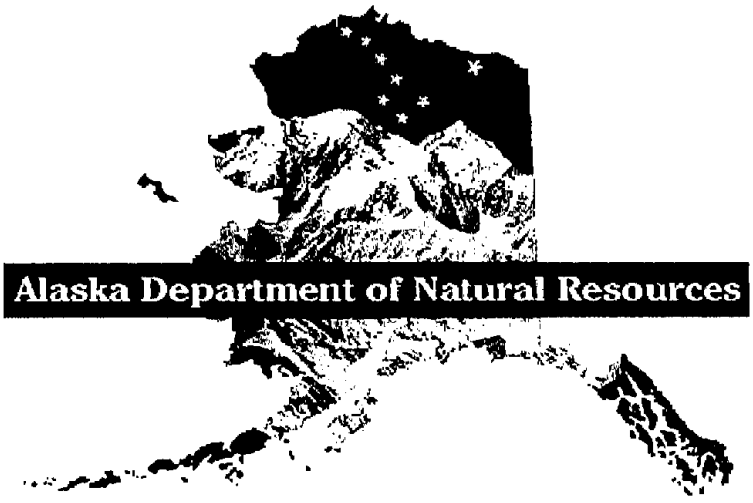
Geochemical analysis of cuttings (11,440'-11,500') from the Exxon Company U.S.A. OCS Y-0191-2 well.



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Total of 15 pages in report.

Alaska Geologic Materials Center Data Report No. 282

WESTPORT
TECHNOLOGY CENTER INTERNATIONAL

Petroleum Geochemistry

PF-97-072 December 1997

Geochemical Analysis of Cuttings from the Exxon OCS-Y-0191 #2 Well

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Prepared for BPX - Alaska
W.O.#: D10001D000

EXXON OCS-Y0191-02
SARA/ISOTOPE DATA

CLIENT ID	DEPTH (ft)	LAB ID	SATURATE %	AROMATIC %	POLAR %	ASPHALTENE %	WHOLE ISOTOPE $\delta^{13}C$ (‰)
OCS-Y0191-02	11440-500	WF8998	41.2	13.8	18.3	26.7	-28.38

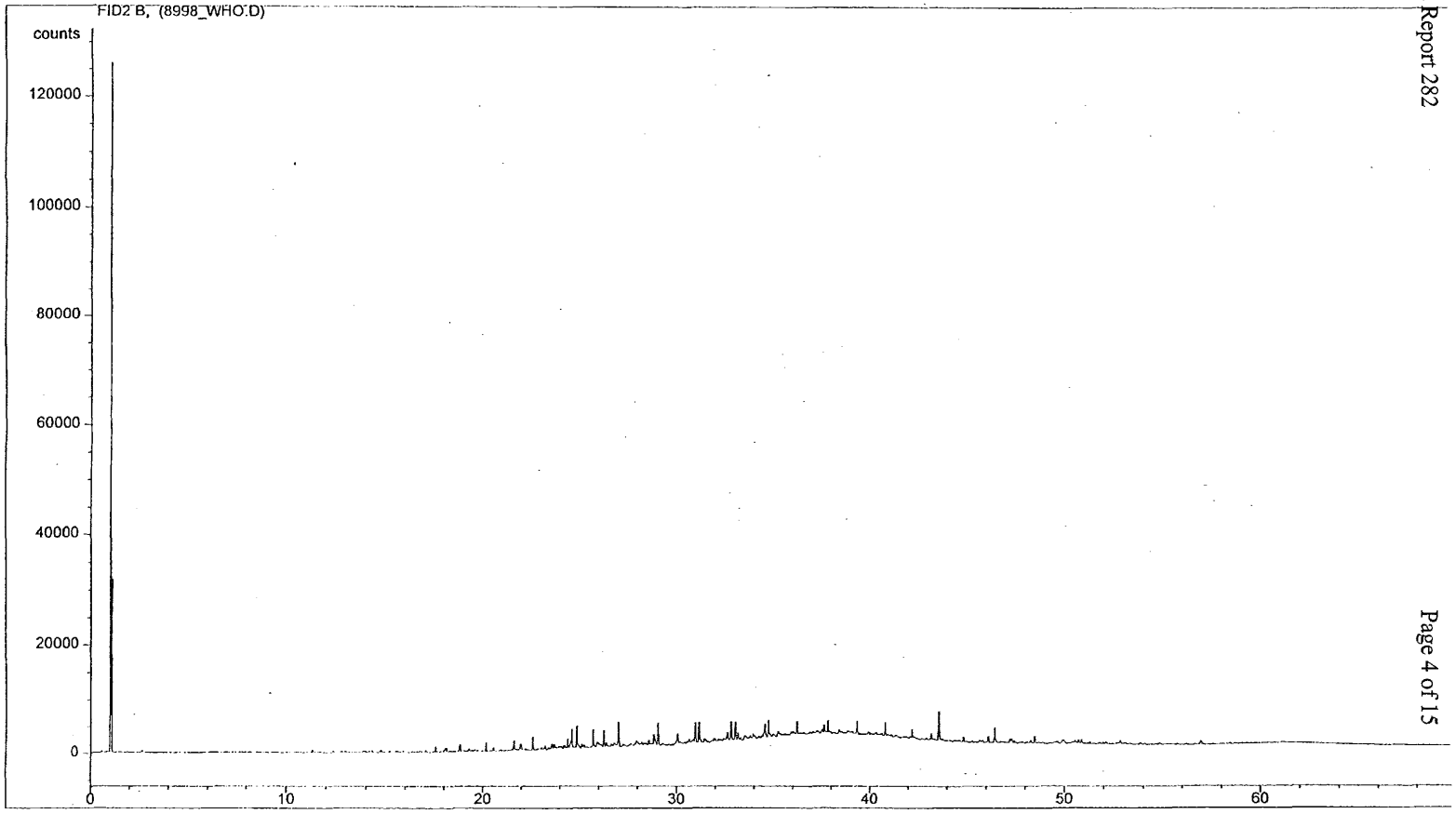
WHOLE OIL GAS CHROMATOGRAPHY - N-ALKANES AND ISOPRENOIDS

SAMPLE : AK 11440-500' DATA FILE 8998_WHO.D

CPI VALUE	1.83	PRISTANE/PHYTANE	0.98
N-C9/N-C19	0.27	PRISTANE/N-C17	0.64
N-C15/N-C25	2.90	PHYTANE/N-C18	1.16

COMPOUND	RETENTION TIME	PEAK AREA	AREA N-C15=1	PEAK HEIGHT	HEIGHT N-C15=1
N-C4	0.00	0	0.000	0	0.000
N-C5	0.00	0	0.000	0	0.000
N-C6	0.00	0	0.000	0	0.000
N-C7	0.00	0	0.000	0	0.000
N-C8	0.00	0	0.000	0	0.000
N-C9	11.70	437	0.031	125	0.031
N-C10	14.77	2042	0.145	495	0.123
N-C11	17.58	3268	0.232	1100	0.274
N-C12	20.17	4019	0.285	1642	0.409
N-C13	22.59	7258	0.515	2500	0.622
N-C14	24.87	14647	1.039	4318	1.074
N-C15	27.03	18219	1.292	4760	1.184
N-C16	29.06	14623	1.037	4314	1.073
N-C17	30.99	14103	1.000	4019	1.000
N-C18	32.83	18868	1.338	3945	0.982
N-C19	34.57	23928	1.697	3183	0.792
N-C20	36.24	17121	1.214	3494	0.869
N-C21	37.83	13475	0.955	3339	0.831
N-C22	39.36	12306	0.873	3002	0.747
N-C23	40.83	7446	0.528	2570	0.639
N-C24	42.23	5420	0.384	1782	0.443
N-C25	43.61	20091	1.425	5377	1.338
N-C26	44.88	3413	0.242	1051	0.262
N-C27	46.14	3983	0.282	1266	0.315
N-C28	47.34	2970	0.211	881	0.219
N-C29	48.51	4864	0.345	1328	0.330
N-C30	49.64	2163	0.153	525	0.131
N-C31	50.75	3316	0.235	805	0.200
N-C32	51.81	2430	0.172	347	0.086
N-C33	52.84	3072	0.218	637	0.158
N-C34	53.84	1980	0.140	312	0.078
N-C35	54.80	700	0.050	230	0.057
N-C36	55.75	518	0.037	141	0.035
N-C37	56.66	1133	0.080	206	0.051
N-C38	57.56	164	0.012	108	0.027
N-C39	58.44	230	0.016	95	0.024
N-C40	59.29	747	0.053	141	0.035
N-C41	60.13	325	0.023	93	0.023
N-C42	60.93	265	0.019	92	0.023
N-C43	0.00	0	0.000	0	0.000
N-C44	0.00	0	0.000	0	0.000
Pristane	31.17	15410		4044	
Phytane	33.06	15667		3778	

AK 11440-500'



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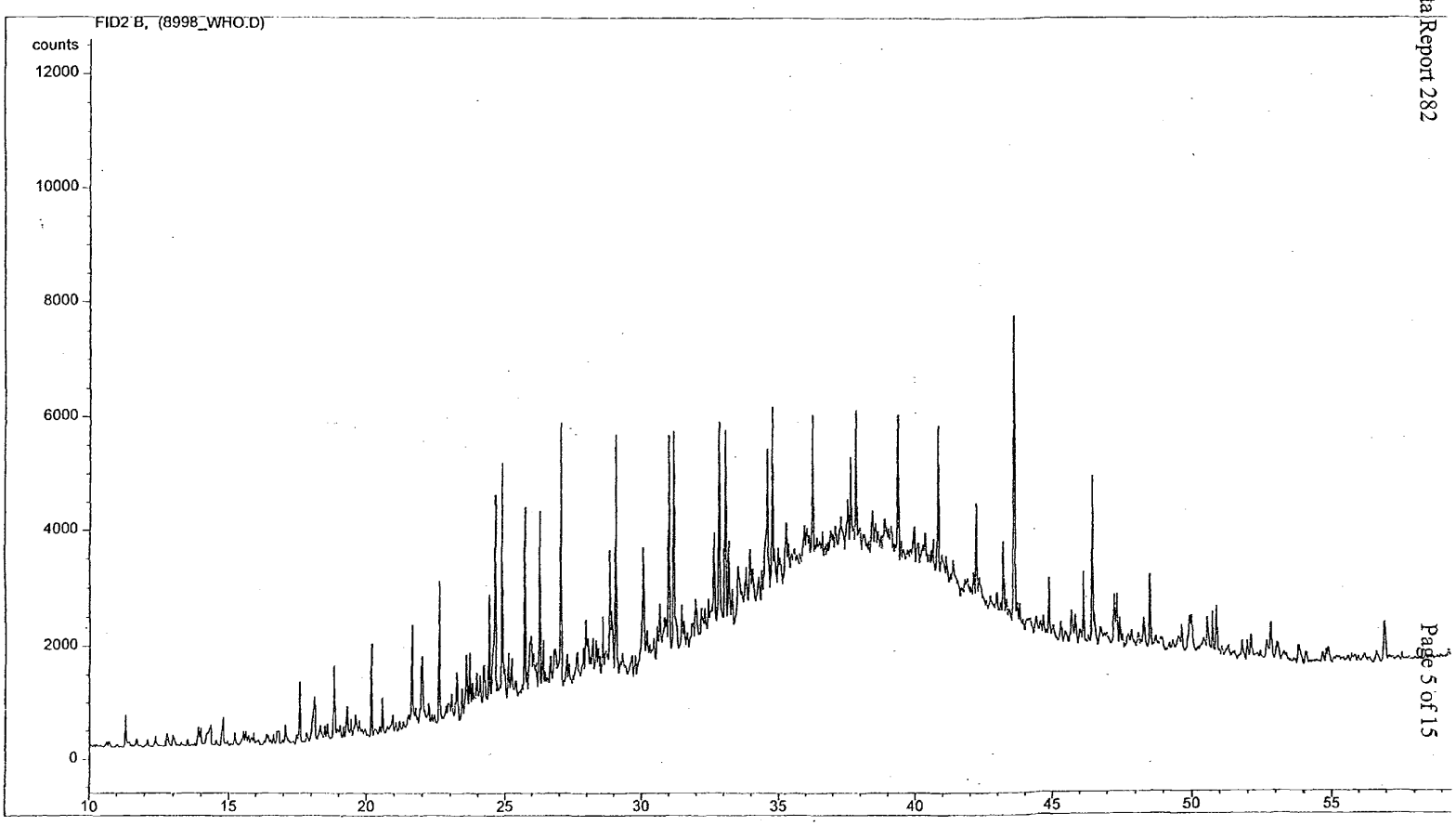
AK 11440-500'



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WF8998
Saturate Biomarker Report

DATA FILE: WF8998.D
DATE ACQUIRED: 09/13/97
MISC. INFO: OCS-Y0191-02 11440-500'

PEAK #	RET TIME	AMU	COMPOUND NAME	AREA
1	26.50	191	C19 Tricyclic (Cheilanthane)	65790
2	28.10	191	C20 Tricyclic (Cheilanthane)	118119
3	29.84	191	C21 Tricyclic (Cheilanthane)	108664
4	31.49	191	C22 Tricyclic (Cheilanthane)	37129
5	33.48	191	C23 Tricyclic (Cheilanthane)	173095
6	34.57	191	C24 Tricyclic (Cheilanthane)	89872
7	36.85	191	C25 Tricyclic (Cheilanthane)	76188
8	38.36	191	C24 Tetracyclic	59783
9	38.54	191	C26 Tricyclic R (Cheilanthane)	27560
10	38.68	191	C26 Tricyclic S (Cheilanthane)	29362
11	42.43	191	C28 Tricyclic R (Cheilanthane)	37974
12	42.70	191	C28 Tricyclic S (Cheilanthane)	24323
13	43.56	191	C29 Tricyclic R (Cheilanthane)	34226
14	43.87	191	C29 Tricyclic S (Cheilanthane)	41006
15	44.66	191	Ts (22,29,30-Trisnorhopane-II)	76944
16	45.18	191	C26 Tetracyclic	2921
17	45.40	191	Tm (22,29,30-Trisnorhopane)	179750
18	45.71	191	C30 Tricyclic R	25038
19	46.06	191	C30 Tricyclic S	48338
20	47.09	191	28,30 Bisnorhopane	59060
21	47.88	191	17a,21b(H)-30-norhopane(C29 Nor)	466649
22	48.01	191	18a(H)-30-norneohopane (C29 Ts)	86433
23	48.31	191	17a(H)-diahopane	13027
24	48.76	191	Normoretane	97827
25	49.18	191	Oleanane	11341
26	49.41	191	17a,21b(H)-hopane (C30 Hopane)	703572
27	49.55	191	17a(H)-30-nor-29-homohopane	40934
28	50.09	191	17b,21a(H)--hopane (Moretane)	173089
29	51.17	191	17a,21b(H)-homohopane 22S (C31)	238589
30	51.39	191	17a,21b(H)-homohopane 22R (C31)	194176
31	51.63	191	Gammacerane	141076
32	52.54	191	17a,21b(H)-bishomohopane S	107127
33	52.84	191	17a,21b(H)-bishomohopane R	82538
34	54.16	191	17a,21b(H)-trishomohopane S	80873
35	54.57	191	17a,21b(H)-trishomohopane R	60429
36	55.82	191	17a,21b(H)-tetrakishomohopane S	50026
37	56.33	191	17a,21b(H)-tetrakishomohopane R	37157
38	57.49	191	17a,21b(H)pentakishomohopane S	49547
39	58.13	191	17a,21b(H)pentakishomohopane R	46371

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40	30.28	217	C21 Diapregnane	43314
41	30.67	217	LMW Sterane	19812
42	31.15	217	LMW Steran	12896
43	31.77	217	C21 Pregnane	55193
44	31.89	217	C22 Diahomopregnane	26811
45	33.80	217	LMW Sterane	10187
46	34.01	217	C22 Homopregnane	28129
47	40.46	217	C27S ba Diasterane	42529
48	41.14	217	C27R ba Diasterane	29426
49	41.64	217	Peak 10	14492
50	42.00	217	Peak 11	15048
51	42.15	217	Peak 12	20456
52	42.26	217	Peak 13	21256
53	42.57	217	Peak 14	11712
54	42.95	217	Peak 15	14347
55	43.45	217	C27S aaa Sterane	37301
56	43.66	217	C27R abb Ster +C29S Diasterane	62993
57	43.83	217	C27S abb Sterane	29937
58	44.24	217	C27R aaa Sterane	53902
59	44.43	217	C29 ba Diasterane	52142
60	45.24	217	C28S aaa Sterane	24064
61	45.54	217	C28R abb Sterane	25015
62	45.71	217	C28S abb Sterane	31898
63	45.89	217	Diasterane	29957
64	46.23	217	C28R aaa Sterane	105049
65	46.77	217	C29S aaa Sterane	56709
66	47.12	217	C29R abb Sterane	65866
67	47.23	217	C29S abb Sterane	30450
68	47.88	217	C29R aaa Sterane	162525
69	48.07	217	C30S aaa Sterane	7568
70	48.42	217	C30R abb Sterane	11197
71	48.52	217	C30S abb Sterane	8332
72	49.24	217	C30R aaa Sterane	15260
73	43.66	218	C27R abb Sterane	42490
74	43.83	218	C27S abb Sterane	29021
75	45.55	218	C28R abb Sterane	36521
76	45.71	218	C28S abb Sterane	41328
77	47.12	218	C29R abb Sterane	66714
78	47.23	218	C29S abb Sterane	49012

WF8998
Saturate Biomarker Report

Westport Biomarker Ratios

Homohopane Profile:		**Value**
C31=(Peaks 29 +30)/(Peaks 29 +30 +32 through 39)		0.457
C32=(Peaks 32 +33)/(Peaks 29 +30 +32 through 39)		0.200
C33=(Peaks 34 +35)/(Peaks 29 +30 +32 through 39)		0.149
C34=(Peaks 36 +37)/(Peaks 29 +30 +32 through 39)		0.092
C35=(Peaks 38 +39)/(Peaks 29 +30 +32 through 39)		0.101
Oleanane Ratio=	Peak 25/Peak 26	0.016
Gammacerane Ratio 1=	Peak 31/Peak 26	0.201
Gammacerane Ratio 2=	Peak 31/Peak30	0.727
Bisnorhopane Ratio=	Peak 20/Peak 26	0.084
30-nor-29-homo+2a-methyl Ratio	Peak 27/Peak 26	0.058
C29 Ts/(C29 Norhopane + C29 Ts=	Peak 22/(Peaks 21 + 22)	0.156
C30 to Norhopane & Homopane Indices:		
Norhopane/Hopane = Peak 21/Peak 21+26		0.399
Hopane/Hopane+Hopane		0.500
C31/Hopane = Peaks 29 + 30/Peaks 29 + 30 + 26		0.381
C32/Hopane = Peaks 32 + 33/Peaks 32 + 33 + 26		0.212
C33/Hopane = Peaks 34 + 35/Peaks 34 + 35 + 26		0.167
C34/Hopane = Peaks 36 + 37/Peaks 36 + 37 + 26		0.110
C35/Hopane = Peaks 38 + 39/Peaks 38 + 39 + 26		0.120
Ts/Tm=	Peak 15/Peak 17	0.428
C23 Tricyclic/Hopane Ratio=	Peak 5/Peak 26	0.246
C23 Tricyclic/C24 Tricyclic Ratio=	Peak 5/Peak 6	1.926
C24 Tetracyclic/C25 Tricyclic Ratio=	Peak 8/Peak 7	0.785
C24 Tetracyclic/C26 Tricyclic Ratio=	Peak 8/Peaks 9+10	1.050
Moretane Index=	Peak 28/Peaks 26+28	0.197
Normoretane Index=	Peak 24/Peaks 24+26	0.122
Tricyclic/Hopane Ratio=		0.288

WF8998
Saturate Biomarker Report

BP Sunbury Traditional Biomarker Ratios

S1	C29S/C29S+C29R Sterane			0.259
S2	C29R&S abb/C29S&R aaa + C29R&S abb			0.345
		C27	C28	C29
S3	aaa 20R Steranes	16.77%	32.68%	50.56%
S4	abb 20S&20R Steranes	26.98%	29.37%	43.66%
S5	Dia ba/(Dia+Non-Diasteranes) (Calculated)			36.46%
M4	C27-35 Hopanes/(Hopanes + Steranes C27-29			77.57%
H1	C32S/C32s + R Hopane			0.565
H2	C31S/C31S + R Hopane			0.551
H3	C30 Hopane/Hopane + Moretane			0.803
H6	18A/18A + 17A Hopane			0.300

BPX Source Indicators

1920Tri23 Index ((C19+20 Tris)/(C19+20+23 Tris))	0.515
23TriHo Index (C23 Tri/(C23 Tri + Hopane)	0.197
24TetHo Index (C24 Tetra/(C24 Tetra + Hopane)	0.078
TmTs Index (Tm/(Tm+Ts))	0.700
Bis Index (Bisnorhopane/(Bisnorhopane + Hopane)	0.077
Moretane Index (Moretane/(Moretane + Hopane)	0.197
Ol30Ho Index (Oleanane/(Oleanane + Hopane)	0.016
BP G2 Index (G2/(G2 + Hopane)	0.055

G2 = coelution of17a(H)-30-nor-29-homohopane and 2a-methyl-17a(H),21b(H)-hopane

Ga30Ho Index (Gammacerane/(Gammacerane+Hopane)	0.167

WF8998
Saturate Biomarker Report

35Ho34 Index (C35 Homohopane/(C35 +C34 Homohopanes))	0.524
HoSt Index (M4/100)	0.776
29St27 Index (C29 Steranes/(C27+29 steranes from S3)	0.751
DiaSt Index (C27 Diasteranes/(C27 Dias + C27 Steranes)	0.365
DMH Index (Demethylated Hopane/(Dem. Hopane + Hopane)	nm

Hopane Profile Indices (N hopane or homohopane/(Sum C29-C35 Hopanes)

C29=	0.220
C30=	0.332
C31=	0.204
C32=	0.090
C33=	0.067
C34=	0.041
C35=	0.045

BPX Maturity Indicators

S1	C29S/C29S+C29R Sterane	0.259
S2	C29R&S abb/C29S&R aaa +C29R&S abb	0.345
H1	C32S/C32s + R Hopane	0.565
H2	C31S/C31S + R Hopane	0.551

pnf = peak not found
*** = no value due to missing peaks

WESTPORT LABORATORY

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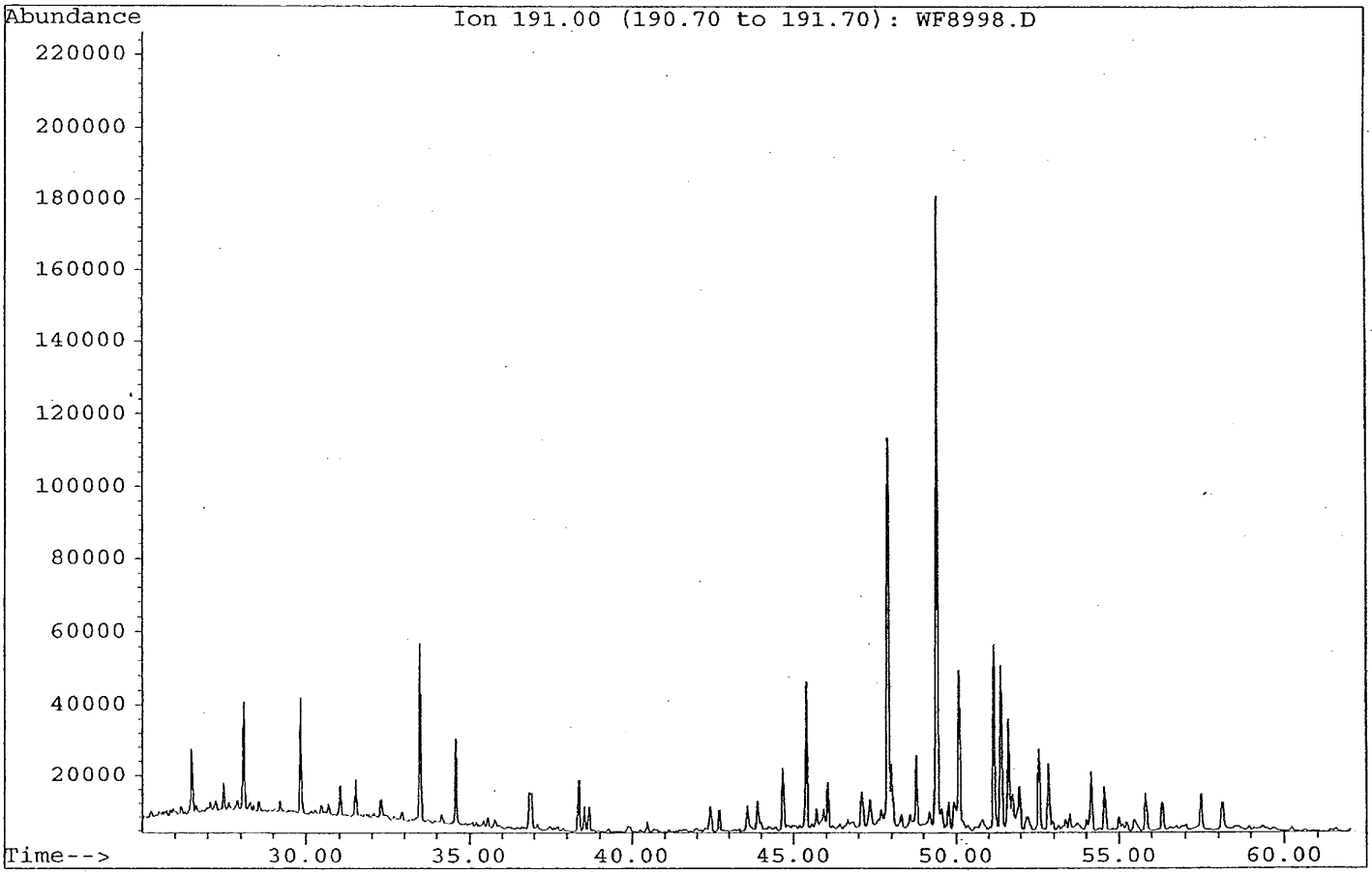

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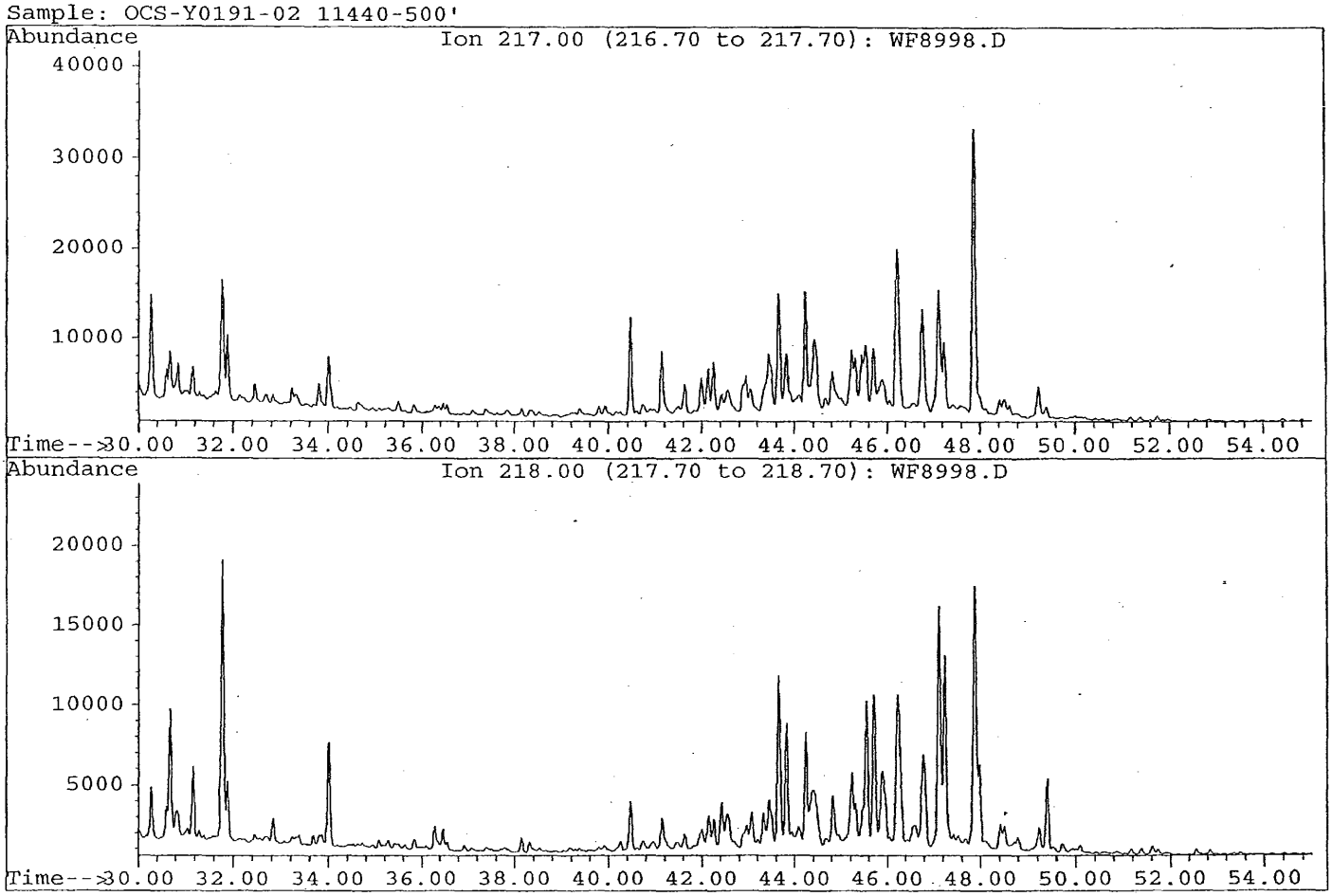

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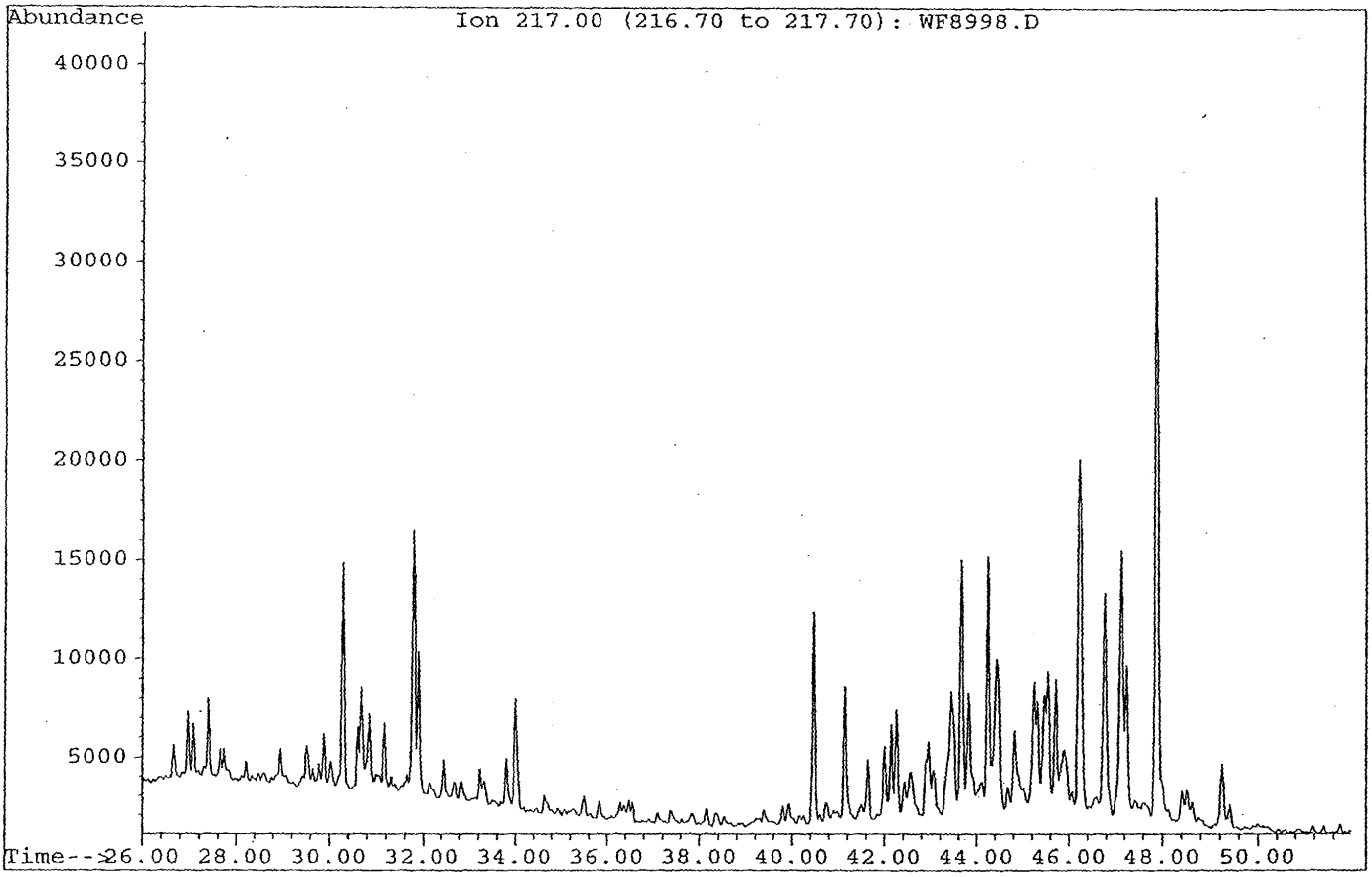

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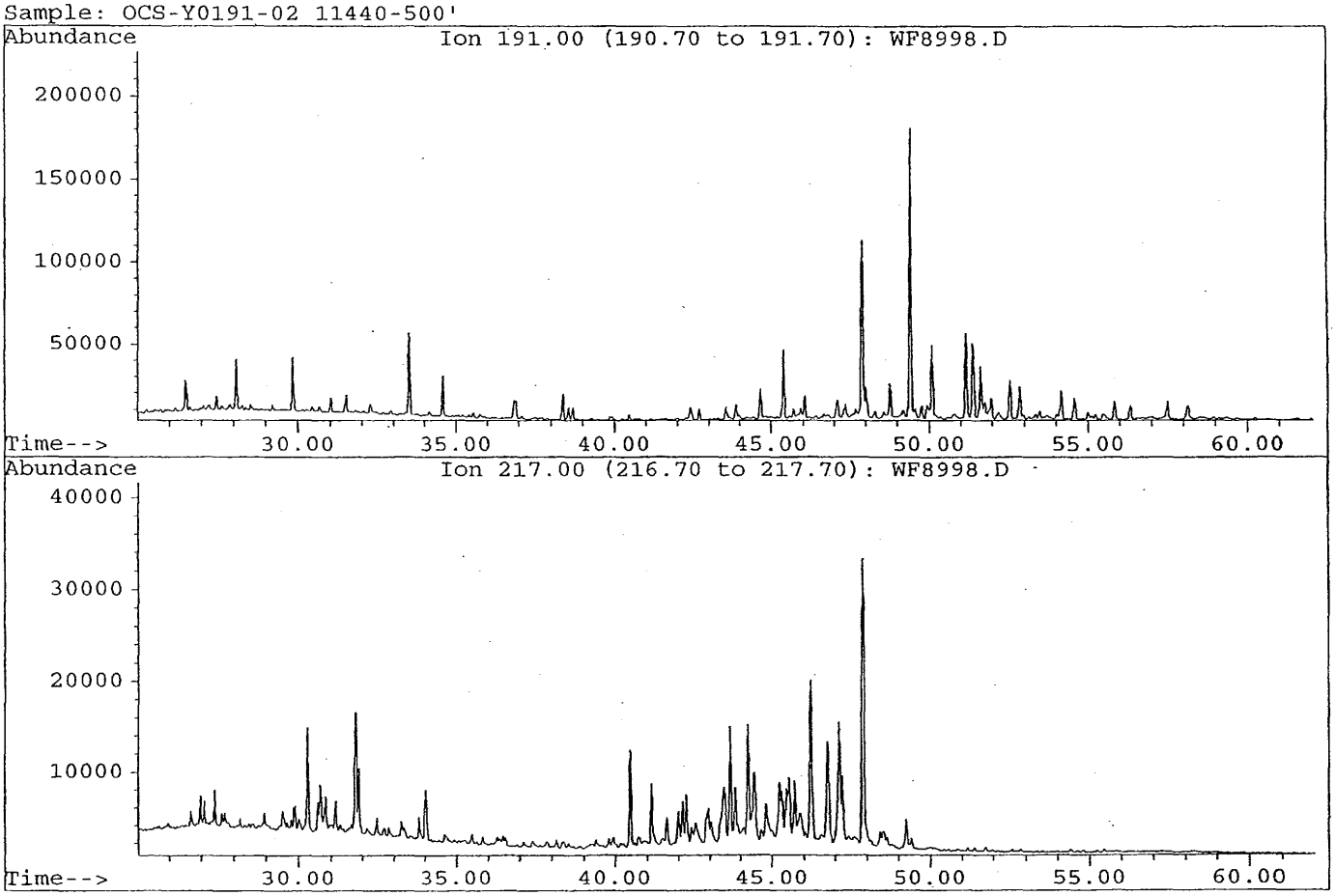

WESTPORT LABORATORY

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