

Sidewall Core. Gas Chromatography, Tilana-1 AMDEL, Amoco Australia Petroleum Company

Contents:

Cover Letter

Table 1 Summary of Extraction and Liquid Chromatography

Table 2 Summary of Gas Chromatography Data

Figure 1. 3020.4m SWC 84 – Whole Extract C₁₂ + GLC

Figure 2. 3044.0m SWC 81 – Whole Extract C₁₂ + GLC

Figure 3. 3047.0m SWC 80 – Whole Extract C₁₂ + GLC

Figure 4. 3072.5m SWC 78 – Whole Extract C₁₂ + GLC

Figure 5. 3074.0m SWC 77 – Whole Extract C₁₂ + GLC

Figure 6. 3084.0m SWC 75 – Whole Extract C₁₂ + GLC

Figure 7. 3094.0m SWC 74 – Whole Extract C₁₂ + GLC

Figure 8. 3183.0m SWC 72 – Whole Extract C₁₂ + GLC

Figure 9. 3197.5m SWC 71 – Whole Extract C₁₂ + GLC

Figure 10. 3214.0m SWC 69 – Whole Extract C₁₂ + GLC

OR-0329

TPR
OR-329

226002

R107/85

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL CHEMISTS

• PERTH:
52 MURRAY ROAD,
WELSHPOOL, WESTERN AUSTRALIA, 6106
TELEPHONE (09) 456 7999
TELEX: ANALAB AA 92860
P.O. BOX 210, BENTLEY, W.A. 6102

PT/fmh

12th November, 1985.

Mr. G. Kjellgren
Amoco Australia Petroleum Company
12th Floor, Phillips Building
15 Blue Street
NORTH SYDNEY NSW 2060



Dear Gary,

Enclosed are the results of the extraction and C12+ whole extract gas-liquid chromatography analyses carried out on sidewall cores from the Tilana 1 well.

These samples are overall lean in C12+ hydrocarbon. Only the three samples at 3074m, 3084m and 3094m contain any appreciable amount of extractable organic matter, however these concentrations are not considered significant from a reservoir standpoint. Likewise the majority of the gc traces are not representative of a reservoir hydrocarbon. Reservoir hydrocarbon is usually dominated by normal alkanes. Most of these traces contain compounds (aromatic, NSO) other than normal alkanes. However if all compounds, with the exception of the normal alkanes were removed from the trace, the configuration would be representative of a good quality saturate hydrocarbon, similar to a light oil or condensate, but the concentration would be very low.

The two samples at 3084m and 3094m gave gc traces with only alkanes present, which are skewed towards the high molecular weight compounds. It may be that these depths contain reservoir hydrocarbon, where the light molecular weight compounds have been lost due to flushing of the reservoir. However coal was observed in the 3074m and 3084m samples. It has been our experience that the extracts of some coals can give a gc trace similar to the 3084m and 3094m samples.

The only other sample which may contain reservoir hydrocarbon is the 3197.5m sample. The gc trace for this sample has significant amounts of normal alkanes, but again the EOM levels are low. Consequently, if reservoir hydrocarbon is present at this depth it is in very low concentrations.

In summary the cores from 3084m, 3094m and 3197.5m are the only samples with C12+ gc trace configurations which resemble reservoir hydrocarbon.

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

Yours sincerely,

PAUL TYBOR
Manager - Operations

*Note: No coal in 3094m sample.
2. Hydrocarbons present in sands of 3084m sample; not in coal.*

TABLE 1.

Summary of Extraction and Liquid Chromatography

Wellname: TILANA 1

Date of Job: NOVEMBER 1985

A. Concentrations of Extracted Material

Depth(m)	Weight of Rock Extd. (grams)	Total Extract (ppm)	Loss on Column (ppm)	-----Hydrocarbons-----			-----Nonhydrocarbons-----		
				Saturates (ppm)	Aromatics (ppm)	HC Total (ppm)	NSO's (ppm)	Asphaltenes (ppm)	NonHC Total (ppm)
3020.4	14.5	117.2	nd	nd	nd	nd	nd	nd	nd
3044.0	18.0	88.9	nd	nd	nd	nd	nd	nd	nd
3047.0	21.5	74.4	nd	nd	nd	nd	nd	nd	nd
3072.5	26.2	84.0	nd	nd	nd	nd	nd	nd	nd
3074.0	31.0	1171.0	nd	nd	nd	nd	nd	nd	nd
3084.0	22.6	1508.8	nd	nd	nd	nd	nd	nd	nd
3094.0	31.9	1539.2	nd	nd	nd	nd	nd	nd	nd
3183.0	21.0	90.5	nd	nd	nd	nd	nd	nd	nd
3197.5	21.7	147.5	nd	nd	nd	nd	nd	nd	nd
3214.0	21.0	71.4	nd	nd	nd	nd	nd	nd	nd

TABLE 1.

Summary of Extraction and Liquid Chromatography

Wellname: TILANA 1

Date of Job: NOVEMBER 1985

B. Compositional Data

Depth(m)	-----Hydrocarbons-----			-----Nonhydrocarbons-----			EOM(mg) TOC(g)	SAT(mg) TOC(g)	SAT AROM	ASPH NSO	HC Non HC
	ZSAT.	ZAROM.	ZHC's	ZNSO's	ZASPH.	ZNon HC's					
3020.4	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
3044.0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
3047.0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
3072.5	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
3074.0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
3084.0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
3094.0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
3183.0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
3197.5	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
3214.0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd

na = not applicable nd = no data

TABLE 2.

Summary of Gas Chromatography Data

Wellname: TILANA 1

Date of Job: NOVEMBER 1985

A. Alkane Compositional Data

Depth(m)	Prist./Phyt.	Prist./n-C17	Phyt./n-C18	CPI(1)	CPI(2)	(C21+C22)/(C28+C29)
3020.4	4.83	1.21	.27	1.88	1.91	5.26
3044.0	3.45	1.04	.36	1.63	1.64	2.75
3047.0	3.64	.83	.27	1.32	1.28	4.79
3072.5	4.24	.69	.26	1.59	1.59	3.81
3074.0	3.03	1.72	1.39	1.10	1.09	2.34
3084.0	8.17	1.91	.22	1.12	1.10	3.56
3094.0	10.07	5.03	.48	1.23	1.20	1.22
3183.0	3.76	1.01	.30	1.40	1.39	2.82
3197.5	6.87	2.29	.36	1.33	1.27	1.68
3214.0	5.55	1.38	.28	1.46	1.47	4.88

TABLE 2.

Summary of Gas Chromatography Data

Wellname: TILANA 1

Date of Job: NOVEMBER 1985

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
3020.4	2.6	4.4	8.7	7.0	8.6	8.9	10.8	8.4	2.2	7.9	7.1	4.9	3.7	2.9	2.0	5.1	1.4	1.3	.8	.8	.4	.2
3044.0	2.7	4.7	24.2	5.7	7.0	8.2	8.5	6.9	2.5	5.1	4.5	3.7	2.7	2.5	2.0	3.4	1.3	1.3	.9	1.5	.6	.4
3047.0	3.7	5.6	12.2	7.7	10.0	10.2	8.5	8.6	2.3	7.4	6.5	4.6	3.0	2.2	1.5	1.7	1.1	1.1	.7	.9	.3	.3
3072.5	2.3	4.2	7.2	7.0	9.0	12.6	8.7	7.8	2.0	7.2	6.4	4.6	3.6	3.1	2.5	4.9	1.9	1.8	1.1	1.0	.4	.3
3074.0	4.0	4.9	16.5	5.7	5.8	6.7	11.5	2.7	3.8	3.2	3.0	3.1	3.2	7.4	4.9	4.0	3.5	2.5	1.5	1.2	.6	.3
3084.0	3.4	4.1	4.7	4.5	4.4	4.6	8.7	4.9	1.1	5.5	5.9	6.4	6.9	7.3	7.0	6.9	5.0	4.4	2.3	1.5	.5	.3
3094.0	1.2	1.9	2.4	2.3	2.5	2.9	14.4	3.0	1.4	3.6	4.0	4.8	5.7	7.3	7.3	8.9	6.8	7.6	4.4	4.1	1.8	1.5
3183.0	3.1	4.5	11.5	6.3	8.2	8.0	8.1	7.2	2.2	6.4	6.1	4.9	4.0	3.3	2.8	4.7	2.3	2.2	1.6	1.5	.7	.5
3197.5	1.7	2.8	6.0	5.0	6.0	6.3	14.3	5.8	2.1	5.7	5.4	5.0	4.6	4.3	4.2	5.8	3.8	3.9	2.6	3.1	1.0	.7
3214.0	3.3	5.0	8.8	7.8	8.9	8.3	11.4	7.2	2.1	6.4	5.8	4.9	3.8	3.4	2.8	4.5	1.8	1.5	.9	.9	.4	.2

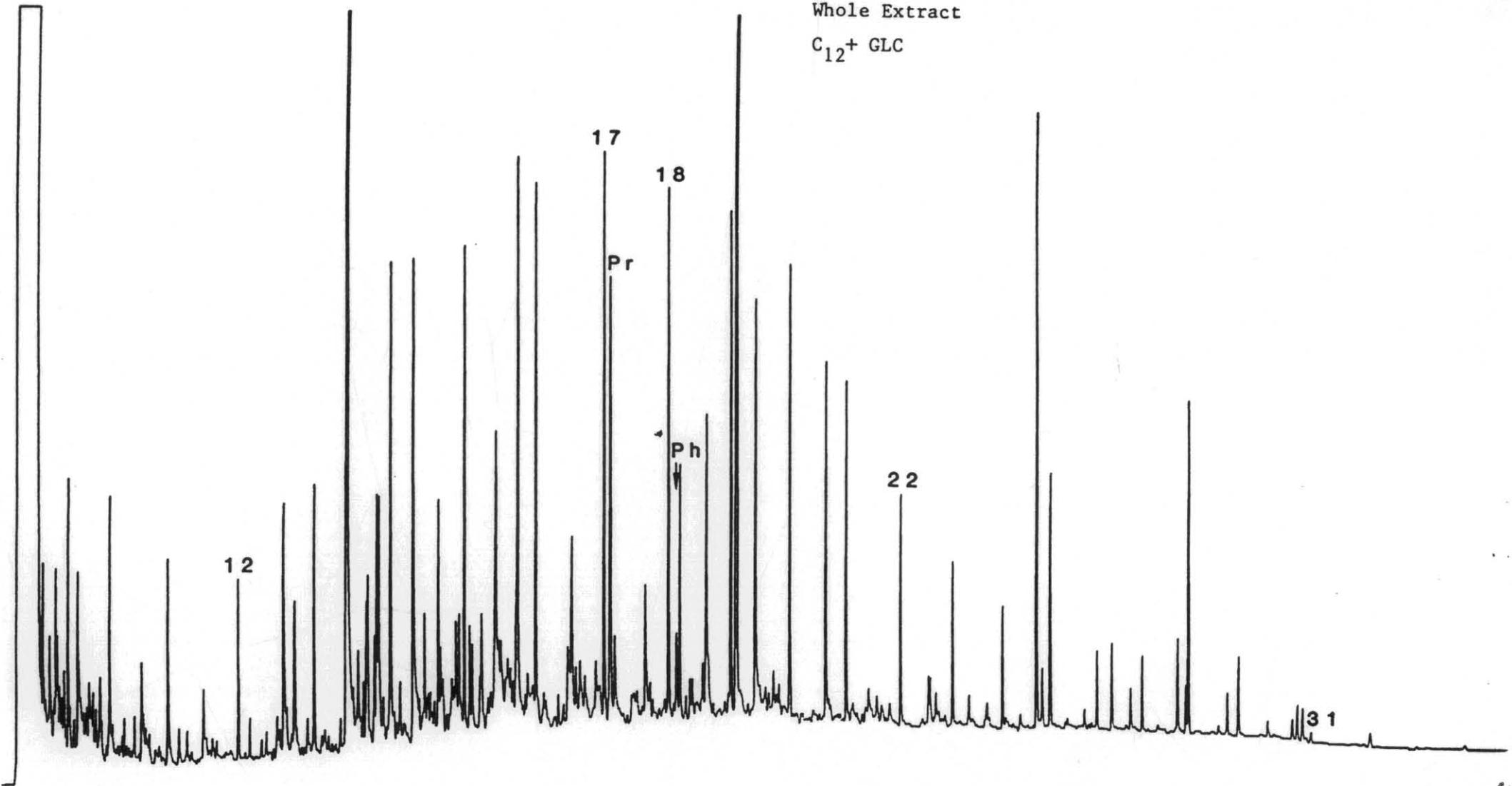
na = not applicable nd = no data

5 cm

TILANA 1, 3020.4m SWC 84

Whole Extract

C₁₂⁺ GLC

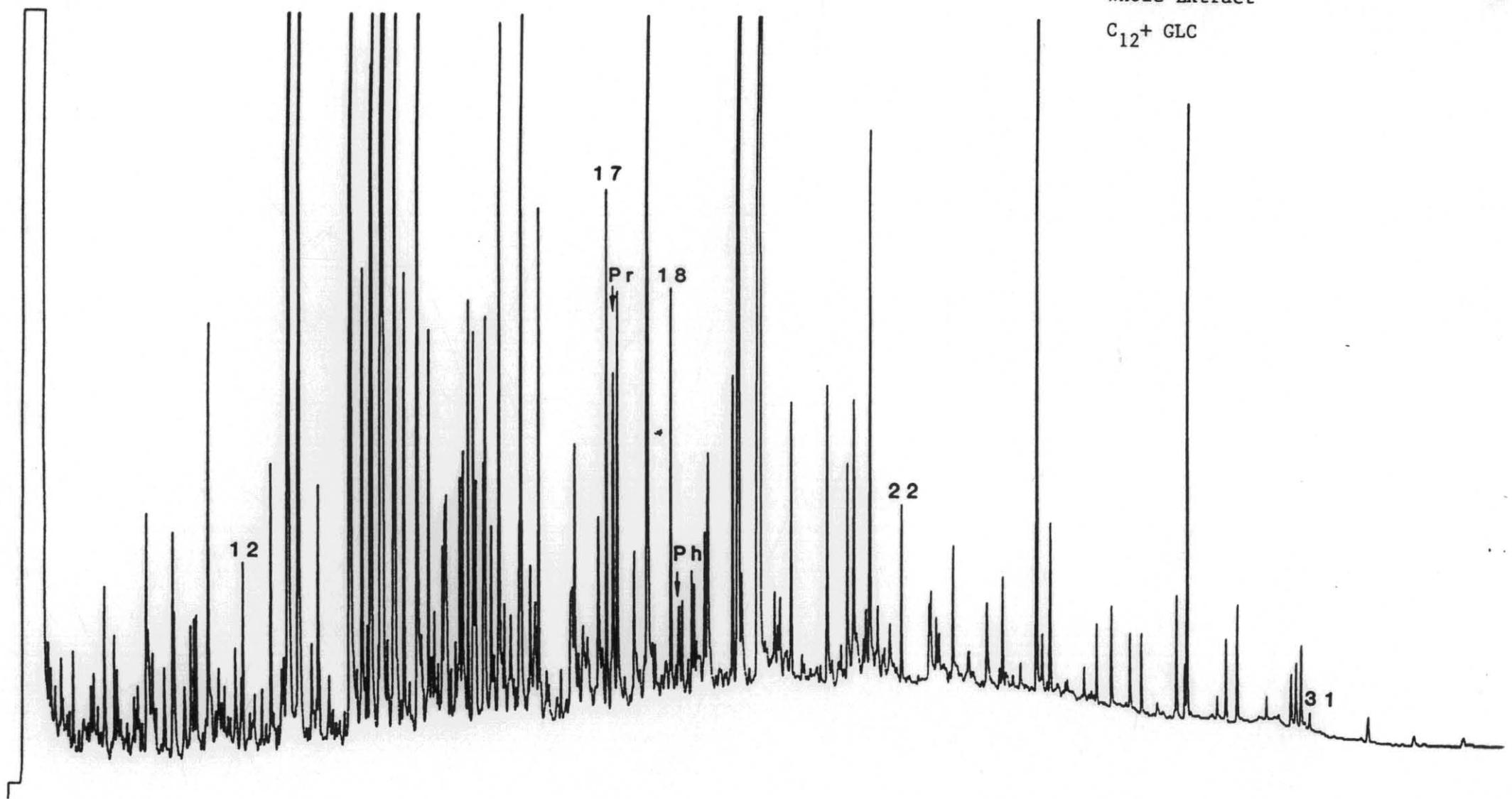


326005

FIG. 1.

5 cm

TILANA 1, 3044.0m SWC 81
Whole Extract
C₁₂⁺ GLC

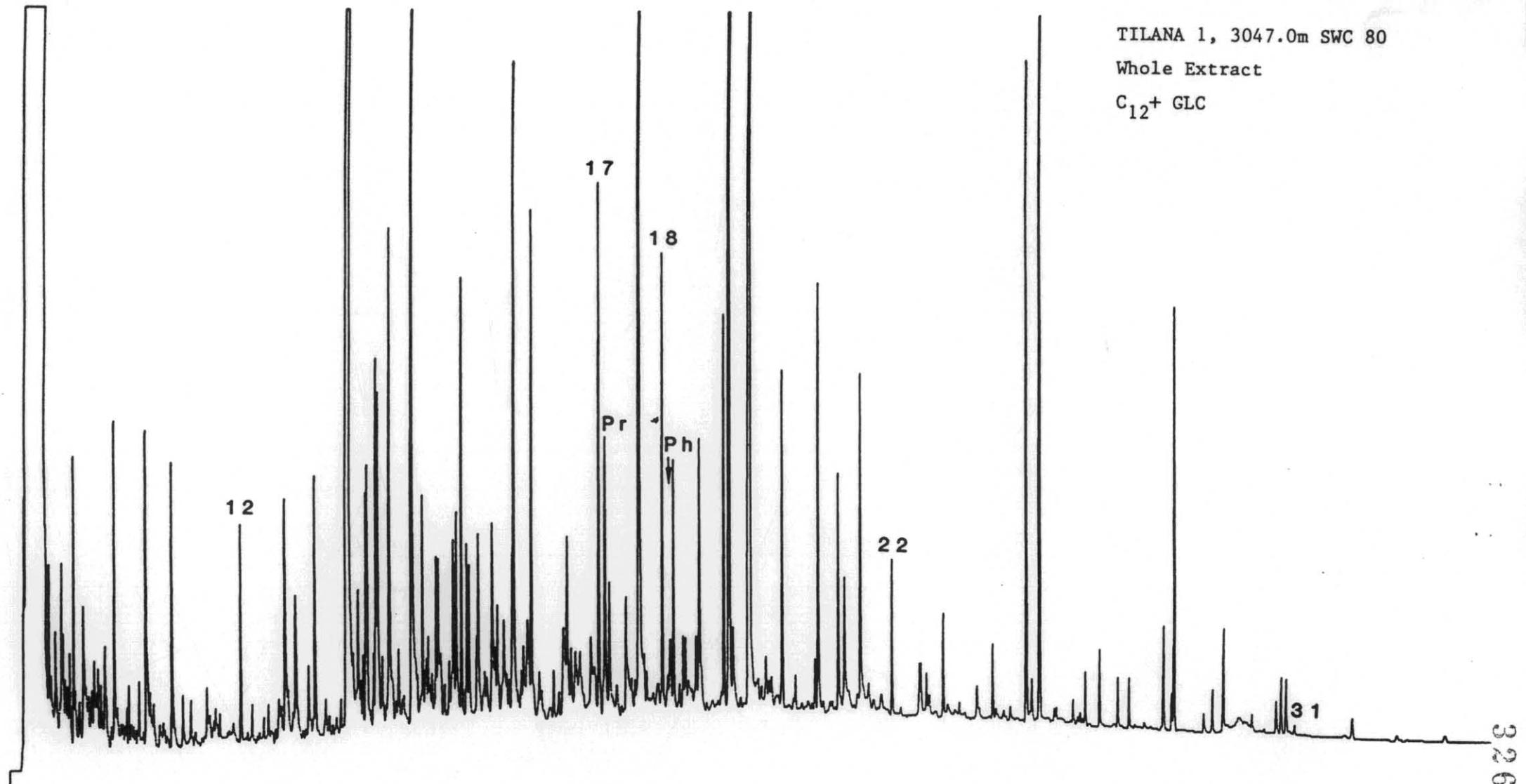


326006

FIG. 2.

5 cm

TILANA 1, 3047.0m SWC 80
Whole Extract
C₁₂⁺ GLC



326007

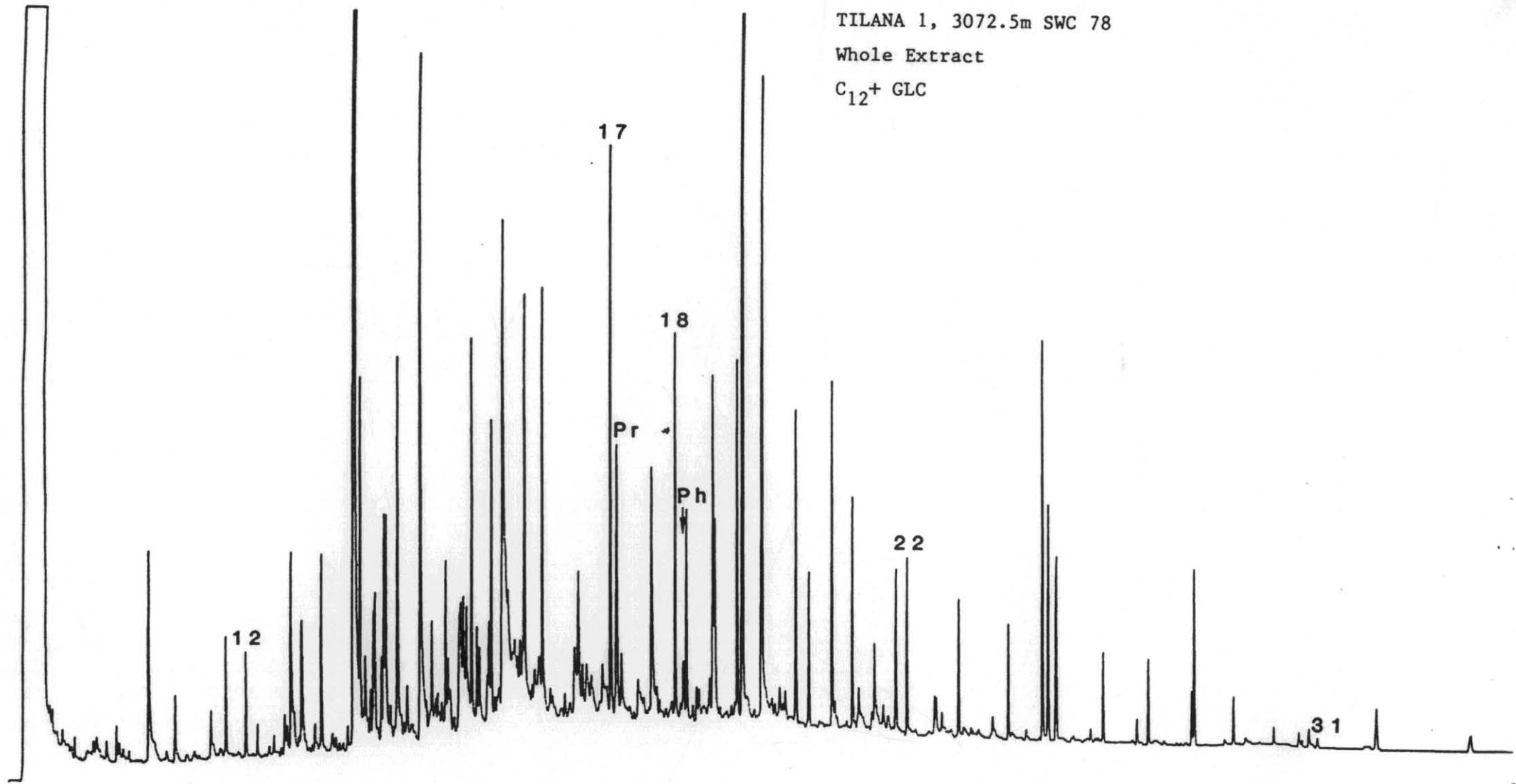
FIG. 3.

5 cm

TILANA 1, 3072.5m SWC 78

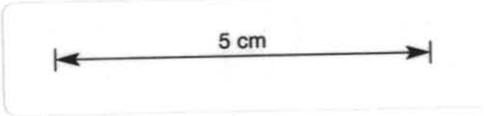
Whole Extract

C₁₂⁺ GLC

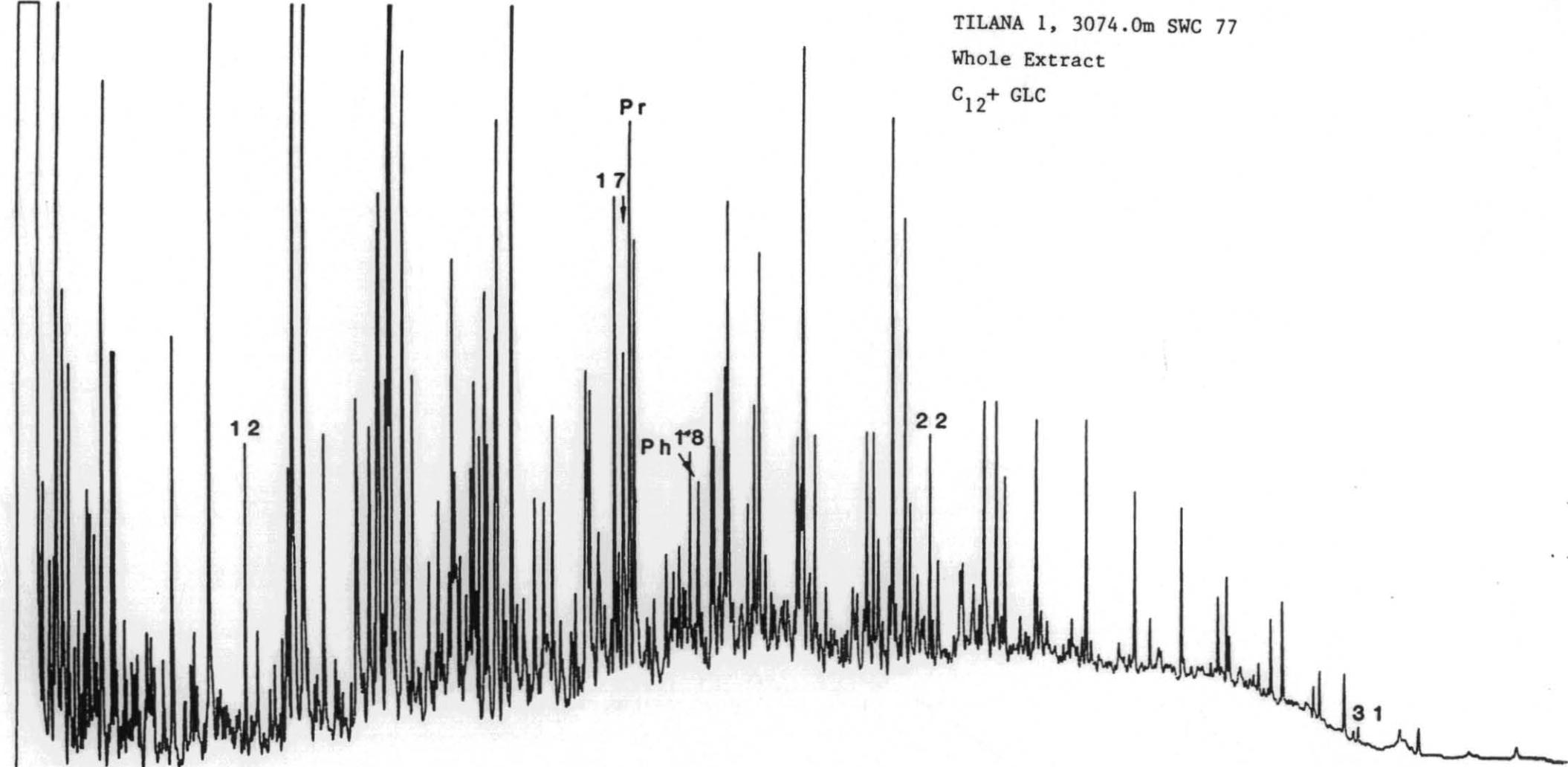


326008

FIG. 4



TILANA 1, 3074.0m SWC 77
Whole Extract
C₁₂⁺ GLC



326009

FIG. 5

5 cm

TILANA 1, 3084.0m SWC 75

Whole Extract

C₁₂+ GLC

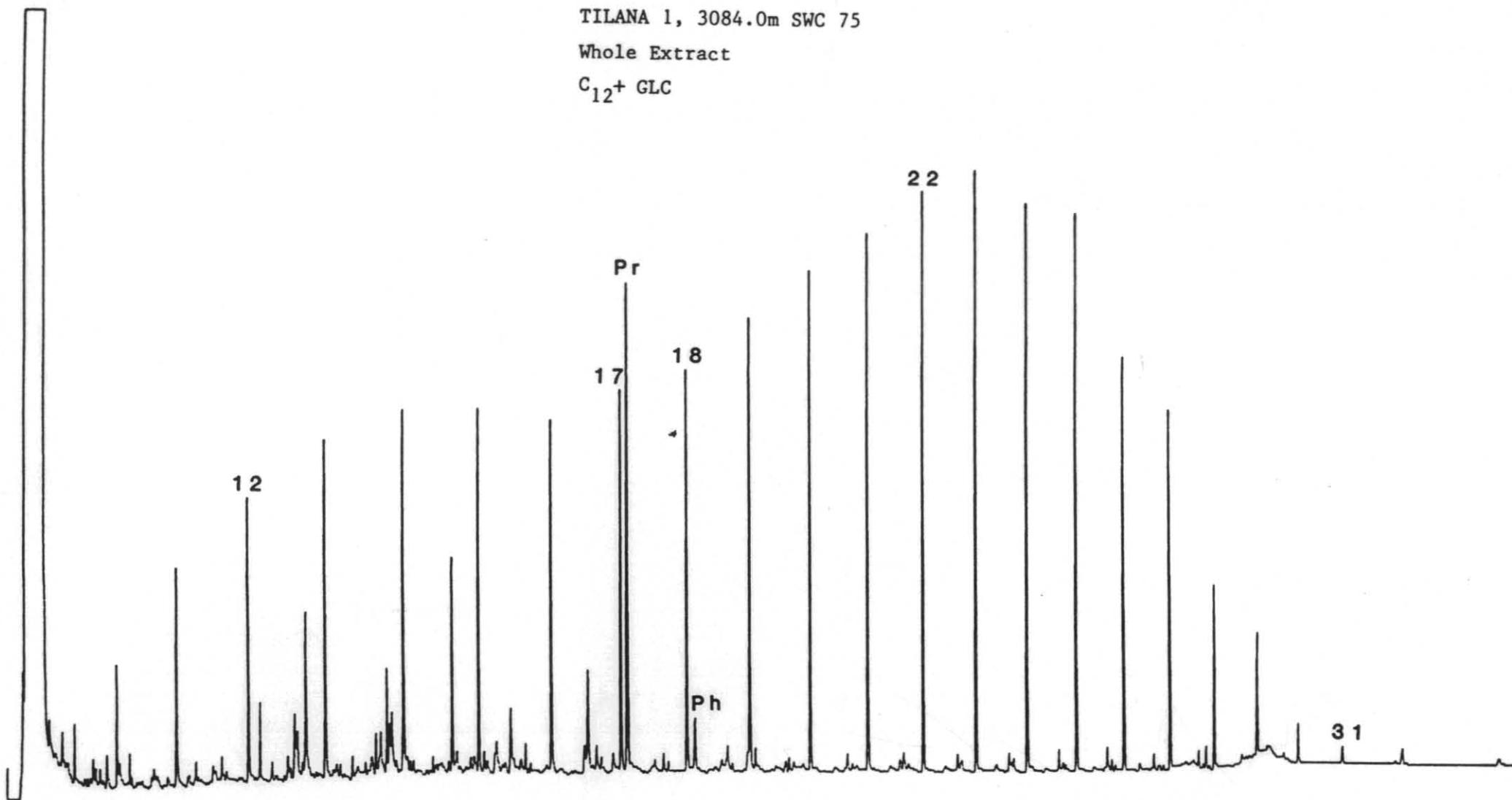
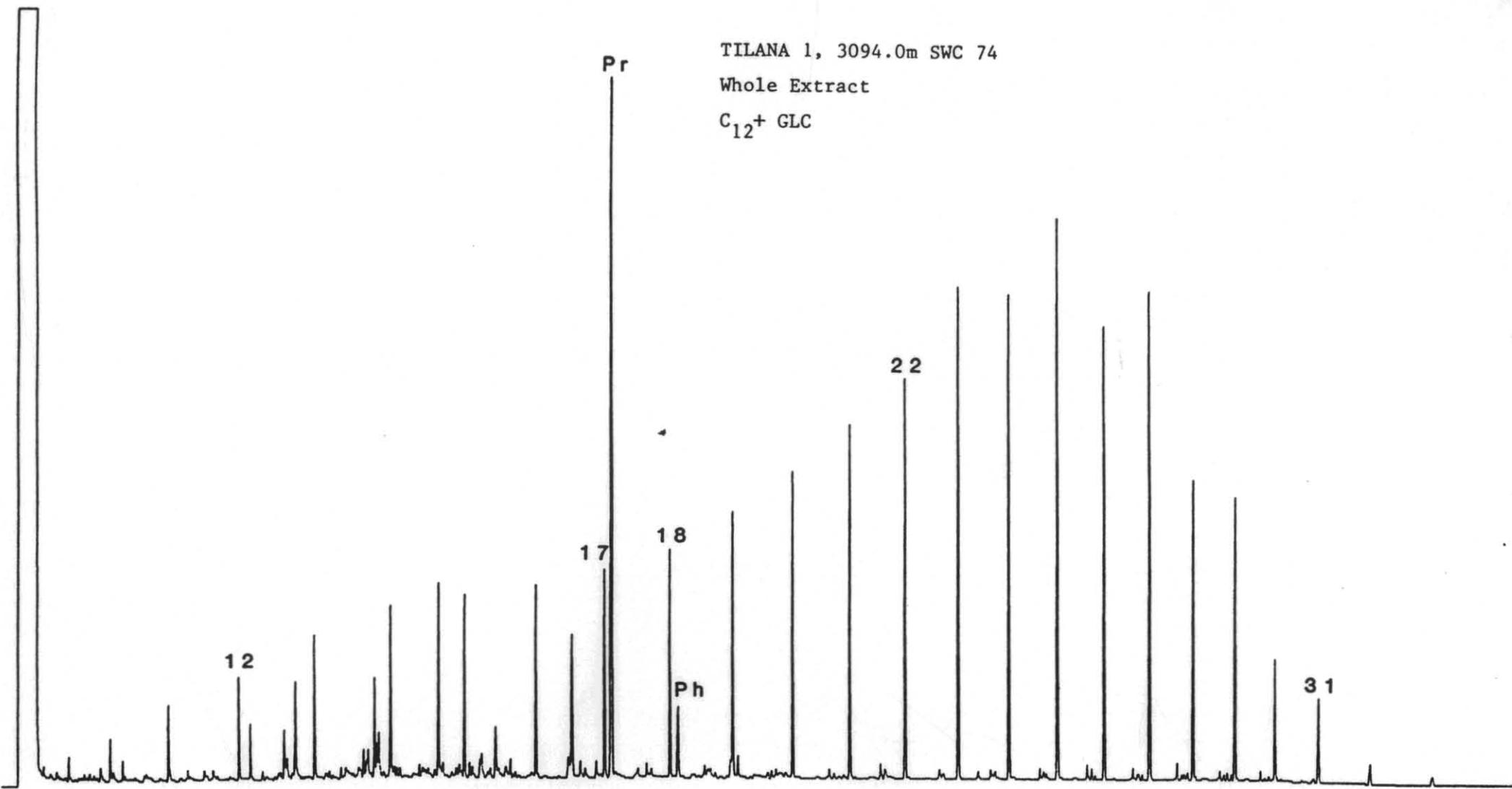
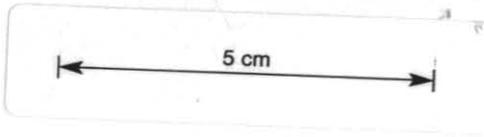


FIG. 6

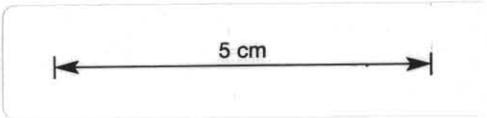
326010



TILANA 1, 3094.0m SWC 74
Whole Extract
C₁₂⁺ GLC

326011

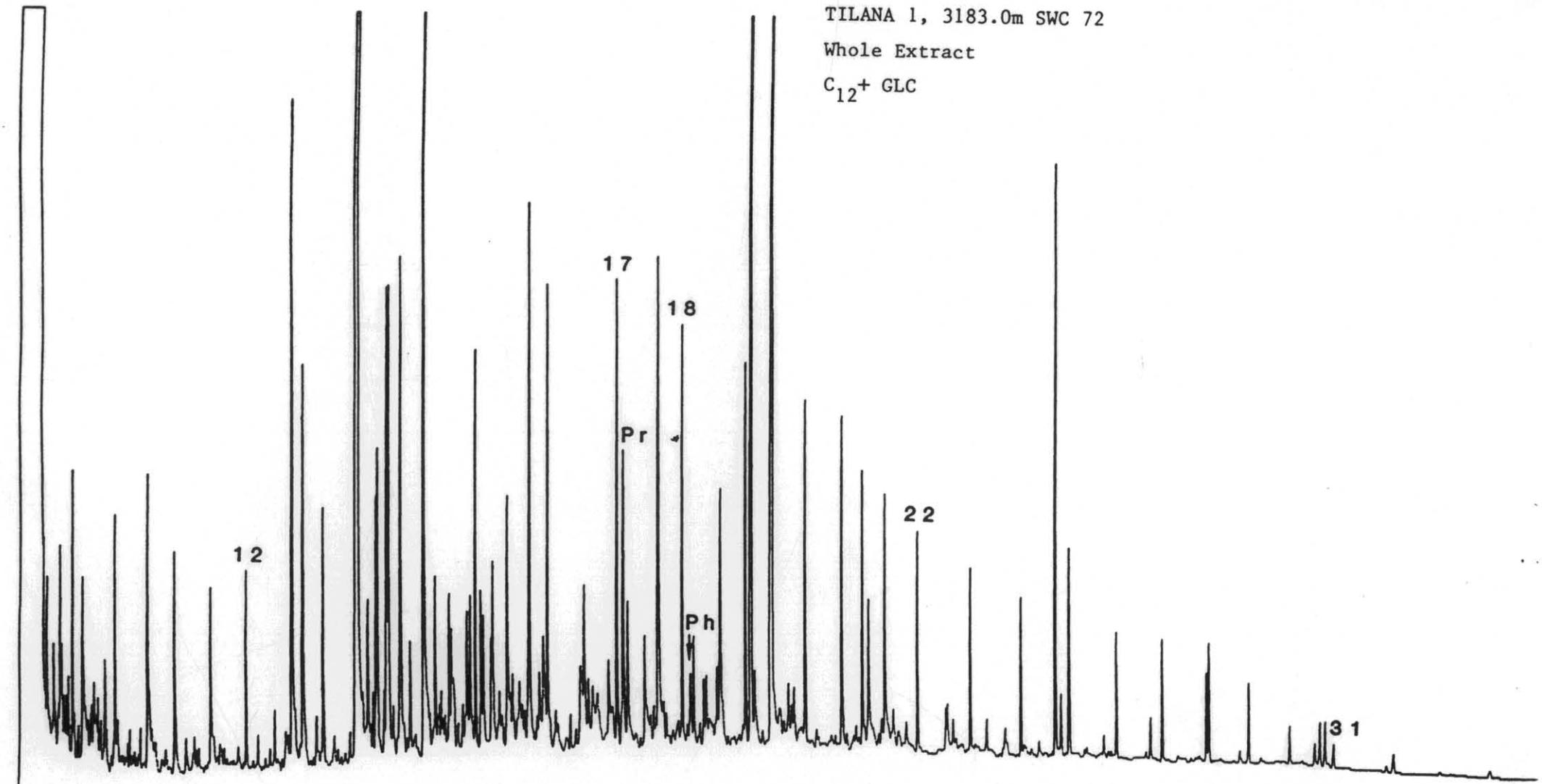
FIG. 7



TILANA 1, 3183.0m SWC 72

Whole Extract

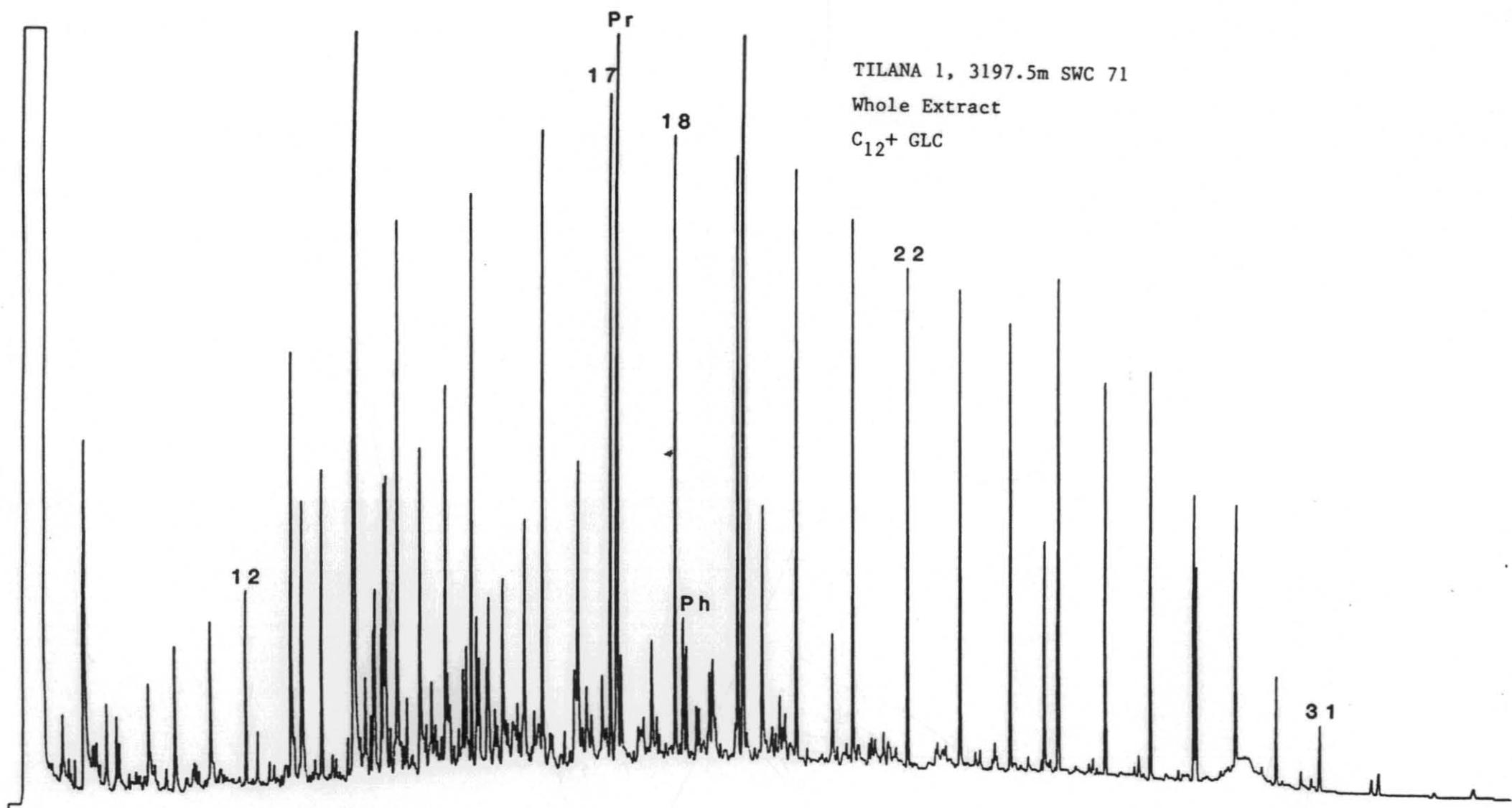
C₁₂⁺ GLC



326012

FIG. 8.

5 cm

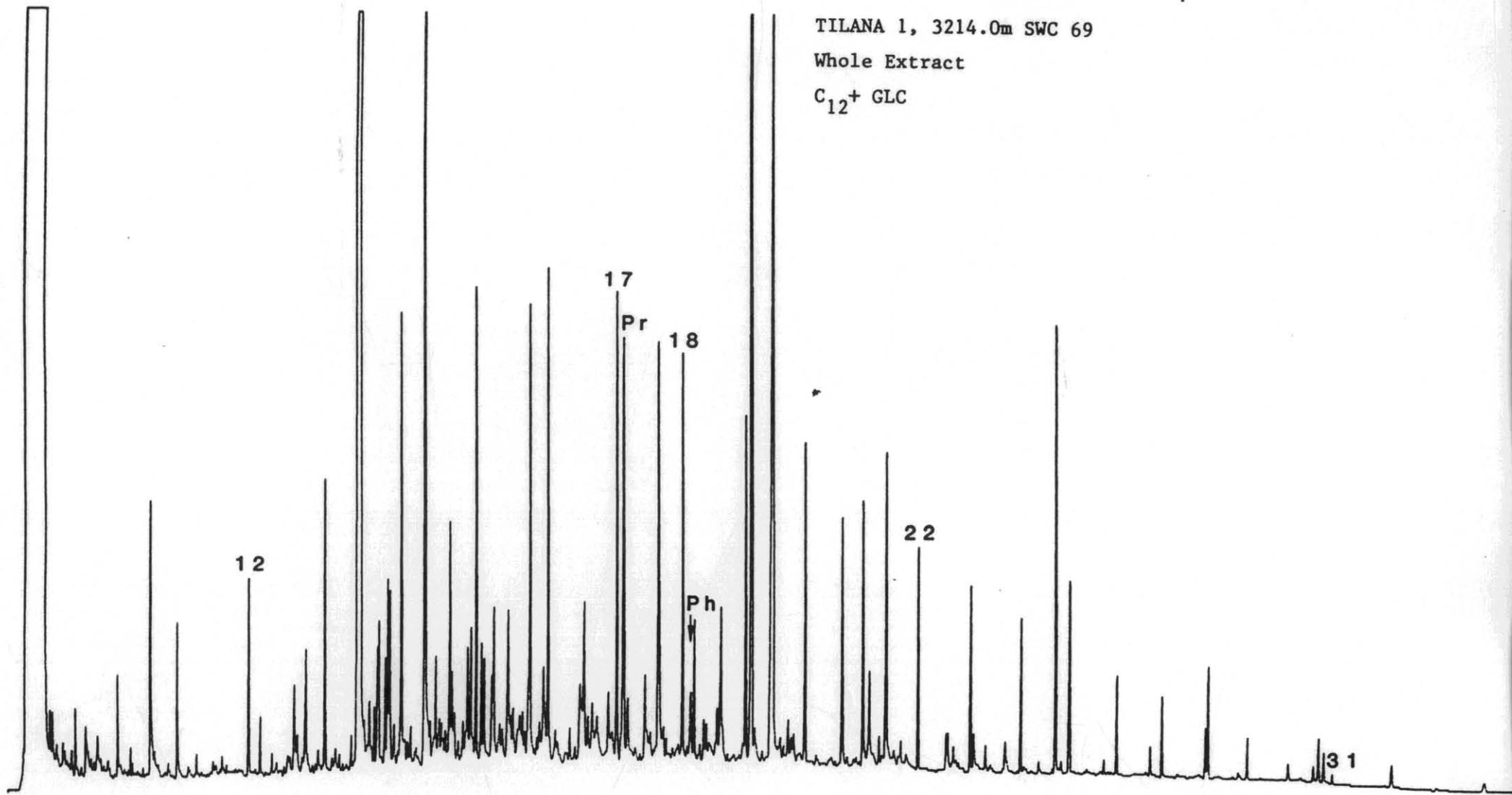


TILANA 1, 3197.5m SWC 71
Whole Extract
C₁₂⁺ GLC

326013

FIG. 9

5 cm



326014

FIG. 10