.45	D	
Bisnorhopane/Hopane	0.07		
Diahopane/Hopane	0.06	M/D	
Moretane/Hopane	0.18	M	0.05 (0.7%)
25-*nor*-hopane/hopane		B	
Ts/(Ts+Tm) trisnorhopanes	0.43	M/D	1.00 (1.4%)
C29Ts/C29 Hopane	0.31	M	
H32 S/(R+S) Homohopanes	0.57	M	0.60 (0.6%)
H35/H34 Homohopanes	0.95	D	
C24 Tetracyclic/Hopane	0.03	D	
C24 Tetracyclic/C26 Tricyclics	0.50	D	
C23/C24 Tricyclic terpanes	1.09	D	
C19/C23 Tricyclic terpanes	0.14	D	
C26/C25 Tricyclic terpanes	0.91	D	
(C28+C29 Tricyclics)/Ts	1.38	A	
Various (*m/z* 191; 217)			
Steranes/Hopanes	0.78	D	
Tricyclic terpanes/Hopanes	0.16	M	1.00 (1.4%)
Tricyclic terpanes/Steranes	0.21	M/D	1.00 (1.4%)

[1]Definition and utility of the ratios can be found on our website www.brilabs.com

[2]A=Source Age; D=Depositional environment; M= Maturity; B=Possible Biodegradation

[3]Thermal equilibrium value of the biomarker ratio and in brackets the approximate VR value at which this value is reached

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2605 - 2606 FT**	**Lab ID:**	**TM000742**
Sampling Point:		**File Name:**	**M2090469.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
217	CHOL	*5β cholane (internal standard)*	42.106	8920	1207	100.0	100.0
125	BCAROT	β-carotane					
187	4MDIAM	4-methyldiamantane	9.224	93	36	1.0	3.0
187	1MDIAM	1-methyldiamantane	9.817	86	29	1.0	2.4
187	3MDIAM	3-methyldiamantane	10.200	88	25	1.0	2.1
188	DIAM	diamantane	9.085	54	19	0.6	1.6
191	TR19	C19 tricyclic terpane	18.739	689	120	7.7	9.9
191	TR20	C20 tricyclic terpane	21.563	1155	195	12.9	16.2
191	TR21	C21 tricyclic terpane	24.891	1731	238	19.4	19.7
191	TR22	C22 tricyclic terpane	28.307	821	111	9.2	9.2
191	TR23	C23 tricyclic terpane	32.552	4907	652	55.0	54.0
191	TR24	C24 tricyclic terpane	34.958	4492	580	50.4	48.1
191	DESAOL	des-A-oleanane	37.538	659	81	7.4	6.7
191	DESALU	des-A-lupane					
191	TR25A	C25 tricyclic terpane (a)	40.049	3066	418	34.4	34.6
191	TR25B	C25 tricyclic terpane (b)	40.153	2959	407	33.2	33.7
191	TET24	C24 tetracyclic terpane (TET)	43.274	2761	388	31.0	32.1
191	TR26A	C26 tricyclic terpane (a)	43.919	2619	355	29.4	29.4
191	TR26B	C26 tricyclic terpane (b)	44.233	2865	368	32.1	30.5
191	TR28A	C28 tricyclic terpane (a)	52.864	3181	448	35.7	37.1
191	TR28B	C28 tricyclic terpane (b)	53.474	3552	470	39.8	38.9
191	TR29A	C29 tricyclic terpane (a)	55.427	3494	533	39.2	44.2
191	TR29B	C29 tricyclic terpane (b)	56.176	3735	563	41.9	46.6
191	TR30A	C30 tricyclic terpane (a)	60.378	4696	563	52.6	46.6
191	TR30B	C30 tricyclic terpane (b)	61.215	3534	489	39.6	40.5
191	TS	Ts 18α(H)-trisnorhopane	57.554	10109	1431	113.3	118.6
191	TM	Tm 17α(H)-trisnorhopane	59.192	13484	1968	151.2	163.0
191	H28	C28 17α18α21β(H)-bisnorhopane	63.168	5248	545	58.8	45.2
191	NOR25H	C29 Nor-25-hopane					
191	H29	C29 Tm 17α(H)21β(H)-norhopane	64.998	35947	5046	403.0	418.1
191	C29TS	C29 Ts 18α(H)-norneohopane	65.242	11307	1439	126.8	119.2
191	DH30	C30 17α(H)-diahopane	66.010	5117	727	57.4	60.2
191	M29	C29 normoretane	67.003	7292	980	81.7	81.2
191	OLA	oleanane a					
191	OLB	oleanane b					
191	H30	C30 17α(H)-hopane	68.468	79543	11944	891.7	989.6
191	C30TS	C29 Ts 18α(H)-norneohopane	69.287	4596	601	51.5	49.8
191	M30	C30 moretane	70.037	13980	1912	156.7	158.4
191	H31S	C31 22S 17α(H) hopane	72.548	25541	3645	286.3	302.0
191	H31R	C31 22R 17α(H) hopane	73.053	23027	3002	258.2	248.7
191	GAM	gammacerane	73.489	3013	290	33.8	24.0
191	H32S	C32 22S 17α(H) hopane	75.773	17865	2481	200.3	205.6
191	H32R	C32 22R 17α(H) hopane	76.471	13218	1821	148.2	150.9
191	H33S	C33 22S 17α(H) hopane	79.504	13141	1715	147.3	142.1
191	H33R	C33 22R 17α(H) hopane	80.463	9750	1261	109.3	104.5
191	H34S	C34 22S 17α(H) hopane	83.392	8638	1201	96.8	99.5
191	H34R	C34 22R 17α(H) hopane	84.543	6586	918	73.8	76.1
191	H35S	C35 22S 17α(H) hopane	87.123	8279	1187	92.8	98.3
191	H35R	C35 22R 17α(H) hopane	88.448	6239	816	69.9	67.6

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2605 - 2606 FT**	**Lab ID:**	**TM000742**
Sampling Point:		**File Name:**	**M2090469.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
217	S21	C21 sterane	28.882	3195	364	35.8	30.2
217	S22	C22 sterane	33.615	2566	334	28.8	27.7
217	DIA27S	C27 βα 20S diasterane	48.296	15556	2100	174.4	174.0
217	DIA27R	C27 βα 20R diasterane	49.865	10609	1455	118.9	120.5
217	DIA28SA	C28 βα 20S diasterane a	52.114	11106	1534	124.5	127.1
217	DIA28SB	C28 βα 20S diasterane b	52.393	14407	1643	161.5	136.1
217	DIA28RA	C28 βα 20R diasterane a	53.823	7622	1065	85.4	88.2
217	DIA28RB	C28 βα 20R diasterane b	53.997	9351	1092	104.8	90.5
217	C27S	C27 αα 20S sterane	55.026	8690	994	97.4	82.4
217	BB_D29S	C27 ββ 20R + C29 dia20S	55.549	22408	1548	251.2	128.3
217	C27BBS	C27 ββ 20S sterane	55.932	12456	1361	139.6	112.8
217	C27R	C27 αα 20R sterane	56.821	7797	985	87.4	81.6
217	DIA29R	C29 βα 20R diasterane	57.414	16669	1330	186.9	110.2
217	C28S	C28 αα 20S sterane	59.140	7575	815	84.9	67.5
217	C28BBR	C28 ββ 20R sterane(+5 βαα)	59.872	12447	1398	139.5	115.8
217	C28BBS	C28 ββ 20S sterane	60.256	15533	1621	174.1	134.3
217	C28R	C28 αα 20R sterane	61.424	9299	694	104.2	57.5
217	C29S	C29 αα 20S sterane	62.679	9922	937	111.2	77.6
217	C29BBR	C29 ββ 20R sterane(+5 βαα)	63.464	14331	1470	160.7	121.8
217	C29BBS	C29 ββ 20S sterane	63.795	11330	1310	127.0	108.5
217	C29R	C29 αα 20R sterane	65.208	12865	1265	144.2	104.8
218	C27ABBR	C27 ββ 20R sterane	55.531	15994	1952	179.3	161.7
218	C27ABBS	C27 ββ 20S sterane	55.932	12357	1657	138.5	137.3
218	C28ABBR	C28 ββ 20R sterane	59.872	16453	2021	184.5	167.4
218	C28ABBS	C28 ββ 20S sterane	60.273	18471	2240	207.1	185.6
218	C29ABBR	C29 ββ 20R sterane	63.464	16899	2115	189.5	175.2
218	C29ABBS	C29 ββ 20S sterane	63.778	16258	2051	182.3	169.9
218	C30ABBR	C30 ββ 20R sterane	66.515	5717	744	64.1	61.6
218	C30ABBS	C30 ββ 20S sterane	66.742	5719	754	64.1	62.5
259	D27S	C27 βα 20S diasterane	48.313	9881	1341	110.8	111.1
259	D27R	C27 βα 20R diasterane	49.865	7273	950	81.5	78.7
259	D28SA	C28 βα 20S diasterane a	52.114	7242	1011	81.2	83.8
259	D28SB	C28 βα 20S diasterane b	52.410	7838	1029	87.9	85.3
259	D28RA	C28 βα 20R diasterane a	53.823	5632	746	63.1	61.8
259	D28RB	C28 βα 20R diasterane b	53.997	4987	669	55.9	55.4
259	D29S	C29 βα 20S diasterane	55.653	11035	926	123.7	76.7
259	D29R	C29 βα 20R diasterane	57.397	8003	675	89.7	55.9
259	C30TP1	C30 tetracyclic polyprenoid	66.986	1264	174	14.2	14.4
259	C30TP2	C30 tetracyclic polyprenoid	67.125	1061	150	11.9	12.4

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2605 - 2606 FT**	**Lab ID:**	**TM000742**
Sampling Point:		**File Name:**	**M2090469.D**

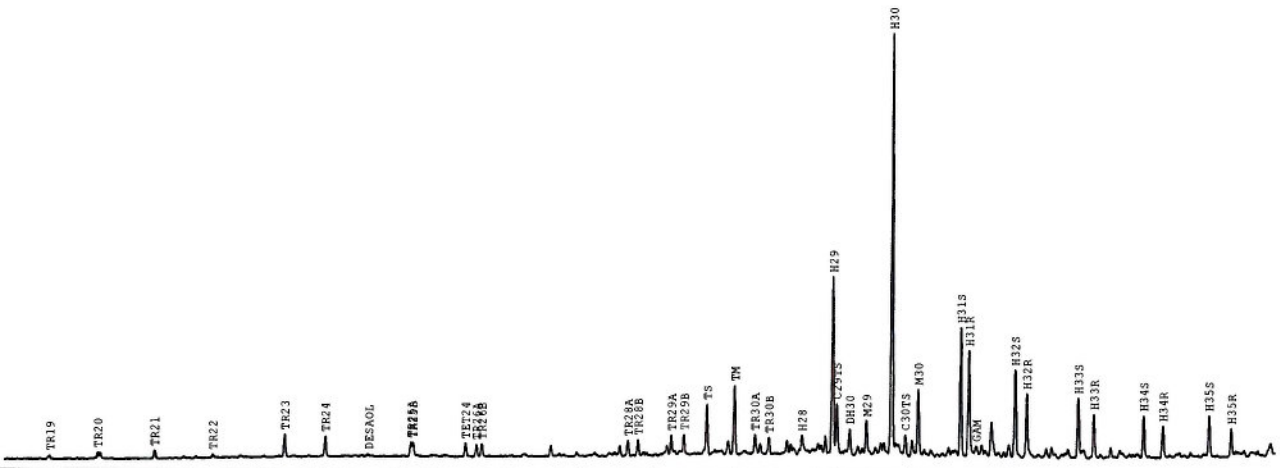
Miscellaneous Ratios	By Areas	By Heights
Terpanes (m/z 191)		
C19/C23 Tricyclic terpanes	0.14	0.18
C22/C21 Tricyclic terpanes	0.47	0.47
C22/C24 Tricyclic terpanes	0.18	0.19
C23/C24 Tricyclic terpanes	1.09	1.12
C24/C23 Tricyclic terpanes	0.92	0.89
C26/C25 Tricyclic terpanes	0.91	0.88
C24 Tetracyclic/C23 Tricyclic	0.56	0.60
C24 Tetracyclic/C26 Tricyclics	0.50	0.54
(C28+C29 Tricyclics)/Ts	1.38	1.41
Ts/Tm trisnorhopanes	0.75	0.73
Ts/(Ts+Tm) trisnorhopanes	0.43	0.42
25-nor-hopane/hopane		0.05
C29Ts/C29 Hopane	0.31	0.29
C29Ts/(C29TS+C29) Hopane	0.24	0.22
C23 Tricyclic/Hopane	0.06	0.05
C24 Tetracyclic/Hopane	0.03	0.03
Bisnorhopane/Hopane	0.07	0.05
Norhopane/Hopane	0.45	0.42
Diahopane/Hopane	0.06	0.06
Oleanane/Hopane		
Moretane/Hopane	0.18	0.16
Moretane/(Moretane+Hopane)	0.15	0.14
C30Ts/C30 Hopane	0.06	0.05
Gammacerane/Hopane	0.04	0.02
C32 S/(S+R) Homohopanes	0.57	0.58
Gammacerane/H31R Homohopane	0.13	0.10
C35/C34 Homohopanes	0.95	0.95
C35/C34 S Homohopanes	0.96	0.99
C35 Homohopane Index	0.11	0.11
Rel % C31 Homohopane	36.7	36.8
Rel % C32 Homohopane	23.5	23.8
Rel % C33Homohopane	17.3	16.5
Rel % C34 Homohopane	11.5	11.7
Rel % C35 Homohopane	11.0	11.1

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2605 - 2606 FT**	**Lab ID:**	**TM000742**
Sampling Point:		**File Name:**	**M2090469.D**

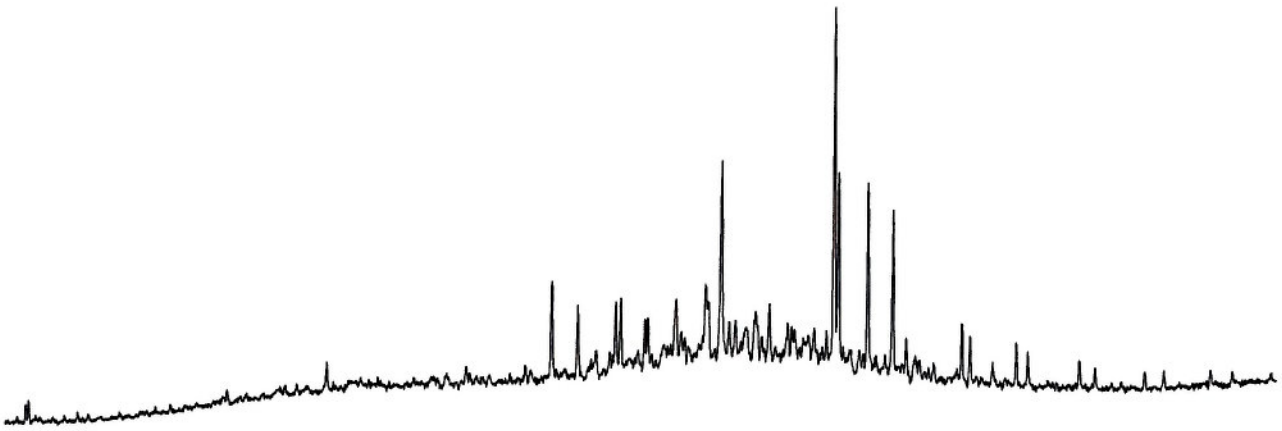
Miscellaneous Ratios	By Areas	By Heights
Steranes (m/z 217; 218)		
%C27 ααα*R* (217)	26.0	33.5
%C28 ααα*R* (217)	31.0	23.6
%C29 ααα*R* (217)	42.9	43.0
S/R (C_{29} ααα) (217)	0.77	0.74
S/(S+R) (C_{29} ααα) (217)	0.44	0.43
ββ/(αα+ββ) (C_{29}) (217)	0.53	0.56
ββ*S*/(αα*R*+ββ*S*) (C29) (217)	0.47	0.51
αββ*S*/ααα*R* (C_{29}) (217)	0.88	1.04
(C_{21}+C_{22})/(C_{27}+C_{28}+C_{29}) (217)	0.03	0.03
Diaster/ααα Ster (C_{27}) (217)	1.59	1.80
Diaster/(Diaster+ααα) Ster (C_{27}) (217)	0.61	0.64
%C27 αββ*S* (218)	26.2	27.9
%C28 αββ*S* (218)	39.2	37.7
%C29 αββ*S* (218)	34.5	34.5
%C27 αββ (R+S) (218)	29.4	30.0
%C28 αββ (R+S) (218)	36.2	35.4
%C29 αββ (R+S) (218)	34.4	34.6
C30 αββ*S* Sterane Index (218)	10.8	11.3
C30 S+R Sterane Index (218)	10.6	11.1
C_{27}/C_{29} (αββ*S*) (218)	0.76	0.81
C_{28}/C_{29} (αββ*S*) (218)	1.14	1.09
C_{29}/C_{27} (αββ*S*) (218)	1.32	1.24
C_{29}/C_{27} (αββ) (218)	1.17	1.15
Various (m/z 191; 217)		
Steranes/Hopanes	0.77	0.59
Tricyclic terpanes/Hopanes	0.16	0.16
Tricyclic terpanes/Steranes	0.21	0.26
Tricyclic/Pentacyclic Terpanes	15.6	15.4
Steranes/Terpanes	0.59	0.47
% Tricyclic Terpanes	8.5	9.1
% Pentacyclic Terpanes	54.45	9.07
% Steranes	37.1	31.9

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #2
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	2605 - 2606 FT	Lab ID:	TM000742
Sampling Point:		File Name:	M2090469.D

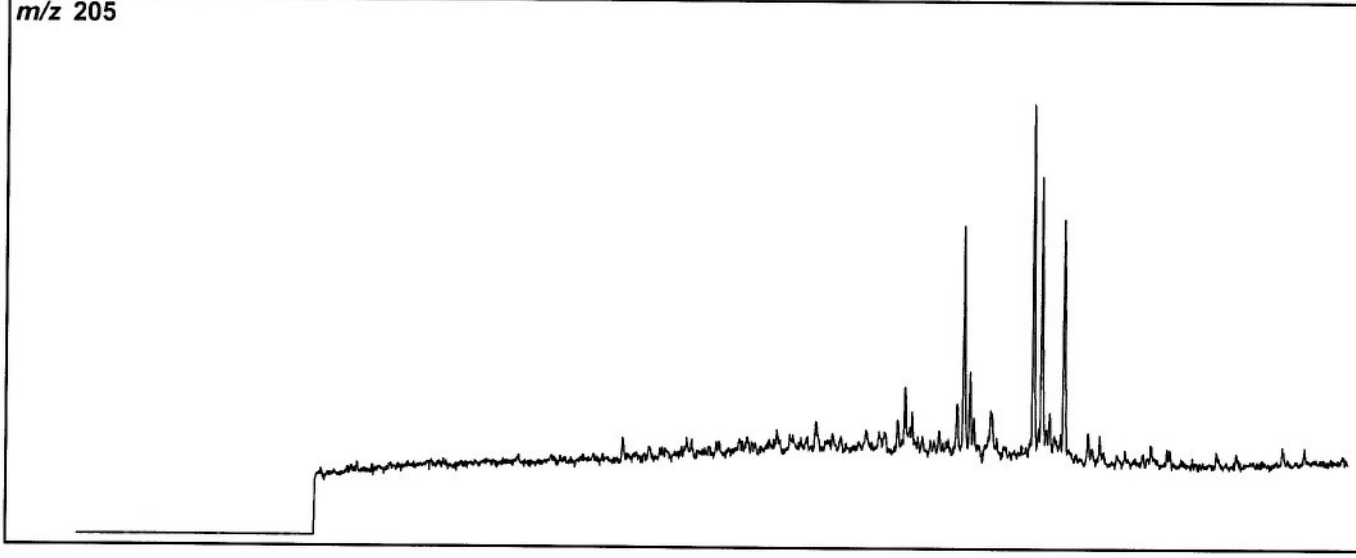
***m/z* 191:Tri-, tetra- and pentacyclic Terpanes**



***m/z* 177: Norhopanes**

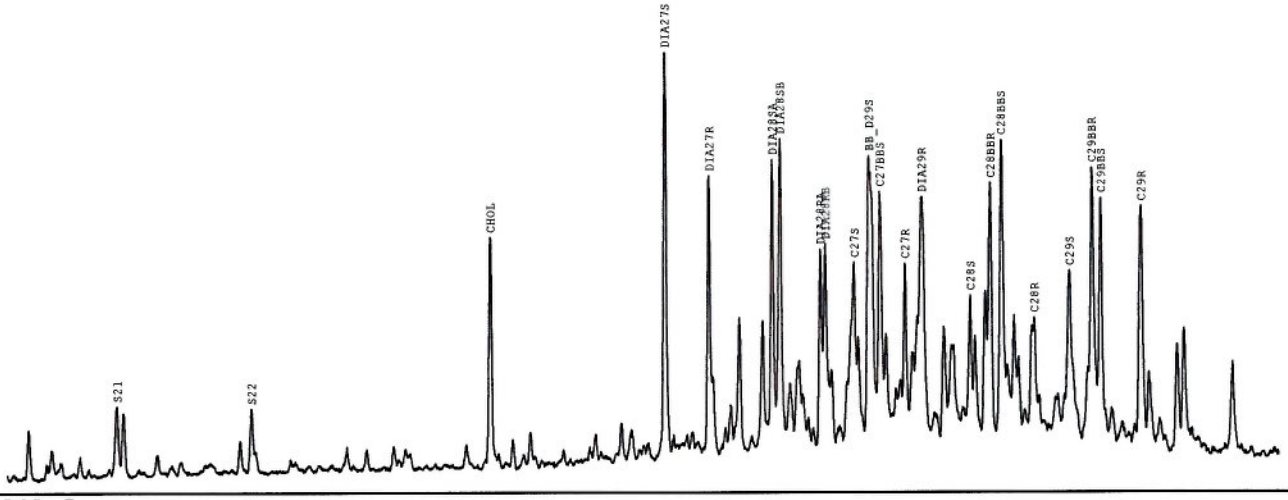


***m/z* 205**

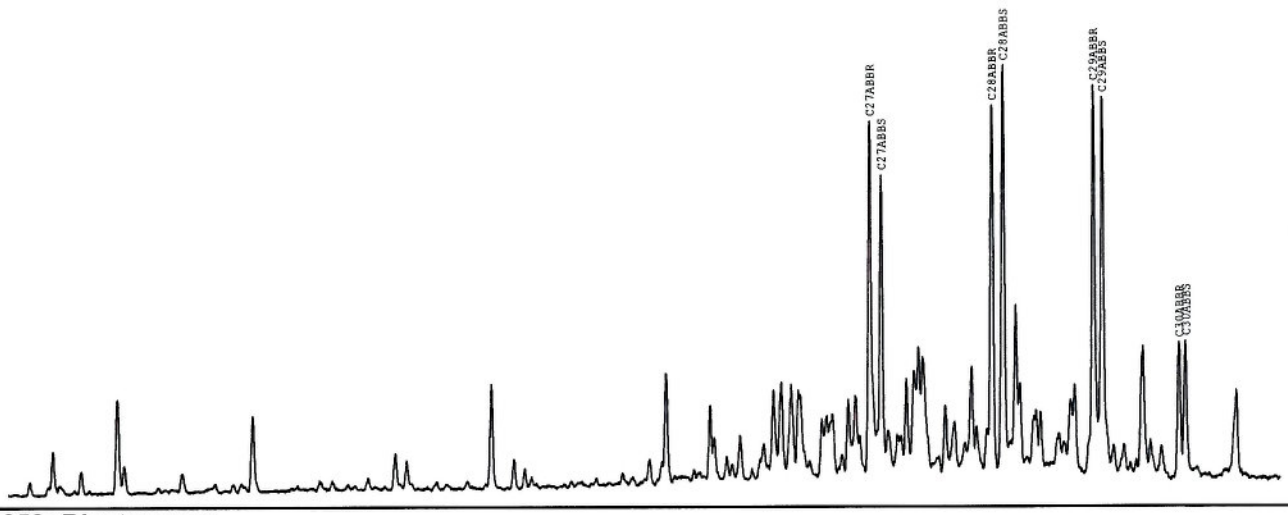


Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #2
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	2605 - 2606 FT	Lab ID:	TM000742
Sampling Point:		File Name:	M2090469.D

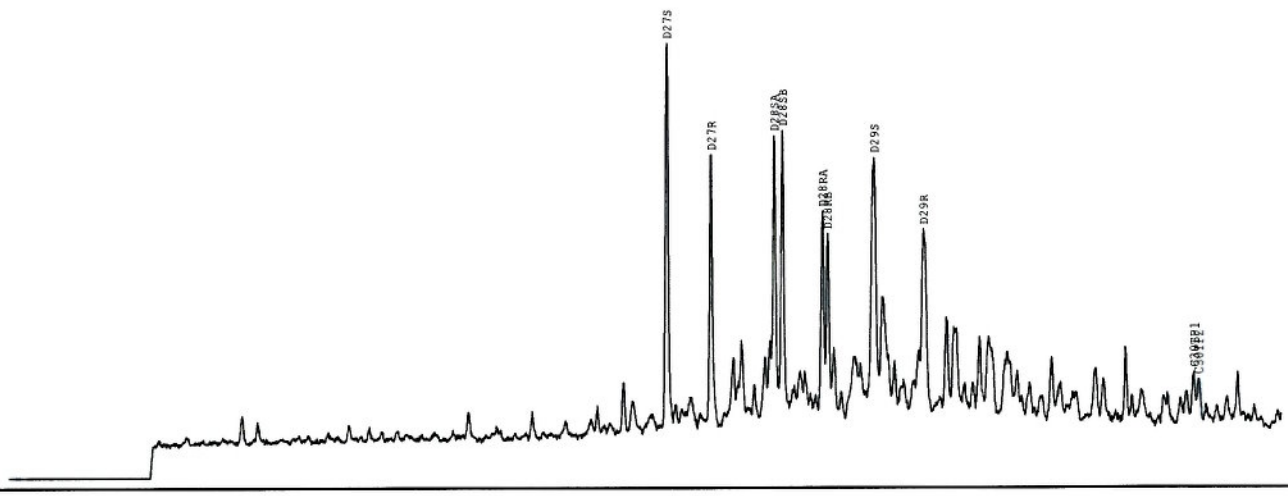
***m/z* 217: Steranes**



***m/z* 218: Steranes**



***m/z* 259: Diasteranes**

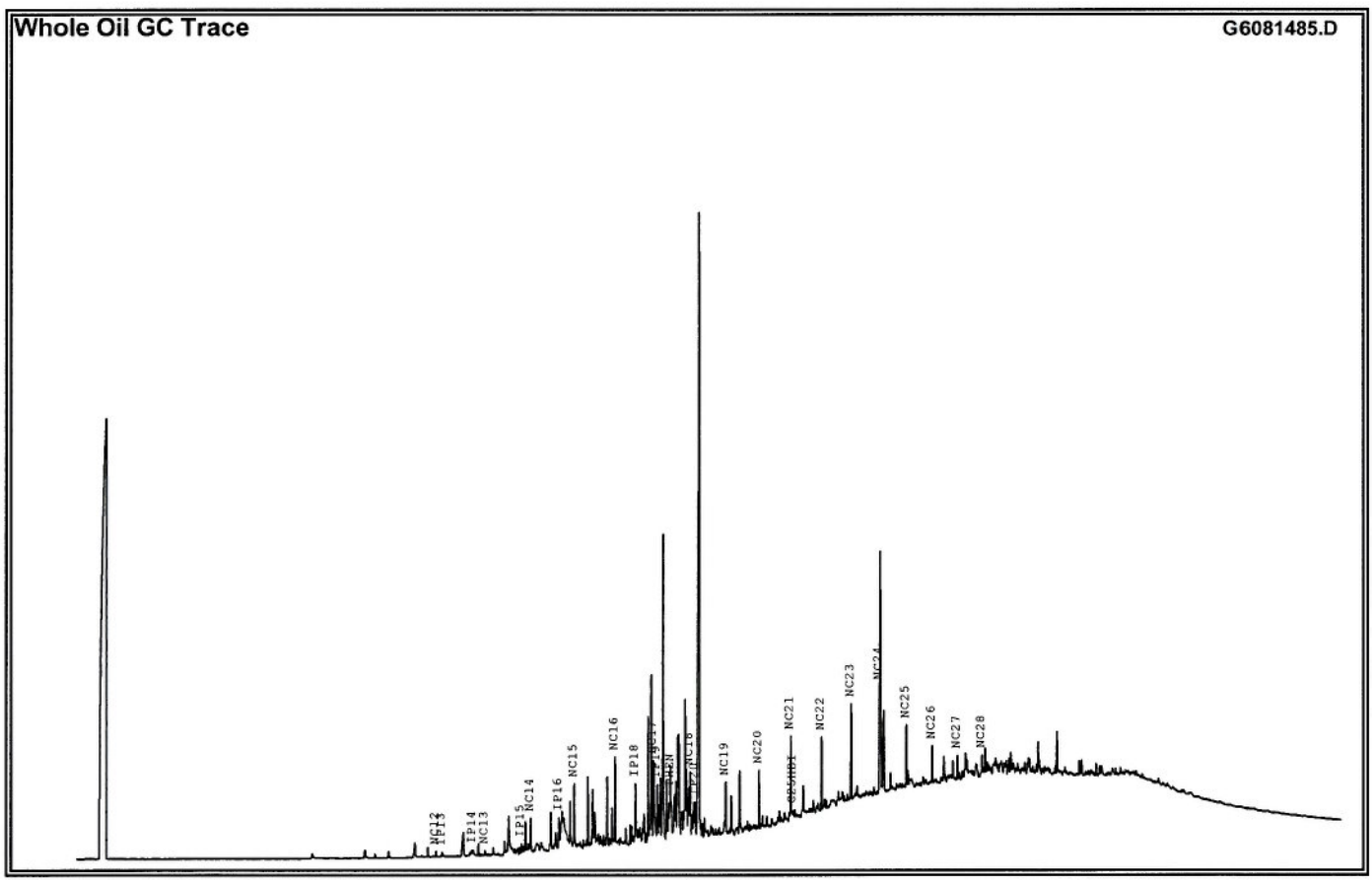


Weatherford LABORATORIES

WHOLE OIL GC

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #2
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000743
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	PRINCE CREEK
Well Name:	SUSIE NO. 1	Geologic Age:	
Latitude:	0	Top Depth:	2607 FT
Longitude:	0	Bottom Depth:	2608 FT

Whole Oil GC Trace G6081485.D



WGC parameters	
Pristane/Phytane	1.16
Pristane/*n* C_{17}	0.92
Phytane/*n* C_{18}	0.89
n C_{18}/(nC_{18}+*n* C_{19})	0.59
n C_{17}/(nC_{17}+*n* C_{29})	1.00
CPI Hunt[4]	0.89
Normal Paraffins	9.3
Isoprenoids	3.0
Cycloparaffins	
Branched (iso-) Paraffins	
BTX aromatics	
Resolved unknowns	87.2

Thompson[1]	
A.	BZ/*n* C_6
B.	TOL/*n* C_7
C.	(*n* C_6+*n* C_7)/(CH+MCH)
I.	Isoheptane Value
F.	*n* C_7/MCH
U.	CH/MCP
R.	*n* C_7/2MH
S.	*n* C_6/22DMB
H.	Heptane Value
	MCH/*n* C_7
	mpXYL/*n* C_8

Mango[2]
P_1
P_2
P_3
$5N_1$
N_2
$6N_1$
K_1
K_2
$5N_1/6N_1$
P_3/N_2
ln(24DMP/23DMP)

Halpern[3]
Tr_1
Tr_2
Tr_3
Tr_4
Tr_5
Tr_7
Tr_8
C_1
C_2
C_3
C_4
C_5

[1]Thompson, K.F.M.,1983.GCA:V.47, p.303. [2]Mango, F.D.,1994.GCA: V.58, p.895. [3]Halpern,H.I.,1995,AAPG Bull.: V.79, p.801. [4]Hunt, 1979

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2607 - 2608 FT**	**Lab ID:**	**TM000743**
Sampling Point:		**File Name:**	**G6081485.D**

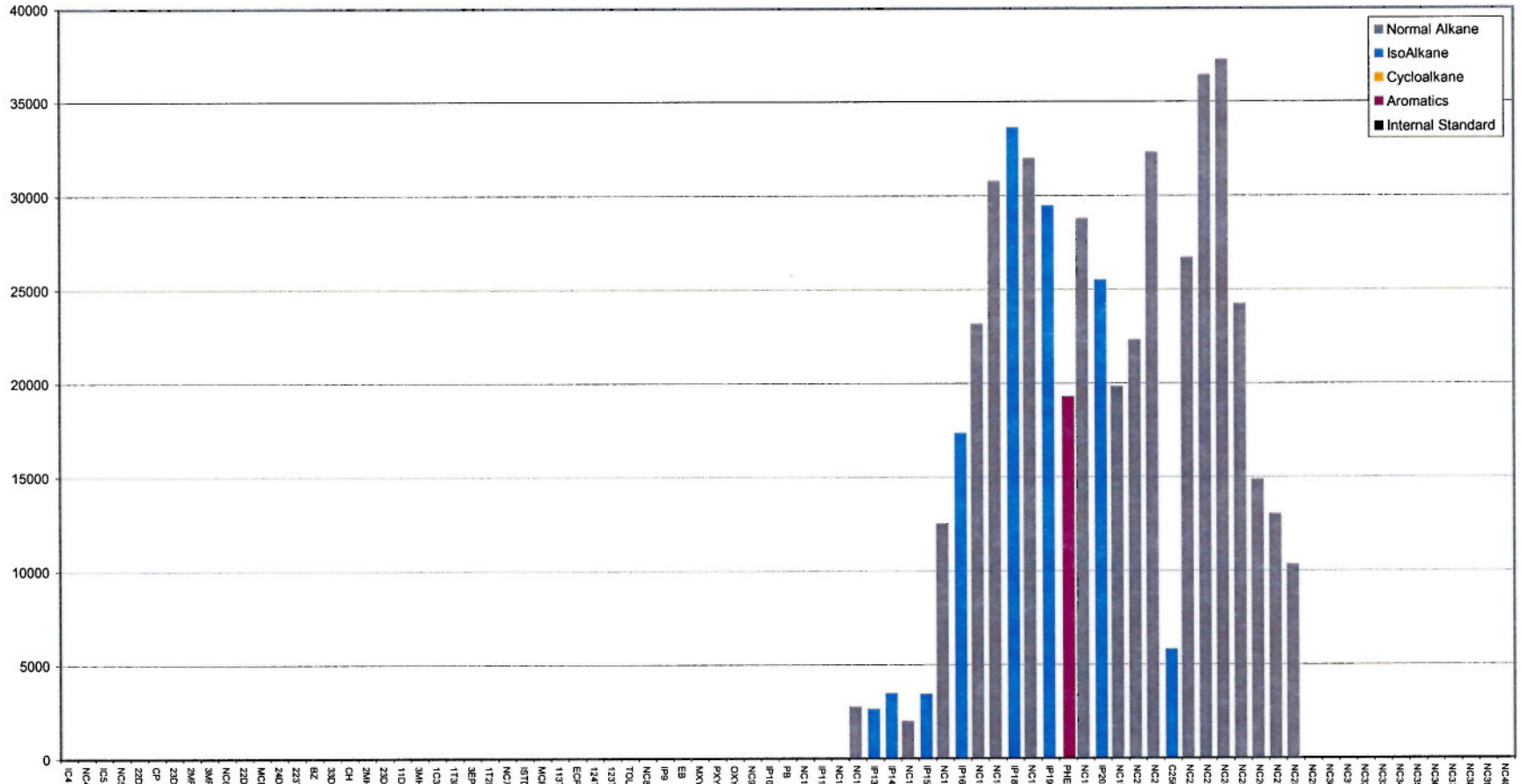
Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IC4	Iso-alkane C4					
NC4	Normal Alkane C4					
IC5	Iso-alkane C5					
NC5	Normal Alkane C5					
22DMB	2,2-Dimethylbutane					
CP	Cyclopentane					
23DMB	2,3-Dimethylbutane					
2MP	2-Methylpentane					
3MP	3-Methylpentane					
NC6	Normal Alkane C6					
22DMP	2,2-Dimethylpentane					
MCP	Methylcyclopentane					
24DMP	2,4-Dimethylpentane					
223TMB	2,2,3-Trimethylbutane					
BZ	Benzene					
33DMP	3,3-Dimethylpentane					
CH	Cyclohexane					
2MH	2-Methylhexane					
23DMP	2,3-Dimethylpentane					
11DMCP	1,1-Dimethylcyclopentane					
3MH	3-Methylhexane					
1C3DMCP	1-cis-3-Dimethylcyclopentane					
1T3DMCP	1-trans-3-Dimethylcyclopentane					
3EP	3-Ethylpentane					
1T2DMCP	1-trans-2-Dimethylcyclopentane					
NC7	Normal Alkane C7					
ISTD	Internal Standard					
MCH	Methylcyclohexane					
113TMCP	1,1,3,-Trimethylcyclopentane					
ECP	Ethylcyclopentane					
124TMCP	1,2,4-Trimethylcyclopentane					
123TMCP	1,2,3-Trimethylcyclopentane					
TOL	Toluene					
NC8	Normal Alkane C8					
IP9	Isoprenoid C9					
EB	Ethyl-benzene					
MXYL	*m*-xylene					
PXYL	*p*-xylene					
OXYL	*o*-xylene					
NC9	Normal Alkane C9					
IP10	Isoprenoid C10					
PB	Propyl-benzene					
NC10	Normal Alkane C10					
IP11	Isoprenoid C11					
NC11	Normal Alkane C11					
NC12	Normal Alkane C12	36.712	2762	607		
IP13	Isoprenoid C13	37.264	2646	489		
IP14	Isoprenoid C14	40.156	3500	621		
NC13	Normal Alkane C13	41.271	1986	557		
IP15	Isoprenoid C15	44.707	3452	1018		
NC14	Normal Alkane C14	45.589	12514	3561		

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2607 - 2608 FT**	**Lab ID:**	**TM000743**
Sampling Point:		**File Name:**	**G6081485.D**

Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IP16	Isoprenoid C16	48.249	17342	3342		
NC15	Normal Alkane C15	49.661	23163	6675		
NC16	Normal Alkane C16	53.512	30771	9125		
IP18	Isoprenoid C18	55.434	33649	6233		
NC17	Normal Alkane C17	57.170	31998	8332		
IP19	Isoprenoid C19 (Pristane)	57.530	29460	5837		
PHEN	Phenanthrene	58.829	19295	3986		
NC18	Normal Alkane C18	60.627	28786	6755		
IP20	Isoprenoid C20 (Phytane)	61.077	25505	3649		
NC19	Normal Alkane C19	63.921	19831	5449		
NC20	Normal Alkane C20	67.071	22320	6062		
NC21	Normal Alkane C21	70.083	32329	8670		
C25HBI	Highly Branch Isoprenoid C25	70.324	5823	1047		
NC22	Normal Alkane C22	72.966	26718	7525		
NC23	Normal Alkane C23	75.730	36457	10059		
NC24	Normal Alkane C24	78.389	37270	11044		
NC25	Normal Alkane C25	80.925	24237	6563		
NC26	Normal Alkane C26	83.376	14858	4049		
NC27	Normal Alkane C27	85.733	13028	2699		
NC28	Normal Alkane C28	88.018	10345	2364		
NC29	Normal Alkane C29					
NC30	Normal Alkane C30					
NC31	Normal Alkane C31					
NC32	Normal Alkane C32					
NC33	Normal Alkane C33					
NC34	Normal Alkane C34					
NC35	Normal Alkane C35					
NC36	Normal Alkane C36					
NC37	Normal Alkane C37					
NC38	Normal Alkane C38					
NC39	Normal Alkane C39					
NC40	Normal Alkane C40					
NC41	Normal Alkane C41					

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2607 - 2608 FT**	**Lab ID:**	**TM000743**
Sampling Point:		**File Name:**	**G6081485.D**

Histogram Based on Area

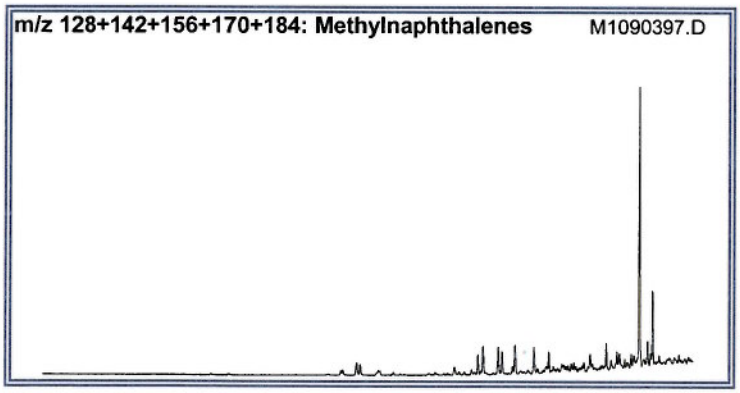


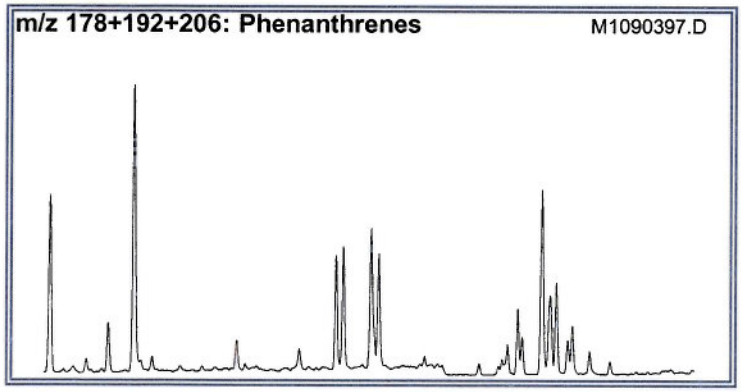
Parameter	Formula
WGC Parameters	
Pristane/Phytane	IP19/IP20
Pristane/nC17	IP19/NC17
Phytane/nC18	IP20/NC18
$nC_{18}/(nC_{18}+nC_{19})$	NC18/(NC18+NC19)
$nC_{17}/(nC_{17}+nC_{29})$	NC17/(NC17+NC29)
CPI Hunt[4]	((NC23+NC25+NC27+NC29+NC31)+(NC25+NC27+NC29+NC31+NC33))/(2*(NC24+NC26+NC28+NC30+NC32))
Normal Paraffins	100*(NC4+NC5+NC6+NC7+NC8+NC9+NC10+NC11+NC12+NC13+NC14+NC15+NC16+NC17+NC18+NC19+NC20+NC21+NC22+NC23+NC24+NC25+NC26+NC27+NC28+NC29+NC30+NC31+NC32+NC33+NC34+NC35+NC36+NC37+NC38+NC39+NC40+NC41)/TOTAL_RESOLVED
Isoprenoids	100*(IP9+IP10+IP11+IP13+IP14+IP15+IP16+IP18+IP19+IP20+C25HBI)/TOTAL_RESOLVED
Cycloparaffins	100*(CP+MCP+CH+11DMCP+1T3DMCP+1T2DMCP+MCH+113TMCP+ECP+124TMCP+123TMCP+1C3DMCP+1C2DMCP)/TOTAL_RESOLVED
Branched (iso-) Paraffins	100*(IC4+IC5+22DMB+23DMB+2MP+3MP+22DMP+24DMP+223TMB+33DMP+2MH+23DMP+3MH+3EP)/TOTAL_RESOLVED
BTX aromatics	100*(BZ+TOL+MXYL+PXYL+OXYL)/TOTAL_RESOLVED (*OXYL added 05/21/2007)
Thompson[1]	
BZ/nC6	BZ/NC6
TOL/nC7	TOL/NC7
(nC6+nC7)/(CH+MCH)	(NC6+NC7)/(CH+MCH)
Isoheptane Value	(2MH+3MH)/(1C3DMCP+1T3DMCP+1T2DMCP)
nC7/MCH	NC7/MCH
CH/MCP	CH/MCP
nC7/2MH	NC7/2MH
nC6/22DMB	NC6/22DMB
Heptane Value	100*NC7/(CH+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+1T2DMCP+MCH+NC7)
MCH/nC7	MCH/NC7
mpXYL/nC8	(MXYL+PXYL)/NC8
Mango[2]	
P1	100*NC7/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
P2	100*(2MH+3MH)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
P3	100*(3EP+33DMP+23DMP+24DMP+22DMP+223TMB)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
5N1	100*(ECP+1T2DMCP)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
N2	100*(11DMCP+1C3DMCP+1T3DMCP)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
6N1	100*(MCH+TOL)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
K1	(2MH+23DMP)/(3MH+24DMP)
K2	(2MH+3MH)/(2MH+3MH+11DMCP+1C3DMCP+1T3DMCP)
5N1/6N1	(ECP+1T2DMCP)/(MCH+TOL)
P3/N2	(3EP+33DMP+23DMP+24DMP+22DMP+223TMB)/(11DMCP+1C3DMCP+1T3DMCP)
ln(24DMP/23DMP)	ln(24DMP/23DMP)
Halpern[3]	
Tr1	TOL/11DMCP
Tr2	NC7/11DMCP
Tr3	3MH/11DMCP
Tr4	2MH/11DMCP
Tr5	(2MH+3MH)/11DMCP
Tr7	1T3DMCP/11DMCP
Tr8	(2MH+3MH)/(22DMP+23DMP+24DMP+33DMP+3EP)
C1	22DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C2	23DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C3	24DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C4	33DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C5	3EP/(22DMP+23DMP+24DMP+33DMP+3EP)

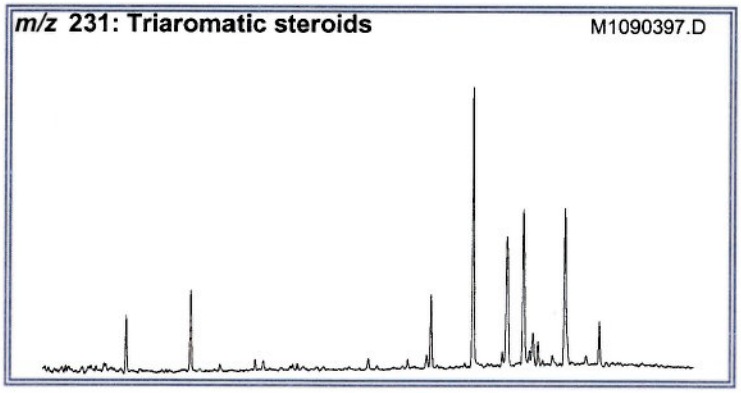
Weatherford LABORATORIES

AROMATIC BIOMARKERS

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #2
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000743
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	PRINCE CREEK
Well Name:	SUSIE NO. 1	Geologic Age:	
Latitude:	0	Top Depth:	2607 FT
Longitude:	0	Bottom Depth:	2608 FT







RATIOS (on Areas)[1]		Appl[2]	TEV[3]
Mono- (MAS) and Triaromatic Steroids (TAS)			
(C20+C21)/Σ TAS	0.12	M	1.0 (1.3%)
TAS #1 20/20+27	0.22	M	
TAS #2 21/21+28	0.31	M	
%26 TAS	14.6	D	
%27 TAS	40.5	D	
%28 TAS	35.8	D	
%29 TAS	9.2	D	
C28/C26 20S TAS	2.73		
C28/C27 20R TAS	0.88		
Dia/Regular C27 MAS	2.05		
%27 MAS	23.3	D	
%28 MAS	46.6	D	
%29 MAS	30.1	D	
(C21+C22)/Σ MAS	0.08	M	1.0 (1.3%)
TAS/(MAS+TAS)	0.76	M	
TA28/(TA28+MA29)	0.79	M	1.0 (0.8%)
Triaromatic Methylsteroids			
Dinosteroid Index	0.33	A	
C4/C3+C4 Mester	0.49	A	
Phenanthrenes, Naphthalenes, and Dibenzothiophenes			
MPI-1	0.63	M	
Rc(a) if Ro < 1.3 (Ro%)	0.75	M	
Rc(b) if Ro > 1.3 (Ro%)	1.92	M	
MPI-2	0.66	M	
DNR-1	2.99	M	
DNR-2	1.50	M	
TNR1	0.87	M	
TDE-1	6.30	M	
TDE-2	0.23	M	
MDR	2.08	M	
Rm (Ro%)	0.72	M	
MDR23	0.75	M	
MDR1	0.64	M	
DBT/Phenanthrene	0.04	D	

[1]Definition and utility of the ratios can be found on our website www.BaselineDGSI.com

[2]A=Source Age; D=Depositional environment; M= Maturity

[3]Thermal equilibrium value of the biomarker ratio and in brackets the approximate VR value at which this value is reached

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2607 - 2608 FT**	**Lab ID:**	**TM000743**
Sampling Point:		**File Name:**	**M1090397.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
230	OTP	*Ortho-terphenyl* (internal standard)				0.0	0.0
128	NAPH	Naphthalene					
142	2MN	2-Methylnaphthalene	37.944	338	54		
142	1MN	1-Methylnaphthalene	39.174	309	50		
154	BP	Biphenyl	44.667	443	60		
156	2EN	2-Ethylnaphthalene	46.133	237	32		
156	1EN	1-Ethylnaphthalene	46.234	71	20		
156	26DMN	2,6-Dimethylnaphthalene	47.043	1012	155		
156	27DMN	2,7-Dimethylnaphthalene	47.194	1120	179		
156	1317DMN	1,3 & 1,7-Dimethylnaphthalenes	48.172	3017	405		
156	16DMN	1,6-Dimethylnaphthalene	48.424	2266	349		
156	23DMN	2,3-Dimethylnaphthalene	49.604	362	74		
156	14DMN	1,4-Dimethylnaphthalene	49.722	1061	153		
156	15DMN	1,5-Dimethylnaphthalene	49.806	714	131		
156	12DMN	1,2-Dimethylnaphthalene	50.783	592	95		
168	2MBP	2-Methylbiphenyl					
168	DPM	Diphenylmethane					
168	3MBP	3-Methylbiphenyl	53.260	483	79		
168	4MBP	4-Methylbiphenyl	53.917	262	43		
168	DBF	Dibenzofuran	55.349	81	13		
170	BB_EMN	Ethyl-methyl-Naphthalene	55.113	1694	223		
170	AB_EMN	Ethyl-methyl-Naphthalene	56.310	889	141		
170	137TMN	1,3,7-Trimethylnaphthalene	56.765	3897	634		
170	136TMN	1,3,6-Trimethylnaphthalene	57.135	5860	920		
170	146135T	(1,4,6+1,3,5)-Trimethylnaphthalenes	58.197	5147	821		
170	236TMN	2,3,6-Trimethylnaphthalene	58.466	4491	746		
170	127TMN	1,2,7-Trimethylnaphthalene	59.208	1260	226		
170	167126T	(1,6,7+1,2,6)-Trimethylnaphthalenes	59.376	5565	816		
170	124TMN	1,2,4-Trimethylnaphthalene	60.303	581	101		
170	125TMN	1,2,5-Trimethylnaphthalene	60.741	3662	648		
178	PHEN	Phenanthrene	70.244	42304	8880		
184	1357	1,3,5,7-Tetramethylnaphthalene	64.701	2990	515		
184	1367	1,3,6,7-Tetramethylnaphthalene	65.863	3869	833		
184	1247	(1,2,4,7+1,2,4,6+1,4,6,7)-Tetramethylnaphthalenes	66.605	2543	492		
184	1257	1,2,5,7-Tetramethylnaphthalene	66.790	1895	388		
184	2367	2,3,6,7-Tetramethylnaphthalene	67.161	952	199		
184	1267	1,2,6,7-Tetramethylnaphthalene	67.599	1446	302		
184	1237	1,2,3,7-Tetramethylnaphthalene	67.784	492	110		
184	1236	1,2,3,6-Tetramethylnaphthalene	68.054	1091	231		
184	1256	1,2,5,6-Tetramethylnaphthalene	68.761	2785	642		
184	DBT	Dibenzothiophene	68.964	1873	369		
191	BH32	C32 Benzohopane	117.653	1897	322		
191	BH33	C33 Benzohopane	119.811	984	155		
191	BH34	C34 Benzohopane	121.715	407	65		
191	BH35	C35 Benzohopane					
192	3MP	3-Methylphenanthrene	75.164	15182	3516		
192	2MP	2-Methylphenanthrene	75.349	16790	3758		
192	9MP	9-Methylphenanthrene	76.040	18882	4247		
192	1MP	1-Methylphenanthrene	76.226	14687	3475		

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2607 - 2608 FT**	**Lab ID:**	**TM000743**
Sampling Point:		**File Name:**	**M1090397.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
198	CAD	Cadalene	66.200	2404	479		
198	4MDBT	4 Methyl Dibenzothiophene	73.513	2509	558		
198	23MDBT	2 & 3 Methyl Dibenzothiophenes	74.305	1409	243		
198	1MDBT	1 Methyl Dibenzothiophene	75.080	1204	250		
206	36DMP	3,6-Dimethylphenanthrene	79.393	3776	947		
206	26DMP	2,6-Dimethylphenanthrene	79.646	8469	2028		
206	27DMP	2,7-Dimethylphenanthrene	79.764	4537	1152		
206	39DMP	(3,9+3,10+2,10+1,3)-Dimethylphenanthrenes	80.252	27712	5711		
206	29DMP	(2,9+1,6)-Dimethylphenanthrenes	80.455	14592	2438		
206	17DMP	1,7-Dimethylphenanthrene	80.606	11722	2825		
206	23DMP	2,3-Dimethylphenanthrene	80.876	4522	1053		
206	19DMP	1,9-Dimethylphenanthrene	80.994	6603	1499		
206	18DMP	1,8-Dimethylphenanthrene	81.415	2988	713		
206	12DMP	1,2-Dimethylphenanthrene	81.921	1762	403		
231	231A20	C20 Triaromatic Steroid	92.236	5770	1412		
231	231B21	C21 Triaromatic	94.731	7842	1963		
231	231C26	C26 20S Triaromatic	103.917	7155	1792		
231	231D26	C27 20S & C26 20R Triaromatic	105.518	30654	6741		
231	TADMD1	C28 23,24-Cholestane Triaromatic	106.074	479	94		
231	TADMD2	C28 23,24-Cholestane Triaromatic	106.630	1555	373		
231	231E28	C28 20S Triaromatic	106.816	19559	3131		
231	231F27	C27 20R Triaromatic	107.456	19903	3764		
231	TADMD3	C28 23,24-Cholestane Triaromatic	107.557	431	195		
231	C29TA1	C29 Triaromatic	107.827	4626	793		
231	C29TA2	C29 Triaromatic	108.029	2450	592		
231	TADMD4	C28 23,24-Cholestane Triaromatic	108.872	189	72		
231	231G28	C28 20R Triaromatic	109.057	17588	3786		
231	TADMD5	C28 23,24-Cholestane Triaromatic	109.125	2006	829		
231	C29TA3	C29 Triaromatic	110.372	4498	1074		
245	C3S	C27 20S 3-Methyl Triaromatic Steroid	106.596	1459	318		
245	C4S	C27 20S 4-Methyl Triaromatic Steroid	107.220	2078	468		
245	E2S	C28 20S 2-Methyl Triaromatic Steroid	107.776	1147	191		
245	E3SC3R	C28 20S 3-Methyl & C27 20R 3-Methyl TAS	108.113	6409	1106		
245	E4SC4R	C28 20S 4-Methyl & C27 20R 4-Methyl TAS	108.703	7246	1192		
245	S2S	C29 20S 2-Methyl Triaromatic Steroid	108.973	1342	188		
245	DA	Triaromatic Dinosteroid a	109.142	1501	325		
245	S3S	C29 20S 3-Methyl Triaromatic Steroid	109.310	4378	542		
245	DB	Triaromatic Dinosteroid b	109.731	3833	805		
245	S4SE2R	C29 20S 4-Methyl & C28 20R 2-Methyl TAS	109.883	6390	859		
245	E3R	C28 20R 3-Methyl Triaromatic Steroid	110.052	4809	782		
245	E4R	C28 20R 4-Methyl Triaromatic Steroid	110.642	4376	793		
245	DC	Triaromatic Dinosteroid c	110.827	4438	946		
245	DD	Triaromatic Dinosteroid d	110.928	4888	984		
245	S2R	C29 20R 2-Methyl Triaromatic Steroid	111.349	1285	203		
245	S3R	C29 20R 3-Methyl Triaromatic Steroid	111.569	4090	738		
245	DE	Triaromatic Dinosteroid e	111.720	4119	720		
245	S4R	C29 20R 4-Methyl Triaromatic Steroid	112.175	3681	731		
245	DF	Triaromatic Dinosteroid f	112.293	5338	1112		

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2607 - 2608 FT**	**Lab ID:**	**TM000743**
Sampling Point:		**File Name:**	**M1090397.D**

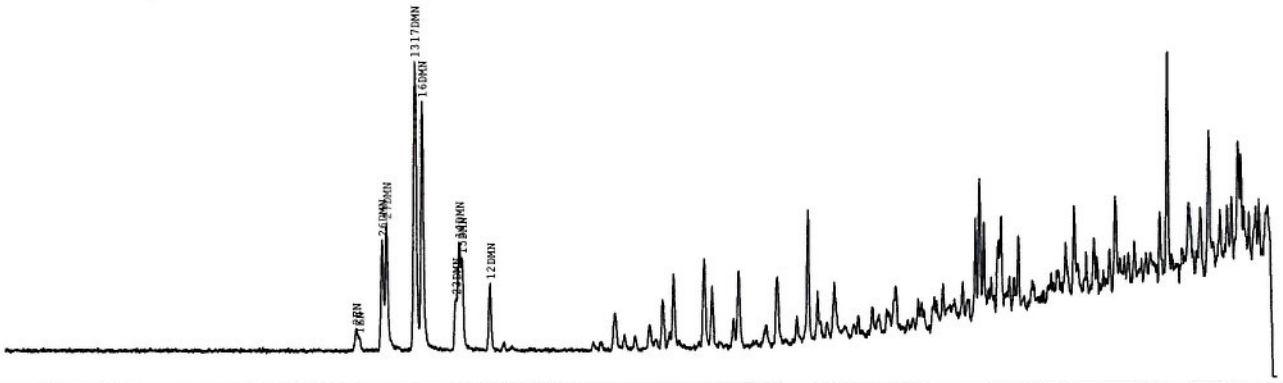
Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
253	S253A	C21 Ring-C Monoaromatic Steroid	84.483	1671	282		
253	S253B	C22 Monoaromatic steroid	86.944	1245	257		
253	S253C	C27 Reg 5β(H),10β(CH3) 20S	96.922	951	189		
253	S253D	C27 Dia 10β(H),5β(CH3) 20S	97.074	1953	463		
253	S253E	C27 Dia10βH,5βCH3 20R+Reg5βH,10βCH3 20R	98.540	2599	482		
253	S253F	C27 Reg 5α(H),10β(CH3) 20S	98.675	975	203		
253	S253G	C28 Dia 10αH,5αCH3 20s+Reg5βH,10βCH3 20S	99.079	6136	1173		
253	S253H	C27 Reg 5α(H),10β(CH3) 20R	100.360	1133	217		
253	S253I	C28 Reg 5α(H),10β(CH3) 20S	100.512	1413	263		
253	S253J	C28 Dia 10αH,5αCH3 20R+Reg5βH,10βCH3 20R	100.697	5659	1168		
253	S253K	C29 Dia 10βH,5βCH3 20S+Reg5βH,10βCH3 20S	100.832	3774	714		
253	S253L	C29 Reg 5α(H),10β(CH3) 20S	102.113	1241	198		
253	S253M	C28 Reg 5α(H),10β(CH3) 20R	102.383	2038	291		
253	S253N	C29 Dia 10βH,5βCH3 20R+Reg5βH,10βCH3 20R	102.518	3718	594		
253	S253O	C29 Reg 5α(H),10β(CH3) 20R	104.136	1110	174		
365	SH29	C29 8,14-secohopanoids	104.001	15470	3367		
365	SH30	C30 8,14-secohopanoids	105.973	13307	3184		

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2607 - 2608 FT**	**Lab ID:**	**TM000743**
Sampling Point:		**File Name:**	**M1090397.D**

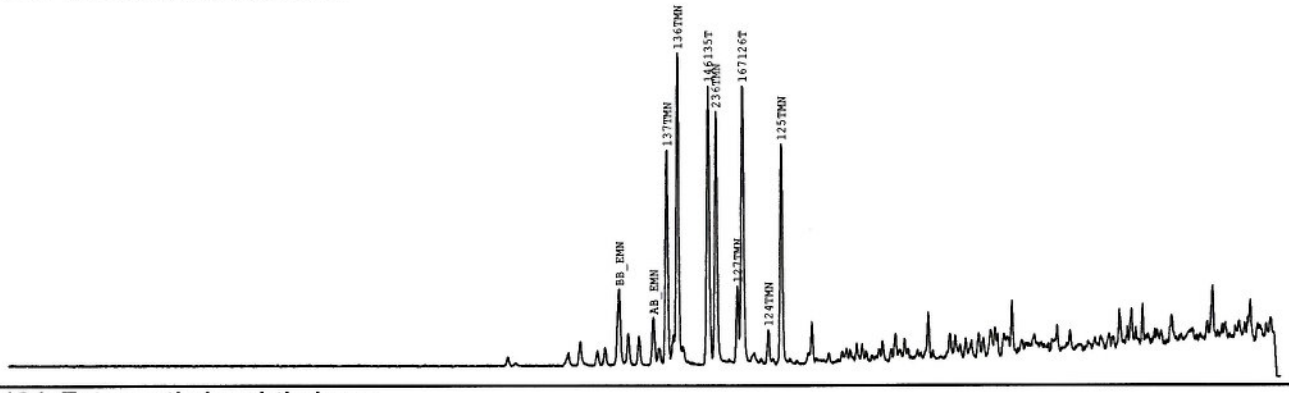
Miscellaneous Ratios	By Areas	By Heights
Triaromatic Steroids m/z 231		
(C20+C21)/Σ TAS	0.12	0.14
TAS #1 20/20+27	0.22	0.27
TAS #2 21/21+28	0.31	0.34
%26TAS	14.6	17.2
%27TAS	40.5	36.1
%28TAS	35.8	36.3
%29TAS	9.2	10.3
C28/C26 20S TAS	2.73	1.75
C28/C27 20R TAS	0.88	1.01
Monoaromatic Steroids m/z 253		
Dia/Regular C27 MAS	2.05	2.45
%27 MAS	23.3	25.4
%28 MAS	46.6	47.2
%29 MAS	30.1	27.4
(C21+C22)/Σ MAS	0.08	0.08
TAS/(MAS+TAS)	0.76	0.78
TA28/(TA28+MA29)	0.79	0.80
Triaromatic Methylsteroids m/z 245		
Dinosteroid Index	0.33	0.38
C4/C3+C4 Mester	0.49	0.52
Phenanthrenes and Naphthalenes		
MPI-1	0.63	0.66
MPI-2	0.66	0.68
MPI-3	0.95	0.94
Rc(a) if Ro < 1.3 (Ro%)	0.75	0.76
Rc(b) if Ro > 1.3 (Ro%)	1.92	1.91
DNR-1	2.99	2.55
DNR-2	1.50	1.47
TNR1	0.87	0.91
TDE-1	6.30	6.42
TDE-2	0.23	0.28
MDR	2.08	2.23
Rm (Ro%)	0.72	0.72
MDR23	0.75	0.66
MDR1	0.64	0.68
DBT/Phenanthrene	0.04	0.04

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #2
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	2607 - 2608 FT	Lab ID:	TM000743
Sampling Point:		File Name:	

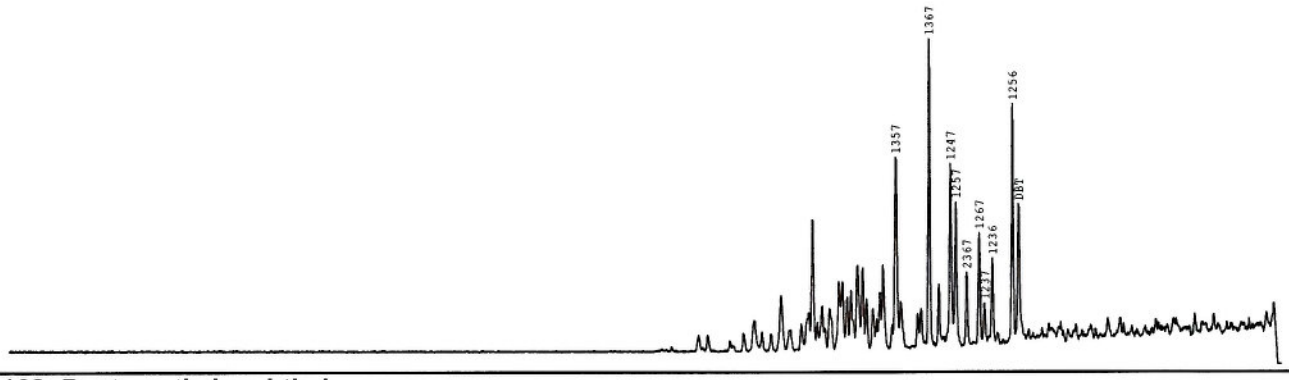
m/z 156: Dimethylnaphthalenes



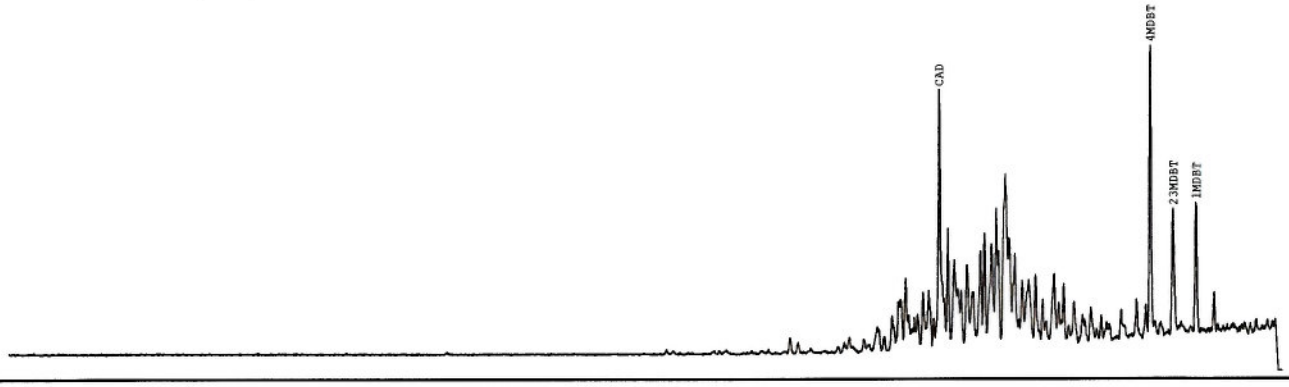
m/z 170: Trimethylnaphthalenes



m/z 184: Tetramethylnaphthalenes

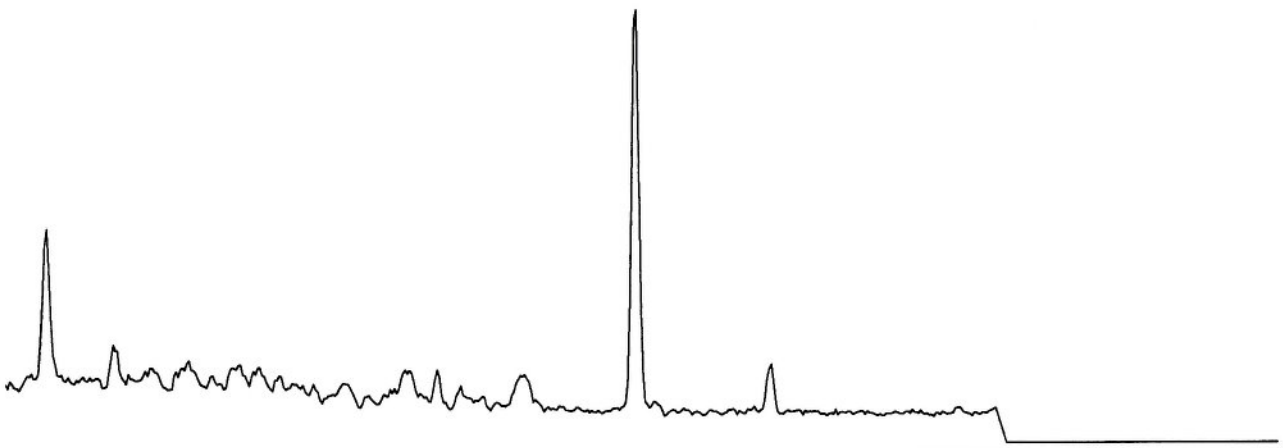


m/z 198: Pentamethylnaphthalenes

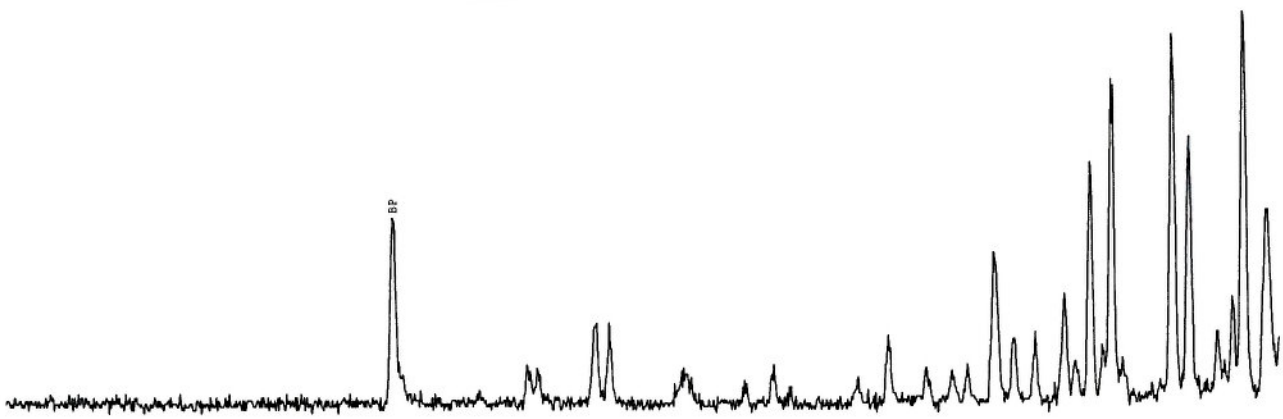


Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #2
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	2607 - 2608 FT	Lab ID:	TM000743
Sampling Point:		File Name:	M1090397.D

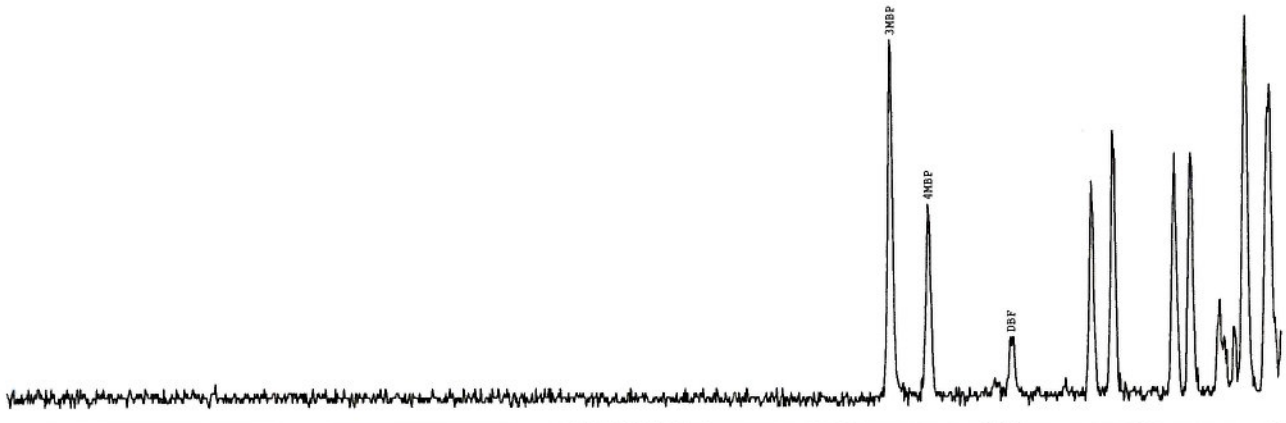
m/z 230: Ortho-Terphenyl (Inter. Std)



m/z 154: Biphenyl

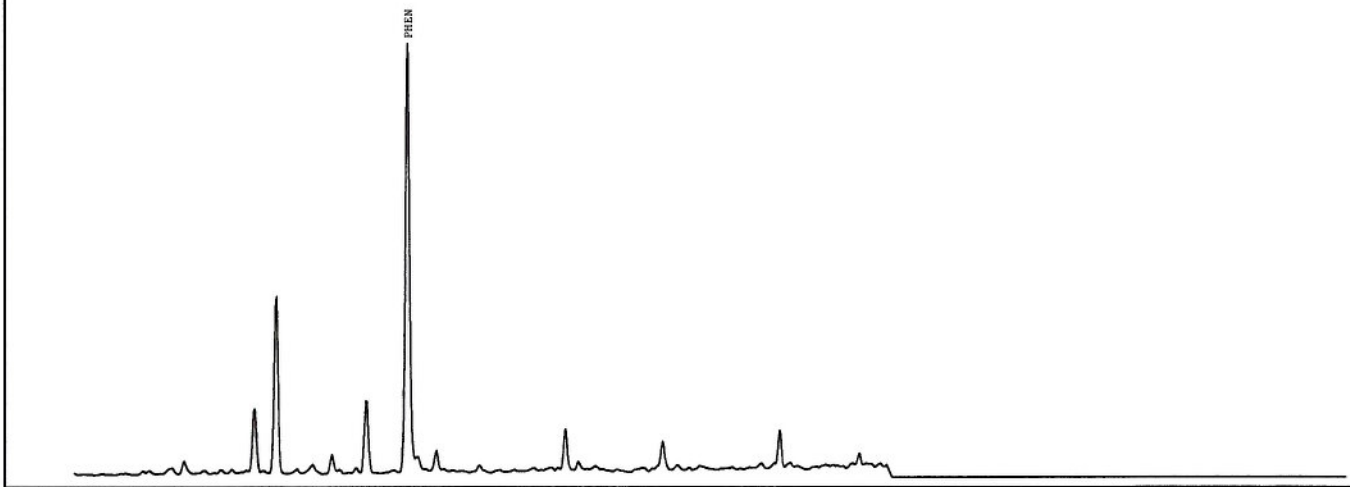


m/z 168: Methylbiphenyls (MBP)

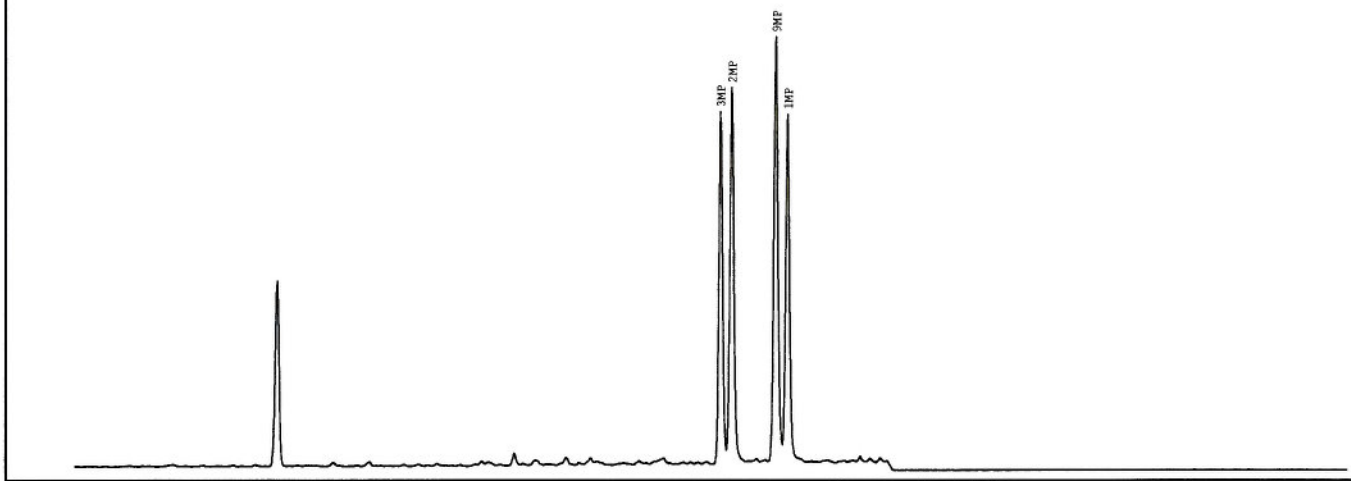


Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #2
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	2607 - 2608 FT	Lab ID:	TM000743
Sampling Point:		File Name:	M1090397.D

***m/z* 178: Phenanthrene**



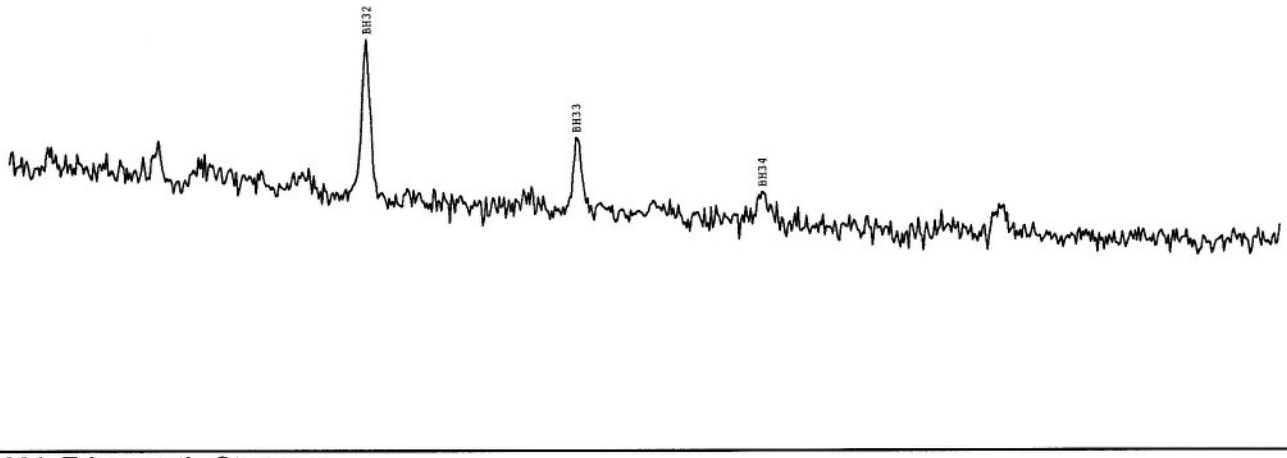
***m/z* 192: Methylphenanthrenes**



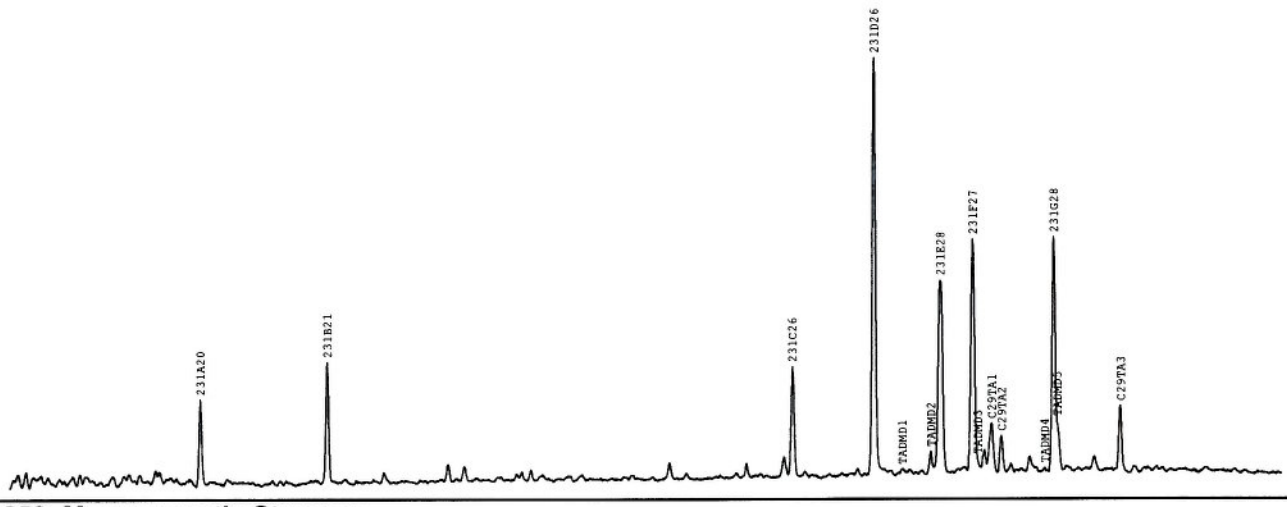
***m/z* 206: Dimethylpehnanthrenes**

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #2
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	2607 - 2608 FT	Lab ID:	TM000743
Sampling Point:		File Name:	M1090397.D

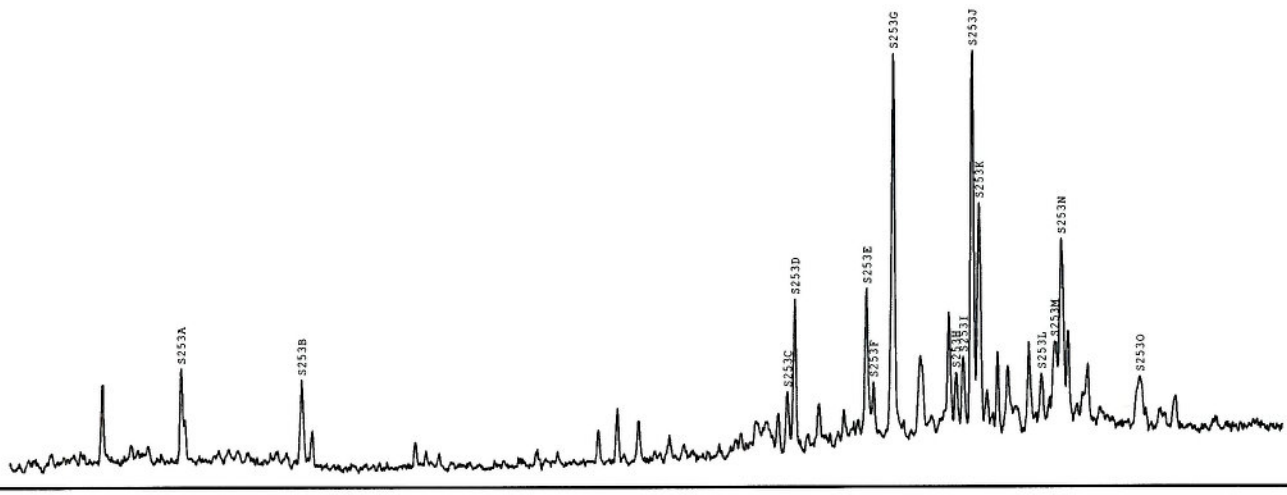
***m/z* 191: Benzohopanes**



***m/z* 231: Triaromatic Steranes**



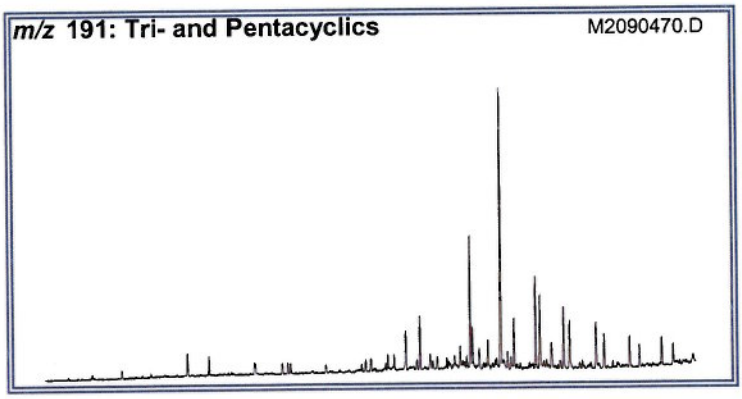
***m/z* 253: Monoaromatic Steranes**

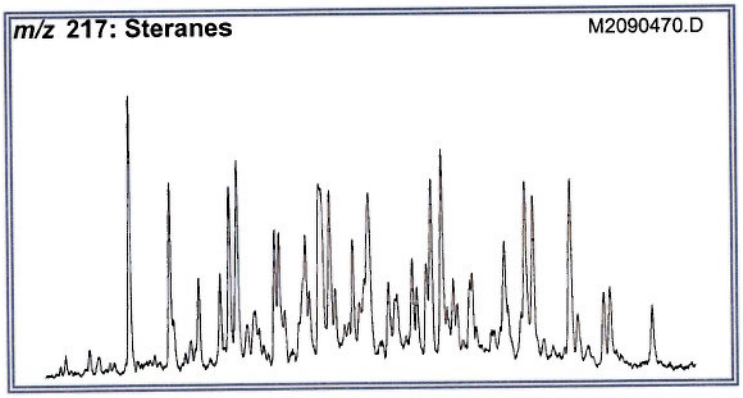


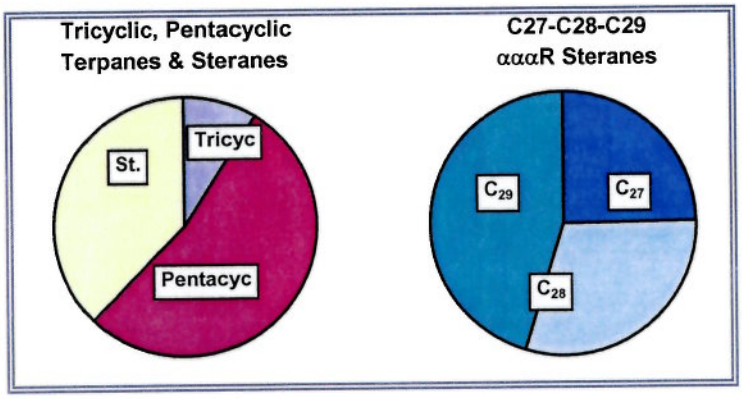
Weatherford LABORATORIES

SATURATE BIOMARKERS

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #2
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000743
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	PRINCE CREEK
Well Name:	SUSIE NO. 1	Geologic Age:	
Latitude:	0	Top Depth:	2607 FT
Longitude:	0	Bottom Depth:	2608 FT







RATIOS (on Areas)[1]		Appl[2]	TEV[3]
Steranes (*m/z* 217; 218)			
%C_{27} αββS (218)	26.4	D	
%C_{28} αββS (218)	38.2	D	
%C_{29} αββS (218)	35.4	D	
%C_{27} αααR (217)	24.8	D	
%C_{28} αααR (217)	30.0	D	
%C_{29} αααR (217)	45.2	D	
S/(S+R) (C_{29} ααα) (217)	0.40	M	0.55 (0.8%)
ββS/(ββS+ααR) (C29) (217)	0.46	M	0.70 (0.9%)
(C_{21}+C_{22})/(C_{27}+C_{28}+C_{29}) (217)	0.03		
C_{27}/C_{29} (αββS) (218)	0.75	D	
C_{28}/C_{29} (αββS) (218)	1.08	D	
Diaster/ααα Ster (C_{27}) (217)	1.76	M/D	1.00 (1.4%)
C30 αββS Sterane Index (218)	10.46	D	
C30 S+R Sterane Index (218)	10.14	D	
Terpanes (*m/z* 191)			
Oleanane/Hopane		D/A	
Gammacerane/Hopane	0.04	D	
Norhopane/Hopane	0.48	D	
Bisnorhopane/Hopane	0.07		
Diahopane/Hopane	0.08	M/D	
Moretane/Hopane	0.20	M	0.05 (0.7%)
25-*nor*-hopane/hopane	0.09	B	
Ts/(Ts+Tm) trisnorhopanes	0.42	M/D	1.00 (1.4%)
C29Ts/C29 Hopane	0.33	M	
H32 S/(R+S) Homohopanes	0.56	M	0.60 (0.6%)
H35/H34 Homohopanes	0.92	D	
C24 Tetracyclic/Hopane	0.04	D	
C24 Tetracyclic/C26 Tricyclics	0.55	D	
C23/C24 Tricyclic terpanes	1.22	D	
C19/C23 Tricyclic terpanes	0.08	D	
C26/C25 Tricyclic terpanes	0.89	D	
(C28+C29 Tricyclics)/Ts	1.38	A	
Various (*m/z* 191; 217)			
Steranes/Hopanes	0.84	D	
Tricyclic terpanes/Hopanes	0.17	M	1.00 (1.4%)
Tricyclic terpanes/Steranes	0.21	M/D	1.00 (1.4%)

[1]Definition and utility of the ratios can be found on our website www.brilabs.com

[2]A=Source Age; D=Depositional environment; M= Maturity; B=Possible Biodegradation

[3]Thermal equilibrium value of the biomarker ratio and in brackets the approximate VR value at which this value is reached

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2607 - 2608 FT**	**Lab ID:**	**TM000743**
Sampling Point:		**File Name:**	**M2090470.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
217	CHOL	*5β cholane (internal standard)*				0.0	0.0
125	BCAROT	β-carotane	90.994	1857	123		
187	4MDIAM	4-methyldiamantane	9.224	41	13		
187	1MDIAM	1-methyldiamantane	9.816	39	10		
187	3MDIAM	3-methyldiamantane	10.182	36	14		
188	DIAM	diamantane	9.067	19	7		
191	TR19	C19 tricyclic terpane	18.704	270	55		
191	TR20	C20 tricyclic terpane	21.544	566	111		
191	TR21	C21 tricyclic terpane	24.873	1048	186		
191	TR22	C22 tricyclic terpane	28.271	511	92		
191	TR23	C23 tricyclic terpane	32.517	3337	522		
191	TR24	C24 tricyclic terpane	34.923	2726	433		
191	DESAOL	des-A-oleanane	37.451	376	66		
191	DESALU	des-A-lupane					
191	TR25A	C25 tricyclic terpane (a)	40.014	1874	271		
191	TR25B	C25 tricyclic terpane (b)	40.136	1671	254		
191	TET24	C24 tetracyclic terpane (TET)	43.257	1732	249		
191	TR26A	C26 tricyclic terpane (a)	43.885	1527	249		
191	TR26B	C26 tricyclic terpane (b)	44.216	1640	244		
191	TR28A	C28 tricyclic terpane (a)	52.829	1664	259		
191	TR28B	C28 tricyclic terpane (b)	53.439	2010	291		
191	TR29A	C29 tricyclic terpane (a)	55.409	2252	351		
191	TR29B	C29 tricyclic terpane (b)	56.141	2270	352		
191	TR30A	C30 tricyclic terpane (a)	60.361	2515	343		
191	TR30B	C30 tricyclic terpane (b)	61.180	2093	283		
191	TS	Ts 18α(H)-trisnorhopane	57.519	5924	876		
191	TM	Tm 17α(H)-trisnorhopane	59.158	8208	1206		
191	H28	C28 17α18α21β(H)-bisnorhopane	63.150	2776	290		
191	NOR25H	C29 Nor-25-hopane	63.813	3584	511		
191	H29	C29 Tm 17α(H)21β(H)-norhopane	64.963	19977	2962		
191	C29TS	C29 Ts 18α(H)-norneohopane	65.225	6592	927		
191	DH30	C30 17α(H)-diahopane	65.975	3273	440		
191	M29	C29 normoretane	66.968	4119	624		
191	OLA	oleanane a					
191	OLB	oleanane b					
191	H30	C30 17α(H)-hopane	68.433	41741	6248		
191	C30TS	C29 Ts 18α(H)-norneohopane	69.252	2553	386		
191	M30	C30 moretane	70.020	8168	1145		
191	H31S	C31 22S 17α(H) hopane	72.513	13674	2073		
191	H31R	C31 22R 17α(H) hopane	73.018	11511	1661		
191	GAM	gammacerane	73.454	1664	180		
191	H32S	C32 22S 17α(H) hopane	75.756	9736	1389		
191	H32R	C32 22R 17α(H) hopane	76.436	7566	1085		
191	H33S	C33 22S 17α(H) hopane	79.487	6983	1040		
191	H33R	C33 22R 17α(H) hopane	80.428	5577	772		
191	H34S	C34 22S 17α(H) hopane	83.375	5116	717		
191	H34R	C34 22R 17α(H) hopane	84.508	3547	511		
191	H35S	C35 22S 17α(H) hopane	87.106	4666	658		
191	H35R	C35 22R 17α(H) hopane	88.414	3280	487		

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2607 - 2608 FT**	**Lab ID:**	**TM000743**
Sampling Point:		**File Name:**	**M2090470.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
217	S21	C21 sterane	28.846	1888	254		
217	S22	C22 sterane	33.580	1497	224		
217	DIA27S	C27 βα 20S diasterane	48.278	8955	1304		
217	DIA27R	C27 βα 20R diasterane	49.830	6152	891		
217	DIA28SA	C28 βα 20S diasterane a	52.079	6483	868		
217	DIA28SB	C28 βα 20S diasterane b	52.375	8330	990		
217	DIA28RA	C28 βα 20R diasterane a	53.805	4415	660		
217	DIA28RB	C28 βα 20R diasterane b	53.979	5442	648		
217	C27S	C27 αα 20S sterane	54.991	3978	634		
217	BB_D29S	C27 ββ 20R + C29 dia20S	55.514	12868	875		
217	C27BBS	C27 ββ 20S sterane	55.915	7216	842		
217	C27R	C27 αα 20R sterane	56.786	4612	610		
217	DIA29R	C29 βα 20R diasterane	57.397	9770	829		
217	C28S	C28 αα 20S sterane	59.105	4500	516		
217	C28BBR	C28 ββ 20R sterane(+5 βαα)	59.838	7369	889		
217	C28BBS	C28 ββ 20S sterane	60.239	9494	1029		
217	C28R	C28 αα 20R sterane	61.407	5574	444		
217	C29S	C29 αα 20S sterane	62.645	5564	592		
217	C29BBR	C29 ββ 20R sterane(+5 βαα)	63.429	8383	871		
217	C29BBS	C29 ββ 20S sterane	63.743	7032	802		
217	C29R	C29 αα 20R sterane	65.190	8410	882		
218	C27ABBR	C27 ββ 20R sterane	55.496	10071	1192		
218	C27ABBS	C27 ββ 20S sterane	55.897	7477	1070		
218	C28ABBR	C28 ββ 20R sterane	59.838	9790	1297		
218	C28ABBS	C28 ββ 20S sterane	60.239	10822	1364		
218	C29ABBR	C29 ββ 20R sterane	63.429	9879	1267		
218	C29ABBS	C29 ββ 20S sterane	63.743	10016	1261		
218	C30ABBR	C30 ββ 20R sterane	66.480	3247	466		
218	C30ABBS	C30 ββ 20S sterane	66.707	3307	446		
259	D27S	C27 βα 20S diasterane	48.278	5788	851		
259	D27R	C27 βα 20R diasterane	49.830	4142	572		
259	D28SA	C28 βα 20S diasterane a	52.079	4130	577		
259	D28SB	C28 βα 20S diasterane b	52.375	4380	615		
259	D28RA	C28 βα 20R diasterane a	53.805	3344	460		
259	D28RB	C28 βα 20R diasterane b	53.979	2920	419		
259	D29S	C29 βα 20S diasterane	55.618	6763	532		
259	D29R	C29 βα 20R diasterane	57.414	4691	397		
259	C30TP1	C30 tetracyclic polyprenoid	66.934	699	100		
259	C30TP2	C30 tetracyclic polyprenoid	67.108	548	96		

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #2
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	2607 - 2608 FT	Lab ID:	TM000743
Sampling Point:		File Name:	M2090470.D

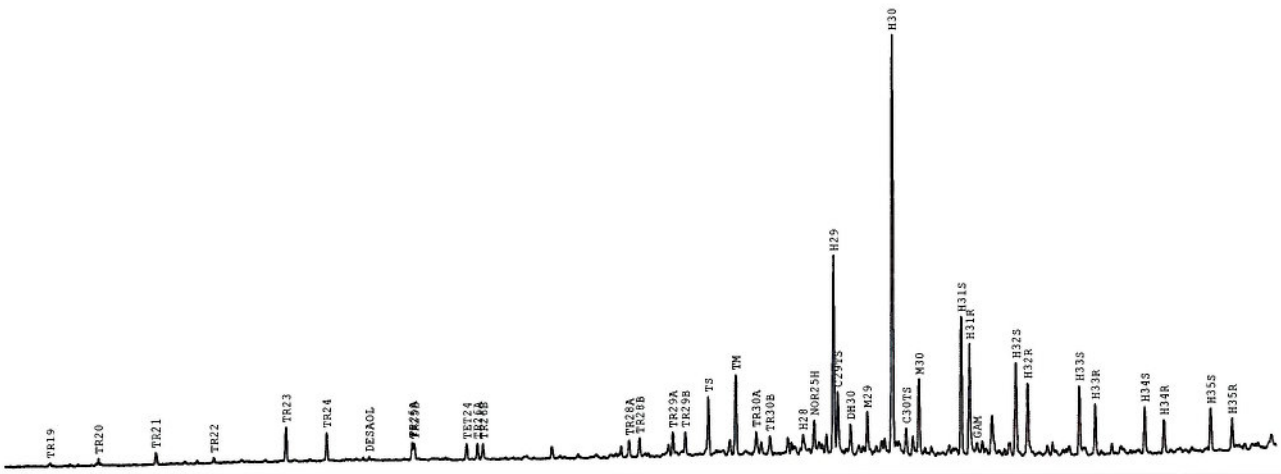
Miscellaneous Ratios	By Areas	By Heights
Terpanes (m/z 191)		
C19/C23 Tricyclic terpanes	0.08	0.11
C22/C21 Tricyclic terpanes	0.49	0.49
C22/C24 Tricyclic terpanes	0.19	0.21
C23/C24 Tricyclic terpanes	1.22	1.21
C24/C23 Tricyclic terpanes	0.82	0.83
C26/C25 Tricyclic terpanes	0.89	0.94
C24 Tetracyclic/C23 Tricyclic	0.52	0.48
C24 Tetracyclic/C26 Tricyclics	0.55	0.51
(C28+C29 Tricyclics)/Ts	1.38	1.43
Ts/Tm trisnorhopanes	0.72	0.73
Ts/(Ts+Tm) trisnorhopanes	0.42	0.42
25-nor-hopane/hopane	0.09	0.05
C29Ts/C29 Hopane	0.33	0.31
C29Ts/(C29TS+C29) Hopane	0.25	0.24
C23 Tricyclic/Hopane	0.08	0.08
C24 Tetracyclic/Hopane	0.04	0.04
Bisnorhopane/Hopane	0.07	0.05
Norhopane/Hopane	0.48	0.47
Diahopane/Hopane	0.08	0.07
Oleanane/Hopane		
Moretane/Hopane	0.20	0.18
Moretane/(Moretane+Hopane)	0.16	0.15
C30Ts/C30 Hopane	0.06	0.06
Gammacerane/Hopane	0.04	0.03
C32 S/(S+R) Homohopanes	0.56	0.56
Gammacerane/H31R Homohopane	0.14	0.11
C35/C34 Homohopanes	0.92	0.93
C35/C34 S Homohopanes	0.91	0.92
C35 Homohopane Index	0.11	0.11
Rel % C31 Homohopane	35.1	35.9
Rel % C32 Homohopane	24.1	23.8
Rel % C33Homohopane	17.5	17.4
Rel % C34 Homohopane	12.1	11.8
Rel % C35 Homohopane	11.1	11.0

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2607 - 2608 FT**	**Lab ID:**	**TM000743**
Sampling Point:		**File Name:**	**M2090470.D**

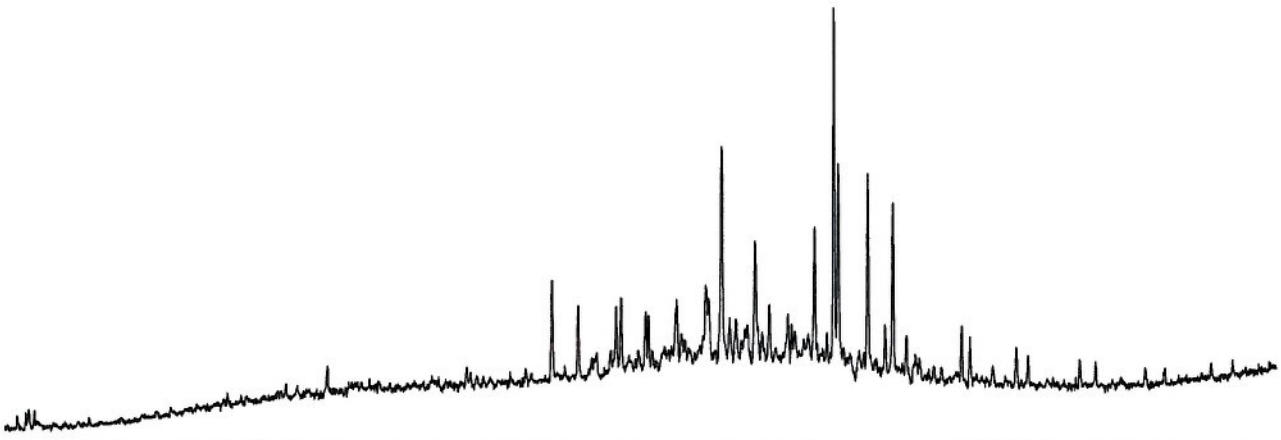
Miscellaneous Ratios	By Areas	By Heights
Steranes (m/z 217; 218)		
%C27 αααR (217)	24.8	31.5
%C28 αααR (217)	30.0	22.9
%C29 αααR (217)	45.2	45.6
S/R (C_{29} ααα) (217)	0.66	0.67
S/(S+R) (C_{29} ααα) (217)	0.40	0.40
ββ/(αα+ββ) (C_{29}) (217)	0.52	0.53
ββS/(ααR+ββS) (C29) (217)	0.46	0.48
αββS/αααR (C_{29}) (217)	0.84	0.91
(C_{21}+C_{22})/(C_{27}+C_{28}+C_{29}) (217)	0.03	0.03
Diaster/ααα Ster (C_{27}) (217)	1.76	1.76
Diaster/(Diaster+ααα) Ster (C_{27}) (217)	0.64	0.64
%C27 αββS (218)	26.4	29.0
%C28 αββS (218)	38.2	36.9
%C29 αββS (218)	35.4	34.1
%C27 αββ (R+S) (218)	30.2	30.4
%C28 αββ (R+S) (218)	35.5	35.7
%C29 αββ (R+S) (218)	34.3	33.9
C30 αββS Sterane Index (218)	10.5	10.8
C30 S+R Sterane Index (218)	10.1	10.9
C_{27}/C_{29} (αββS) (218)	0.75	0.85
C_{28}/C_{29} (αββS) (218)	1.08	1.08
C_{29}/C_{27} (αββS) (218)	1.34	1.18
C_{29}/C_{27} (αββ) (218)	1.13	1.12
Various (m/z 191; 217)		
Steranes/Hopanes	0.83	0.64
Tricyclic terpanes/Hopanes	0.17	0.18
Tricyclic terpanes/Steranes	0.21	0.28
Tricyclic/Pentacyclic Terpanes	16.5	17.4
Steranes/Terpanes	0.61	0.49
% Tricyclic Terpanes	8.8	9.9
% Pentacyclic Terpanes	53.31	9.94
% Steranes	37.9	32.8

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #2
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	2607 - 2608 FT	Lab ID:	TM000743
Sampling Point:		File Name:	M2090470.D

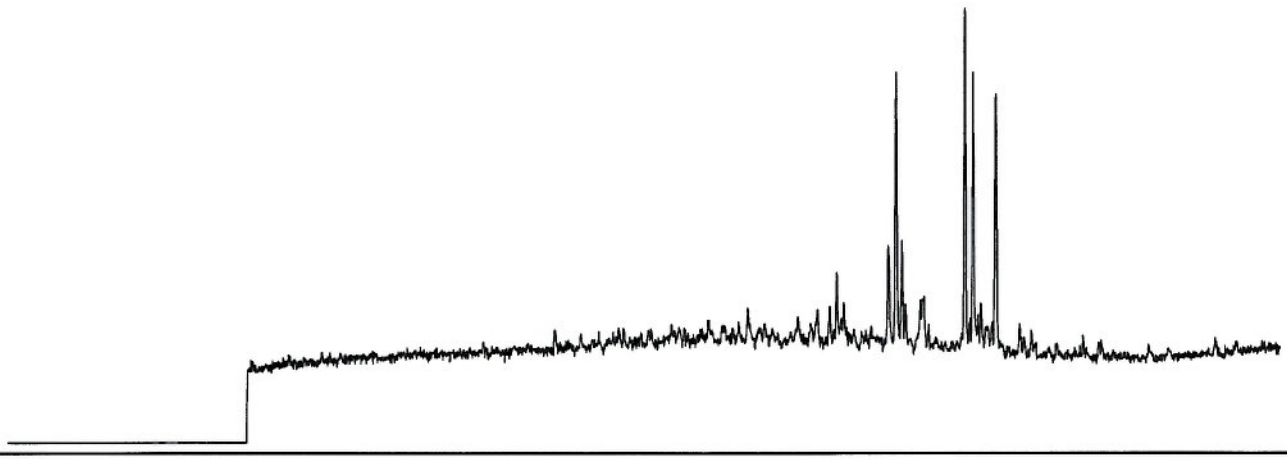
***m/z* 191:Tri-, tetra- and pentacyclic Terpanes**



***m/z* 177: Norhopanes**

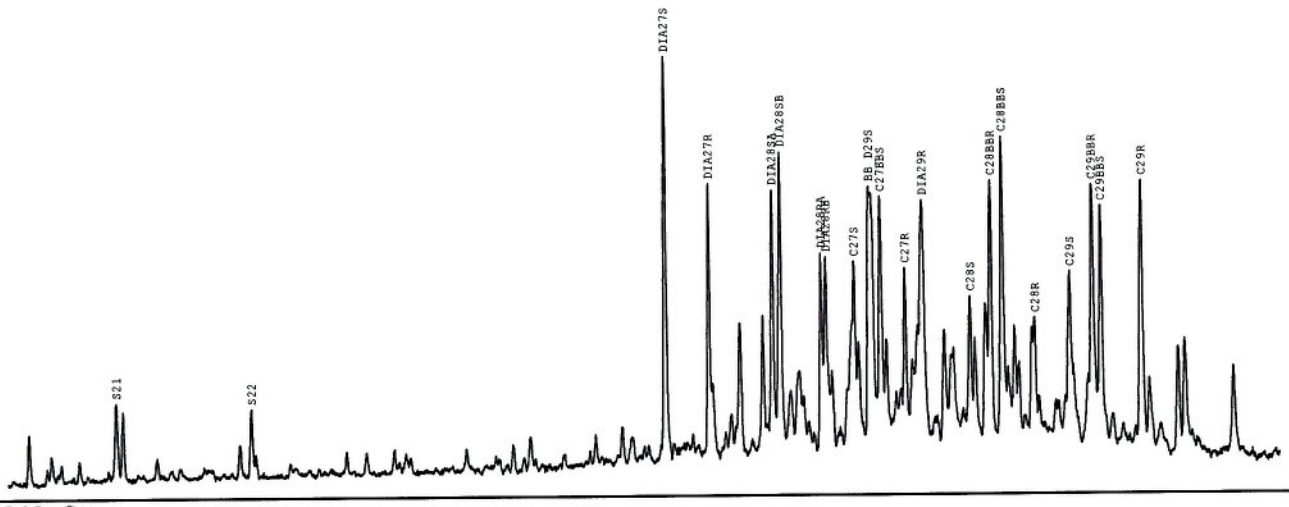


***m/z* 205**

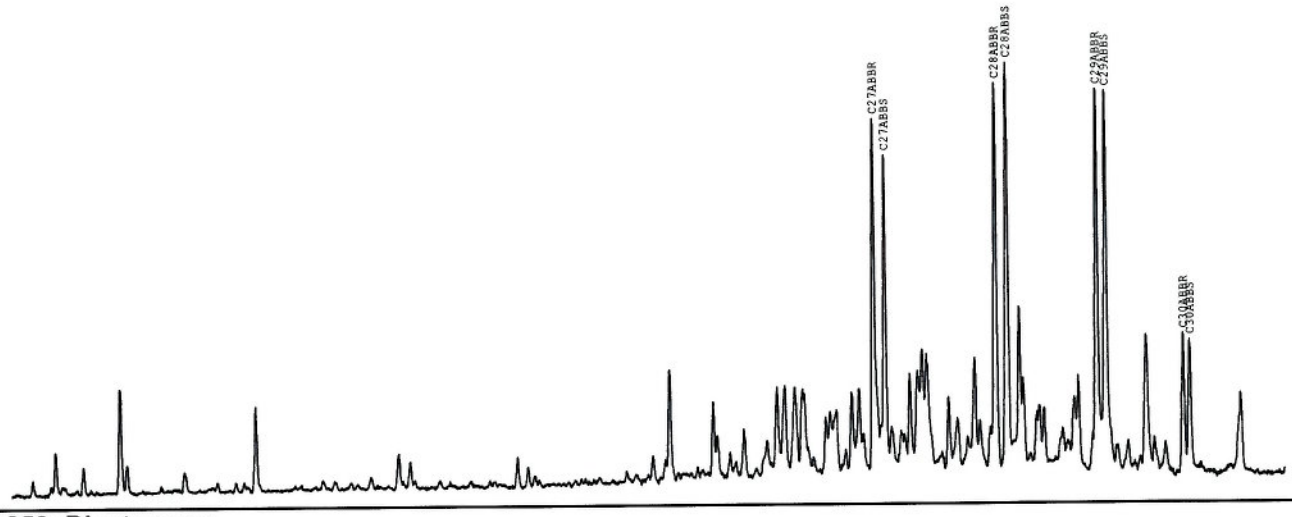


Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #2
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	2607 - 2608 FT	Lab ID:	TM000743
Sampling Point:		File Name:	M2090470.D

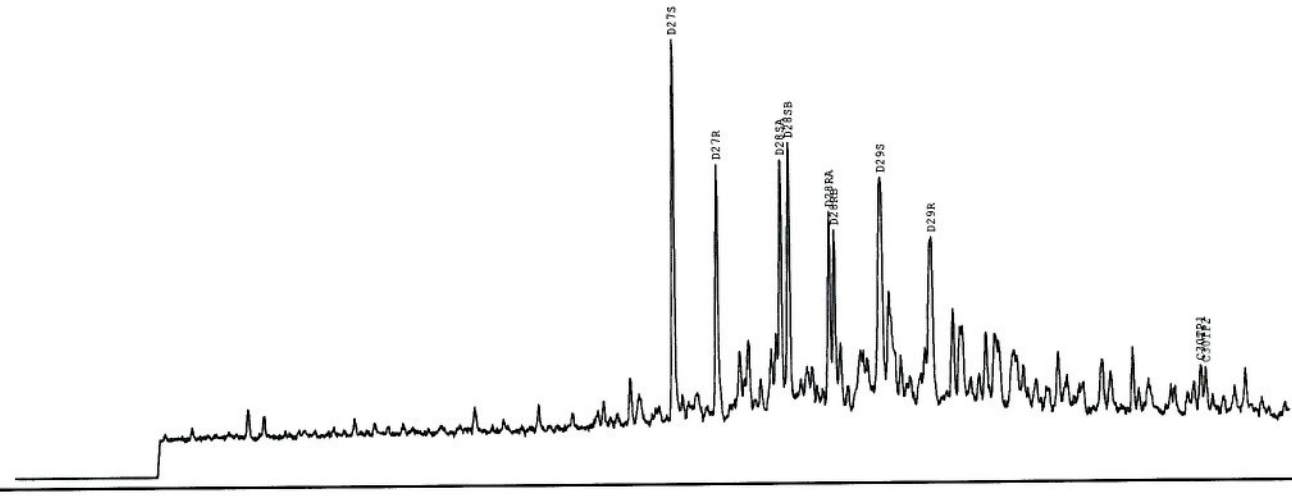
m/z 217: Steranes



m/z 218: Steranes



m/z 259: Diasteranes



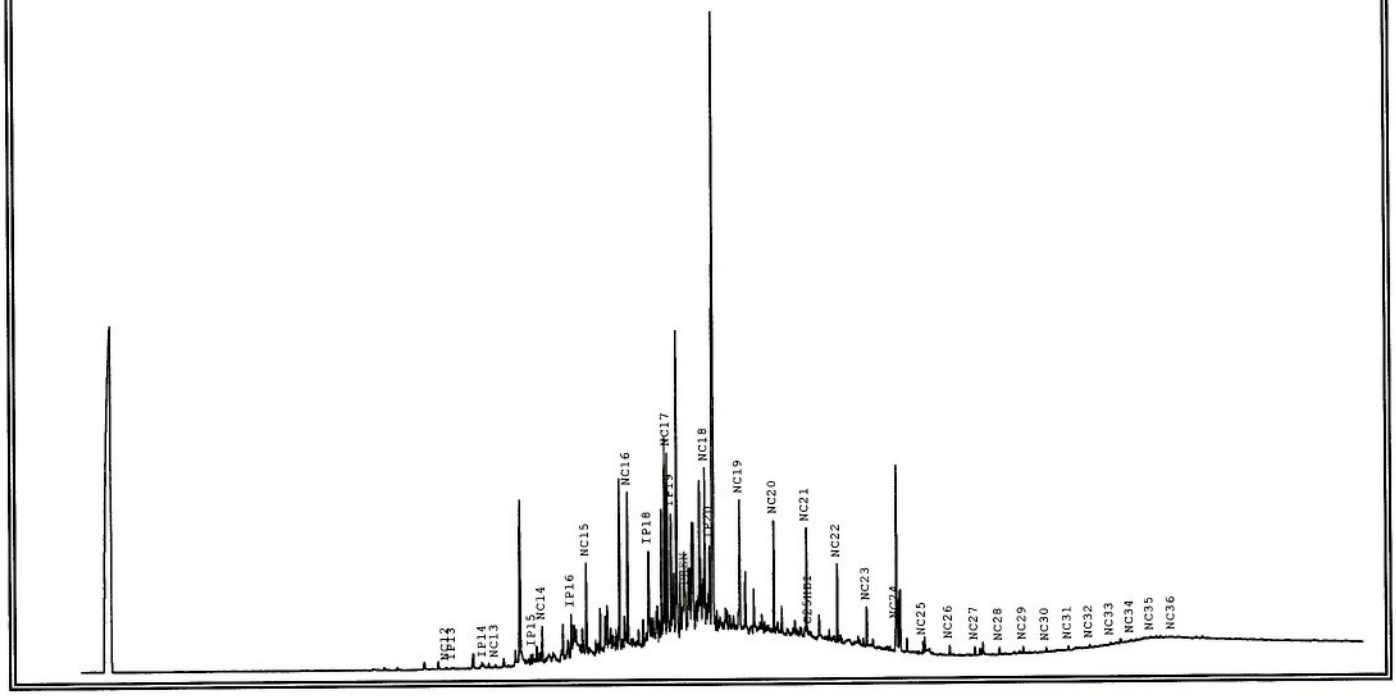
Weatherford LABORATORIES

WHOLE OIL GC

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #2
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000744
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	PRINCE CREEK
Well Name:	SUSIE NO. 1	Geologic Age:	
Latitude:	0	Top Depth:	2611 FT
Longitude:	0	Bottom Depth:	2612 FT

Whole Oil GC Trace

G6081486.D



WGC parameters	
Pristane/Phytane	1.26
Pristane/$n\,C_{17}$	0.84
Phytane/$n\,C_{18}$	0.83
$n\,C_{18}/(nC_{18}+n\,C_{19})$	0.57
$n\,C_{17}/(nC_{17}+n\,C_{29})$	0.97
CPI Hunt[4]	1.23
Normal Paraffins	12.3
Isoprenoids	5.6
Cycloparaffins	
Branched (iso-) Paraffins	
BTX aromatics	
Resolved unknowns	81.4

Thompson[1]	
A.	BZ/$n\,C_6$
B.	TOL/$n\,C_7$
C.	$(n\,C_6+n\,C_7)$/(CH+MCH)
I.	Isoheptane Value
F.	$n\,C_7$/MCH
U.	CH/MCP
R.	$n\,C_7$/2MH
S.	$n\,C_6$/22DMB
H.	Heptane Value
	MCH/$n\,C_7$
	mpXYL/$n\,C_8$

Mango[2]
P_1
P_2
P_3
$5N_1$
N_2
$6N_1$
K_1
K_2
$5N_1/6N_1$
P_3/N_2
ln(24DMP/23DMP)

Halpern[3]
Tr_1
Tr_2
Tr_3
Tr_4
Tr_5
Tr_7
Tr_8
C_1
C_2
C_3
C_4
C_5

[1]Thompson, K.F.M.,1983.GCA:V.47, p.303. [2]Mango, F.D.,1994.GCA: V.58, p.895. [3]Halpern,H.I.,1995,AAPG Bull.: V.79, p.801. [4]Hunt, 1979

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2611 - 2612 FT**	**Lab ID:**	**TM000744**
Sampling Point:		**File Name:**	**G6081486.D**

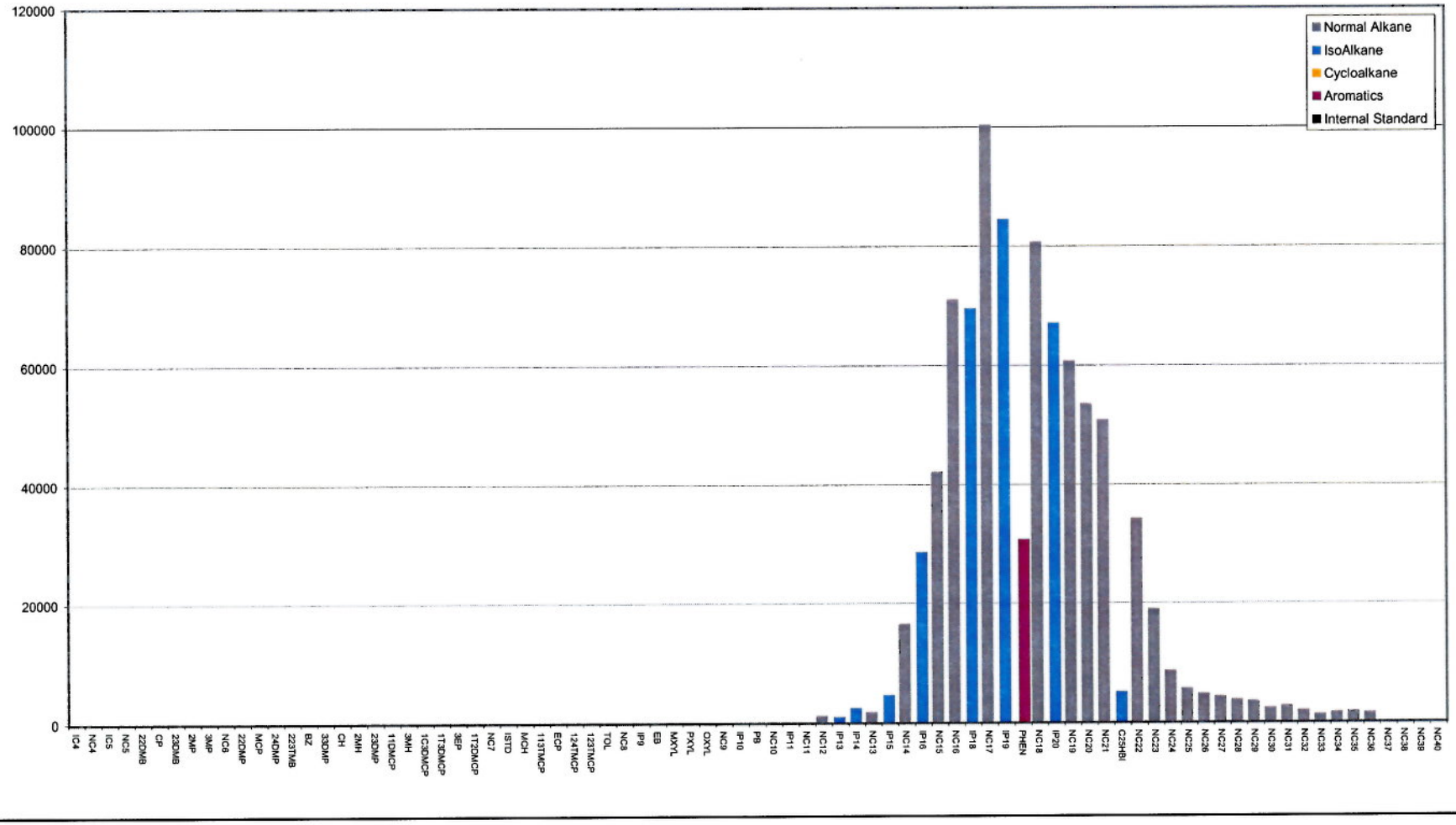
Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IC4	Iso-alkane C4					
NC4	Normal Alkane C4					
IC5	Iso-alkane C5					
NC5	Normal Alkane C5					
22DMB	2,2-Dimethylbutane					
CP	Cyclopentane					
23DMB	2,3-Dimethylbutane					
2MP	2-Methylpentane					
3MP	3-Methylpentane					
NC6	Normal Alkane C6					
22DMP	2,2-Dimethylpentane					
MCP	Methylcyclopentane					
24DMP	2,4-Dimethylpentane					
223TMB	2,2,3-Trimethylbutane					
BZ	Benzene					
33DMP	3,3-Dimethylpentane					
CH	Cyclohexane					
2MH	2-Methylhexane					
23DMP	2,3-Dimethylpentane					
11DMCP	1,1-Dimethylcyclopentane					
3MH	3-Methylhexane					
1C3DMCP	1-cis-3-Dimethylcyclopentane					
1T3DMCP	1-trans-3-Dimethylcyclopentane					
3EP	3-Ethylpentane					
1T2DMCP	1-trans-2-Dimethylcyclopentane					
NC7	Normal Alkane C7					
ISTD	Internal Standard					
MCH	Methylcyclohexane					
113TMCP	1,1,3,-Trimethylcyclopentane					
ECP	Ethylcyclopentane					
124TMCP	1,2,4-Trimethylcyclopentane					
123TMCP	1,2,3-Trimethylcyclopentane					
TOL	Toluene					
NC8	Normal Alkane C8					
IP9	Isoprenoid C9					
EB	Ethyl-benzene					
MXYL	*m*-xylene					
PXYL	*p*-xylene					
OXYL	*o*-xylene					
NC9	Normal Alkane C9					
IP10	Isoprenoid C10					
PB	Propyl-benzene					
NC10	Normal Alkane C10					
IP11	Isoprenoid C11					
NC11	Normal Alkane C11					
NC12	Normal Alkane C12	36.684	1179	286		
IP13	Isoprenoid C13	37.276	1003	214		
IP14	Isoprenoid C14	40.172	2488	456		
NC13	Normal Alkane C13	41.276	1767	463		
IP15	Isoprenoid C15	44.714	4683	1411		
NC14	Normal Alkane C14	45.597	16601	4857		

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2611 - 2612 FT**	**Lab ID:**	**TM000744**
Sampling Point:		**File Name:**	**G6081486.D**

Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IP16	Isoprenoid C16	48.260	28677	5885		
NC15	Normal Alkane C15	49.674	42203	12225		
NC16	Normal Alkane C16	53.532	71054	20547		
IP18	Isoprenoid C18	55.458	69546	12351		
NC17	Normal Alkane C17	57.198	100383	24608		
IP19	Isoprenoid C19 (Pristane)	57.560	84522	16571		
PHEN	Phenanthrene	58.867	30748	5988		
NC18	Normal Alkane C18	60.661	80731	21616		
IP20	Isoprenoid C20 (Phytane)	61.116	67111	11353		
NC19	Normal Alkane C19	63.949	60751	17308		
NC20	Normal Alkane C20	67.089	53590	14918		
NC21	Normal Alkane C21	70.092	50796	14354		
C25HBI	Highly Branch Isoprenoid C25	70.341	5181	993		
NC22	Normal Alkane C22	72.966	34265	10262		
NC23	Normal Alkane C23	75.713	19011	5264		
NC24	Normal Alkane C24	78.380	8695	2746		
NC25	Normal Alkane C25	80.902	5688	1594		
NC26	Normal Alkane C26	83.345	4785	1304		
NC27	Normal Alkane C27	85.704	4333	1140		
NC28	Normal Alkane C28	87.983	3820	945		
NC29	Normal Alkane C29	90.182	3574	926		
NC30	Normal Alkane C30	92.312	2402	586		
NC31	Normal Alkane C31	94.371	2740	597		
NC32	Normal Alkane C32	96.365	1933	420		
NC33	Normal Alkane C33	98.299	1326	350		
NC34	Normal Alkane C34	100.192	1697	269		
NC35	Normal Alkane C35	102.024	1745	249		
NC36	Normal Alkane C36	104.012	1594	186		
NC37	Normal Alkane C37					
NC38	Normal Alkane C38					
NC39	Normal Alkane C39					
NC40	Normal Alkane C40					
NC41	Normal Alkane C41					

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2611 - 2612 FT**	**Lab ID:**	**TM000744**
Sampling Point:		**File Name:**	**G6081486.D**

Histogram Based on Area



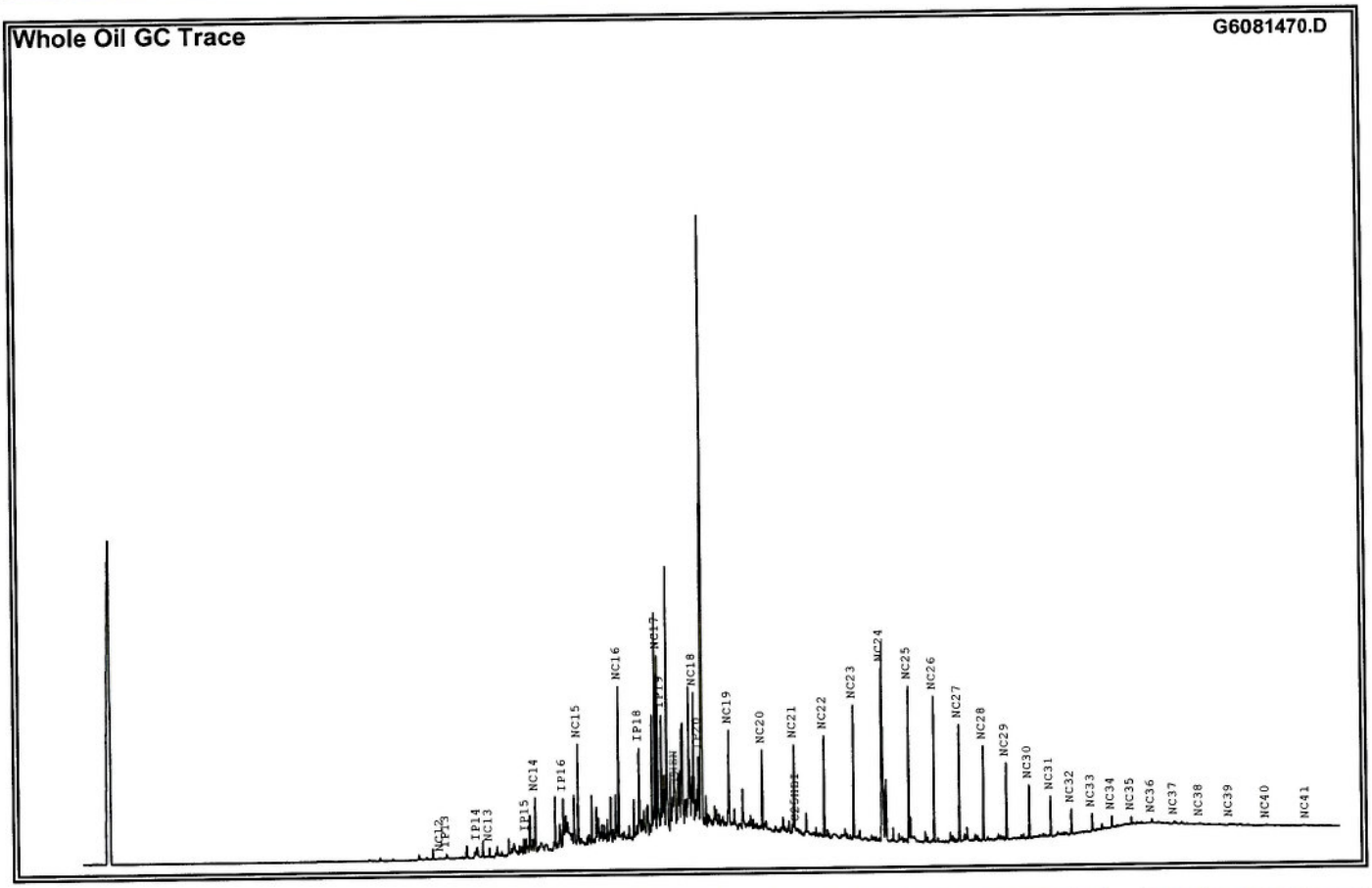
Weatherford LABORATORIES

WHOLE OIL GC

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #2
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000745
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	PRINCE CREEK
Well Name:	SUSIE NO. 1	Geologic Age:	
Latitude:	0	Top Depth:	2613 FT
Longitude:	0	Bottom Depth:	2614 FT

Whole Oil GC Trace

G6081470.D



WGC parameters	
Pristane/Phytane	1.47
Pristane/$n C_{17}$	0.87
Phytane/$n C_{18}$	0.81
$n C_{18}/(nC_{18}+n C_{19})$	0.60
$n C_{17}/(nC_{17}+n C_{29})$	0.72
CPI Hunt[4]	0.94
Normal Paraffins	20.6
Isoprenoids	5.5
Cycloparaffins	
Branched (iso-) Paraffins	
BTX aromatics	
Resolved unknowns	73.3

Thompson[1]	
A.	BZ/$n C_6$
B.	TOL/$n C_7$
C.	$(n C_6+n C_7)/(CH+MCH)$
I.	Isoheptane Value
F.	$n C_7$/MCH
U.	CH/MCP
R.	$n C_7$/2MH
S.	$n C_6$/22DMB
H.	Heptane Value
	MCH/$n C_7$
	mpXYL/$n C_8$

Mango[2]
P_1
P_2
P_3
$5N_1$
N_2
$6N_1$
K_1
K_2
$5N_1/6N_1$
P_3/N_2
ln(24DMP/23DMP)

Halpern[3]
Tr_1
Tr_2
Tr_3
Tr_4
Tr_5
Tr_7
Tr_8
C_1
C_2
C_3
C_4
C_5

[1]Thompson, K.F.M.,1983.GCA:V.47, p.303. [2]Mango, F.D.,1994.GCA: V.58, p.895. [3]Halpern,H.I.,1995,AAPG Bull.: V.79, p.801. [4]Hunt, 1979

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2613 - 2614 FT**	**Lab ID:**	**TM000745**
Sampling Point:		**File Name:**	**G6081470.D**

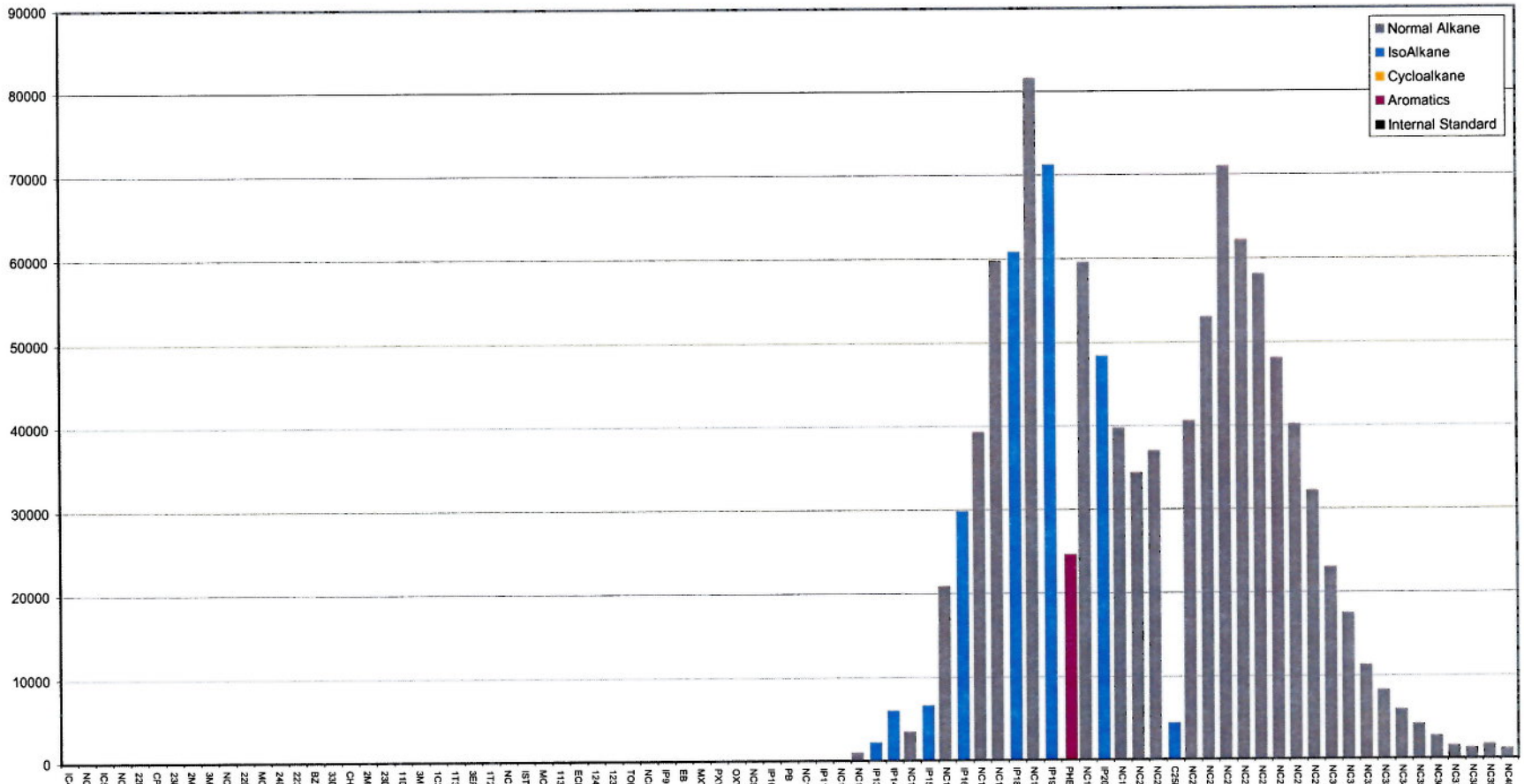
Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IC4	Iso-alkane C4					
NC4	Normal Alkane C4					
IC5	Iso-alkane C5					
NC5	Normal Alkane C5					
22DMB	2,2-Dimethylbutane					
CP	Cyclopentane					
23DMB	2,3-Dimethylbutane					
2MP	2-Methylpentane					
3MP	3-Methylpentane					
NC6	Normal Alkane C6					
22DMP	2,2-Dimethylpentane					
MCP	Methylcyclopentane					
24DMP	2,4-Dimethylpentane					
223TMB	2,2,3-Trimethylbutane					
BZ	Benzene					
33DMP	3,3-Dimethylpentane					
CH	Cyclohexane					
2MH	2-Methylhexane					
23DMP	2,3-Dimethylpentane					
11DMCP	1,1-Dimethylcyclopentane					
3MH	3-Methylhexane					
1C3DMCP	1-cis-3-Dimethylcyclopentane					
1T3DMCP	1-trans-3-Dimethylcyclopentane					
3EP	3-Ethylpentane					
1T2DMCP	1-trans-2-Dimethylcyclopentane					
NC7	Normal Alkane C7					
ISTD	Internal Standard					
MCH	Methylcyclohexane					
113TMCP	1,1,3,-Trimethylcyclopentane					
ECP	Ethylcyclopentane					
124TMCP	1,2,4-Trimethylcyclopentane					
123TMCP	1,2,3-Trimethylcyclopentane					
TOL	Toluene					
NC8	Normal Alkane C8					
IP9	Isoprenoid C9					
EB	Ethyl-benzene					
MXYL	*m*-xylene					
PXYL	*p*-xylene					
OXYL	*o*-xylene					
NC9	Normal Alkane C9					
IP10	Isoprenoid C10					
PB	Propyl-benzene					
NC10	Normal Alkane C10					
IP11	Isoprenoid C11					
NC11	Normal Alkane C11					
NC12	Normal Alkane C12	36.683	993	151		
IP13	Isoprenoid C13	37.276	2249	511		
IP14	Isoprenoid C14	40.138	5997	1206		
NC13	Normal Alkane C13	41.278	3513	1062		
IP15	Isoprenoid C15	44.719	6620	1737		
NC14	Normal Alkane C14	45.601	20913	6234		

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2613 - 2614 FT**	**Lab ID:**	**TM000745**
Sampling Point:		**File Name:**	**G6081470.D**

Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IP16	Isoprenoid C16	48.261	29806	5761		
NC15	Normal Alkane C15	49.675	39339	11721		
NC16	Normal Alkane C16	53.529	59782	17604		
IP18	Isoprenoid C18	55.459	60849	10184		
NC17	Normal Alkane C17	57.191	81666	20381		
IP19	Isoprenoid C19 (Pristane)	57.551	71229	13555		
PHEN	Phenanthrene	58.857	24633	4898		
NC18	Normal Alkane C18	60.653	59566	15404		
IP20	Isoprenoid C20 (Phytane)	61.104	48428	8085		
NC19	Normal Alkane C19	63.939	39726	11076		
NC20	Normal Alkane C20	67.083	34395	9186		
NC21	Normal Alkane C21	70.088	37057	10214		
C25HBI	Highly Branch Isoprenoid C25	70.327	4375	721		
NC22	Normal Alkane C22	72.969	40602	11554		
NC23	Normal Alkane C23	75.727	53032	15238		
NC24	Normal Alkane C24	78.386	70994	19544		
NC25	Normal Alkane C25	80.925	62226	17674		
NC26	Normal Alkane C26	83.372	58118	16550		
NC27	Normal Alkane C27	85.729	48123	13277		
NC28	Normal Alkane C28	88.006	40221	10742		
NC29	Normal Alkane C29	90.198	32205	8745		
NC30	Normal Alkane C30	92.330	23062	6052		
NC31	Normal Alkane C31	94.383	17482	4605		
NC32	Normal Alkane C32	96.379	11305	2878		
NC33	Normal Alkane C33	98.312	8317	2047		
NC34	Normal Alkane C34	100.192	5937	1338		
NC35	Normal Alkane C35	102.021	4172	901		
NC36	Normal Alkane C36	103.955	2791	459		
NC37	Normal Alkane C37	106.109	1591	307		
NC38	Normal Alkane C38	108.555	1317	193		
NC39	Normal Alkane C39	111.338	1757	185		
NC40	Normal Alkane C40	114.584	1206	112		
NC41	Normal Alkane C41	118.359	564	71		

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2613 - 2614 FT**	**Lab ID:**	**TM000745**
Sampling Point:		**File Name:**	**G6081470.D**

Histogram Based on Area



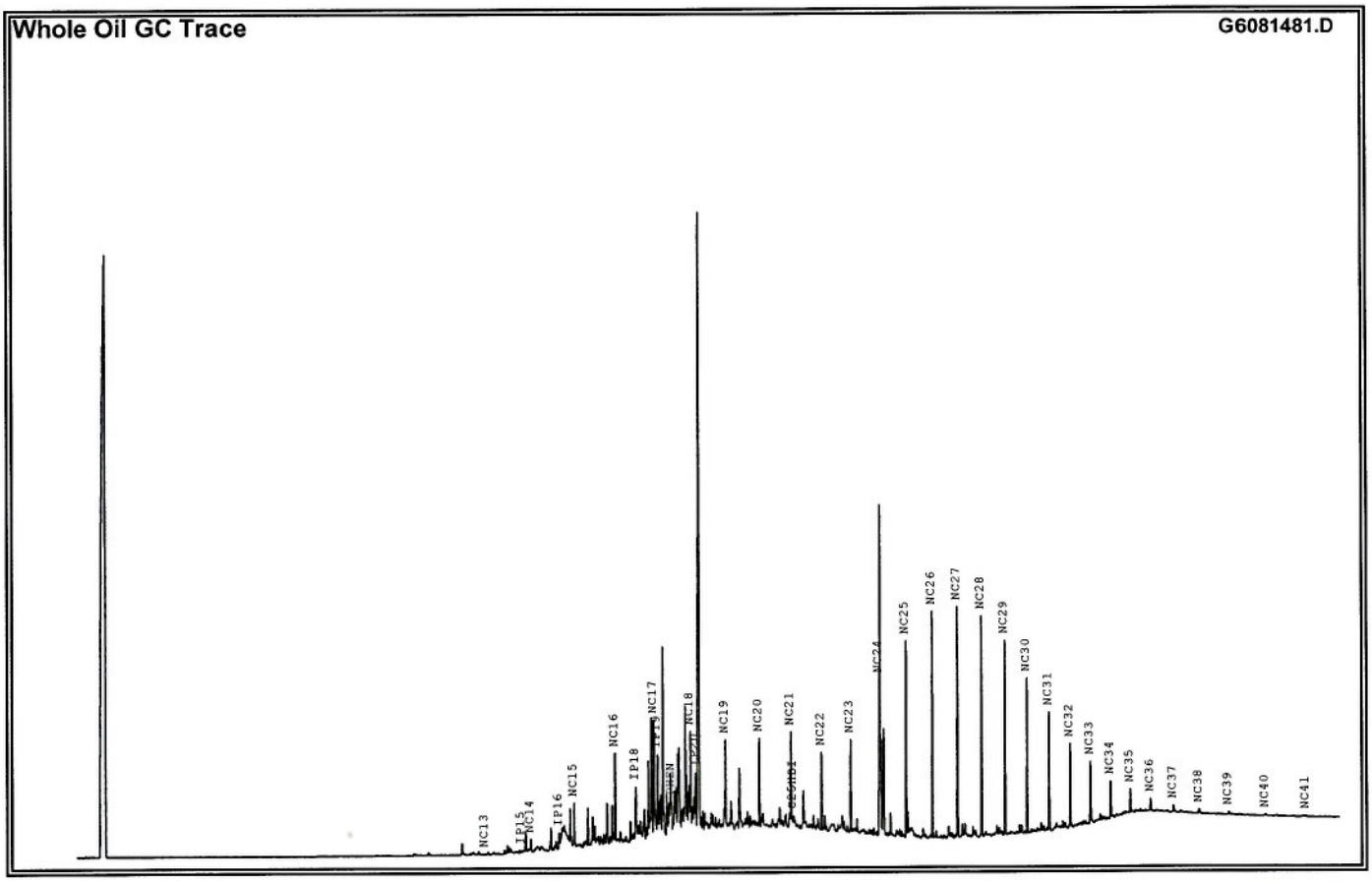
Parameter	Formula
WGC Parameters	
Pristane/Phytane	IP19/IP20
Pristane/nC17	IP19/NC17
Phytane/nC18	IP20/NC18
$nC_{18}/(nC_{18}+nC_{19})$	NC18/(NC18+NC19)
$nC_{17}/(nC_{17}+nC_{29})$	NC17/(NC17+NC29)
CPI Hunt[4]	((NC23+NC25+NC27+NC29+NC31)+(NC25+NC27+NC29+NC31+NC33))/(2*(NC24+NC26+NC28+NC30+NC32))
Normal Paraffins	100*(NC4+NC5+NC6+NC7+NC8+NC9+NC10+NC11+NC12+NC13+NC14+NC15+NC16+NC17+NC18+NC19+NC20+NC21+NC22+NC23+NC24+NC25+NC26+NC27+NC28+NC29+NC30+NC31+NC32+NC33+NC34+NC35+NC36+NC37+NC38+NC39+NC40+NC41)/TOTAL_RESOLVED
Isoprenoids	100*(IP9+IP10+IP11+IP13+IP14+IP15+IP16+IP18+IP19+IP20+C25HBI)/TOTAL_RESOLVED
Cycloparaffins	100*(CP+MCP+CH+11DMCP+1T3DMCP+1T2DMCP+MCH+113TMCP+ECP+124TMCP+123TMCP+1C3DMCP+1C2DMCP)/TOTAL_RESOLVED
Branched (iso-) Paraffins	100*(IC4+IC5+22DMB+23DMB+2MP+3MP+22DMP+24DMP+223TMB+33DMP+2MH+23DMP+3MH+3EP)/TOTAL_RESOLVED
BTX aromatics	100*(BZ+TOL+MXYL+PXYL+OXYL)/TOTAL_RESOLVED (*OXYL added 05/21/2007)
Thompson[1]	
BZ/nC6	BZ/NC6
TOL/nC7	TOL/NC7
(nC6+nC7)/(CH+MCH)	(NC6+NC7)/(CH+MCH)
Isoheptane Value	(2MH+3MH)/(1C3DMCP+1T3DMCP+1T2DMCP)
nC7/MCH	NC7/MCH
CH/MCP	CH/MCP
nC7/2MH	NC7/2MH
nC6/22DMB	NC6/22DMB
Heptane Value	100*NC7/(CH+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+1T2DMCP+MCH+NC7)
MCH/nC7	MCH/NC7
mpXYL/nC8	(MXYL+PXYL)/NC8
Mango[2]	
P1	100*NC7/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
P2	100*(2MH+3MH)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
P3	100*(3EP+33DMP+23DMP+24DMP+22DMP+223TMB)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
5N1	100*(ECP+1T2DMCP)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
N2	100*(11DMCP+1C3DMCP+1T3DMCP)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
6N1	100*(MCH+TOL)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
K1	(2MH+23DMP)/(3MH+24DMP)
K2	(2MH+3MH)/(2MH+3MH+11DMCP+1C3DMCP+1T3DMCP)
5N1/6N1	(ECP+1T2DMCP)/(MCH+TOL)
P3/N2	(3EP+33DMP+23DMP+24DMP+22DMP+223TMB)/(11DMCP+1C3DMCP+1T3DMCP)
ln(24DMP/23DMP)	ln(24DMP/23DMP)
Halpern[3]	
Tr1	TOL/11DMCP
Tr2	NC7/11DMCP
Tr3	3MH/11DMCP
Tr4	2MH/11DMCP
Tr5	(2MH+3MH)/11DMCP
Tr7	1T3DMCP/11DMCP
Tr8	(2MH+3MH)/(22DMP+23DMP+24DMP+33DMP+3EP)
C1	22DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C2	23DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C3	24DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C4	33DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C5	3EP/(22DMP+23DMP+24DMP+33DMP+3EP)

Weatherford LABORATORIES

WHOLE OIL GC

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #2
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000746
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	PRINCE CREEK
Well Name:	SUSIE NO. 1	Geologic Age:	
Latitude:	0	Top Depth:	2615 FT
Longitude:	0	Bottom Depth:	2616 FT

Whole Oil GC Trace G6081481.D



WGC parameters	
Pristane/Phytane	2.58
Pristane/$n\,C_{17}$	0.84
Phytane/$n\,C_{18}$	0.43
$n\,C_{18}$/(nC_{18}+$n\,C_{19}$)	0.55
$n\,C_{17}$/(nC_{17}+$n\,C_{29}$)	0.42
CPI Hunt[4]	0.98
Normal Paraffins	26.3
Isoprenoids	3.1
Cycloparaffins	
Branched (iso-) Paraffins	
BTX aromatics	
Resolved unknowns	70.1

Thompson[1]	
A.	BZ/$n\,C_6$
B.	TOL/$n\,C_7$
C.	($n\,C_6$+$n\,C_7$)/(CH+MCH)
I.	Isoheptane Value
F.	$n\,C_7$/MCH
U.	CH/MCP
R.	$n\,C_7$/2MH
S.	$n\,C_6$/22DMB
H.	Heptane Value
	MCH/$n\,C_7$
	mpXYL/$n\,C_8$

Mango[2]
P_1
P_2
P_3
$5N_1$
N_2
$6N_1$
K_1
K_2
$5N_1/6N_1$
P_3/N_2
ln(24DMP/23DMP)

Halpern[3]
Tr_1
Tr_2
Tr_3
Tr_4
Tr_5
Tr_7
Tr_8
C_1
C_2
C_3
C_4
C_5

[1]Thompson, K.F.M.,1983.GCA:V.47, p.303. [2]Mango, F.D.,1994.GCA: V.58, p.895. [3]Halpern,H.I.,1995,AAPG Bull.: V.79, p.801. [4]Hunt, 1979

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2615 - 2616 FT**	**Lab ID:**	**TM000746**
Sampling Point:		**File Name:**	**G6081481.D**

Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IC4	Iso-alkane C4					
NC4	Normal Alkane C4					
IC5	Iso-alkane C5					
NC5	Normal Alkane C5					
22DMB	2,2-Dimethylbutane					
CP	Cyclopentane					
23DMB	2,3-Dimethylbutane					
2MP	2-Methylpentane					
3MP	3-Methylpentane					
NC6	Normal Alkane C6					
22DMP	2,2-Dimethylpentane					
MCP	Methylcyclopentane					
24DMP	2,4-Dimethylpentane					
223TMB	2,2,3-Trimethylbutane					
BZ	Benzene					
33DMP	3,3-Dimethylpentane					
CH	Cyclohexane					
2MH	2-Methylhexane					
23DMP	2,3-Dimethylpentane					
11DMCP	1,1-Dimethylcyclopentane					
3MH	3-Methylhexane					
1C3DMCP	1-cis-3-Dimethylcyclopentane					
1T3DMCP	1-trans-3-Dimethylcyclopentane					
3EP	3-Ethylpentane					
1T2DMCP	1-trans-2-Dimethylcyclopentane					
NC7	Normal Alkane C7					
ISTD	Internal Standard					
MCH	Methylcyclohexane					
113TMCP	1,1,3,-Trimethylcyclopentane					
ECP	Ethylcyclopentane					
124TMCP	1,2,4-Trimethylcyclopentane					
123TMCP	1,2,3-Trimethylcyclopentane					
TOL	Toluene					
NC8	Normal Alkane C8					
IP9	Isoprenoid C9					
EB	Ethyl-benzene					
MXYL	*m*-xylene					
PXYL	*p*-xylene					
OXYL	*o*-xylene					
NC9	Normal Alkane C9					
IP10	Isoprenoid C10					
PB	Propyl-benzene					
NC10	Normal Alkane C10					
IP11	Isoprenoid C11					
NC11	Normal Alkane C11					
NC12	Normal Alkane C12					
IP13	Isoprenoid C13					
IP14	Isoprenoid C14					
NC13	Normal Alkane C13	41.272	243	56		
IP15	Isoprenoid C15	44.700	497	145		
NC14	Normal Alkane C14	45.582	3377	894		

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2615 - 2616 FT**	**Lab ID:**	**TM000746**
Sampling Point:		**File Name:**	**G6081481.D**

Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IP16	Isoprenoid C16	48.237	5883	1154		
NC15	Normal Alkane C15	49.652	10688	3093		
NC16	Normal Alkane C16	53.503	21047	6193		
IP18	Isoprenoid C18	55.434	22804	3718		
NC17	Normal Alkane C17	57.159	35332	8057		
IP19	Isoprenoid C19 (Pristane)	57.518	29511	5651		
PHEN	Phenanthrene	58.819	11597	2275		
NC18	Normal Alkane C18	60.622	26664	6830		
IP20	Isoprenoid C20 (Phytane)	61.088	11433	3929		
NC19	Normal Alkane C19	63.917	21395	6088		
NC20	Normal Alkane C20	67.065	22659	6118		
NC21	Normal Alkane C21	70.069	24766	6561		
C25HBI	Highly Branch Isoprenoid C25	70.320	5099	865		
NC22	Normal Alkane C22	72.947	18163	5323		
NC23	Normal Alkane C23	75.705	22255	6356		
NC24	Normal Alkane C24	78.362	35939	10622		
NC25	Normal Alkane C25	80.907	46774	13318		
NC26	Normal Alkane C26	83.358	55734	15309		
NC27	Normal Alkane C27	85.717	56235	15682		
NC28	Normal Alkane C28	87.995	55204	15073		
NC29	Normal Alkane C29	90.191	49501	13235		
NC30	Normal Alkane C30	92.317	39258	10527		
NC31	Normal Alkane C31	94.375	31163	8062		
NC32	Normal Alkane C32	96.367	21463	5709		
NC33	Normal Alkane C33	98.303	16068	4226		
NC34	Normal Alkane C34	100.183	10748	2556		
NC35	Normal Alkane C35	102.011	7217	1669		
NC36	Normal Alkane C36	103.943	4587	875		
NC37	Normal Alkane C37	106.092	2703	499		
NC38	Normal Alkane C38	108.533	1862	302		
NC39	Normal Alkane C39	111.320	1793	203		
NC40	Normal Alkane C40	114.573	1180	122		
NC41	Normal Alkane C41	118.347	638	71		

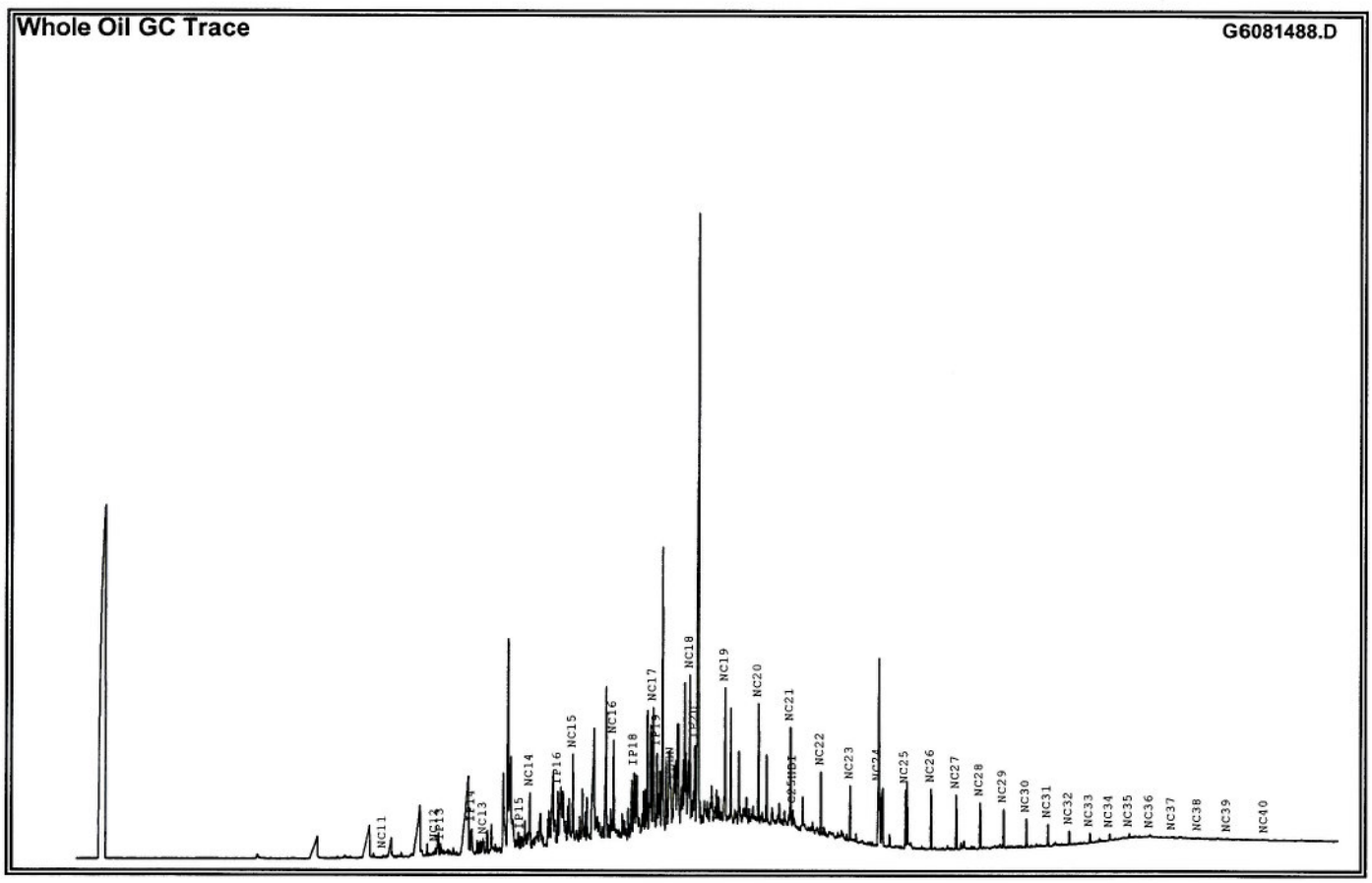
Weatherford LABORATORIES

WHOLE OIL GC

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #2
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000747
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	PRINCE CREEK
Well Name:	SUSIE NO. 1	Geologic Age:	
Latitude:	0	Top Depth:	2619 FT
Longitude:	0	Bottom Depth:	2620 FT

Whole Oil GC Trace

G6081488.D



WGC parameters	
Pristane/Phytane	0.91
Pristane/$n C_{17}$	0.83
Phytane/$n C_{18}$	0.82
$n C_{18}$/(nC_{18}+$n C_{19}$)	0.55
$n C_{17}$/(nC_{17}+$n C_{29}$)	0.78
CPI Hunt[4]	0.99
Normal Paraffins	10.7
Isoprenoids	3.5
Cycloparaffins	
Branched (iso-) Paraffins	
BTX aromatics	
Resolved unknowns	85.3

Thompson[1]	
A.	BZ/$n C_6$
B.	TOL/$n C_7$
C.	($n C_6$+$n C_7$)/(CH+MCH)
I.	Isoheptane Value
F.	$n C_7$/MCH
U.	CH/MCP
R.	$n C_7$/2MH
S.	$n C_6$/22DMB
H.	Heptane Value
	MCH/$n C_7$
	mpXYL/$n C_8$

Mango[2]
P_1
P_2
P_3
$5N_1$
N_2
$6N_1$
K_1
K_2
$5N_1/6N_1$
P_3/N_2
ln(24DMP/23DMP)

Halpern[3]
Tr_1
Tr_2
Tr_3
Tr_4
Tr_5
Tr_7
Tr_8
C_1
C_2
C_3
C_4
C_5

[1]Thompson, K.F.M.,1983.GCA:V.47, p.303. [2]Mango, F.D.,1994.GCA: V.58, p.895. [3]Halpern,H.I.,1995,AAPG Bull.: V.79, p.801. [4]Hunt, 1979

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2619 - 2620 FT**	**Lab ID:**	**TM000747**
Sampling Point:		**File Name:**	**G6081488.D**

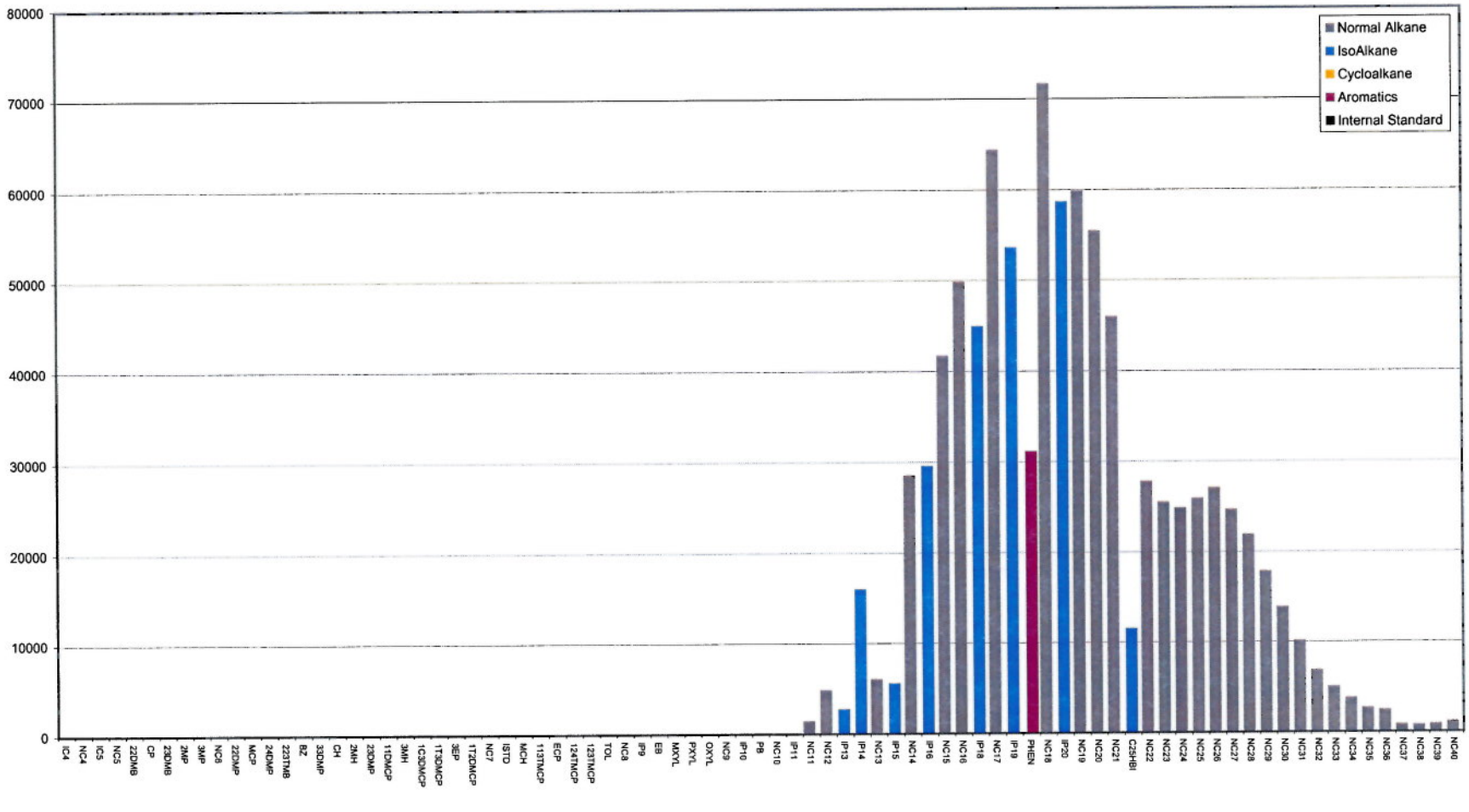
Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IC4	Iso-alkane C4					
NC4	Normal Alkane C4					
IC5	Iso-alkane C5					
NC5	Normal Alkane C5					
22DMB	2,2-Dimethylbutane					
CP	Cyclopentane					
23DMB	2,3-Dimethylbutane					
2MP	2-Methylpentane					
3MP	3-Methylpentane					
NC6	Normal Alkane C6					
22DMP	2,2-Dimethylpentane					
MCP	Methylcyclopentane					
24DMP	2,4-Dimethylpentane					
223TMB	2,2,3-Trimethylbutane					
BZ	Benzene					
33DMP	3,3-Dimethylpentane					
CH	Cyclohexane					
2MH	2-Methylhexane					
23DMP	2,3-Dimethylpentane					
11DMCP	1,1-Dimethylcyclopentane					
3MH	3-Methylhexane					
1C3DMCP	1-cis-3-Dimethylcyclopentane					
1T3DMCP	1-trans-3-Dimethylcyclopentane					
3EP	3-Ethylpentane					
1T2DMCP	1-trans-2-Dimethylcyclopentane					
NC7	Normal Alkane C7					
ISTD	Internal Standard					
MCH	Methylcyclohexane					
113TMCP	1,1,3,-Trimethylcyclopentane					
ECP	Ethylcyclopentane					
124TMCP	1,2,4-Trimethylcyclopentane					
123TMCP	1,2,3-Trimethylcyclopentane					
TOL	Toluene					
NC8	Normal Alkane C8					
IP9	Isoprenoid C9					
EB	Ethyl-benzene					
MXYL	*m*-xylene					
PXYL	*p*-xylene					
OXYL	*o*-xylene					
NC9	Normal Alkane C9					
IP10	Isoprenoid C10					
PB	Propyl-benzene					
NC10	Normal Alkane C10					
IP11	Isoprenoid C11					
NC11	Normal Alkane C11	31.788	1460	326		
NC12	Normal Alkane C12	36.707	4853	985		
IP13	Isoprenoid C13	37.273	2745	846		
IP14	Isoprenoid C14	40.142	16004	3194		
NC13	Normal Alkane C13	41.285	6033	1654		
IP15	Isoprenoid C15	44.716	5583	1805		
NC14	Normal Alkane C14	45.597	28538	7107		

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2619 - 2620 FT**	**Lab ID:**	**TM000747**
Sampling Point:		**File Name:**	**G6081488.D**

Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IP16	Isoprenoid C16	48.263	29581	6873		
NC15	Normal Alkane C15	49.673	41742	11380		
NC16	Normal Alkane C16	53.524	49833	12706		
IP18	Isoprenoid C18	55.447	44958	8309		
NC17	Normal Alkane C17	57.188	64408	16002		
IP19	Isoprenoid C19 (Pristane)	57.549	53634	10112		
PHEN	Phenanthrene	58.848	31125	5673		
NC18	Normal Alkane C18	60.657	71752	19081		
IP20	Isoprenoid C20 (Phytane)	61.108	58701	10088		
NC19	Normal Alkane C19	63.948	59877	17272		
NC20	Normal Alkane C20	67.089	55418	15204		
NC21	Normal Alkane C21	70.091	45983	12748		
C25HBI	Highly Branch Isoprenoid C25	70.334	11552	2429		
NC22	Normal Alkane C22	72.962	27784	8023		
NC23	Normal Alkane C23	75.713	25506	6996		
NC24	Normal Alkane C24	78.364	24834	7389		
NC25	Normal Alkane C25	80.906	25904	7353		
NC26	Normal Alkane C26	83.352	27038	7594		
NC27	Normal Alkane C27	85.712	24670	6868		
NC28	Normal Alkane C28	87.988	21905	5834		
NC29	Normal Alkane C29	90.185	17877	4885		
NC30	Normal Alkane C30	92.316	13870	3534		
NC31	Normal Alkane C31	94.373	10129	2770		
NC32	Normal Alkane C32	96.367	6882	1745		
NC33	Normal Alkane C33	98.302	5041	1226		
NC34	Normal Alkane C34	100.180	3773	832		
NC35	Normal Alkane C35	102.006	2701	550		
NC36	Normal Alkane C36	103.937	2449	355		
NC37	Normal Alkane C37	106.089	841	164		
NC38	Normal Alkane C38	108.520	771	125		
NC39	Normal Alkane C39	111.306	912	110		
NC40	Normal Alkane C40	114.583	1184	94		
NC41	Normal Alkane C41					

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2619 - 2620 FT**	**Lab ID:**	**TM000747**
Sampling Point:		**File Name:**	**G6081488.D**

Histogram Based on Area



Parameter	Formula
WGC Parameters	
Pristane/Phytane	IP19/IP20
Pristane/nC17	IP19/NC17
Phytane/nC18	IP20/NC18
$nC_{18}/(nC_{18}+nC_{19})$	NC18/(NC18+NC19)
$nC_{17}/(nC_{17}+nC_{29})$	NC17/(NC17+NC29)
CPI Hunt[4]	((NC23+NC25+NC27+NC29+NC31)+(NC25+NC27+NC29+NC31+NC33))/(2*(NC24+NC26+NC28+NC30+NC32))
Normal Paraffins	100*(NC4+NC5+NC6+NC7+NC8+NC9+NC10+NC11+NC12+NC13+NC14+NC15+NC16+NC17+NC18+NC19+NC20+NC21+NC22+NC23+NC24+NC25+NC26+NC27+NC28+NC29+NC30+NC31+NC32+NC33+NC34+NC35+NC36+NC37+NC38+NC39+NC40+NC41)/TOTAL_RESOLVED
Isoprenoids	100*(IP9+IP10+IP11+IP13+IP14+IP15+IP16+IP18+IP19+IP20+C25HBI)/TOTAL_RESOLVED
Cycloparaffins	100*(CP+MCP+CH+11DMCP+1T3DMCP+1T2DMCP+MCH+113TMCP+ECP+124TMCP+123TMCP+1C3DMCP+1C2DMCP)/TOTAL_RESOLVED
Branched (iso-) Paraffins	100*(IC4+IC5+22DMB+23DMB+2MP+3MP+22DMP+24DMP+223TMB+33DMP+2MH+23DMP+3MH+3EP)/TOTAL_RESOLVED
BTX aromatics	100*(BZ+TOL+MXYL+PXYL+OXYL)/TOTAL_RESOLVED (*OXYL added 05/21/2007)
Thompson[1]	
BZ/nC6	BZ/NC6
TOL/nC7	TOL/NC7
(nC6+nC7)/(CH+MCH)	(NC6+NC7)/(CH+MCH)
Isoheptane Value	(2MH+3MH)/(1C3DMCP+1T3DMCP+1T2DMCP)
nC7/MCH	NC7/MCH
CH/MCP	CH/MCP
nC7/2MH	NC7/2MH
nC6/22DMB	NC6/22DMB
Heptane Value	100*NC7/(CH+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+1T2DMCP+MCH+NC7)
MCH/nC7	MCH/NC7
mpXYL/nC8	(MXYL+PXYL)/NC8
Mango[2]	
P1	100*NC7/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
P2	100*(2MH+3MH)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
P3	100*(3EP+33DMP+23DMP+24DMP+22DMP+223TMB)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
5N1	100*(ECP+1T2DMCP)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
N2	100*(11DMCP+1C3DMCP+1T3DMCP)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
6N1	100*(MCH+TOL)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
K1	(2MH+23DMP)/(3MH+24DMP)
K2	(2MH+3MH)/(2MH+3MH+11DMCP+1C3DMCP+1T3DMCP)
5N1/6N1	(ECP+1T2DMCP)/(MCH+TOL)
P3/N2	(3EP+33DMP+23DMP+24DMP+22DMP+223TMB)/(11DMCP+1C3DMCP+1T3DMCP)
ln(24DMP/23DMP)	ln(24DMP/23DMP)
Halpern[3]	
Tr1	TOL/11DMCP
Tr2	NC7/11DMCP
Tr3	3MH/11DMCP
Tr4	2MH/11DMCP
Tr5	(2MH+3MH)/11DMCP
Tr7	1T3DMCP/11DMCP
Tr8	(2MH+3MH)/(22DMP+23DMP+24DMP+33DMP+3EP)
C1	22DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C2	23DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C3	24DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C4	33DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C5	3EP/(22DMP+23DMP+24DMP+33DMP+3EP)

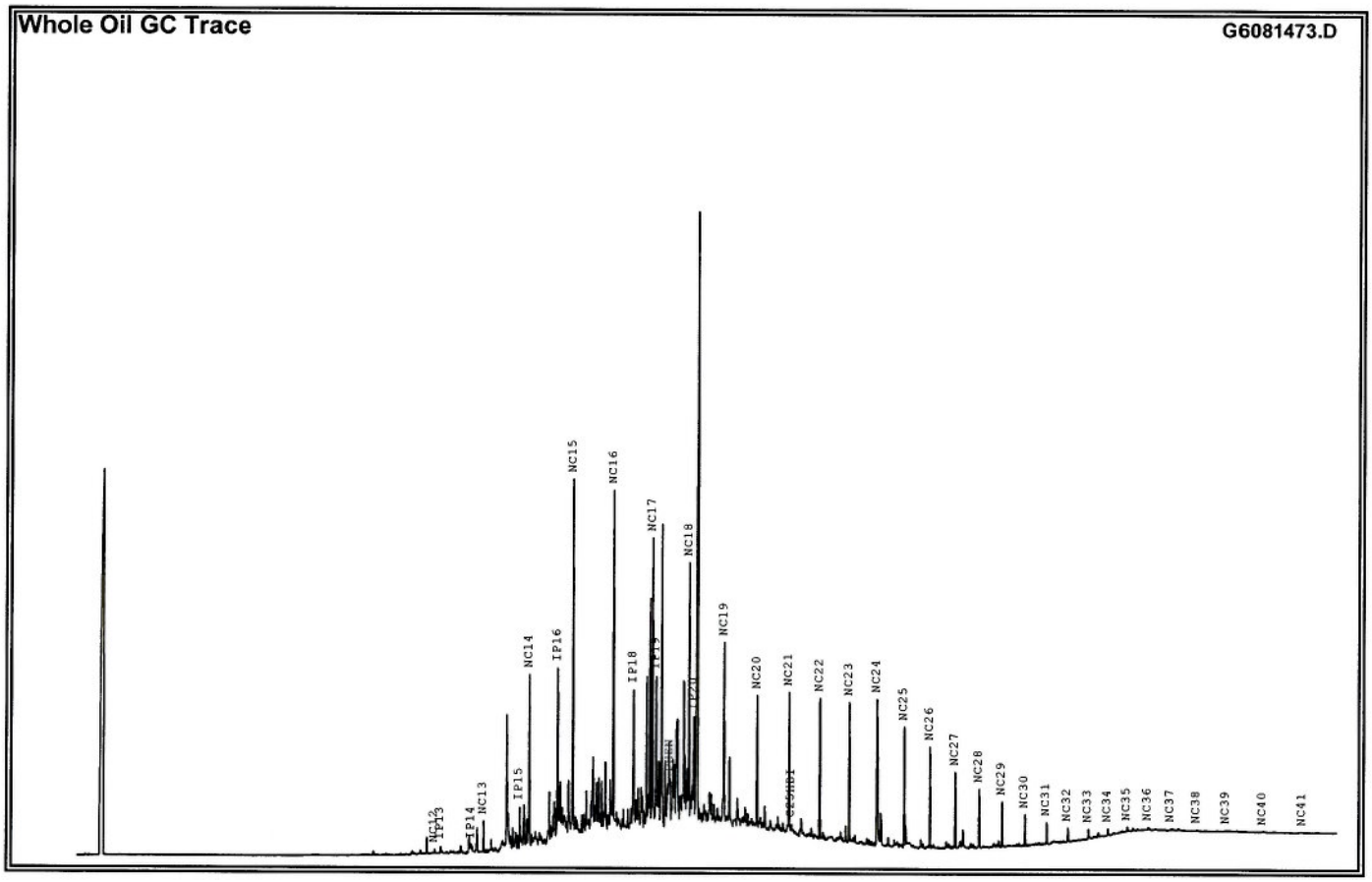
Weatherford LABORATORIES

WHOLE OIL GC

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #6
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000748
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	SCHRADER BLUFF
Well Name:	SUSIE NO. 1	Geologic Age:	
Latitude:	0	Top Depth:	4641 FT
Longitude:	0	Bottom Depth:	4642 FT

Whole Oil GC Trace

G6081473.D



WGC parameters	
Pristane/Phytane	1.28
Pristane/$n C_{17}$	0.71
Phytane/$n C_{18}$	0.65
$n C_{18}/(nC_{18}+n C_{19})$	0.59
$n C_{17}/(nC_{17}+n C_{29})$	0.87
CPI Hunt[4]	0.95
Normal Paraffins	22.4
Isoprenoids	7.0
Cycloparaffins	
Branched (iso-) Paraffins	
BTX aromatics	
Resolved unknowns	70.1

Thompson[1]	
A.	$BZ/n C_6$
B.	$TOL/n C_7$
C.	$(n C_6+n C_7)/(CH+MCH)$
I.	Isoheptane Value
F.	$n C_7/MCH$
U.	CH/MCP
R.	$n C_7/2MH$
S.	$n C_6/22DMB$
H.	Heptane Value
	$MCH/n C_7$
	$mpXYL/n C_8$

Mango[2]
P_1
P_2
P_3
$5N_1$
N_2
$6N_1$
K_1
K_2
$5N_1/6N_1$
P_3/N_2
ln(24DMP/23DMP)

Halpern[3]
Tr_1
Tr_2
Tr_3
Tr_4
Tr_5
Tr_7
Tr_8
C_1
C_2
C_3
C_4
C_5

[1]Thompson, K.F.M.,1983.GCA:V.47, p.303. [2]Mango, F.D.,1994.GCA: V.58, p.895. [3]Halpern,H.I.,1995,AAPG Bull.: V.79, p.801. [4]Hunt, 1979

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #6**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**4641 - 4642 FT**	**Lab ID:**	**TM000748**
Sampling Point:		**File Name:**	**G6081473.D**

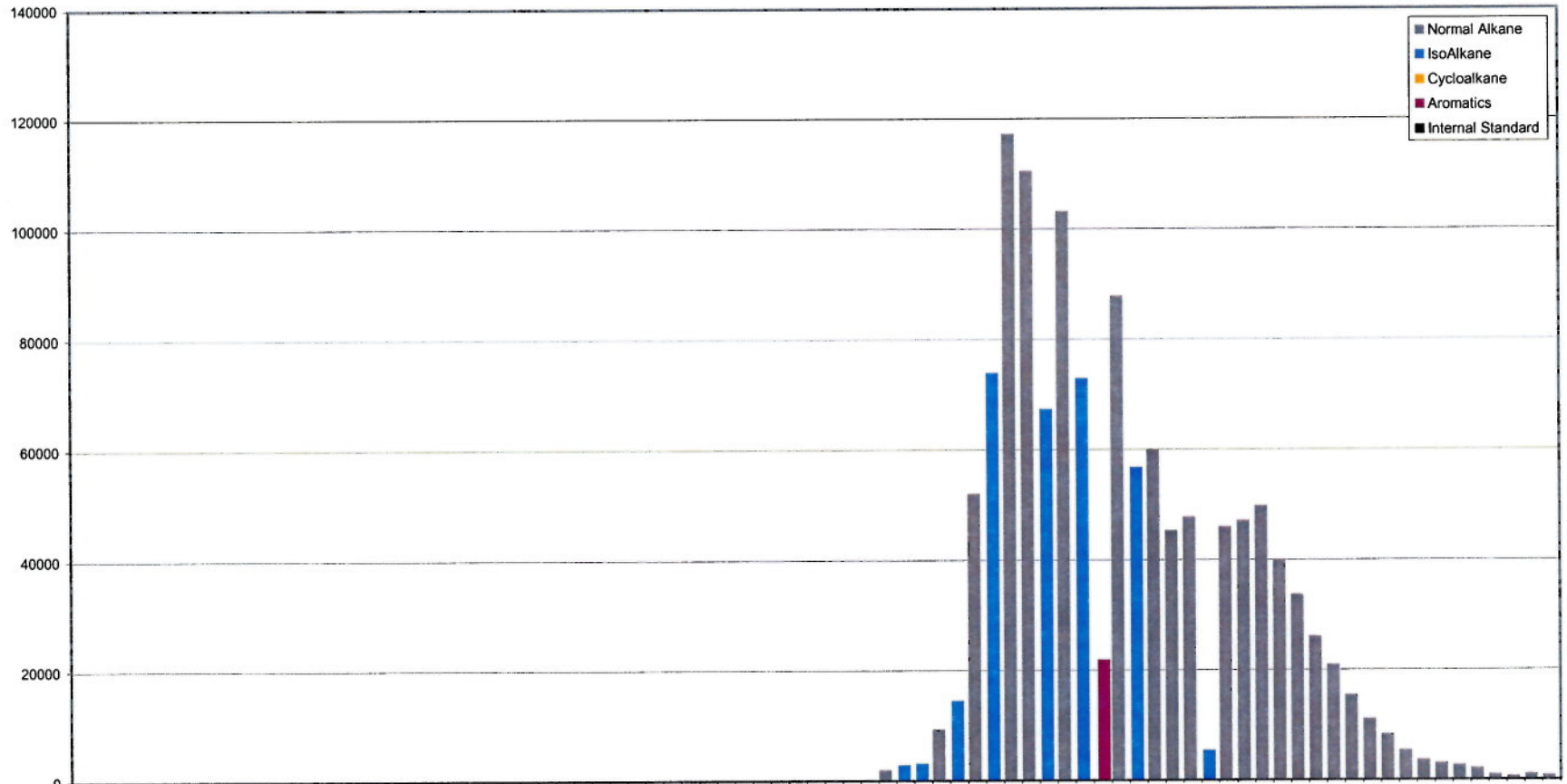
Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IC4	Iso-alkane C4					
NC4	Normal Alkane C4					
IC5	Iso-alkane C5					
NC5	Normal Alkane C5					
22DMB	2,2-Dimethylbutane					
CP	Cyclopentane					
23DMB	2,3-Dimethylbutane					
2MP	2-Methylpentane					
3MP	3-Methylpentane					
NC6	Normal Alkane C6					
22DMP	2,2-Dimethylpentane					
MCP	Methylcyclopentane					
24DMP	2,4-Dimethylpentane					
223TMB	2,2,3-Trimethylbutane					
BZ	Benzene					
33DMP	3,3-Dimethylpentane					
CH	Cyclohexane					
2MH	2-Methylhexane					
23DMP	2,3-Dimethylpentane					
11DMCP	1,1-Dimethylcyclopentane					
3MH	3-Methylhexane					
1C3DMCP	1-cis-3-Dimethylcyclopentane					
1T3DMCP	1-trans-3-Dimethylcyclopentane					
3EP	3-Ethylpentane					
1T2DMCP	1-trans-2-Dimethylcyclopentane					
NC7	Normal Alkane C7					
ISTD	Internal Standard					
MCH	Methylcyclohexane					
113TMCP	1,1,3,-Trimethylcyclopentane					
ECP	Ethylcyclopentane					
124TMCP	1,2,4-Trimethylcyclopentane					
123TMCP	1,2,3-Trimethylcyclopentane					
TOL	Toluene					
NC8	Normal Alkane C8					
IP9	Isoprenoid C9					
EB	Ethyl-benzene					
MXYL	*m*-xylene					
PXYL	*p*-xylene					
OXYL	*o*-xylene					
NC9	Normal Alkane C9					
IP10	Isoprenoid C10					
PB	Propyl-benzene					
NC10	Normal Alkane C10					
IP11	Isoprenoid C11					
NC11	Normal Alkane C11					
NC12	Normal Alkane C12	36.687	2014	462		
IP13	Isoprenoid C13	37.267	2882	730		
IP14	Isoprenoid C14	40.168	3146	702		
NC13	Normal Alkane C13	41.278	9298	3009		
IP15	Isoprenoid C15	44.715	14566	3907		
NC14	Normal Alkane C14	45.605	51981	16267		

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #6**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**4641 - 4642 FT**	**Lab ID:**	**TM000748**
Sampling Point:		**File Name:**	**G6081473.D**

Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IP16	Isoprenoid C16	48.270	73957	16324		
NC15	Normal Alkane C15	49.692	117248	33858		
NC16	Normal Alkane C16	53.540	110445	32083		
IP18	Isoprenoid C18	55.459	67341	13152		
NC17	Normal Alkane C17	57.192	103160	27429		
IP19	Isoprenoid C19 (Pristane)	57.544	72941	14282		
PHEN	Phenanthrene	58.862	21912	4531		
NC18	Normal Alkane C18	60.654	87838	24598		
IP20	Isoprenoid C20 (Phytane)	61.105	56830	10061		
NC19	Normal Alkane C19	63.941	59955	17274		
NC20	Normal Alkane C20	67.080	45306	12559		
NC21	Normal Alkane C21	70.083	47685	13334		
C25HBI	Highly Branch Isoprenoid C25	70.320	5456	1015		
NC22	Normal Alkane C22	72.965	45948	13284		
NC23	Normal Alkane C23	75.719	47075	13236		
NC24	Normal Alkane C24	78.370	49698	13766		
NC25	Normal Alkane C25	80.909	39900	11329		
NC26	Normal Alkane C26	83.354	33802	9562		
NC27	Normal Alkane C27	85.713	26153	7163		
NC28	Normal Alkane C28	87.988	20961	5466		
NC29	Normal Alkane C29	90.190	15544	4267		
NC30	Normal Alkane C30	92.312	11108	2945		
NC31	Normal Alkane C31	94.375	8299	2077		
NC32	Normal Alkane C32	96.366	5466	1352		
NC33	Normal Alkane C33	98.305	3661	946		
NC34	Normal Alkane C34	100.186	3048	631		
NC35	Normal Alkane C35	102.007	2704	488		
NC36	Normal Alkane C36	103.945	2157	287		
NC37	Normal Alkane C37	106.095	960	171		
NC38	Normal Alkane C38	108.537	651	105		
NC39	Normal Alkane C39	111.309	1058	105		
NC40	Normal Alkane C40	114.597	790	76		
NC41	Normal Alkane C41	118.336	366	42		

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #6**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**4641 - 4642 FT**	**Lab ID:**	**TM000748**
Sampling Point:		**File Name:**	**G6081473.D**

Histogram Based on Area



Parameter	Formula
WGC Parameters	
Pristane/Phytane	IP19/IP20
Pristane/nC17	IP19/NC17
Phytane/nC18	IP20/NC18
$nC_{18}/(nC_{18}+nC_{19})$	NC18/(NC18+NC19)
$nC_{17}/(nC_{17}+nC_{29})$	NC17/(NC17+NC29)
CPI Hunt[4]	((NC23+NC25+NC27+NC29+NC31)+(NC25+NC27+NC29+NC31+NC33))/(2*(NC24+NC26+NC28+NC30+NC32))
Normal Paraffins	100*(NC4+NC5+NC6+NC7+NC8+NC9+NC10+NC11+NC12+NC13+NC14+NC15+NC16+NC17+NC18+NC19+NC20+NC21+NC22+NC23+NC24+NC25+NC26+NC27+NC28+NC29+NC30+NC31+NC32+NC33+NC34+NC35+NC36+NC37+NC38+NC39+NC40+NC41)/TOTAL_RESOLVED
Isoprenoids	100*(IP9+IP10+IP11+IP13+IP14+IP15+IP16+IP18+IP19+IP20+C25HBI)/TOTAL_RESOLVED
Cycloparaffins	100*(CP+MCP+CH+11DMCP+1T3DMCP+1T2DMCP+MCH+113TMCP+ECP+124TMCP+123TMCP+1C3DMCP+1C2DMCP)/TOTAL_RESOLVED
Branched (iso-) Paraffins	100*(IC4+IC5+22DMB+23DMB+2MP+3MP+22DMP+24DMP+223TMB+33DMP+2MH+23DMP+3MH+3EP)/TOTAL_RESOLVED
BTX aromatics	100*(BZ+TOL+MXYL+PXYL+OXYL)/TOTAL_RESOLVED (*OXYL added 05/21/2007)
Thompson[1]	
BZ/nC6	BZ/NC6
TOL/nC7	TOL/NC7
(nC6+nC7)/(CH+MCH)	(NC6+NC7)/(CH+MCH)
Isoheptane Value	(2MH+3MH)/(1C3DMCP+1T3DMCP+1T2DMCP)
nC7/MCH	NC7/MCH
CH/MCP	CH/MCP
nC7/2MH	NC7/2MH
nC6/22DMB	NC6/22DMB
Heptane Value	100*NC7/(CH+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+1T2DMCP+MCH+NC7)
MCH/nC7	MCH/NC7
mpXYL/nC8	(MXYL+PXYL)/NC8
Mango[2]	
P1	100*NC7/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
P2	100*(2MH+3MH)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
P3	100*(3EP+33DMP+23DMP+24DMP+22DMP+223TMB)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
5N1	100*(ECP+1T2DMCP)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
N2	100*(11DMCP+1C3DMCP+1T3DMCP)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
6N1	100*(MCH+TOL)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
K1	(2MH+23DMP)/(3MH+24DMP)
K2	(2MH+3MH)/(2MH+3MH+11DMCP+1C3DMCP+1T3DMCP)
5N1/6N1	(ECP+1T2DMCP)/(MCH+TOL)
P3/N2	(3EP+33DMP+23DMP+24DMP+22DMP+223TMB)/(11DMCP+1C3DMCP+1T3DMCP)
ln(24DMP/23DMP)	ln(24DMP/23DMP)
Halpern[3]	
Tr1	TOL/11DMCP
Tr2	NC7/11DMCP
Tr3	3MH/11DMCP
Tr4	2MH/11DMCP
Tr5	(2MH+3MH)/11DMCP
Tr7	1T3DMCP/11DMCP
Tr8	(2MH+3MH)/(22DMP+23DMP+24DMP+33DMP+3EP)
C1	22DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C2	23DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C3	24DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C4	33DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C5	3EP/(22DMP+23DMP+24DMP+33DMP+3EP)

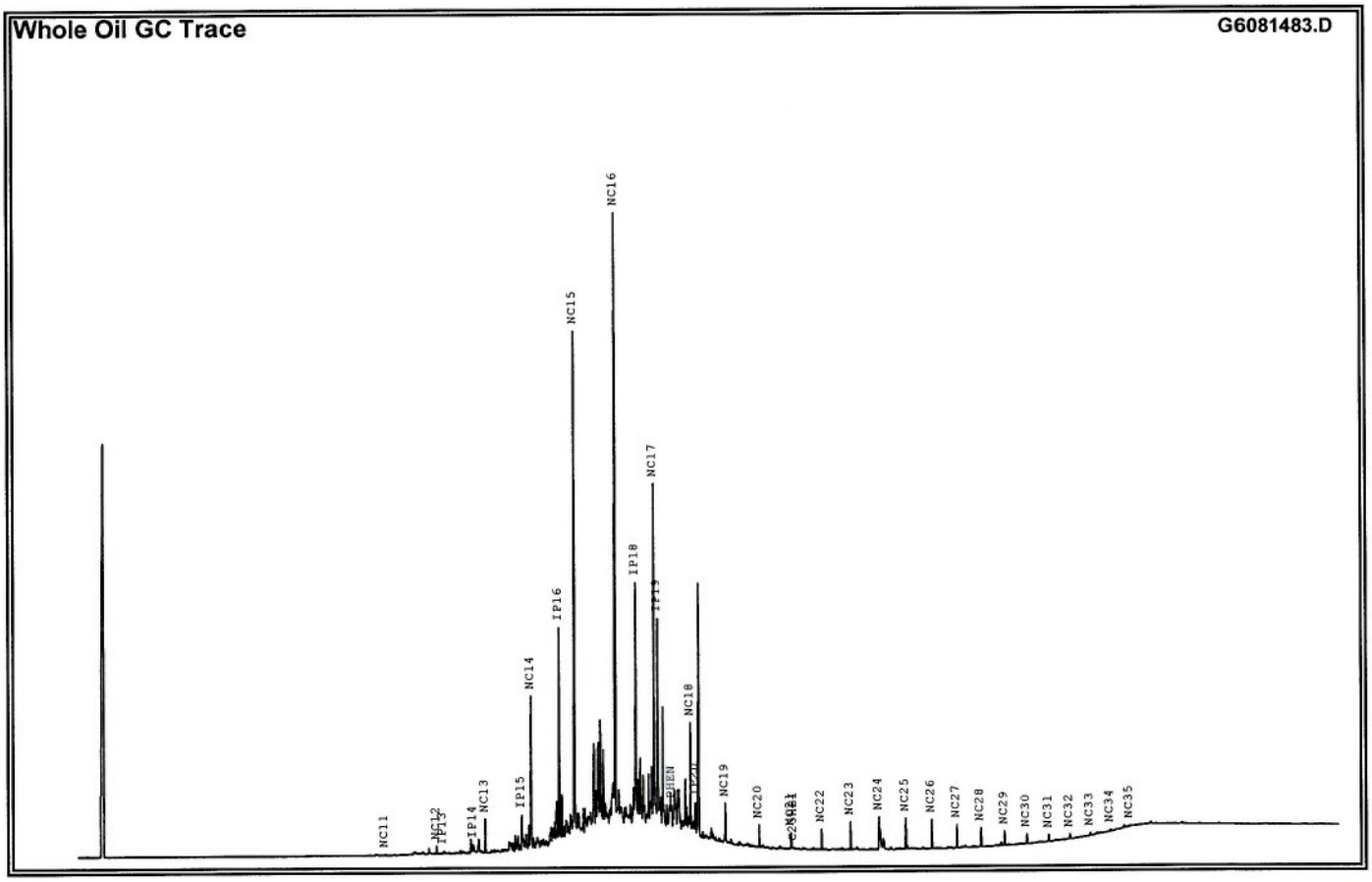
Weatherford LABORATORIES

WHOLE OIL GC

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #6
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000749
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	SCHRADER BLUFF
Well Name:	SUSIE NO. 1	Geologic Age:	
Latitude:	0	Top Depth:	4643 FT
Longitude:	0	Bottom Depth:	4644 FT

Whole Oil GC Trace

G6081483.D



WGC parameters	
Pristane/Phytane	5.34
Pristane/$n C_{17}$	0.89
Phytane/$n C_{18}$	0.51
$n C_{18}/(nC_{18}+n C_{19})$	0.75
$n C_{17}/(nC_{17}+n C_{29})$	0.96
CPI Hunt[4]	0.94
Normal Paraffins	24.9
Isoprenoids	11.9
Cycloparaffins	
Branched (iso-) Paraffins	
BTX aromatics	
Resolved unknowns	62.8

Thompson[1]	
A.	BZ/$n C_6$
B.	TOL/$n C_7$
C.	$(n C_6+n C_7)/(CH+MCH)$
I.	Isoheptane Value
F.	$n C_7$/MCH
U.	CH/MCP
R.	$n C_7$/2MH
S.	$n C_6$/22DMB
H.	Heptane Value
	MCH/$n C_7$
	mpXYL/$n C_8$

Mango[2]
P_1
P_2
P_3
$5N_1$
N_2
$6N_1$
K_1
K_2
$5N_1/6N_1$
P_3/N_2
ln(24DMP/23DMP)

Halpern[3]
Tr_1
Tr_2
Tr_3
Tr_4
Tr_5
Tr_7
Tr_8
C_1
C_2
C_3
C_4
C_5

[1]Thompson, K.F.M.,1983.GCA:V.47, p.303. [2]Mango, F.D.,1994.GCA: V.58, p.895. [3]Halpern,H.I.,1995,AAPG Bull.: V.79, p.801. [4]Hunt, 1979

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #6**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**4643 - 4644 FT**	**Lab ID:**	**TM000749**
Sampling Point:		**File Name:**	**G6081483.D**

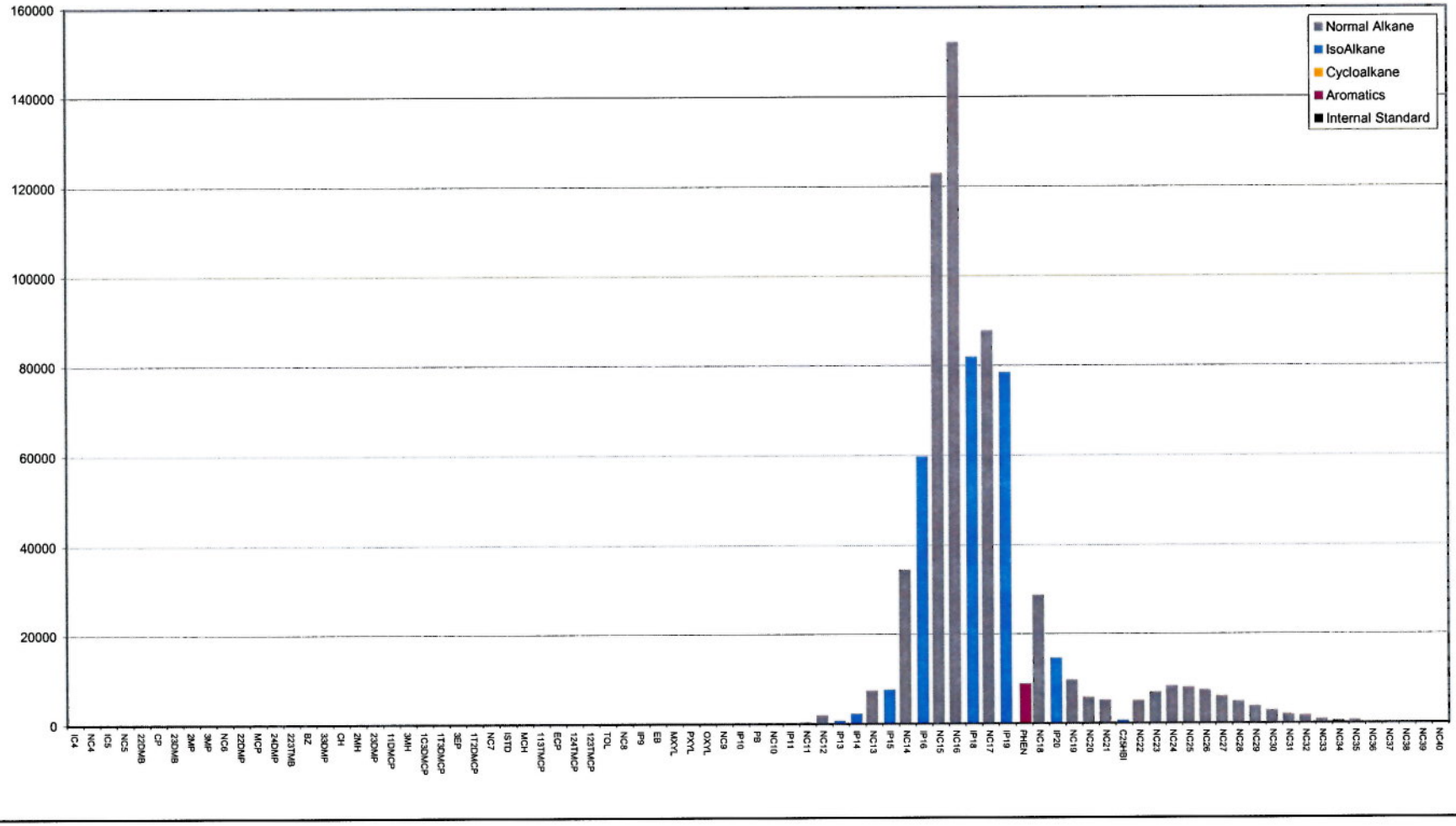
Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IC4	Iso-alkane C4					
NC4	Normal Alkane C4					
IC5	Iso-alkane C5					
NC5	Normal Alkane C5					
22DMB	2,2-Dimethylbutane					
CP	Cyclopentane					
23DMB	2,3-Dimethylbutane					
2MP	2-Methylpentane					
3MP	3-Methylpentane					
NC6	Normal Alkane C6					
22DMP	2,2-Dimethylpentane					
MCP	Methylcyclopentane					
24DMP	2,4-Dimethylpentane					
223TMB	2,2,3-Trimethylbutane					
BZ	Benzene					
33DMP	3,3-Dimethylpentane					
CH	Cyclohexane					
2MH	2-Methylhexane					
23DMP	2,3-Dimethylpentane					
11DMCP	1,1-Dimethylcyclopentane					
3MH	3-Methylhexane					
1C3DMCP	1-cis-3-Dimethylcyclopentane					
1T3DMCP	1-trans-3-Dimethylcyclopentane					
3EP	3-Ethylpentane					
1T2DMCP	1-trans-2-Dimethylcyclopentane					
NC7	Normal Alkane C7					
ISTD	Internal Standard					
MCH	Methylcyclohexane					
113TMCP	1,1,3,-Trimethylcyclopentane					
ECP	Ethylcyclopentane					
124TMCP	1,2,4-Trimethylcyclopentane					
123TMCP	1,2,3-Trimethylcyclopentane					
TOL	Toluene					
NC8	Normal Alkane C8					
IP9	Isoprenoid C9					
EB	Ethyl-benzene					
MXYL	*m*-xylene					
PXYL	*p*-xylene					
OXYL	*o*-xylene					
NC9	Normal Alkane C9					
IP10	Isoprenoid C10					
PB	Propyl-benzene					
NC10	Normal Alkane C10					
IP11	Isoprenoid C11					
NC11	Normal Alkane C11	31.797	340	99		
NC12	Normal Alkane C12	36.692	1932	576		
IP13	Isoprenoid C13	37.284	729	192		
IP14	Isoprenoid C14	40.175	2315	593		
NC13	Normal Alkane C13	41.280	7413	2404		
IP15	Isoprenoid C15	44.713	7600	2460		
NC14	Normal Alkane C14	45.600	34504	10763		

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #6**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**4643 - 4644 FT**	**Lab ID:**	**TM000749**
Sampling Point:		**File Name:**	**G6081483.D**

Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IP16	Isoprenoid C16	48.261	59703	15156		
NC15	Normal Alkane C15	49.691	122950	35751		
NC16	Normal Alkane C16	53.548	152257	43313		
IP18	Isoprenoid C18	55.452	81936	17134		
NC17	Normal Alkane C17	57.178	87812	24365		
IP19	Isoprenoid C19 (Pristane)	57.533	78414	14846		
PHEN	Phenanthrene	58.851	8861	1927		
NC18	Normal Alkane C18	60.620	28738	7990		
IP20	Isoprenoid C20 (Phytane)	61.077	14696	2421		
NC19	Normal Alkane C19	63.908	9737	2823		
NC20	Normal Alkane C20	67.050	5783	1605		
NC21	Normal Alkane C21	70.063	5177	1197		
C25HBI	Highly Branch Isoprenoid C25	70.318	666	110		
NC22	Normal Alkane C22	72.934	5093	1483		
NC23	Normal Alkane C23	75.692	6918	2008		
NC24	Normal Alkane C24	78.340	8304	2330		
NC25	Normal Alkane C25	80.883	8022	2212		
NC26	Normal Alkane C26	83.330	7397	2076		
NC27	Normal Alkane C27	85.694	6066	1661		
NC28	Normal Alkane C28	87.970	4899	1359		
NC29	Normal Alkane C29	90.167	3789	1021		
NC30	Normal Alkane C30	92.297	2820	707		
NC31	Normal Alkane C31	94.359	1977	504		
NC32	Normal Alkane C32	96.353	1742	366		
NC33	Normal Alkane C33	98.287	908	222		
NC34	Normal Alkane C34	100.170	573	143		
NC35	Normal Alkane C35	101.991	636	118		
NC36	Normal Alkane C36					
NC37	Normal Alkane C37					
NC38	Normal Alkane C38					
NC39	Normal Alkane C39					
NC40	Normal Alkane C40					
NC41	Normal Alkane C41					

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #6**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**4643 - 4644 FT**	**Lab ID:**	**TM000749**
Sampling Point:		**File Name:**	**G6081483.D**

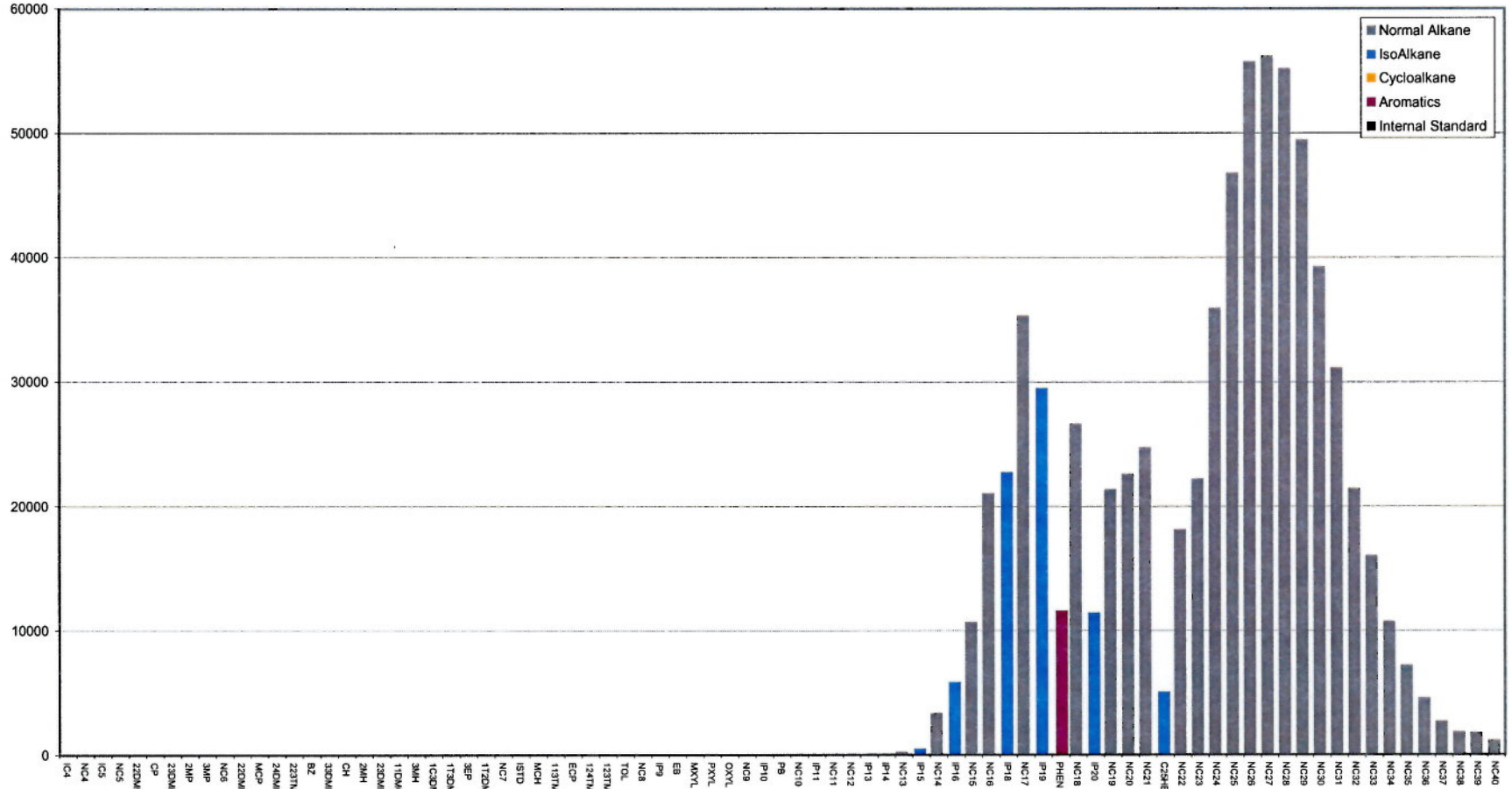
Histogram Based on Area



Parameter	Formula
WGC Parameters	
Pristane/Phytane	IP19/IP20
Pristane/nC17	IP19/NC17
Phytane/nC18	IP20/NC18
$nC_{18}/(nC_{18}+nC_{19})$	NC18/(NC18+NC19)
$nC_{17}/(nC_{17}+nC_{29})$	NC17/(NC17+NC29)
CPI Hunt[4]	((NC23+NC25+NC27+NC29+NC31)+(NC25+NC27+NC29+NC31+NC33))/(2*(NC24+NC26+NC28+NC30+NC32))
Normal Paraffins	100*(NC4+NC5+NC6+NC7+NC8+NC9+NC10+NC11+NC12+NC13+NC14+NC15+NC16+NC17+NC18+NC19+NC20+NC21+NC22+NC23+NC24+NC25+NC26+NC27+NC28+NC29+NC30+NC31+NC32+NC33+NC34+NC35+NC36+NC37+NC38+NC39+NC40+NC41)/TOTAL_RESOLVED
Isoprenoids	100*(IP9+IP10+IP11+IP13+IP14+IP15+IP16+IP18+IP19+IP20+C25HBI)/TOTAL_RESOLVED
Cycloparaffins	100*(CP+MCP+CH+11DMCP+1T3DMCP+1T2DMCP+MCH+113TMCP+ECP+124TMCP+123TMCP+1C3DMCP+1C2DMCP)/TOTAL_RESOLVED
Branched (iso-) Paraffins	100*(IC4+IC5+22DMB+23DMB+2MP+3MP+22DMP+24DMP+223TMB+33DMP+2MH+23DMP+3MH+3EP)/TOTAL_RESOLVED
BTX aromatics	100*(BZ+TOL+MXYL+PXYL+OXYL)/TOTAL_RESOLVED (*OXYL added 05/21/2007)
Thompson[1]	
BZ/nC6	BZ/NC6
TOL/nC7	TOL/NC7
(nC6+nC7)/(CH+MCH)	(NC6+NC7)/(CH+MCH)
Isoheptane Value	(2MH+3MH)/(1C3DMCP+1T3DMCP+1T2DMCP)
nC7/MCH	NC7/MCH
CH/MCP	CH/MCP
nC7/2MH	NC7/2MH
nC6/22DMB	NC6/22DMB
Heptane Value	100*NC7/(CH+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+1T2DMCP+MCH+NC7)
MCH/nC7	MCH/NC7
mpXYL/nC8	(MXYL+PXYL)/NC8
Mango[2]	
P1	100*NC7/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
P2	100*(2MH+3MH)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
P3	100*(3EP+33DMP+23DMP+24DMP+22DMP+223TMB)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
5N1	100*(ECP+1T2DMCP)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
N2	100*(11DMCP+1C3DMCP+1T3DMCP)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
6N1	100*(MCH+TOL)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
K1	(2MH+23DMP)/(3MH+24DMP)
K2	(2MH+3MH)/(2MH+3MH+11DMCP+1C3DMCP+1T3DMCP)
5N1/6N1	(ECP+1T2DMCP)/(MCH+TOL)
P3/N2	(3EP+33DMP+23DMP+24DMP+22DMP+223TMB)/(11DMCP+1C3DMCP+1T3DMCP)
ln(24DMP/23DMP)	ln(24DMP/23DMP)
Halpern[3]	
Tr1	TOL/11DMCP
Tr2	NC7/11DMCP
Tr3	3MH/11DMCP
Tr4	2MH/11DMCP
Tr5	(2MH+3MH)/11DMCP
Tr7	1T3DMCP/11DMCP
Tr8	(2MH+3MH)/(22DMP+23DMP+24DMP+33DMP+3EP)
C1	22DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C2	23DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C3	24DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C4	33DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C5	3EP/(22DMP+23DMP+24DMP+33DMP+3EP)

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #2**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**2615 - 2616 FT**	**Lab ID:**	**TM000746**
Sampling Point:		**File Name:**	**G6081481.D**

Histogram Based on Area

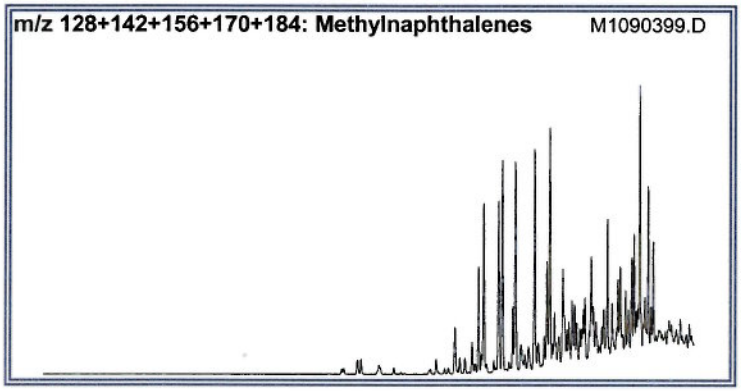


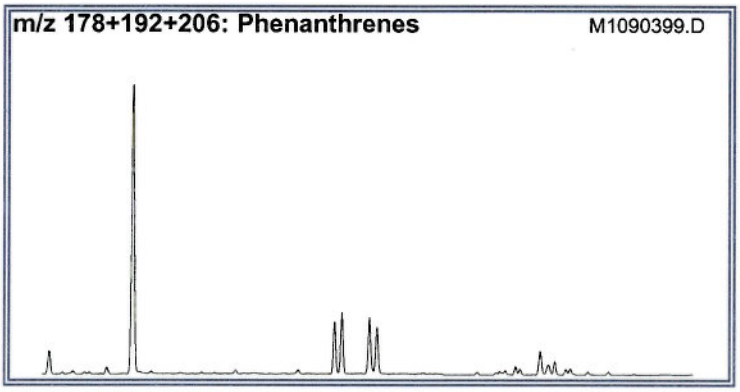
Parameter	Formula
WGC Parameters	
Pristane/Phytane	IP19/IP20
Pristane/nC17	IP19/NC17
Phytane/nC18	IP20/NC18
$nC_{18}/(nC_{18}+nC_{19})$	NC18/(NC18+NC19)
$nC_{17}/(nC_{17}+nC_{29})$	NC17/(NC17+NC29)
CPI Hunt[4]	((NC23+NC25+NC27+NC29+NC31)+(NC25+NC27+NC29+NC31+NC33))/(2*(NC24+NC26+NC28+NC30+NC32))
Normal Paraffins	100*(NC4+NC5+NC6+NC7+NC8+NC9+NC10+NC11+NC12+NC13+NC14+NC15+NC16+NC17+NC18+NC19+NC20+NC21+NC22+NC23+NC24+NC25+NC26+NC27+NC28+NC29+NC30+NC31+NC32+NC33+NC34+NC35+NC36+NC37+NC38+NC39+NC40+NC41)/TOTAL_RESOLVED
Isoprenoids	100*(IP9+IP10+IP11+IP13+IP14+IP15+IP16+IP18+IP19+IP20+C25HBI)/TOTAL_RESOLVED
Cycloparaffins	100*(CP+MCP+CH+11DMCP+1T3DMCP+1T2DMCP+MCH+113TMCP+ECP+124TMCP+123TMCP+1C3DMCP+1C2DMCP)/TOTAL_RESOLVED
Branched (iso-) Paraffins	100*(IC4+IC5+22DMB+23DMB+2MP+3MP+22DMP+24DMP+223TMB+33DMP+2MH+23DMP+3MH+3EP)/TOTAL_RESOLVED
BTX aromatics	100*(BZ+TOL+MXYL+PXYL+OXYL)/TOTAL_RESOLVED (*OXYL added 05/21/2007)
Thompson[1]	
BZ/nC6	BZ/NC6
TOL/nC7	TOL/NC7
(nC6+nC7)/(CH+MCH)	(NC6+NC7)/(CH+MCH)
Isoheptane Value	(2MH+3MH)/(1C3DMCP+1T3DMCP+1T2DMCP)
nC7/MCH	NC7/MCH
CH/MCP	CH/MCP
nC7/2MH	NC7/2MH
nC6/22DMB	NC6/22DMB
Heptane Value	100*NC7/(CH+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+1T2DMCP+MCH+NC7)
MCH/nC7	MCH/NC7
mpXYL/nC8	(MXYL+PXYL)/NC8
Mango[2]	
P1	100*NC7/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
P2	100*(2MH+3MH)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
P3	100*(3EP+33DMP+23DMP+24DMP+22DMP+223TMB)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
5N1	100*(ECP+1T2DMCP)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
N2	100*(11DMCP+1C3DMCP+1T3DMCP)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
6N1	100*(MCH+TOL)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
K1	(2MH+23DMP)/(3MH+24DMP)
K2	(2MH+3MH)/(2MH+3MH+11DMCP+1C3DMCP+1T3DMCP)
5N1/6N1	(ECP+1T2DMCP)/(MCH+TOL)
P3/N2	(3EP+33DMP+23DMP+24DMP+22DMP+223TMB)/(11DMCP+1C3DMCP+1T3DMCP)
ln(24DMP/23DMP)	ln(24DMP/23DMP)
Halpern[3]	
Tr1	TOL/11DMCP
Tr2	NC7/11DMCP
Tr3	3MH/11DMCP
Tr4	2MH/11DMCP
Tr5	(2MH+3MH)/11DMCP
Tr7	1T3DMCP/11DMCP
Tr8	(2MH+3MH)/(22DMP+23DMP+24DMP+33DMP+3EP)
C1	22DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C2	23DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C3	24DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C4	33DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C5	3EP/(22DMP+23DMP+24DMP+33DMP+3EP)

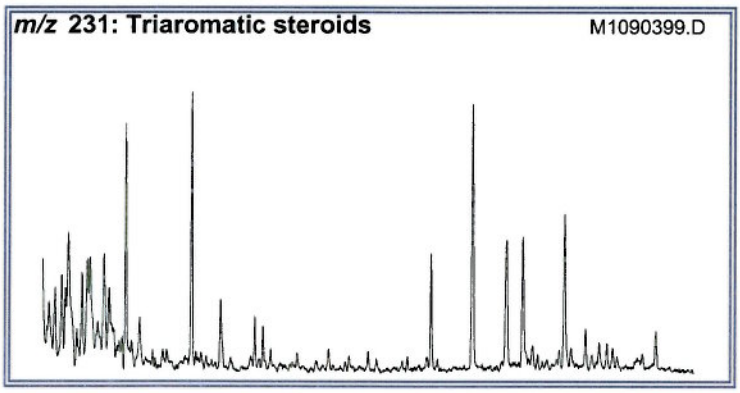
Weatherford LABORATORIES

AROMATIC BIOMARKERS

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #6
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000749
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	SCHRADER BLUFF
Well Name:	SUSIE NO. 1	Geologic Age:	
Latitude:	0	Top Depth:	4643 FT
Longitude:	0	Bottom Depth:	4644 FT







RATIOS (on Areas)[1]		Appl[2]	TEV[3]
Mono- (MAS) and Triaromatic Steroids (TAS)			
(C20+C21)/Σ TAS	0.33	M	1.0 (1.3%)
TAS #1 20/20+27	0.59	M	
TAS #2 21/21+28	0.59	M	
%26 TAS	23.5	D	
%27 TAS	34.0	D	
%28 TAS	35.6	D	
%29 TAS	6.8	D	
C28/C26 20S TAS	1.70		
C28/C27 20R TAS	1.05		
Dia/Regular C27 MAS	0.96		
%27 MAS	29.7	D	
%28 MAS	34.6	D	
%29 MAS	35.6	D	
(C21+C22)/Σ MAS	0.11	M	1.0 (1.3%)
TAS/(MAS+TAS)	0.47	M	
TA28/(TA28+MA29)	0.41	M	1.0 (0.8%)
Triaromatic Methylsteroids			
Dinosteroid Index	0.27	A	
C4/C3+C4 Mester	0.60	A	
Phenanthrenes, Naphthalenes, and Dibenzothiophenes			
MPI-1	0.41	M	
Rc(a) if Ro < 1.3 (Ro%)	0.62	M	
Rc(b) if Ro > 1.3 (Ro%)	2.05	M	
MPI-2	0.43	M	
DNR-1	2.26	M	
DNR-2	0.93	M	
TNR1	1.20	M	
TDE-1	9.68	M	
TDE-2	0.26	M	
MDR	1.61	M	
Rm (Ro%)	0.69	M	
MDR23	0.38	M	
MDR1	0.46	M	
DBT/Phenanthrene	0.02	D	

[1]Definition and utility of the ratios can be found on our website www.BaselineDGSI.com

[2]A=Source Age; D=Depositional environment; M= Maturity

[3]Thermal equilibrium value of the biomarker ratio and in brackets the approximate VR value at which this value is reached

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #6**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**4643 - 4644 FT**	**Lab ID:**	**TM000749**
Sampling Point:		**File Name:**	**M1090399.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
230	OTP	*Ortho-terphenyl* (internal standard)				0.0	0.0
128	NAPH	Naphthalene					
142	2MN	2-Methylnaphthalene	37.964	82	15		
142	1MN	1-Methylnaphthalene	39.161	118	18		
154	BP	Biphenyl	44.670	663	101		
156	2EN	2-Ethylnaphthalene	46.119	426	62		
156	1EN	1-Ethylnaphthalene	46.220	157	37		
156	26DMN	2,6-Dimethylnaphthalene	47.046	2990	487		
156	27DMN	2,7-Dimethylnaphthalene	47.181	3480	526		
156	1317DMN	1,3 & 1,7-Dimethylnaphthalenes	48.175	9127	1280		
156	16DMN	1,6-Dimethylnaphthalene	48.428	8681	1371		
156	23DMN	2,3-Dimethylnaphthalene	49.590	1476	285		
156	14DMN	1,4-Dimethylnaphthalene	49.708	5481	801		
156	15DMN	1,5-Dimethylnaphthalene	49.809	2865	583		
156	12DMN	1,2-Dimethylnaphthalene	50.770	3448	551		
168	2MBP	2-Methylbiphenyl					
168	DPM	Diphenylmethane					
168	3MBP	3-Methylbiphenyl	53.263	2616	428		
168	4MBP	4-Methylbiphenyl	53.920	1306	210		
168	DBF	Dibenzofuran	55.353	1322	198		
170	BB_EMN	Ethyl-methyl-Naphthalene	55.100	24574	3320		
170	AB_EMN	Ethyl-methyl-Naphthalene	56.313	14244	2316		
170	137TMN	1,3,7-Trimethylnaphthalene	56.751	52667	8993		
170	136TMN	1,3,6-Trimethylnaphthalene	57.139	87107	14540		
170	146135T	(1,4,6+1,3,5)-Trimethylnaphthalenes	58.200	84206	13358		
170	236TMN	2,3,6-Trimethylnaphthalene	58.470	101408	18273		
170	127TMN	1,2,7-Trimethylnaphthalene	59.211	27957	5230		
170	167126T	(1,6,7+1,2,6)-Trimethylnaphthalenes	59.380	109310	16900		
170	124TMN	1,2,4-Trimethylnaphthalene	60.306	8534	1601		
170	125TMN	1,2,5-Trimethylnaphthalene	60.744	82569	15142		
178	PHEN	Phenanthrene	70.264	744817	161104		
184	1357	1,3,5,7-Tetramethylnaphthalene	64.704	46675	7914		
184	1367	1,3,6,7-Tetramethylnaphthalene	65.867	52145	11229		
184	1247	(1,2,4,7+1,2,4,6+1,4,6,7)-Tetramethylnaphthalenes	66.625	30940	6022		
184	1257	1,2,5,7-Tetramethylnaphthalene	66.793	28931	5818		
184	2367	2,3,6,7-Tetramethylnaphthalene	67.164	14954	3200		
184	1267	1,2,6,7-Tetramethylnaphthalene	67.602	21951	4749		
184	1237	1,2,3,7-Tetramethylnaphthalene	67.787	6758	1450		
184	1236	1,2,3,6-Tetramethylnaphthalene	68.057	13108	2783		
184	1256	1,2,5,6-Tetramethylnaphthalene	68.765	50743	11284		
184	DBT	Dibenzothiophene	68.984	14228	3034		
191	BH32	C32 Benzohopane	117.653	4083	686		
191	BH33	C33 Benzohopane	119.810	2428	361		
191	BH34	C34 Benzohopane	121.731	1331	181		
191	BH35	C35 Benzohopane	124.142	827	120		
192	3MP	3-Methylphenanthrene	75.184	126672	28851		
192	2MP	2-Methylphenanthrene	75.353	143399	34091		
192	9MP	9-Methylphenanthrene	76.044	136359	30938		
192	1MP	1-Methylphenanthrene	76.229	108477	25914		

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #6**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**4643 - 4644 FT**	**Lab ID:**	**TM000749**
Sampling Point:		**File Name:**	**M1090399.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
198	CAD	Cadalene	66.220	38603	7455		
198	4MDBT	4 Methyl Dibenzothiophene	73.516	10500	2485		
198	23MDBT	2 & 3 Methyl Dibenzothiophenes	74.291	5468	980		
198	1MDBT	1 Methyl Dibenzothiophene	75.083	6516	1460		
206	36DMP	3,6-Dimethylphenanthrene	79.392	10717	2327		
206	26DMP	2,6-Dimethylphenanthrene	79.645	20429	4743		
206	27DMP	2,7-Dimethylphenanthrene	79.763	12700	3065		
206	39DMP	(3,9+3,10+2,10+1,3)-Dimethylphenanthrenes	80.252	63992	13284		
206	29DMP	(2,9+1,6)-Dimethylphenanthrenes	80.454	33294	5557		
206	17DMP	1,7-Dimethylphenanthrene	80.606	30318	7431		
206	23DMP	2,3-Dimethylphenanthrene	80.875	13524	2957		
206	19DMP	1,9-Dimethylphenanthrene	80.993	15043	3405		
206	18DMP	1,8-Dimethylphenanthrene	81.415	6832	1657		
206	12DMP	1,2-Dimethylphenanthrene	81.920	6395	1566		
231	231A20	C20 Triaromatic Steroid	92.236	6215	1455		
231	231B21	C21 Triaromatic	94.730	6560	1619		
231	231C26	C26 20S Triaromatic	103.916	2955	699		
231	231D26	C27 20S & C26 20R Triaromatic	105.500	7933	1572		
231	TADMD1	C28 23,24-Cholestane Triaromatic	106.090	159	29		
231	TADMD2	C28 23,24-Cholestane Triaromatic	106.646	294	62		
231	231E28	C28 20S Triaromatic	106.832	5035	779		
231	231F27	C27 20R Triaromatic	107.455	4271	784		
231	TADMD3	C28 23,24-Cholestane Triaromatic	107.540	405	111		
231	C29TA1	C29 Triaromatic	107.826	873	141		
231	C29TA2	C29 Triaromatic	108.028	378	91		
231	TADMD4	C28 23,24-Cholestane Triaromatic	108.854	493	116		
231	231G28	C28 20R Triaromatic	109.057	4469	917		
231	TADMD5	C28 23,24-Cholestane Triaromatic	109.141	214	115		
231	C29TA3	C29 Triaromatic	110.371	860	161		
245	C3S	C27 20S 3-Methyl Triaromatic Steroid	106.596	579	124		
245	C4S	C27 20S 4-Methyl Triaromatic Steroid	107.203	1486	349		
245	E2S	C28 20S 2-Methyl Triaromatic Steroid	107.759	286	68		
245	E3SC3R	C28 20S 3-Methyl & C27 20R 3-Methyl TAS	108.113	1453	240		
245	E4SC4R	C28 20S 4-Methyl & C27 20R 4-Methyl TAS	108.703	3306	487		
245	S2S	C29 20S 2-Methyl Triaromatic Steroid	108.955	425	85		
245	DA	Triaromatic Dinosteroid a	109.124	378	72		
245	S3S	C29 20S 3-Methyl Triaromatic Steroid	109.293	1428	179		
245	DB	Triaromatic Dinosteroid b	109.731	1168	255		
245	S4SE2R	C29 20S 4-Methyl & C28 20R 2-Methyl TAS	109.866	2552	387		
245	E3R	C28 20R 3-Methyl Triaromatic Steroid	110.051	1177	184		
245	E4R	C28 20R 4-Methyl Triaromatic Steroid	110.641	1719	303		
245	DC	Triaromatic Dinosteroid c	110.826	1000	220		
245	DD	Triaromatic Dinosteroid d	110.927	1127	243		
245	S2R	C29 20R 2-Methyl Triaromatic Steroid	111.349	356	73		
245	S3R	C29 20R 3-Methyl Triaromatic Steroid	111.568	1193	220		
245	DE	Triaromatic Dinosteroid e	111.720	1038	161		
245	S4R	C29 20R 4-Methyl Triaromatic Steroid	112.158	1288	255		
245	DF	Triaromatic Dinosteroid f	112.293	1608	346		

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #6**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**4643 - 4644 FT**	**Lab ID:**	**TM000749**
Sampling Point:		**File Name:**	**M1090399.D**

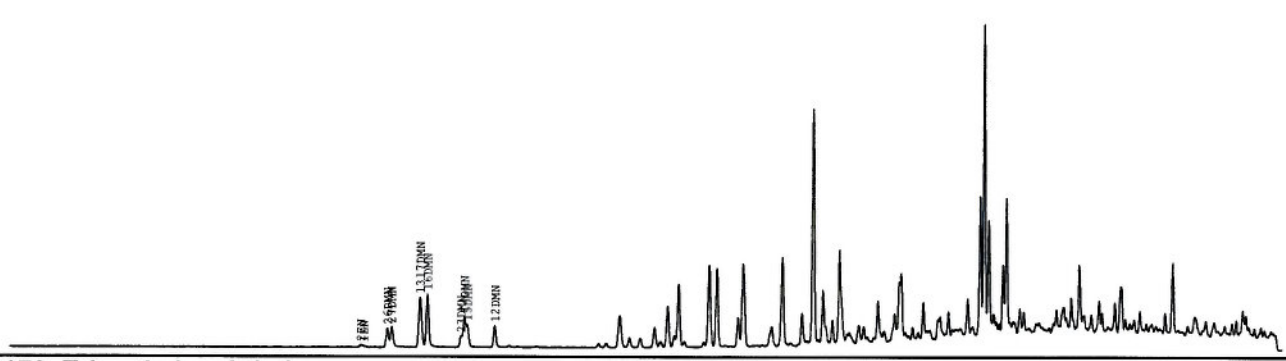
Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
253	S253A	C21 Ring-C Monoaromatic Steroid	84.482	2959	505		
253	S253B	C22 Monoaromatic steroid	86.943	1831	350		
253	S253C	C27 Reg 5β(H),10β(CH3) 20S	96.904	1624	361		
253	S253D	C27 Dia 10β(H),5β(CH3) 20S	97.056	1564	387		
253	S253E	C27 Dia10βH,5βCH3 20R+Reg5βH,10βCH3 20R	98.539	2880	523		
253	S253F	C27 Reg 5α(H),10β(CH3) 20S	98.674	1551	322		
253	S253G	C28 Dia 10αH,5αCH3 20s+Reg5βH,10βCH3 20S	99.062	4933	848		
253	S253H	C27 Reg 5α(H),10β(CH3) 20R	100.360	4020	890		
253	S253I	C28 Reg 5α(H),10β(CH3) 20S	100.511	2087	418		
253	S253J	C28 Dia 10αH,5αCH3 20R+Reg5βH,10βCH3 20R	100.697	4237	826		
253	S253K	C29 Dia 10βH,5βCH3 20S+Reg5βH,10βCH3 20S	100.831	4536	802		
253	S253L	C29 Reg 5α(H),10β(CH3) 20S	102.129	4788	755		
253	S253M	C28 Reg 5α(H),10β(CH3) 20R	102.416	2294	380		
253	S253N	C29 Dia 10βH,5βCH3 20R+Reg5βH,10βCH3 20R	102.534	3107	579		
253	S253O	C29 Reg 5α(H),10β(CH3) 20R	104.152	1512	258		
365	SH29	C29 8,14-secohopanoids	104.000	4166	899		
365	SH30	C30 8,14-secohopanoids	105.972	2907	679		

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #6
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	4643 - 4644 FT	Lab ID:	TM000749
Sampling Point:		File Name:	M1090399.D

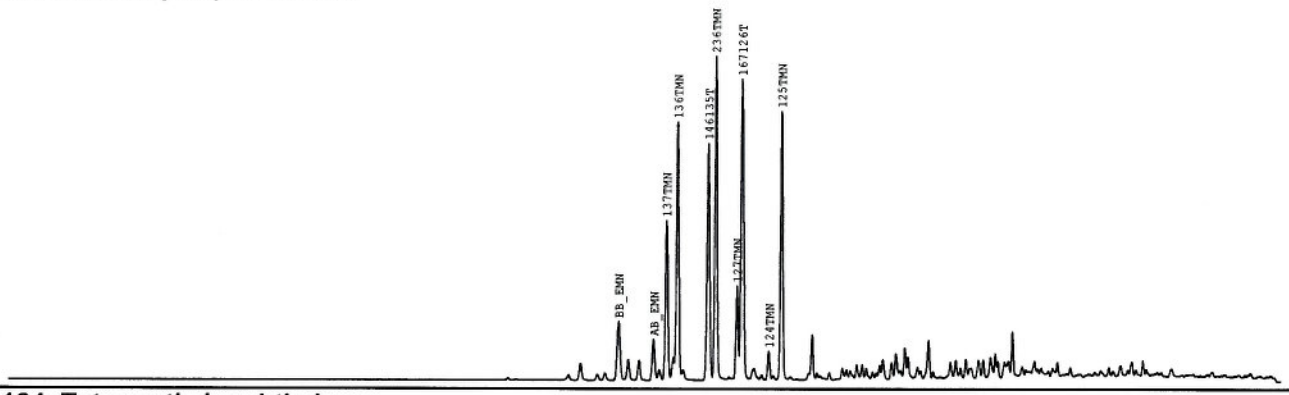
Miscellaneous Ratios	By Areas	By Heights
Triaromatic Steroids m/z 231		
(C20+C21)/Σ TAS	0.33	0.38
TAS #1 20/20+27	0.59	0.65
TAS #2 21/21+28	0.59	0.64
%26TAS	23.5	27.3
%27TAS	34.0	30.6
%28TAS	35.6	35.8
%29TAS	6.8	6.3
C28/C26 20S TAS	1.70	1.11
C28/C27 20R TAS	1.05	1.17
Monoaromatic Steroids m/z 253		
Dia/Regular C27 MAS	0.96	1.07
%27 MAS	29.7	33.8
%28 MAS	34.6	33.6
%29 MAS	35.6	32.6
(C21+C22)/Σ MAS	0.11	0.10
TAS/(MAS+TAS)	0.47	0.49
TA28/(TA28+MA29)	0.41	0.41
Triaromatic Methylsteroids m/z 245		
Dinosteroid Index	0.27	0.31
C4/C3+C4 Mester	0.60	0.63
Phenanthrenes and Naphthalenes		
MPI-1	0.41	0.43
MPI-2	0.43	0.47
MPI-3	1.10	1.11
Rc(a) if Ro < 1.3 (Ro%)	0.62	0.63
Rc(b) if Ro > 1.3 (Ro%)	2.05	2.04
DNR-1	2.26	1.74
DNR-2	0.93	0.93
TNR1	1.20	1.37
TDE-1	9.68	9.46
TDE-2	0.26	0.31
MDR	1.61	1.70
Rm (Ro%)	0.69	0.69
MDR23	0.38	0.32
MDR1	0.46	0.48
DBT/Phenanthrene	0.02	0.02

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #6
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	4643 - 4644 FT	Lab ID:	TM000749
Sampling Point:		File Name:	

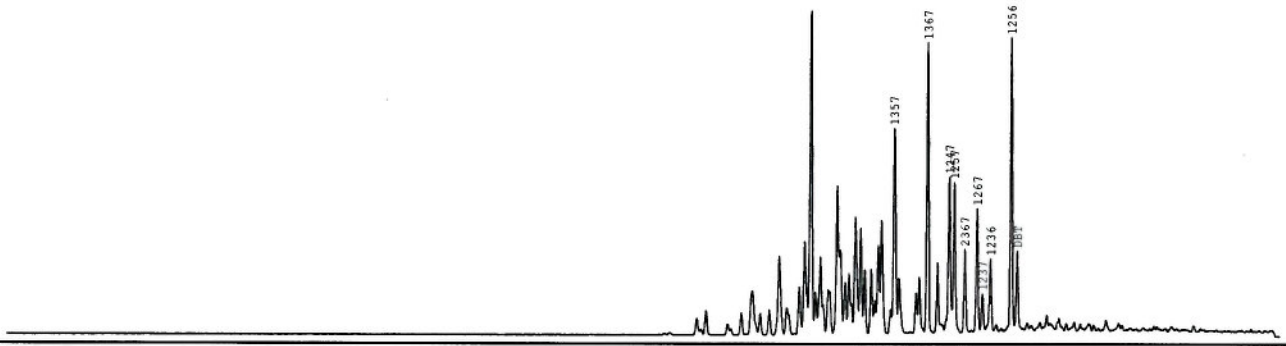
m/z 156: Dimethylnaphthalenes



m/z 170: Trimethylnaphthalenes



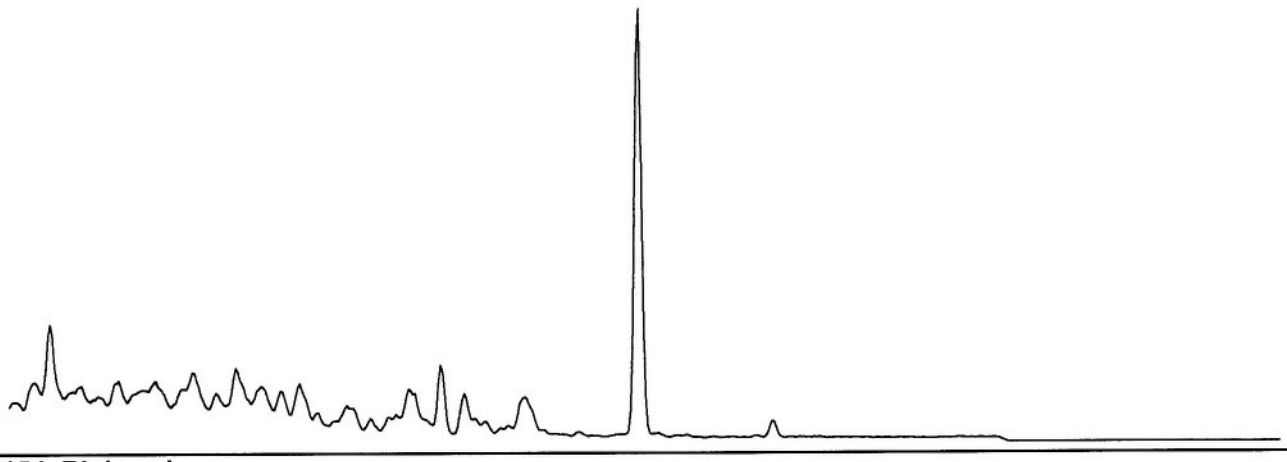
m/z 184: Tetramethylnaphthalenes



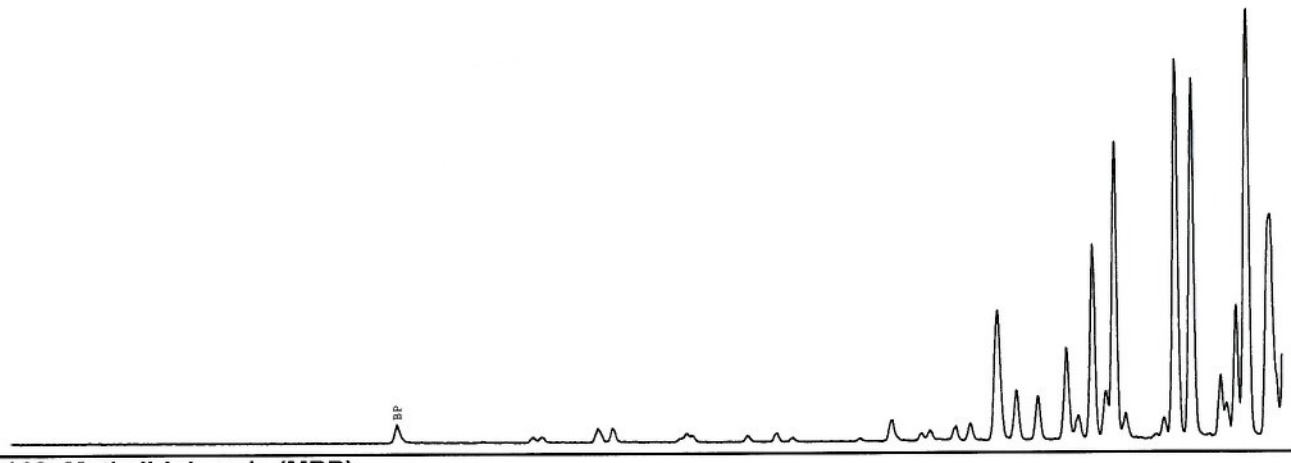
m/z 198: Pentamethylnaphthalenes

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #6
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	4643 - 4644 FT	Lab ID:	TM000749
Sampling Point:		File Name:	M1090399.D

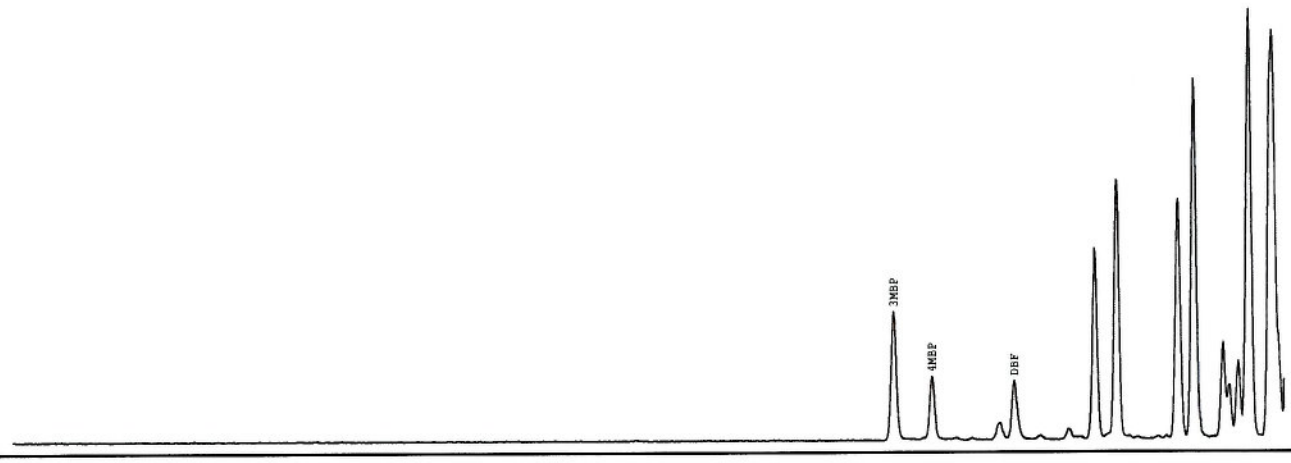
m/z 230: Ortho-Terphenyl (Inter. Std)



m/z 154: Biphenyl

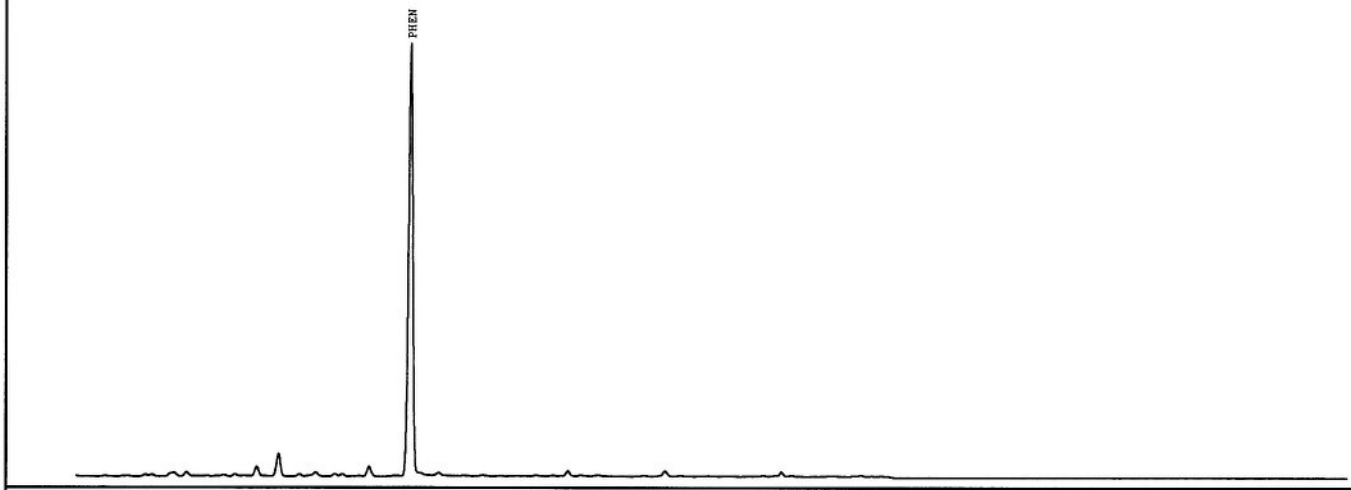


m/z 168: Methylbiphenyls (MBP)

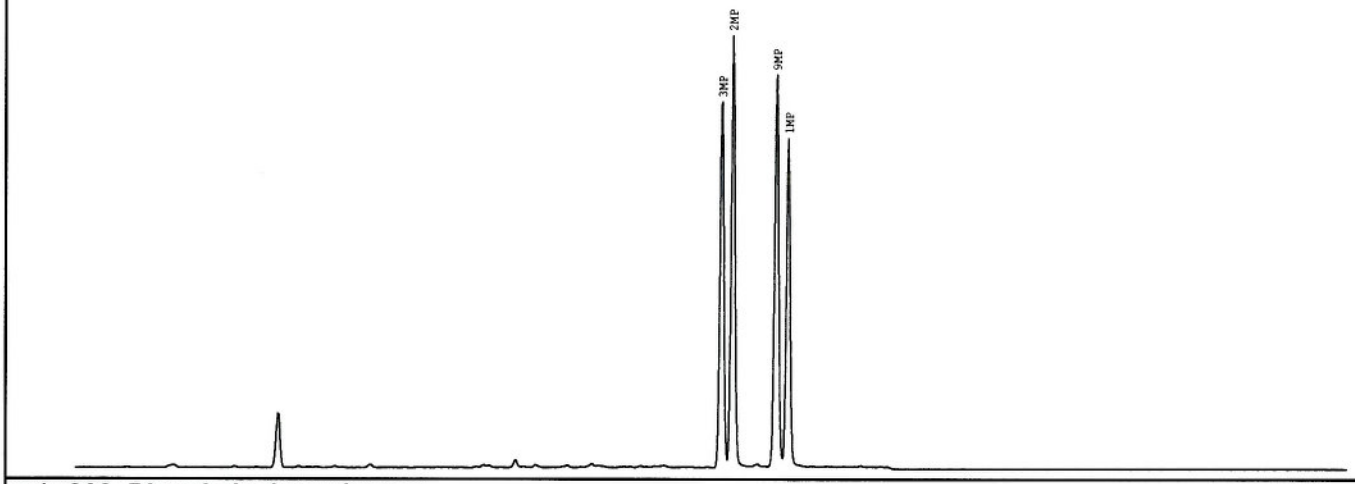


Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #6
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	4643 - 4644 FT	Lab ID:	TM000749
Sampling Point:		File Name:	M1090399.D

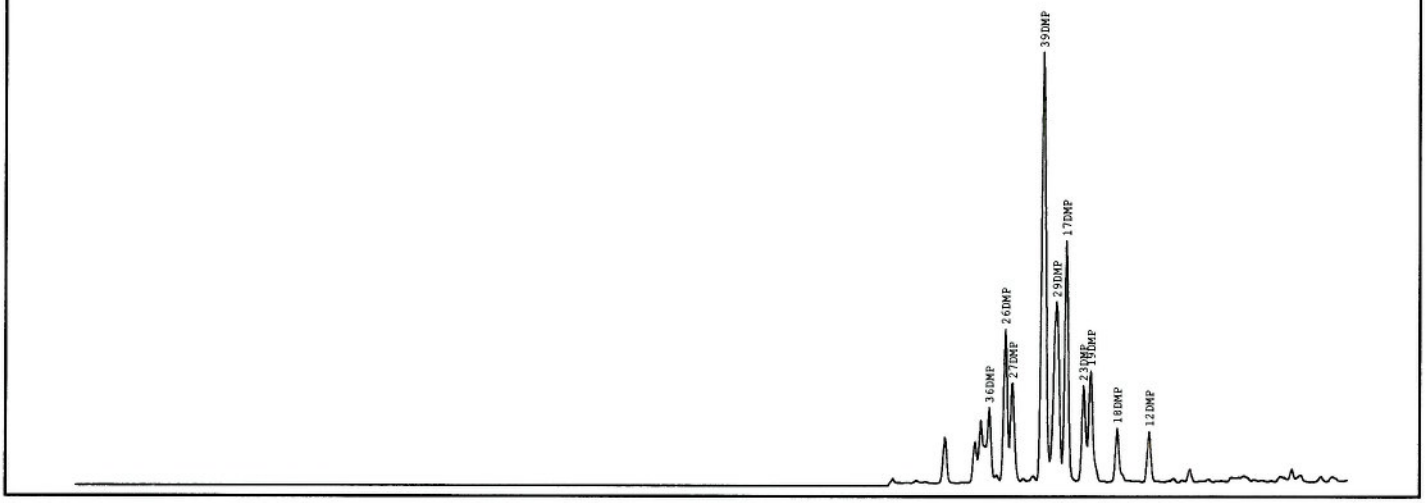
***m/z* 178: Phenanthrene**



***m/z* 192: Methylphenanthrenes**

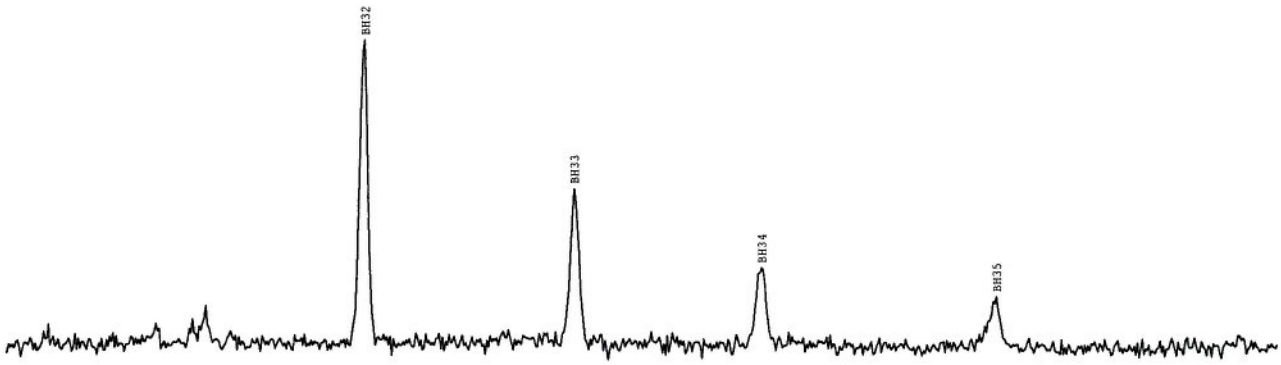


***m/z* 206: Dimethylpehnanthrenes**

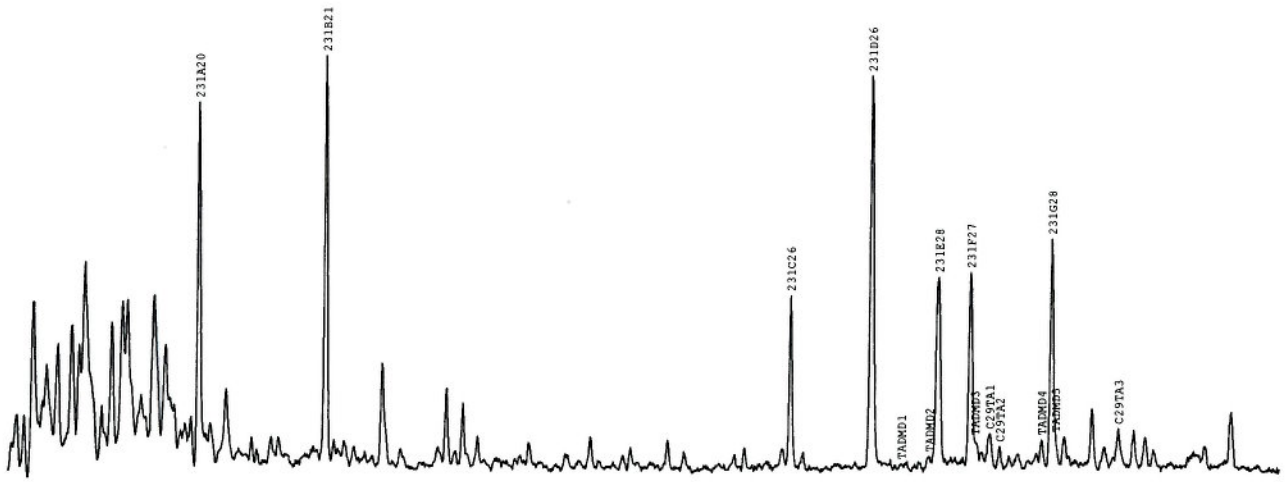


Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #6
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	4643 - 4644 FT	Lab ID:	TM000749
Sampling Point:		File Name:	M1090399.D

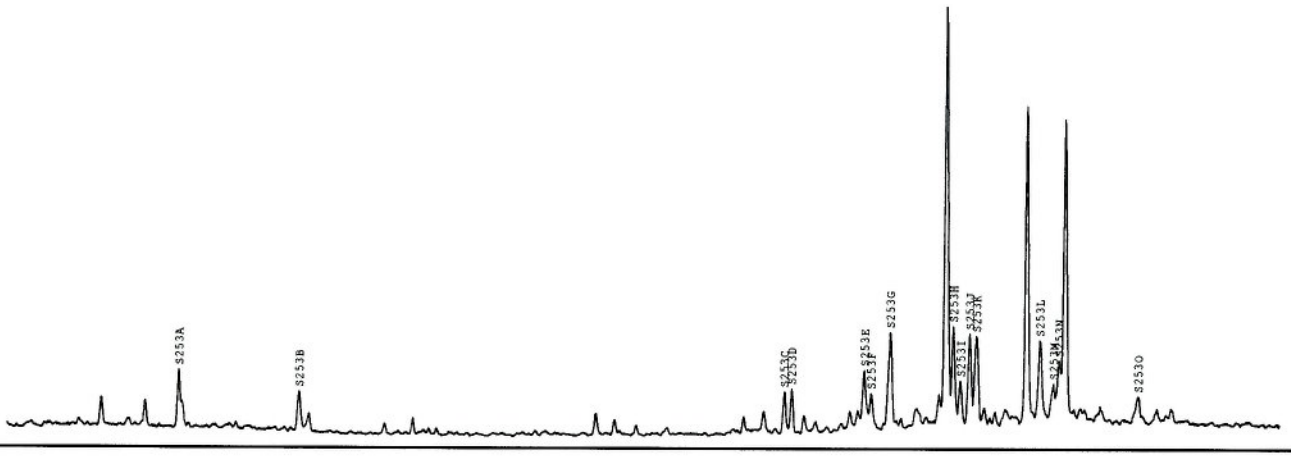
***m/z* 191: Benzohopanes**



***m/z* 231: Triaromatic Steranes**



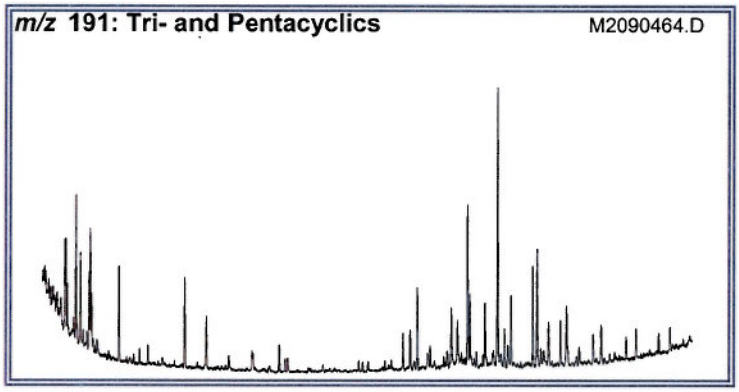
***m/z* 253: Monoaromatic Steranes**

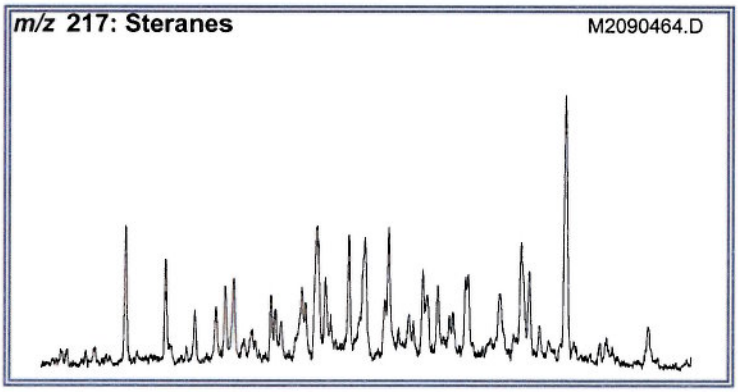


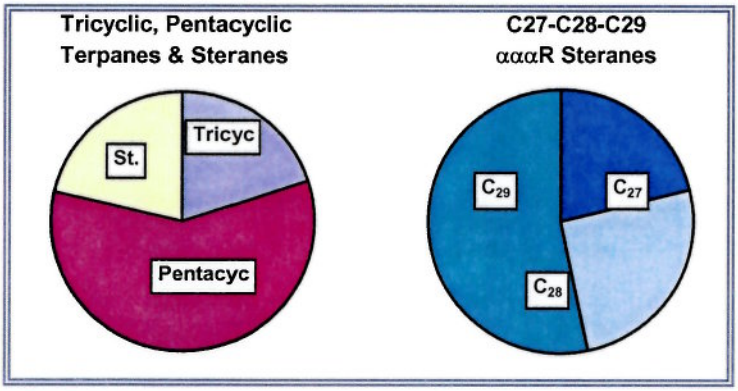
Weatherford LABORATORIES

SATURATE BIOMARKERS

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #6
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000749
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	SCHRADER BLUFF
Well Name:	SUSIE NO. 1	Geologic Age:	
Latitude:	0	Top Depth:	4643 FT
Longitude:	0	Bottom Depth:	4644 FT







RATIOS (on Areas)[1]		Appl[2]	TEV[3]
Steranes (*m/z* 217; 218)			
%C_{27} αββS (218)	27.2	D	
%C_{28} αββS (218)	32.2	D	
%C_{29} αββS (218)	40.6	D	
%C_{27} αααR (217)	21.0	D	
%C_{28} αααR (217)	25.7	D	
%C_{29} αααR (217)	53.3	D	
S/(S+R) (C_{29} ααα) (217)	0.21	M	0.55 (0.8%)
ββS/(ββS+ααR) (C29) (217)	0.22	M	0.70 (0.9%)
(C_{21}+C_{22})/(C_{27}+C_{28}+C_{29}) (217)	0.20		
C_{27}/C_{29} (αββS) (218)	0.67	D	
C_{28}/C_{29} (αββS) (218)	0.79	D	
Diaster/ααα Ster (C_{27}) (217)	1.13	M/D	1.00 (1.4%)
C30 αββS Sterane Index (218)	6.20	D	
C30 S+R Sterane Index (218)	5.65	D	
Terpanes (*m/z* 191)			
Oleanane/Hopane	0.11	D/A	
Gammacerane/Hopane	0.09	D	
Norhopane/Hopane	0.61	D	
Bisnorhopane/Hopane	0.27		
Diahopane/Hopane	0.05	M/D	
Moretane/Hopane	0.29	M	0.05 (0.7%)
25-*nor*-hopane/hopane	0.20	B	
Ts/(Ts+Tm) trisnorhopanes	0.32	M/D	1.00 (1.4%)
C29Ts/C29 Hopane	0.43	M	
H32 S/(R+S) Homohopanes	0.40	M	0.60 (0.6%)
H35/H34 Homohopanes	0.76	D	
C24 Tetracyclic/Hopane	0.09	D	
C24 Tetracyclic/C26 Tricyclics	0.86	D	
C23/C24 Tricyclic terpanes	1.67	D	
C19/C23 Tricyclic terpanes	0.69	D	
C26/C25 Tricyclic terpanes	0.82	D	
(C28+C29 Tricyclics)/Ts	1.01	A	
Various (*m/z* 191; 217)			
Steranes/Hopanes	0.41	D	
Tricyclic terpanes/Hopanes	0.40	M	1.00 (1.4%)
Tricyclic terpanes/Steranes	0.99	M/D	1.00 (1.4%)

[1]Definition and utility of the ratios can be found on our website www.brilabs.com

[2]A=Source Age; D=Depositional environment; M= Maturity; B=Possible Biodegradation

[3]Thermal equilibrium value of the biomarker ratio and in brackets the approximate VR value at which this value is reached

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #6**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**4643 - 4644 FT**	**Lab ID:**	**TM000749**
Sampling Point:		**File Name:**	**M2090464.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
217	CHOL	*5β cholane (internal standard)*	42.054	14301	2329	100.0	100.0
125	BCAROT	β-carotane	91.064	450	39	3.1	1.7
187	4MDIAM	4-methyldiamantane	9.258	260	86	1.8	3.7
187	1MDIAM	1-methyldiamantane	9.850	248	64	1.7	2.7
187	3MDIAM	3-methyldiamantane	10.234	296	79	2.1	3.4
188	DIAM	diamantane	9.083	135	43	0.9	1.8
191	TR19	C19 tricyclic terpane	18.755	2072	531	14.5	22.8
191	TR20	C20 tricyclic terpane	21.561	3412	697	23.9	29.9
191	TR21	C21 tricyclic terpane	24.889	2936	538	20.5	23.1
191	TR22	C22 tricyclic terpane	28.270	713	118	5.0	5.1
191	TR23	C23 tricyclic terpane	32.500	2999	510	21.0	21.9
191	TR24	C24 tricyclic terpane	34.906	1800	303	12.6	13.0
191	DESAOL	des-A-oleanane	37.452	507	82	3.5	3.5
191	DESALU	des-A-lupane					
191	TR25A	C25 tricyclic terpane (a)	39.997	704	118	4.9	5.1
191	TR25B	C25 tricyclic terpane (b)	40.102	661	102	4.6	4.4
191	TET24	C24 tetracyclic terpane (TET)	43.223	967	156	6.8	6.7
191	TR26A	C26 tricyclic terpane (a)	43.885	523	78	3.7	3.3
191	TR26B	C26 tricyclic terpane (b)	44.199	598	82	4.2	3.5
191	TR28A	C28 tricyclic terpane (a)	52.812	405	60	2.8	2.6
191	TR28B	C28 tricyclic terpane (b)	53.439	392	61	2.7	2.6
191	TR29A	C29 tricyclic terpane (a)	55.392	326	57	2.3	2.4
191	TR29B	C29 tricyclic terpane (b)	56.124	345	59	2.4	2.5
191	TR30A	C30 tricyclic terpane (a)	60.326	638	87	4.5	3.7
191	TR30B	C30 tricyclic terpane (b)	61.198	229	44	1.6	1.9
191	TS	Ts 18α(H)-trisnorhopane	57.519	1451	214	10.1	9.2
191	TM	Tm 17α(H)-trisnorhopane	59.158	3105	469	21.7	20.1
191	H28	C28 17α18α21β(H)-bisnorhopane	63.116	2792	337	19.5	14.5
191	NOR25H	C29 Nor-25-hopane	63.796	2039	267	14.3	11.5
191	H29	C29 Tm 17α(H)21β(H)-norhopane	64.947	6292	915	44.0	39.3
191	C29TS	C29 Ts 18α(H)-norneohopane	65.208	2736	415	19.1	17.8
191	DH30	C30 17α(H)-diahopane	65.958	545	88	3.8	3.8
191	M29	C29 normoretane	66.934	2588	360	18.1	15.5
191	OLA	oleanane a	67.823	524	79	3.7	3.4
191	OLB	oleanane b	67.963	649	94	4.5	4.0
191	H30	C30 17α(H)-hopane	68.416	10357	1572	72.4	67.5
191	C30TS	C29 Ts 18α(H)-norneohopane	69.236	1709	222	12.0	9.5
191	M30	C30 moretane	70.003	2983	410	20.9	17.6
191	H31S	C31 22S 17α(H) hopane	72.496	3782	571	26.4	24.5
191	H31R	C31 22R 17α(H) hopane	73.001	4526	666	31.6	28.6
191	GAM	gammacerane	73.455	924	108	6.5	4.6
191	H32S	C32 22S 17α(H) hopane	75.739	1702	261	11.9	11.2
191	H32R	C32 22R 17α(H) hopane	76.436	2584	342	18.1	14.7
191	H33S	C33 22S 17α(H) hopane	79.470	1206	171	8.4	7.3
191	H33R	C33 22R 17α(H) hopane	80.411	1519	217	10.6	9.3
191	H34S	C34 22S 17α(H) hopane	83.340	956	137	6.7	5.9
191	H34R	C34 22R 17α(H) hopane	84.491	1301	177	9.1	7.6
191	H35S	C35 22S 17α(H) hopane	87.106	771	119	5.4	5.1
191	H35R	C35 22R 17α(H) hopane	88.414	946	141	6.6	6.1

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #6**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**4643 - 4644 FT**	**Lab ID:**	**TM000749**
Sampling Point:		**File Name:**	**M2090464.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
217	S21	C21 sterane	28.845	2821	414	19.7	17.8
217	S22	C22 sterane	33.564	1018	156	7.1	6.7
217	DIA27S	C27 βα 20S diasterane	48.261	1046	162	7.3	7.0
217	DIA27R	C27 βα 20R diasterane	49.795	778	122	5.4	5.2
217	DIA28SA	C28 βα 20S diasterane a	52.062	626	88	4.4	3.8
217	DIA28SB	C28 βα 20S diasterane b	52.358	676	97	4.7	4.2
217	DIA28RA	C28 βα 20R diasterane a	53.788	553	78	3.9	3.3
217	DIA28RB	C28 βα 20R diasterane b	53.962	444	61	3.1	2.6
217	C27S	C27 αα 20S sterane	54.974	554	87	3.9	3.7
217	BB_D29S	C27 ββ 20R + C29 dia20S	55.584	1896	158	13.3	6.8
217	C27BBS	C27 ββ 20S sterane	55.898	810	98	5.7	4.2
217	C27R	C27 αα 20R sterane	56.787	1066	148	7.5	6.4
217	DIA29R	C29 βα 20R diasterane	57.397	1563	145	10.9	6.2
217	C28S	C28 αα 20S sterane	59.106	370	56	2.6	2.4
217	C28BBR	C28 ββ 20R sterane(+5 βαα)	59.803	794	78	5.6	3.3
217	C28BBS	C28 ββ 20S sterane	60.222	690	89	4.8	3.8
217	C28R	C28 αα 20R sterane	61.390	1302	102	9.1	4.4
217	C29S	C29 αα 20S sterane	62.593	730	79	5.1	3.4
217	C29BBR	C29 ββ 20R sterane(+5 βαα)	63.447	1524	139	10.7	6.0
217	C29BBS	C29 ββ 20S sterane	63.743	780	105	5.5	4.5
217	C29R	C29 αα 20R sterane	65.156	2704	310	18.9	13.3
218	C27ABBR	C27 ββ 20R sterane	55.479	1030	119	7.2	5.1
218	C27ABBS	C27 ββ 20S sterane	55.898	746	106	5.2	4.6
218	C28ABBR	C28 ββ 20R sterane	59.821	762	102	5.3	4.4
218	C28ABBS	C28 ββ 20S sterane	60.222	882	114	6.2	4.9
218	C29ABBR	C29 ββ 20R sterane	63.412	1459	176	10.2	7.6
218	C29ABBS	C29 ββ 20S sterane	63.743	1112	160	7.8	6.9
218	C30ABBR	C30 ββ 20R sterane	66.446	178	23	1.2	1.0
218	C30ABBS	C30 ββ 20S sterane	66.690	181	26	1.3	1.1
259	D27S	C27 βα 20S diasterane	48.261	687	112	4.8	4.8
259	D27R	C27 βα 20R diasterane	49.813	544	80	3.8	3.4
259	D28SA	C28 βα 20S diasterane a	52.062	399	63	2.8	2.7
259	D28SB	C28 βα 20S diasterane b	52.358	389	62	2.7	2.7
259	D28RA	C28 βα 20R diasterane a	53.788	327	47	2.3	2.0
259	D28RB	C28 βα 20R diasterane b	53.980	307	44	2.1	1.9
259	D29S	C29 βα 20S diasterane	55.566	1041	105	7.3	4.5
259	D29R	C29 βα 20R diasterane	57.415	888	86	6.2	3.7
259	C30TP1	C30 tetracyclic polyprenoid	66.934	478	72	3.3	3.1
259	C30TP2	C30 tetracyclic polyprenoid	67.074	403	64	2.8	2.7

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #6**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**4643 - 4644 FT**	**Lab ID:**	**TM000749**
Sampling Point:		**File Name:**	**M2090464.D**

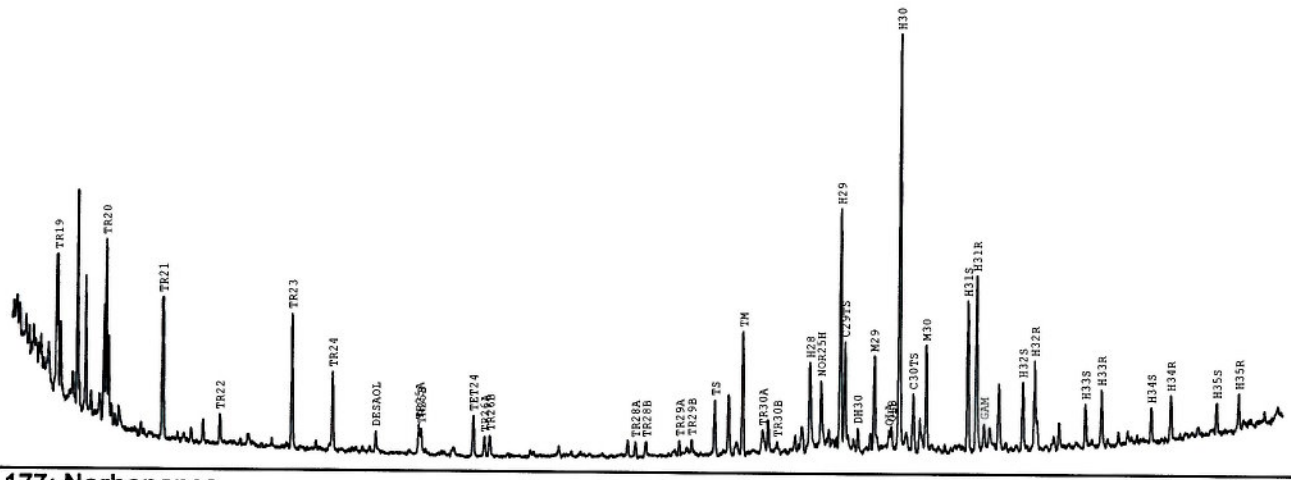
Miscellaneous Ratios	By Areas	By Heights
Terpanes (m/z 191)		
C19/C23 Tricyclic terpanes	0.69	1.04
C22/C21 Tricyclic terpanes	0.24	0.22
C22/C24 Tricyclic terpanes	0.40	0.39
C23/C24 Tricyclic terpanes	1.67	1.68
C24/C23 Tricyclic terpanes	0.60	0.59
C26/C25 Tricyclic terpanes	0.82	0.73
C24 Tetracyclic/C23 Tricyclic	0.32	0.31
C24 Tetracyclic/C26 Tricyclics	0.86	0.98
(C28+C29 Tricyclics)/Ts	1.01	1.11
Ts/Tm trisnorhopanes	0.47	0.46
Ts/(Ts+Tm) trisnorhopanes	0.32	0.31
25-nor-hopane/hopane	0.20	0.21
C29Ts/C29 Hopane	0.43	0.45
C29Ts/(C29TS+C29) Hopane	0.30	0.31
C23 Tricyclic/Hopane	0.29	0.32
C24 Tetracyclic/Hopane	0.09	0.10
Bisnorhopane/Hopane	0.27	0.21
Norhopane/Hopane	0.61	0.58
Diahopane/Hopane	0.05	0.06
Oleanane/Hopane	0.11	0.11
Moretane/Hopane	0.29	0.26
Moretane/(Moretane+Hopane)	0.22	0.21
C30Ts/C30 Hopane	0.17	0.14
Gammacerane/Hopane	0.09	0.07
C32 S/(S+R) Homohopanes	0.40	0.43
Gammacerane/H31R Homohopane	0.20	0.16
C35/C34 Homohopanes	0.76	0.83
C35/C34 S Homohopanes	0.81	0.87
C35 Homohopane Index	0.09	0.09
Rel % C31 Homohopane	43.1	44.1
Rel % C32 Homohopane	22.2	21.5
Rel % C33Homohopane	14.1	13.8
Rel % C34 Homohopane	11.7	11.2
Rel % C35 Homohopane	8.9	9.3

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #6**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**4643 - 4644 FT**	**Lab ID:**	**TM000749**
Sampling Point:		**File Name:**	**M2090464.D**

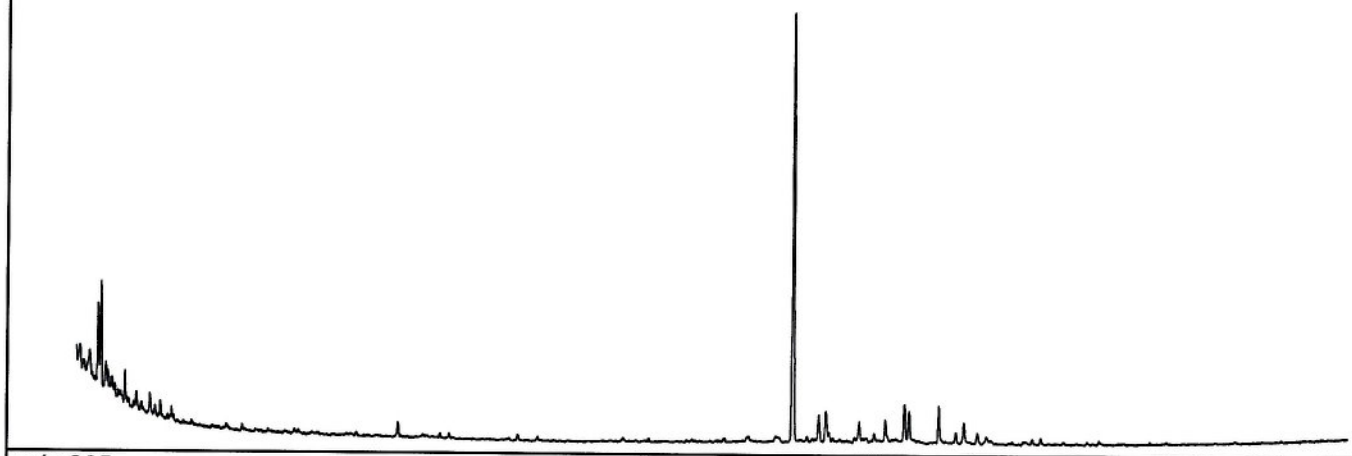
Miscellaneous Ratios	By Areas	By Heights
Steranes (m/z 217; 218)		
%C27 αααR (217)	21.0	26.4
%C28 αααR (217)	25.7	18.2
%C29 αααR (217)	53.3	55.4
S/R (C_{29} ααα) (217)	0.27	0.25
S/(S+R) (C_{29} ααα) (217)	0.21	0.20
ββ/(αα+ββ) (C_{29}) (217)	0.40	0.39
ββS/(ααR+ββS) (C29) (217)	0.22	0.25
αββS/αααR (C_{29}) (217)	0.29	0.34
(C_{21}+C_{22})/(C_{27}+C_{28}+C_{29}) (217)	0.20	0.26
Diaster/ααα Ster (C_{27}) (217)	1.13	1.21
Diaster/(Diaster+ααα) Ster (C_{27}) (217)	0.53	0.55
%C27 αββS (218)	27.2	27.9
%C28 αββS (218)	32.2	30.0
%C29 αββS (218)	40.6	42.1
%C27 αββ (R+S) (218)	29.6	29.0
%C28 αββ (R+S) (218)	27.4	27.8
%C29 αββ (R+S) (218)	42.9	43.2
C30 αββS Sterane Index (218)	6.2	6.4
C30 S+R Sterane Index (218)	5.7	5.9
C_{27}/C_{29} (αββS) (218)	0.67	0.66
C_{28}/C_{29} (αββS) (218)	0.79	0.71
C_{29}/C_{27} (αββS) (218)	1.49	1.51
C_{29}/C_{27} (αββ) (218)	1.45	1.49
Various (m/z 191; 217)		
Steranes/Hopanes	0.39	0.31
Tricyclic terpanes/Hopanes	0.39	0.49
Tricyclic terpanes/Steranes	0.99	1.56
Tricyclic/Pentacyclic Terpanes	34.0	43.1
Steranes/Terpanes	0.27	0.23
% Tricyclic Terpanes	19.9	24.6
% Pentacyclic Terpanes	58.64	24.59
% Steranes	21.4	18.4

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #6
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	4643 - 4644 FT	Lab ID:	TM000749
Sampling Point:		File Name:	M2090464.D

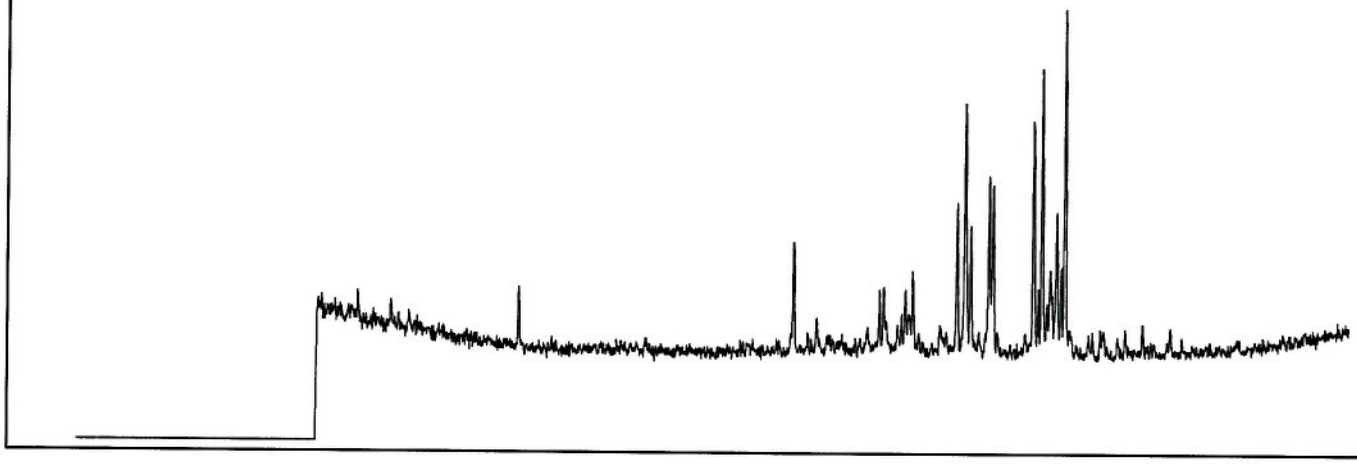
***m/z* 191:Tri-, tetra- and pentacyclic Terpanes**



***m/z* 177: Norhopanes**

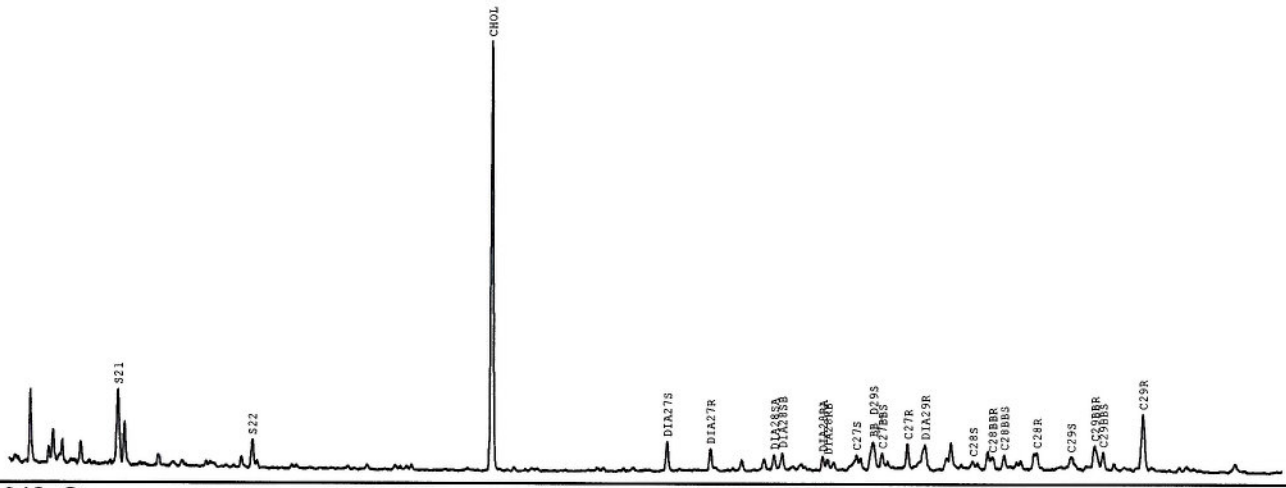


***m/z* 205**

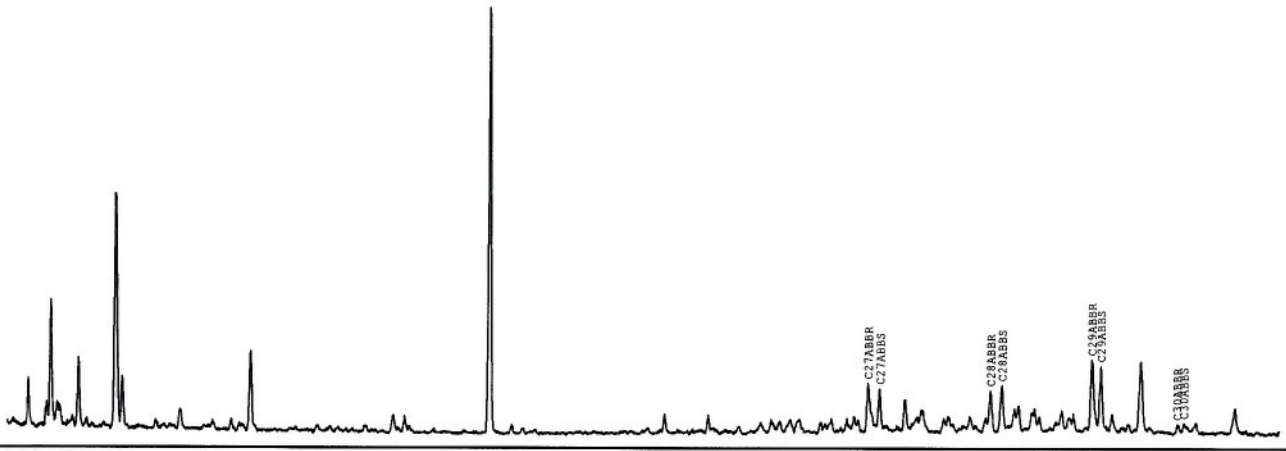


Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #6
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	4643 - 4644 FT	Lab ID:	TM000749
Sampling Point:		File Name:	M2090464.D

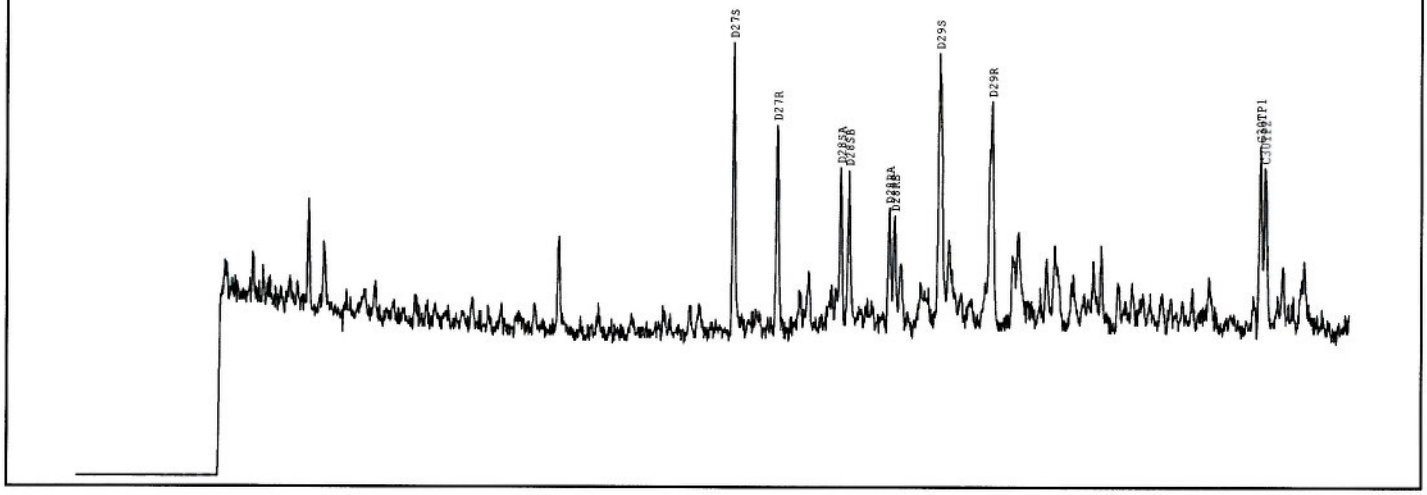
***m/z* 217: Steranes**



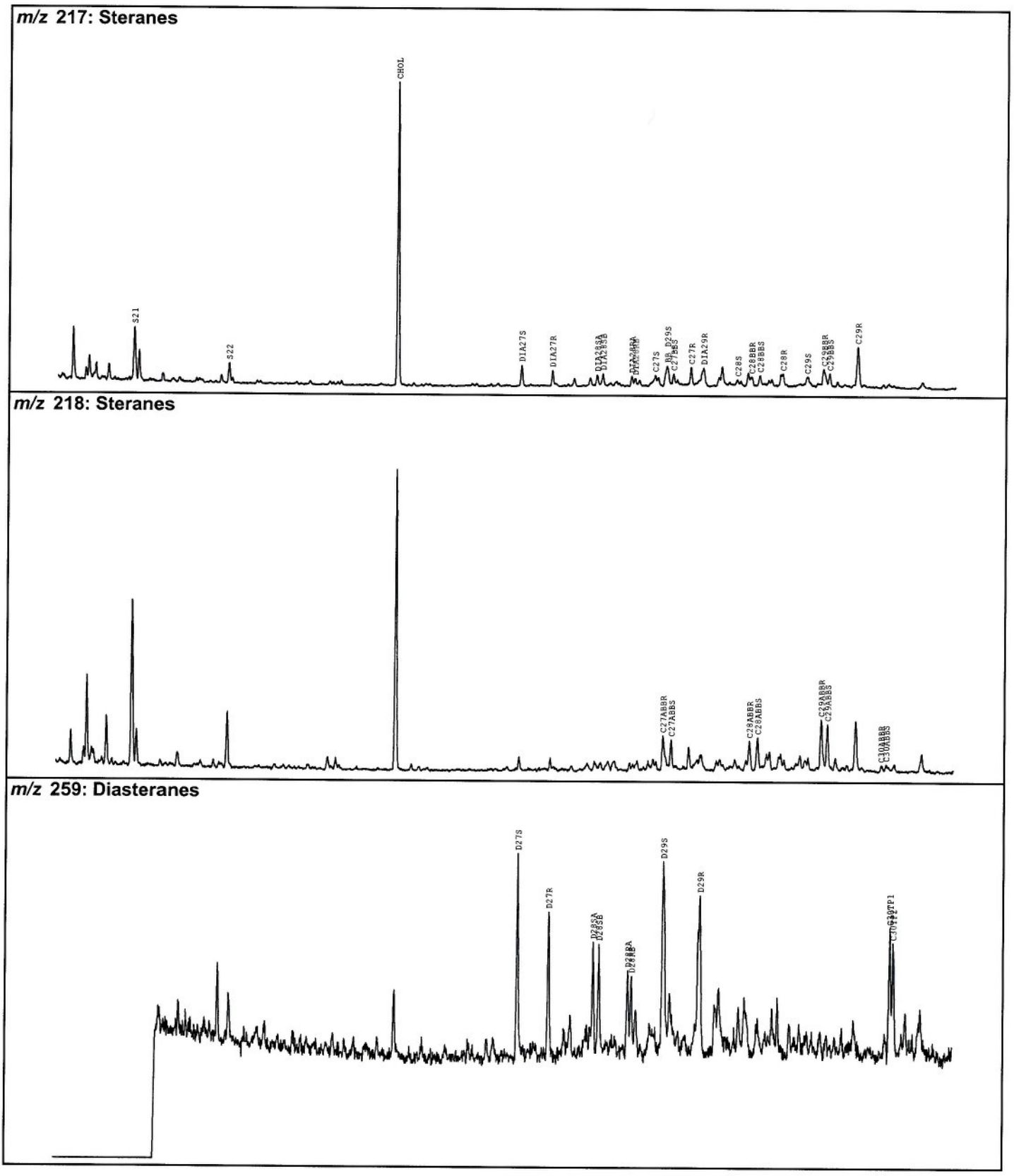
***m/z* 218: Steranes**



***m/z* 259: Diasteranes**



Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #6
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	4643 - 4644 FT	Lab ID:	TM000749
Sampling Point:		File Name:	M2090464.D



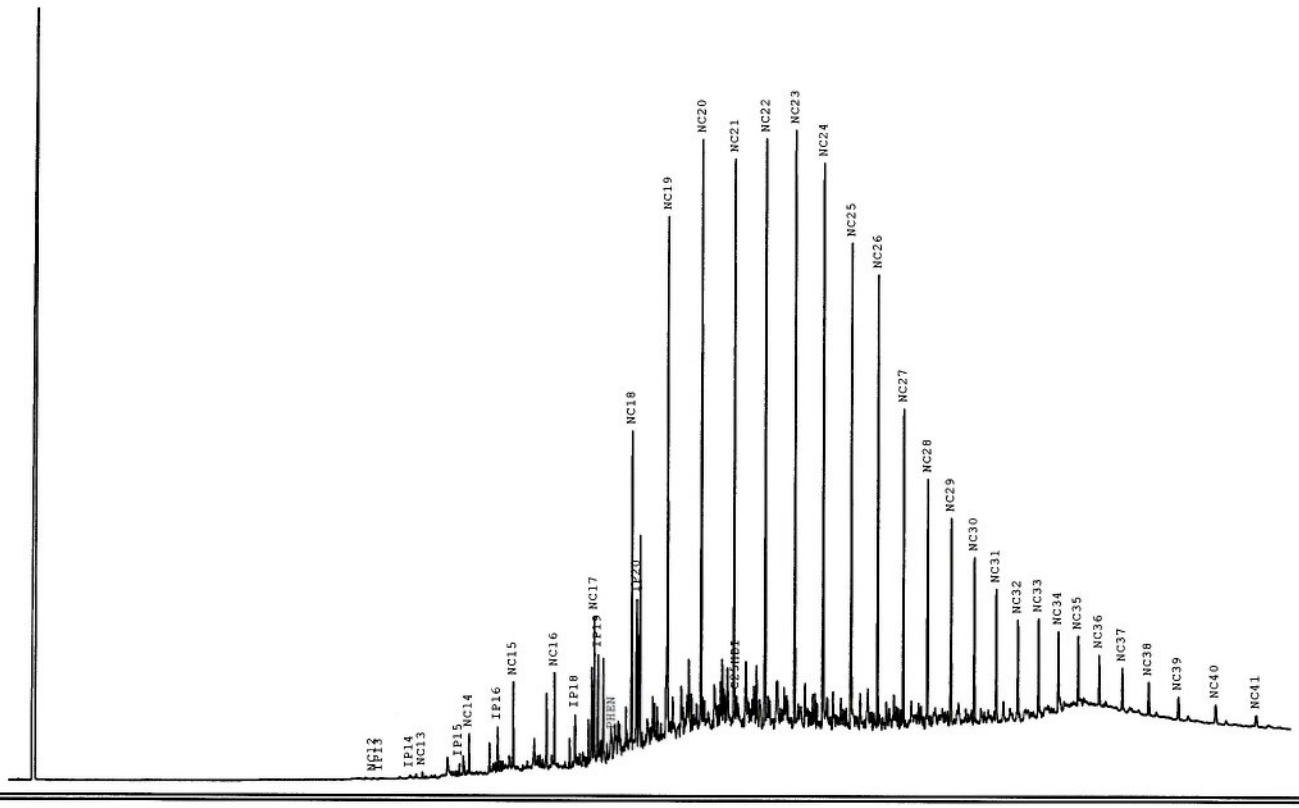
Weatherford LABORATORIES

WHOLE OIL GC

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #7
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000750
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	SCHRADER BLUFF
Well Name:	SUSIE NO. 1	Geologic Age:	
Latitude:	0	Top Depth:	5166 FT
Longitude:	0	Bottom Depth:	5167 FT

Whole Oil GC Trace

G6081484.D



WGC parameters	
Pristane/Phytane	0.67
Pristane/$n C_{17}$	1.06
Phytane/$n C_{18}$	0.75
$n C_{18}/(nC_{18}+n C_{19})$	0.38
$n C_{17}/(nC_{17}+n C_{29})$	0.38
CPI Hunt[4]	0.95
Normal Paraffins	40.1
Isoprenoids	3.3
Cycloparaffins	
Branched (iso-) Paraffins	
BTX aromatics	
Resolved unknowns	56.5

Thompson[1]	
A.	BZ/$n C_6$
B.	TOL/$n C_7$
C.	$(n C_6+n C_7)$/(CH+MCH)
I.	Isoheptane Value
F.	$n C_7$/MCH
U.	CH/MCP
R.	$n C_7$/2MH
S.	$n C_6$/22DMB
H.	Heptane Value
	MCH/$n C_7$
	mpXYL/$n C_8$

Mango[2]
P_1
P_2
P_3
$5N_1$
N_2
$6N_1$
K_1
K_2
$5N_1/6N_1$
P_3/N_2
ln(24DMP/23DMP)

Halpern[3]
Tr_1
Tr_2
Tr_3
Tr_4
Tr_5
Tr_7
Tr_8
C_1
C_2
C_3
C_4
C_5

[1]Thompson, K.F.M.,1983.GCA:V.47, p.303. [2]Mango, F.D.,1994.GCA: V.58, p.895. [3]Halpern,H.I.,1995,AAPG Bull.: V.79, p.801. [4]Hunt, 1979

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #7**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**5166 - 5167 FT**	**Lab ID:**	**TM000750**
Sampling Point:		**File Name:**	**G6081484.D**

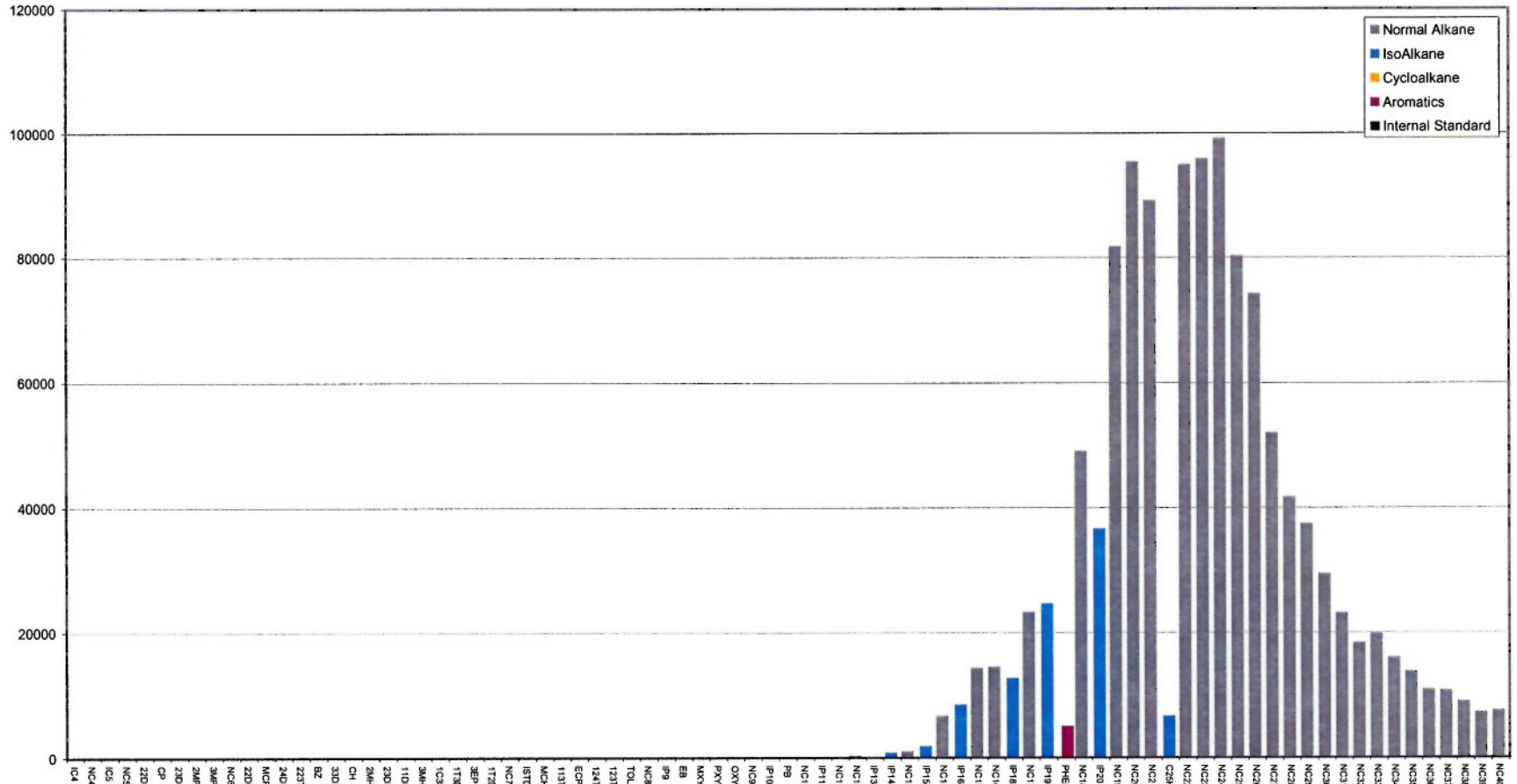
Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IC4	Iso-alkane C4					
NC4	Normal Alkane C4					
IC5	Iso-alkane C5					
NC5	Normal Alkane C5					
22DMB	2,2-Dimethylbutane					
CP	Cyclopentane					
23DMB	2,3-Dimethylbutane					
2MP	2-Methylpentane					
3MP	3-Methylpentane					
NC6	Normal Alkane C6					
22DMP	2,2-Dimethylpentane					
MCP	Methylcyclopentane					
24DMP	2,4-Dimethylpentane					
223TMB	2,2,3-Trimethylbutane					
BZ	Benzene					
33DMP	3,3-Dimethylpentane					
CH	Cyclohexane					
2MH	2-Methylhexane					
23DMP	2,3-Dimethylpentane					
11DMCP	1,1-Dimethylcyclopentane					
3MH	3-Methylhexane					
1C3DMCP	1-cis-3-Dimethylcyclopentane					
1T3DMCP	1-trans-3-Dimethylcyclopentane					
3EP	3-Ethylpentane					
1T2DMCP	1-trans-2-Dimethylcyclopentane					
NC7	Normal Alkane C7					
ISTD	Internal Standard					
MCH	Methylcyclohexane					
113TMCP	1,1,3,-Trimethylcyclopentane					
ECP	Ethylcyclopentane					
124TMCP	1,2,4-Trimethylcyclopentane					
123TMCP	1,2,3-Trimethylcyclopentane					
TOL	Toluene					
NC8	Normal Alkane C8					
IP9	Isoprenoid C9					
EB	Ethyl-benzene					
MXYL	*m*-xylene					
PXYL	*p*-xylene					
OXYL	*o*-xylene					
NC9	Normal Alkane C9					
IP10	Isoprenoid C10					
PB	Propyl-benzene					
NC10	Normal Alkane C10					
IP11	Isoprenoid C11					
NC11	Normal Alkane C11					
NC12	Normal Alkane C12	36.694	307	68		
IP13	Isoprenoid C13	37.292	161	37		
IP14	Isoprenoid C14	40.112	804	164		
NC13	Normal Alkane C13	41.278	1007	297		
IP15	Isoprenoid C15	44.706	1838	576		
NC14	Normal Alkane C14	45.589	6603	1895		

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #7**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**5166 - 5167 FT**	**Lab ID:**	**TM000750**
Sampling Point:		**File Name:**	**G6081484.D**

Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IP16	Isoprenoid C16	48.243	8410	2088		
NC15	Normal Alkane C15	49.657	14330	4064		
NC16	Normal Alkane C16	53.504	14486	4339		
IP18	Isoprenoid C18	55.435	12684	2389		
NC17	Normal Alkane C17	57.153	23275	6675		
IP19	Isoprenoid C19 (Pristane)	57.517	24673	4929		
PHEN	Phenanthrene	58.843	4984	1108		
NC18	Normal Alkane C18	60.627	49111	14438		
IP20	Isoprenoid C20 (Phytane)	61.085	36699	6835		
NC19	Normal Alkane C19	63.940	81781	23529		
NC20	Normal Alkane C20	67.087	95446	26542		
NC21	Normal Alkane C21	70.096	89249	25525		
C25HBI	Highly Branch Isoprenoid C25	70.327	6628	1517		
NC22	Normal Alkane C22	72.975	95045	26469		
NC23	Normal Alkane C23	75.733	95935	26873		
NC24	Normal Alkane C24	78.378	99207	25442		
NC25	Normal Alkane C25	80.921	80284	21816		
NC26	Normal Alkane C26	83.367	74332	20400		
NC27	Normal Alkane C27	85.721	52059	14391		
NC28	Normal Alkane C28	87.994	41745	11191		
NC29	Normal Alkane C29	90.194	37448	9356		
NC30	Normal Alkane C30	92.319	29439	7511		
NC31	Normal Alkane C31	94.376	23148	6014		
NC32	Normal Alkane C32	96.369	18368	4580		
NC33	Normal Alkane C33	98.301	19849	4472		
NC34	Normal Alkane C34	100.179	16051	3645		
NC35	Normal Alkane C35	102.005	13783	3193		
NC36	Normal Alkane C36	103.940	10868	2325		
NC37	Normal Alkane C37	106.090	10720	1965		
NC38	Normal Alkane C38	108.535	9027	1513		
NC39	Normal Alkane C39	111.332	7228	1054		
NC40	Normal Alkane C40	114.563	7520	874		
NC41	Normal Alkane C41	118.334	5343	543		

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #7**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**5166 - 5167 FT**	**Lab ID:**	**TM000750**
Sampling Point:		**File Name:**	**G6081484.D**

Histogram Based on Area

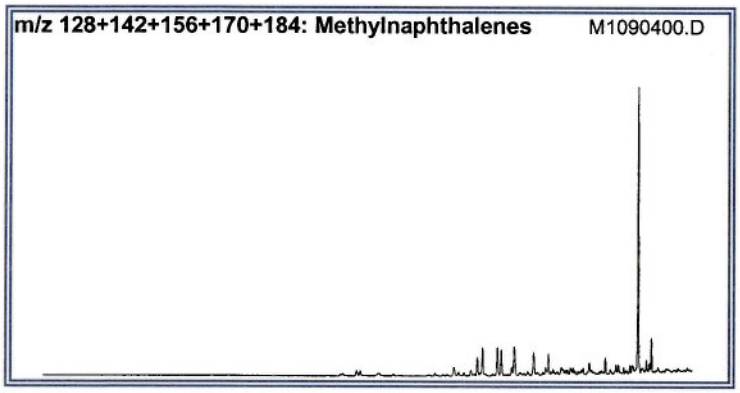


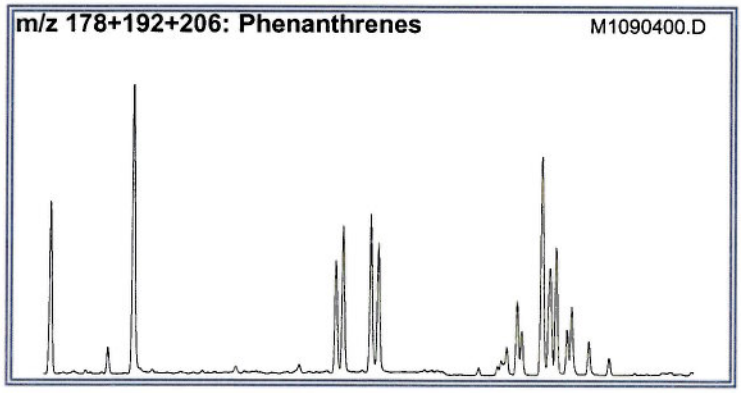
Parameter	Formula
WGC Parameters	
Pristane/Phytane	IP19/IP20
Pristane/nC17	IP19/NC17
Phytane/nC18	IP20/NC18
$nC_{18}/(nC_{18}+nC_{19})$	NC18/(NC18+NC19)
$nC_{17}/(nC_{17}+nC_{29})$	NC17/(NC17+NC29)
CPI Hunt[4]	((NC23+NC25+NC27+NC29+NC31)+(NC25+NC27+NC29+NC31+NC33))/(2*(NC24+NC26+NC28+NC30+NC32))
Normal Paraffins	100*(NC4+NC5+NC6+NC7+NC8+NC9+NC10+NC11+NC12+NC13+NC14+NC15+NC16+NC17+NC18+NC19+NC20+NC21+NC22+NC23+NC24+NC25+NC26+NC27+NC28+NC29+NC30+NC31+NC32+NC33+NC34+NC35+NC36+NC37+NC38+NC39+NC40+NC41)/TOTAL_RESOLVED
Isoprenoids	100*(IP9+IP10+IP11+IP13+IP14+IP15+IP16+IP18+IP19+IP20+C25HBI)/TOTAL_RESOLVED
Cycloparaffins	100*(CP+MCP+CH+11DMCP+1T3DMCP+1T2DMCP+MCH+113TMCP+ECP+124TMCP+123TMCP+1C3DMCP+1C2DMCP)/TOTAL_RESOLVED
Branched (iso-) Paraffins	100*(IC4+IC5+22DMB+23DMB+2MP+3MP+22DMP+24DMP+223TMB+33DMP+2MH+23DMP+3MH+3EP)/TOTAL_RESOLVED
BTX aromatics	100*(BZ+TOL+MXYL+PXYL+OXYL)/TOTAL_RESOLVED (*OXYL added 05/21/2007)
Thompson[1]	
BZ/nC6	BZ/NC6
TOL/nC7	TOL/NC7
(nC6+nC7)/(CH+MCH)	(NC6+NC7)/(CH+MCH)
Isoheptane Value	(2MH+3MH)/(1C3DMCP+1T3DMCP+1T2DMCP)
nC7/MCH	NC7/MCH
CH/MCP	CH/MCP
nC7/2MH	NC7/2MH
nC6/22DMB	NC6/22DMB
Heptane Value	100*NC7/(CH+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+1T2DMCP+MCH+NC7)
MCH/nC7	MCH/NC7
mpXYL/nC8	(MXYL+PXYL)/NC8
Mango[2]	
P1	100*NC7/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
P2	100*(2MH+3MH)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
P3	100*(3EP+33DMP+23DMP+24DMP+22DMP+223TMB)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
5N1	100*(ECP+1T2DMCP)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
N2	100*(11DMCP+1C3DMCP+1T3DMCP)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
6N1	100*(MCH+TOL)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
K1	(2MH+23DMP)/(3MH+24DMP)
K2	(2MH+3MH)/(2MH+3MH+11DMCP+1C3DMCP+1T3DMCP)
5N1/6N1	(ECP+1T2DMCP)/(MCH+TOL)
P3/N2	(3EP+33DMP+23DMP+24DMP+22DMP+223TMB)/(11DMCP+1C3DMCP+1T3DMCP)
ln(24DMP/23DMP)	ln(24DMP/23DMP)
Halpern[3]	
Tr1	TOL/11DMCP
Tr2	NC7/11DMCP
Tr3	3MH/11DMCP
Tr4	2MH/11DMCP
Tr5	(2MH+3MH)/11DMCP
Tr7	1T3DMCP/11DMCP
Tr8	(2MH+3MH)/(22DMP+23DMP+24DMP+33DMP+3EP)
C1	22DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C2	23DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C3	24DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C4	33DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C5	3EP/(22DMP+23DMP+24DMP+33DMP+3EP)

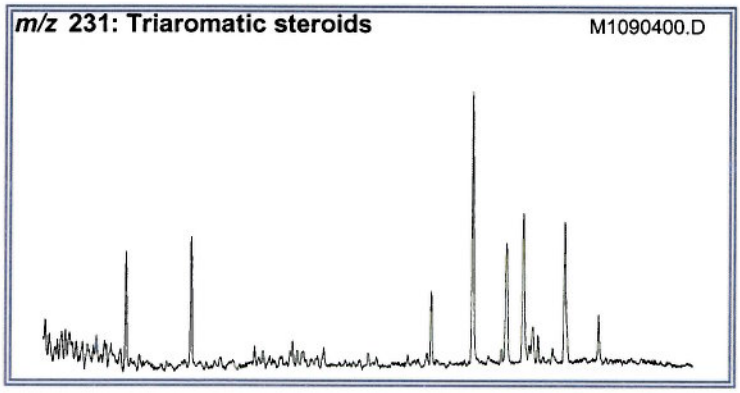
Weatherford LABORATORIES

AROMATIC BIOMARKERS

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #7
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000750
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	SCHRADER BLUFF
Well Name:	SUSIE NO. 1	Geologic Age:	
Latitude:	0	Top Depth:	5166 FT
Longitude:	0	Bottom Depth:	5167 FT







RATIOS (on Areas)[1]		Appl[2]	TEV[3]
Mono- (MAS) and Triaromatic Steroids (TAS)			
(C20+C21)/Σ TAS	0.20	M	1.0 (1.3%)
TAS #1 20/20+27	0.38	M	
TAS #2 21/21+28	0.43	M	
%26 TAS	15.8	D	
%27 TAS	39.9	D	
%28 TAS	33.9	D	
%29 TAS	10.5	D	
C28/C26 20S TAS	2.26		
C28/C27 20R TAS	0.85		
Dia/Regular C27 MAS	0.53		
%27 MAS	34.6	D	
%28 MAS	40.6	D	
%29 MAS	24.8	D	
(C21+C22)/Σ MAS	0.19	M	1.0 (1.3%)
TAS/(MAS+TAS)	0.79	M	
TA28/(TA28+MA29)	0.84	M	1.0 (0.8%)
Triaromatic Methylsteroids			
Dinosteroid Index	0.41	A	
C4/C3+C4 Mester	0.52	A	
Phenanthrenes, Naphthalenes, and Dibenzothiophenes			
MPI-1	0.63	M	
Rc(a) if Ro < 1.3 (Ro%)	0.75	M	
Rc(b) if Ro > 1.3 (Ro%)	1.92	M	
MPI-2	0.70	M	
DNR-1	2.05	M	
DNR-2	1.30	M	
TNR1	0.92	M	
TDE-1	6.00	M	
TDE-2	0.25	M	
MDR	2.95	M	
Rm (Ro%)	0.75	M	
MDR23	0.34	M	
MDR1	0.27	M	
DBT/Phenanthrene	0.04	D	

[1]Definition and utility of the ratios can be found on our website www.BaselineDGSI.com

[2]A=Source Age; D=Depositional environment; M= Maturity

[3]Thermal equilibrium value of the biomarker ratio and in brackets the approximate VR value at which this value is reached

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #7**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**5166 - 5167 FT**	**Lab ID:**	**TM000750**
Sampling Point:		**File Name:**	**M1090400.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
230	OTP	*Ortho-terphenyl* (internal standard)	74.964	66442	15997	300.0	300.0
128	NAPH	Naphthalene					
142	2MN	2-Methylnaphthalene	37.946	119	20	0.5	0.4
142	1MN	1-Methylnaphthalene	39.176	140	22	0.6	0.4
154	BP	Biphenyl	44.686	324	40	1.5	0.8
156	2EN	2-Ethylnaphthalene	46.152	259	41	1.2	0.8
156	1EN	1-Ethylnaphthalene	46.219	125	31	0.6	0.6
156	26DMN	2,6-Dimethylnaphthalene	47.045	1347	216	6.1	4.1
156	27DMN	2,7-Dimethylnaphthalene	47.197	1704	257	7.7	4.8
156	1317DMN	1,3 & 1,7-Dimethylnaphthalenes	48.191	4290	576	19.4	10.8
156	16DMN	1,6-Dimethylnaphthalene	48.427	3711	573	16.8	10.7
156	23DMN	2,3-Dimethylnaphthalene	49.589	618	125	2.8	2.3
156	14DMN	1,4-Dimethylnaphthalene	49.724	1723	285	7.8	5.3
156	15DMN	1,5-Dimethylnaphthalene	49.791	1491	238	6.7	4.5
156	12DMN	1,2-Dimethylnaphthalene	50.769	1260	190	5.7	3.6
168	2MBP	2-Methylbiphenyl					
168	DPM	Diphenylmethane					
168	3MBP	3-Methylbiphenyl	53.262	891	136	4.0	2.6
168	4MBP	4-Methylbiphenyl	53.920	494	76	2.2	1.4
168	DBF	Dibenzofuran	55.369	290	36	1.3	0.7
170	BB_EMN	Ethyl-methyl-Naphthalene	55.099	5848	764	26.4	14.3
170	AB_EMN	Ethyl-methyl-Naphthalene	56.312	3213	489	14.5	9.2
170	137TMN	1,3,7-Trimethylnaphthalene	56.750	12050	1940	54.4	36.4
170	136TMN	1,3,6-Trimethylnaphthalene	57.138	18808	3028	84.9	56.8
170	146135T	(1,4,6+1,3,5)-Trimethylnaphthalenes	58.199	17487	2742	79.0	51.4
170	236TMN	2,3,6-Trimethylnaphthalene	58.469	16132	2764	72.8	51.8
170	127TMN	1,2,7-Trimethylnaphthalene	59.210	4672	865	21.1	16.2
170	167126T	(1,6,7+1,2,6)-Trimethylnaphthalenes	59.379	18680	2846	84.3	53.4
170	124TMN	1,2,4-Trimethylnaphthalene	60.305	1775	330	8.0	6.2
170	125TMN	1,2,5-Trimethylnaphthalene	60.744	10657	1909	48.1	35.8
178	PHEN	Phenanthrene	70.246	151544	31073	684.3	582.7
184	1357	1,3,5,7-Tetramethylnaphthalene	64.703	6720	1171	30.3	22.0
184	1367	1,3,6,7-Tetramethylnaphthalene	65.866	8339	1681	37.7	31.5
184	1247	(1,2,4,7+1,2,4,6+1,4,6,7)-Tetramethylnaphthalenes	66.607	5061	976	22.9	18.3
184	1257	1,2,5,7-Tetramethylnaphthalene	66.792	3791	777	17.1	14.6
184	2367	2,3,6,7-Tetramethylnaphthalene	67.163	2089	459	9.4	8.6
184	1267	1,2,6,7-Tetramethylnaphthalene	67.584	2943	608	13.3	11.4
184	1237	1,2,3,7-Tetramethylnaphthalene	67.787	1112	228	5.0	4.3
184	1236	1,2,3,6-Tetramethylnaphthalene	68.039	2157	434	9.7	8.1
184	1256	1,2,5,6-Tetramethylnaphthalene	68.764	4805	1060	21.7	19.9
184	DBT	Dibenzothiophene	68.966	5817	1138	26.3	21.3
191	BH32	C32 Benzohopane					
191	BH33	C33 Benzohopane					
191	BH34	C34 Benzohopane					
191	BH35	C35 Benzohopane					
192	3MP	3-Methylphenanthrene	75.166	53418	12049	241.2	226.0
192	2MP	2-Methylphenanthrene	75.352	66709	15784	301.2	296.0
192	9MP	9-Methylphenanthrene	76.043	72349	17030	326.7	319.4
192	1MP	1-Methylphenanthrene	76.228	61184	13893	276.3	260.5

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #7**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**5166 - 5167 FT**	**Lab ID:**	**TM000750**
Sampling Point:		**File Name:**	**M1090400.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
198	CAD	Cadalene	66.203	4622	884	20.9	16.6
198	4MDBT	4 Methyl Dibenzothiophene	73.515	4669	1037	21.1	19.4
198	23MDBT	2 & 3 Methyl Dibenzothiophenes	74.290	2005	358	9.1	6.7
198	1MDBT	1 Methyl Dibenzothiophene	75.082	1582	327	7.1	6.1
206	36DMP	3,6-Dimethylphenanthrene	79.391	12666	2988	57.2	56.0
206	26DMP	2,6-Dimethylphenanthrene	79.644	33810	7913	152.7	148.4
206	27DMP	2,7-Dimethylphenanthrene	79.762	18696	4670	84.4	87.6
206	39DMP	(3,9+3,10+2,10+1,3)-Dimethylphenanthrenes	80.251	119612	23458	540.1	439.9
206	29DMP	(2,9+1,6)-Dimethylphenanthrenes	80.470	68043	11428	307.2	214.3
206	17DMP	1,7-Dimethylphenanthrene	80.605	57494	13694	259.6	256.8
206	23DMP	2,3-Dimethylphenanthrene	80.875	21775	4844	98.3	90.8
206	19DMP	1,9-Dimethylphenanthrene	80.992	30319	7254	136.9	136.0
206	18DMP	1,8-Dimethylphenanthrene	81.414	15999	3627	72.2	68.0
206	12DMP	1,2-Dimethylphenanthrene	81.920	7800	1869	35.2	35.1
231	231A20	C20 Triaromatic Steroid	92.235	4230	956	19.1	17.9
231	231B21	C21 Triaromatic	94.729	4318	1038	19.5	19.5
231	231C26	C26 20S Triaromatic	103.915	2717	605	12.3	11.3
231	231D26	C27 20S & C26 20R Triaromatic	105.516	10545	2175	47.6	40.8
231	TADMD1	C28 23,24-Cholestane Triaromatic	106.123	352	70	1.6	1.3
231	TADMD2	C28 23,24-Cholestane Triaromatic	106.645	567	126	2.6	2.4
231	231E28	C28 20S Triaromatic	106.831	6127	966	27.7	18.1
231	231F27	C27 20R Triaromatic	107.454	6879	1196	31.1	22.4
231	TADMD3	C28 23,24-Cholestane Triaromatic	107.556	262	126	1.2	2.4
231	C29TA1	C29 Triaromatic	107.825	1770	294	8.0	5.5
231	C29TA2	C29 Triaromatic	108.011	897	226	4.1	4.2
231	TADMD4	C28 23,24-Cholestane Triaromatic	108.921	111	25	0.5	0.5
231	231G28	C28 20R Triaromatic	109.056	5841	1126	26.4	21.1
231	TADMD5	C28 23,24-Cholestane Triaromatic	109.140	605	304	2.7	5.7
231	C29TA3	C29 Triaromatic	110.370	1804	384	8.1	7.2
245	C3S	C27 20S 3-Methyl Triaromatic Steroid	106.595	406	88	1.8	1.7
245	C4S	C27 20S 4-Methyl Triaromatic Steroid	107.218	614	148	2.8	2.8
245	E2S	C28 20S 2-Methyl Triaromatic Steroid	107.758	256	62	1.2	1.2
245	E3SC3R	C28 20S 3-Methyl & C27 20R 3-Methyl TAS	108.112	1683	320	7.6	6.0
245	E4SC4R	C28 20S 4-Methyl & C27 20R 4-Methyl TAS	108.702	2269	362	10.2	6.8
245	S2S	C29 20S 2-Methyl Triaromatic Steroid	108.988	320	61	1.4	1.1
245	DA	Triaromatic Dinosteroid a	109.140	430	121	1.9	2.3
245	S3S	C29 20S 3-Methyl Triaromatic Steroid	109.308	1137	140	5.1	2.6
245	DB	Triaromatic Dinosteroid b	109.730	1520	328	6.9	6.2
245	S4SE2R	C29 20S 4-Methyl & C28 20R 2-Methyl TAS	109.898	1865	256	8.4	4.8
245	E3R	C28 20R 3-Methyl Triaromatic Steroid	110.050	1458	233	6.6	4.4
245	E4R	C28 20R 4-Methyl Triaromatic Steroid	110.640	1515	264	6.8	5.0
245	DC	Triaromatic Dinosteroid c	110.825	1975	409	8.9	7.7
245	DD	Triaromatic Dinosteroid d	110.943	1877	399	8.5	7.5
245	S2R	C29 20R 2-Methyl Triaromatic Steroid	111.348	304	70	1.4	1.3
245	S3R	C29 20R 3-Methyl Triaromatic Steroid	111.567	1189	225	5.4	4.2
245	DE	Triaromatic Dinosteroid e	111.702	1737	278	7.8	5.2
245	S4R	C29 20R 4-Methyl Triaromatic Steroid	112.174	1139	222	5.1	4.2
245	DF	Triaromatic Dinosteroid f	112.292	2169	455	9.8	8.5

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #7**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**5166 - 5167 FT**	**Lab ID:**	**TM000750**
Sampling Point:		**File Name:**	**M1090400.D**

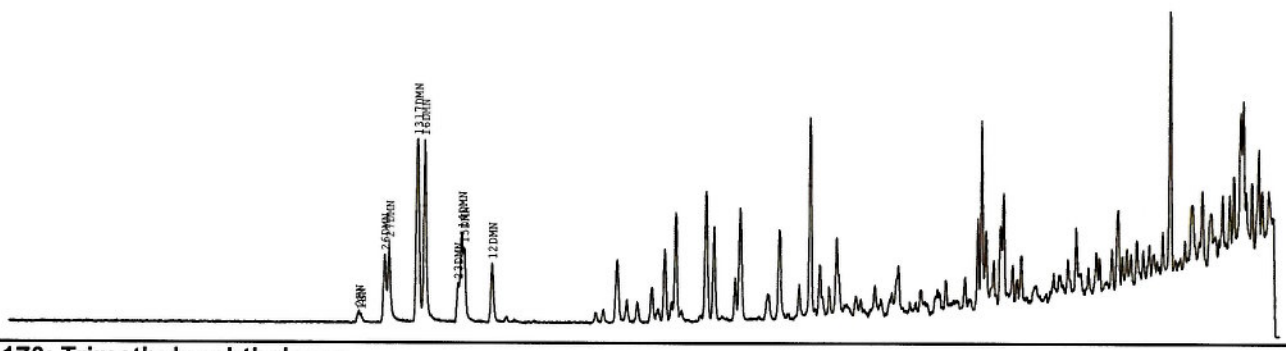
Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
253	S253A	C21 Ring-C Monoaromatic Steroid	84.481	1246	198	5.6	3.7
253	S253B	C22 Monoaromatic steroid	86.942	817	137	3.7	2.6
253	S253C	C27 Reg 5β(H),10β(CH3) 20S	96.920	964	174	4.4	3.3
253	S253D	C27 Dia 10β(H),5β(CH3) 20S	97.072	514	111	2.3	2.1
253	S253E	C27 Dia10βH,5βCH3 20R+Reg5βH,10βCH3 20R	98.538	598	136	2.7	2.6
253	S253F	C27 Reg 5α(H),10β(CH3) 20S	98.690	491	79	2.2	1.5
253	S253G	C28 Dia 10αH,5αCH3 20s+Reg5βH,10βCH3 20S	99.078	1330	227	6.0	4.3
253	S253H	C27 Reg 5α(H),10β(CH3) 20R	100.359	557	101	2.5	1.9
253	S253I	C28 Reg 5α(H),10β(CH3) 20S	100.477	411	58	1.9	1.1
253	S253J	C28 Dia 10αH,5αCH3 20R+Reg5βH,10βCH3 20R	100.696	1459	296	6.6	5.6
253	S253K	C29 Dia 10βH,5βCH3 20S+Reg5βH,10βCH3 20S	100.847	775	130	3.5	2.4
253	S253L	C29 Reg 5α(H),10β(CH3) 20S	102.128	182	43	0.8	0.8
253	S253M	C28 Reg 5α(H),10β(CH3) 20R	102.415	469	72	2.1	1.4
253	S253N	C29 Dia 10βH,5βCH3 20R+Reg5βH,10βCH3 20R	102.516	1024	147	4.6	2.8
253	S253O	C29 Reg 5α(H),10β(CH3) 20R	104.084	254	39	1.1	0.7
365	SH29	C29 8,14-secohopanoids	103.999	8455	1783	38.2	33.4
365	SH30	C30 8,14-secohopanoids	105.971	7254	1655	32.8	31.0

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #7**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**5166 - 5167 FT**	**Lab ID:**	**TM000750**
Sampling Point:		**File Name:**	**M1090400.D**

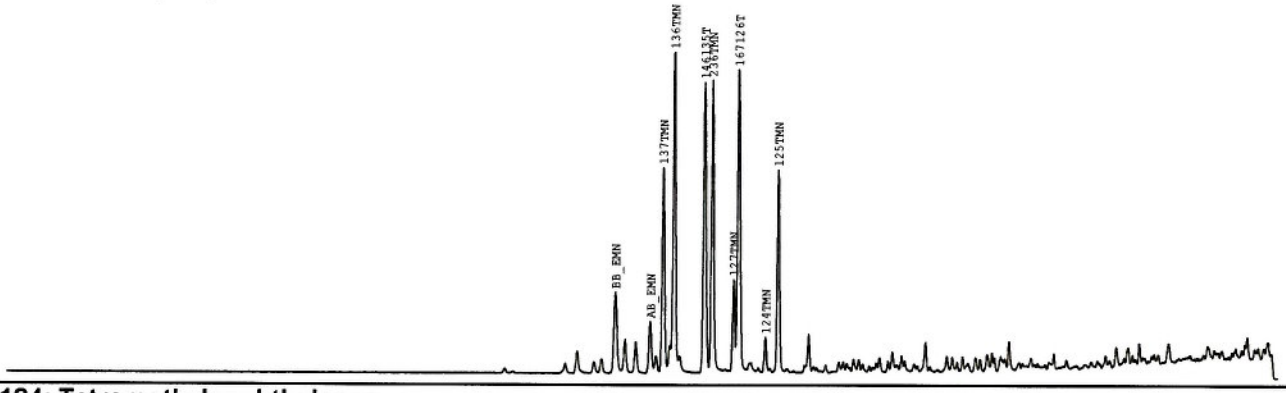
Miscellaneous Ratios	By Areas	By Heights
Triaromatic Steroids m/z 231		
(C20+C21)/Σ TAS	0.20	0.24
TAS #1 20/20+27	0.38	0.44
TAS #2 21/21+28	0.43	0.48
%26TAS	15.8	18.3
%27TAS	39.9	36.1
%28TAS	33.9	34.0
%29TAS	10.5	11.6
C28/C26 20S TAS	2.26	1.60
C28/C27 20R TAS	0.85	0.94
Monoaromatic Steroids m/z 253		
Dia/Regular C27 MAS	0.53	0.64
%27 MAS	34.6	37.3
%28 MAS	40.6	40.5
%29 MAS	24.8	22.3
(C21+C22)/Σ MAS	0.19	0.17
TAS/(MAS+TAS)	0.79	0.81
TA28/(TA28+MA29)	0.84	0.85
Triaromatic Methylsteroids m/z 245		
Dinosteroid Index	0.41	0.45
C4/C3+C4 Mester	0.52	0.54
Phenanthrenes and Naphthalenes		
MPI-1	0.63	0.67
MPI-2	0.70	0.76
MPI-3	0.90	0.90
Rc(a) if Ro < 1.3 (Ro%)	0.75	0.77
Rc(b) if Ro > 1.3 (Ro%)	1.92	1.90
DNR-1	2.05	1.99
DNR-2	1.30	1.15
TNR1	0.92	1.01
TDE-1	6.00	5.78
TDE-2	0.25	0.30
MDR	2.95	3.17
Rm (Ro%)	0.75	0.76
MDR23	0.34	0.31
MDR1	0.27	0.29
DBT/Phenanthrene	0.04	0.04

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #7
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	5166 - 5167 FT	Lab ID:	TM000750
Sampling Point:		File Name:	

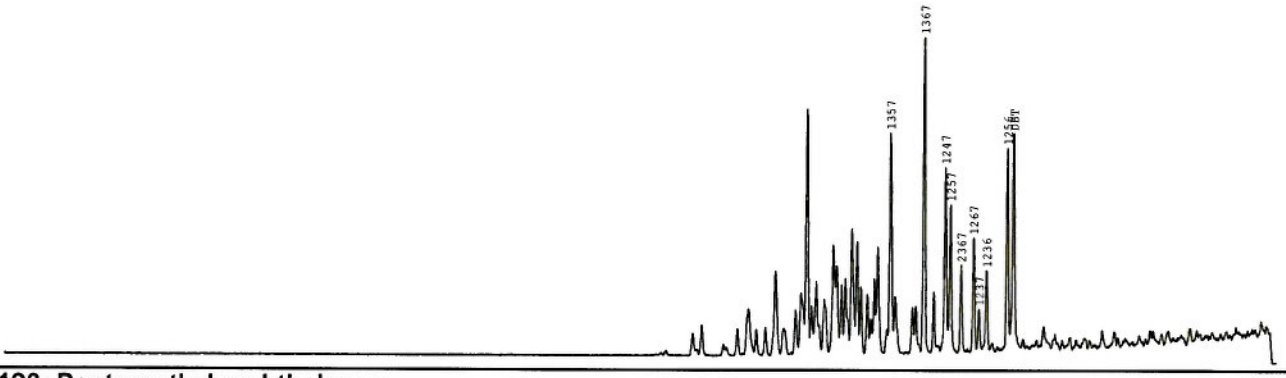
***m/z* 156: Dimethylnaphthalenes**



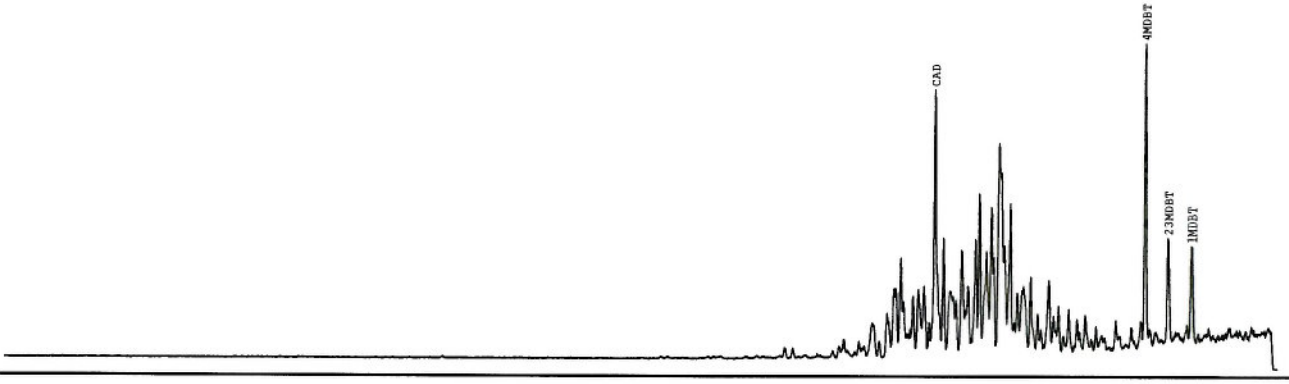
***m/z* 170: Trimethylnaphthalenes**



***m/z* 184: Tetramethylnaphthalenes**

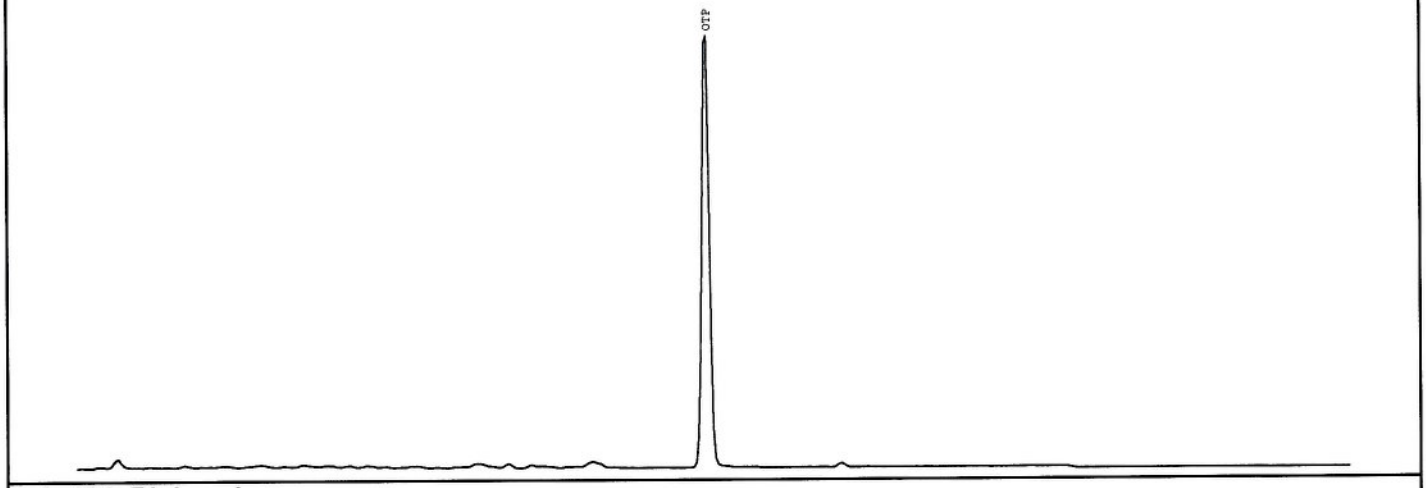


***m/z* 198: Pentamethylnaphthalenes**



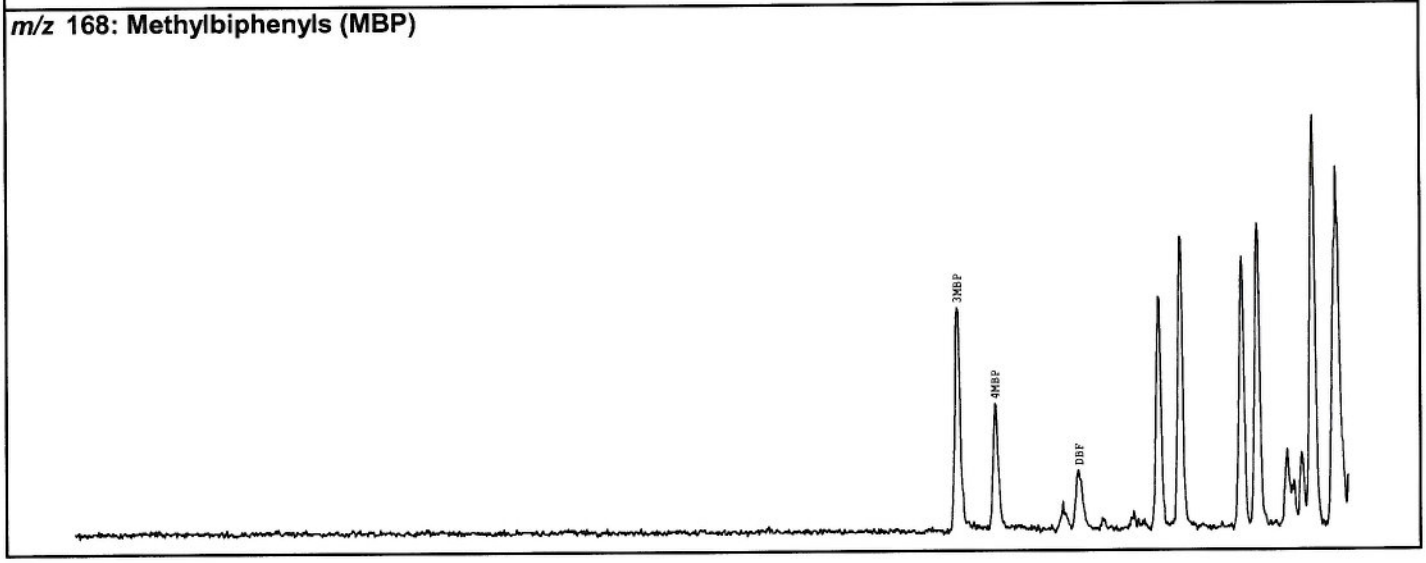
Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #7
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	5166 - 5167 FT	Lab ID:	TM000750
Sampling Point:		File Name:	M1090400.D

***m/z* 230: Ortho-Terphenyl (Inter. Std)**



***m/z* 154: Biphenyl**

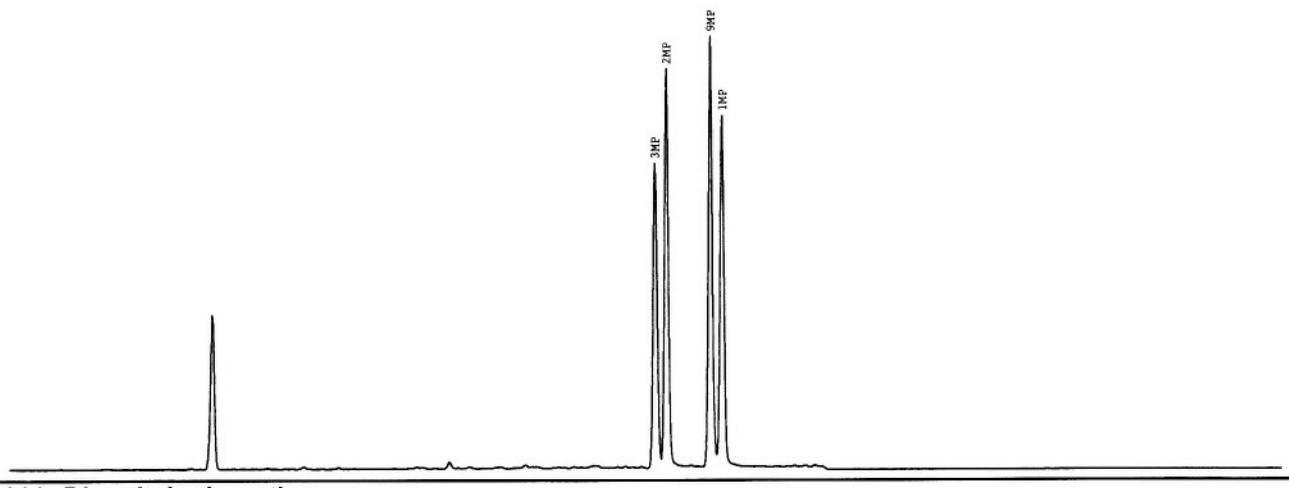
***m/z* 168: Methylbiphenyls (MBP)**



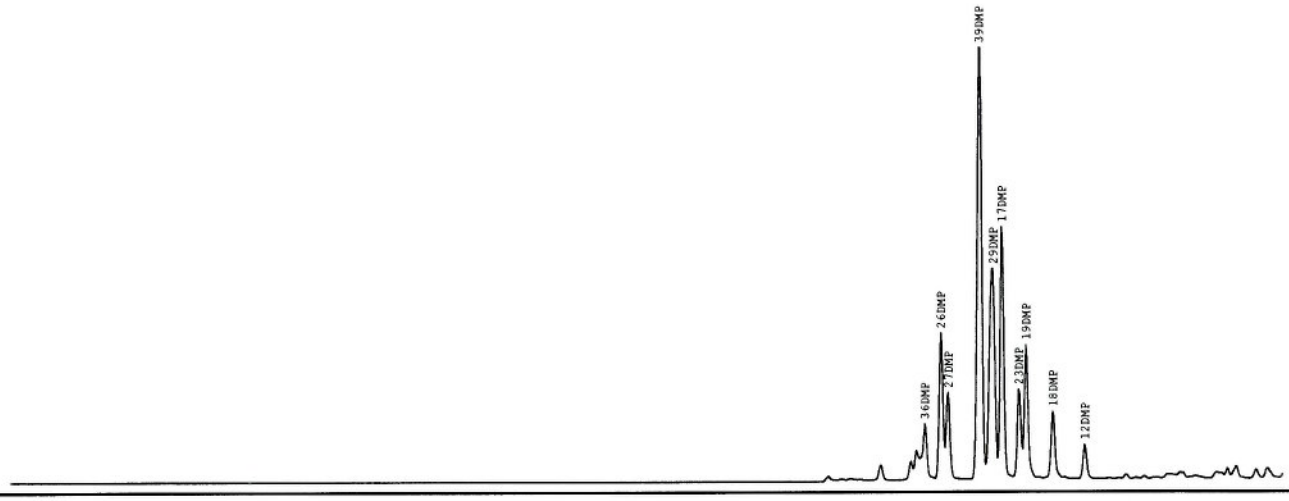
Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #7
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	5166 - 5167 FT	Lab ID:	TM000750
Sampling Point:		File Name:	M1090400.D

***m/z* 178: Phenanthrene**

***m/z* 192: Methylphenanthrenes**



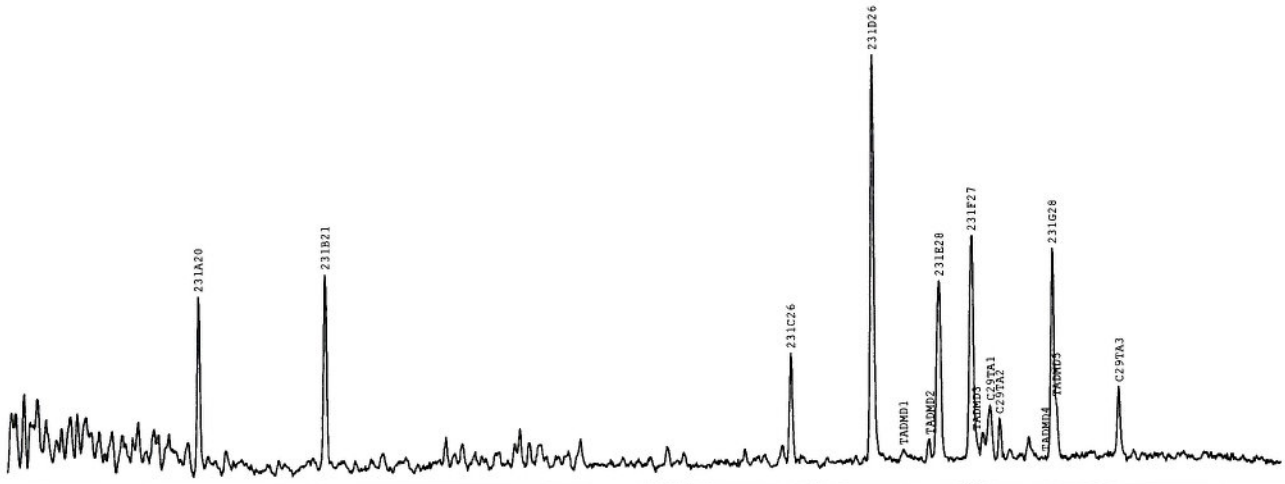
***m/z* 206: Dimethylpehnanthrenes**



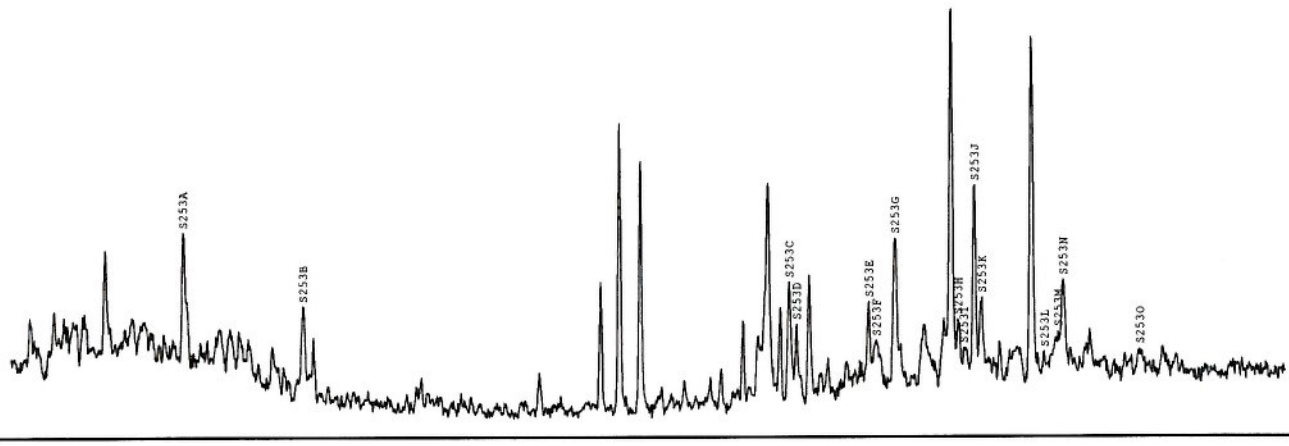
Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #7
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	5166 - 5167 FT	Lab ID:	TM000750
Sampling Point:		File Name:	M1090400.D

***m/z* 191: Benzohopanes**

***m/z* 231: Triaromatic Steranes**



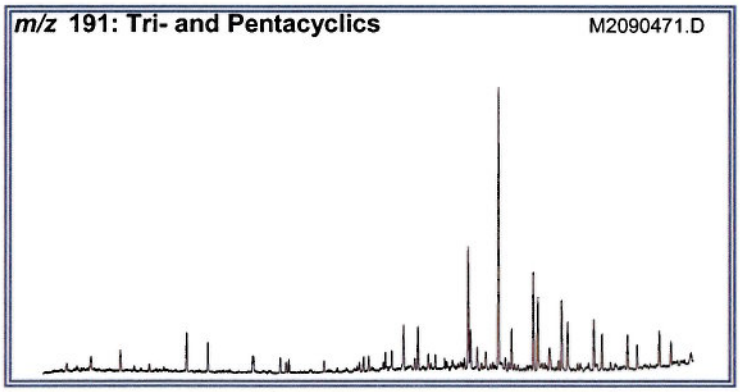
***m/z* 253: Monoaromatic Steranes**

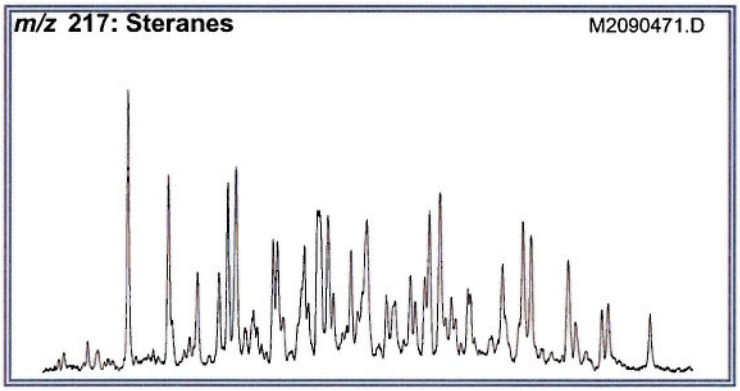


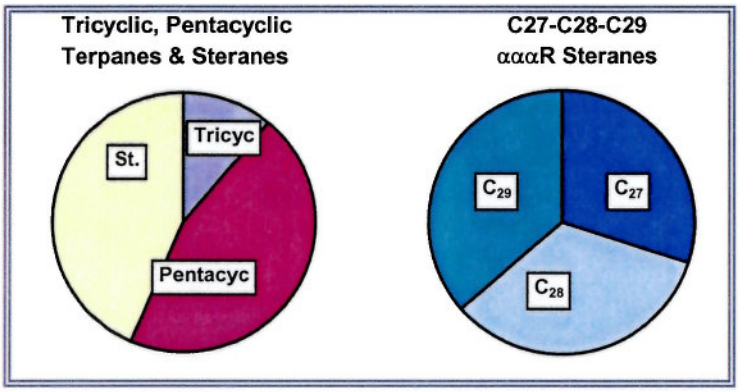
Weatherford LABORATORIES

SATURATE BIOMARKERS

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #7
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000750
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	SCHRADER BLUFF
Well Name:	SUSIE NO. 1	Geologic Age:	
Latitude:	0	Top Depth:	5166 FT
Longitude:	0	Bottom Depth:	5167 FT







RATIOS (on Areas)[1]		Appl[2]	TEV[3]
Steranes (*m/z* 217; 218)			
%C_{27} αββS (218)	27.6	D	
%C_{28} αββS (218)	38.8	D	
%C_{29} αββS (218)	33.6	D	
%C_{27} αααR (217)	29.9	D	
%C_{28} αααR (217)	33.7	D	
%C_{29} αααR (217)	36.5	D	
S/(S+R) (C_{29} ααα) (217)	0.47	M	0.55 (0.8%)
ββS/(ββS+ααR) (C29) (217)	0.53	M	0.70 (0.9%)
(C_{21}+C_{22})/(C_{27}+C_{28}+C_{29}) (217)	0.06		
C_{27}/C_{29} (αββS) (218)	0.82	D	
C_{28}/C_{29} (αββS) (218)	1.16	D	
Diaster/ααα Ster (C_{27}) (217)	1.79	M/D	1.00 (1.4%)
C30 αββS Sterane Index (218)	10.36	D	
C30 S+R Sterane Index (218)	9.97	D	
Terpanes (*m/z* 191)			
Oleanane/Hopane		D/A	
Gammacerane/Hopane	0.03	D	
Norhopane/Hopane	0.44	D	
Bisnorhopane/Hopane	0.04		
Diahopane/Hopane	0.09	M/D	
Moretane/Hopane	0.15	M	0.05 (0.7%)
25-*nor*-hopane/hopane		B	
Ts/(Ts+Tm) trisnorhopanes	0.50	M/D	1.00 (1.4%)
C29Ts/C29 Hopane	0.35	M	
H32 S/(R+S) Homohopanes	0.59	M	0.60 (0.6%)
H35/H34 Homohopanes	0.95	D	
C24 Tetracyclic/Hopane	0.05	D	
C24 Tetracyclic/C26 Tricyclics	0.54	D	
C23/C24 Tricyclic terpanes	1.29	D	
C19/C23 Tricyclic terpanes	0.18	D	
C26/C25 Tricyclic terpanes	0.83	D	
(C28+C29 Tricyclics)/Ts	1.40	A	
Various (*m/z* 191; 217)			
Steranes/Hopanes	1.05	D	
Tricyclic terpanes/Hopanes	0.25	M	1.00 (1.4%)
Tricyclic terpanes/Steranes	0.24	M/D	1.00 (1.4%)

[1]Definition and utility of the ratios can be found on our website www.brilabs.com

[2]A=Source Age; D=Depositional environment; M= Maturity; B=Possible Biodegradation

[3]Thermal equilibrium value of the biomarker ratio and in brackets the approximate VR value at which this value is reached

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #7**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**5166 - 5167 FT**	**Lab ID:**	**TM000750**
Sampling Point:		**File Name:**	**M2090471.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
217	CHOL	*5β cholane (internal standard)*	42.107	7821	1161	100.0	100.0
125	BCAROT	β-carotane					
187	4MDIAM	4-methyldiamantane	9.225	65	22	0.8	1.9
187	1MDIAM	1-methyldiamantane	9.818	63	18	0.8	1.6
187	3MDIAM	3-methyldiamantane	10.201	50	16	0.6	1.4
188	DIAM	diamantane	9.068	35	14	0.4	1.2
191	TR19	C19 tricyclic terpane	18.758	719	128	9.2	11.0
191	TR20	C20 tricyclic terpane	21.581	1468	233	18.8	20.1
191	TR21	C21 tricyclic terpane	24.909	2273	327	29.1	28.2
191	TR22	C22 tricyclic terpane	28.307	847	121	10.8	10.4
191	TR23	C23 tricyclic terpane	32.553	3891	602	49.8	51.9
191	TR24	C24 tricyclic terpane	34.976	3028	455	38.7	39.2
191	DESAOL	des-A-oleanane	37.487	303	48	3.9	4.1
191	DESALU	des-A-lupane					
191	TR25A	C25 tricyclic terpane (a)	40.050	1822	270	23.3	23.3
191	TR25B	C25 tricyclic terpane (b)	40.155	1614	257	20.6	22.1
191	TET24	C24 tetracyclic terpane (TET)	43.275	1552	245	19.8	21.1
191	TR26A	C26 tricyclic terpane (a)	43.938	1336	177	17.1	15.2
191	TR26B	C26 tricyclic terpane (b)	44.252	1533	213	19.6	18.3
191	TR28A	C28 tricyclic terpane (a)	52.865	1538	232	19.7	20.0
191	TR28B	C28 tricyclic terpane (b)	53.457	1651	237	21.1	20.4
191	TR29A	C29 tricyclic terpane (a)	55.428	1691	264	21.6	22.7
191	TR29B	C29 tricyclic terpane (b)	56.160	1712	291	21.9	25.1
191	TR30A	C30 tricyclic terpane (a)	60.379	1875	262	24.0	22.6
191	TR30B	C30 tricyclic terpane (b)	61.199	1653	238	21.1	20.5
191	TS	Ts 18α(H)-trisnorhopane	57.537	4723	696	60.4	59.9
191	TM	Tm 17α(H)-trisnorhopane	59.176	4754	676	60.8	58.2
191	H28	C28 17α18α21β(H)-bisnorhopane	63.169	1204	151	15.4	13.0
191	NOR25H	C29 Nor-25-hopane					
191	H29	C29 Tm 17α(H)21β(H)-norhopane	64.965	12817	1887	163.9	162.5
191	C29TS	C29 Ts 18α(H)-norneohopane	65.243	4493	626	57.4	53.9
191	DH30	C30 17α(H)-diahopane	66.011	2532	356	32.4	30.7
191	M29	C29 normoretane	66.970	2129	276	27.2	23.8
191	OLA	oleanane a					
191	OLB	oleanane b					
191	H30	C30 17α(H)-hopane	68.452	28841	4319	368.8	372.0
191	C30TS	C29 Ts 18α(H)-norneohopane	69.271	1381	194	17.7	16.7
191	M30	C30 moretane	70.021	4459	651	57.0	56.1
191	H31S	C31 22S 17α(H) hopane	72.531	10094	1501	129.1	129.3
191	H31R	C31 22R 17α(H) hopane	73.037	8261	1128	105.6	97.2
191	GAM	gammacerane	73.508	924	108	11.8	9.3
191	H32S	C32 22S 17α(H) hopane	75.757	7510	1083	96.0	93.3
191	H32R	C32 22R 17α(H) hopane	76.454	5306	753	67.8	64.9
191	H33S	C33 22S 17α(H) hopane	79.505	5437	784	69.5	67.5
191	H33R	C33 22R 17α(H) hopane	80.447	4098	569	52.4	49.0
191	H34S	C34 22S 17α(H) hopane	83.376	4016	539	51.3	46.4
191	H34R	C34 22R 17α(H) hopane	84.527	2916	390	37.3	33.6
191	H35S	C35 22S 17α(H) hopane	87.124	3832	568	49.0	48.9
191	H35R	C35 22R 17α(H) hopane	88.432	2752	389	35.2	33.5

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #7**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**5166 - 5167 FT**	**Lab ID:**	**TM000750**
Sampling Point:		**File Name:**	**M2090471.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
217	S21	C21 sterane	28.882	4281	544	54.7	46.9
217	S22	C22 sterane	33.616	2341	320	29.9	27.6
217	DIA27S	C27 βα 20S diasterane	48.297	9443	1374	120.7	118.3
217	DIA27R	C27 βα 20R diasterane	49.848	6250	940	79.9	81.0
217	DIA28SA	C28 βα 20S diasterane a	52.115	6105	903	78.1	77.8
217	DIA28SB	C28 βα 20S diasterane b	52.394	7955	982	101.7	84.6
217	DIA28RA	C28 βα 20R diasterane a	53.824	4460	624	57.0	53.7
217	DIA28RB	C28 βα 20R diasterane b	53.998	5113	611	65.4	52.6
217	C27S	C27 αα 20S sterane	55.027	4508	592	57.6	51.0
217	BB_D29S	C27 ββ 20R + C29 dia20S	55.532	11213	767	143.4	66.1
217	C27BBS	C27 ββ 20S sterane	55.933	6520	742	83.4	63.9
217	C27R	C27 αα 20R sterane	56.822	4282	569	54.8	49.0
217	DIA29R	C29 βα 20R diasterane	57.433	8750	720	111.9	62.0
217	C28S	C28 αα 20S sterane	59.124	3619	445	46.3	38.3
217	C28BBR	C28 ββ 20R sterane(+5 βαα)	59.856	6409	766	81.9	66.0
217	C28BBS	C28 ββ 20S sterane	60.257	8077	853	103.3	73.5
217	C28R	C28 αα 20R sterane	61.321	4824	381	61.7	32.8
217	C29S	C29 αα 20S sterane	62.663	4582	504	58.6	43.4
217	C29BBR	C29 ββ 20R sterane(+5 βαα)	63.448	6533	711	83.5	61.2
217	C29BBS	C29 ββ 20S sterane	63.762	5870	644	75.1	55.5
217	C29R	C29 αα 20R sterane	65.191	5225	522	66.8	45.0
218	C27ABBR	C27 ββ 20R sterane	55.515	8934	1066	114.2	91.8
218	C27ABBS	C27 ββ 20S sterane	55.916	6691	910	85.6	78.4
218	C28ABBR	C28 ββ 20R sterane	59.856	8480	1090	108.4	93.9
218	C28ABBS	C28 ββ 20S sterane	60.257	9405	1186	120.3	102.2
218	C29ABBR	C29 ββ 20R sterane	63.448	7677	995	98.2	85.7
218	C29ABBS	C29 ββ 20S sterane	63.762	8129	1020	103.9	87.9
218	C30ABBR	C30 ββ 20R sterane	66.481	2662	360	34.0	31.0
218	C30ABBS	C30 ββ 20S sterane	66.725	2799	382	35.8	32.9
259	D27S	C27 βα 20S diasterane	48.297	6049	863	77.3	74.3
259	D27R	C27 βα 20R diasterane	49.848	4564	647	58.4	55.7
259	D28SA	C28 βα 20S diasterane a	52.115	4119	622	52.7	53.6
259	D28SB	C28 βα 20S diasterane b	52.394	4554	622	58.2	53.6
259	D28RA	C28 βα 20R diasterane a	53.824	3411	432	43.6	37.2
259	D28RB	C28 βα 20R diasterane b	53.998	3024	419	38.7	36.1
259	D29S	C29 βα 20S diasterane	55.637	6217	545	79.5	46.9
259	D29R	C29 βα 20R diasterane	57.415	4614	354	59.0	30.5
259	C30TP1	C30 tetracyclic polyprenoid	66.987	683	92	8.7	7.9
259	C30TP2	C30 tetracyclic polyprenoid	67.126	518	79	6.6	6.8

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #7**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**5166 - 5167 FT**	**Lab ID:**	**TM000750**
Sampling Point:		**File Name:**	**M2090471.D**

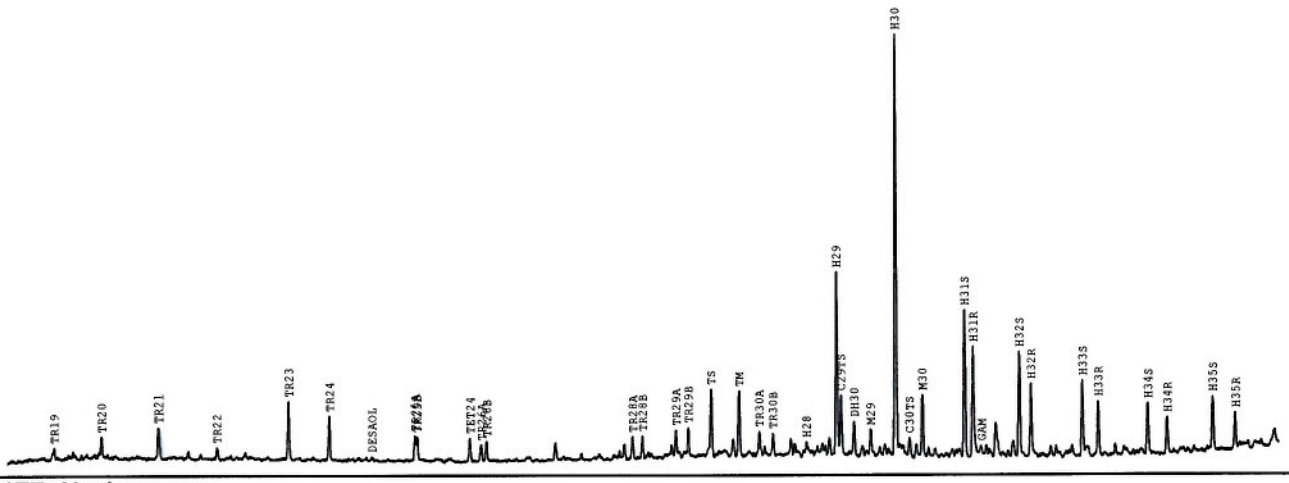
Miscellaneous Ratios	By Areas	By Heights
Terpanes (m/z 191)		
C19/C23 Tricyclic terpanes	0.18	0.21
C22/C21 Tricyclic terpanes	0.37	0.37
C22/C24 Tricyclic terpanes	0.28	0.27
C23/C24 Tricyclic terpanes	1.29	1.32
C24/C23 Tricyclic terpanes	0.78	0.76
C26/C25 Tricyclic terpanes	0.83	0.74
C24 Tetracyclic/C23 Tricyclic	0.40	0.41
C24 Tetracyclic/C26 Tricyclics	0.54	0.63
(C28+C29 Tricyclics)/Ts	1.40	1.47
Ts/Tm trisnorhopanes	0.99	1.03
Ts/(Ts+Tm) trisnorhopanes	0.50	0.51
25-nor-hopane/hopane		0.03
C29Ts/C29 Hopane	0.35	0.33
C29Ts/(C29TS+C29) Hopane	0.26	0.25
C23 Tricyclic/Hopane	0.13	0.14
C24 Tetracyclic/Hopane	0.05	0.06
Bisnorhopane/Hopane	0.04	0.03
Norhopane/Hopane	0.44	0.44
Diahopane/Hopane	0.09	0.08
Oleanane/Hopane		
Moretane/Hopane	0.15	0.15
Moretane/(Moretane+Hopane)	0.13	0.13
C30Ts/C30 Hopane	0.05	0.04
Gammacerane/Hopane	0.03	0.03
C32 S/(S+R) Homohopanes	0.59	0.59
Gammacerane/H31R Homohopane	0.11	0.10
C35/C34 Homohopanes	0.95	1.03
C35/C34 S Homohopanes	0.95	1.05
C35 Homohopane Index	0.12	0.12
Rel % C31 Homohopane	33.9	34.1
Rel % C32 Homohopane	23.6	23.8
Rel % C33Homohopane	17.6	17.6
Rel % C34 Homohopane	12.8	12.1
Rel % C35 Homohopane	12.1	12.4

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #7**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**5166 - 5167 FT**	**Lab ID:**	**TM000750**
Sampling Point:		**File Name:**	**M2090471.D**

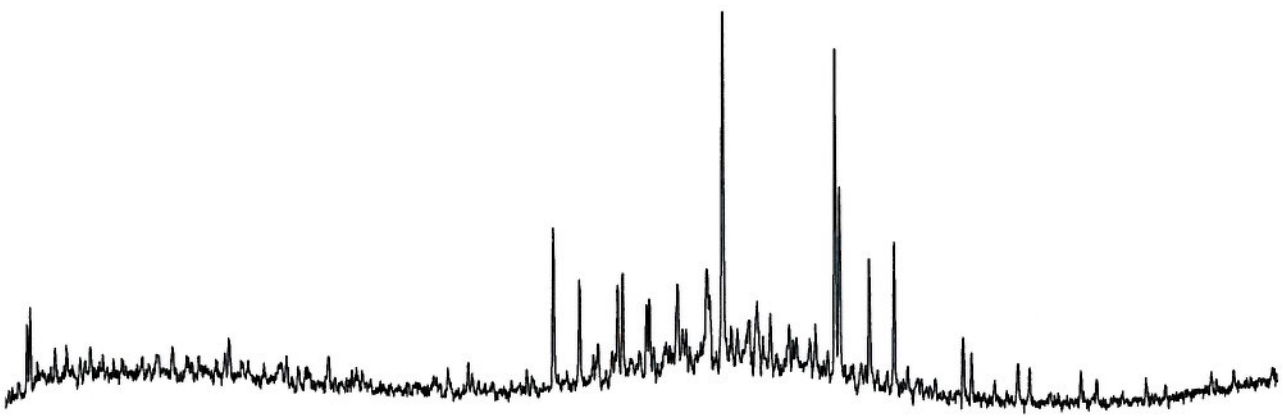
Miscellaneous Ratios	By Areas	By Heights
Steranes (m/z 217; 218)		
%C27 αααR (217)	29.9	38.7
%C28 αααR (217)	33.7	25.9
%C29 αααR (217)	36.5	35.5
S/R (C_{29} ααα) (217)	0.88	0.97
S/(S+R) (C_{29} ααα) (217)	0.47	0.49
ββ/(αα+ββ) (C_{29}) (217)	0.56	0.57
ββS/(ααR+ββS) (C29) (217)	0.53	0.55
αββS/αααR (C_{29}) (217)	1.12	1.23
(C_{21}+C_{22})/(C_{27}+C_{28}+C_{29}) (217)	0.06	0.06
Diaster/ααα Ster (C_{27}) (217)	1.79	1.99
Diaster/(Diaster+ααα) Ster (C_{27}) (217)	0.64	0.67
%C27 αββS (218)	27.6	29.2
%C28 αββS (218)	38.8	38.1
%C29 αββS (218)	33.6	32.7
%C27 αββ (R+S) (218)	31.7	31.5
%C28 αββ (R+S) (218)	36.3	36.3
%C29 αββ (R+S) (218)	32.1	32.2
C30 αββS Sterane Index (218)	10.4	10.9
C30 S+R Sterane Index (218)	10.0	10.6
C_{27}/C_{29} (αββS) (218)	0.82	0.89
C_{28}/C_{29} (αββS) (218)	1.16	1.16
C_{29}/C_{27} (αββS) (218)	1.21	1.12
C_{29}/C_{27} (αββ) (218)	1.01	1.02
Various (m/z 191; 217)		
Steranes/Hopanes	1.04	0.82
Tricyclic terpanes/Hopanes	0.25	0.26
Tricyclic terpanes/Steranes	0.24	0.32
Tricyclic/Pentacyclic Terpanes	24.7	25.8
Steranes/Terpanes	0.77	0.63
% Tricyclic Terpanes	11.2	12.6
% Pentacyclic Terpanes	45.31	12.61
% Steranes	43.5	38.5

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #7
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	5166 - 5167 FT	Lab ID:	TM000750
Sampling Point:		File Name:	M2090471.D

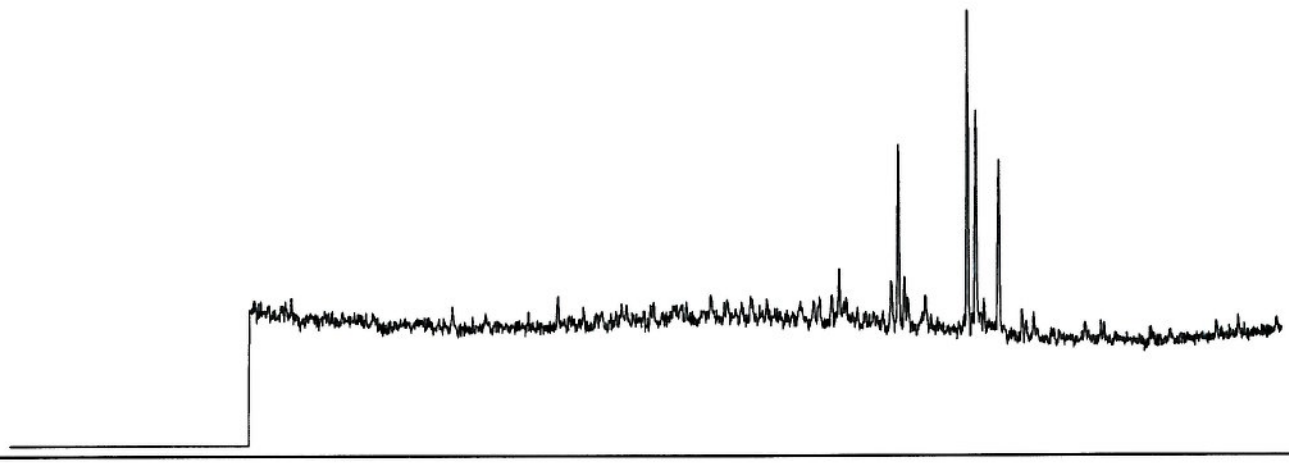
m/z 191:Tri-, tetra- and pentacyclic Terpanes



m/z 177: Norhopanes

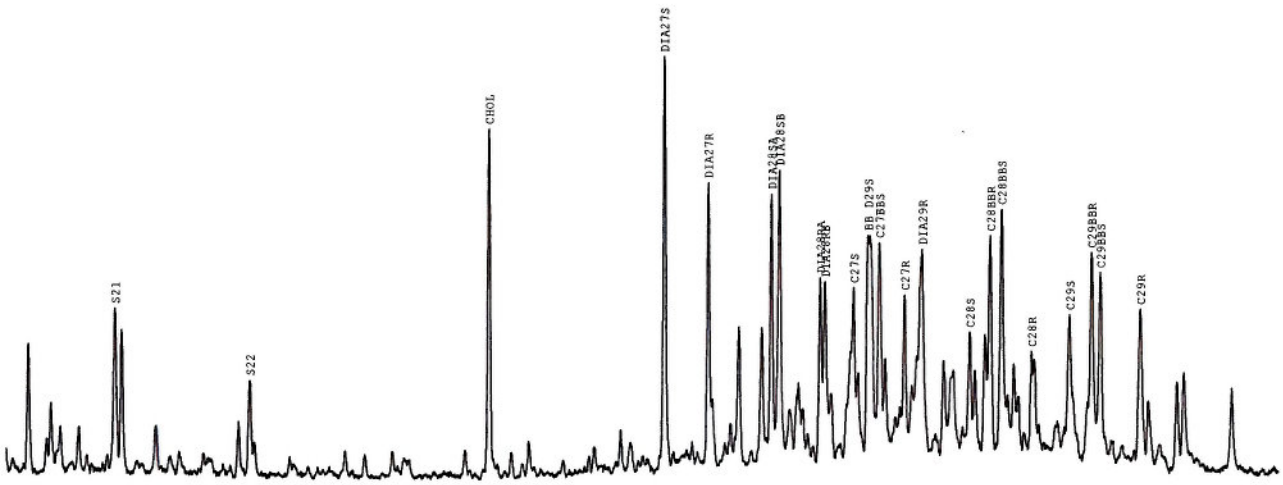


m/z 205

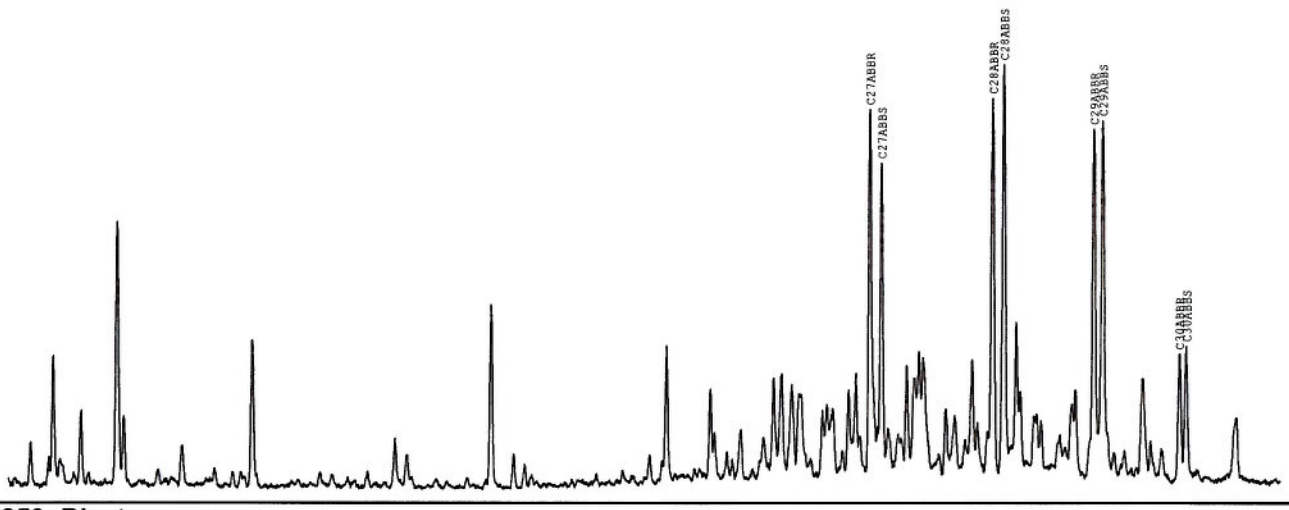


Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #7
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	5166 - 5167 FT	Lab ID:	TM000750
Sampling Point:		File Name:	M2090471.D

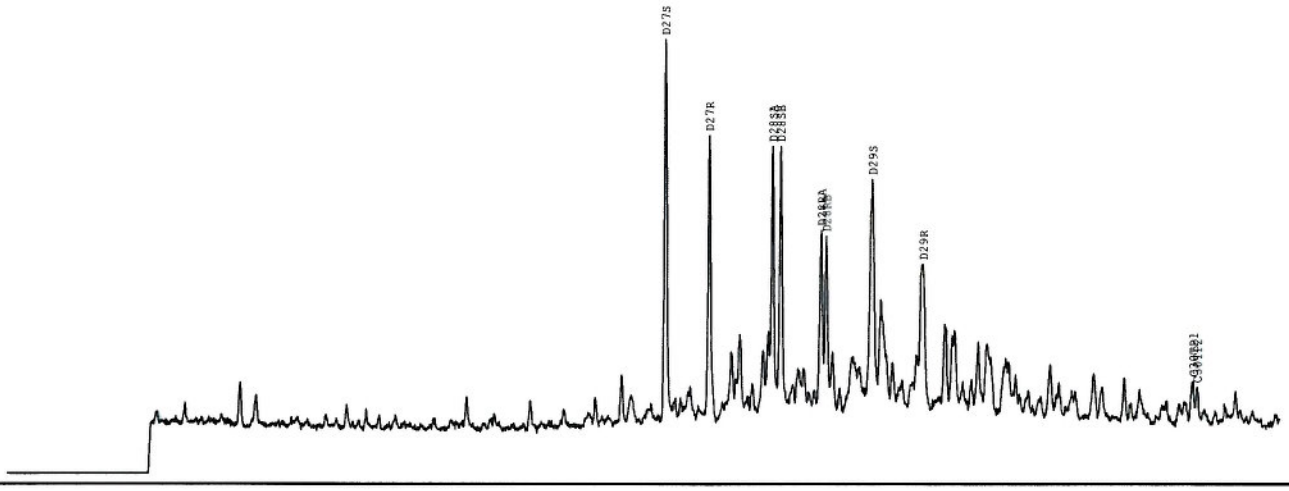
***m/z* 217: Steranes**



***m/z* 218: Steranes**



***m/z* 259: Diasteranes**



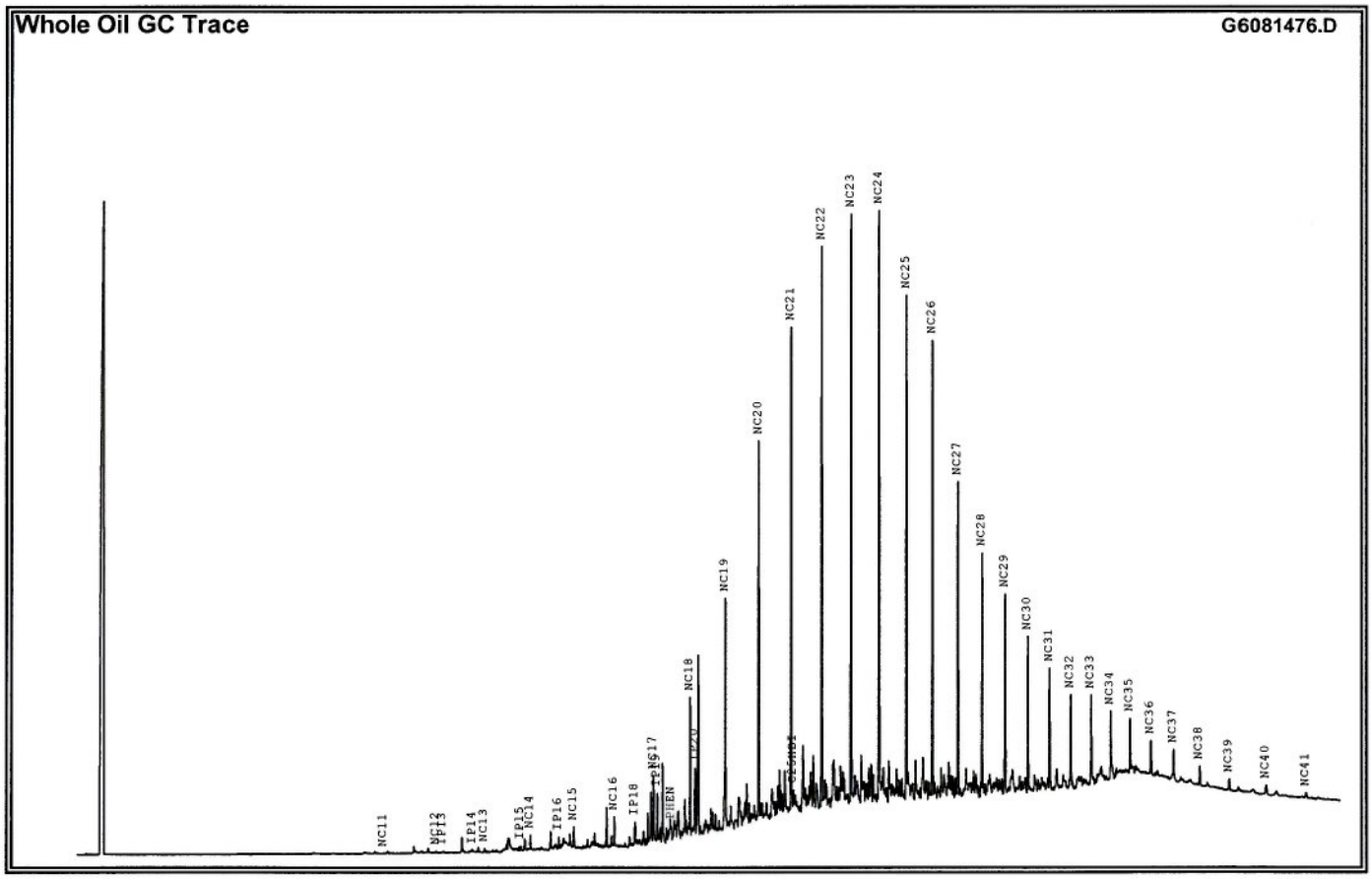
Weatherford LABORATORIES

WHOLE OIL GC

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #7
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000751
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	SCHRADER BLUFF
Well Name:	SUSIE NO. 1	Geologic Age:	
Latitude:	0	Top Depth:	5169 FT
Longitude:	0	Bottom Depth:	5170 FT

Whole Oil GC Trace

G6081476.D



WGC parameters	
Pristane/Phytane	0.67
Pristane/$n C_{17}$	0.96
Phytane/$n C_{18}$	0.80
$n C_{18}$/(nC_{18}+$n C_{19}$)	0.38
$n C_{17}$/(nC_{17}+$n C_{29}$)	0.25
CPI Hunt[4]	0.95
Normal Paraffins	40.3
Isoprenoids	1.9
Cycloparaffins	
Branched (iso-) Paraffins	
BTX aromatics	
Resolved unknowns	57.7

Thompson[1]	
A.	BZ/$n C_6$
B.	TOL/$n C_7$
C.	($n C_6$+$n C_7$)/(CH+MCH)
I.	Isoheptane Value
F.	$n C_7$/MCH
U.	CH/MCP
R.	$n C_7$/2MH
S.	$n C_6$/22DMB
H.	Heptane Value
	MCH/$n C_7$
	mpXYL/$n C_8$

Mango[2]
P_1
P_2
P_3
$5N_1$
N_2
$6N_1$
K_1
K_2
$5N_1/6N_1$
P_3/N_2
ln(24DMP/23DMP)

Halpern[3]
Tr_1
Tr_2
Tr_3
Tr_4
Tr_5
Tr_7
Tr_8
C_1
C_2
C_3
C_4
C_5

[1]Thompson, K.F.M.,1983.GCA:V.47, p.303. [2]Mango, F.D.,1994.GCA: V.58, p.895. [3]Halpern,H.I.,1995,AAPG Bull.: V.79, p.801. [4]Hunt, 1979

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #7**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**5169 - 5170 FT**	**Lab ID:**	**TM000751**
Sampling Point:		**File Name:**	**G6081476.D**

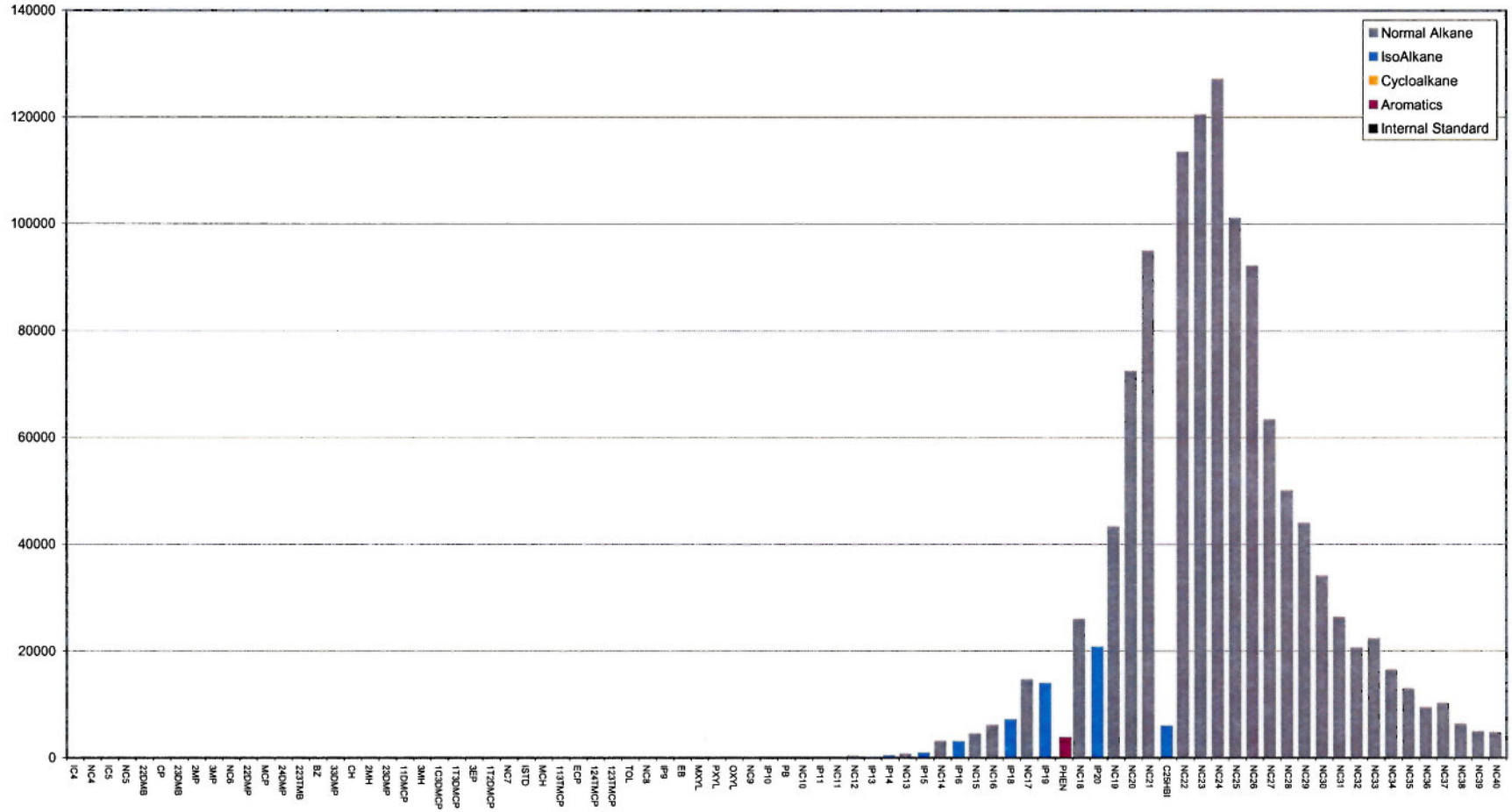
Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IC4	Iso-alkane C4					
NC4	Normal Alkane C4					
IC5	Iso-alkane C5					
NC5	Normal Alkane C5					
22DMB	2,2-Dimethylbutane					
CP	Cyclopentane					
23DMB	2,3-Dimethylbutane					
2MP	2-Methylpentane					
3MP	3-Methylpentane					
NC6	Normal Alkane C6					
22DMP	2,2-Dimethylpentane					
MCP	Methylcyclopentane					
24DMP	2,4-Dimethylpentane					
223TMB	2,2,3-Trimethylbutane					
BZ	Benzene					
33DMP	3,3-Dimethylpentane					
CH	Cyclohexane					
2MH	2-Methylhexane					
23DMP	2,3-Dimethylpentane					
11DMCP	1,1-Dimethylcyclopentane					
3MH	3-Methylhexane					
1C3DMCP	1-cis-3-Dimethylcyclopentane					
1T3DMCP	1-trans-3-Dimethylcyclopentane					
3EP	3-Ethylpentane					
1T2DMCP	1-trans-2-Dimethylcyclopentane					
NC7	Normal Alkane C7					
ISTD	Internal Standard					
MCH	Methylcyclohexane					
113TMCP	1,1,3,-Trimethylcyclopentane					
ECP	Ethylcyclopentane					
124TMCP	1,2,4-Trimethylcyclopentane					
123TMCP	1,2,3-Trimethylcyclopentane					
TOL	Toluene					
NC8	Normal Alkane C8					
IP9	Isoprenoid C9					
EB	Ethyl-benzene					
MXYL	*m*-xylene					
PXYL	*p*-xylene					
OXYL	*o*-xylene					
NC9	Normal Alkane C9					
IP10	Isoprenoid C10					
PB	Propyl-benzene					
NC10	Normal Alkane C10					
IP11	Isoprenoid C11					
NC11	Normal Alkane C11	31.787	101	27		
NC12	Normal Alkane C12	36.682	400	88		
IP13	Isoprenoid C13	37.362	212	57		
IP14	Isoprenoid C14	40.173	471	92		
NC13	Normal Alkane C13	41.273	789	216		
IP15	Isoprenoid C15	44.707	990	281		
NC14	Normal Alkane C14	45.589	3217	884		

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #7**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**5169 - 5170 FT**	**Lab ID:**	**TM000751**
Sampling Point:		**File Name:**	**G6081476.D**

Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IP16	Isoprenoid C16	48.244	3188	697		
NC15	Normal Alkane C15	49.656	4596	1231		
NC16	Normal Alkane C16	53.505	6188	1715		
IP18	Isoprenoid C18	55.436	7218	1332		
NC17	Normal Alkane C17	57.154	14675	3774		
IP19	Isoprenoid C19 (Pristane)	57.515	14025	2775		
PHEN	Phenanthrene	58.846	3843	868		
NC18	Normal Alkane C18	60.622	26064	7687		
IP20	Isoprenoid C20 (Phytane)	61.075	20859	3722		
NC19	Normal Alkane C19	63.928	43389	12741		
NC20	Normal Alkane C20	67.085	72549	20923		
NC21	Normal Alkane C21	70.102	95037	26710		
C25HBI	Highly Branch Isoprenoid C25	70.332	6009	1330		
NC22	Normal Alkane C22	72.988	113532	30858		
NC23	Normal Alkane C23	75.750	120529	32410		
NC24	Normal Alkane C24	78.396	127230	32509		
NC25	Normal Alkane C25	80.940	101179	27702		
NC26	Normal Alkane C26	83.385	92242	25179		
NC27	Normal Alkane C27	85.738	63490	17382		
NC28	Normal Alkane C28	88.010	50076	13416		
NC29	Normal Alkane C29	90.209	44048	11036		
NC30	Normal Alkane C30	92.333	34126	8582		
NC31	Normal Alkane C31	94.392	26405	6766		
NC32	Normal Alkane C32	96.383	20674	5201		
NC33	Normal Alkane C33	98.318	22532	4973		
NC34	Normal Alkane C34	100.195	16478	3754		
NC35	Normal Alkane C35	102.022	12979	3076		
NC36	Normal Alkane C36	103.951	9476	1934		
NC37	Normal Alkane C37	106.105	10289	1762		
NC38	Normal Alkane C38	108.550	6413	1090		
NC39	Normal Alkane C39	111.356	4970	675		
NC40	Normal Alkane C40	114.596	4818	572		
NC41	Normal Alkane C41	118.363	3244	326		

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #7**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**5169 - 5170 FT**	**Lab ID:**	**TM000751**
Sampling Point:		**File Name:**	**G6081476.D**

Histogram Based on Area

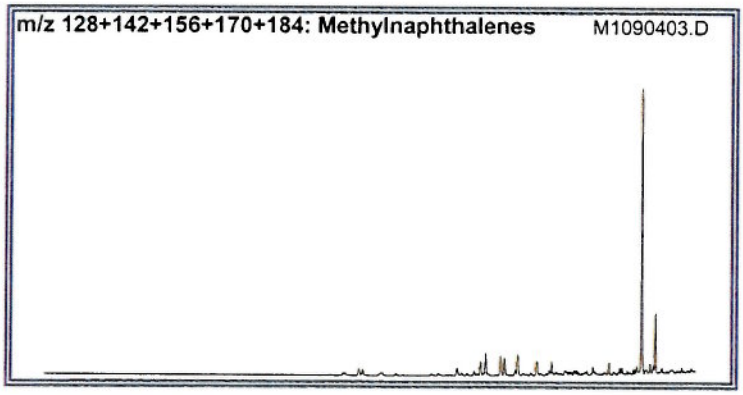


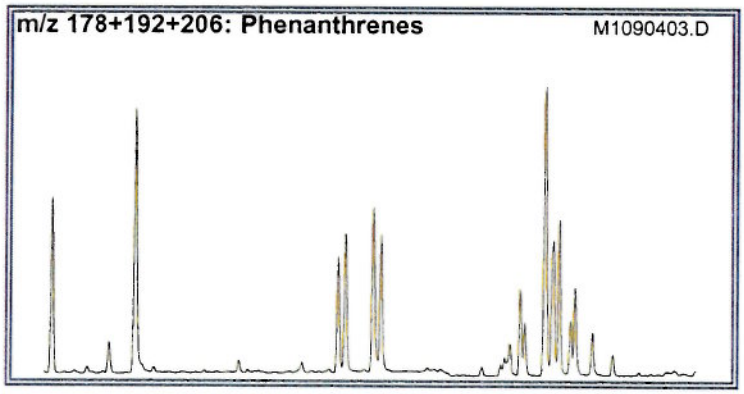
Parameter	Formula
WGC Parameters	
Pristane/Phytane	IP19/IP20
Pristane/nC17	IP19/NC17
Phytane/nC18	IP20/NC18
$nC_{18}/(nC_{18}+nC_{19})$	NC18/(NC18+NC19)
$nC_{17}/(nC_{17}+nC_{29})$	NC17/(NC17+NC29)
CPI Hunt[4]	((NC23+NC25+NC27+NC29+NC31)+(NC25+NC27+NC29+NC31+NC33))/(2*(NC24+NC26+NC28+NC30+NC32))
Normal Paraffins	100*(NC4+NC5+NC6+NC7+NC8+NC9+NC10+NC11+NC12+NC13+NC14+NC15+NC16+NC17+NC18+NC19+NC20+NC21+NC22+NC23+NC24+NC25+NC26+NC27+NC28+NC29+NC30+NC31+NC32+NC33+NC34+NC35+NC36+NC37+NC38+NC39+NC40+NC41)/TOTAL_RESOLVED
Isoprenoids	100*(IP9+IP10+IP11+IP13+IP14+IP15+IP16+IP18+IP19+IP20+C25HBI)/TOTAL_RESOLVED
Cycloparaffins	100*(CP+MCP+CH+11DMCP+1T3DMCP+1T2DMCP+MCH+113TMCP+ECP+124TMCP+123TMCP+1C3DMCP+1C2DMCP)/TOTAL_RESOLVED
Branched (iso-) Paraffins	100*(IC4+IC5+22DMB+23DMB+2MP+3MP+22DMP+24DMP+223TMB+33DMP+2MH+23DMP+3MH+3EP)/TOTAL_RESOLVED
BTX aromatics	100*(BZ+TOL+MXYL+PXYL+OXYL)/TOTAL_RESOLVED (*OXYL added 05/21/2007)
Thompson[1]	
BZ/nC6	BZ/NC6
TOL/nC7	TOL/NC7
(nC6+nC7)/(CH+MCH)	(NC6+NC7)/(CH+MCH)
Isoheptane Value	(2MH+3MH)/(1C3DMCP+1T3DMCP+1T2DMCP)
nC7/MCH	NC7/MCH
CH/MCP	CH/MCP
nC7/2MH	NC7/2MH
nC6/22DMB	NC6/22DMB
Heptane Value	100*NC7/(CH+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+1T2DMCP+MCH+NC7)
MCH/nC7	MCH/NC7
mpXYL/nC8	(MXYL+PXYL)/NC8
Mango[2]	
P1	100*NC7/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
P2	100*(2MH+3MH)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
P3	100*(3EP+33DMP+23DMP+24DMP+22DMP+223TMB)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
5N1	100*(ECP+1T2DMCP)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
N2	100*(11DMCP+1C3DMCP+1T3DMCP)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
6N1	100*(MCH+TOL)/(22DMP+24DMP+223TMB+33DMP+2MH+23DMP+11DMCP+3MH+1C3DMCP+1T3DMCP+3EP+1T2DMCP+NC7+MCH+ECP+TOL)
K1	(2MH+23DMP)/(3MH+24DMP)
K2	(2MH+3MH)/(2MH+3MH+11DMCP+1C3DMCP+1T3DMCP)
5N1/6N1	(ECP+1T2DMCP)/(MCH+TOL)
P3/N2	(3EP+33DMP+23DMP+24DMP+22DMP+223TMB)/(11DMCP+1C3DMCP+1T3DMCP)
ln(24DMP/23DMP)	ln(24DMP/23DMP)
Halpern[3]	
Tr1	TOL/11DMCP
Tr2	NC7/11DMCP
Tr3	3MH/11DMCP
Tr4	2MH/11DMCP
Tr5	(2MH+3MH)/11DMCP
Tr7	1T3DMCP/11DMCP
Tr8	(2MH+3MH)/(22DMP+23DMP+24DMP+33DMP+3EP)
C1	22DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C2	23DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C3	24DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C4	33DMP/(22DMP+23DMP+24DMP+33DMP+3EP)
C5	3EP/(22DMP+23DMP+24DMP+33DMP+3EP)

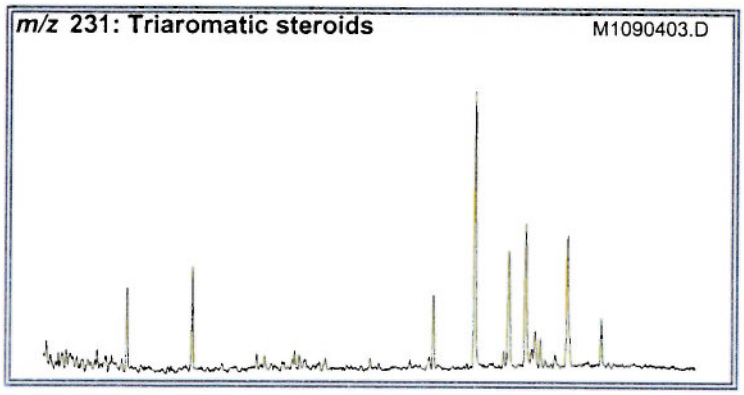
Weatherford LABORATORIES

AROMATIC BIOMARKERS

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #7
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000751
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	SCHRADER BLUFF
Well Name:	SUSIE NO. 1	Geologic Age:	
Latitude:	0	Top Depth:	5169 FT
Longitude:	0	Bottom Depth:	5170 FT







RATIOS (on Areas)[1]		Appl[2]	TEV[3]
Mono- (MAS) and Triaromatic Steroids (TAS)			
(C20+C21)/Σ TAS	0.16	M	1.0 (1.3%)
TAS #1 20/20+27	0.31	M	
TAS #2 21/21+28	0.39	M	
%26 TAS	15.8	D	
%27 TAS	40.1	D	
%28 TAS	33.7	D	
%29 TAS	10.4	D	
C28/C26 20S TAS	2.28		
C28/C27 20R TAS	0.84		
Dia/Regular C27 MAS	1.01		
%27 MAS	29.4	D	
%28 MAS	46.4	D	
%29 MAS	24.2	D	
(C21+C22)/Σ MAS	0.13	M	1.0 (1.3%)
TAS/(MAS+TAS)	0.78	M	
TA28/(TA28+MA29)	0.83	M	1.0 (0.8%)
Triaromatic Methylsteroids			
Dinosteroid Index	0.39	A	
C4/C3+C4 Mester	0.50	A	
Phenanthrenes, Naphthalenes, and Dibenzothiophenes			
MPI-1	0.64	M	
Rc(a) if Ro < 1.3 (Ro%)	0.75	M	
Rc(b) if Ro > 1.3 (Ro%)	1.92	M	
MPI-2	0.72	M	
DNR-1	2.51	M	
DNR-2	1.30	M	
TNR1	0.95	M	
TDE-1	5.51	M	
TDE-2	0.24	M	
MDR	2.79	M	
Rm (Ro%)	0.74	M	
MDR23	0.41	M	
MDR1	0.28	M	
DBT/Phenanthrene	0.04	D	

[1]Definition and utility of the ratios can be found on our website www.BaselineDGSI.com

[2]A=Source Age; D=Depositional environment; M= Maturity

[3]Thermal equilibrium value of the biomarker ratio and in brackets the approximate VR value at which this value is reached

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #7
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	5169 - 5170 FT	Lab ID:	TM000751
Sampling Point:		File Name:	M1090403.D

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
230	OTP	*Ortho-terphenyl* (internal standard)	74.995	35198	9104	300.0	300.0
128	NAPH	Naphthalene					
142	2MN	2-Methylnaphthalene	37.977	64	11	0.5	0.4
142	1MN	1-Methylnaphthalene	39.224	67	14	0.6	0.5
154	BP	Biphenyl	44.734	165	24	1.4	0.8
156	2EN	2-Ethylnaphthalene	46.149	67	14	0.6	0.5
156	1EN	1-Ethylnaphthalene	46.233	47	15	0.4	0.5
156	26DMN	2,6-Dimethylnaphthalene	47.093	527	83	4.5	2.7
156	27DMN	2,7-Dimethylnaphthalene	47.244	670	99	5.7	3.3
156	1317DMN	1,3 & 1,7-Dimethylnaphthalenes	48.238	1687	226	14.4	7.4
156	16DMN	1,6-Dimethylnaphthalene	48.474	1423	212	12.1	7.0
156	23DMN	2,3-Dimethylnaphthalene	49.687	321	47	2.7	1.5
156	14DMN	1,4-Dimethylnaphthalene	49.772	602	100	5.1	3.3
156	15DMN	1,5-Dimethylnaphthalene	49.839	476	91	4.1	3.0
156	12DMN	1,2-Dimethylnaphthalene	50.816	434	66	3.7	2.2
168	2MBP	2-Methylbiphenyl					
168	DPM	Diphenylmethane					
168	3MBP	3-Methylbiphenyl	53.327	424	65	3.6	2.1
168	4MBP	4-Methylbiphenyl	53.984	271	39	2.3	1.3
168	DBF	Dibenzofuran	55.382	85	12	0.7	0.4
170	BB_EMN	Ethyl-methyl-Naphthalene	55.147	1604	204	13.7	6.7
170	AB_EMN	Ethyl-methyl-Naphthalene	56.377	843	127	7.2	4.2
170	137TMN	1,3,7-Trimethylnaphthalene	56.815	2902	466	24.7	15.4
170	136TMN	1,3,6-Trimethylnaphthalene	57.185	4642	749	39.6	24.7
170	146135T	(1,4,6+1,3,5)-Trimethylnaphthalenes	58.247	3890	603	33.2	19.9
170	236TMN	2,3,6-Trimethylnaphthalene	58.516	3691	589	31.5	19.4
170	127TMN	1,2,7-Trimethylnaphthalene	59.258	1060	193	9.0	6.4
170	167126T	(1,6,7+1,2,6)-Trimethylnaphthalenes	59.426	4358	630	37.1	20.8
170	124TMN	1,2,4-Trimethylnaphthalene	60.353	376	62	3.2	2.0
170	125TMN	1,2,5-Trimethylnaphthalene	60.791	2072	362	17.7	11.9
178	PHEN	Phenanthrene	70.277	42383	8617	361.2	284.0
184	1357	1,3,5,7-Tetramethylnaphthalene	64.751	1499	266	12.8	8.8
184	1367	1,3,6,7-Tetramethylnaphthalene	65.896	1906	395	16.2	13.0
184	1247	(1,2,4,7+1,2,4,6+1,4,6,7)-Tetramethylnaphthalenes	66.655	1047	205	8.9	6.8
184	1257	1,2,5,7-Tetramethylnaphthalene	66.840	889	188	7.6	6.2
184	2367	2,3,6,7-Tetramethylnaphthalene	67.194	475	96	4.0	3.2
184	1267	1,2,6,7-Tetramethylnaphthalene	67.632	639	137	5.4	4.5
184	1237	1,2,3,7-Tetramethylnaphthalene	67.817	236	48	2.0	1.6
184	1236	1,2,3,6-Tetramethylnaphthalene	68.087	458	96	3.9	3.2
184	1256	1,2,5,6-Tetramethylnaphthalene	68.794	1094	256	9.3	8.4
184	DBT	Dibenzothiophene	69.014	1683	324	14.3	10.7
191	BH32	C32 Benzohopane					
191	BH33	C33 Benzohopane					
191	BH34	C34 Benzohopane					
191	BH35	C35 Benzohopane					
192	3MP	3-Methylphenanthrene	75.214	16028	3762	136.6	124.0
192	2MP	2-Methylphenanthrene	75.383	20504	4512	174.8	148.7
192	9MP	9-Methylphenanthrene	76.073	23819	5358	203.0	176.6
192	1MP	1-Methylphenanthrene	76.259	19772	4461	168.5	147.0

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #7
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	5169 - 5170 FT	Lab ID:	TM000751
Sampling Point:		File Name:	M1090403.D

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
198	CAD	Cadalene	66.250	1075	194	9.2	6.4
198	4MDBT	4 Methyl Dibenzothiophene	73.563	1329	278	11.3	9.2
198	23MDBT	2 & 3 Methyl Dibenzothiophenes	74.338	685	128	5.8	4.2
198	1MDBT	1 Methyl Dibenzothiophene	75.130	477	105	4.1	3.5
206	36DMP	3,6-Dimethylphenanthrene	79.425	4566	1014	38.9	33.4
206	26DMP	2,6-Dimethylphenanthrene	79.678	11843	2812	100.9	92.7
206	27DMP	2,7-Dimethylphenanthrene	79.796	6619	1703	56.4	56.1
206	39DMP	(3,9+3,10+2,10+1,3)-Dimethylphenanthrenes	80.302	46270	9414	394.4	310.2
206	29DMP	(2,9+1,6)-Dimethylphenanthrenes	80.504	25597	4385	218.2	144.5
206	17DMP	1,7-Dimethylphenanthrene	80.639	21549	5085	183.7	167.6
206	23DMP	2,3-Dimethylphenanthrene	80.925	7968	1756	67.9	57.9
206	19DMP	1,9-Dimethylphenanthrene	81.027	11956	2856	101.9	94.1
206	18DMP	1,8-Dimethylphenanthrene	81.465	6157	1368	52.5	45.1
206	12DMP	1,2-Dimethylphenanthrene	81.970	2932	665	25.0	21.9
231	231A20	C20 Triaromatic Steroid	92.286	3219	750	27.4	24.7
231	231B21	C21 Triaromatic	94.780	3810	931	32.5	30.7
231	231C26	C26 20S Triaromatic	103.949	2834	662	24.2	21.8
231	231D26	C27 20S & C26 20R Triaromatic	105.550	11240	2461	95.8	81.1
231	TADMD1	C28 23,24-Cholestane Triaromatic	106.106	302	51	2.6	1.7
231	TADMD2	C28 23,24-Cholestane Triaromatic	106.663	679	164	5.8	5.4
231	231E28	C28 20S Triaromatic	106.848	6456	1047	55.0	34.5
231	231F27	C27 20R Triaromatic	107.505	7201	1288	61.4	42.4
231	TADMD3	C28 23,24-Cholestane Triaromatic	107.606	203	88	1.7	2.9
231	C29TA1	C29 Triaromatic	107.859	2070	343	17.6	11.3
231	C29TA2	C29 Triaromatic	108.062	1195	282	10.2	9.3
231	TADMD4	C28 23,24-Cholestane Triaromatic					
231	231G28	C28 20R Triaromatic	109.107	6041	1178	51.5	38.8
231	TADMD5	C28 23,24-Cholestane Triaromatic	109.174	672	286	5.7	9.4
231	C29TA3	C29 Triaromatic	110.404	1866	447	15.9	14.7
245	C3S	C27 20S 3-Methyl Triaromatic Steroid	106.646	480	109	4.1	3.6
245	C4S	C27 20S 4-Methyl Triaromatic Steroid	107.253	613	135	5.2	4.4
245	E2S	C28 20S 2-Methyl Triaromatic Steroid	107.792	262	59	2.2	1.9
245	E3SC3R	C28 20S 3-Methyl & C27 20R 3-Methyl TAS	108.146	2054	357	17.5	11.8
245	E4SC4R	C28 20S 4-Methyl & C27 20R 4-Methyl TAS	108.753	2456	419	20.9	13.8
245	S2S	C29 20S 2-Methyl Triaromatic Steroid	109.022	407	71	3.5	2.3
245	DA	Triaromatic Dinosteroid a	109.157	463	110	3.9	3.6
245	S3S	C29 20S 3-Methyl Triaromatic Steroid	109.359	1424	188	12.1	6.2
245	DB	Triaromatic Dinosteroid b	109.764	1482	311	12.6	10.2
245	S4SE2R	C29 20S 4-Methyl & C28 20R 2-Methyl TAS	109.932	1834	278	15.6	9.2
245	E3R	C28 20R 3-Methyl Triaromatic Steroid	110.084	1672	252	14.3	8.3
245	E4R	C28 20R 4-Methyl Triaromatic Steroid	110.674	1608	284	13.7	9.4
245	DC	Triaromatic Dinosteroid c	110.876	1745	383	14.9	12.6
245	DD	Triaromatic Dinosteroid d	110.977	2024	419	17.3	13.8
245	S2R	C29 20R 2-Methyl Triaromatic Steroid	111.382	360	58	3.1	1.9
245	S3R	C29 20R 3-Methyl Triaromatic Steroid	111.601	1207	228	10.3	7.5
245	DE	Triaromatic Dinosteroid e	111.753	1737	311	14.8	10.2
245	S4R	C29 20R 4-Methyl Triaromatic Steroid	112.208	1187	246	10.1	8.1
245	DF	Triaromatic Dinosteroid f	112.326	2314	499	19.7	16.4

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #7
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	5169 - 5170 FT	Lab ID:	TM000751
Sampling Point:		File Name:	M1090403.D

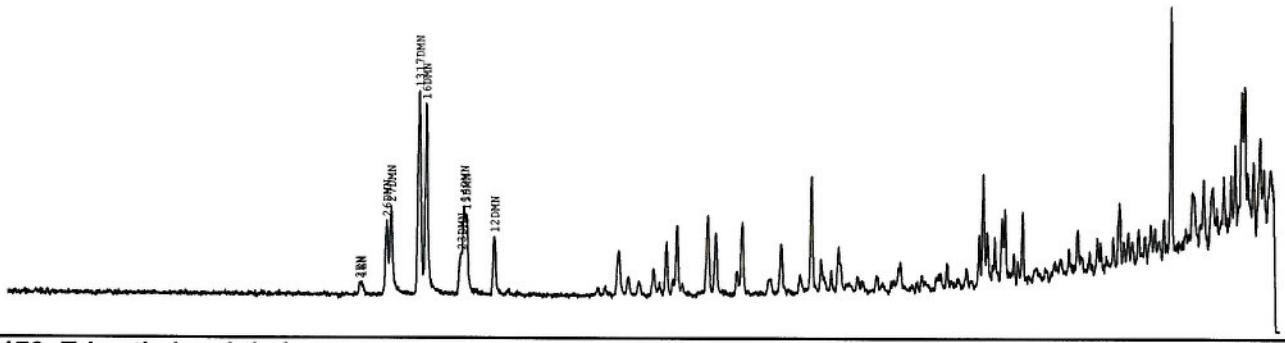
Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
253	S253A	C21 Ring-C Monoaromatic Steroid	84.515	959	169	8.2	5.6
253	S253B	C22 Monoaromatic steroid	86.993	588	125	5.0	4.1
253	S253C	C27 Reg 5β(H),10β(CH3) 20S	96.954	688	143	5.9	4.7
253	S253D	C27 Dia 10β(H),5β(CH3) 20S	97.106	692	168	5.9	5.5
253	S253E	C27 Dia10βH,5βCH3 20R+Reg5βH,10βCH3 20R	98.572	925	177	7.9	5.8
253	S253F	C27 Reg 5α(H),10β(CH3) 20S	98.707	399	74	3.4	2.4
253	S253G	C28 Dia 10αH,5αCH3 20s+Reg5βH,10βCH3 20S	99.129	1905	338	16.2	11.1
253	S253H	C27 Reg 5α(H),10β(CH3) 20R	100.393	361	74	3.1	2.4
253	S253I	C28 Reg 5α(H),10β(CH3) 20S	100.544	467	73	4.0	2.4
253	S253J	C28 Dia 10αH,5αCH3 20R+Reg5βH,10βCH3 20R	100.730	1903	410	16.2	13.5
253	S253K	C29 Dia 10βH,5βCH3 20S+Reg5βH,10βCH3 20S	100.865	991	193	8.4	6.4
253	S253L	C29 Reg 5α(H),10β(CH3) 20S	102.146	200	41	1.7	1.4
253	S253M	C28 Reg 5α(H),10β(CH3) 20R	102.432	557	93	4.7	3.1
253	S253N	C29 Dia 10βH,5βCH3 20R+Reg5βH,10βCH3 20R	102.567	1102	195	9.4	6.4
253	S253O	C29 Reg 5α(H),10β(CH3) 20R	104.118	222	58	1.9	1.9
365	SH29	C29 8,14-secohopanoids	104.033	6454	1365	55.0	45.0
365	SH30	C30 8,14-secohopanoids	106.022	5431	1349	46.3	44.5

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #7
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	5169 - 5170 FT	Lab ID:	TM000751
Sampling Point:		File Name:	M1090403.D

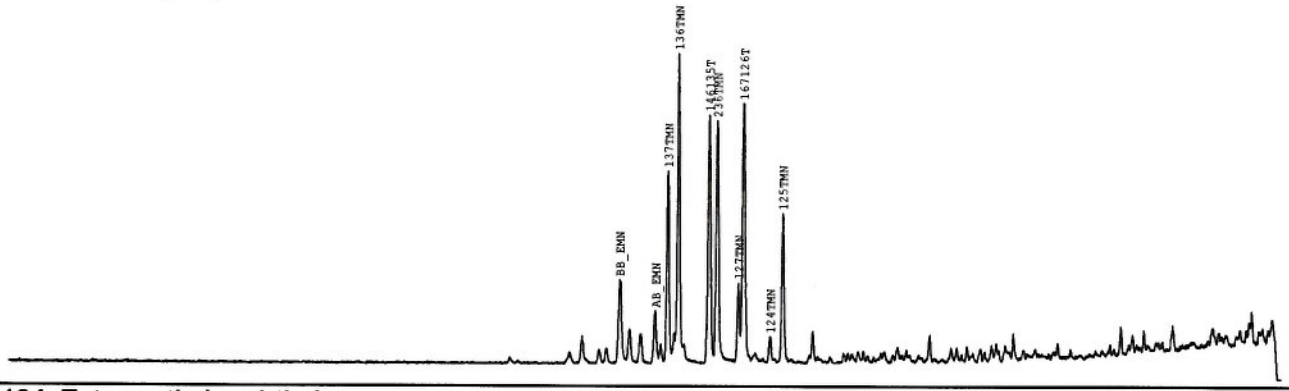
Miscellaneous Ratios	By Areas	By Heights
Triaromatic Steroids m/z 231		
(C20+C21)/Σ TAS	0.16	0.19
TAS #1 20/20+27	0.31	0.37
TAS #2 21/21+28	0.39	0.44
%26TAS	15.8	18.5
%27TAS	40.1	36.0
%28TAS	33.7	33.0
%29TAS	10.4	12.5
C28/C26 20S TAS	2.28	1.58
C28/C27 20R TAS	0.84	0.91
Monoaromatic Steroids m/z 253		
Dia/Regular C27 MAS	1.01	1.17
%27 MAS	29.4	31.2
%28 MAS	46.4	44.9
%29 MAS	24.2	23.9
(C21+C22)/Σ MAS	0.13	0.13
TAS/(MAS+TAS)	0.78	0.79
TA28/(TA28+MA29)	0.83	0.82
Triaromatic Methylsteroids m/z 245		
Dinosteroid Index	0.39	0.43
C4/C3+C4 Mester	0.50	0.53
Phenanthrenes and Naphthalenes		
MPI-1	0.64	0.67
MPI-2	0.72	0.73
MPI-3	0.84	0.84
Rc(a) if Ro < 1.3 (Ro%)	0.75	0.77
Rc(b) if Ro > 1.3 (Ro%)	1.92	1.90
DNR-1	2.51	2.00
DNR-2	1.30	1.24
TNR1	0.95	0.98
TDE-1	5.51	5.84
TDE-2	0.24	0.31
MDR	2.79	2.65
Rm (Ro%)	0.74	0.74
MDR23	0.41	0.40
MDR1	0.28	0.32
DBT/Phenanthrene	0.04	0.04

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #7
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	5169 - 5170 FT	Lab ID:	TM000751
Sampling Point:		File Name:	

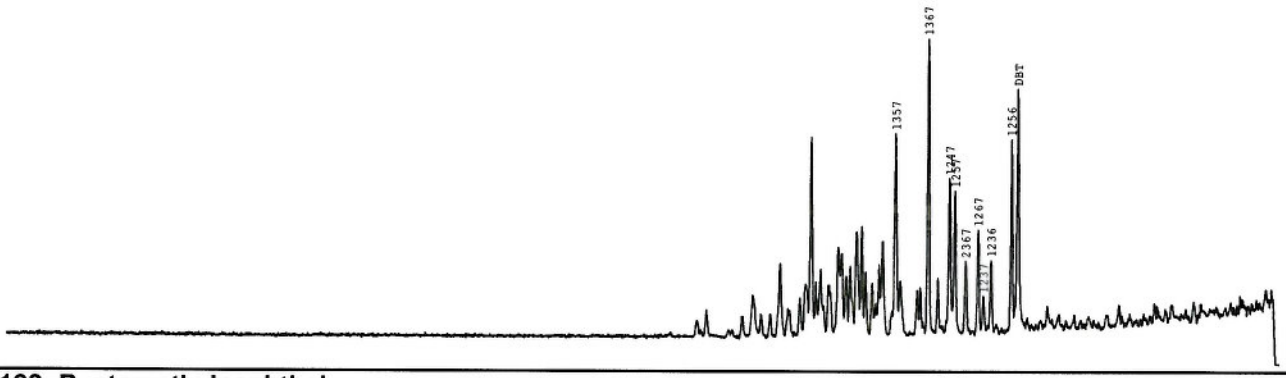
***m/z* 156: Dimethylnaphthalenes**



***m/z* 170: Trimethylnaphthalenes**



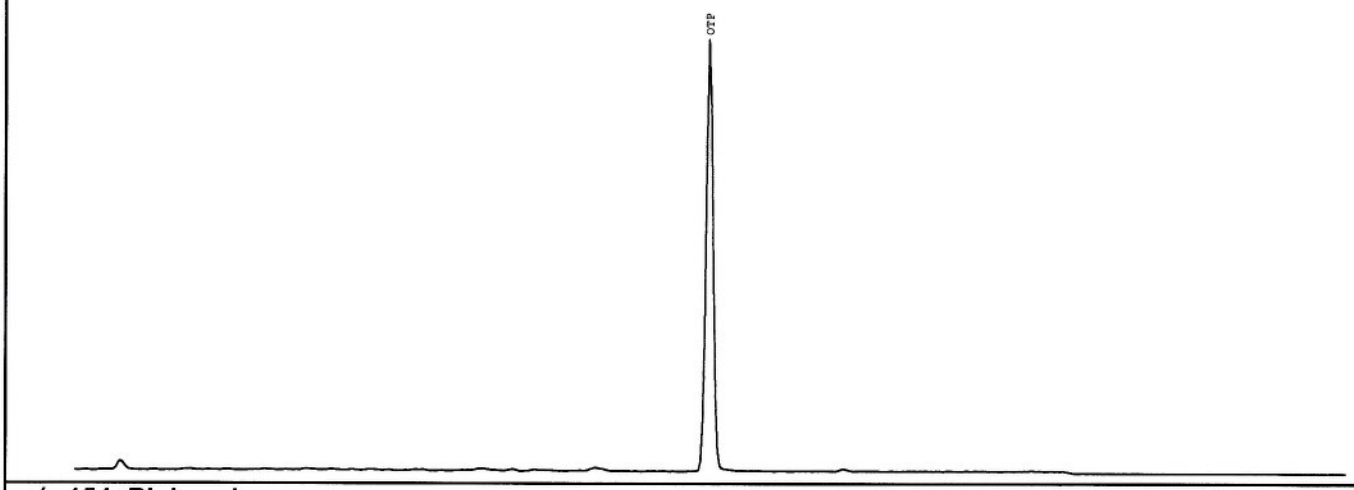
***m/z* 184: Tetramethylnaphthalenes**



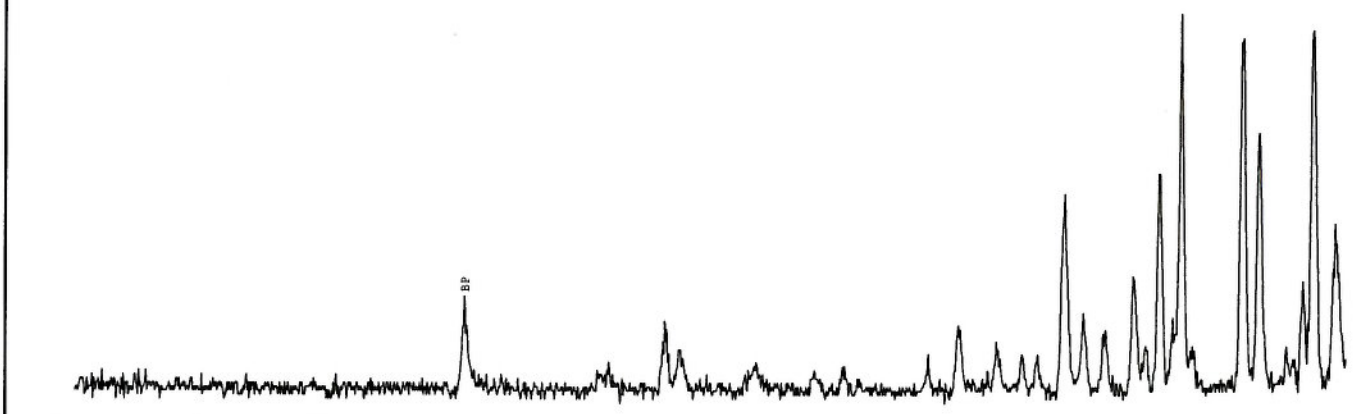
***m/z* 198: Pentamethylnaphthalenes**

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #7
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	5169 - 5170 FT	Lab ID:	TM000751
Sampling Point:		File Name:	M1090403.D

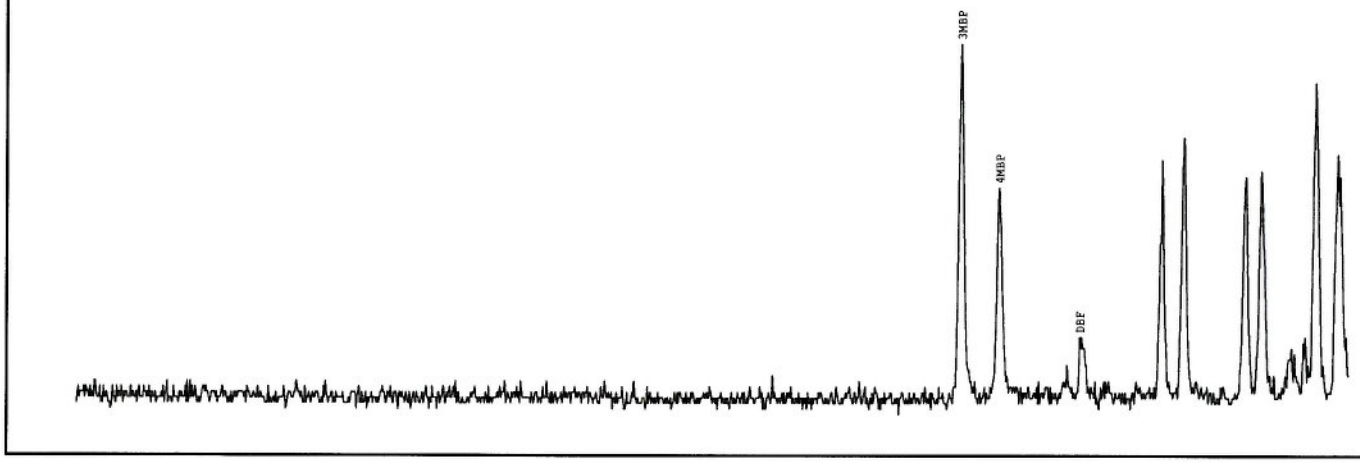
***m/z* 230: Ortho-Terphenyl (Inter. Std)**



***m/z* 154: Biphenyl**

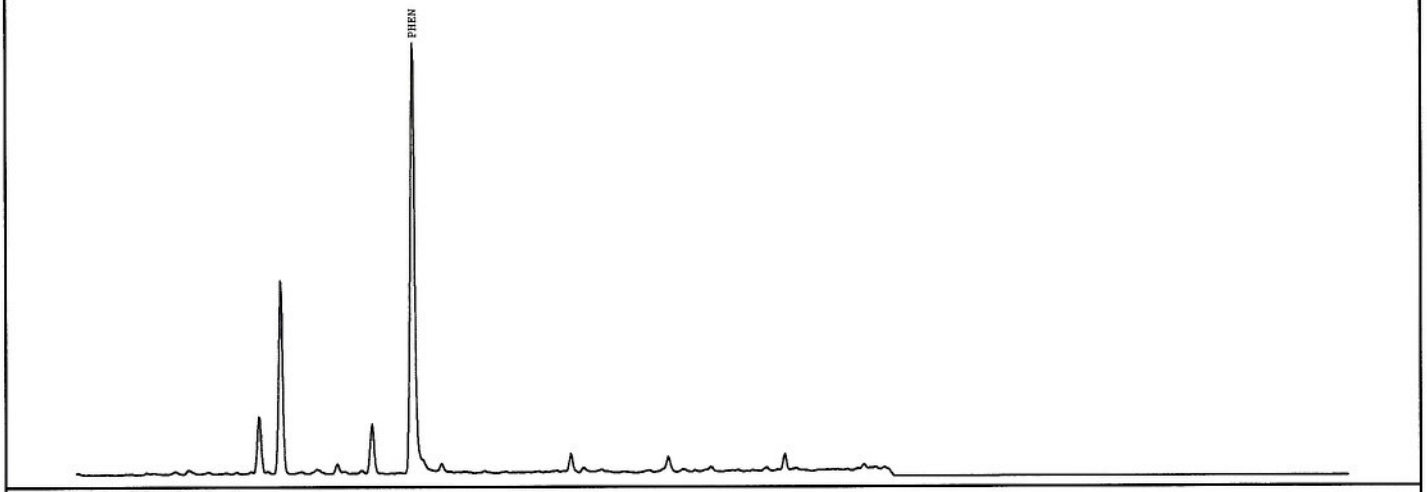


***m/z* 168: Methylbiphenyls (MBP)**

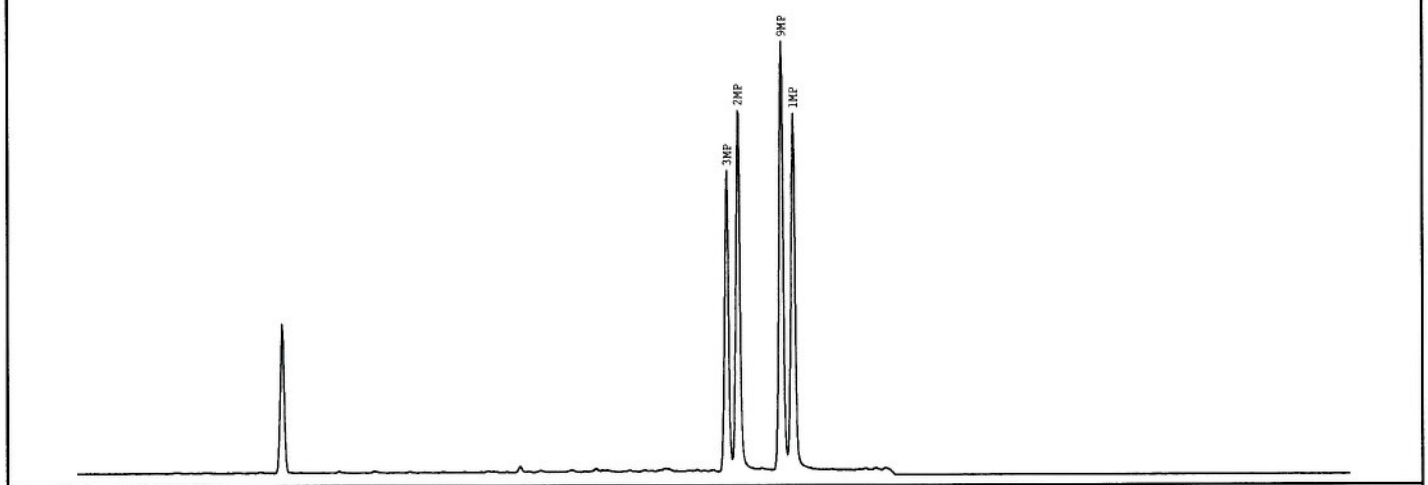


Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #7
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	5169 - 5170 FT	Lab ID:	TM000751
Sampling Point:		File Name:	M1090403.D

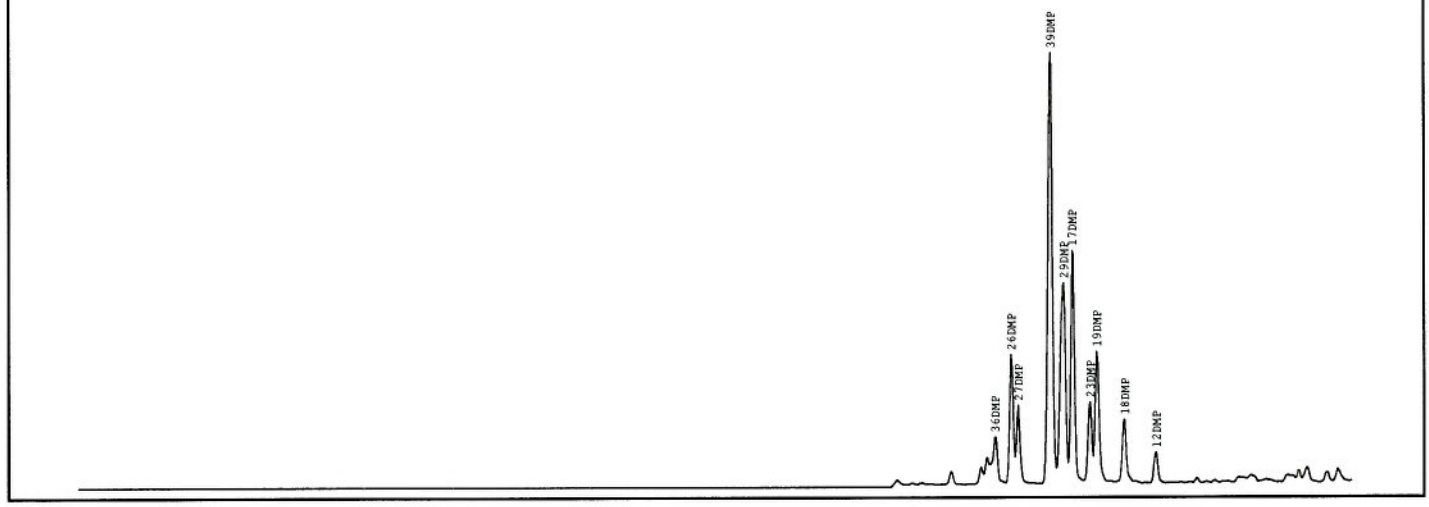
***m/z* 178: Phenanthrene**



***m/z* 192: Methylphenanthrenes**

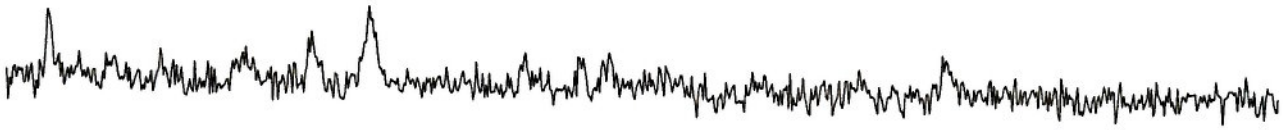


***m/z* 206: Dimethylpehnanthrenes**

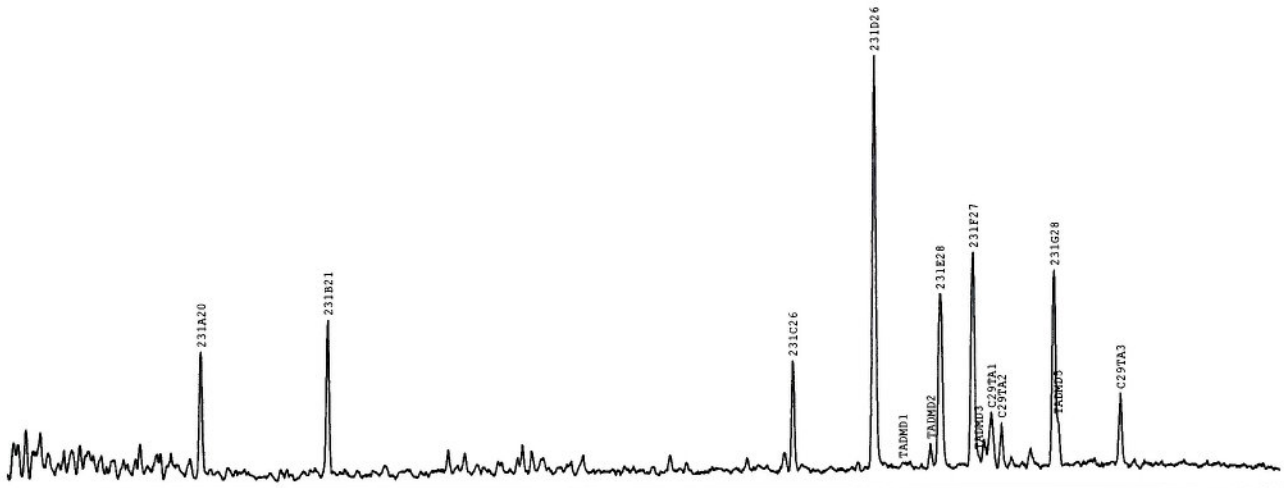


Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #7
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	5169 - 5170 FT	Lab ID:	TM000751
Sampling Point:		File Name:	M1090403.D

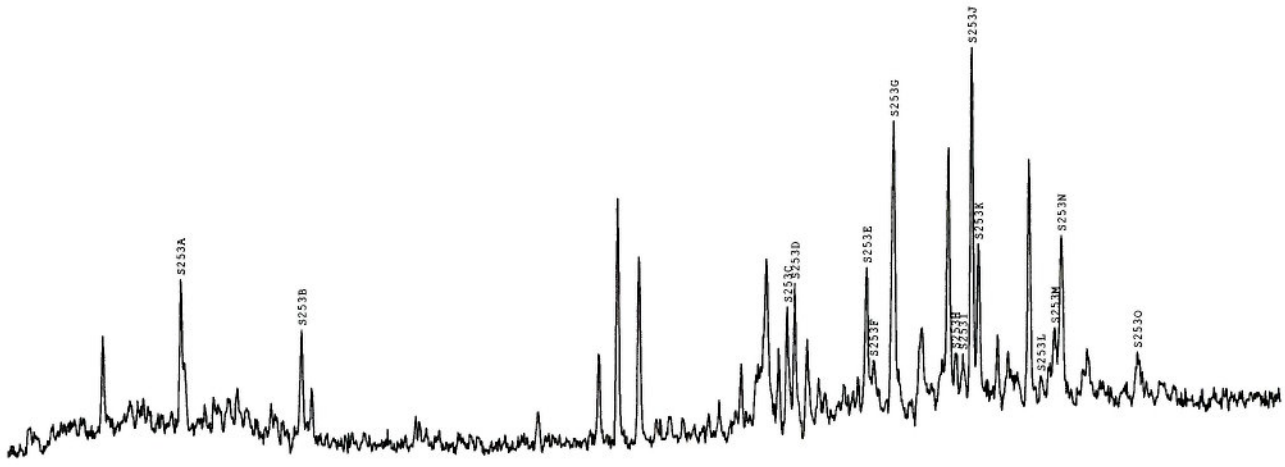
***m/z* 191: Benzohopanes**



***m/z* 231: Triaromatic Steranes**



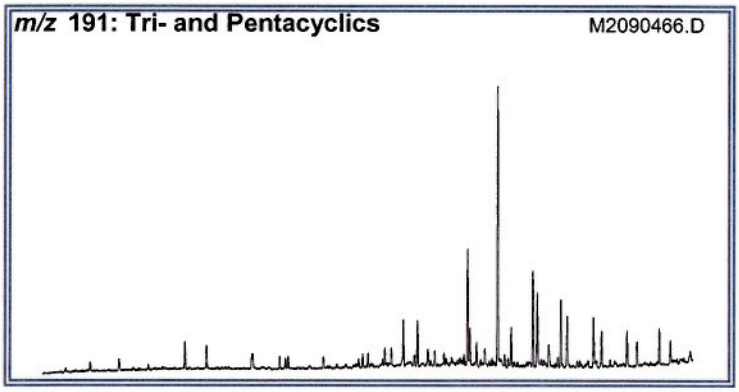
***m/z* 253: Monoaromatic Steranes**

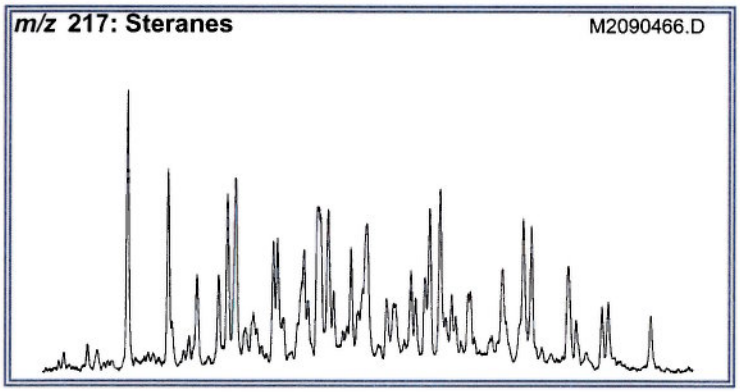


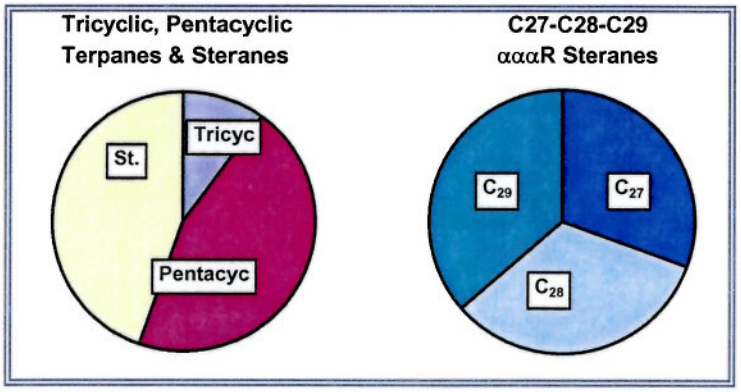
Weatherford LABORATORIES

SATURATE BIOMARKERS

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #7
Country:	ALASKA	Project #:	08-1633-A
Basin:	NORTH SLOPE	Lab ID:	TM000751
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	SCHRADER BLUFF
Well Name:	SUSIE NO. 1	Geologic Age:	
Latitude:	0	Top Depth:	5169 FT
Longitude:	0	Bottom Depth:	5170 FT







RATIOS (on Areas)[1]		Appl[2]	TEV[3]
Steranes (*m/z* 217; 218)			
%C_{27} αββS (218)	27.7	D	
%C_{28} αββS (218)	38.2	D	
%C_{29} αββS (218)	34.1	D	
%C_{27} αααR (217)	30.6	D	
%C_{28} αααR (217)	33.0	D	
%C_{29} αααR (217)	36.4	D	
S/(S+R) (C_{29} ααα) (217)	0.48	M	0.55 (0.8%)
ββS/(ββS+ααR) (C29) (217)	0.52	M	0.70 (0.9%)
(C_{21}+C_{22})/(C_{27}+C_{28}+C_{29}) (217)	0.04		
C_{27}/C_{29} (αββS) (218)	0.81	D	
C_{28}/C_{29} (αββS) (218)	1.12	D	
Diaster/ααα Ster (C_{27}) (217)	1.75	M/D	1.00 (1.4%)
C30 αββS Sterane Index (218)	9.97	D	
C30 S+R Sterane Index (218)	9.85	D	
Terpanes (*m/z* 191)			
Oleanane/Hopane		D/A	
Gammacerane/Hopane	0.04	D	
Norhopane/Hopane	0.44	D	
Bisnorhopane/Hopane	0.05		
Diahopane/Hopane	0.09	M/D	
Moretane/Hopane	0.14	M	0.05 (0.7%)
25-*nor*-hopane/hopane		B	
Ts/(Ts+Tm) trisnorhopanes	0.50	M/D	1.00 (1.4%)
C29Ts/C29 Hopane	0.35	M	
H32 S/(R+S) Homohopanes	0.59	M	0.60 (0.6%)
H35/H34 Homohopanes	0.96	D	
C24 Tetracyclic/Hopane	0.05	D	
C24 Tetracyclic/C26 Tricyclics	0.49	D	
C23/C24 Tricyclic terpanes	1.21	D	
C19/C23 Tricyclic terpanes	0.11	D	
C26/C25 Tricyclic terpanes	1.00	D	
(C28+C29 Tricyclics)/Ts	1.38	A	
Various (*m/z* 191; 217)			
Steranes/Hopanes	1.10	D	
Tricyclic terpanes/Hopanes	0.23	M	1.00 (1.4%)
Tricyclic terpanes/Steranes	0.21	M/D	1.00 (1.4%)

[1]Definition and utility of the ratios can be found on our website www.brilabs.com

[2]A=Source Age; D=Depositional environment; M= Maturity; B=Possible Biodegradation

[3]Thermal equilibrium value of the biomarker ratio and in brackets the approximate VR value at which this value is reached

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #7**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**5169 - 5170 FT**	**Lab ID:**	**TM000751**
Sampling Point:		**File Name:**	**M2090466.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
217	CHOL	*5β cholane (internal standard)*	42.124	12586	1836	100.0	100.0
125	BCAROT	β-carotane					
187	4MDIAM	4-methyldiamantane	9.227	37	15	0.3	0.8
187	1MDIAM	1-methyldiamantane	9.819	29	11	0.2	0.6
187	3MDIAM	3-methyldiamantane	10.185	30	8	0.2	0.4
188	DIAM	diamantane	9.087	30	9	0.2	0.5
191	TR19	C19 tricyclic terpane	18.724	457	93	3.6	5.1
191	TR20	C20 tricyclic terpane	21.565	1213	186	9.6	10.1
191	TR21	C21 tricyclic terpane	24.946	1844	232	14.7	12.6
191	TR22	C22 tricyclic terpane	28.309	810	113	6.4	6.2
191	TR23	C23 tricyclic terpane	32.553	4012	554	31.9	30.2
191	TR24	C24 tricyclic terpane	34.976	3303	465	26.2	25.3
191	DESAOL	des-A-oleanane	37.504	289	41	2.3	2.2
191	DESALU	des-A-lupane					
191	TR25A	C25 tricyclic terpane (a)	40.067	1980	298	15.7	16.2
191	TR25B	C25 tricyclic terpane (b)	40.189	1863	299	14.8	16.3
191	TET24	C24 tetracyclic terpane (TET)	43.292	1880	257	14.9	14.0
191	TR26A	C26 tricyclic terpane (a)	43.955	1764	222	14.0	12.1
191	TR26B	C26 tricyclic terpane (b)	44.269	2071	264	16.5	14.4
191	TR28A	C28 tricyclic terpane (a)	52.882	1927	280	15.3	15.3
191	TR28B	C28 tricyclic terpane (b)	53.492	2012	277	16.0	15.1
191	TR29A	C29 tricyclic terpane (a)	55.445	2226	352	17.7	19.2
191	TR29B	C29 tricyclic terpane (b)	56.177	2157	349	17.1	19.0
191	TR30A	C30 tricyclic terpane (a)	60.396	2438	335	19.4	18.2
191	TR30B	C30 tricyclic terpane (b)	61.233	2164	308	17.2	16.8
191	TS	Ts 18α(H)-trisnorhopane	57.554	6035	920	48.0	50.1
191	TM	Tm 17α(H)-trisnorhopane	59.193	6077	898	48.3	48.9
191	H28	C28 17α18α21β(H)-bisnorhopane	63.168	1632	183	13.0	10.0
191	NOR25H	C29 Nor-25-hopane					
191	H29	C29 Tm 17α(H)21β(H)-norhopane	64.982	15971	2283	126.9	124.3
191	C29TS	C29 Ts 18α(H)-norneohopane	65.261	5623	748	44.7	40.7
191	DH30	C30 17α(H)-diahopane	66.028	3161	465	25.1	25.3
191	M29	C29 normoretane	67.004	2610	346	20.7	18.8
191	OLA	oleanane a					
191	OLB	oleanane b					
191	H30	C30 17α(H)-hopane	68.469	35994	5428	286.0	295.6
191	C30TS	C29 Ts 18α(H)-norneohopane	69.271	1667	241	13.2	13.1
191	M30	C30 moretane	70.038	5197	767	41.3	41.8
191	H31S	C31 22S 17α(H) hopane	72.548	12530	1874	99.6	102.1
191	H31R	C31 22R 17α(H) hopane	73.037	10227	1455	81.3	79.2
191	GAM	gammacerane	73.507	1263	166	10.0	9.0
191	H32S	C32 22S 17α(H) hopane	75.774	9205	1323	73.1	72.1
191	H32R	C32 22R 17α(H) hopane	76.471	6515	1004	51.8	54.7
191	H33S	C33 22S 17α(H) hopane	79.505	7137	990	56.7	53.9
191	H33R	C33 22R 17α(H) hopane	80.464	5108	717	40.6	39.1
191	H34S	C34 22S 17α(H) hopane	83.393	4842	702	38.5	38.2
191	H34R	C34 22R 17α(H) hopane	84.544	3651	505	29.0	27.5
191	H35S	C35 22S 17α(H) hopane	87.124	4713	720	37.4	39.2
191	H35R	C35 22R 17α(H) hopane	88.432	3399	478	27.0	26.0

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #7**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**5169 - 5170 FT**	**Lab ID:**	**TM000751**
Sampling Point:		**File Name:**	**M2090466.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
217	S21	C21 sterane	28.884	3605	439	28.6	23.9
217	S22	C22 sterane	33.633	2388	328	19.0	17.9
217	DIA27S	C27 βα 20S diasterane	48.331	11912	1720	94.6	93.7
217	DIA27R	C27 βα 20R diasterane	49.865	8175	1233	65.0	67.2
217	DIA28SA	C28 βα 20S diasterane a	52.132	8104	1079	64.4	58.8
217	DIA28SB	C28 βα 20S diasterane b	52.394	10290	1175	81.8	64.0
217	DIA28RA	C28 βα 20R diasterane a	53.841	5982	789	47.5	43.0
217	DIA28RB	C28 βα 20R diasterane b	54.015	6402	808	50.9	44.0
217	C27S	C27 αα 20S sterane	55.044	5710	732	45.4	39.9
217	BB_D29S	C27 ββ 20R + C29 dia20S	55.549	14919	998	118.5	54.4
217	C27BBS	C27 ββ 20S sterane	55.950	8998	983	71.5	53.5
217	C27R	C27 αα 20R sterane	56.822	5738	748	45.6	40.7
217	DIA29R	C29 βα 20R diasterane	57.450	10819	894	86.0	48.7
217	C28S	C28 αα 20S sterane	59.141	5132	603	40.8	32.8
217	C28BBR	C28 ββ 20R sterane(+5 βαα)	59.856	8347	985	66.3	53.6
217	C28BBS	C28 ββ 20S sterane	60.274	10311	1101	81.9	60.0
217	C28R	C28 αα 20R sterane	61.425	6176	475	49.1	25.9
217	C29S	C29 αα 20S sterane	62.680	6349	612	50.4	33.3
217	C29BBR	C29 ββ 20R sterane(+5 βαα)	63.465	8783	921	69.8	50.2
217	C29BBS	C29 ββ 20S sterane	63.779	7291	876	57.9	47.7
217	C29R	C29 αα 20R sterane	65.208	6809	626	54.1	34.1
218	C27ABBR	C27 ββ 20R sterane	55.532	10508	1349	83.5	73.5
218	C27ABBS	C27 ββ 20S sterane	55.933	8479	1190	67.4	64.8
218	C28ABBR	C28 ββ 20R sterane	59.873	10709	1381	85.1	75.2
218	C28ABBS	C28 ββ 20S sterane	60.274	11700	1508	93.0	82.1
218	C29ABBR	C29 ββ 20R sterane	63.465	10005	1335	79.5	72.7
218	C29ABBS	C29 ββ 20S sterane	63.796	10454	1307	83.1	71.2
218	C30ABBR	C30 ββ 20R sterane	66.498	3364	486	26.7	26.5
218	C30ABBS	C30 ββ 20S sterane	66.743	3392	460	27.0	25.1
259	D27S	C27 βα 20S diasterane	48.331	7382	1063	58.7	57.9
259	D27R	C27 βα 20R diasterane	49.865	5510	793	43.8	43.2
259	D28SA	C28 βα 20S diasterane a	52.115	5014	702	39.8	38.2
259	D28SB	C28 βα 20S diasterane b	52.411	5649	771	44.9	42.0
259	D28RA	C28 βα 20R diasterane a	53.841	4352	526	34.6	28.6
259	D28RB	C28 βα 20R diasterane b	54.015	3601	520	28.6	28.3
259	D29S	C29 βα 20S diasterane	55.654	7478	627	59.4	34.2
259	D29R	C29 βα 20R diasterane	57.380	5240	424	41.6	23.1
259	C30TP1	C30 tetracyclic polyprenoid	66.969	830	112	6.6	6.1
259	C30TP2	C30 tetracyclic polyprenoid	67.144	641	97	5.1	5.3

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #7
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	5169 - 5170 FT	Lab ID:	TM000751
Sampling Point:		File Name:	M2090466.D

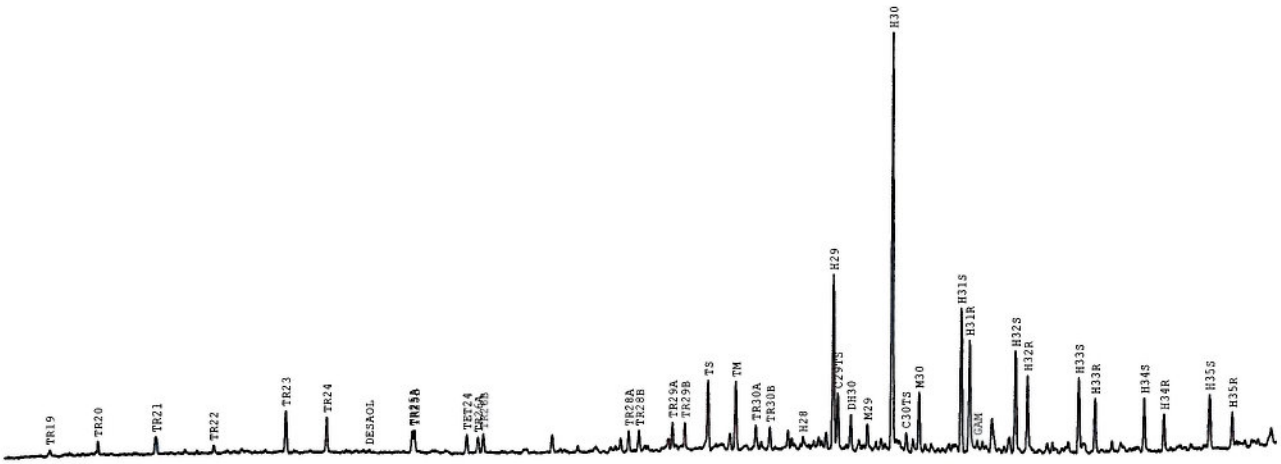
Miscellaneous Ratios	By Areas	By Heights
Terpanes (m/z 191)		
C19/C23 Tricyclic terpanes	0.11	0.17
C22/C21 Tricyclic terpanes	0.44	0.49
C22/C24 Tricyclic terpanes	0.25	0.24
C23/C24 Tricyclic terpanes	1.21	1.19
C24/C23 Tricyclic terpanes	0.82	0.84
C26/C25 Tricyclic terpanes	1.00	0.81
C24 Tetracyclic/C23 Tricyclic	0.47	0.46
C24 Tetracyclic/C26 Tricyclics	0.49	0.53
(C28+C29 Tricyclics)/Ts	1.38	1.37
Ts/Tm trisnorhopanes	0.99	1.02
Ts/(Ts+Tm) trisnorhopanes	0.50	0.51
25-nor-hopane/hopane		0.03
C29Ts/C29 Hopane	0.35	0.33
C29Ts/(C29TS+C29) Hopane	0.26	0.25
C23 Tricyclic/Hopane	0.11	0.10
C24 Tetracyclic/Hopane	0.05	0.05
Bisnorhopane/Hopane	0.05	0.03
Norhopane/Hopane	0.44	0.42
Diahopane/Hopane	0.09	0.09
Oleanane/Hopane		
Moretane/Hopane	0.14	0.14
Moretane/(Moretane+Hopane)	0.13	0.12
C30Ts/C30 Hopane	0.05	0.04
Gammacerane/Hopane	0.04	0.03
C32 S/(S+R) Homohopanes	0.59	0.57
Gammacerane/H31R Homohopane	0.12	0.11
C35/C34 Homohopanes	0.96	0.99
C35/C34 S Homohopanes	0.97	1.03
C35 Homohopane Index	0.12	0.12
Rel % C31 Homohopane	33.8	34.1
Rel % C32 Homohopane	23.3	23.8
Rel % C33Homohopane	18.2	17.5
Rel % C34 Homohopane	12.6	12.4
Rel % C35 Homohopane	12.0	12.3

Company:	**TALISMAN ENERGY**	**Client ID:**	**SUSIE #1/CORE #7**
Well Name:	**SUSIE NO. 1**	**Project #:**	**08-1633-A**
Depth:	**5169 - 5170 FT**	**Lab ID:**	**TM000751**
Sampling Point:		**File Name:**	**M2090466.D**

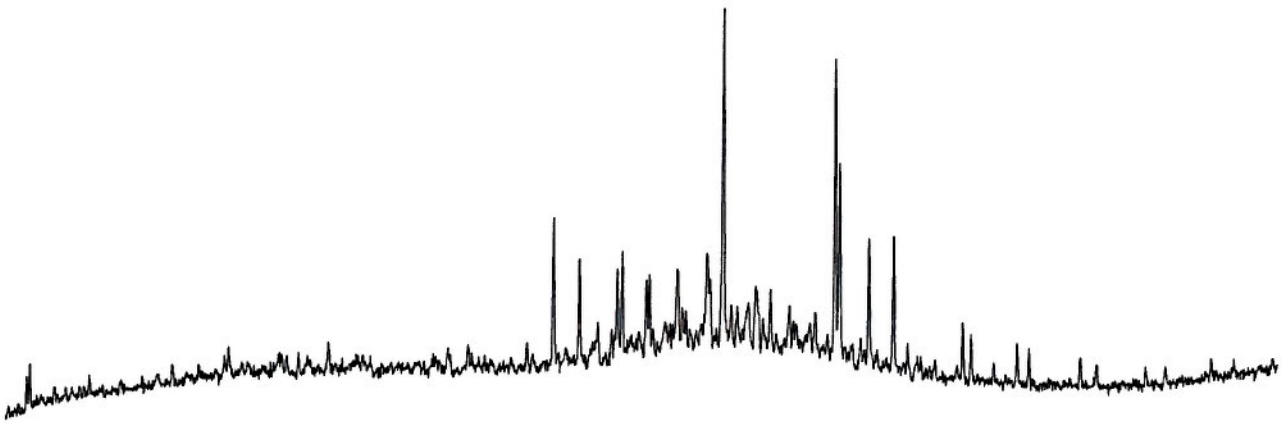
Miscellaneous Ratios	By Areas	By Heights
Steranes (m/z 217; 218)		
%C27 αααR (217)	30.6	40.5
%C28 αααR (217)	33.0	25.7
%C29 αααR (217)	36.4	33.9
S/R (C_{29} ααα) (217)	0.93	0.98
S/(S+R) (C_{29} ααα) (217)	0.48	0.49
ββ/(αα+ββ) (C_{29}) (217)	0.55	0.59
ββS/(ααR+ββS) (C29) (217)	0.52	0.58
αββS/αααR (C_{29}) (217)	1.07	1.40
(C_{21}+C_{22})/(C_{27}+C_{28}+C_{29}) (217)	0.04	0.04
Diaster/ααα Ster (C_{27}) (217)	1.75	2.00
Diaster/(Diaster+ααα) Ster (C_{27}) (217)	0.64	0.67
%C27 αββS (218)	27.7	29.7
%C28 αββS (218)	38.2	37.7
%C29 αββS (218)	34.1	32.6
%C27 αββ (R+S) (218)	30.7	31.5
%C28 αββ (R+S) (218)	36.2	35.8
%C29 αββ (R+S) (218)	33.1	32.7
C30 αββS Sterane Index (218)	10.0	10.3
C30 S+R Sterane Index (218)	9.8	10.5
C_{27}/C_{29} (αββS) (218)	0.81	0.91
C_{28}/C_{29} (αββS) (218)	1.12	1.15
C_{29}/C_{27} (αββS) (218)	1.23	1.10
C_{29}/C_{27} (αββ) (218)	1.08	1.04
Various (m/z 191; 217)		
Steranes/Hopanes	1.09	0.83
Tricyclic terpanes/Hopanes	0.22	0.22
Tricyclic terpanes/Steranes	0.21	0.27
Tricyclic/Pentacyclic Terpanes	22.4	22.0
Steranes/Terpanes	0.81	0.64
% Tricyclic Terpanes	10.1	11.0
% Pentacyclic Terpanes	45.12	10.99
% Steranes	44.8	39.0

Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #7
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	5169 - 5170 FT	Lab ID:	TM000751
Sampling Point:		File Name:	M2090466.D

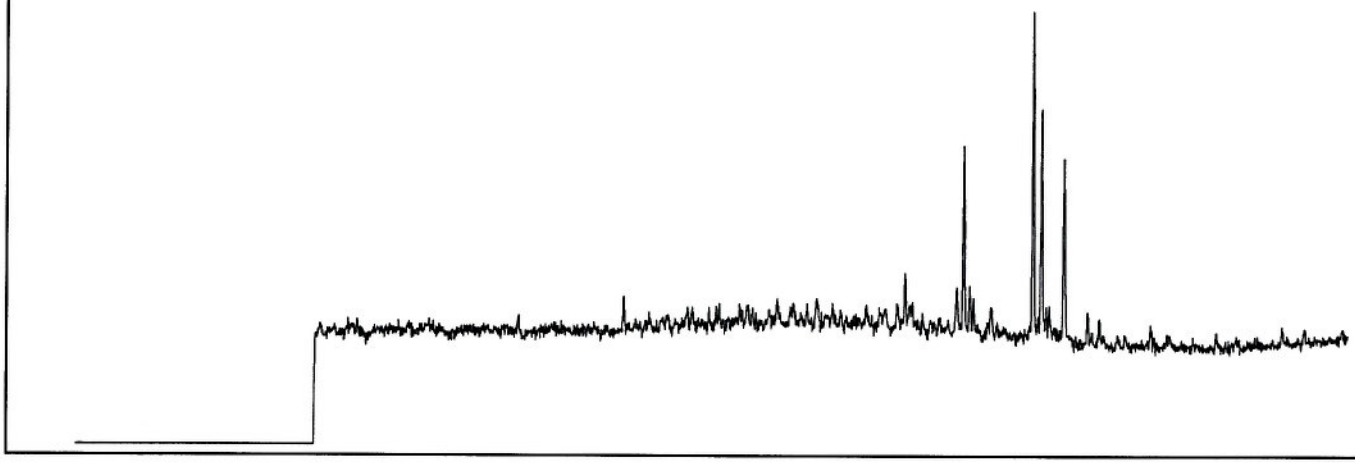
***m/z* 191:Tri-, tetra- and pentacyclic Terpanes**



***m/z* 177: Norhopanes**

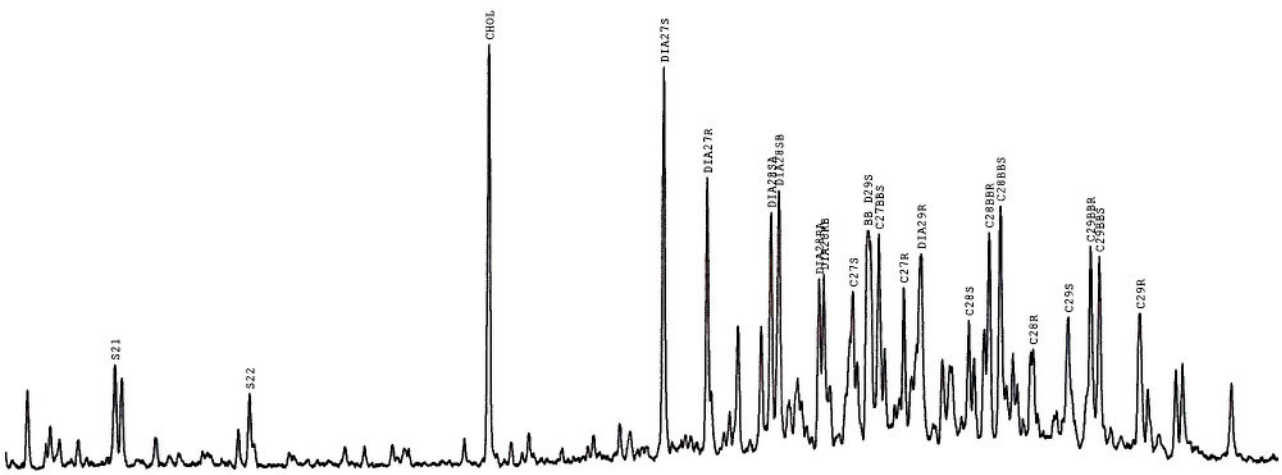


***m/z* 205**

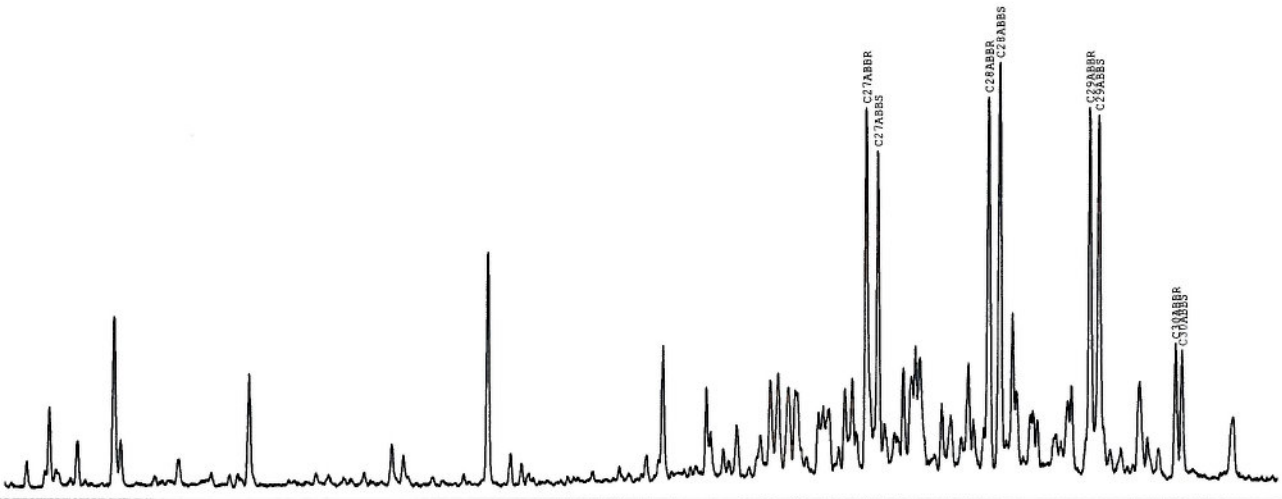


Company:	TALISMAN ENERGY	Client ID:	SUSIE #1/CORE #7
Well Name:	SUSIE NO. 1	Project #:	08-1633-A
Depth:	5169 - 5170 FT	Lab ID:	TM000751
Sampling Point:		File Name:	M2090466.D

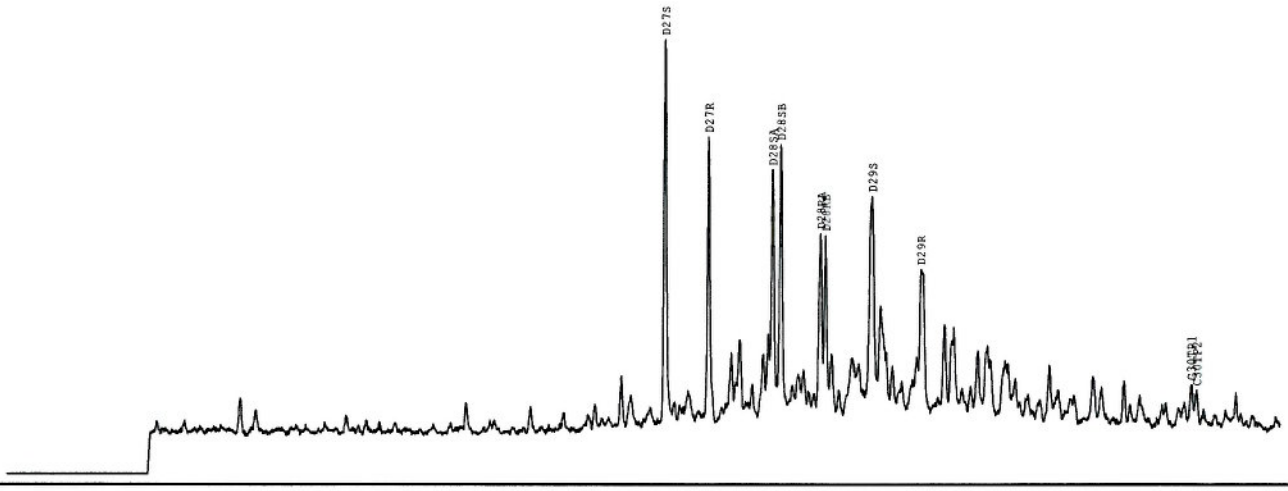
***m/z* 217: Steranes**



***m/z* 218: Steranes**



***m/z* 259: Diasteranes**

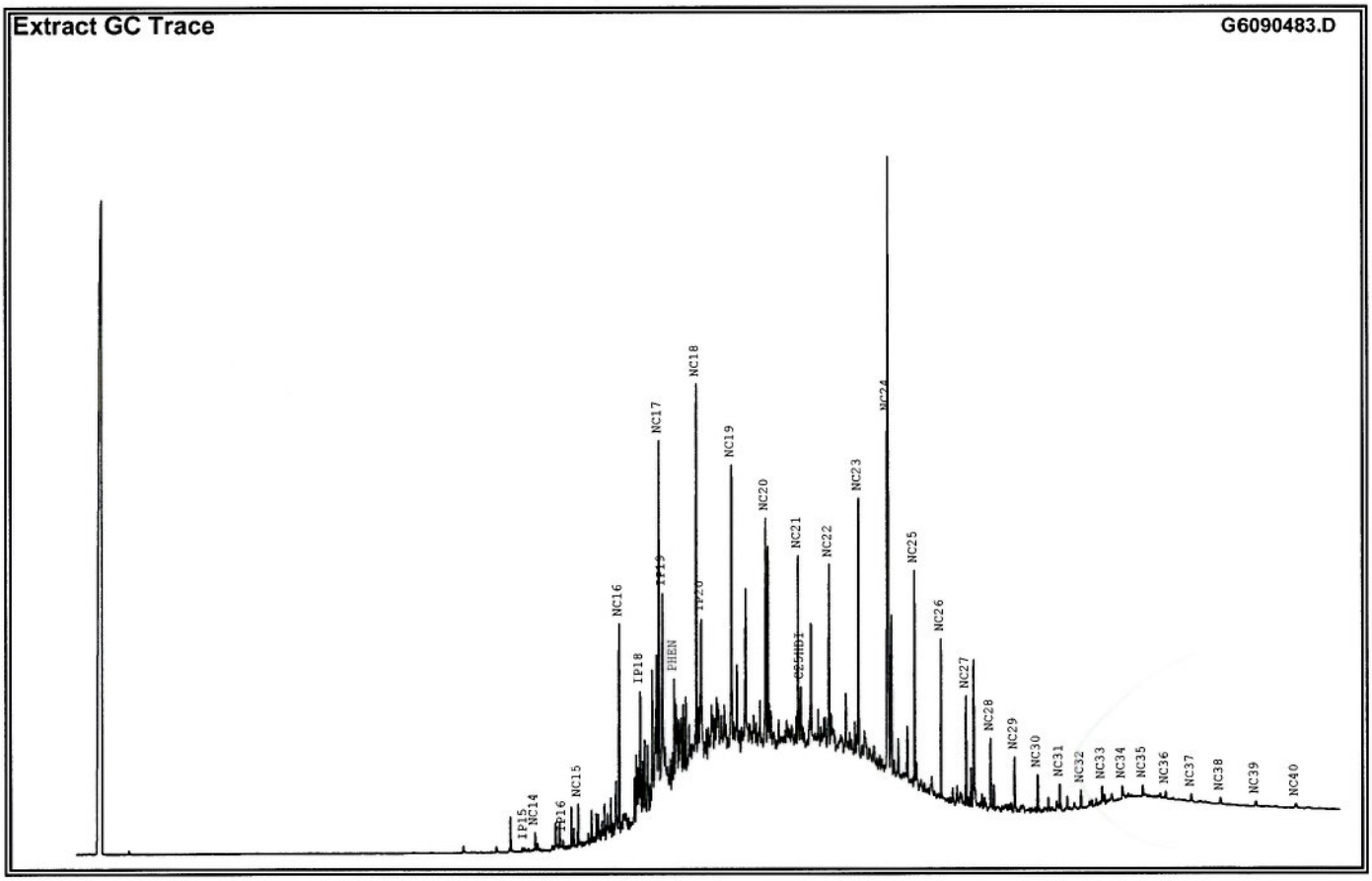


Weatherford LABORATORIES

EXTRACT GC

Company:	TALISMAN ENERGY	Client ID:	TM001509
Country:	ALASKA	Project #:	09-687-A
Basin:		Lab ID:	TM001509
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	LOWER SEABEE SANDSTONE
Well Name:	SQUARE LAKE NO. 1	Geologic Age:	
Latitude:	0	Top Depth:	1662 FT
Longitude:	0	Bottom Depth:	FT

Extract GC Trace G6090483.D



WGC parameters	
Pristane/Phytane	1.09
Pristane/$n\,C_{17}$	0.82
Phytane/$n\,C_{18}$	0.77
$n\,C_{18}$/(nC_{18}+$n\,C_{19}$)	0.56
$n\,C_{17}$/(nC_{17}+$n\,C_{29}$)	0.86
CPI Hunt[4]	0.87
Normal Paraffins	22.4
Isoprenoids	5.6
Cycloparaffins	
Branched (iso-) Paraffins	
BTX aromatics	
Resolved unknowns	71.2

Thompson[1]	
A.	BZ/$n\,C_6$
B.	TOL/$n\,C_7$
C.	($n\,C_6$+$n\,C_7$)/(CH+MCH)
I.	Isoheptane Value
F.	$n\,C_7$/MCH
U.	CH/MCP
R.	$n\,C_7$/2MH
S.	$n\,C_6$/22DMB
H.	Heptane Value
	MCH/$n\,C_7$
	mpXYL/$n\,C_8$

Mango[2]
P_1
P_2
P_3
$5N_1$
N_2
$6N_1$
K_1
K_2
$5N_1/6N_1$
P_3/N_2
ln(24DMP/23DMP)

Halpern[3]
Tr_1
Tr_2
Tr_3
Tr_4
Tr_5
Tr_7
Tr_8
C_1
C_2
C_3
C_4
C_5

[1]Thompson, K.F.M.,1983.GCA:V.47, p.303. [2]Mango, F.D.,1994.GCA: V.58, p.895. [3]Halpern,H.I.,1995,AAPG Bull.: V.79, p.801. [4]Hunt, 1979

Company:	**TALISMAN ENERGY**	**Client ID:**	**TM001509**
Well Name:	**SQUARE LAKE NO. 1**	**Project #:**	**09-687-A**
Depth:	**1662 - FT**	**Lab ID:**	**TM001509**
Sampling Point:		**File Name:**	**G6090483.D**

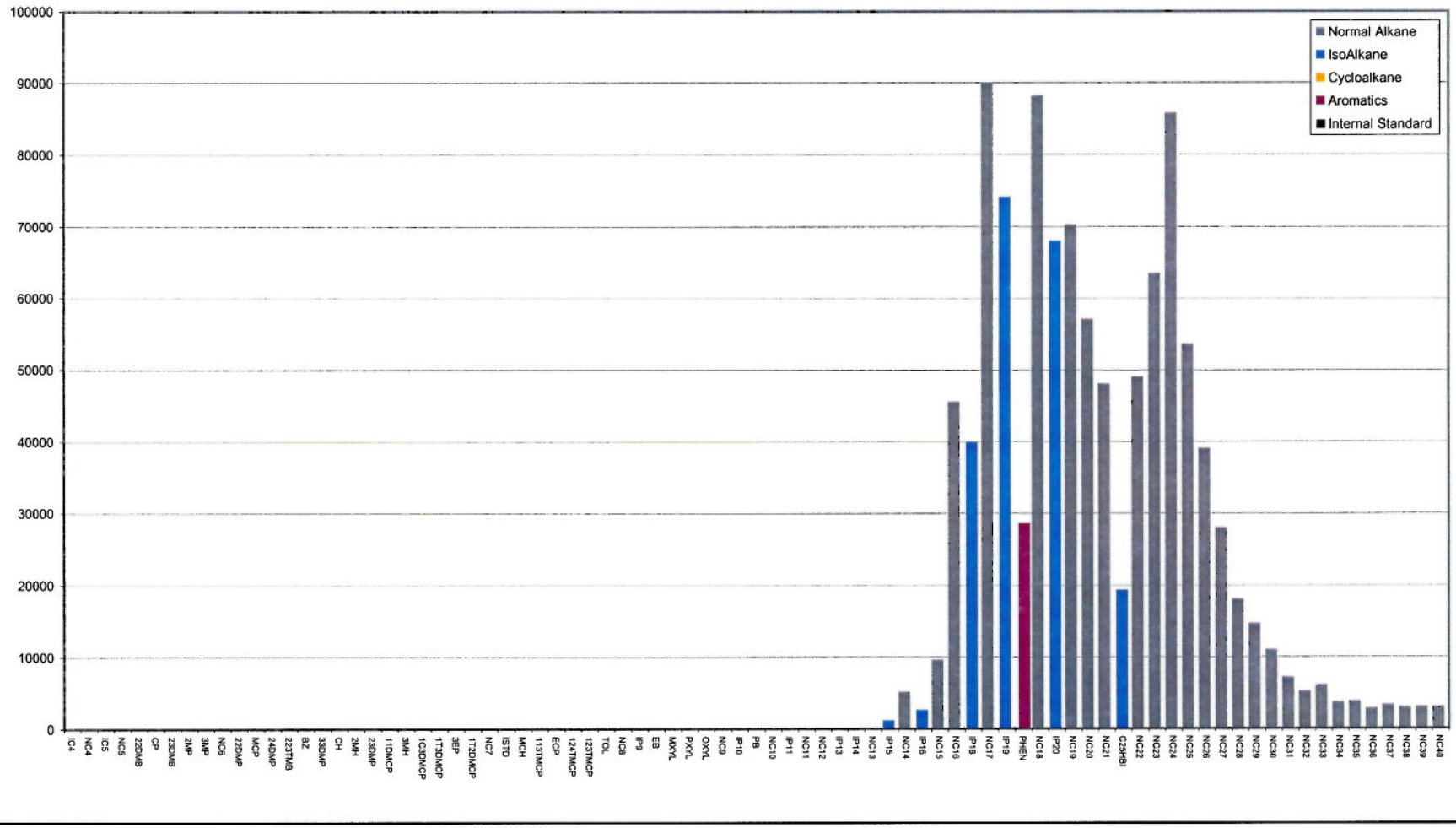
Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IC4	Iso-alkane C4					
NC4	Normal Alkane C4					
IC5	Iso-alkane C5					
NC5	Normal Alkane C5					
22DMB	2,2-Dimethylbutane					
CP	Cyclopentane					
23DMB	2,3-Dimethylbutane					
2MP	2-Methylpentane					
3MP	3-Methylpentane					
NC6	Normal Alkane C6					
22DMP	2,2-Dimethylpentane					
MCP	Methylcyclopentane					
24DMP	2,4-Dimethylpentane					
223TMB	2,2,3-Trimethylbutane					
BZ	Benzene					
33DMP	3,3-Dimethylpentane					
CH	Cyclohexane					
2MH	2-Methylhexane					
23DMP	2,3-Dimethylpentane					
11DMCP	1,1-Dimethylcyclopentane					
3MH	3-Methylhexane					
1C3DMCP	1-cis-3-Dimethylcyclopentane					
1T3DMCP	1-trans-3-Dimethylcyclopentane					
3EP	3-Ethylpentane					
1T2DMCP	1-trans-2-Dimethylcyclopentane					
NC7	Normal Alkane C7					
ISTD	Internal Standard					
MCH	Methylcyclohexane					
113TMCP	1,1,3,-Trimethylcyclopentane					
ECP	Ethylcyclopentane					
124TMCP	1,2,4-Trimethylcyclopentane					
123TMCP	1,2,3-Trimethylcyclopentane					
TOL	Toluene					
NC8	Normal Alkane C8					
IP9	Isoprenoid C9					
EB	Ethyl-benzene					
MXYL	*m*-xylene					
PXYL	*p*-xylene					
OXYL	*o*-xylene					
NC9	Normal Alkane C9					
IP10	Isoprenoid C10					
PB	Propyl-benzene					
NC10	Normal Alkane C10					
IP11	Isoprenoid C11					
NC11	Normal Alkane C11					
NC12	Normal Alkane C12					
IP13	Isoprenoid C13					
IP14	Isoprenoid C14					
NC13	Normal Alkane C13					
IP15	Isoprenoid C15	45.048	1169	268		
NC14	Normal Alkane C14	46.076	5133	1202		

Company:	**TALISMAN ENERGY**	**Client ID:**	**TM001509**
Well Name:	**SQUARE LAKE NO. 1**	**Project #:**	**09-687-A**
Depth:	**1662 - FT**	**Lab ID:**	**TM001509**
Sampling Point:		**File Name:**	**G6090483.D**

Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IP16	Isoprenoid C16	48.665	2594	620		
NC15	Normal Alkane C15	50.092	9587	2754		
NC16	Normal Alkane C16	53.996	45552	13331		
IP18	Isoprenoid C18	55.961	39917	8077		
NC17	Normal Alkane C17	57.703	90015	22940		
IP19	Isoprenoid C19 (Pristane)	58.065	74157	12964		
PHEN	Phenanthrene	59.130	28588	6919		
NC18	Normal Alkane C18	61.216	88216	24395		
IP20	Isoprenoid C20 (Phytane)	61.679	68041	9215		
NC19	Normal Alkane C19	64.553	70357	18340		
NC20	Normal Alkane C20	67.733	57133	14730		
NC21	Normal Alkane C21	70.769	48128	12208		
C25HBI	Highly Branch Isoprenoid C25	71.032	19365	3896		
NC22	Normal Alkane C22	73.687	49111	11855		
NC23	Normal Alkane C23	76.478	63507	16644		
NC24	Normal Alkane C24	79.170	85804	22634		
NC25	Normal Alkane C25	81.725	53674	13854		
NC26	Normal Alkane C26	84.198	39090	10214		
NC27	Normal Alkane C27	86.588	28052	7055		
NC28	Normal Alkane C28	88.889	18070	4612		
NC29	Normal Alkane C29	91.115	14680	3517		
NC30	Normal Alkane C30	93.268	11047	2410		
NC31	Normal Alkane C31	95.355	7153	1736		
NC32	Normal Alkane C32	97.373	5191	1215		
NC33	Normal Alkane C33	99.334	6107	1194		
NC34	Normal Alkane C34	101.239	3750	847		
NC35	Normal Alkane C35	103.157	3864	734		
NC36	Normal Alkane C36	105.280	2832	490		
NC37	Normal Alkane C37	107.686	3347	502		
NC38	Normal Alkane C38	110.442	3029	408		
NC39	Normal Alkane C39	113.637	3084	337		
NC40	Normal Alkane C40	117.352	3040	281		
NC41	Normal Alkane C41					

Company:	**TALISMAN ENERGY**	**Client ID:**	**TM001509**
Well Name:	**SQUARE LAKE NO. 1**	**Project #:**	**09-687-A**
Depth:	**1662 - FT**	**Lab ID:**	**TM001509**
Sampling Point:		**File Name:**	**G6090483.D**

Histogram Based on Area



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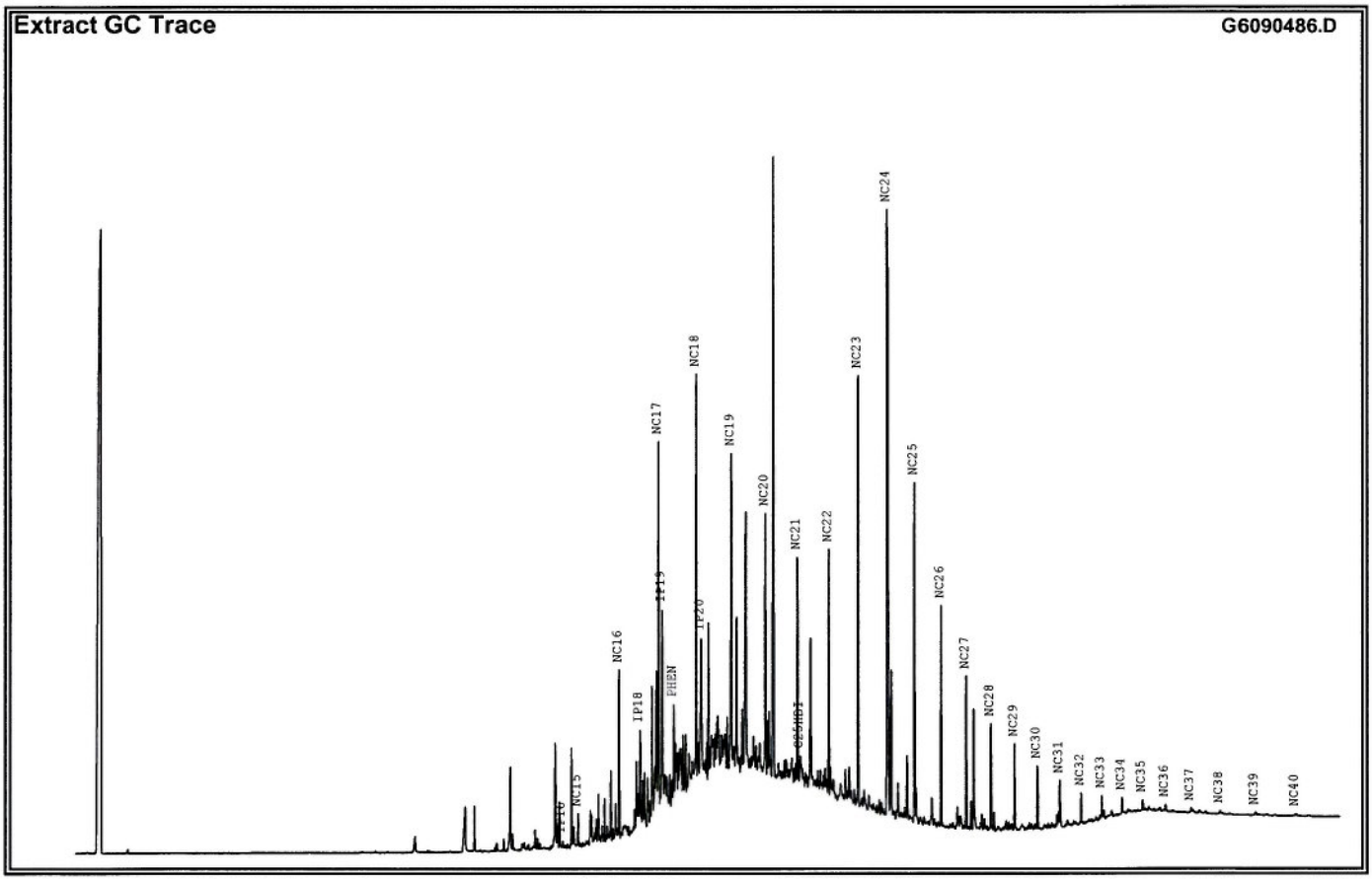
EXTRACT GC

Company:	TALISMAN ENERGY	Client ID:	TM001510
Country:	ALASKA	Project #:	09-687-A
Basin:		Lab ID:	TM001510
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	NANUSHUK/GRANDSTAND SANDSTC
Well Name:	SQUARE LAKE NO. 1	Geologic Age:	
Latitude:	0	Top Depth:	3030 FT
Longitude:	0	Bottom Depth:	FT

Extract GC Trace G6090486.D



WGC parameters	
Pristane/Phytane	1.26
Pristane/$n C_{17}$	0.76
Phytane/$n C_{18}$	0.60
$n C_{18}/(nC_{18}+n C_{19})$	0.55
$n C_{17}/(nC_{17}+n C_{29})$	0.81
CPI Hunt[4]	0.82
Normal Paraffins	26.5
Isoprenoids	4.5
Cycloparaffins	
Branched (iso-) Paraffins	
BTX aromatics	
Resolved unknowns	68.2

Thompson[1]	
A.	BZ/$n C_6$
B.	TOL/$n C_7$
C.	$(n C_6+n C_7)/(CH+MCH)$
I.	Isoheptane Value
F.	$n C_7$/MCH
U.	CH/MCP
R.	$n C_7$/2MH
S.	$n C_6$/22DMB
H.	Heptane Value
	MCH/$n C_7$
	mpXYL/$n C_8$

Mango[2]
P_1
P_2
P_3
$5N_1$
N_2
$6N_1$
K_1
K_2
$5N_1/6N_1$
P_3/N_2
ln(24DMP/23DMP)

Halpern[3]
Tr_1
Tr_2
Tr_3
Tr_4
Tr_5
Tr_7
Tr_8
C_1
C_2
C_3
C_4
C_5

[1]Thompson, K.F.M.,1983.GCA:V.47, p.303. [2]Mango, F.D.,1994.GCA: V.58, p.895. [3]Halpern,H.I.,1995,AAPG Bull.: V.79, p.801. [4]Hunt, 1979

Company:	**TALISMAN ENERGY**	**Client ID:**	**TM001510**
Well Name:	**SQUARE LAKE NO. 1**	**Project #:**	**09-687-A**
Depth:	**3030 - FT**	**Lab ID:**	**TM001510**
Sampling Point:		**File Name:**	**G6090486.D**

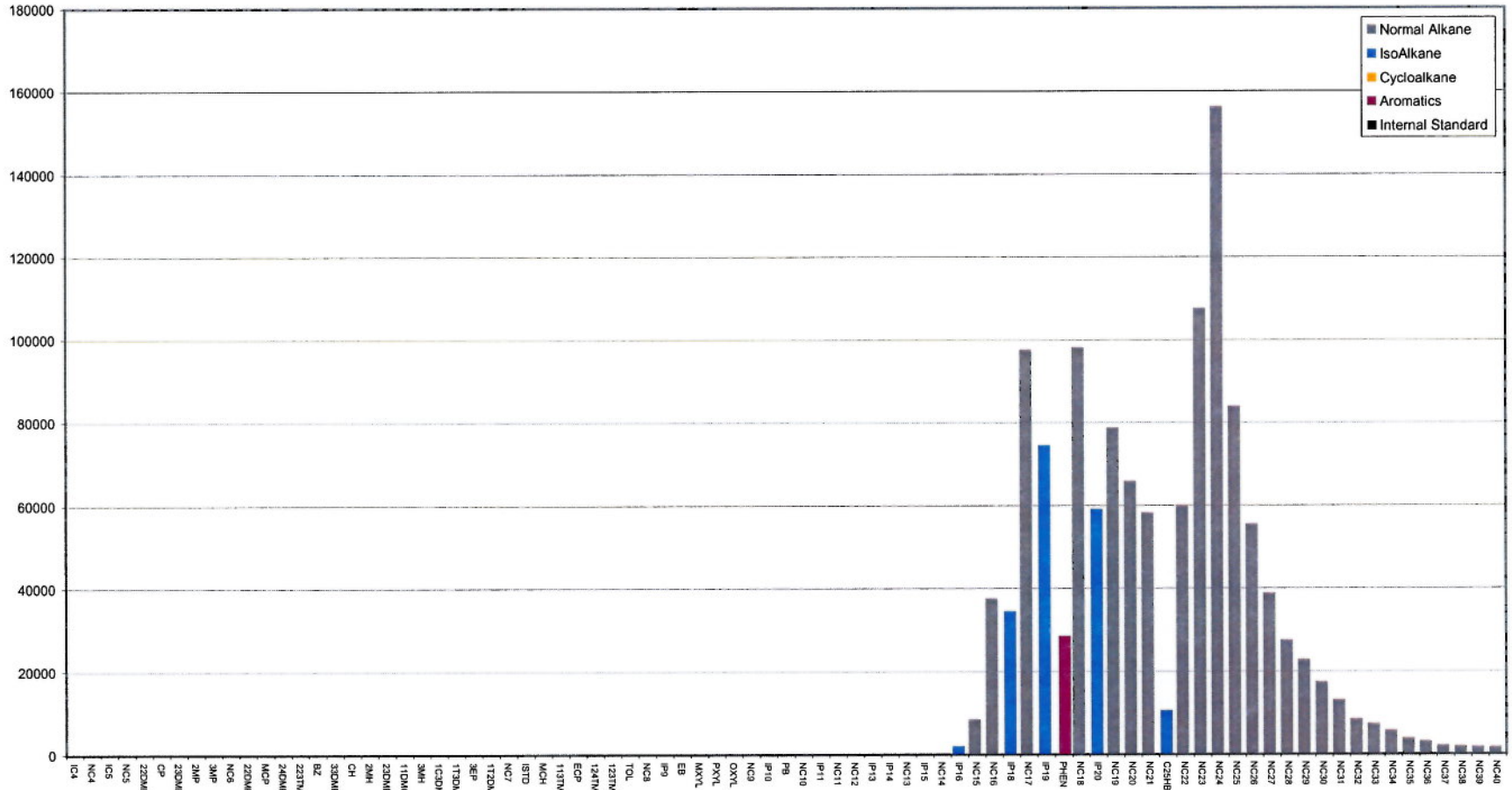
Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IC4	Iso-alkane C4					
NC4	Normal Alkane C4					
IC5	Iso-alkane C5					
NC5	Normal Alkane C5					
22DMB	2,2-Dimethylbutane					
CP	Cyclopentane					
23DMB	2,3-Dimethylbutane					
2MP	2-Methylpentane					
3MP	3-Methylpentane					
NC6	Normal Alkane C6					
22DMP	2,2-Dimethylpentane					
MCP	Methylcyclopentane					
24DMP	2,4-Dimethylpentane					
223TMB	2,2,3-Trimethylbutane					
BZ	Benzene					
33DMP	3,3-Dimethylpentane					
CH	Cyclohexane					
2MH	2-Methylhexane					
23DMP	2,3-Dimethylpentane					
11DMCP	1,1-Dimethylcyclopentane					
3MH	3-Methylhexane					
1C3DMCP	1-cis-3-Dimethylcyclopentane					
1T3DMCP	1-trans-3-Dimethylcyclopentane					
3EP	3-Ethylpentane					
1T2DMCP	1-trans-2-Dimethylcyclopentane					
NC7	Normal Alkane C7					
ISTD	Internal Standard					
MCH	Methylcyclohexane					
113TMCP	1,1,3,-Trimethylcyclopentane					
ECP	Ethylcyclopentane					
124TMCP	1,2,4-Trimethylcyclopentane					
123TMCP	1,2,3-Trimethylcyclopentane					
TOL	Toluene					
NC8	Normal Alkane C8					
IP9	Isoprenoid C9					
EB	Ethyl-benzene					
MXYL	*m*-xylene					
PXYL	*p*-xylene					
OXYL	*o*-xylene					
NC9	Normal Alkane C9					
IP10	Isoprenoid C10					
PB	Propyl-benzene					
NC10	Normal Alkane C10					
IP11	Isoprenoid C11					
NC11	Normal Alkane C11					
NC12	Normal Alkane C12					
IP13	Isoprenoid C13					
IP14	Isoprenoid C14					
NC13	Normal Alkane C13					
IP15	Isoprenoid C15					
NC14	Normal Alkane C14					

Company:	**TALISMAN ENERGY**	**Client ID:**	**TM001510**
Well Name:	**SQUARE LAKE NO. 1**	**Project #:**	**09-687-A**
Depth:	**3030 - FT**	**Lab ID:**	**TM001510**
Sampling Point:		**File Name:**	**G6090486.D**

Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IP16	Isoprenoid C16	48.662	2022	483		
NC15	Normal Alkane C15	50.088	8517	2207		
NC16	Normal Alkane C16	53.990	37573	11128		
IP18	Isoprenoid C18	55.952	34603	6552		
NC17	Normal Alkane C17	57.698	97705	24757		
IP19	Isoprenoid C19 (Pristane)	58.060	74597	13423		
PHEN	Phenanthrene	59.121	28556	6634		
NC18	Normal Alkane C18	61.214	98232	27334		
IP20	Isoprenoid C20 (Phytane)	61.670	59161	9656		
NC19	Normal Alkane C19	64.549	78776	21142		
NC20	Normal Alkane C20	67.732	65846	17336		
NC21	Normal Alkane C21	70.762	58305	15125		
C25HBI	Highly Branch Isoprenoid C25	71.022	10620	2081		
NC22	Normal Alkane C22	73.676	60058	16326		
NC23	Normal Alkane C23	76.476	107634	28442		
NC24	Normal Alkane C24	79.167	156220	39931		
NC25	Normal Alkane C25	81.725	84049	22385		
NC26	Normal Alkane C26	84.195	55463	14631		
NC27	Normal Alkane C27	86.582	38767	10091		
NC28	Normal Alkane C28	88.885	27513	7056		
NC29	Normal Alkane C29	91.111	22791	5699		
NC30	Normal Alkane C30	93.266	17369	4177		
NC31	Normal Alkane C31	95.353	13036	3096		
NC32	Normal Alkane C32	97.371	8473	2080		
NC33	Normal Alkane C33	99.334	7386	1595		
NC34	Normal Alkane C34	101.235	5774	1162		
NC35	Normal Alkane C35	103.155	3858	761		
NC36	Normal Alkane C36	105.280	3225	494		
NC37	Normal Alkane C37	107.681	2108	321		
NC38	Normal Alkane C38	110.434	1871	237		
NC39	Normal Alkane C39	113.642	1743	192		
NC40	Normal Alkane C40	117.373	1668	157		
NC41	Normal Alkane C41					

Company:	**TALISMAN ENERGY**	**Client ID:**	**TM001510**
Well Name:	**SQUARE LAKE NO. 1**	**Project #:**	**09-687-A**
Depth:	**3030 - FT**	**Lab ID:**	**TM001510**
Sampling Point:		**File Name:**	**G6090486.D**

Histogram Based on Area



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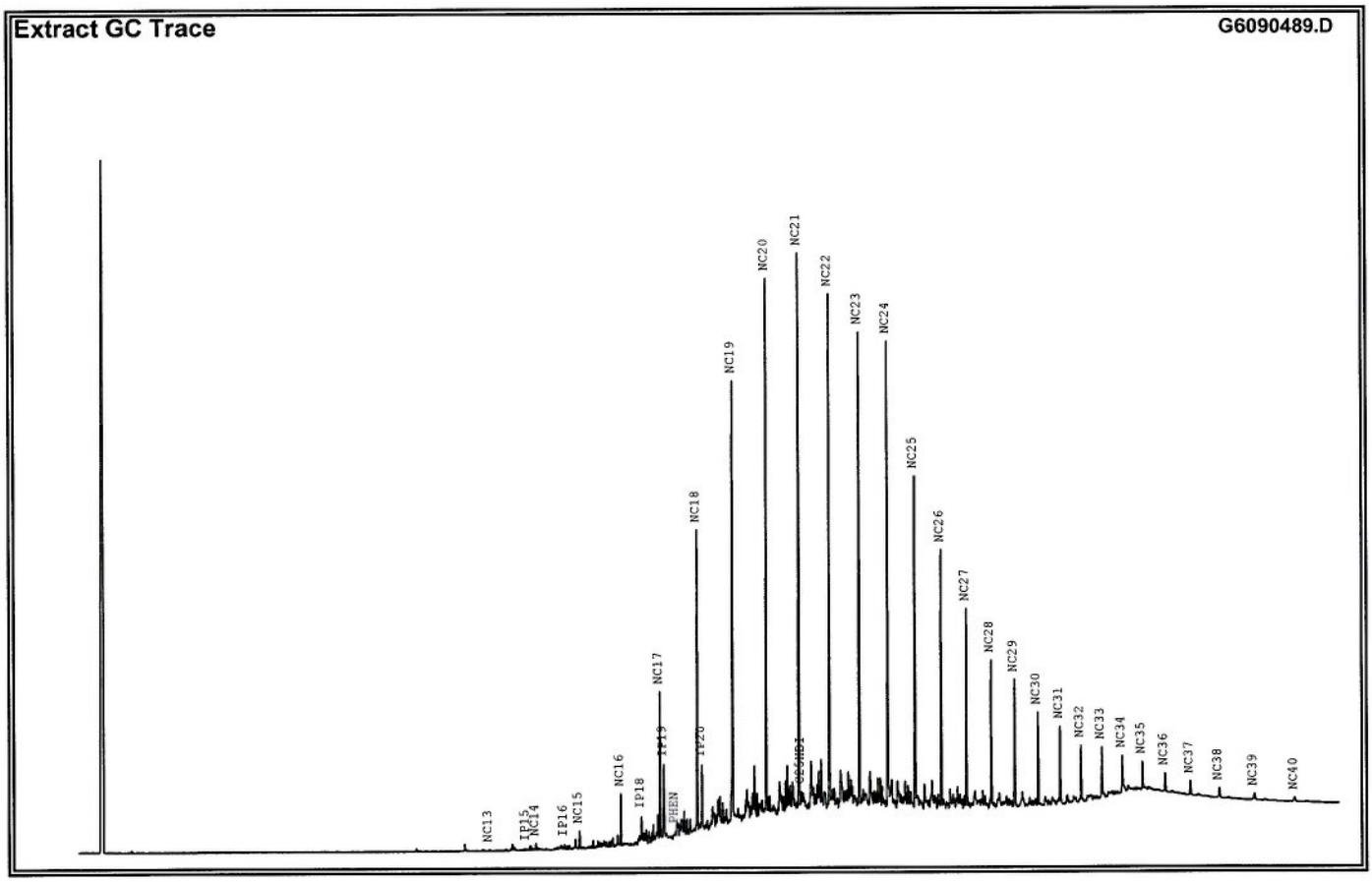
EXTRACT GC

Company:	TALISMAN ENERGY	Client ID:	TM001511
Country:	ALASKA	Project #:	09-687-A
Basin:		Lab ID:	TM001511
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	NANUSHUK/GRANDSTAND SANDSTC
Well Name:	SQUARE LAKE NO. 1	Geologic Age:	
Latitude:	0	Top Depth:	3870 FT
Longitude:	0	Bottom Depth:	FT

Extract GC Trace G6090489.D



WGC parameters	
Pristane/Phytane	1.07
Pristane/$n C_{17}$	0.75
Phytane/$n C_{18}$	0.37
$n C_{18}/(nC_{18}+n C_{19})$	0.40
$n C_{17}/(nC_{17}+n C_{29})$	0.51
CPI Hunt[4]	0.98
Normal Paraffins	46.8
Isoprenoids	2.6
Cycloparaffins	
Branched (iso-) Paraffins	
BTX aromatics	
Resolved unknowns	50.5

Thompson[1]	
A.	BZ/$n C_6$
B.	TOL/$n C_7$
C.	$(n C_6+n C_7)/(CH+MCH)$
I.	Isoheptane Value
F.	$n C_7$/MCH
U.	CH/MCP
R.	$n C_7$/2MH
S.	$n C_6$/22DMB
H.	Heptane Value
	MCH/$n C_7$
	mpXYL/$n C_8$

Mango[2]
P_1
P_2
P_3
$5N_1$
N_2
$6N_1$
K_1
K_2
$5N_1/6N_1$
P_3/N_2
ln(24DMP/23DMP)

Halpern[3]
Tr_1
Tr_2
Tr_3
Tr_4
Tr_5
Tr_7
Tr_8
C_1
C_2
C_3
C_4
C_5

[1]Thompson, K.F.M.,1983.GCA:V.47, p.303. [2]Mango, F.D.,1994.GCA: V.58, p.895. [3]Halpern,H.I.,1995,AAPG Bull.: V.79, p.801. [4]Hunt, 1979

Company:	**TALISMAN ENERGY**	**Client ID:**	**TM001511**
Well Name:	**SQUARE LAKE NO. 1**	**Project #:**	**09-687-A**
Depth:	**3870 - FT**	**Lab ID:**	**TM001511**
Sampling Point:		**File Name:**	**G6090489.D**

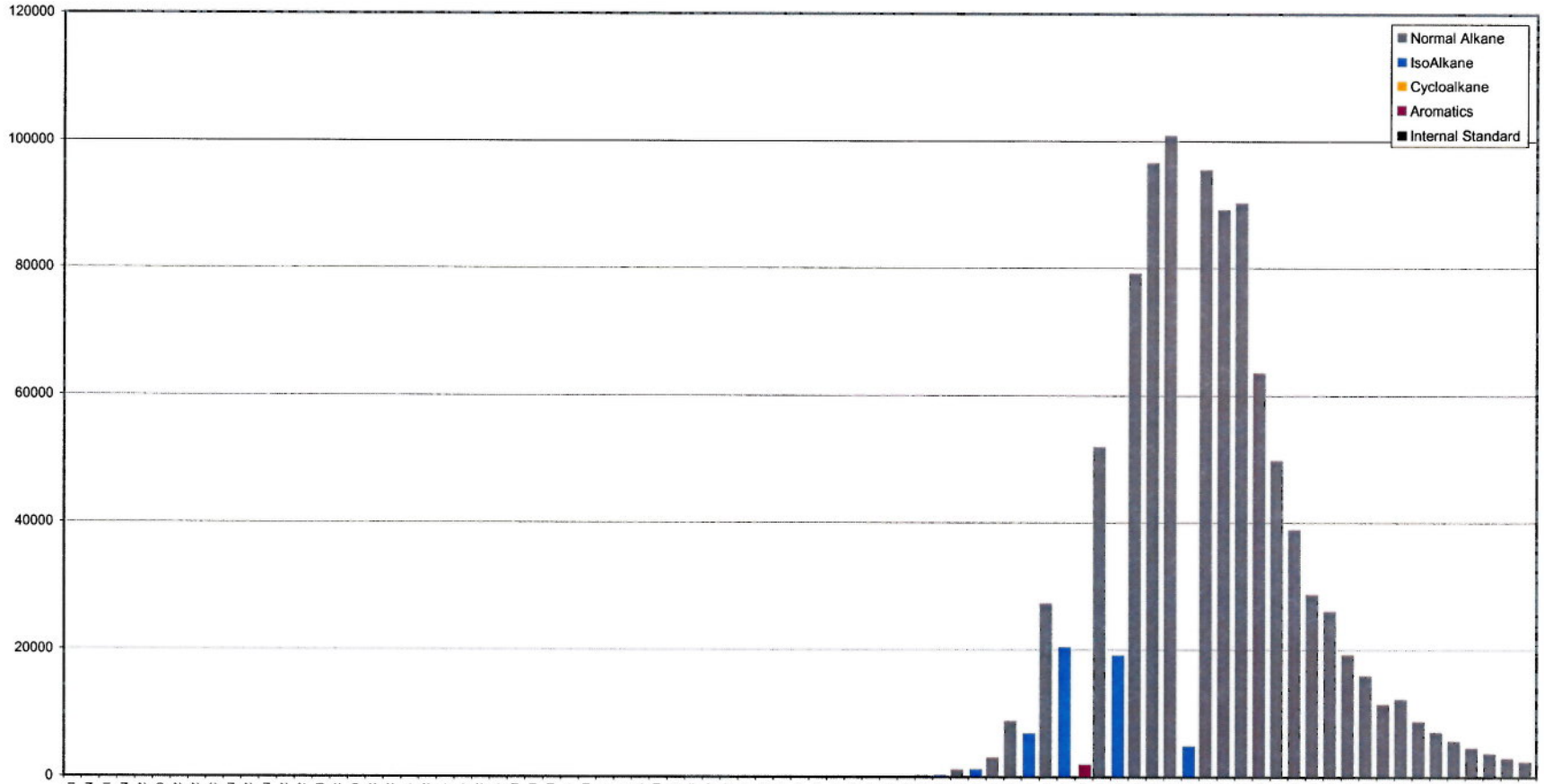
Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IC4	Iso-alkane C4					
NC4	Normal Alkane C4					
IC5	Iso-alkane C5					
NC5	Normal Alkane C5					
22DMB	2,2-Dimethylbutane					
CP	Cyclopentane					
23DMB	2,3-Dimethylbutane					
2MP	2-Methylpentane					
3MP	3-Methylpentane					
NC6	Normal Alkane C6					
22DMP	2,2-Dimethylpentane					
MCP	Methylcyclopentane					
24DMP	2,4-Dimethylpentane					
223TMB	2,2,3-Trimethylbutane					
BZ	Benzene					
33DMP	3,3-Dimethylpentane					
CH	Cyclohexane					
2MH	2-Methylhexane					
23DMP	2,3-Dimethylpentane					
11DMCP	1,1-Dimethylcyclopentane					
3MH	3-Methylhexane					
1C3DMCP	1-cis-3-Dimethylcyclopentane					
1T3DMCP	1-trans-3-Dimethylcyclopentane					
3EP	3-Ethylpentane					
1T2DMCP	1-trans-2-Dimethylcyclopentane					
NC7	Normal Alkane C7					
ISTD	Internal Standard					
MCH	Methylcyclohexane					
113TMCP	1,1,3,-Trimethylcyclopentane					
ECP	Ethylcyclopentane					
124TMCP	1,2,4-Trimethylcyclopentane					
123TMCP	1,2,3-Trimethylcyclopentane					
TOL	Toluene					
NC8	Normal Alkane C8					
IP9	Isoprenoid C9					
EB	Ethyl-benzene					
MXYL	*m*-xylene					
PXYL	*p*-xylene					
OXYL	*o*-xylene					
NC9	Normal Alkane C9					
IP10	Isoprenoid C10					
PB	Propyl-benzene					
NC10	Normal Alkane C10					
IP11	Isoprenoid C11					
NC11	Normal Alkane C11					
NC12	Normal Alkane C12					
IP13	Isoprenoid C13					
IP14	Isoprenoid C14					
NC13	Normal Alkane C13	41.606	252	69		
IP15	Isoprenoid C15	45.087	318	81		
NC14	Normal Alkane C14	45.967	1156	333		

Company:	**TALISMAN ENERGY**	**Client ID:**	**TM001511**
Well Name:	**SQUARE LAKE NO. 1**	**Project #:**	**09-687-A**
Depth:	**3870 - FT**	**Lab ID:**	**TM001511**
Sampling Point:		**File Name:**	**G6090489.D**

Peak Label	Compound Name	Ret. Time	Area	Height	ppt (Area)	ppt (Hght)
IP16	Isoprenoid C16	48.656	1203	263		
NC15	Normal Alkane C15	50.079	3101	891		
NC16	Normal Alkane C16	53.970	8848	2606		
IP18	Isoprenoid C18	55.929	6939	1366		
NC17	Normal Alkane C17	57.663	27276	7401		
IP19	Isoprenoid C19 (Pristane)	58.023	20402	3761		
PHEN	Phenanthrene	59.096	1933	363		
NC18	Normal Alkane C18	61.175	51902	15020		
IP20	Isoprenoid C20 (Phytane)	61.626	19098	3306		
NC19	Normal Alkane C19	64.522	79195	21934		
NC20	Normal Alkane C20	67.708	96582	26548		
NC21	Normal Alkane C21	70.753	100947	27701		
C25HBI	Highly Branch Isoprenoid C25	70.991	4919	1032		
NC22	Normal Alkane C22	73.664	95504	25509		
NC23	Normal Alkane C23	76.456	89177	23560		
NC24	Normal Alkane C24	79.136	90259	23103		
NC25	Normal Alkane C25	81.705	63562	16491		
NC26	Normal Alkane C26	84.181	49782	12841		
NC27	Normal Alkane C27	86.569	38838	9922		
NC28	Normal Alkane C28	88.873	28676	7339		
NC29	Normal Alkane C29	91.101	26040	6353		
NC30	Normal Alkane C30	93.256	19208	4657		
NC31	Normal Alkane C31	95.339	15911	3893		
NC32	Normal Alkane C32	97.359	11433	2837		
NC33	Normal Alkane C33	99.319	12221	2538		
NC34	Normal Alkane C34	101.223	8782	1854		
NC35	Normal Alkane C35	103.138	7159	1415		
NC36	Normal Alkane C36	105.262	5737	976		
NC37	Normal Alkane C37	107.663	4649	723		
NC38	Normal Alkane C38	110.413	3776	502		
NC39	Normal Alkane C39	113.601	3005	326		
NC40	Normal Alkane C40	117.324	2427	227		
NC41	Normal Alkane C41					

Company:	**TALISMAN ENERGY**	**Client ID:**	**TM001511**
Well Name:	**SQUARE LAKE NO. 1**	**Project #:**	**09-687-A**
Depth:	**3870 - FT**	**Lab ID:**	**TM001511**
Sampling Point:		**File Name:**	**G6090489.D**

Histogram Based on Area



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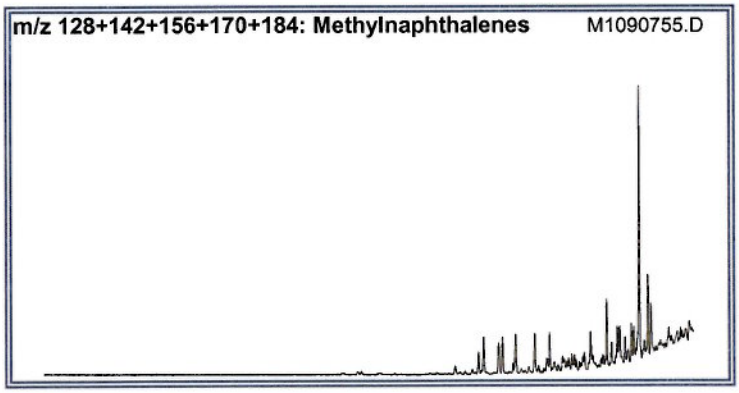
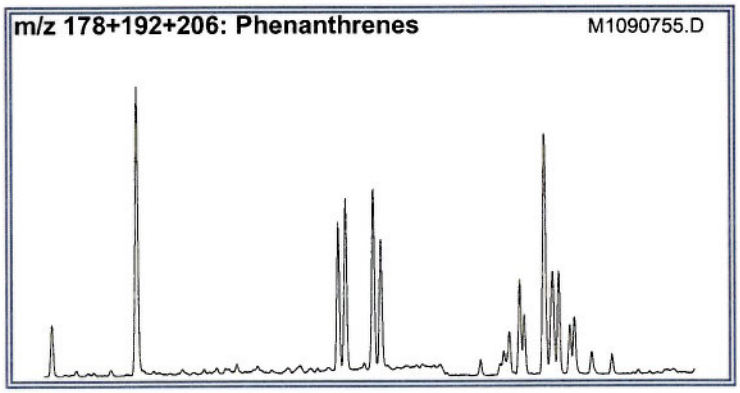
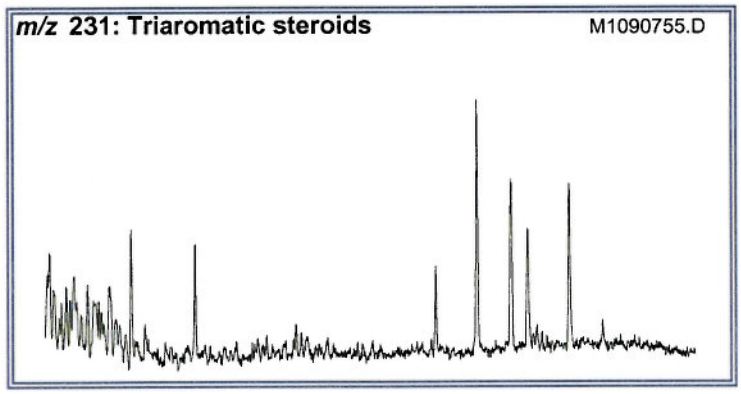
AROMATIC BIOMARKERS

Company:	TALISMAN ENERGY	Client ID:	TM001511
Country:	ALASKA	Project #:	09-687-A
Basin:		Lab ID:	TM001511
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	NANUSHUK/GRANDSTAND SANDSTC
Well Name:	SQUARE LAKE NO. 1	Geologic Age:	
Latitude:	0	Top Depth:	3870 FT
Longitude:	0	Bottom Depth:	FT







RATIOS (on Areas)[1]		Appl[2]	TEV[3]
Mono- (MAS) and Triaromatic Steroids (TAS)			
(C20+C21)/Σ TAS	0.22	M	1.0 (1.3%)
TAS #1 20/20+27	0.50	M	
TAS #2 21/21+28	0.37	M	
%26 TAS	18.9	D	
%27 TAS	32.7	D	
%28 TAS	42.2	D	
%29 TAS	6.1	D	
C28/C26 20S TAS	2.43		
C28/C27 20R TAS	1.29		
Dia/Regular C27 MAS	1.23		
%27 MAS	30.7	D	
%28 MAS	36.0	D	
%29 MAS	33.3	D	
(C21+C22)/Σ MAS	0.21	M	1.0 (1.3%)
TAS/(MAS+TAS)	0.58	M	
TA28/(TA28+MA29)	0.64	M	1.0 (0.8%)
Triaromatic Methylsteroids			
Dinosteroid Index	0.33	A	
C4/C3+C4 Mester	0.51	A	
Phenanthrenes, Naphthalenes, and Dibenzothiophenes			
MPI-1	0.75	M	
Rc(a) if Ro < 1.3 (Ro%)	0.82	M	
Rc(b) if Ro > 1.3 (Ro%)	1.85	M	
MPI-2	0.82	M	
DNR-1	2.75	M	
DNR-2	0.92	M	
TNR1	1.12	M	
TDE-1	5.80	M	
TDE-2	0.20	M	
MDR	1.97	M	
Rm (Ro%)	0.71	M	
MDR23	0.66	M	
MDR1	0.56	M	
DBT/Phenanthrene	0.06	D	

[1]Definition and utility of the ratios can be found on our website www.brilabs.com

[2]A=Source Age; D=Depositional environment; M= Maturity

[3]Thermal equilibrium value of the biomarker ratio and in brackets the approximate VR value at which this value is reached

Company:	**TALISMAN ENERGY**	**Client ID:**	**TM001511**
Well Name:	**SQUARE LAKE NO. 1**	**Project #:**	**09-687-A**
Depth:	**3870 - FT**	**Lab ID:**	**TM001511**
Sampling Point:		**File Name:**	**M1090755.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
230	OTP	*Ortho-terphenyl* (internal standard)	74.995	82224	19641	300.0	300.0
128	NAPH	Naphthalene					
142	2MN	2-Methylnaphthalene					
142	1MN	1-Methylnaphthalene					
154	BP	Biphenyl					
156	2EN	2-Ethylnaphthalene					
156	1EN	1-Ethylnaphthalene					
156	26DMN	2,6-Dimethylnaphthalene	47.076	199	35	0.7	0.5
156	27DMN	2,7-Dimethylnaphthalene	47.244	233	34	0.9	0.5
156	1317DMN	1,3 & 1,7-Dimethylnaphthalenes	48.222	643	92	2.3	1.4
156	16DMN	1,6-Dimethylnaphthalene	48.491	597	99	2.2	1.5
156	23DMN	2,3-Dimethylnaphthalene	49.654	119	24	0.4	0.4
156	14DMN	1,4-Dimethylnaphthalene	49.755	352	46	1.3	0.7
156	15DMN	1,5-Dimethylnaphthalene	49.856	157	38	0.6	0.6
156	12DMN	1,2-Dimethylnaphthalene	50.799	188	38	0.7	0.6
168	2MBP	2-Methylbiphenyl					
168	DPM	Diphenylmethane					
168	3MBP	3-Methylbiphenyl	53.327	412	68	1.5	1.0
168	4MBP	4-Methylbiphenyl	53.967	250	48	0.9	0.7
168	DBF	Dibenzofuran	55.399	149	23	0.5	0.4
170	BB_EMN	Ethyl-methyl-Naphthalene	55.147	1245	185	4.5	2.8
170	AB_EMN	Ethyl-methyl-Naphthalene	56.360	747	117	2.7	1.8
170	137TMN	1,3,7-Trimethylnaphthalene	56.815	3430	574	12.5	8.8
170	136TMN	1,3,6-Trimethylnaphthalene	57.185	5890	968	21.5	14.8
170	146135T	(1,4,6+1,3,5)-Trimethylnaphthalenes	58.247	4988	792	18.2	12.1
170	236TMN	2,3,6-Trimethylnaphthalene	58.516	5589	953	20.4	14.6
170	127TMN	1,2,7-Trimethylnaphthalene	59.241	1319	245	4.8	3.7
170	167126T	(1,6,7+1,2,6)-Trimethylnaphthalenes	59.426	6683	968	24.4	14.8
170	124TMN	1,2,4-Trimethylnaphthalene	60.353	771	144	2.8	2.2
170	125TMN	1,2,5-Trimethylnaphthalene	60.791	4473	818	16.3	12.5
178	PHEN	Phenanthrene	70.294	125149	25888	456.6	395.4
184	1357	1,3,5,7-Tetramethylnaphthalene	64.751	5463	942	19.9	14.4
184	1367	1,3,6,7-Tetramethylnaphthalene	65.896	8662	1765	31.6	27.0
184	1247	(1,2,4,7+1,2,4,6+1,4,6,7)-Tetramethylnaphthalenes	66.655	5308	980	19.4	15.0
184	1257	1,2,5,7-Tetramethylnaphthalene	66.840	4305	817	15.7	12.5
184	2367	2,3,6,7-Tetramethylnaphthalene	67.194	2509	513	9.2	7.8
184	1267	1,2,6,7-Tetramethylnaphthalene	67.632	3265	726	11.9	11.1
184	1237	1,2,3,7-Tetramethylnaphthalene	67.834	1436	293	5.2	4.5
184	1236	1,2,3,6-Tetramethylnaphthalene	68.087	2904	571	10.6	8.7
184	1256	1,2,5,6-Tetramethylnaphthalene	68.811	7816	1715	28.5	26.2
184	DBT	Dibenzothiophene	69.014	7891	1505	28.8	23.0
191	BH32	C32 Benzohopane	117.838	1136	197	4.1	3.0
191	BH33	C33 Benzohopane	119.995	814	131	3.0	2.0
191	BH34	C34 Benzohopane					
191	BH35	C35 Benzohopane					
192	3MP	3-Methylphenanthrene	75.231	57995	13316	211.6	203.4
192	2MP	2-Methylphenanthrene	75.416	69859	15335	254.9	234.2
192	9MP	9-Methylphenanthrene	76.107	75230	16002	274.5	244.4
192	1MP	1-Methylphenanthrene	76.292	53998	11417	197.0	174.4

Company:	**TALISMAN ENERGY**	**Client ID:**	**TM001511**
Well Name:	**SQUARE LAKE NO. 1**	**Project #:**	**09-687-A**
Depth:	**3870 - FT**	**Lab ID:**	**TM001511**
Sampling Point:		**File Name:**	**M1090755.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
198	CAD	Cadalene	66.250	5880	1191	21.5	18.2
198	4MDBT	4 Methyl Dibenzothiophene	73.563	8729	1959	31.8	29.9
198	23MDBT	2 & 3 Methyl Dibenzothiophenes	74.355	5178	917	18.9	14.0
198	1MDBT	1 Methyl Dibenzothiophene	75.130	4438	854	16.2	13.0
206	36DMP	3,6-Dimethylphenanthrene	79.460	18841	3848	68.7	58.8
206	26DMP	2,6-Dimethylphenanthrene	79.713	38559	8500	140.7	129.8
206	27DMP	2,7-Dimethylphenanthrene	79.831	21321	5328	77.8	81.4
206	39DMP	(3,9+3,10+2,10+1,3)-Dimethylphenanthrenes	80.319	110995	21571	405.0	329.5
206	29DMP	(2,9+1,6)-Dimethylphenanthrenes	80.538	54664	9191	199.4	140.4
206	17DMP	1,7-Dimethylphenanthrene	80.673	41680	9257	152.1	141.4
206	23DMP	2,3-Dimethylphenanthrene	80.960	20594	4346	75.1	66.4
206	19DMP	1,9-Dimethylphenanthrene	81.061	22206	5094	81.0	77.8
206	18DMP	1,8-Dimethylphenanthrene	81.482	9754	2016	35.6	30.8
206	12DMP	1,2-Dimethylphenanthrene	81.988	7799	1836	28.5	28.0
231	231A20	C20 Triaromatic Steroid	92.320	5126	1017	18.7	15.5
231	231B21	C21 Triaromatic	94.831	3915	853	14.3	13.0
231	231C26	C26 20S Triaromatic	104.017	3017	659	11.0	10.1
231	231D26	C27 20S & C26 20R Triaromatic	105.601	9135	1864	33.3	28.5
231	TADMD1	C28 23,24-Cholestane Triaromatic					
231	TADMD2	C28 23,24-Cholestane Triaromatic					
231	231E28	C28 20S Triaromatic	106.916	7337	1254	26.8	19.2
231	231F27	C27 20R Triaromatic	107.557	5212	896	19.0	13.7
231	TADMD3	C28 23,24-Cholestane Triaromatic					
231	C29TA1	C29 Triaromatic	107.927	1013	198	3.7	3.0
231	C29TA2	C29 Triaromatic	108.130	606	143	2.2	2.2
231	TADMD4	C28 23,24-Cholestane Triaromatic					
231	231G28	C28 20R Triaromatic	109.158	6722	1218	24.5	18.6
231	TADMD5	C28 23,24-Cholestane Triaromatic					
231	C29TA3	C29 Triaromatic	110.456	979	223	3.6	3.4
245	C3S	C27 20S 3-Methyl Triaromatic Steroid	106.680	743	157	2.7	2.4
245	C4S	C27 20S 4-Methyl Triaromatic Steroid	107.321	969	192	3.5	2.9
245	E2S	C28 20S 2-Methyl Triaromatic Steroid	107.759	375	96	1.4	1.5
245	E3SC3R	C28 20S 3-Methyl & C27 20R 3-Methyl TAS	108.214	1583	296	5.8	4.5
245	E4SC4R	C28 20S 4-Methyl & C27 20R 4-Methyl TAS	108.804	3082	454	11.2	6.9
245	S2S	C29 20S 2-Methyl Triaromatic Steroid	109.090	622	105	2.3	1.6
245	DA	Triaromatic Dinosteroid a	109.242	420	120	1.5	1.8
245	S3S	C29 20S 3-Methyl Triaromatic Steroid	109.427	1911	220	7.0	3.4
245	DB	Triaromatic Dinosteroid b	109.832	1515	302	5.5	4.6
245	S4SE2R	C29 20S 4-Methyl & C28 20R 2-Methyl TAS	110.017	2027	289	7.4	4.4
245	E3R	C28 20R 3-Methyl Triaromatic Steroid	110.152	1520	213	5.5	3.3
245	E4R	C28 20R 4-Methyl Triaromatic Steroid	110.759	1840	274	6.7	4.2
245	DC	Triaromatic Dinosteroid c	110.944	1961	305	7.2	4.7
245	DD	Triaromatic Dinosteroid d	111.046	1672	325	6.1	5.0
245	S2R	C29 20R 2-Methyl Triaromatic Steroid	111.450	608	115	2.2	1.8
245	S3R	C29 20R 3-Methyl Triaromatic Steroid	111.686	1477	268	5.4	4.1
245	DE	Triaromatic Dinosteroid e	111.821	1529	249	5.6	3.8
245	S4R	C29 20R 4-Methyl Triaromatic Steroid	112.259	1114	216	4.1	3.3
245	DF	Triaromatic Dinosteroid f	112.394	1752	311	6.4	4.8

Company:	**TALISMAN ENERGY**	**Client ID:**	**TM001511**
Well Name:	**SQUARE LAKE NO. 1**	**Project #:**	**09-687-A**
Depth:	**3870 - FT**	**Lab ID:**	**TM001511**
Sampling Point:		**File Name:**	**M1090755.D**

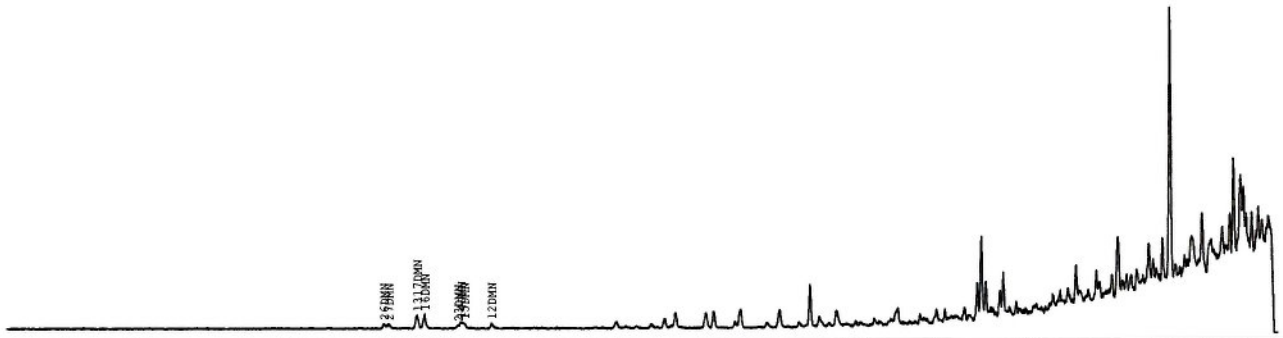
Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
253	S253A	C21 Ring-C Monoaromatic Steroid	84.533	4010	587	14.6	9.0
253	S253B	C22 Monoaromatic steroid	87.011	2294	406	8.4	6.2
253	S253C	C27 Reg 5β(H),10β(CH3) 20S	96.989	1231	293	4.5	4.5
253	S253D	C27 Dia 10β(H),5β(CH3) 20S	97.124	1510	349	5.5	5.3
253	S253E	C27 Dia10βH,5βCH3 20R+Reg5βH,10βCH3 20R	98.607	2150	450	7.8	6.9
253	S253F	C27 Reg 5α(H),10β(CH3) 20S	98.758	1138	199	4.2	3.0
253	S253G	C28 Dia 10αH,5αCH3 20s+Reg5βH,10βCH3 20S	99.163	3405	582	12.4	8.9
253	S253H	C27 Reg 5α(H),10β(CH3) 20R	100.444	1231	198	4.5	3.0
253	S253I	C28 Reg 5α(H),10β(CH3) 20S	100.579	773	162	2.8	2.5
253	S253J	C28 Dia 10αH,5αCH3 20R+Reg5βH,10βCH3 20R	100.764	3447	579	12.6	8.8
253	S253K	C29 Dia 10βH,5βCH3 20S+Reg5βH,10βCH3 20S	100.899	3139	656	11.5	10.0
253	S253L	C29 Reg 5α(H),10β(CH3) 20S	102.180	603	150	2.2	2.3
253	S253M	C28 Reg 5α(H),10β(CH3) 20R	102.450	868	157	3.2	2.4
253	S253N	C29 Dia 10βH,5βCH3 20R+Reg5βH,10βCH3 20R	102.601	3498	593	12.8	9.1
253	S253O	C29 Reg 5α(H),10β(CH3) 20R	104.186	626	99	2.3	1.5
365	SH29	C29 8,14-secohopanoids	104.085	14405	2889	52.6	44.1
365	SH30	C30 8,14-secohopanoids	106.073	13107	2924	47.8	44.7

Company:	TALISMAN ENERGY	Client ID:	TM001511
Well Name:	SQUARE LAKE NO. 1	Project #:	09-687-A
Depth:	3870 - FT	Lab ID:	TM001511
Sampling Point:		File Name:	M1090755.D

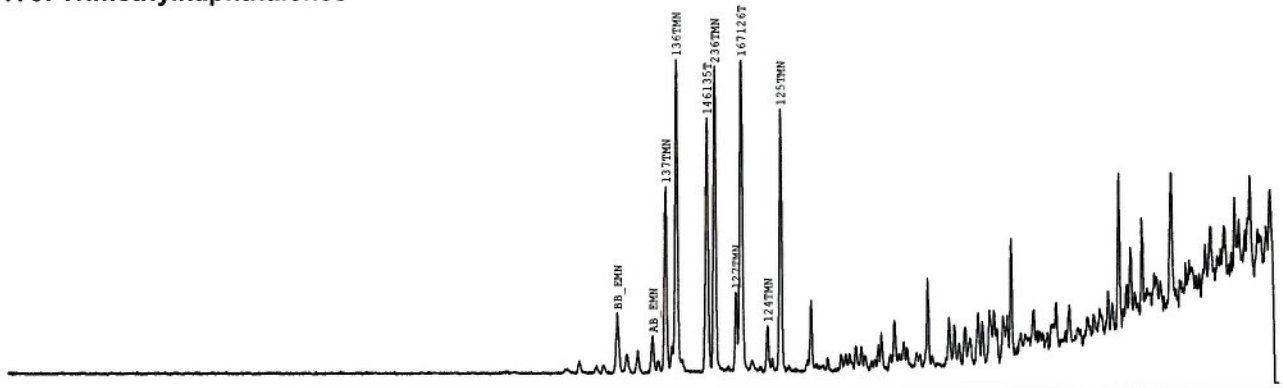
Miscellaneous Ratios	By Areas	By Heights
Triaromatic Steroids m/z 231		
(C20+C21)/Σ TAS	0.22	0.23
TAS #1 20/20+27	0.50	0.53
TAS #2 21/21+28	0.37	0.41
%26TAS	18.9	22.0
%27TAS	32.7	29.9
%28TAS	42.2	40.7
%29TAS	6.1	7.4
C28/C26 20S TAS	2.43	1.90
C28/C27 20R TAS	1.29	1.36
Monoaromatic Steroids m/z 253		
Dia/Regular C27 MAS	1.23	1.19
%27 MAS	30.7	33.3
%28 MAS	36.0	33.1
%29 MAS	33.3	33.5
(C21+C22)/Σ MAS	0.21	0.18
TAS/(MAS+TAS)	0.58	0.59
TA28/(TA28+MA29)	0.64	0.62
Triaromatic Methylsteroids m/z 245		
Dinosteroid Index	0.33	0.36
C4/C3+C4 Mester	0.51	0.52
Phenanthrenes and Naphthalenes		
MPI-1	0.75	0.81
MPI-2	0.82	0.86
MPI-3	0.99	1.04
Rc(a) if Ro < 1.3 (Ro%)	0.82	0.85
Rc(b) if Ro > 1.3 (Ro%)	1.85	1.82
DNR-1	2.75	1.82
DNR-2	0.92	0.99
TNR1	1.12	1.20
TDE-1	5.80	5.68
TDE-2	0.20	0.25
MDR	1.97	2.29
Rm (Ro%)	0.71	0.73
MDR23	0.66	0.61
MDR1	0.56	0.57
DBT/Phenanthrene	0.06	0.06

Company:	TALISMAN ENERGY	Client ID:	TM001511
Well Name:	SQUARE LAKE NO. 1	Project #:	09-687-A
Depth:	3870 - FT	Lab ID:	TM001511
Sampling Point:		File Name:	

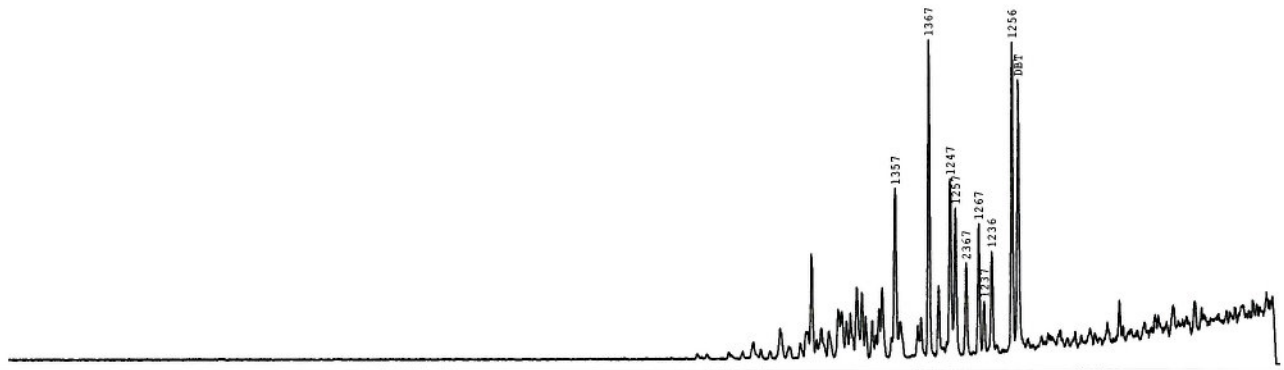
***m/z* 156: Dimethylnaphthalenes**



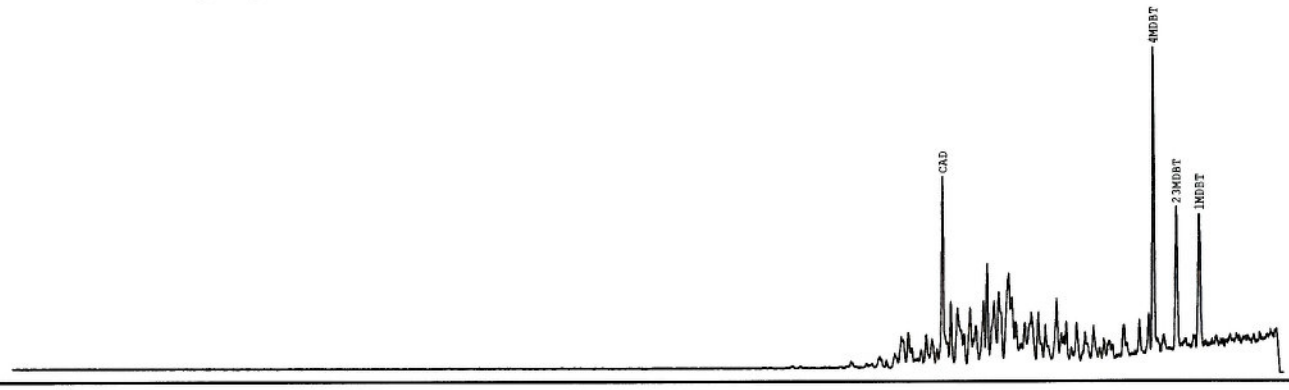
***m/z* 170: Trimethylnaphthalenes**



***m/z* 184: Tetramethylnaphthalenes**

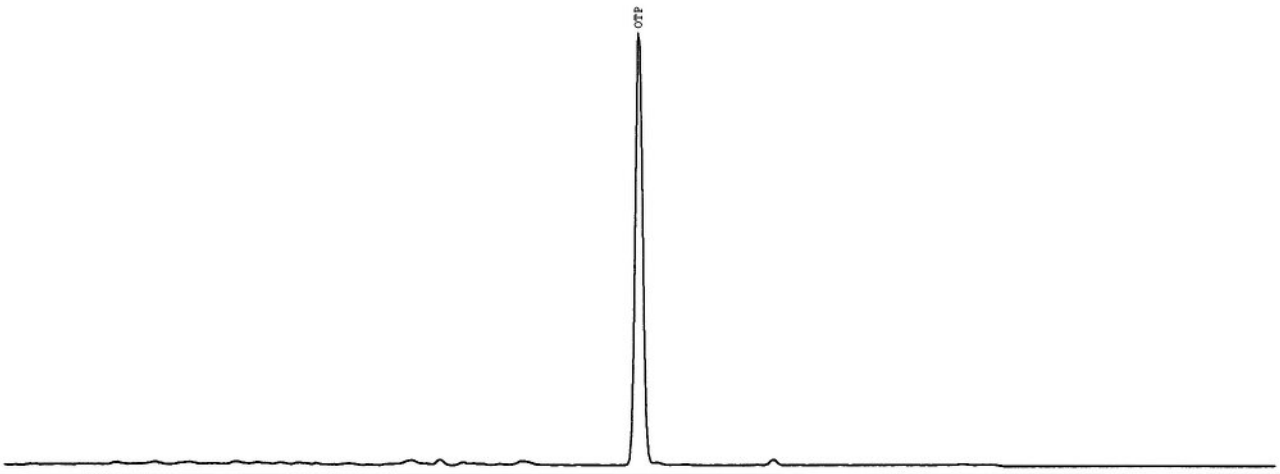


***m/z* 198: Pentamethylnaphthalenes**

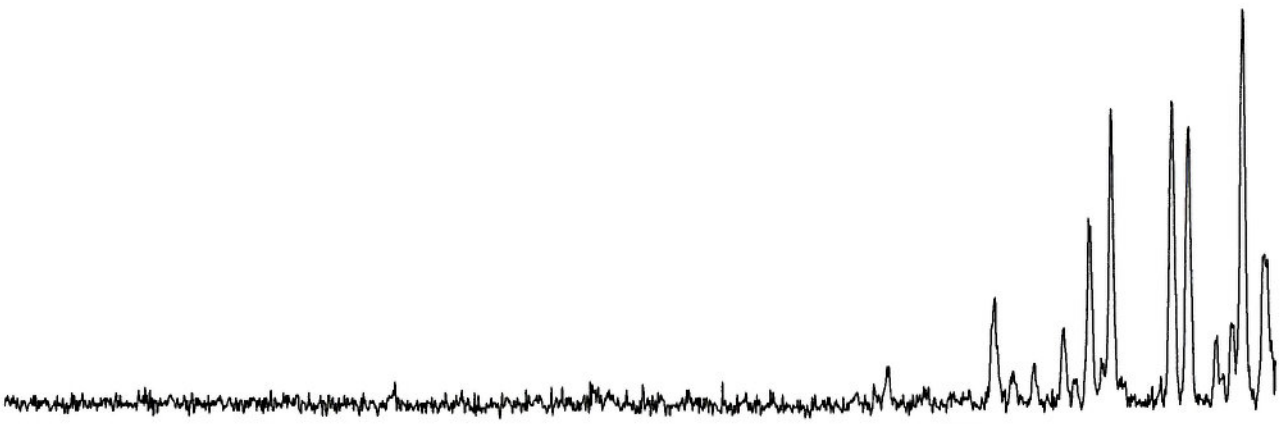


Company:	TALISMAN ENERGY	Client ID:	TM001511
Well Name:	SQUARE LAKE NO. 1	Project #:	09-687-A
Depth:	3870 - FT	Lab ID:	TM001511
Sampling Point:		File Name:	M1090755.D

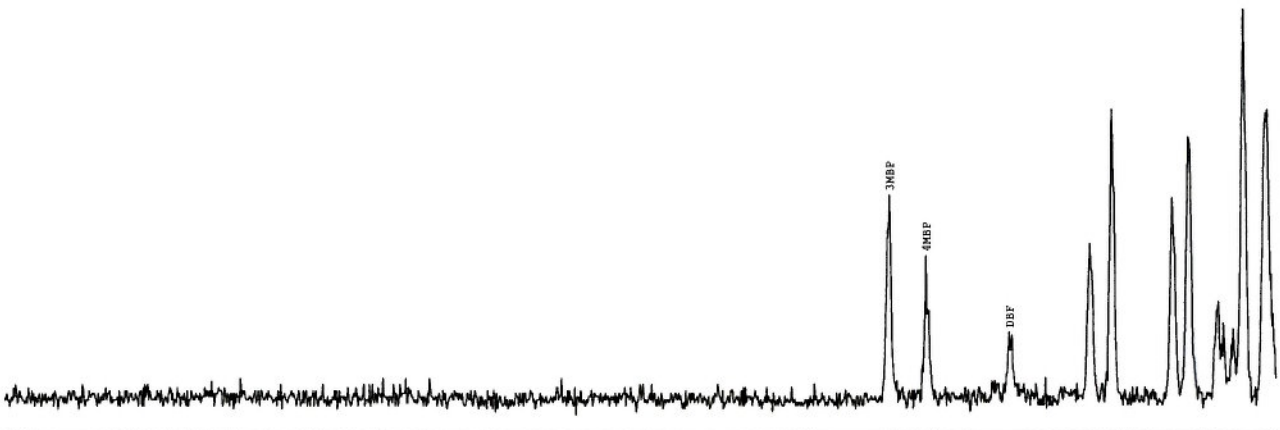
m/z 230: Ortho-Terphenyl (Inter. Std)



m/z 154: Biphenyl

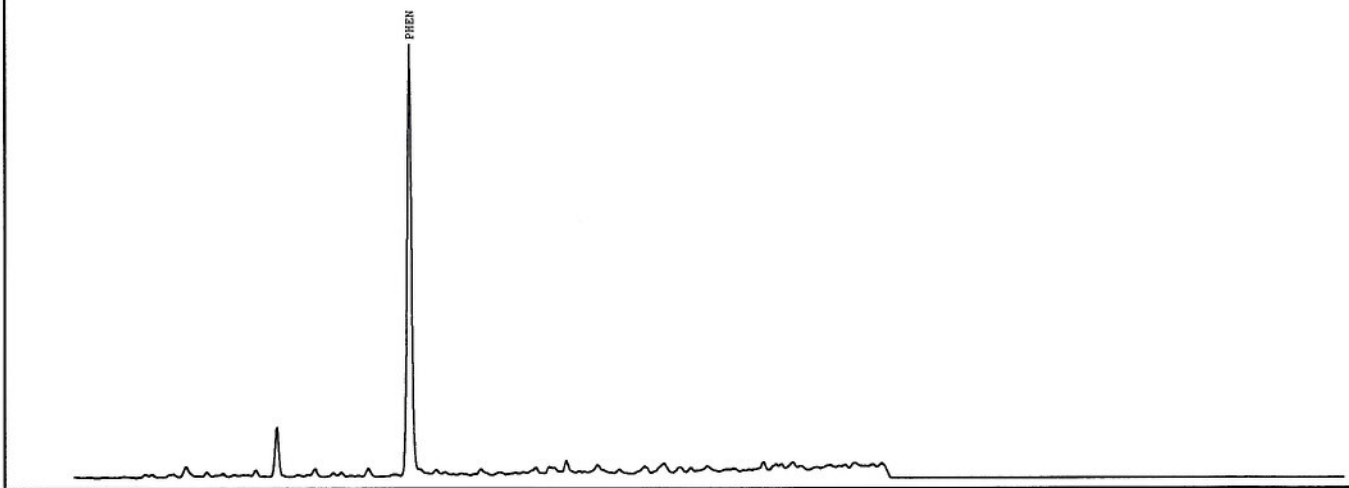


m/z 168: Methylbiphenyls (MBP)

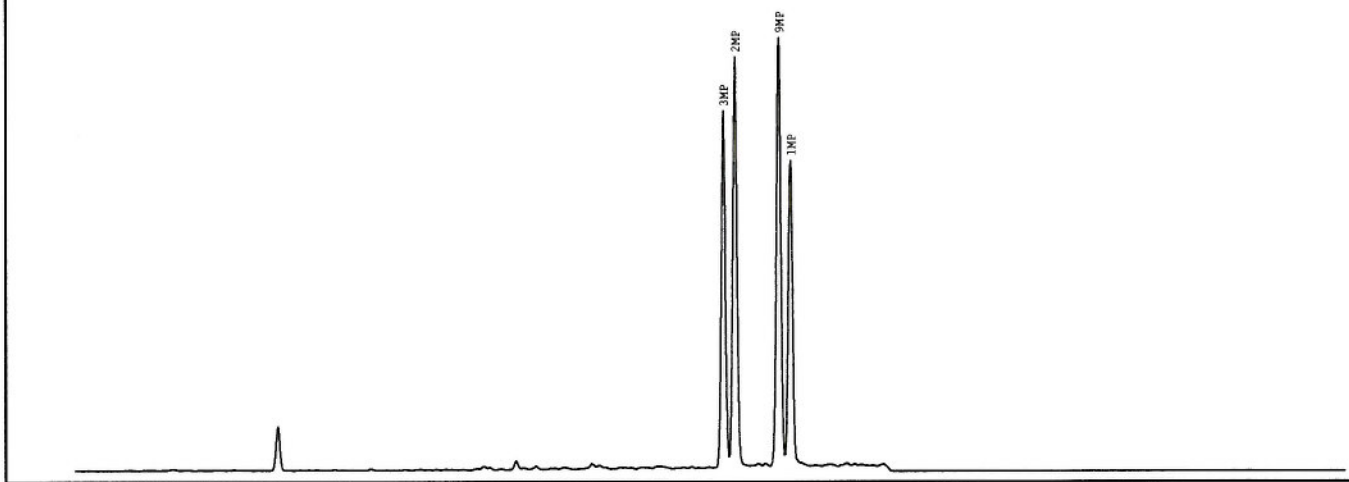


Company:	TALISMAN ENERGY	Client ID:	TM001511
Well Name:	SQUARE LAKE NO. 1	Project #:	09-687-A
Depth:	3870 - FT	Lab ID:	TM001511
Sampling Point:		File Name:	M1090755.D

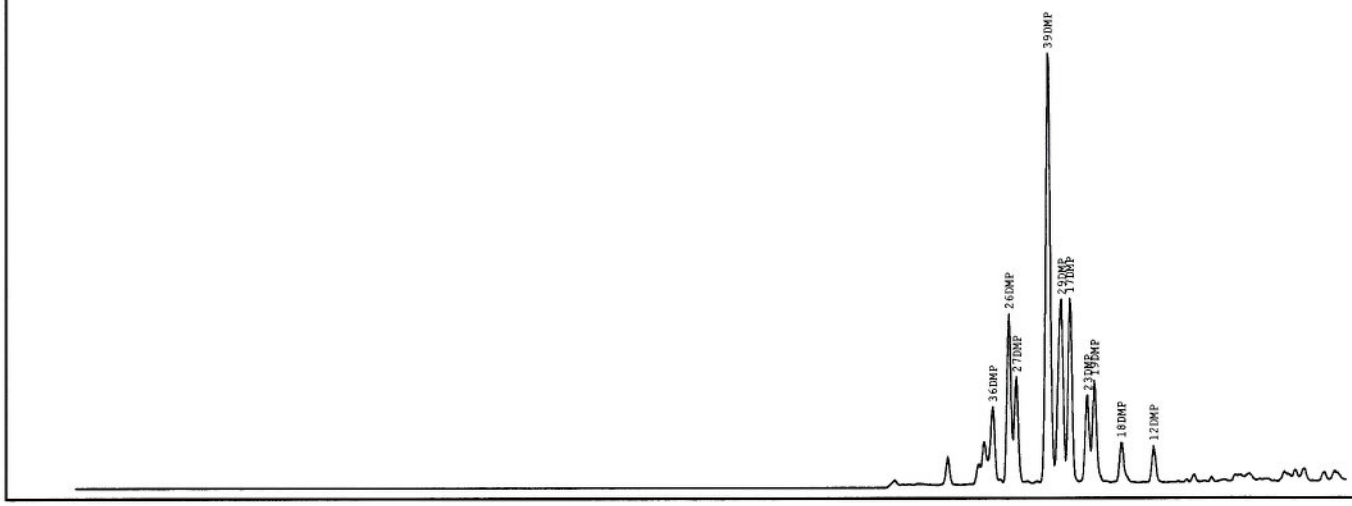
***m/z* 178: Phenanthrene**



***m/z* 192: Methylphenanthrenes**

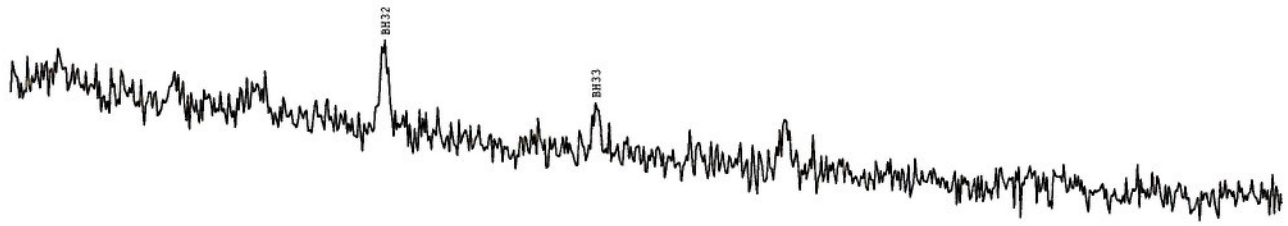


***m/z* 206: Dimethylpehnanthrenes**

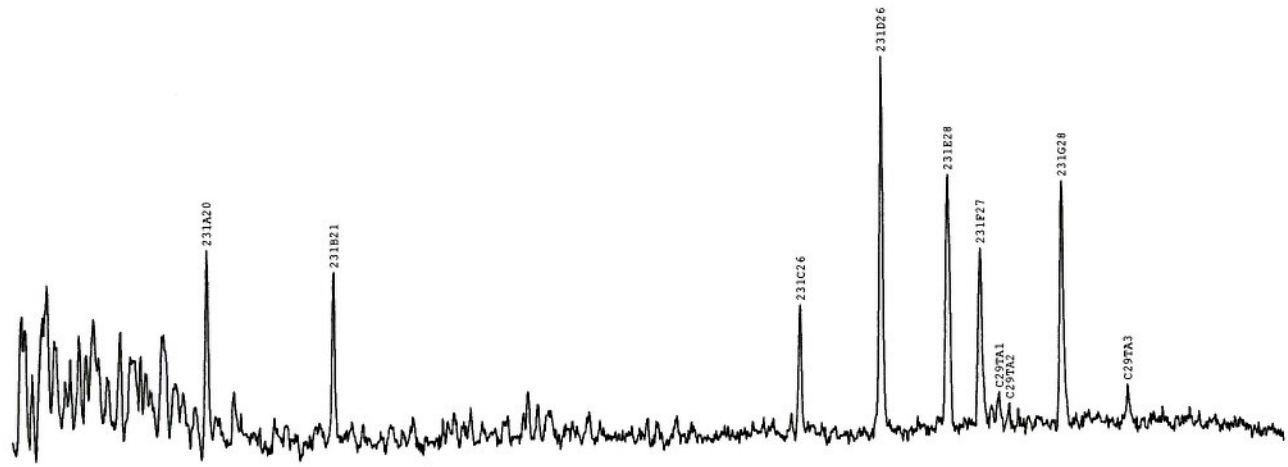


Company:	TALISMAN ENERGY	Client ID:	TM001511
Well Name:	SQUARE LAKE NO. 1	Project #:	09-687-A
Depth:	3870 - FT	Lab ID:	TM001511
Sampling Point:		File Name:	M1090755.D

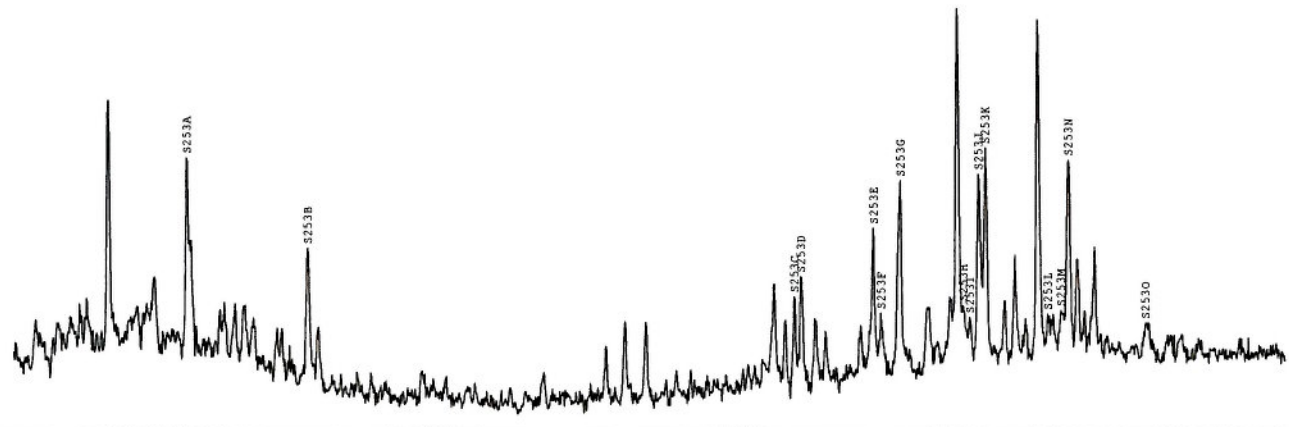
***m/z* 191: Benzohopanes**



***m/z* 231: Triaromatic Steranes**



***m/z* 253: Monoaromatic Steranes**

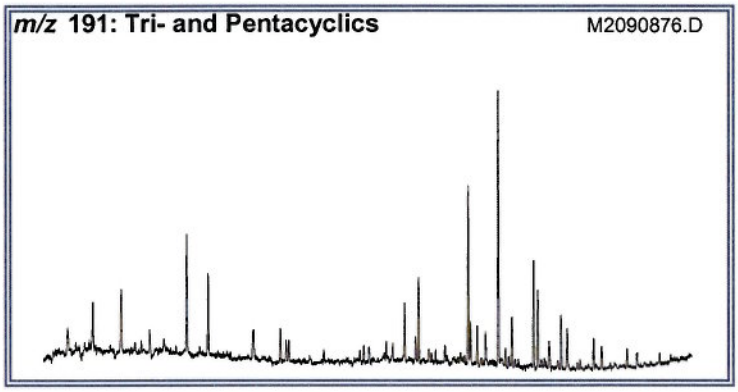


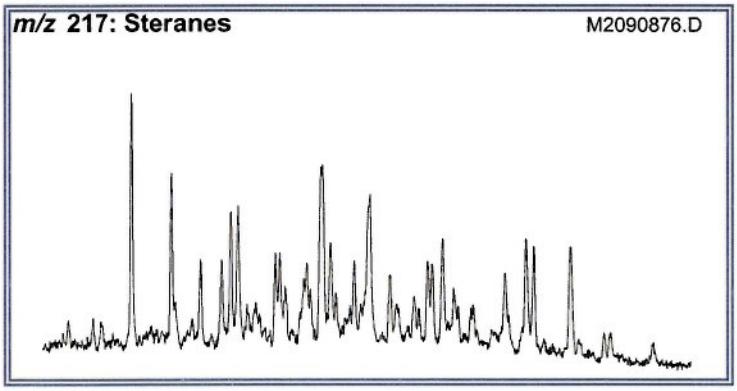
Parameter	Formula
Mono- (MAS) and Triaromatic Steroids (TAS)	
(C20+C21)/Σ TAS	(231A20+231B21)/(231A20+231B21+231C26+231D26+231E28+231F27+231G28+C29TA3)
TAS #1 20/20+27	(231A20)/(231A20+231F27)
TAS #2 21/21+28	(231B21)/(231B21+231G28)
%26 TAS	100*(231C26)/(231C26+231F27+231G28+C29TA3)
%27 TAS	100*(231F27)/(231C26+231F27+231G28+C29TA3)
%28 TAS	100*(231G28)/(231C26+231F27+231G28+C29TA3)
%29 TAS	100*(C29TA3)/(231C26+231F27+231G28+C29TA3)
C28/C26 20S TAS	(231E28)/(231C26)
C28/C27 20R TAS	(231G28)/(231F27)
Dia/Regular C27 MAS	(S253D)/(S253C)
%27 MAS	100*(S253C+S253D+S253E+S253F+S253H)/(S253C+S253D+S253E+S253F+S253G+S253H+S253I+S253J+S253K+S253L+S253M+S253N+S253O)
%28 MAS	100*(S253G+S253I+S253J+S253M)/(S253C+S253D+S253E+S253F+S253G+S253H+S253I+S253J+S253K+S253L+S253M+S253N+S253O)
%29 MAS	100*(S253K+S253L+S253N+S253O)/(S253C+S253D+S253E+S253F+S253G+S253H+S253I+S253J+S253K+S253L+S253M+S253N+S253O)
(C21+C22)/Σ MAS	(S253A+S253B)/(S253A+S253B+S253C+S253D+S253E+S253F+S253G+S253H+S253I+S253J+S253K+S253L+S253M+S253N+S253O)
TAS/(MAS+TAS)	(231A20+231B21+231C26+231D26+231E28+231F27+231G28+C29TA3)/((231A20+231B21+231C26+231D26+231E28+231F27+231G28+C29TA3)+(S253A+S253B+S253C+S253D+S253E+S253F+S253G+S253H+S253I+S253J+S253K+S253L+S253M+S253N+S253O))
TA28/(TA28+MA29)	(231E28+231G28)/(231E28+231G28+S253K+S253L+S253N+S253O)
Triaromatic Methylsteroids	
Dinosteroid Index	(DA+DB+DC+DD+DE+DF)/(C3S+C4S+E2S+E3SC3R+E4SC4R+S2S+DA+S3S+DB+S4SE2R+E3R+E4R+DC+DD+S2R+S3R+DE+S4R+DF)
C4/C3+C4 Mester	(C4S+E4R+S4R)/(C3S+C4S+E3R+E4R+S3R+S4R)
Phenanthrenes, Naphthalenes, and Dibenzothiophenes	
MPI-1	(1.5*(3MP+2MP))/(PHEN+9MP+1MP)
MPI-2	(3*(2MP))/(PHEN+9MP+1MP)
MPI-3	(3MP+2MP)/(9MP+1MP)
Rc(a) if Ro < 1.3 (Ro%)	(((.6)*(1.5*(2MP+3MP))/(PHEN+9MP+1MP))+.37)
Rc(b) if Ro > 1.3 (Ro%)	(((-.6)*(1.5*(2MP+3MP))/(PHEN+9MP+1MP))+2.3)
DNR-1	(26DMN+27DMN)/(15DMN)
DNR-2	(26DMN+27DMN)/(14DMN+23DMN)
TNR1	(236TMN)/(146135T)
TDE-1	(125TMN)/(124TMN)
TDE-2	(127TMN)/(167126T)
MDR	(4MDBT)/(1MDBT)
Rm (Ro%)	(0.40+0.30*(4MDBT/1MDBT)-0.094*(4MDBT/1MDBT)*(4MDBT/1MDBT)+0.011*(4MDBT/1MDBT)*(4MDBT/1MDBT)*(4MDBT/1MDBT))
MDR23	(23MDBT)/(DBT)
MDR1	(1MDBT)/(DBT)
DBT/Phenanthrene	(DBT)/(PHEN)

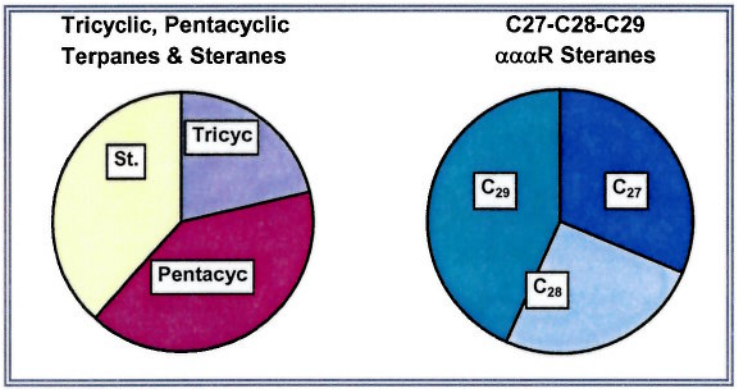
Weatherford LABORATORIES

SATURATE BIOMARKERS

Company:	TALISMAN ENERGY	Client ID:	TM001511
Country:	ALASKA	Project #:	09-687-A
Basin:		Lab ID:	TM001511
Lease:		Sample Type:	CORE
Block:		Sampling Point:	
Field:		Formation:	NANUSHUK/GRANDSTAND SANDSTC
Well Name:	SQUARE LAKE NO. 1	Geologic Age:	
Latitude:	0	Top Depth:	3870 FT
Longitude:	0	Bottom Depth:	FT







RATIOS (on Areas)[1]		Appl[2]	TEV[3]
Steranes (*m/z* 217; 218)			
%C_{27} αββS (218)	27.0	D	
%C_{28} αββS (218)	36.4	D	
%C_{29} αββS (218)	36.6	D	
%C_{27} αααR (217)	31.4	D	
%C_{28} αααR (217)	25.3	D	
%C_{29} αααR (217)	43.4	D	
S/(S+R) (C_{29} ααα) (217)	0.42	M	0.55 (0.8%)
ββS/(ββS+ααR) (C29) (217)	0.46	M	0.70 (0.9%)
(C_{21}+C_{22})/(C_{27}+C_{28}+C_{29}) (217)	0.14		
C_{27}/C_{29} (αββS) (218)	0.74	D	
C_{28}/C_{29} (αββS) (218)	1.00	D	
Diaster/ααα Ster (C_{27}) (217)	2.13	M/D	1.00 (1.4%)
C30 αββS Sterane Index (218)	7.30	D	
C30 S+R Sterane Index (218)	7.20	D	
Terpanes (*m/z* 191)			
Oleanane/Hopane		D/A	
Gammacerane/Hopane	0.05	D	
Norhopane/Hopane	0.63	D	
Bisnorhopane/Hopane			
Diahopane/Hopane	0.14	M/D	
Moretane/Hopane	0.19	M	0.05 (0.7%)
25-*nor*-hopane/hopane		B	
Ts/(Ts+Tm) trisnorhopanes	0.39	M/D	1.00 (1.4%)
C29Ts/C29 Hopane	0.26	M	
H32 S/(R+S) Homohopanes	0.57	M	0.60 (0.6%)
H35/H34 Homohopanes	0.52	D	
C24 Tetracyclic/Hopane	0.13	D	
C24 Tetracyclic/C26 Tricyclics	0.73	D	
C23/C24 Tricyclic terpanes	1.68	D	
C19/C23 Tricyclic terpanes	0.33	D	
C26/C25 Tricyclic terpanes	0.86	D	
(C28+C29 Tricyclics)/Ts	1.10	A	
Various (*m/z* 191; 217)			
Steranes/Hopanes	1.02	D	
Tricyclic terpanes/Hopanes	0.55	M	1.00 (1.4%)
Tricyclic terpanes/Steranes	0.54	M/D	1.00 (1.4%)

[1]Definition and utility of the ratios can be found on our website www.brilabs.com

[2]A=Source Age; D=Depositional environment; M= Maturity; B=Possible Biodegradation

[3]Thermal equilibrium value of the biomarker ratio and in brackets the approximate VR value at which this value is reached

Company:	**TALISMAN ENERGY**	**Client ID:**	**TM001511**
Well Name:	**SQUARE LAKE NO. 1**	**Project #:**	**09-687-A**
Depth:	**3870 - FT**	**Lab ID:**	**TM001511**
Sampling Point:		**File Name:**	**M2090876.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
217	CHOL	*5β cholane (internal standard)*	42.298	15418	2420	100.0	100.0
125	BCAROT	β-carotane					
187	4MDIAM	4-methyldiamantane	9.296	109	35	0.7	1.4
187	1MDIAM	1-methyldiamantane	9.888	102	27	0.7	1.1
187	3MDIAM	3-methyldiamantane	10.272	112	34	0.7	1.4
188	DIAM	diamantane	9.139	77	26	0.5	1.1
191	TR19	C19 tricyclic terpane	18.845	4257	415	27.6	17.1
191	TR20	C20 tricyclic terpane	21.756	5260	763	34.1	31.5
191	TR21	C21 tricyclic terpane	25.137	8994	964	58.3	39.8
191	TR22	C22 tricyclic terpane	28.500	2427	374	15.7	15.5
191	TR23	C23 tricyclic terpane	32.761	13004	1804	84.3	74.5
191	TR24	C24 tricyclic terpane	35.185	7726	1232	50.1	50.9
191	DESAOL	des-A-oleanane					
191	DESALU	des-A-lupane					
191	TR25A	C25 tricyclic terpane (a)	40.276	3061	447	19.9	18.5
191	TR25B	C25 tricyclic terpane (b)	40.380	2857	453	18.5	18.7
191	TET24	C24 tetracyclic terpane (TET)	43.484	3691	535	23.9	22.1
191	TR26A	C26 tricyclic terpane (a)	44.146	2356	350	15.3	14.5
191	TR26B	C26 tricyclic terpane (b)	44.478	2704	343	17.5	14.2
191	TR28A	C28 tricyclic terpane (a)	53.038	1773	280	11.5	11.6
191	TR28B	C28 tricyclic terpane (b)	53.666	1819	253	11.8	10.5
191	TR29A	C29 tricyclic terpane (a)	55.619	1582	291	10.3	12.0
191	TR29B	C29 tricyclic terpane (b)	56.351	1310	272	8.5	11.2
191	TR30A	C30 tricyclic terpane (a)	60.570	1412	219	9.2	9.1
191	TR30B	C30 tricyclic terpane (b)	61.372	1254	217	8.1	9.0
191	TS	Ts 18α(H)-trisnorhopane	57.728	5876	908	38.1	37.5
191	TM	Tm 17α(H)-trisnorhopane	59.367	9159	1300	59.4	53.7
191	H28	C28 17α18α21β(H)-bisnorhopane					
191	NOR25H	C29 Nor-25-hopane					
191	H29	C29 Tm 17α(H)21β(H)-norhopane	65.155	17928	2678	116.3	110.7
191	C29TS	C29 Ts 18α(H)-norneohopane	65.400	4636	652	30.1	26.9
191	DH30	C30 17α(H)-diahopane	66.184	3985	588	25.8	24.3
191	M29	C29 normoretane	67.161	3422	509	22.2	21.0
191	OLA	oleanane a					
191	OLB	oleanane b					
191	H30	C30 17α(H)-hopane	68.625	28261	4124	183.3	170.4
191	C30TS	C29 Ts 18α(H)-norneohopane	69.445	2046	308	13.3	12.7
191	M30	C30 moretane	70.194	5493	779	35.6	32.2
191	H31S	C31 22S 17α(H) hopane	72.705	10937	1656	70.9	68.4
191	H31R	C31 22R 17α(H) hopane	73.193	8857	1204	57.4	49.8
191	GAM	gammacerane	73.646	1336	173	8.7	7.1
191	H32S	C32 22S 17α(H) hopane	75.930	5726	841	37.1	34.8
191	H32R	C32 22R 17α(H) hopane	76.628	4400	640	28.5	26.4
191	H33S	C33 22S 17α(H) hopane	79.661	3399	492	22.0	20.3
191	H33R	C33 22R 17α(H) hopane	80.603	2583	366	16.8	15.1
191	H34S	C34 22S 17α(H) hopane	83.532	2289	311	14.8	12.9
191	H34R	C34 22R 17α(H) hopane	84.700	1640	248	10.6	10.2
191	H35S	C35 22S 17α(H) hopane	87.281	1158	191	7.5	7.9
191	H35R	C35 22R 17α(H) hopane	88.571	883	137	5.7	5.7

Company:	**TALISMAN ENERGY**	**Client ID:**	**TM001511**
Well Name:	**SQUARE LAKE NO. 1**	**Project #:**	**09-687-A**
Depth:	**3870 - FT**	**Lab ID:**	**TM001511**
Sampling Point:		**File Name:**	**M2090876.D**

Ion	Peak Label	Compound Name	Ret. Time	Area	Height	ppm (Area)	ppm (Hght)
217	S21	C21 sterane	29.075	10620	1073	68.9	44.3
217	S22	C22 sterane	33.825	5147	594	33.4	24.5
217	DIA27S	C27 βα 20S diasterane	48.488	10088	1444	65.4	59.7
217	DIA27R	C27 βα 20R diasterane	50.039	6454	995	41.9	41.1
217	DIA28SA	C28 βα 20S diasterane a	52.288	5648	782	36.6	32.3
217	DIA28SB	C28 βα 20S diasterane b	52.567	7204	817	46.7	33.8
217	DIA28RA	C28 βα 20R diasterane a	54.015	3943	553	25.6	22.9
217	DIA28RB	C28 βα 20R diasterane b	54.171	4387	555	28.5	22.9
217	C27S	C27 αα 20S sterane	55.218	3566	499	23.1	20.6
217	BB_D29S	C27 ββ 20R + C29 dia20S	55.810	13766	1058	89.3	43.7
217	C27BBS	C27 ββ 20S sterane	56.107	5490	617	35.6	25.5
217	C27R	C27 αα 20R sterane	57.013	4188	517	27.2	21.4
217	DIA29R	C29 βα 20R diasterane	57.624	11335	890	73.5	36.8
217	C28S	C28 αα 20S sterane	59.315	3245	323	21.0	13.3
217	C28BBR	C28 ββ 20R sterane(+5 βαα)	60.030	4222	505	27.4	20.9
217	C28BBS	C28 ββ 20S sterane	60.431	5606	649	36.4	26.8
217	C28R	C28 αα 20R sterane	61.599	3376	278	21.9	11.5
217	C29S	C29 αα 20S sterane	62.819	4113	461	26.7	19.1
217	C29BBR	C29 ββ 20R sterane(+5 βαα)	63.621	6204	657	40.2	27.1
217	C29BBS	C29 ββ 20S sterane	63.935	4968	613	32.2	25.3
217	C29R	C29 αα 20R sterane	65.347	5790	616	37.6	25.5
218	C27ABBR	C27 ββ 20R sterane	55.706	8026	958	52.1	39.6
218	C27ABBS	C27 ββ 20S sterane	56.107	5417	776	35.1	32.1
218	C28ABBR	C28 ββ 20R sterane	60.047	6209	777	40.3	32.1
218	C28ABBS	C28 ββ 20S sterane	60.431	7310	855	47.4	35.3
218	C29ABBR	C29 ββ 20R sterane	63.621	8179	981	53.0	40.5
218	C29ABBS	C29 ββ 20S sterane	63.952	7337	956	47.6	39.5
218	C30ABBR	C30 ββ 20R sterane	66.655	1715	225	11.1	9.3
218	C30ABBS	C30 ββ 20S sterane	66.882	1581	213	10.3	8.8
259	D27S	C27 βα 20S diasterane	48.505	6640	925	43.1	38.2
259	D27R	C27 βα 20R diasterane	50.039	4089	655	26.5	27.1
259	D28SA	C28 βα 20S diasterane a	52.288	3695	510	24.0	21.1
259	D28SB	C28 βα 20S diasterane b	52.567	3609	513	23.4	21.2
259	D28RA	C28 βα 20R diasterane a	53.997	3050	387	19.8	16.0
259	D28RB	C28 βα 20R diasterane b	54.171	1970	344	12.8	14.2
259	D29S	C29 βα 20S diasterane	55.793	7412	708	48.1	29.3
259	D29R	C29 βα 20R diasterane	57.536	5280	464	34.2	19.2
259	C30TP1	C30 tetracyclic polyprenoid	67.108	668	94	4.3	3.9
259	C30TP2	C30 tetracyclic polyprenoid	67.300	554	94	3.6	3.9

Company:	**TALISMAN ENERGY**	**Client ID:**	**TM001511**
Well Name:	**SQUARE LAKE NO. 1**	**Project #:**	**09-687-A**
Depth:	**3870 - FT**	**Lab ID:**	**TM001511**
Sampling Point:		**File Name:**	**M2090876.D**

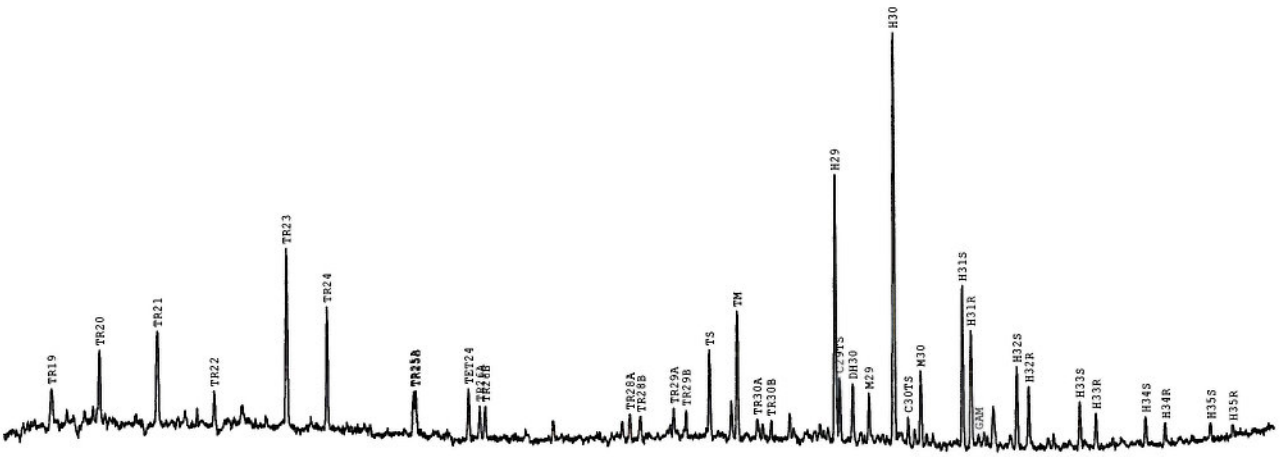
Miscellaneous Ratios	By Areas	By Heights
Terpanes (m/z 191)		
C19/C23 Tricyclic terpanes	0.33	0.23
C22/C21 Tricyclic terpanes	0.27	0.39
C22/C24 Tricyclic terpanes	0.31	0.30
C23/C24 Tricyclic terpanes	1.68	1.46
C24/C23 Tricyclic terpanes	0.59	0.68
C26/C25 Tricyclic terpanes	0.86	0.77
C24 Tetracyclic/C23 Tricyclic	0.28	0.30
C24 Tetracyclic/C26 Tricyclics	0.73	0.77
(C28+C29 Tricyclics)/Ts	1.10	1.21
Ts/Tm trisnorhopanes	0.64	0.70
Ts/(Ts+Tm) trisnorhopanes	0.39	0.41
25-nor-hopane/hopane		
C29Ts/C29 Hopane	0.26	0.24
C29Ts/(C29TS+C29) Hopane	0.21	0.20
C23 Tricyclic/Hopane	0.46	0.44
C24 Tetracyclic/Hopane	0.13	0.13
Bisnorhopane/Hopane		
Norhopane/Hopane	0.63	0.65
Diahopane/Hopane	0.14	0.14
Oleanane/Hopane		
Moretane/Hopane	0.19	0.19
Moretane/(Moretane+Hopane)	0.16	0.16
C30Ts/C30 Hopane	0.07	0.07
Gammacerane/Hopane	0.05	0.04
C32 S/(S+R) Homohopanes	0.57	0.57
Gammacerane/H31R Homohopane	0.15	0.14
C35/C34 Homohopanes	0.52	0.59
C35/C34 S Homohopanes	0.51	0.61
C35 Homohopane Index	0.05	0.05
Rel % C31 Homohopane	47.3	47.0
Rel % C32 Homohopane	24.2	24.3
Rel % C33Homohopane	14.3	14.1
Rel % C34 Homohopane	9.4	9.2
Rel % C35 Homohopane	4.9	5.4

Company:	**TALISMAN ENERGY**	**Client ID:**	**TM001511**
Well Name:	**SQUARE LAKE NO. 1**	**Project #:**	**09-687-A**
Depth:	**3870 - FT**	**Lab ID:**	**TM001511**
Sampling Point:		**File Name:**	**M2090876.D**

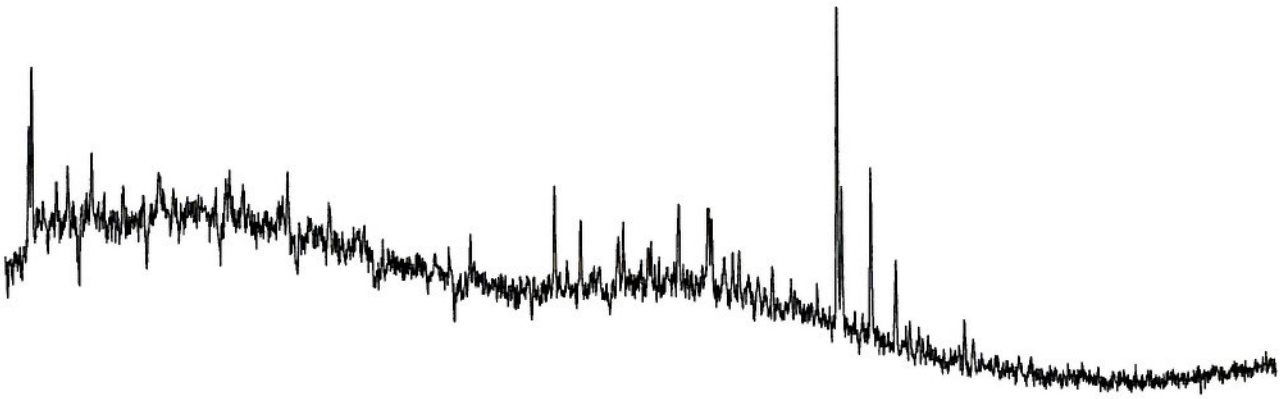
Miscellaneous Ratios	By Areas	By Heights
Steranes (m/z 217; 218)		
%C27 αααR (217)	31.4	36.6
%C28 αααR (217)	25.3	19.7
%C29 αααR (217)	43.4	43.7
S/R (C_{29} ααα) (217)	0.71	0.75
S/(S+R) (C_{29} ααα) (217)	0.42	0.43
ββ/(αα+ββ) (C_{29}) (217)	0.53	0.54
ββS/(ααR+ββS) (C29) (217)	0.46	0.50
αββS/αααR (C_{29}) (217)	0.86	1.00
(C_{21}+C_{22})/(C_{27}+C_{28}+C_{29}) (217)	0.14	0.13
Diaster/ααα Ster (C_{27}) (217)	2.13	2.40
Diaster/(Diaster+ααα) Ster (C_{27}) (217)	0.68	0.71
%C27 αββS (218)	27.0	30.0
%C28 αββS (218)	36.4	33.0
%C29 αββS (218)	36.6	37.0
%C27 αββ (R+S) (218)	31.6	32.7
%C28 αββ (R+S) (218)	31.8	30.8
%C29 αββ (R+S) (218)	36.5	36.5
C30 αββS Sterane Index (218)	7.3	7.6
C30 S+R Sterane Index (218)	7.2	7.6
C_{27}/C_{29} (αββS) (218)	0.74	0.81
C_{28}/C_{29} (αββS) (218)	1.00	0.89
C_{29}/C_{27} (αββS) (218)	1.35	1.23
C_{29}/C_{27} (αββ) (218)	1.15	1.12
Various (m/z 191; 217)		
Steranes/Hopanes	1.00	0.77
Tricyclic terpanes/Hopanes	0.54	0.52
Tricyclic terpanes/Steranes	0.54	0.68
Tricyclic/Pentacyclic Terpanes	52.8	50.9
Steranes/Terpanes	0.62	0.51
% Tricyclic Terpanes	21.3	22.3
% Pentacyclic Terpanes	40.33	22.33
% Steranes	38.4	33.8

Company:	TALISMAN ENERGY	Client ID:	TM001511
Well Name:	SQUARE LAKE NO. 1	Project #:	09-687-A
Depth:	3870 - FT	Lab ID:	TM001511
Sampling Point:		File Name:	M2090876.D

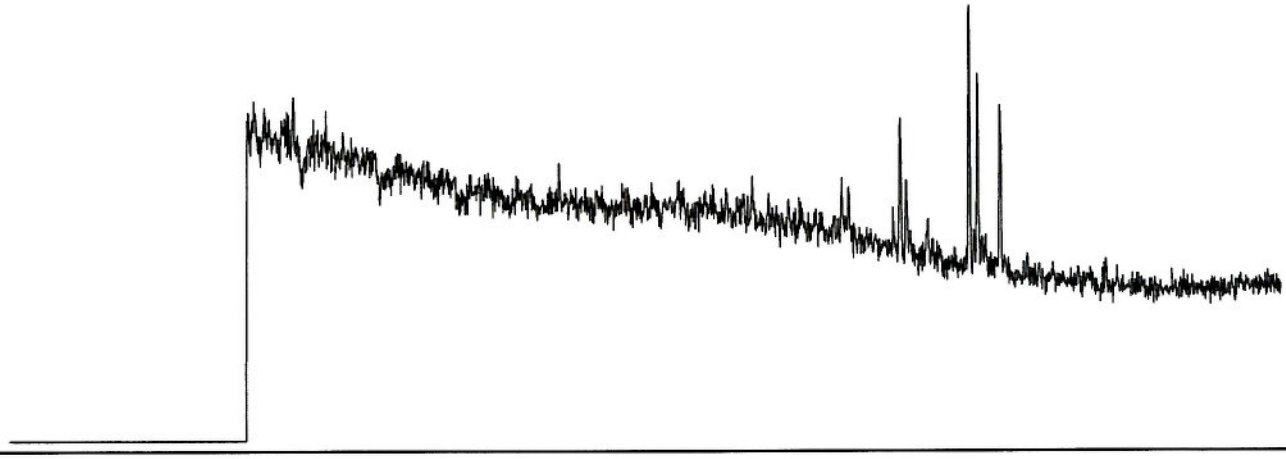
***m/z* 191:Tri-, tetra- and pentacyclic Terpanes**



***m/z* 177: Norhopanes**



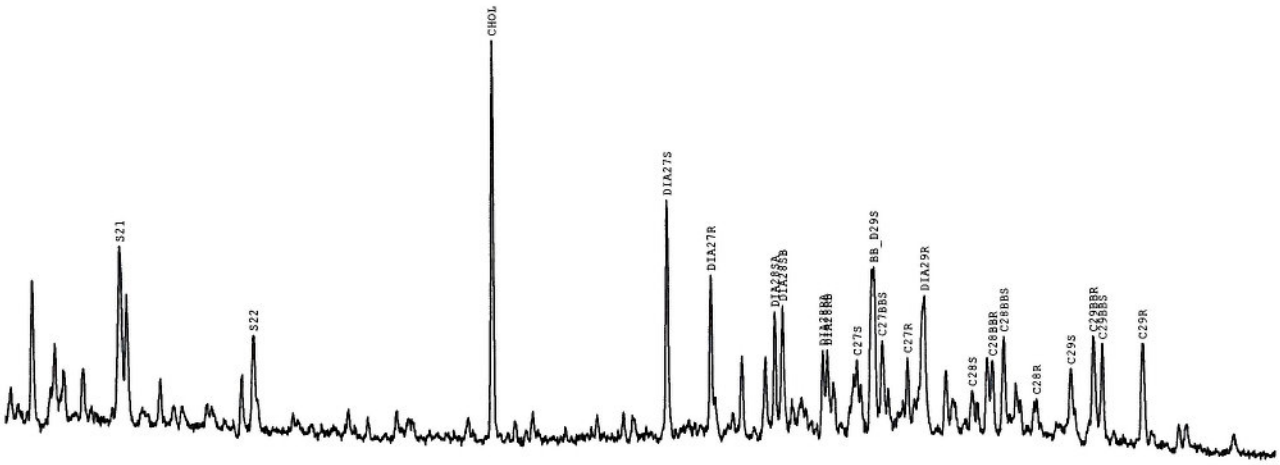
***m/z* 205**



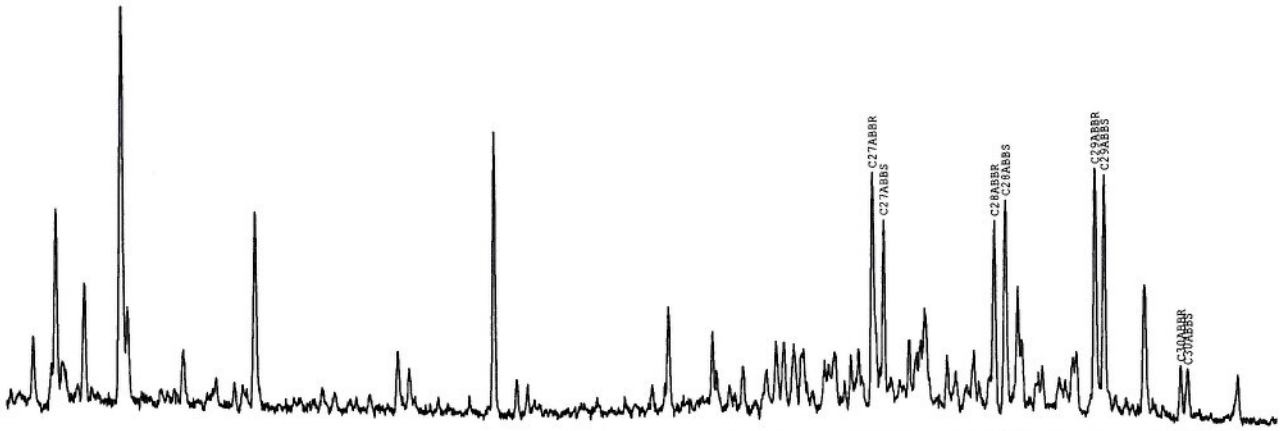
Geochemical Services Group, 143 Vision Park Blvd., Shenandoah, Texas 77384 • Phone: 281-681-2200 • Fax: 281-681-0326 • Email: geocheminfo@weatherfordlabs.com

Company:	TALISMAN ENERGY	Client ID:	TM001511
Well Name:	SQUARE LAKE NO. 1	Project #:	09-687-A
Depth:	3870 - FT	Lab ID:	TM001511
Sampling Point:		File Name:	M2090876.D

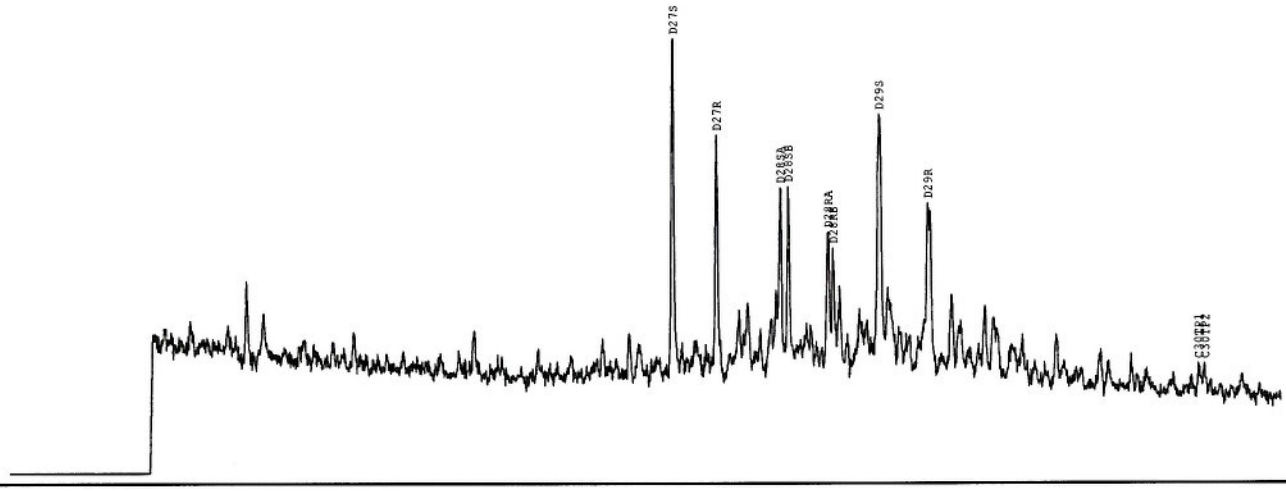
***m/z* 217: Steranes**



***m/z* 218: Steranes**



***m/z* 259: Diasteranes**



Parameter	Formula
Terpanes (*m/z* 191)	
C19/C23 Tricyclic terpanes	TR19/TR23
C22/C21 Tricyclic terpanes	TR22/TR21
C22/C24 Tricyclic terpanes	TR22/TR24
C23/C24 Tricyclic terpanes	TR23/TR24
C24/C23 Tricyclic terpanes	TR24/TR23
C26/C25 Tricyclic terpanes	(TR26A+TR26B)/(TR25A+TR25B)
C24 Tetracyclic/C23 Tricyclic	TET24/TR23
C24 Tetracyclic/C26 Tricyclics	TET24/(TR26A+TR26B)
(C28+C29 Tricyclics)/Ts	(TR28A+TR28B+TR29A+TR29B)/TS
Ts/Tm trisnorhopanes	TS/TM
Ts/(Ts+Tm) trisnorhopanes	TS/(TS+TM)
25-*nor*-hopane/hopane	NOR25H/H30
C29Ts/C29 Hopane	C29TS/H29
C29Ts/(C29TS+C29) Hopane	C29Ts/(C29TS+H29)
C23 Tricyclic/Hopane	TR23/H30
C24 Tetracyclic/Hopane	TET24/H30
Bisnorhopane/Hopane	H28/H30
Norhopane/Hopane	H29/H30
Diahopane/Hopane	DH30/H30
Oleanane/Hopane	(OLA+OLB)/H30
Moretane/Hopane	M30/H30
Moretane/(Moretane+Hopane)	M30/(M30+H30)
C30Ts/C30 Hopane	C30TS/H30
Gammacerane/Hopane	GAM/H30
C32 S/(S+R) Homohopanes	H32S/(H32R+H32S)
Gam/H31R Homohopane	GAM/H31R
C35/C34 Homohopanes	(H35R+H35S)/(H34R+H34S)
C35/C34 S Homohopanes	H35S/H34S
C35 Homohopane Index	(H35S+H35R)/(H31S+H31R+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)
Rel % C31 Homohopane	100*(H31S+H31R)/(H31S+H31R+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)
Rel % C32 Homohopane	100*(H32S+H32R)/(H31S+H31R+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)
Rel % C33Homohopane	100*(H33S+H33R)/(H31S+H31R+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)
Rel % C34 Homohopane	100*(H34S+H34R)/(H31S+H31R+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)
Rel % C35 Homohopane	100*(H35S+H35R)/(H31S+H31R+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)

Parameter	Formula
Steranes (*m/z* 217; 218)	
%C_{27} ααR (217)	100*C27R/(C27R+C28R+C29R)
%C_{28} ααR (217)	100*C28R/(C27R+C28R+C29R)
%C_{29} ααR (217)	100*C29R/(C27R+C28R+C29R)
S/R (C_{29} ααα) (217)	C29S/C29R
S/(S+R) (C_{29} ααα) (217)	C29S/(C29S+C29R)
ββ/(αα+ββ) (C_{29}) (217)	(C29BBR+C29BBS)/(C29S+C29BBR+C29BBS+C29R)
ββS/(ααR+ββS) (C_{29}) (217)	(C29BBS+C29BBS)/(C29R+C29BBS+C29BBS+C29R)
αββS/αααR (C_{29}) (217)	C29BBS/C29R
(C_{21}+C_{22})/(C_{27}+C_{28}+C_{29}) (217)	(S21+S22)/(DIA27S+DIA27R+DIA28SA+DIA28SB+DIA28RA+DIA28RB+C27S+BB_D29S+C27BBS+C27R+DIA29R+C28S+C28BBR+C28BBS+C28R+C29S+C29BBR+C29BBS+C29R)
Diaster/ααα Ster (C_{27}) (217)	(DIA27S+DIA27R)/(C27S+C27R)
Dia/(Dia+ααα) Ster (C_{27})	(DIA27S+DIA27R)/(DIA27S+DIA27R+C27S+C27R)
C_{27}/C_{29} (αββS) (218)	C27ABBS/C29ABBS
C_{28}/C_{29} (αββS) (218)	C28ABBS/C29ABBS
C_{29}/C_{27} (αββS) (218)	C29ABBS/C27ABBS
Diaster/ααα Ster (C_{27}) (217)	(DIA27S+DIA27R)/(C27S+C27R)
C30 αββS Sterane Index (218)	100*(C30ABBS)/(C27ABBS+C28ABBS+C29ABBS+C30ABBS)
C30 S+R Sterane Index (218)	100*(C30ABBR+C30ABBS)/(C27ABBR+C27ABBS+C28ABBR+C28ABBS+C29ABBR+C29ABBS+C30ABBR+C30ABBS)
%C_{27} αββS (218)	100*C27ABBS/(C27ABBS+C28ABBS+C29ABBS)
%C_{28} αββS (218)	100*C28ABBS/(C27ABBS+C28ABBS+C29ABBS)
%C_{29} αββS (218)	100*C29ABBS/(C27ABBS+C28ABBS+C29ABBS)
%C_{27} αββ (R+S) (218)	100*(C27ABBR+C27ABBS)/(C27ABBR+C27ABBS+C28ABBR+C28ABBS+C29ABBR+C29ABBS)
%C_{28} αββ (R+S) (218)	100*(C28ABBR+C28ABBS)/(C27ABBR+C27ABBS+C28ABBR+C28ABBS+C29ABBR+C29ABBS)
%C_{29} αββ (R+S) (218)	100*(C29ABBR+C29ABBS)/(C27ABBR+C27ABBS+C28ABBR+C28ABBS+C29ABBR+C29ABBS)
C30 αββS Sterane Index (218)	100*(C30ABBS)/(C27ABBS+C28ABBS+C29ABBS+C30ABBS)
C30 S+R Sterane Index (218)	100*(C30ABBR+C30ABBS)/(C27ABBR+C27ABBS+C28ABBR+C28ABBS+C29ABBR+C29ABBS+C30ABBR+C30ABBS)
C_{27}/C_{29} (αββS) (218)	C27ABBS/C29ABBS
C_{28}/C_{29} (αββS) (218)	C28ABBS/C29ABBS
C_{29}/C_{27} (αββS) (218)	C29ABBS/C27ABBS
C_{29}/C_{27} (αββ) (218)	(C29ABBR+C29ABBS/)/(C27ABBR+C27ABBS)

Parameter	Formula
Various (*m/z* 191; 217)	
Steranes/Hopanes	(DIA27S+DIA27R+DIA28SA+DIA28SB+DIA28RA+DIA28RB+C27S+BB_D29S+C27BBS+C27R+DIA29R+C28S+C28BBR+C28BBS+C28R+C29S+C29BBR+C29BBS+C29R)/(TS+TM+H28+H29+C29TS+DH30+H30+H31R+H31S+H32R+H32S+H33R+H33S+H34R+H34S+H35R+H35S)
Tricyclic terpanes/Hopanes	(TR19+TR20+TR21+TR22+TR23+TR24+TR25A+TR25B+TR26A+TR26B+TR28A+TR28B+TR29A+TR29B+TR30A+TR30B)/(TS+TM+H28+H29+C29TS+DH30+H30+C30TS+H31R+H31S+H32R+H32S+H33R+H33S+H34R+ H34S+H35R+H35S)
Tricyclic terpanes/Steranes	(TR19+TR20+TR21+TR22+TR23+TR24+TR25A+TR25B+TR26A+TR26B+TR28A+TR28B+TR29A+TR29B+TR30A+TR30B)/(DIA27S+DIA27R+DIA28SA+DIA28SB+DIA28RA+DIA28RB+C27S+BB_D29S+C27BBS+C27R+DIA29R+C28S+C28BBR+C28BBS+C28R+C29S+C29BBR+C29BBS+C29R)
Tricyclic/Pentacyclic Terpanes	100*(TR19+TR20+TR21+TR22+TR23+TR24+TR25A+TR25B+TET24+TR26A+TR26B+TR28A+TR28B+TR29A+TR29B+TR30A+TR30B)/(TS+TM+H28+NOR25H+H29+C29TS+DH30+M29+OLA+OLB+H30+C30TS+M30+H31S+H31R+GAM+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)
Steranes/Terpanes	(S21+S22+DIA27S+DIA27R+DIA28SA+DIA28SB+DIA28RA+DIA28RB+C27S+BB_D29S+C27BBS+C27R+C28S+C28BBR+C28BBS+C28R+C29S+C29BBR+C29BBS+C29R)/(TR19+TR20+TR21+TR22+TR23+TR24+TR25A+TR25B+TET24+TR26A+TR26B+TR28A+TR28B+TR29A+TR29B+TR30A+TR30B+TS+TM+H28+NOR25H+H29+C29TS+DH30+M29+OLA+OLB+H30+C30TS+M30+H31S+H31R+GAM+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)
% Tricyclic Terpanes	100*(TR19+TR20+TR21+TR22+TR23+TR24+TR25A+TR25B+TET24+TR26A+TR26B+TR28A+TR28B+TR29A+TR29B+TR30A+TR30B)/((TR19+TR20+TR21+TR22+TR23+TR24+TR25A+TR25B+TET24+TR26A+TR26B+TR28A+TR28B+TR29A+TR29B+TR30A+TR30B+TS+TM+H28+NOR25H+H29+C29TS+DH30+M29+OLA+OLB+H30+C30TS+M30+H31S+H31R+GAM+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)+(S21+S22+DIA27S+DIA27R+DIA28SA+DIA28SB+DIA28RA+DIA28RB+C27S+BB_D29S+C27BBS+C27R+C28S+C28BBR+C28BBS+C28R+C29S+C29BBR+C29BBS+C29R))
% Pentacyclic Terpanes	100*(TS+TM+H28+NOR25H+H29+C29TS+DH30+M29+OLA+OLB+H30+C30TS+M30+H31S+H31R+GAM+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)/((TR19+TR20+TR21+TR22+TR23+TR24+TR25A+TR25B+TET24+TR26A+TR26B+TR28A+TR28B+TR29A+TR29B+TR30A+TR30B+TS+TM+H28+NOR25H+H29+C29TS+DH30+M29+OLA+OLB+H30+C30TS+M30+H31S+H31R+GAM+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)+(S21+S22+DIA27S+DIA27R+DIA28SA+DIA28SB+DIA28RA+DIA28RB+C27S+BB_D29S+C27BBS+C27R+C28S+C28BBR+C28BBS+C28R+C29S+C29BBR+C29BBS+C29R))
% Steranes	100*(S21+S22+DIA27S+DIA27R+DIA28SA+DIA28SB+DIA28RA+DIA28RB+C27S+BB_D29S+C27BBS+C27R+C28S+C28BBR+C28BBS+C28R+C29S+C29BBR+C29BBS+C29R)/((TR19+TR20+TR21+TR22+TR23+TR24+TR25A+TR25B+TET24+TR26A+TR26B+TR28A+TR28B+TR29A+TR29B+TR30A+TR30B+TS+TM+H28+NOR25H+H29+C29TS+DH30+M29+OLA+OLB+H30+C30TS+M30+H31S+H31R+GAM+H32S+H32R+H33S+H33R+H34S+H34R+H35S+H35R)+(S21+S22+DIA27S+DIA27R+DIA28SA+DIA28SB+DIA28RA+DIA28RB+C27S+BB_D29S+C27BBS+C27R+C28S+C28BBR+C28BBS+C28R+C29S+C29BBR+C29BBS+C29R))

Weatherford LABORATORIES

CARBON ISOTOPES

Company: TALISMAN ENERGY **Project #: 08-1633-A**

Lab ID	Client ID	Well Name	Depth	Sample Type	Prep	$\delta^{13}C$ Sat	$\delta^{13}C$ Aro
TM000738	IVISHAK #1/CORE #1	IVISHAK NO. 1	2116-2117 FT	CORE	NOPR	-28.8	-27.5
TM000739	IVISHAK #1/CORE #1	IVISHAK NO. 1	2137-2138 FT	CORE	NOPR	-28.8	-27.4
TM000740	IVISHAK #1/CORE #2	IVISHAK NO. 1	2443-2444 FT	CORE	NOPR	-29.0	-27.4
TM000741	IVISHAK #1/CORE #2	IVISHAK NO. 1	2462-2463 FT	CORE	NOPR	-28.7	-27.7
TM000742	SUSIE #1/CORE #2	SUSIE NO. 1	2605-2606 FT	CORE	NOPR	-28.7	-27.6
TM000743	SUSIE #1/CORE #2	SUSIE NO. 1	2607-2608 FT	CORE	NOPR	-28.7	-27.8
TM000744	SUSIE #1/CORE #2	SUSIE NO. 1	2611-2612 FT	CORE	NOPR		
TM000745	SUSIE #1/CORE #2	SUSIE NO. 1	2613-2614 FT	CORE	NOPR		
TM000746	SUSIE #1/CORE #2	SUSIE NO. 1	2615-2616 FT	CORE	NOPR		
TM000747	SUSIE #1/CORE #2	SUSIE NO. 1	2619-2620 FT	CORE	NOPR		
TM000748	SUSIE #1/CORE #6	SUSIE NO. 1	4641-4642 FT	CORE	NOPR		
TM000749	SUSIE #1/CORE #6	SUSIE NO. 1	4643-4644 FT	CORE	NOPR	-29.8	-28.0
TM000750	SUSIE #1/CORE #7	SUSIE NO. 1	5166-5167 FT	CORE	NOPR	-28.9	-27.7
TM000751	SUSIE #1/CORE #7	SUSIE NO. 1	5169-5170 FT	CORE	NOPR	-29.0	-28.0

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Weatherford LABORATORIES

ISOTOPES

Company: TALISMAN ENERGY **Project #:** 09-687-A

Client ID	Lab ID	Well Name	Depth, ft	$\delta^{13}C$ Saturate	$\delta^{13}C$ Aromatic	$\delta^{13}C$ Resin	$\delta^{13}C$ Asph	$\delta^{13}C$ Whole
	TM001507	Gubik # 2	1863	-28.6	-27.1			
	TM001508	Gubik # 2	4235	-28.8	-27.2			
	TM001511	Square Lake # 1	3870	-27.4	-26.1			

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