Rock-Eval Pyrolysis
& other Analysis
of various samples in the Bass Basin

Amoco Australia Petroleum Company

TPR
OR-157

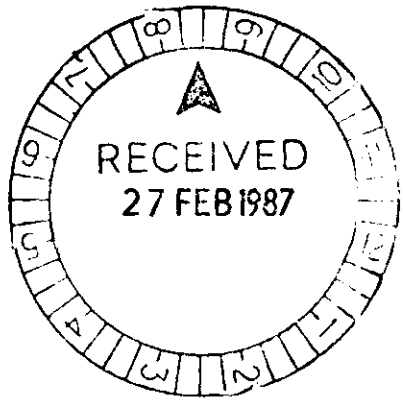
157002

ANALABS
A Division of Macdonald Hamilton & Co. Pty. Ltd.
ANALYTICAL CHEMISTS

• PERTH:
52 MURRAY ROAD,
WELSHPOOL, WESTERN AUSTRALIA. 6106
TELEPHONE (09) 458 7999
TELEX: ANALAB AA 92560
P.O. BOX 210, BENTLEY, W.A. 6102

BHK/fmh

24th February, 1987.



Mr. C. W. Waring
President and Resident Manager
Amoco Australia Petroleum Company
P O Box 126
NORTH SYDNEY NSW 2060

Dear Mr Waring,

Please find enclosed the results of the Rock-Eval pyrolysis, solvent extraction, liquid chromatography and C_{12}+ whole extract GC analyses performed on various samples you submitted for analysis from the Bass Basin.

GC-MS analyses are currently being performed and these results will be forwarded to you upon completion.

If you have any queries concerning these results, please do not hesitate to contact us.

Yours sincerely,

Birgitta Hartung-Kagi

BIRGITTA HARTUNG-KAGI
Manager - Oil & Gas

encs:

CONTENTS

Tables:

Pelican 1

1. Rock-Eval Pyrolysis Data
2. Summary of Extraction and Liquid Chromatography
3. Summary of Gas Chromatography Data

5851ft Whole Extract
7122ft Whole Extract
9269ft Whole Extract

Pelican 3

1. Rock-Eval Pyrolysis Data
2. Summary of Extraction and Liquid Chromatography
3. Summary of Gas Chromatography Data

9386.6ft Whole Extract

Tilana 1

1. Rock-Eval Pyrolysis Data
2. Summary of Extraction and Liquid Chromatography
3. Summary of Gas Chromatography Data

2800.9m Whole Extract

TABLE 1

ROCK-EVAL PYROLYSIS DATA (one run)

WELLNAME = BASS 1

DATE OF JOB = JANUARY 1987

SAMPLES	TMAX	S1	S2	S3	S1+S2	S2/S3	PI	PC	TOC	HI	OI
6405ft Core 12	427	0.83	11.74	1.15	12.57	10.21	0.07	1.04	3.79	309	30
6930ft Core 13	422	0.32	1.52	0.46	1.84	3.30	0.17	0.15	1.86	81	24
7421ft Core 14	nd	nd	nd	nd	nd	nd	nd	nd	61.65	nd	nd
7694ft Core 15	nd	nd	nd	nd	nd	nd	nd	nd	13.00	nd	nd

TMAX = Max. temperature S2
S1 = Volatile hydrocarbons (HC)
S2 = HC generating potential
S1+S2 = Potential yield
S3 = Organic carbon dioxide
PI = Production index
PC = Pyrolysable carbon
TOC = Total organic carbon
HI = Hydrogen index
OI = Oxygen Index
nd = no data

157006

TABLE 2

Summary of Extraction and Liquid Chromatography

Wellname: BASS 1 Date of Job: FEBRUARY 1987

A. Concentrations of Extracted Material

				-------Hydrocarbons--------			-----Nonhydrocarbons-----		
Depth(ft)	Weight of Rock Extd. (grams)	Total Extract (ppm)	Loss on Column (ppm)	Saturates (ppm)	Aromatics (ppm)	HC Total (ppm)	NSO's (ppm)	Asphaltenes (ppm)	NonHC Total (ppm)
6405.0 Core 12	40.5	2133.3	481.5	619.8	474.1	1093.8	558.0	nd	558.0
6930.0 Core 13	40.5	935.8	158.0	390.1	167.9	558.0	219.8	nd	219.8

TABLE 2

Summary of Extraction and Liquid Chromatography

Wellname: BASS 1 Date of Job: FEBRUARY 1987

B. Compositional Data

	-----Hydrocarbons------			-----Nonhydrocarbons------			EOM(mg)	SAT(mg)	SAT	ASPH	HC
Depth(ft)	%SAT.	%AROM.	%HC's	%NSO's	%ASPH.	%Non HC's	TOC(g)	TOC(g)	AROM	NSO	Non HC
6405.0 Core 12	37.5	28.7	66.2	33.8	nd	33.8	56.3	16.4	1.31	nd	2.0
6930.0 Core 13	50.2	21.6	71.7	28.3	nd	28.3	50.3	21.0	2.32	nd	2.5

na = not applicable nd = no data

TABLE 3

Summary of Gas Chromatography Data

Wellname: BASS 1 Date of Job:FEBRUARY 1987

A. Alkane Compositional Data

Depth(ft)	Prist./Phyt.	Prist./n-C17	Phyt./n-C18	CPI(1)	CPI(2)	(C21+C22)/(C28+C29)
6405.0 Core 12	3.00	1.41	.90	2.17	2.15	.36
6930.0 Core 13	2.89	1.11	.69	1.87	1.92	.28

TABLE 3

Summary of Gas Chromatography Data

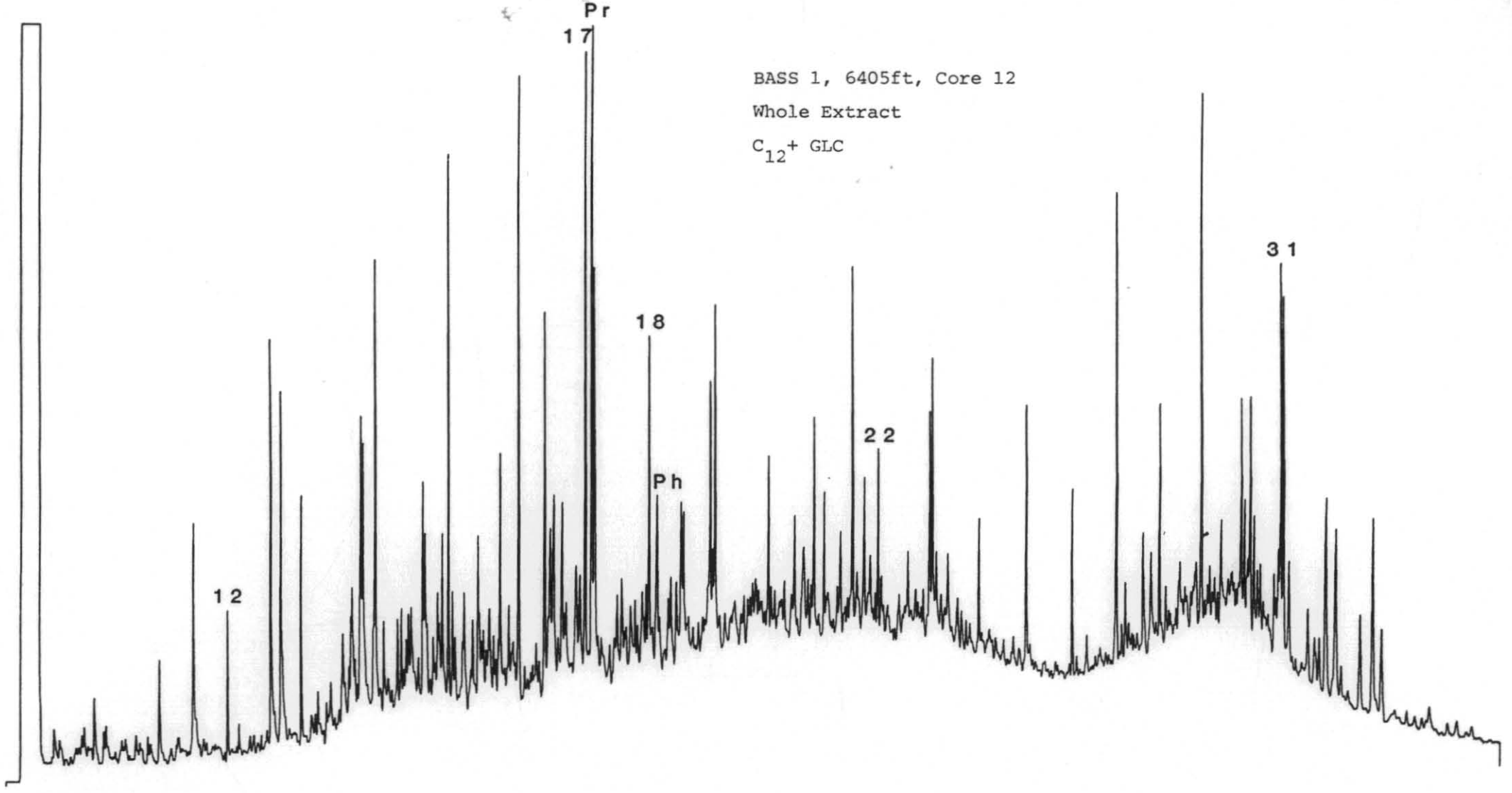
Wellname: BASS 1 Date of Job:FEBRUARY 1987

B. n-Alkane Distributions

DEPTH(ft)	nC12	nC13	nC14	nC15	nC16	nC17	iC19	nC18	iC20	nC19	nC20	nC21	nC22	nC23	nC24	nC25	nC26	nC27	nC28	nC29	nC30	nC31
6405.0 Core 12	1.8	3.1	4.9	6.1	7.8	7.8	11.0	4.1	3.7	4.2	2.3	1.9	2.2	3.7	2.0	3.9	2.5	7.3	3.4	7.9	2.9	5.3
6930.0 Core 13	1.4	2.4	5.4	5.8	10.3	12.4	13.8	6.9	4.8	4.4	1.9	1.1	1.4	3.1	1.3	2.3	1.4	3.8	2.9	6.0	3.0	4.6

na = not applicable nd = no data

157008

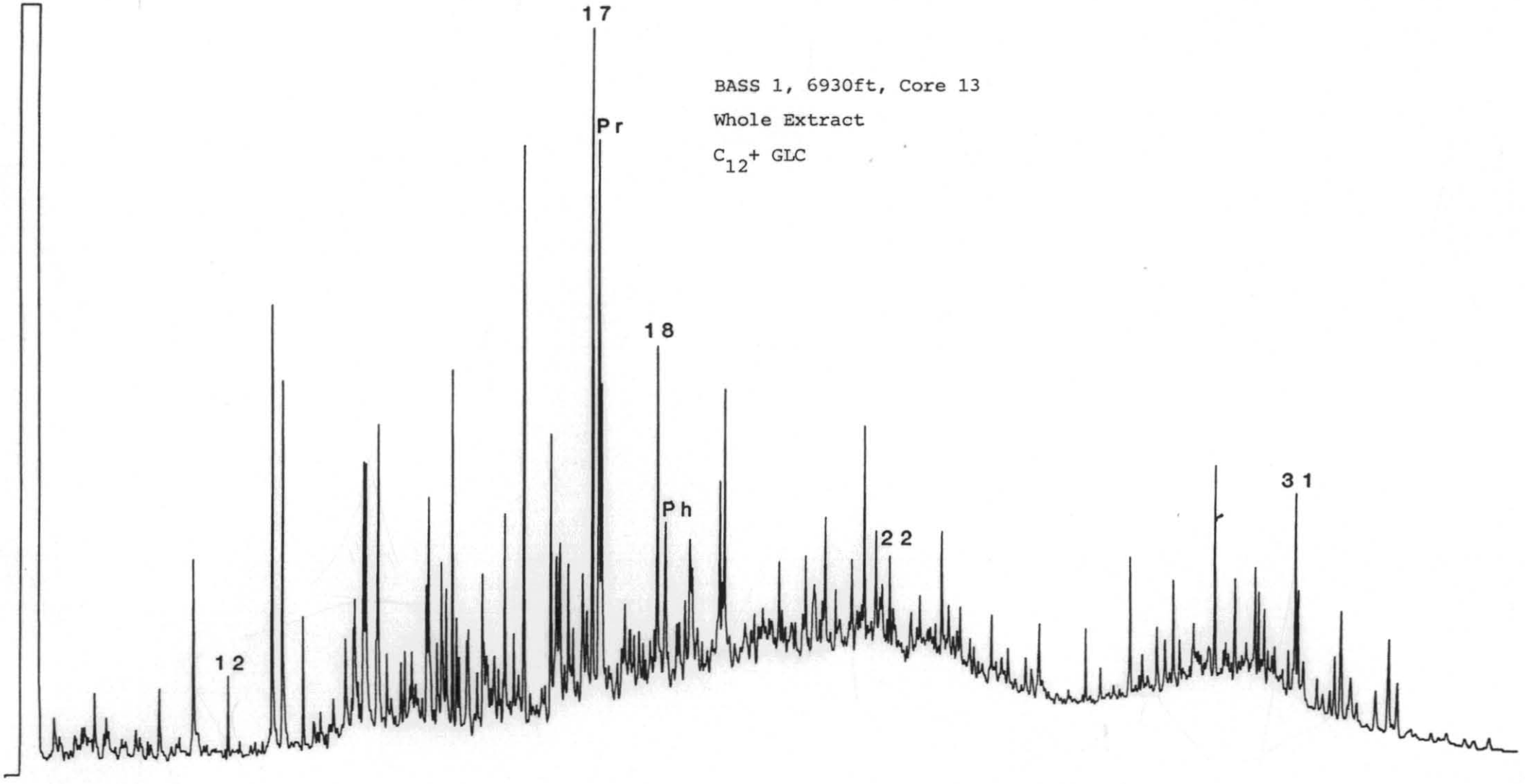


BASS 1, 6405ft, Core 12

Whole Extract

C_{12}+ GLC

157009



BASS 1, 6930ft, Core 13

Whole Extract

C_{12}^{+} GLC

TABLE 1

ROCK-EVAL PYROLYSIS DATA (one run)

WELLNAME = BASS 2

DATE OF JOB = JANUARY 1987

SAMPLES	TMAX	S1	S2	S3	S1+S2	S2/S3	PI	PC	TOC	HI	OI
4135ft Core 5	425	0.84	11.19	1.19	12.03	9.40	0.07	1.00	5.11	218	23
4740ft	429	0.33	2.47	0.13	2.80	19.00	0.12	0.23	1.20	205	10
5068ft	420	0.20	1.05	0.14	1.25	7.50	0.16	0.10	1.13	92	12
5509ft	431	0.54	8.31	0.55	8.85	15.11	0.06	0.73	2.21	376	24

TMAX = Max. temperature S2
S1 = Volatile hydrocarbons (HC)
S2 = HC generating potential
S1+S2 = Potential yield
S3 = Organic carbon dioxide
PI = Production index
PC = Pyrolysable carbon
TOC = Total organic carbon
HI = Hydrogen index
OI = Oxygen Index
nd = no data

157011

TABLE 2

Summary of Extraction and Liquid Chromatography

Wellname: BASS 2

Date of Job: FEBRUARY 1987

A. Concentrations of Extracted Material

				-------Hydrocarbons--------			-----Nonhydrocarbons-----		
Depth(ft)	Weight of Rock Extd. (grams)	Total Extract (ppm)	Loss on Column (ppm)	Saturates (ppm)	Aromatics (ppm)	HC Total (ppm)	NSO's (ppm)	Asphaltenes (ppm)	NonHC Total (ppm)
4135.0 Core 5	40.1	2740.6	603.1	398.1	560.5	958.6	1178.9	nd	1178.9
4740.0	40.9	789.7	105.1	352.1	88.0	440.1	244.5	nd	244.5
5068.0	22.1	782.8	280.5	276.0	45.2	321.3	181.0	nd	181.0
5509.0	13.5	1666.7	274.1	688.9	348.1	1037.0	355.6	nd	355.6

TABLE 2

Summary of Extraction and Liquid Chromatography

Wellname: BASS 2

Date of Job: FEBRUARY 1987

B. Compositional Data

	-----Hydrocarbons------			-----Nonhydrocarbons------			EOM(mg)	SAT(mg)	SAT	ASPH	HC
Depth(ft)	%SAT.	%AROM.	%HC's	%NSO's	%ASPH.	%Non HC's	TOC(g)	TOC(g)	AROM	NSO	Non HC
4135.0 Core 5	18.6	26.2	44.8	55.2	nd	55.2	53.6	7.8	.71	nd	.8
4740.0	51.4	12.9	64.3	35.7	nd	35.7	65.8	29.3	4.00	nd	1.8
5068.0	55.0	9.0	64.0	36.0	nd	36.0	69.3	24.4	6.10	nd	1.8
5509.0	49.5	25.0	74.5	25.5	nd	25.5	75.4	31.2	1.98	nd	2.9

na = not applicable nd = no data

TABLE 3

Summary of Gas Chromatography Data

Wellname: BASS 2

Date of Job:FEBRUARY 1987

A. Alkane Compositional Data

Depth(ft)	Prist./Phyt.	Prist./n-C17	Phyt./n-C18	CPI(1)	CPI(2)	(C21+C22)/(C28+C29)
4135.0 Core 5	1.17	.71	1.14	2.13	2.02	.23
4740.0	2.26	.82	.69	1.87	1.93	.19
5068.0	2.07	.91	.68	1.92	2.07	.72
5509.0	5.82	3.60	.95	1.50	1.92	.25

TABLE 3

Summary of Gas Chromatography Data

Wellname: BASS 2

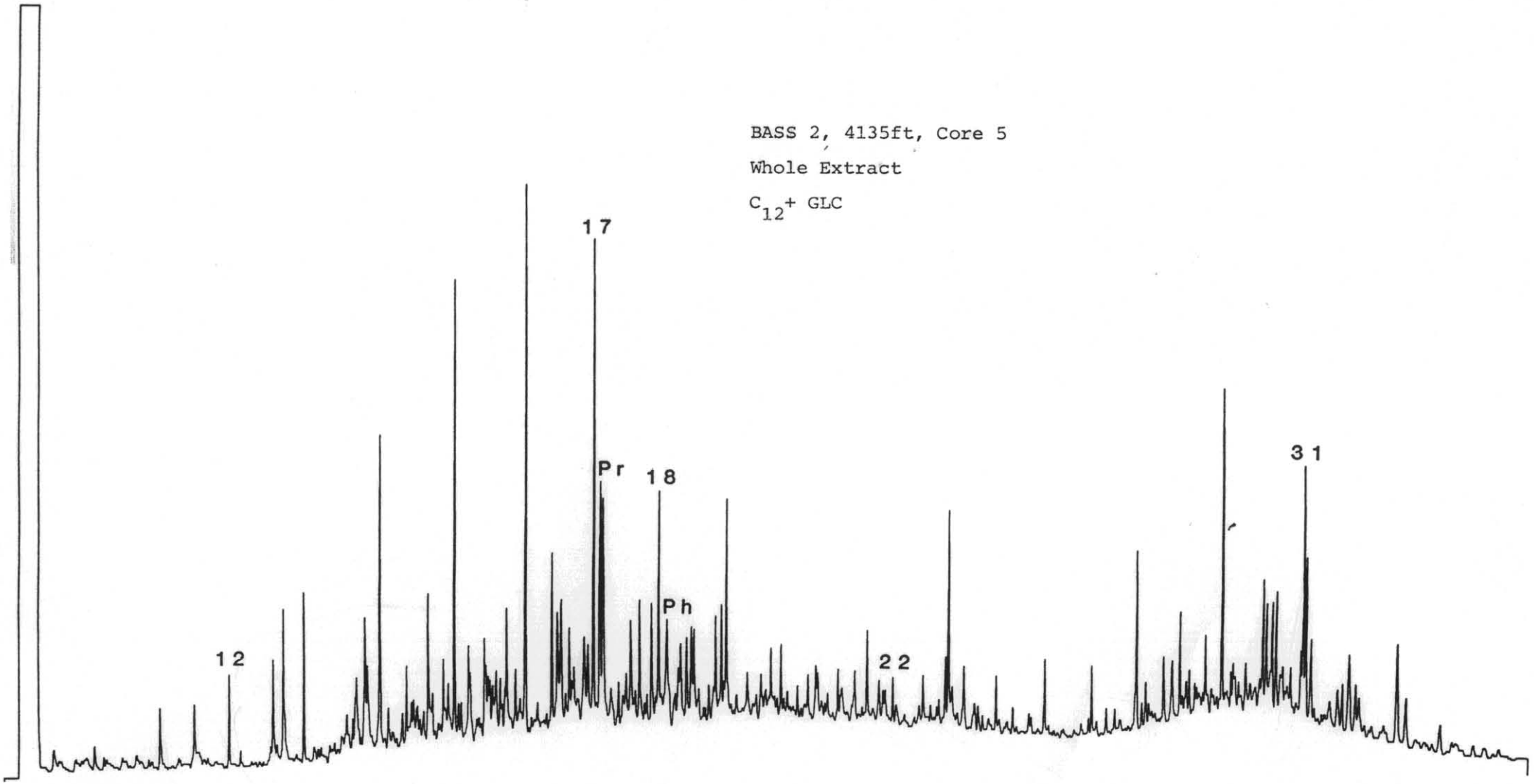
Date of Job:FEBRUARY 1987

B. n-Alkane Distributions

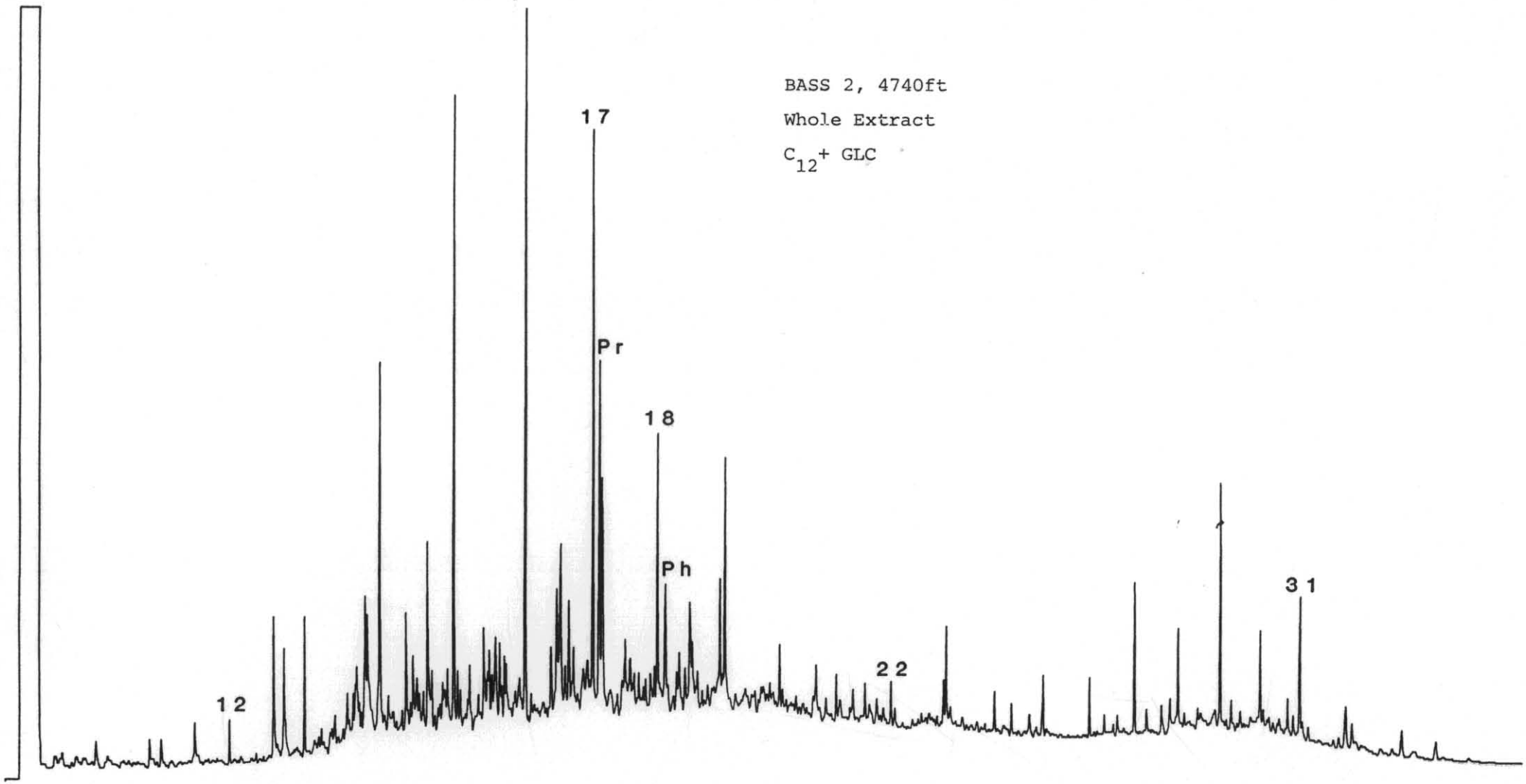
DEPTH(ft)	nC12	nC13	nC14	nC15	nC16	nC17	iC19	nC18	iC20	nC19	nC20	nC21	nC22	nC23	nC24	nC25	nC26	nC27	nC28	nC29	nC30	nC31
4135.0 Core 5	2.0	3.8	7.8	9.2	11.9	10.0	7.1	5.3	6.1	2.6	1.7	1.4	1.0	1.6	1.4	1.9	1.6	4.5	2.5	7.8	3.0	6.1
4740.0	.9	2.8	9.1	11.4	13.8	11.0	9.0	5.8	4.0	2.9	1.4	1.0	.9	1.2	1.1	1.7	1.2	4.2	2.9	7.3	3.0	3.4
5068.0	.9	2.5	7.9	9.0	11.1	10.4	9.5	6.7	4.6	5.0	3.9	2.4	2.5	2.3	1.4	3.2	1.5	3.7	2.1	4.7	2.3	2.6
5509.0	1.0	2.0	4.1	5.1	4.9	4.3	15.6	2.8	2.7	2.8	2.0	1.7	1.7	2.8	2.4	4.8	3.2	7.7	4.1	9.5	8.0	6.6

na = not applicable nd = no data

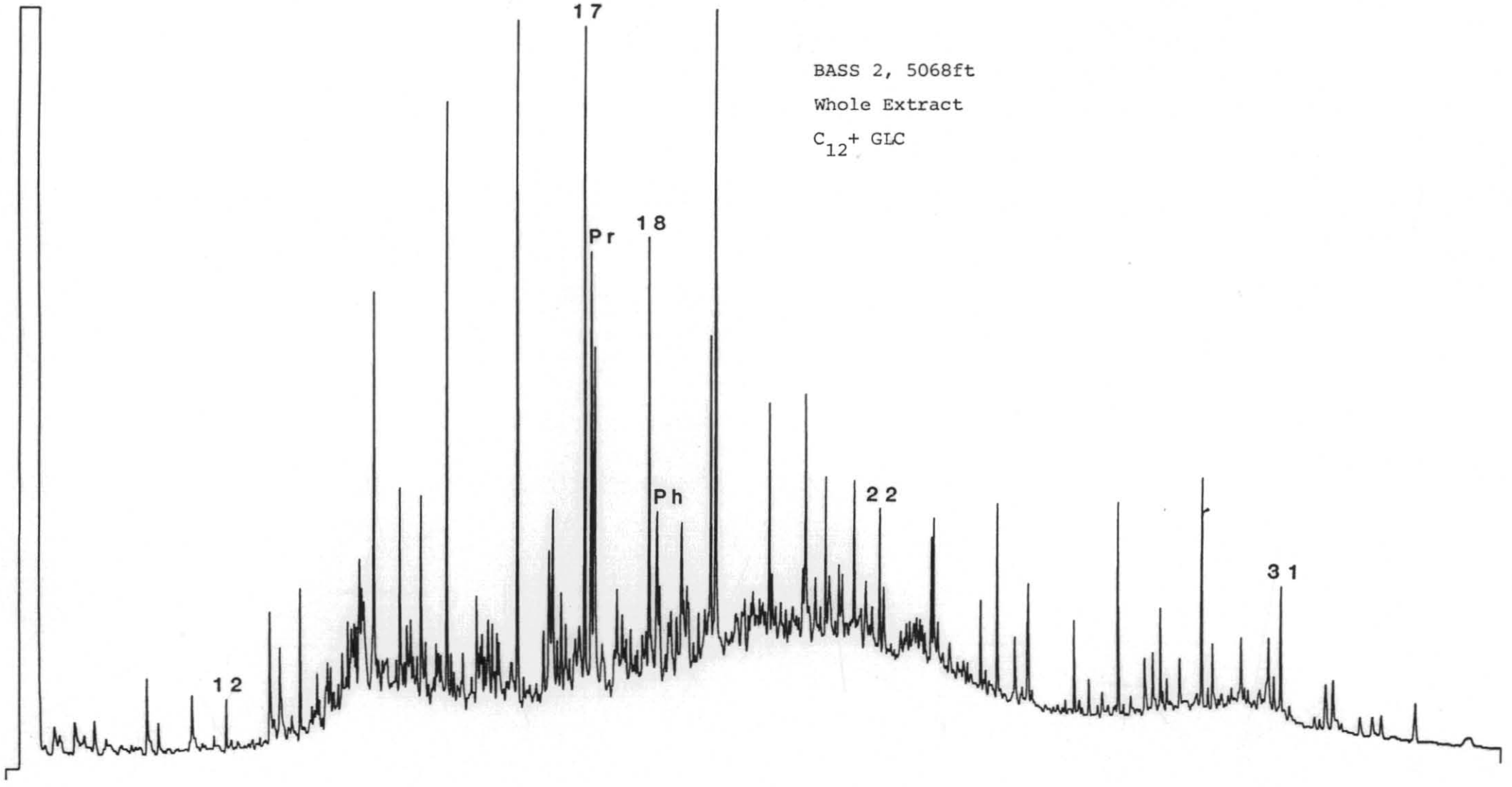
157013



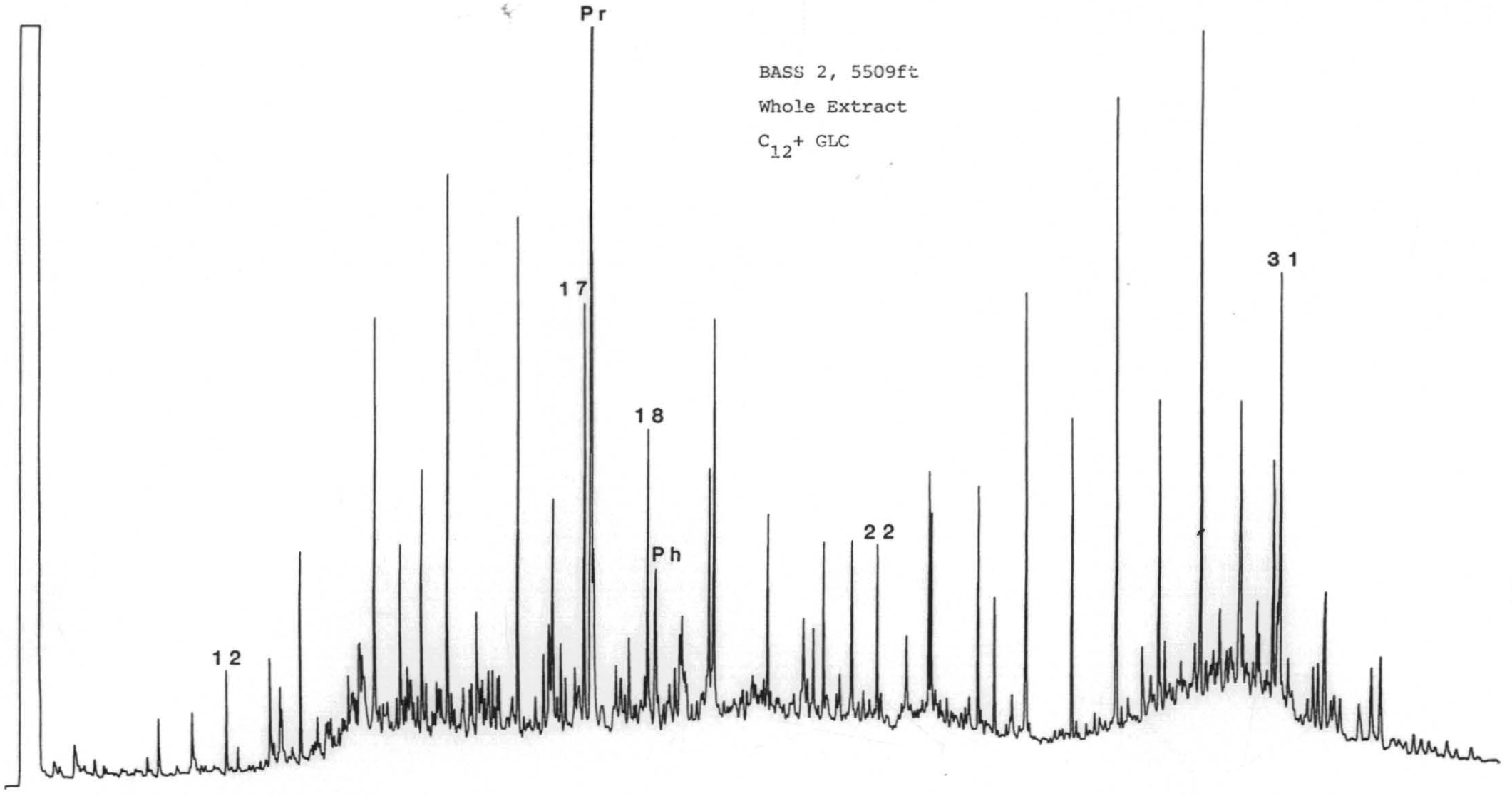
157014



157015



157016



157017

TABLE 1

ROCK-EVAL PYROLYSIS DATA (one run)

WELLNAME = BASS 3

DATE OF JOB = JANUARY 1987

DEPTH(ft)	TMAX	S1	S2	S3	S1+S2	S2/S3	PI	PC	TOC	HI	OI
5023.0	416	0.28	1.00	0.82	1.28	1.22	0.22	0.11	3.61	27	22
5317.0	nd	nd	nd	nd	nd	nd	nd	nd	2.23	nd	nd
5625.0	nd	nd	nd	nd	nd	nd	nd	nd	1.25	nd	nd
5915.0	nd	nd	nd	nd	nd	nd	nd	nd	1.95	nd	nd
6420.0	nd	nd	nd	nd	nd	nd	nd	nd	1.80	nd	nd
6906.0	nd	nd	nd	nd	nd	nd	nd	nd	31.55	nd	nd
7434.0	437	1.22	14.46	0.70	15.68	20.66	0.08	1.30	4.88	296	14

TMAX = Max. temperature S2
S1 = Volatile hydrocarbons (HC)
S2 = HC generating potential
S1+S2 = Potential yield
S3 = Organic carbon dioxide
PI = Production index
PC = Pyrolysable carbon
TOC = Total organic carbon
HI = Hydrogen index
OI = Oxygen Index
nd = no data

157018

TABLE 2

Summary of Extraction and Liquid Chromatography

Wellname: BASS 3

Date of Job: FEBRUARY 1987

A. Concentrations of Extracted Material

				-------Hydrocarbons--------			-----Nonhydrocarbons-----		
Depth(ft)	Weight of Rock Extd. (grams)	Total Extract (ppm)	Loss on Column (ppm)	Saturates (ppm)	Aromatics (ppm)	HC Total (ppm)	NSO's (ppm)	Asphaltenes (ppm)	NonHC Total (ppm)
5023.0	15.0	1073.3	313.3	333.3	100.0	433.3	326.7	nd	326.7
7434.0	21.0	2652.4	828.6	819.0	266.7	1085.7	738.1	nd	738.1

TABLE 2

Summary of Extraction and Liquid Chromatography

Wellname: BASS 3

Date of Job: FEBRUARY 1987

B. Compositional Data

	-----Hydrocarbons------			-----Nonhydrocarbons------			EOM(mg)	SAT(mg)	SAT	ASPH	HC
Depth(ft)	%SAT.	%AROM.	%HC's	%NSO's	%ASPH.	%Non HC's	TOC(g)	TOC(g)	AROM	NSO	Non HC
5023.0	43.9	13.2	57.0	43.0	nd	43.0	29.7	9.2	3.33	nd	1.3
7434.0	44.9	14.6	59.5	40.5	nd	40.5	54.4	16.8	3.07	nd	1.5

na = not applicable nd = no data

TABLE 3

Summary of Gas Chromatography Data

Wellname: BASS 3

Date of Job:FEBRUARY 1987

A. Alkane Compositional Data

Depth(ft)	Prist./Phyt.	Prist./n-C17	Phyt./n-C18	CPI(1)	CPI(2)	(C21+C22)/(C28+C29)
5023.0	2.77	1.03	.65	1.69	2.02	.42
7434.0	5.04	3.41	.91	1.28	1.22	.41

TABLE 3

Summary of Gas Chromatography Data

Wellname: BASS 3

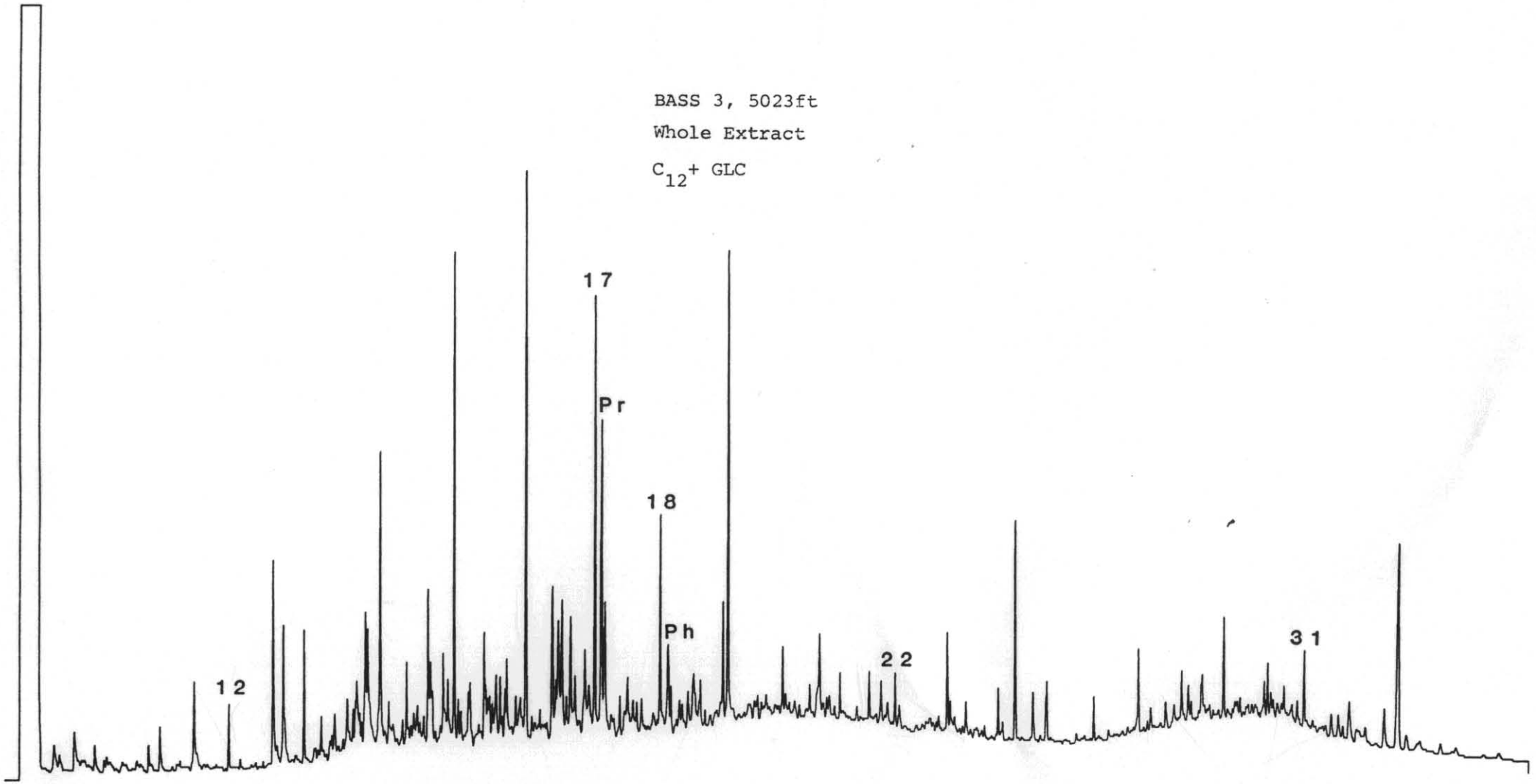
Date of Job:FEBRUARY 1987

B. n-Alkane Distributions

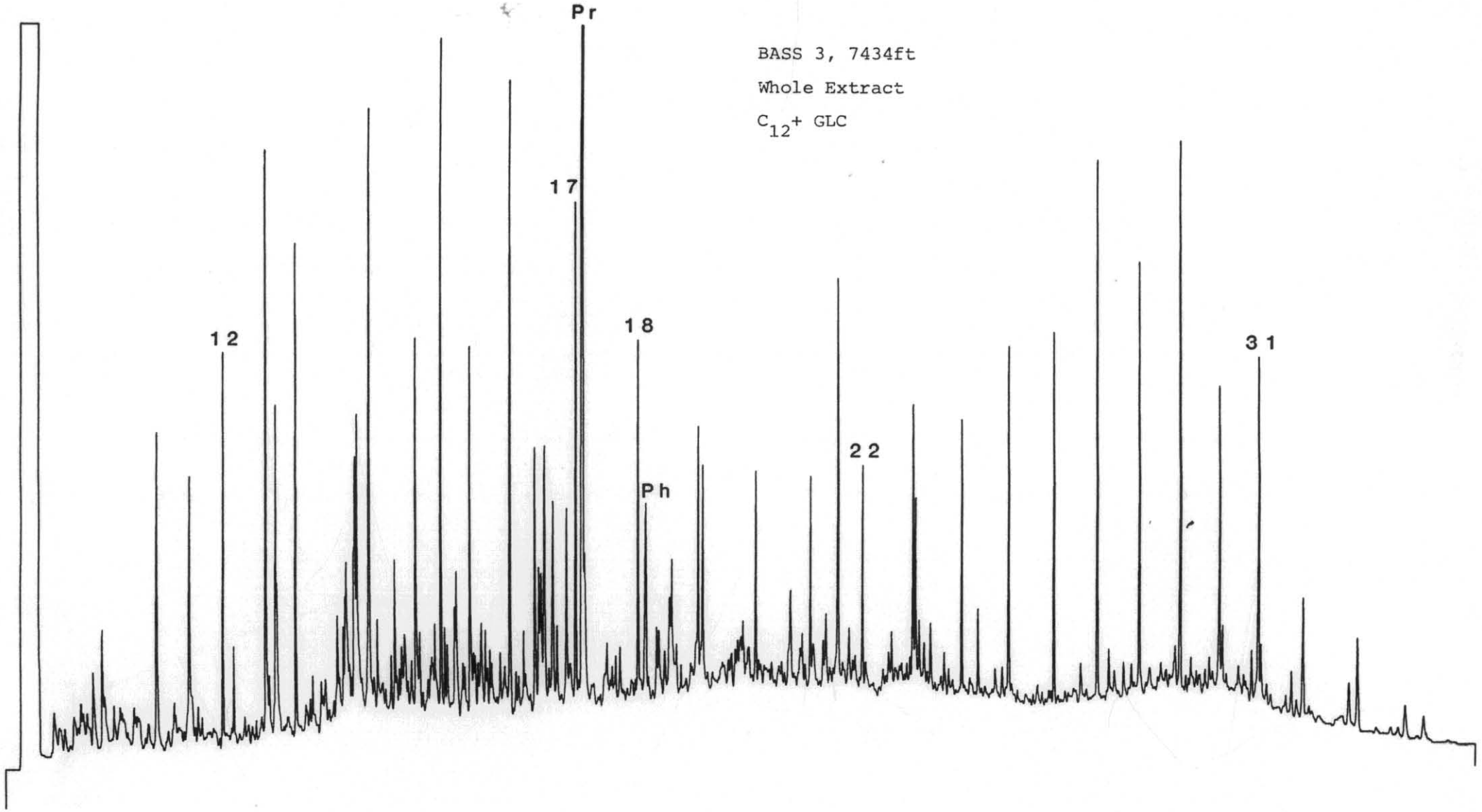
DEPTH(ft)	nC12	nC13	nC14	nC15	nC16	nC17	iC19	nC18	iC20	nC19	nC20	nC21	nC22	nC23	nC24	nC25	nC26	nC27	nC28	nC29	nC30	nC31
5023.0	1.6	3.3	8.5	10.8	13.6	10.5	10.8	5.9	3.9	3.1	1.9	1.2	1.3	3.1	1.3	2.4	1.3	3.3	1.9	4.0	3.1	3.3
7434.0	3.7	4.3	7.3	6.6	6.1	4.9	16.5	3.6	3.3	2.3	2.1	2.0	2.1	2.7	2.9	3.6	3.6	5.6	4.5	5.6	3.0	3.5

na = not applicable nd = no data

157020



157021



BASS 3, 7434ft

Whole Extract

C_{12}+ GLC

157022

TABLE 1

ROCK-EVAL PYROLYSIS DATA (one run)

WELLNAME = DONDU 1

DATE OF JOB = JANUARY 1987

SAMPLES	TMAX	S1	S2	S3	S1+S2	S2/S3	PI	PC	TOC	HI	OI
7679ft 10"	435	0.52	3.24	0.77	3.76	4.21	0.14	0.31	1.60	202	48

TMAX = Max. temperature S2
S1+S2 = Potential yield
PC = Pyrolysable carbon
OI = Oxygen Index

S1 = Volatile hydrocarbons (HC)
S3 = Organic carbon dioxide
TOC = Total organic carbon
nd = no data

S2 = HC generating potential
PI = Production index
HI = Hydrogen index

TABLE 2

Summary of Extraction and Liquid Chromatography

Wellname: DONDU 1

Date of Job: FEBRUARY 1987

A. Concentrations of Extracted Material

				-------Hydrocarbons--------			-----Nonhydrocarbons-----		
Depth(ft)	Weight of Rock Extd. (grams)	Total Extract (ppm)	Loss on Column (ppm)	Saturates (ppm)	Aromatics (ppm)	HC Total (ppm)	NSO's (ppm)	Asphaltenes (ppm)	NonHC Total (ppm)
7679 10"	30.0	1680.0	543.3	480.0	233.3	713.3	423.3	nd	423.3

TABLE 2

Summary of Extraction and Liquid Chromatography

Wellname: DONDU 1

Date of Job: FEBRUARY 1987

B. Compositional Data

	-----Hydrocarbons------			-----Nonhydrocarbons------			EOM(mg)	SAT(mg)	SAT	ASPH	HC
Depth(ft)	%SAT.	%AROM.	%HC's	%NSO's	%ASPH.	%Non HC's	TOC(g)	TOC(g)	AROM	NSO	Non HC
7679 10"	42.2	20.5	62.8	37.2	nd	37.2	105.0	30.0	2.06	nd	1.7

na = not applicable nd = no data

TABLE 3

Summary of Gas Chromatography Data

Wellname: DONDU 1

Date of Job:FEBRUARY 1987

A. Alkane Compositional Data

Depth(ft)	Prist./Phyt.	Prist./n-C17	Phyt./n-C18	CPI(1)	CPI(2)	(C21+C22)/(C28+C29)
7679 10"	6.48	2.57	.59	1.15	1.15	.49

TABLE 3

Summary of Gas Chromatography Data

Wellname: DONDU 1

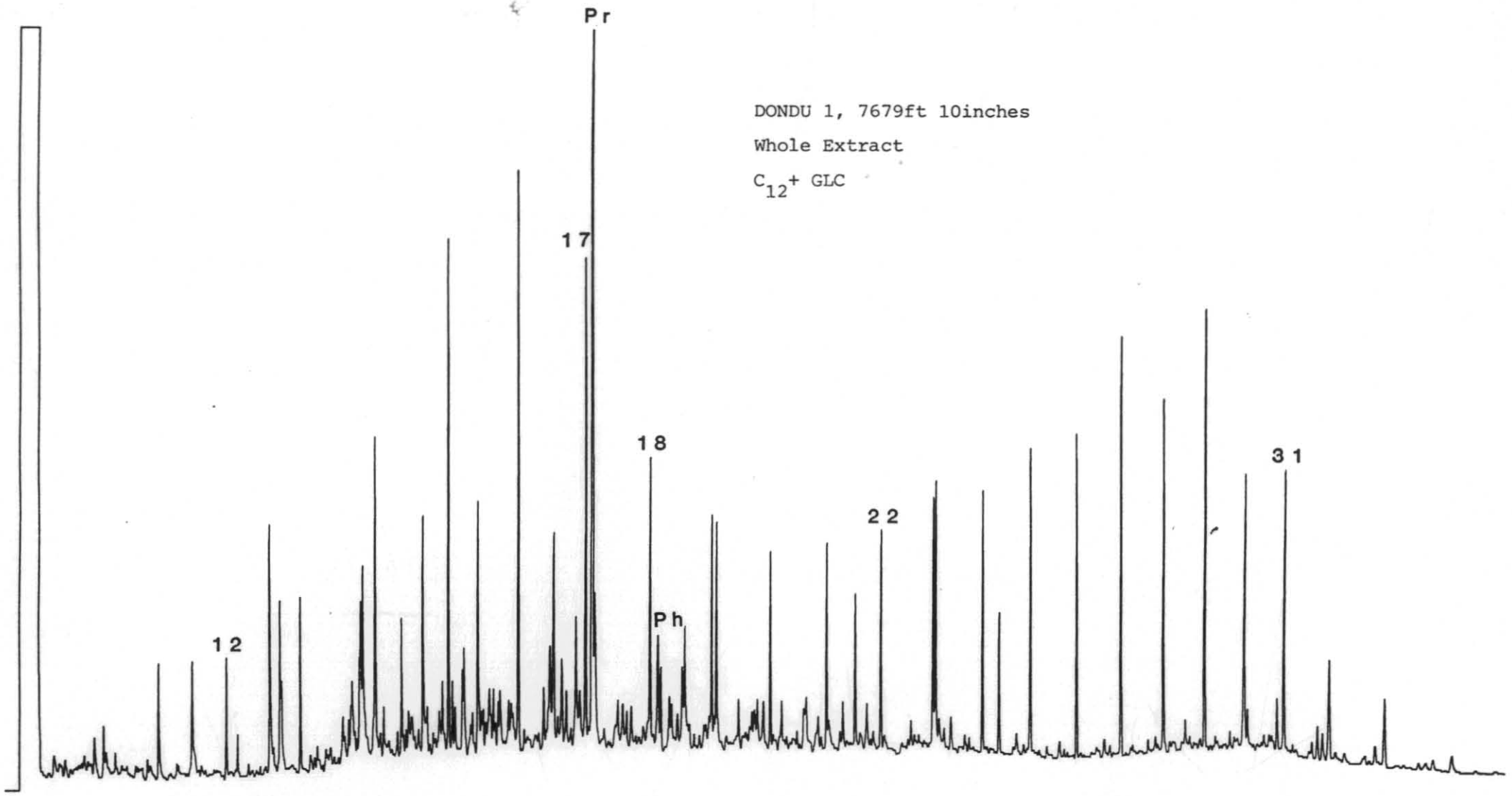
Date of Job:FEBRUARY 1987

B. n-Alkane Distributions

DEPTH(ft)	nC12	nC13	nC14	nC15	nC16	nC17	iC19	nC18	iC20	nC19	nC20	nC21	nC22	nC23	nC24	nC25	nC26	nC27	nC28	nC29	nC30	nC31
7679 10"	1.5	2.3	5.1	6.0	7.1	6.1	15.8	4.1	2.4	2.6	2.5	2.5	2.7	3.0	3.4	4.1	4.2	5.7	4.8	5.9	4.1	3.8

na = not applicable nd = no data

157025



DONDU 1, 7679ft 10inches

Whole Extract

C_{12}^{+} GLC

157026

TABLE 1

ROCK-EVAL PYROLYSIS DATA (one run)

WELLNAME = DURROON 1

DATE OF JOB = JANUARY 1987

DEPTH(ft)	TMAX	S1	S2	S3	S1+S2	S2/S3	PI	PC	TOC	HI	OI
5551.0	438	0.03	0.87	0.66	0.90	1.32	0.03	0.07	1.99	43	33
8424.0	438	0.36	4.31	0.45	4.67	9.58	0.08	0.39	7.64	56	5
9915.0	449	0.13	0.68	0.15	0.81	4.53	0.16	0.07	1.88	36	7

TMAX = Max. temperature S2
S1 = Volatile hydrocarbons (HC)
S2 = HC generating potential
S1+S2 = Potential yield
S3 = Organic carbon dioxide
PI = Production index
PC = Pyrolysable carbon
TOC = Total organic carbon
HI = Hydrogen index
OI = Oxygen Index
nd = no data

TABLE 2

Summary of Extraction and Liquid Chromatography

Wellname: DURROON 1

Date of Job: FEBRUARY 1987

A. Concentrations of Extracted Material

				-------Hydrocarbons--------			-----Nonhydrocarbons-----		
Depth(ft)	Weight of Rock Extd. (grams)	Total Extract (ppm)	Loss on Column (ppm)	Saturates (ppm)	Aromatics (ppm)	HC Total (ppm)	NSO's (ppm)	Asphaltenes (ppm)	NonHC Total (ppm)
5551.0	45.3	512.1	132.5	176.6	79.5	256.1	123.6	nd	123.6
8424.0	14.3	1272.7	468.5	132.9	300.7	433.6	370.6	nd	370.6
9915.0	16.8	922.6	285.7	131.0	125.0	256.0	381.0	nd	381.0

TABLE 2

Summary of Extraction and Liquid Chromatography

Wellname: DURROON 1

Date of Job: FEBRUARY 1987

B. Compositional Data

	-----Hydrocarbons------			-----Nonhydrocarbons------			EOM(mg)	SAT(mg)	SAT	ASPH	HC
Depth(ft)	%SAT.	%AROM.	%HC's	%NSO's	%ASPH.	%Non HC's	TOC(g)	TOC(g)	AROM	NSO	Non HC
5551.0	46.5	20.9	67.4	32.6	nd	32.6	25.7	8.9	2.22	nd	2.1
8424.0	16.5	37.4	53.9	46.1	nd	46.1	16.7	1.7	.44	nd	1.2
9915.0	20.6	19.6	40.2	59.8	nd	59.8	49.1	7.0	1.05	nd	.7

na = not applicable nd = no data

TABLE 3

Summary of Gas Chromatography Data

Wellname: DURROON 1 Date of Job:FEBRUARY 1987

A. Alkane Compositional Data

Depth(ft)	Prist./Phyt.	Prist./n-C17	Phyt./n-C18	CPI(1)	CPI(2)	(C21+C22)/(C28+C29)
5551.0	3.09	.63	.50	3.68	4.04	.33
8424.0	31.44	1.37	.05	1.40	1.54	1.43
9915.0	2.55	1.12	.67	1.37	1.37	1.86

TABLE 3

Summary of Gas Chromatography Data

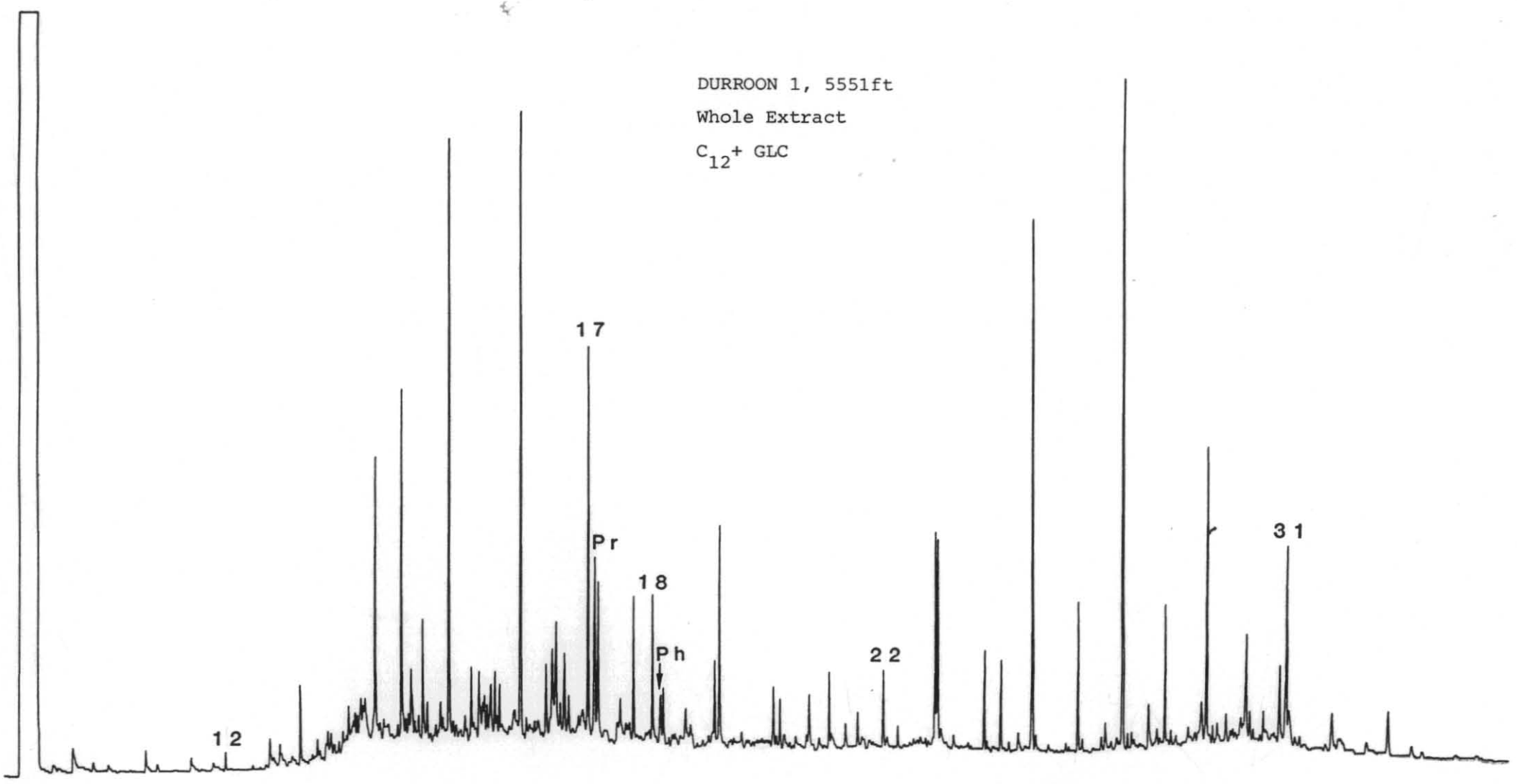
Wellname: DURROON 1 Date of Job:FEBRUARY 1987

B. n-Alkane Distributions

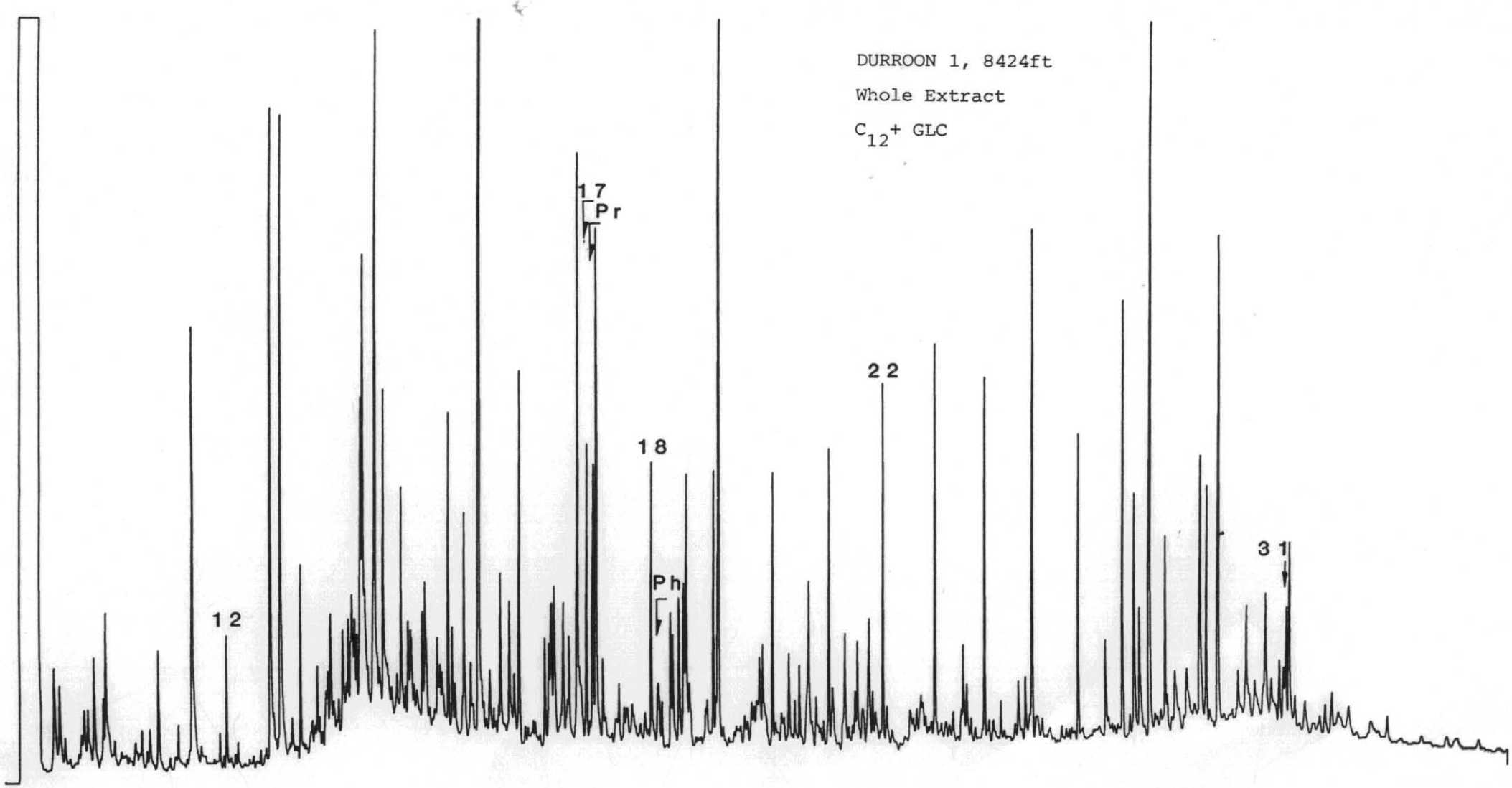
DEPTH(ft)	nC12	nC13	nC14	nC15	nC16	nC17	iC19	nC18	iC20	nC19	nC20	nC21	nC22	nC23	nC24	nC25	nC26	nC27	nC28	nC29	nC30	nC31
5551.0	.3	1.5	6.0	10.8	11.8	7.2	4.6	2.9	1.5	1.7	1.1	1.3	1.5	4.1	1.9	10.3	2.8	14.5	2.7	5.8	2.0	3.7
8424.0	1.9	3.0	5.1	4.2	5.6	4.4	6.0	4.2	.2	3.6	4.1	4.6	5.3	7.0	6.2	9.1	4.8	7.1	3.1	3.8	3.8	3.0
9915.0	3.0	4.5	6.7	7.2	10.6	8.7	9.8	5.7	3.8	3.6	3.8	3.5	3.9	4.9	3.7	5.1	2.6	2.9	2.0	1.9	1.1	1.1

na = not applicable nd = no data

157029



157030



157031

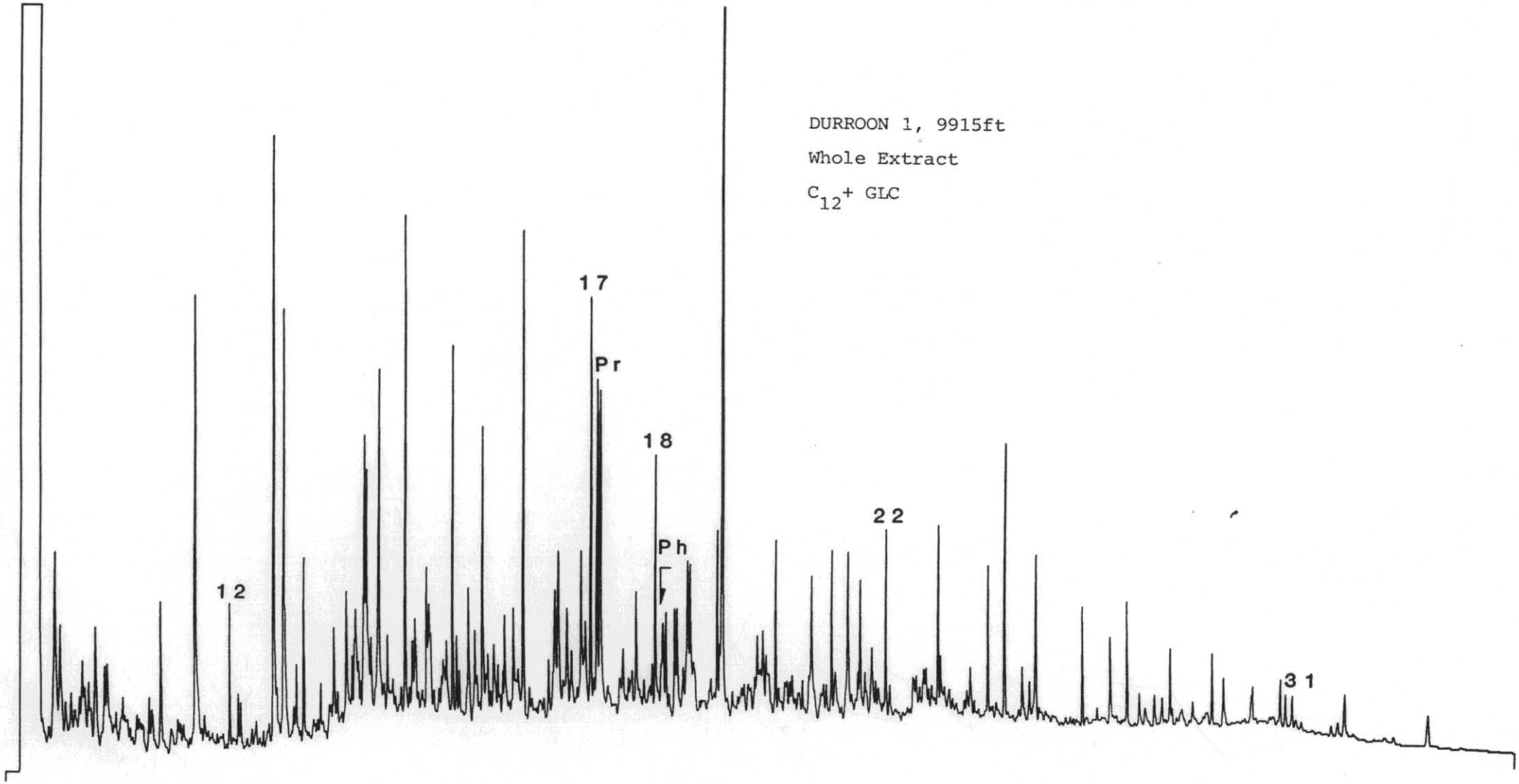


TABLE 1

ROCK-EVAL PYROLYSIS DATA (one run)

WELLNAME = KONKON 1

DATE OF JOB = JANUARY 1987

DEPTH(ft)	TMAX	S1	S2	S3	S1+S2	S2/S3	PI	PC	TOC	HI	OI
4413.0	425	5.60	106.26	29.33	111.86	3.62	0.05	9.28	54.00	196	54
4437.0	nd	nd	nd	nd	nd	nd	nd	nd	1.18	nd	nd

TMAX = Max. temperature S2
S1 = Volatile hydrocarbons (HC)
S2 = HC generating potential
S1+S2 = Potential yield
S3 = Organic carbon dioxide
PI = Production index
PC = Pyrolysable carbon
TOC = Total organic carbon
HI = Hydrogen index
OI = Oxygen Index
nd = no data

TABLE 2

Summary of Extraction and Liquid Chromatography

Wellname: KONKON 1

Date of Job: FEBRUARY 1987

A. Concentrations of Extracted Material

				-------Hydrocarbons--------			-----Nonhydrocarbons-----		
Depth(ft)	Weight of Rock Extd. (grams)	Total Extract (ppm)	Loss on Column (ppm)	Saturates (ppm)	Aromatics (ppm)	HC Total (ppm)	NSO's (ppm)	Asphaltenes (ppm)	NonHC Total (ppm)
4413.0	1.4	21357.1	8857.1	1714.3	1642.9	3357.1	9142.9	nd	9142.9

TABLE 2

Summary of Extraction and Liquid Chromatography

Wellname: KONKON 1

Date of Job: FEBRUARY 1987

B. Compositional Data

	-----Hydrocarbons------			-----Nonhydrocarbons------			EOM(mg)	SAT(mg)	SAT	ASPH	HC
Depth(ft)	%SAT.	%AROM.	%HC's	%NSO's	%ASPH.	%Non HC's	TOC(g)	TOC(g)	AROM	NSO	Non HC
4413.0	13.7	13.1	26.9	73.1	nd	73.1	39.6	3.2	1.04	nd	.4

na = not applicable nd = no data

TABLE 3

Summary of Gas Chromatography Data

Wellname: KONKON 1

Date of Job:FEBRUARY 1987

A. Alkane Compositional Data

Depth(ft)	Prist./Phyt.	Prist./n-C17	Phyt./n-C18	CPI(1)	CPI(2)	(C21+C22)/(C28+C29)
4413.0	4.59	2.41	.97	1.87	1.64	.25

TABLE 3

Summary of Gas Chromatography Data

Wellname: KONKON 1

Date of Job:FEBRUARY 1987

B. n-Alkane Distributions

DEPTH(ft)	nC12	nC13	nC14	nC15	nC16	nC17	iC19	nC18	iC20	nC19	nC20	nC21	nC22	nC23	nC24	nC25	nC26	nC27	nC28	nC29	nC30	nC31
4413.0	2.0	2.3	5.2	5.7	4.1	3.3	7.9	1.8	1.7	1.3	1.5	1.9	2.4	3.8	3.8	6.8	6.1	11.5	5.9	11.4	3.0	6.6

na = not applicable nd = no data

157035

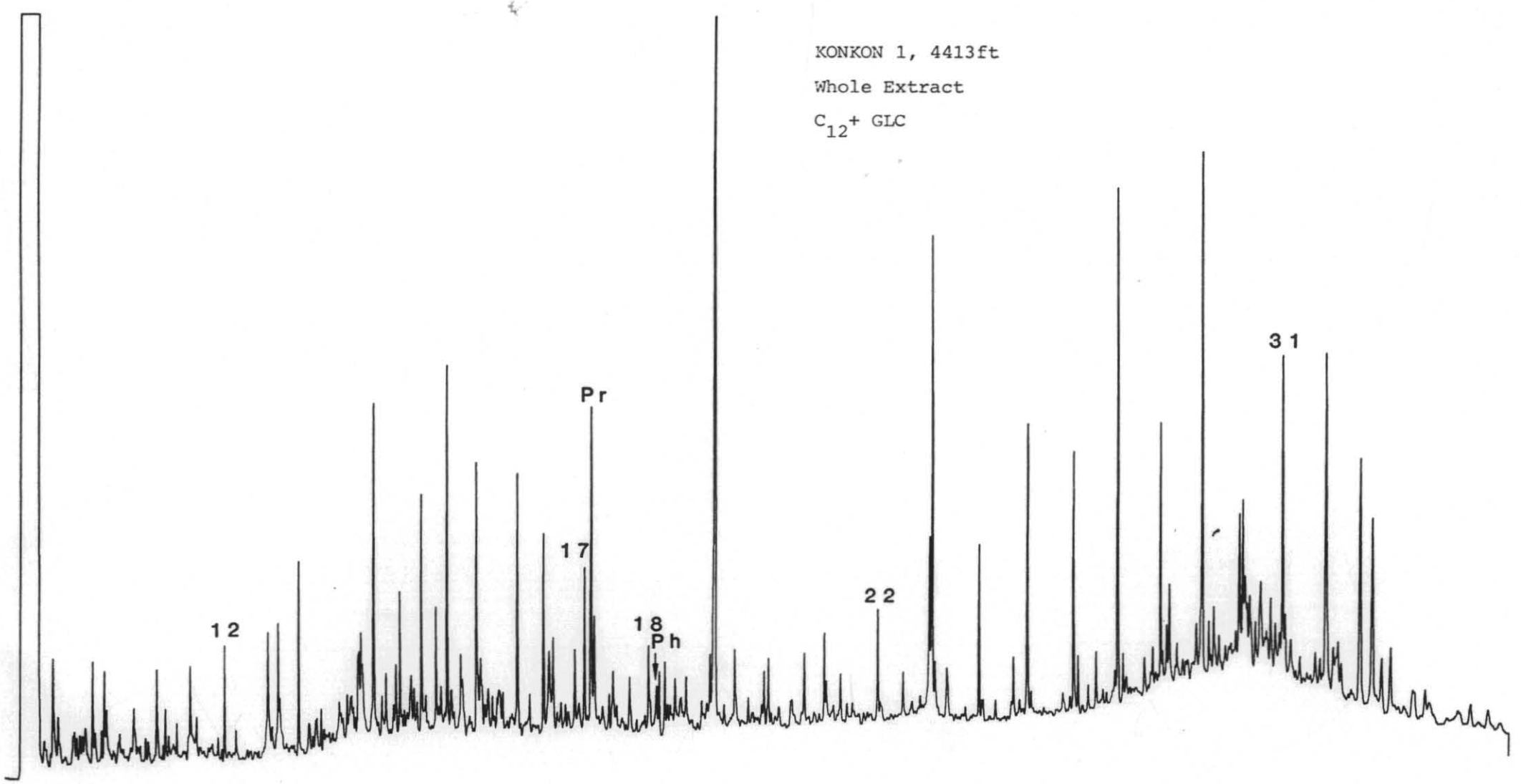


TABLE 1

ROCK-EVAL PYROLYSIS DATA (one run)

WELLNAME = PELICAN 1

DATE OF JOB = JANUARY 1987

DEPTH(ft)	TMAX	S1	S2	S3	S1+S2	S2/S3	PI	PC	TOC	HI	OI
5851.0	405	0.34	0.46	0.51	0.80	0.90	0.43	0.07	0.63	73	80
7122.0	433	3.10	64.18	7.22	67.28	8.89	0.05	5.58	28.50	225	25
7756.0	nd	nd	nd	nd	nd	nd	nd	nd	58.40	nd	nd
8379.0	nd	nd	nd	nd	nd	nd	nd	nd	2.38	nd	nd
8544.0	nd	nd	nd	nd	nd	nd	nd	nd	4.31	nd	nd
9269.0	435	0.61	3.62	2.02	4.23	1.79	0.14	0.35	2.24	161	90
9450.6	nd	nd	nd	nd	nd	nd	nd	nd	1.26	nd	nd
10086.0	nd	nd	nd	nd	nd	nd	nd	nd	1.24	nd	nd

TMAX = Max. temperature S2
S1 = Volatile hydrocarbons (HC)
S2 = HC generating potential
S1+S2 = Potential yield
S3 = Organic carbon dioxide
PI = Production index
PC = Pyrolysable carbon
TOC = Total organic carbon
HI = Hydrogen index
OI = Oxygen Index
nd = no data

157037

TABLE 2

Summary of Extraction and Liquid Chromatography

Wellname: PELICAN 1 Date of Job: FEBRUARY 1987

A. Concentrations of Extracted Material

				-------Hydrocarbons--------			-----Nonhydrocarbons-----		
Depth(ft)	Weight of Rock Extd. (grams)	Total Extract (ppm)	Loss on Column (ppm)	Saturates (ppm)	Aromatics (ppm)	HC Total (ppm)	NSO's (ppm)	Asphaltenes (ppm)	NonHC Total (ppm)
5851.0	28.5	603.5	143.9	105.3	178.9	284.2	175.4	nd	175.4
7122.0	5.7	10210.5	2000.0	1824.6	2403.5	4228.1	3982.5	nd	3982.5
9269.0	29.5	1725.4	359.3	572.9	362.7	935.6	430.5	nd	430.5

TABLE 2

Summary of Extraction and Liquid Chromatography

Wellname: PELICAN 1 Date of Job: FEBRUARY 1987

B. Compositional Data

	-----Hydrocarbons------			-----Nonhydrocarbons------			EOM(mg)	SAT(mg)	SAT	ASPH	HC
Depth(ft)	%SAT.	%AROM.	%HC's	%NSO's	%ASPH.	%Non HC's	TOC(g)	TOC(g)	AROM	NSO	Non HC
5851.0	22.9	38.9	61.8	38.2	nd	38.2	95.8	16.7	.59	nd	1.6
7122.0	22.2	29.3	51.5	48.5	nd	48.5	35.8	6.4	.76	nd	1.1
9269.0	41.9	26.6	68.5	31.5	nd	31.5	77.0	25.6	1.58	nd	2.2

na = not applicable nd = no data

TABLE 3

Summary of Gas Chromatography Data

Wellname: PELICAN 1

Date of Job:FEBRUARY 1987

A. Alkane Compositional Data

Depth(ft)	Prist./Phyt.	Prist./n-C17	Phyt./n-C18	CPI(1)	CPI(2)	(C21+C22)/(C28+C29)
5851.0	2.48	.79	.54	1.52	1.77	1.81
7122.0	10.18	7.92	1.04	1.85	1.82	.40
9269.0	8.36	5.17	.87	1.14	1.11	.42

TABLE 3

Summary of Gas Chromatography Data

Wellname: PELICAN 1

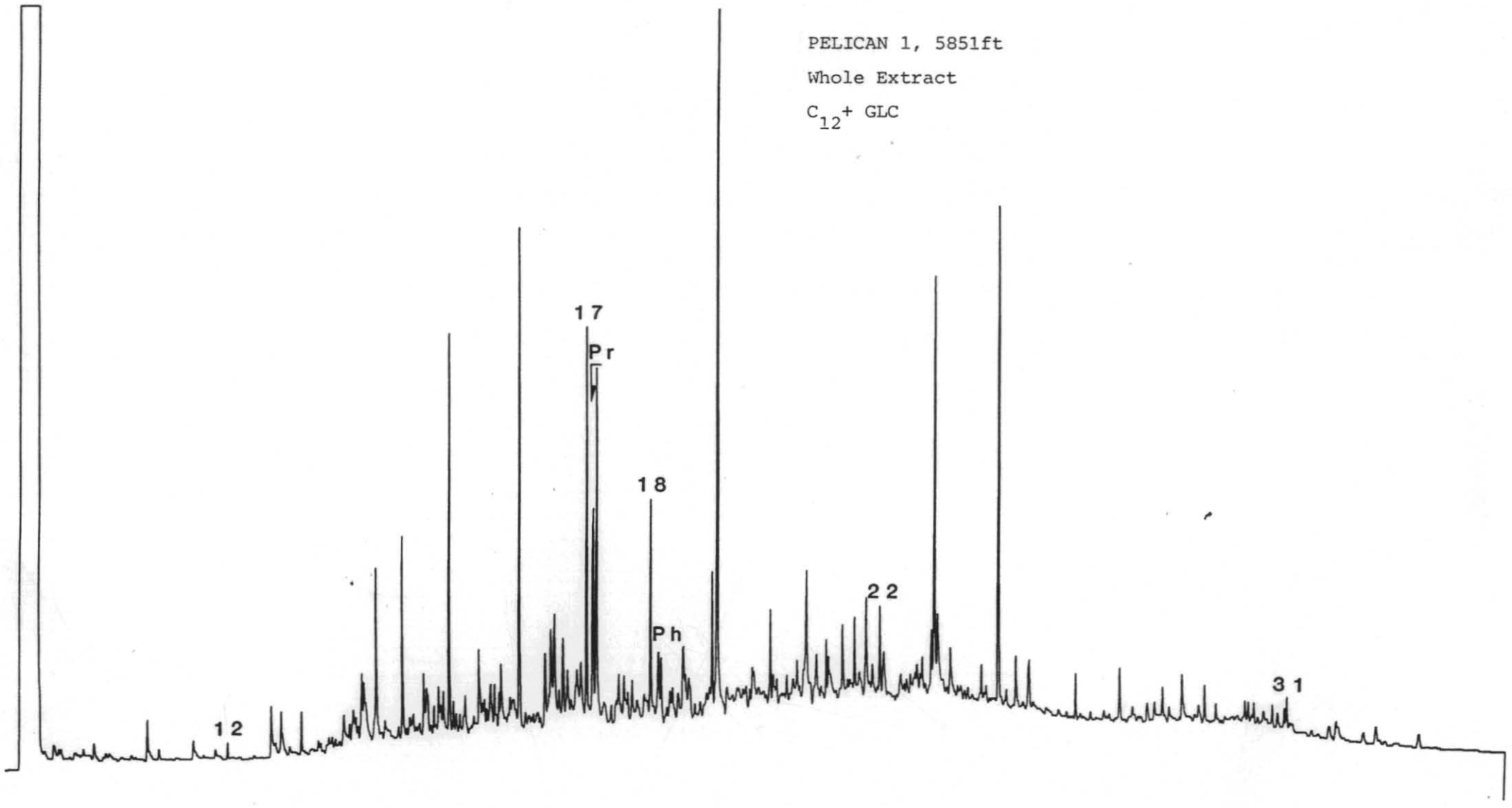
Date of Job:FEBRUARY 1987

B. n-Alkane Distributions

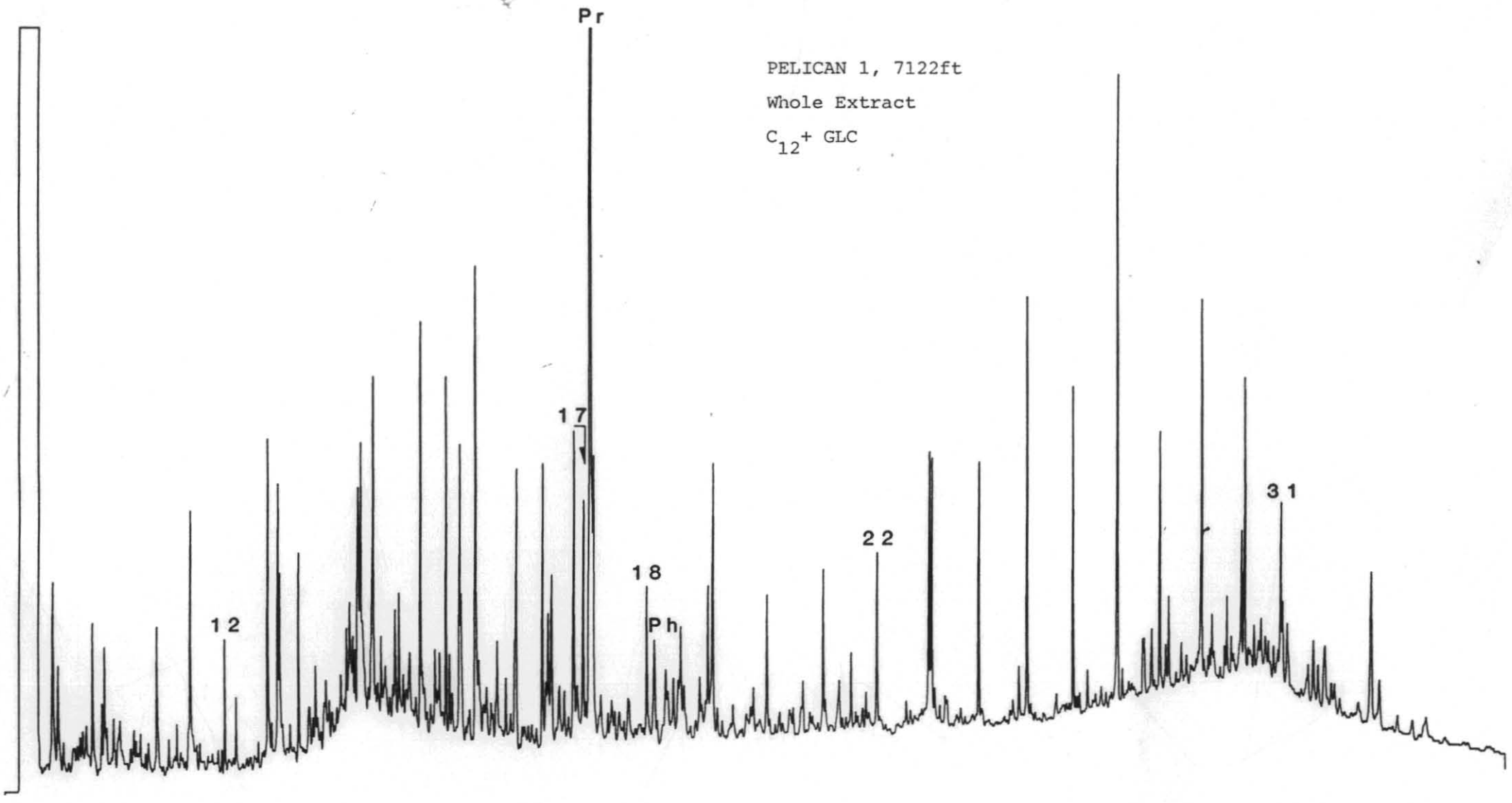
DEPTH(ft)	nC12	nC13	nC14	nC15	nC16	nC17	iC19	nC18	iC20	nC19	nC20	nC21	nC22	nC23	nC24	nC25	nC26	nC27	nC28	nC29	nC30	nC31
5851.0	.6	1.5	7.4	11.7	15.7	12.7	9.9	7.4	4.0	4.6	3.4	2.2	3.0	2.2	1.4	3.0	1.5	2.4	1.2	1.7	1.6	1.0
7122.0	1.6	2.5	4.6	4.3	3.9	3.1	24.7	2.3	2.4	1.3	1.1	1.3	2.3	4.7	3.7	6.3	4.9	11.2	3.7	5.4	2.0	2.6
9269.0	2.4	3.0	5.0	4.7	4.5	3.6	18.5	2.5	2.2	2.4	2.5	2.4	2.5	3.1	3.6	4.8	5.0	5.8	5.3	6.6	4.7	4.9

na = not applicable nd = no data

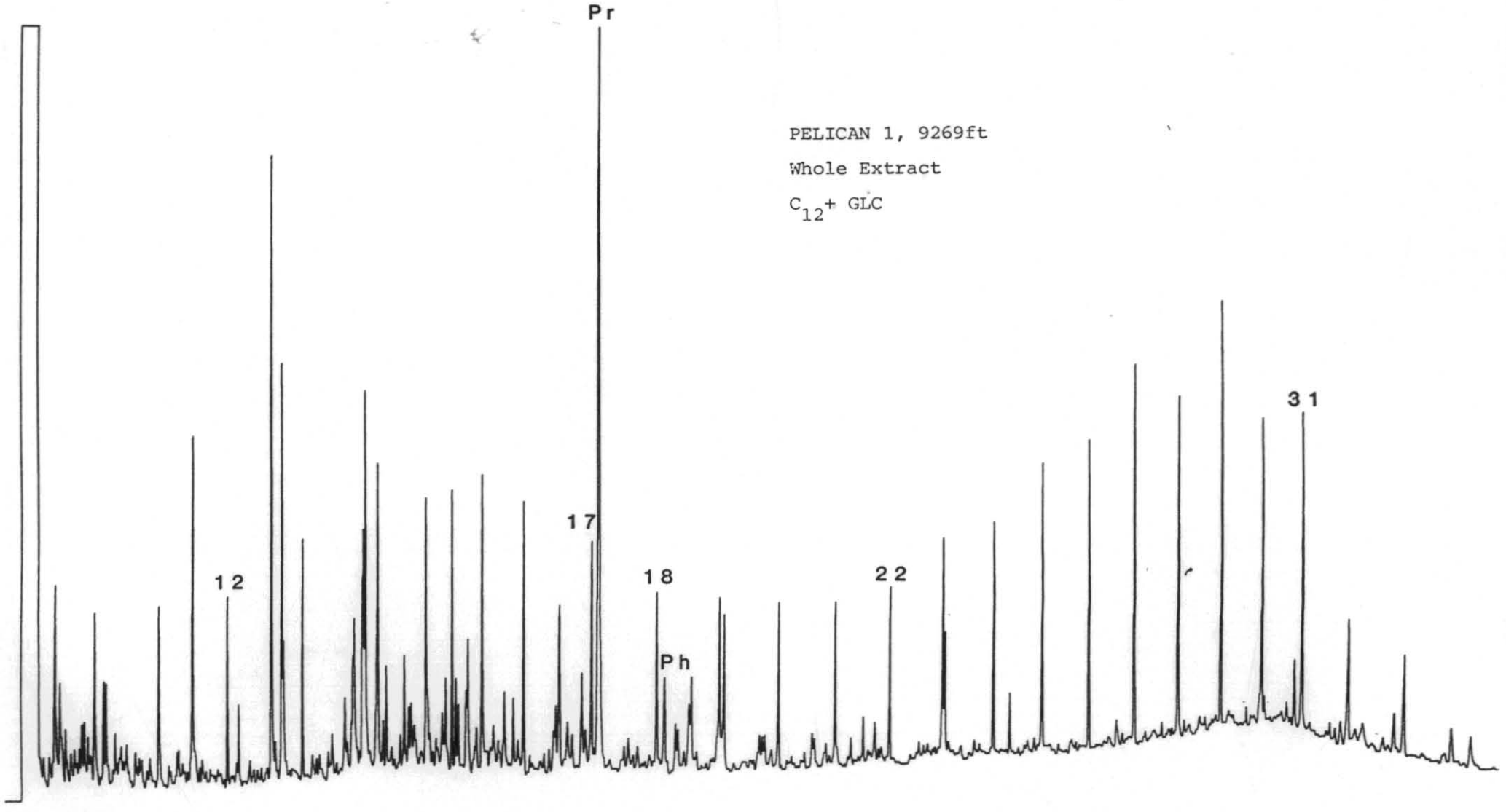
157039



157040



157041



157042

TABLE 1

ROCK-EVAL PYROLYSIS DATA (one run)

WELLNAME = PELICAN 3

DATE OF JOB = JANUARY 1987

DEPTH(ft)	TMAX	S1	S2	S3	S1+S2	S2/S3	PI	PC	TOC	HI	OI
9386.6	434	0.46	2.42	4.12	2.88	0.59	0.16	0.24	2.86	84	144
9439.0	nd	nd	nd	nd	nd	nd	nd	nd	1.50	nd	nd
9485.0	nd	nd	nd	nd	nd	nd	nd	nd	1.42	nd	nd

TMAX = Max. temperature S2
S1 = Volatile hydrocarbons (HC)
S2 = HC generating potential
S1+S2 = Potential yield
S3 = Organic carbon dioxide
PI = Production index
PC = Pyrolysable carbon
TOC = Total organic carbon
HI = Hydrogen index
OI = Oxygen Index
nd = no data

157043

TABLE 2

Summary of Extraction and Liquid Chromatography

Wellname: PELICAN 3

Date of Job: FEBRUARY 1987

A. Concentrations of Extracted Material

				-------Hydrocarbons--------			-----Nonhydrocarbons-----		
Depth(ft)	Weight of Rock Extd. (grams)	Total Extract (ppm)	Loss on Column (ppm)	Saturates (ppm)	Aromatics (ppm)	HC Total (ppm)	NSO's (ppm)	Asphaltenes (ppm)	NonHC Total (ppm)
9386.6	34.5	1043.5	298.6	246.4	255.1	501.4	243.5	nd	243.5

TABLE 2

Summary of Extraction and Liquid Chromatography

Wellname: PELICAN 3

Date of Job: FEBRUARY 1987

B. Compositional Data

	-----Hydrocarbons------			-----Nonhydrocarbons------			EOM(mg)	SAT(mg)	SAT	ASPH	HC
Depth(ft)	%SAT.	%AROM.	%HC's	%NSO's	%ASPH.	%Non HC's	TOC(g)	TOC(g)	AROM	NSO	Non HC
9386.6	33.1	34.2	67.3	32.7	nd	32.7	36.5	8.6	.97	nd	2.1

na = not applicable nd = no data

TABLE 3

Summary of Gas Chromatography Data

Wellname: PELICAN 3

Date of Job:FEBRUARY 1987

A. Alkane Compositional Data

Depth(ft)	Prist./Phyt.	Prist./n-C17	Phyt./n-C18	CPI(1)	CPI(2)	(C21+C22)/(C28+C29)
9386.6	7.02	4.76	.85	1.25	1.15	.56

TABLE 3

Summary of Gas Chromatography Data

Wellname: PELICAN 3

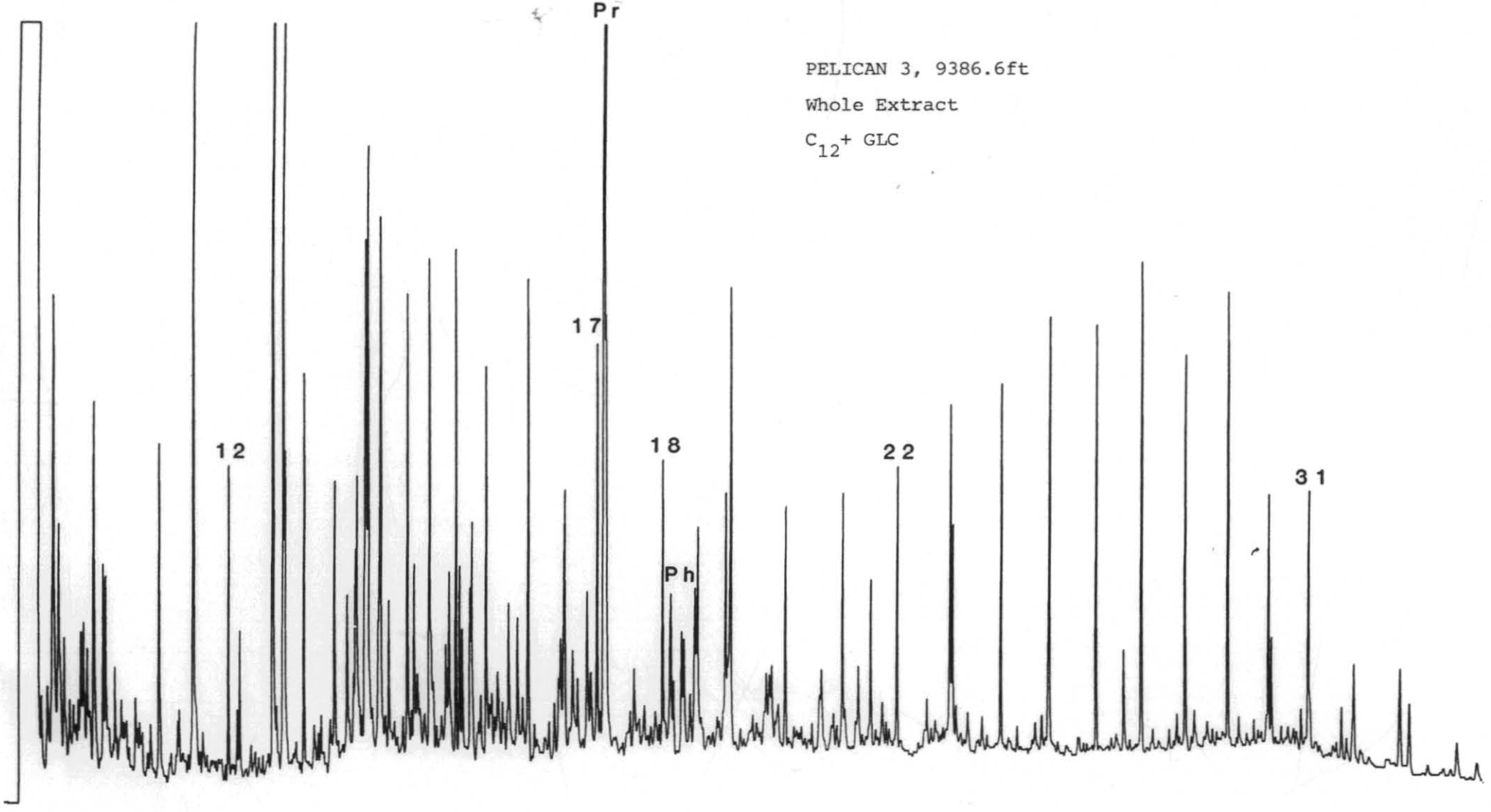
Date of Job:FEBRUARY 1987

B. n-Alkane Distributions

DEPTH(ft)	nC12	nC13	nC14	nC15	nC16	nC17	iC19	nC18	iC20	nC19	nC20	nC21	nC22	nC23	nC24	nC25	nC26	nC27	nC28	nC29	nC30	nC31
9386.6	2.8	3.7	4.8	4.6	4.3	4.2	19.8	3.3	2.8	2.3	1.6	2.6	2.9	3.3	4.0	5.1	4.4	5.7	4.7	5.2	3.0	4.9

na = not applicable nd = no data

157045



PELICAN 3, 9386.6ft

Whole Extract

C_{12}^{+} GLC

157046

TABLE 1

ROCK-EVAL PYROLYSIS DATA (one run)

WELLNAME = TILANA 1

DATE OF JOB = JANUARY 1987

DEPTH(m)	TMAX	S1	S2	S3	S1+S2	S2/S3	PI	PC	TOC	HI	OI
2800.9	436	0.45	3.82	1.30	4.27	2.94	0.11	0.35	2.11	181	61

TMAX = Max. temperature S2
S1 = Volatile hydrocarbons (HC)
S2 = HC generating potential
S1+S2 = Potential yield
S3 = Organic carbon dioxide
PI = Production index
PC = Pyrolysable carbon
TOC = Total organic carbon
HI = Hydrogen index
OI = Oxygen Index
nd = no data

TABLE 2

Summary of Extraction and Liquid Chromatography

Wellname: TILANA 1

Date of Job: FEBRUARY 1987

A. Concentrations of Extracted Material

				-------Hydrocarbons--------			-----Nonhydrocarbons-----		
Depth(m)	Weight of Rock Extd. (grams)	Total Extract (ppm)	Loss on Column (ppm)	Saturates (ppm)	Aromatics (ppm)	HC Total (ppm)	NSO's (ppm)	Asphaltenes (ppm)	NonHC Total (ppm)
2800.9	22.0	1618.2	340.9	422.7	268.2	690.9	586.4	nd	586.4

TABLE 2

Summary of Extraction and Liquid Chromatography

Wellname: TILANA 1

Date of Job: FEBRUARY 1987

B. Compositional Data

	-----Hydrocarbons------			-----Nonhydrocarbons------			EOM(mg)	SAT(mg)	SAT	ASPH	HC
Depth(m)	%SAT.	%AROM.	%HC's	%NSO's	%ASPH.	%Non HC's	TOC(g)	TOC(g)	AROM	NSO	Non HC
2800.9	33.1	21.0	54.1	45.9	nd	45.9	76.7	20.0	1.58	nd	1.2

na = not applicable nd = no data

TABLE 3

Summary of Gas Chromatography Data

Wellname: TILANA 1

Date of Job:FEBRUARY 1987

A. Alkane Compositional Data

Depth(m)	Prist./Phyt.	Prist./n-C17	Phyt./n-C18	CPI(1)	CPI(2)	(C21+C22)/(C28+C29)
2800.9	8.44	7.28	1.00	1.21	1.22	.32

TABLE 3

Summary of Gas Chromatography Data

Wellname: TILANA 1

Date of Job:FEBRUARY 1987

B. n-Alkane Distributions

DEPTH(m)	nC12	nC13	nC14	nC15	nC16	nC17	iC19	nC18	iC20	nC19	nC20	nC21	nC22	nC23	nC24	nC25	nC26	nC27	nC28	nC29	nC30	nC31
2800.9	1.2	1.9	2.6	2.2	2.2	2.5	18.1	2.1	2.1	1.7	1.5	2.4	2.6	4.1	4.5	5.9	6.1	8.5	6.6	8.9	6.3	5.8

na = not applicable nd = no data

157049