BURIAL HISTORY OF THE COOPER, EROMANGA AND LAKE EYRE BASINS IN NORTHEAST SOUTH AUSTRALIA

Report for the South Australian Department of Mines and Energy

by

Reza Moussavi-Harami

VOLUME II

FIGURES AND APPENDICES

FEBRUARY 1996 Envelope 9024

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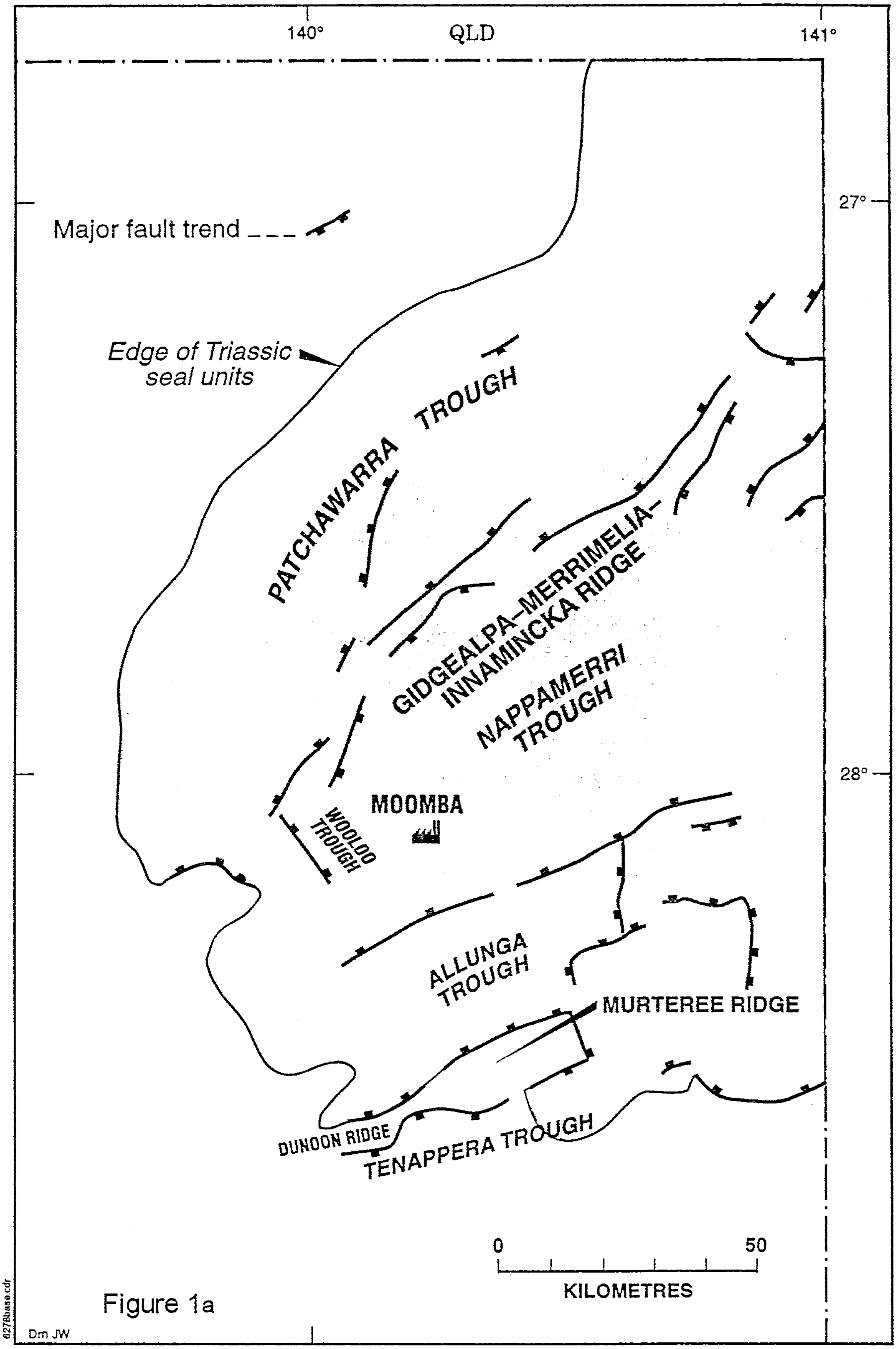


140°
QLD
141°
27°
28°
Major fault trend
Edge of Triassic seal units
PATCHAWARRA TROUGH
GIDGEALPA–MERRIMELIA–INNAMINCKA RIDGE
NAPPAMERRI TROUGH
MOOMBA
WOOLOO TROUGH
ALLUNGA TROUGH
MURTEREE RIDGE
DUNOON RIDGE
TENAPPERA TROUGH
0
50
KILOMETRES
6278base.cdr
Dm JW

Figure 1a

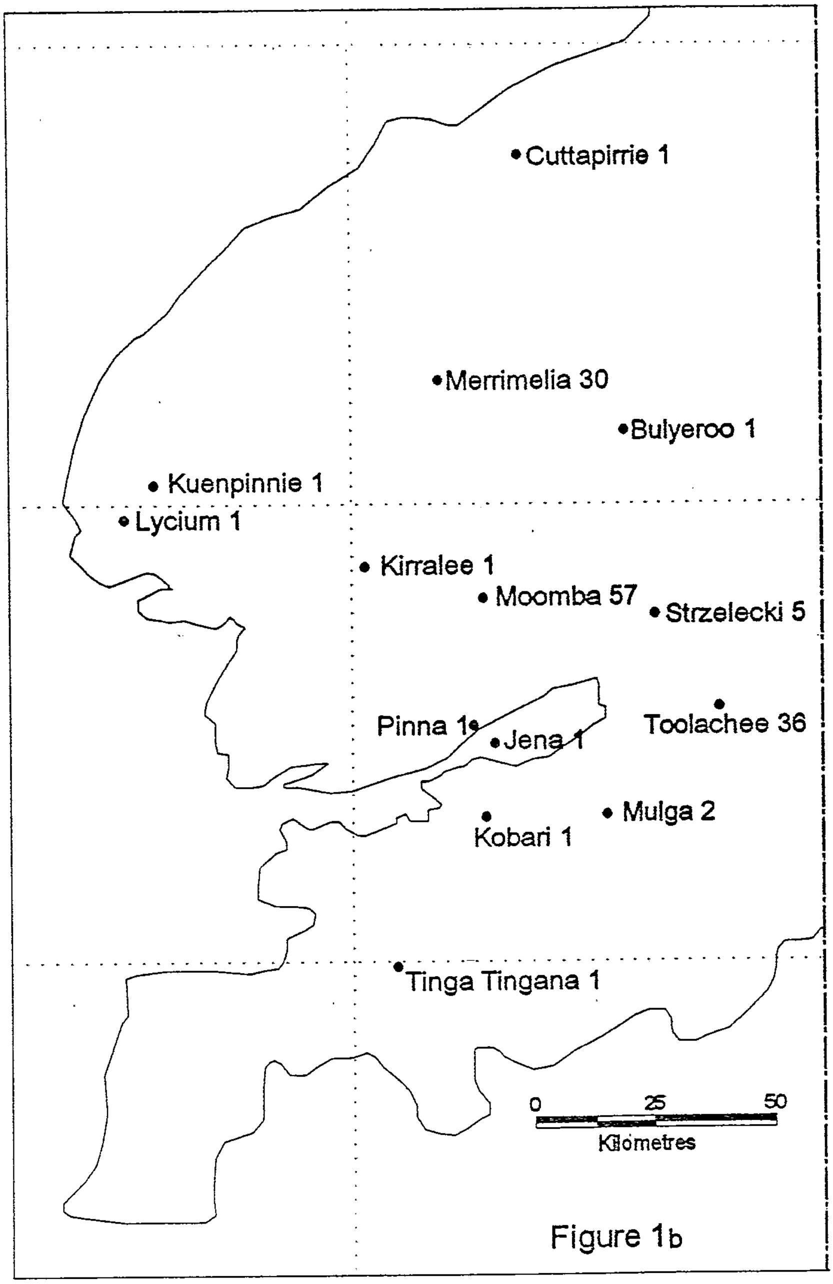

Cuttapirrie 1
Merrimelia 30
Bulyeroo 1
Kuenpinnie 1
Lycium 1
Kirralee 1
Moomba 57
Strzelecki 5
Pinna 1
Jena 1
Toolachee 36
Mulga 2
Kobari 1
Tinga Tingana 1
0
25
50
Kilometres

Figure 1b

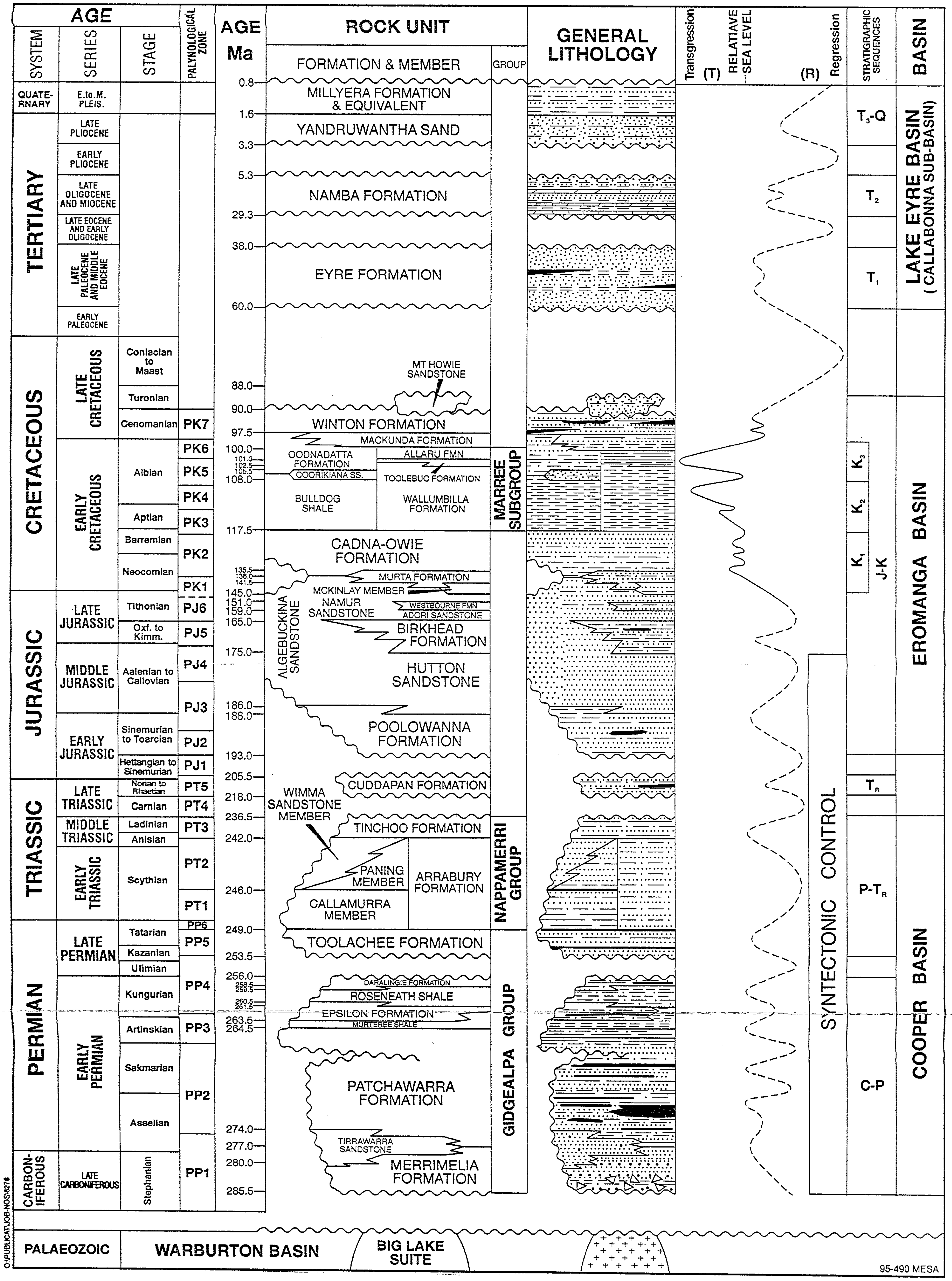
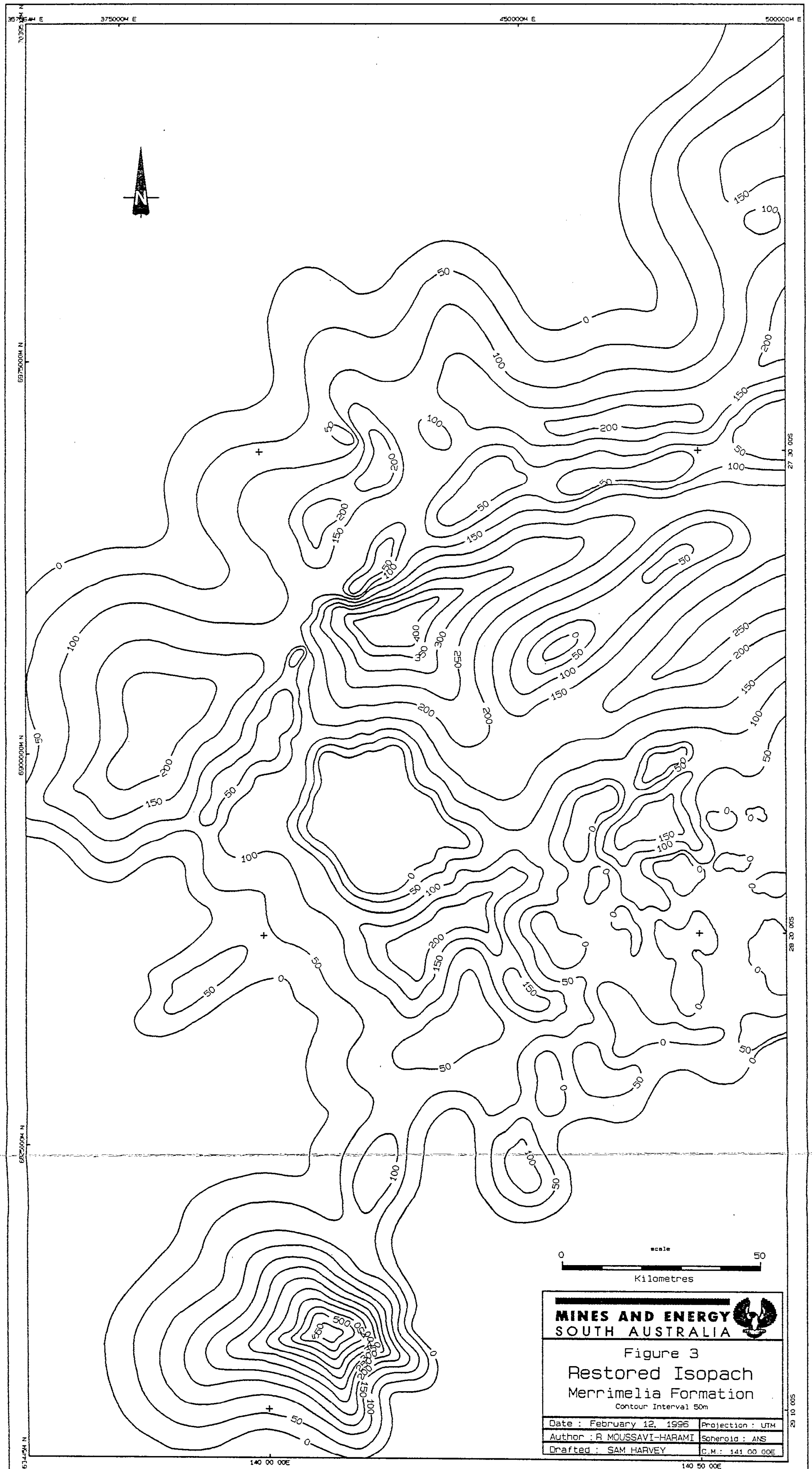


Figure 2 Generalised stratigraphic column and sequences of the Cooper, Eromanga and lake Eyre Basins in northeast South Australia.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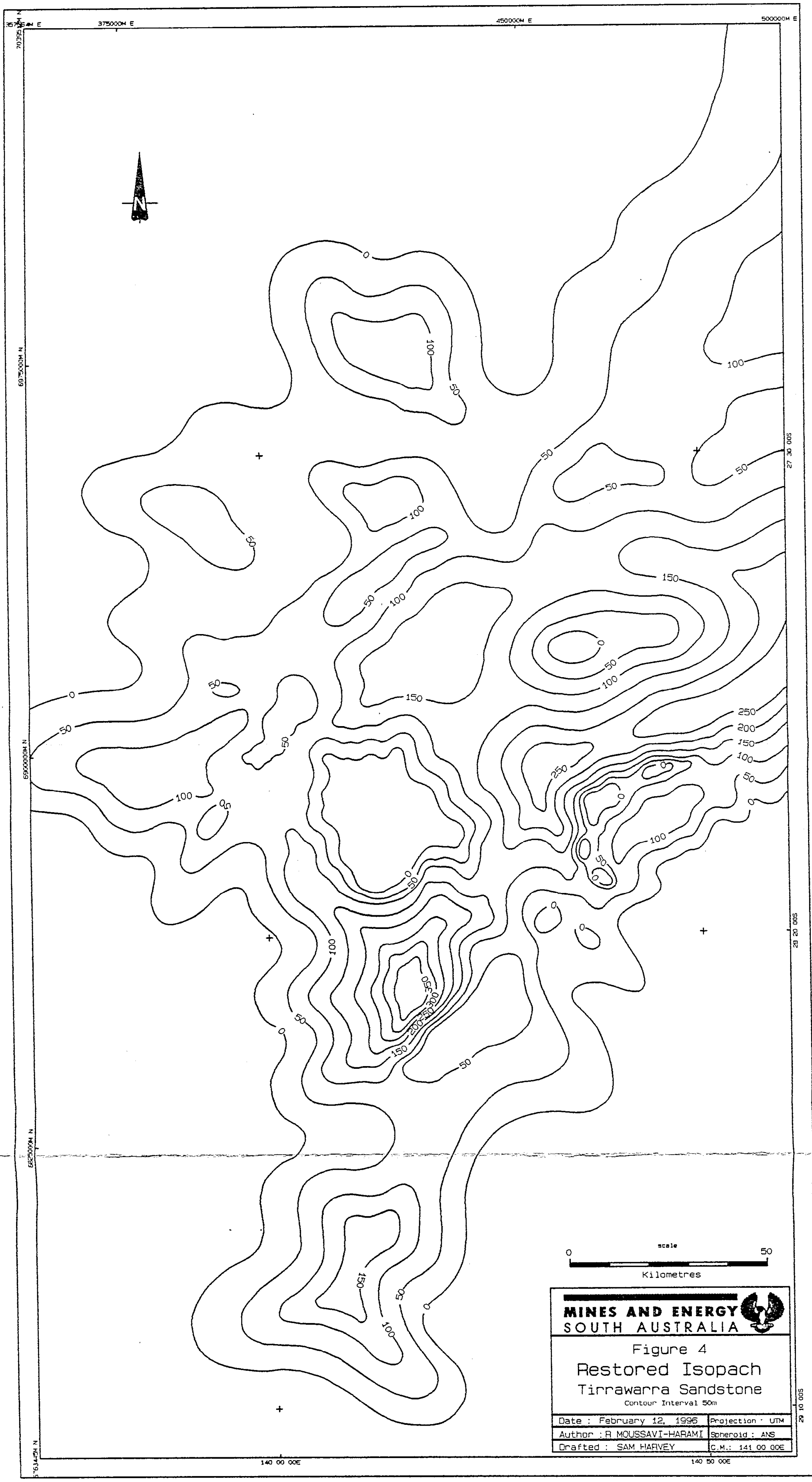
500000M E
6975000M N
6900000M N
6825000M N
27 30 00S
28 20 00S
29 10 00S
140 00 00E
140 50 00E
N
scale
0
50
Kilometres
MINES AND ENERGY
SOUTH AUSTRALIA
Figure 3
Restored Isopach
Merrimelia Formation
Contour Interval 50m
Date : February 12, 1996
Author : R MOUSSAVI-HARAMI
Drafted : SAM HARVEY
Projection : UTM
Spheroid : ANS
C.M.: 141 00 00E



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6975000M N
6900000M N
6825000M N
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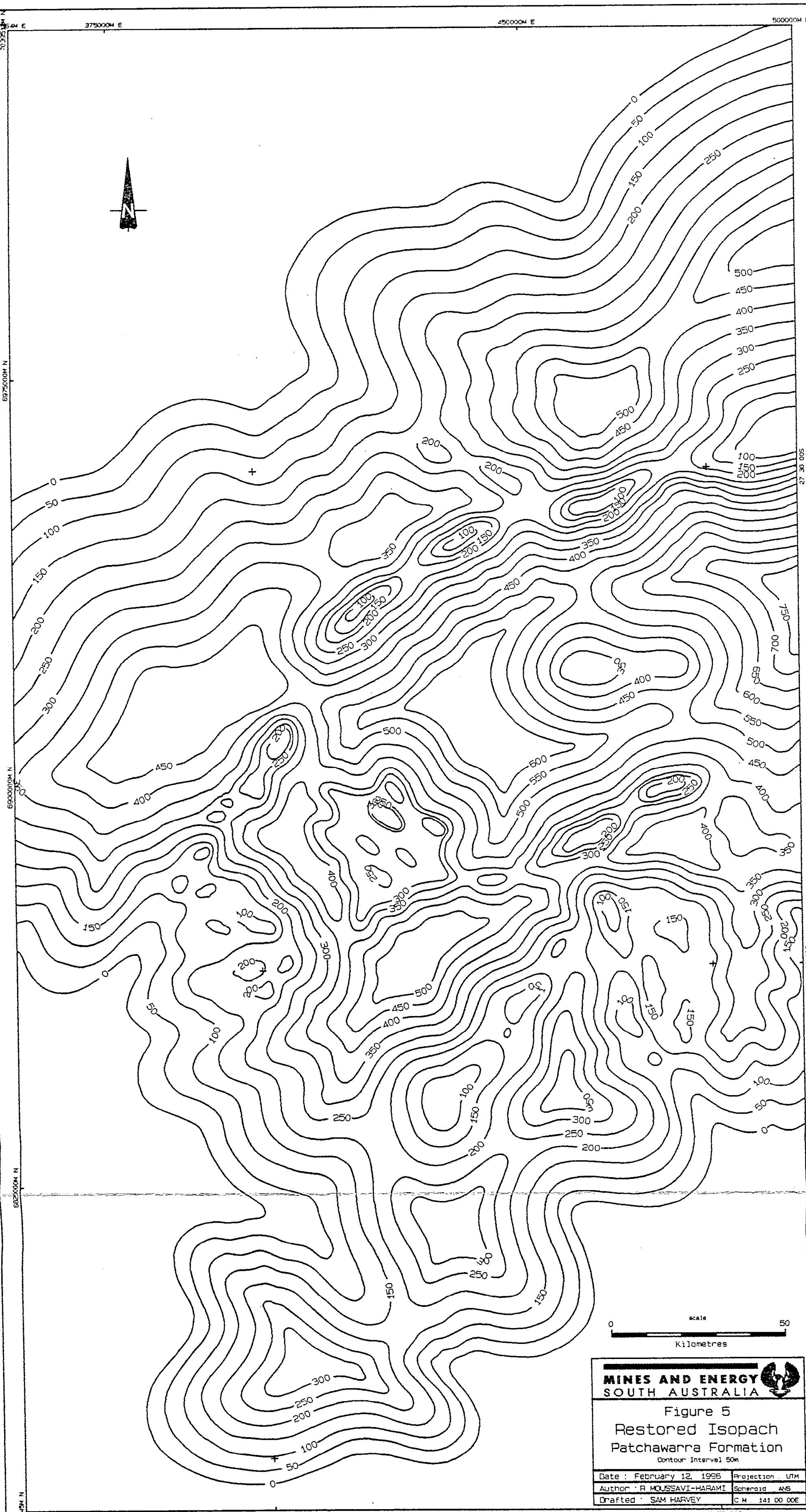
29 20 00S
29 10 00S
140 00 00E
140 50 00E
N
0
50
100
150
200
250
300
350
scale
0
50
Kilometres
MINES AND ENERGY
SOUTH AUSTRALIA
Figure 4
Restored Isopach
Tirrawarra Sandstone
Contour Interval 50m
Date : February 12, 1996
Projection : UTM
Author : R MOUSSAVI-HARAMI
Spheroid : ANS
Drafted : SAM HARVEY
C.M.: 141 00 00E



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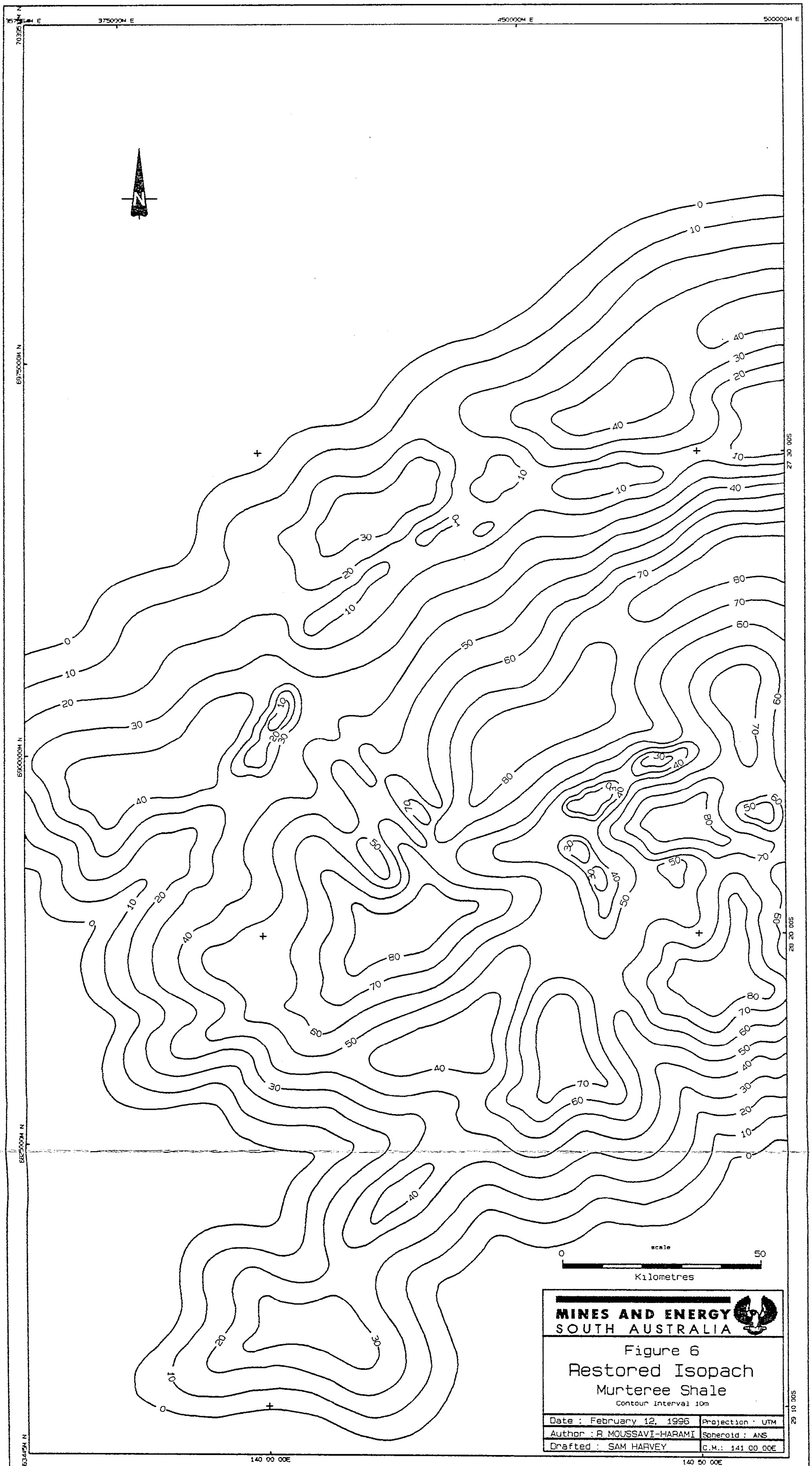
6825000M N
27 30 00S
28 20 00S
29 10 00S
140 00 00E
140 50 00E
N
scale
0
50
Kilometres
MINES AND ENERGY
SOUTH AUSTRALIA
Figure 5
Restored Isopach
Patchawarra Formation
Contour Interval 50m
Date : February 12, 1996
Projection . UTM
Author : R MOUSSAVI-HARAMI
Spheroid ANS
Drafted : SAM HARVEY
C M 141 00 00E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140 00 00E
140 50 00E
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scale
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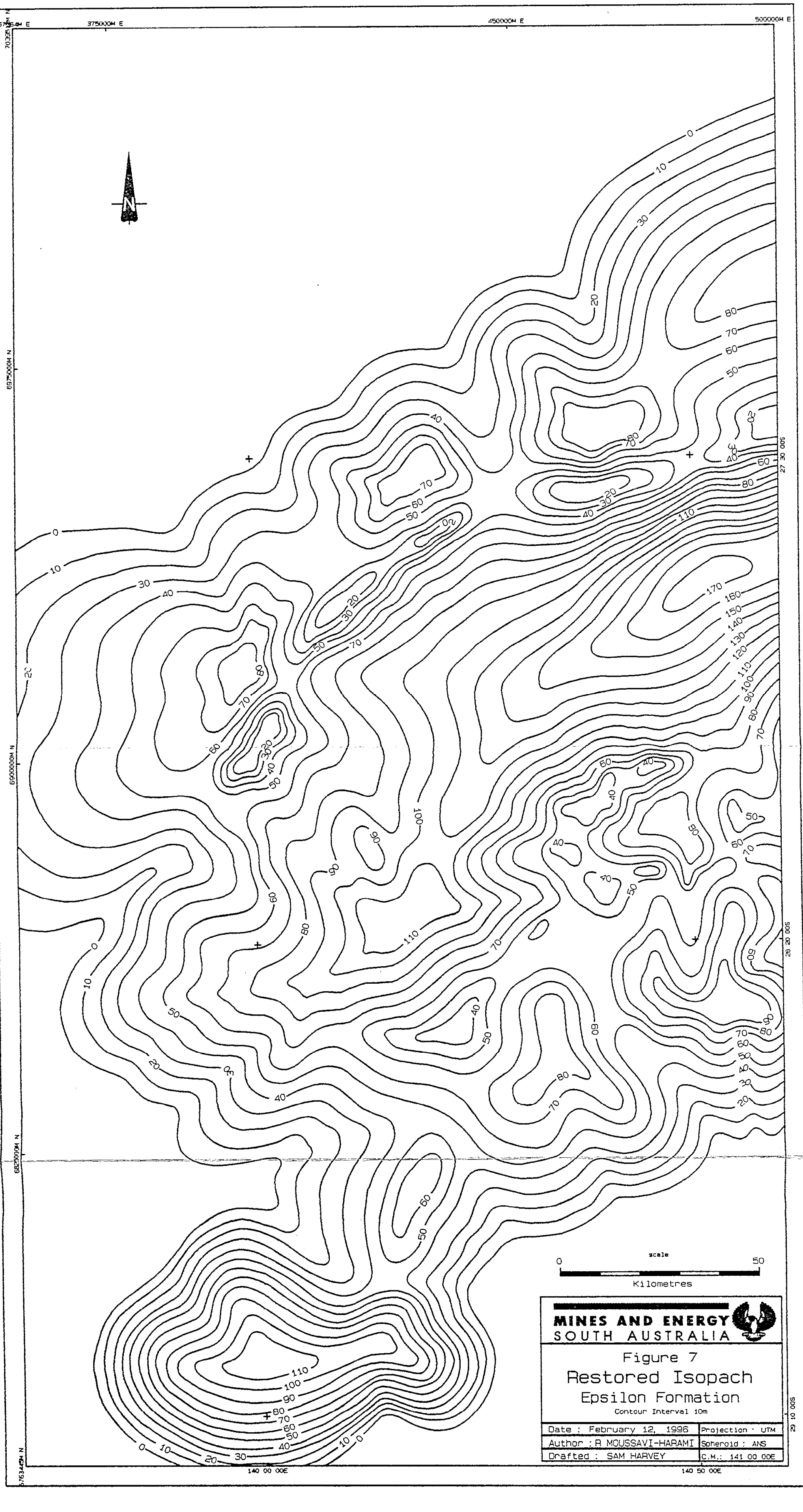
50
Kilometres
MINES AND ENERGY
SOUTH AUSTRALIA
Figure 6
Restored Isopach
Murteree Shale
Contour Interval 10m
Date : February 12, 1996
Projection : UTM
Author : R MOUSSAVI-HARAMI
Spheroid : ANS
Drafted : SAM HARVEY
C.M.: 141 00 00E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29 10 00S
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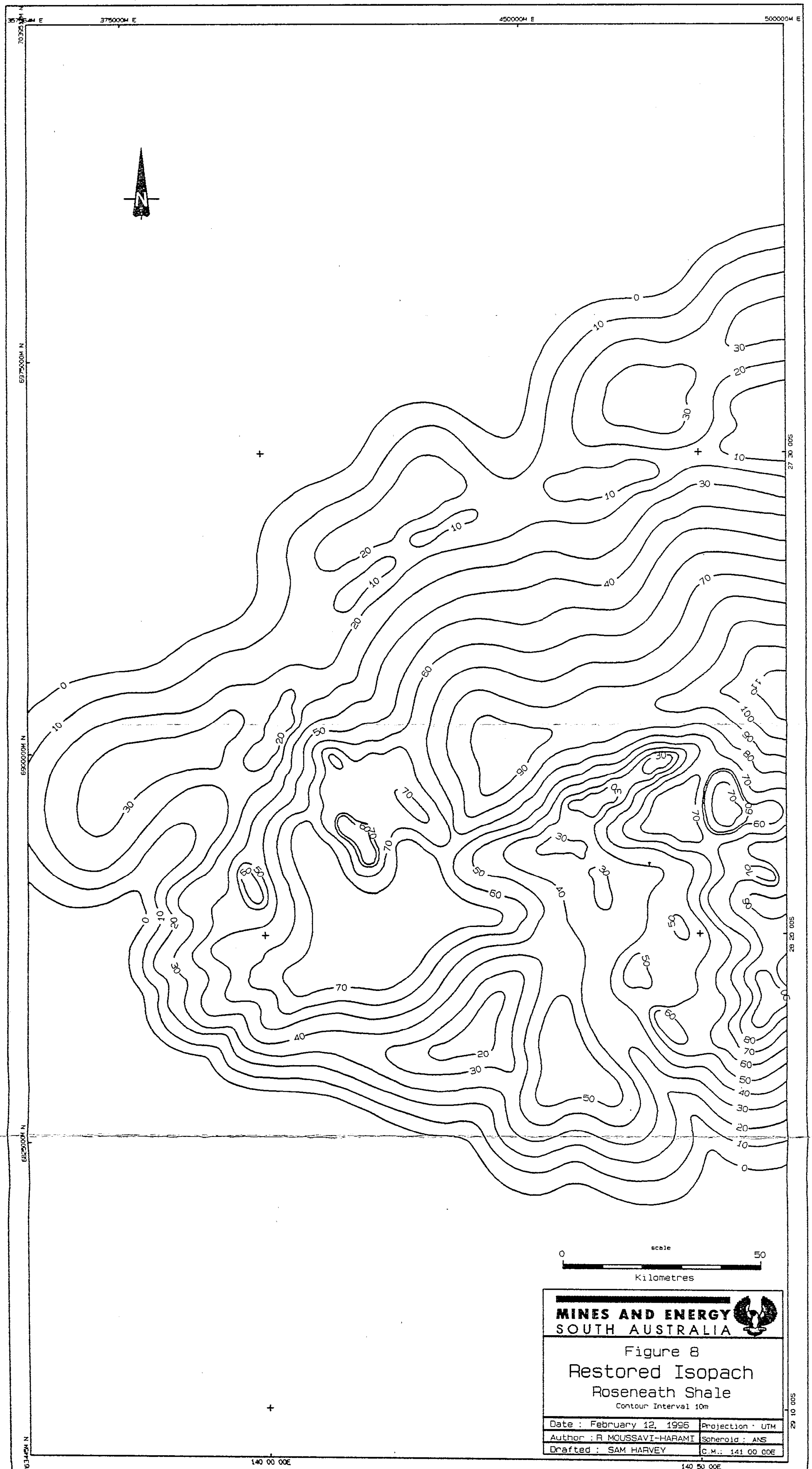
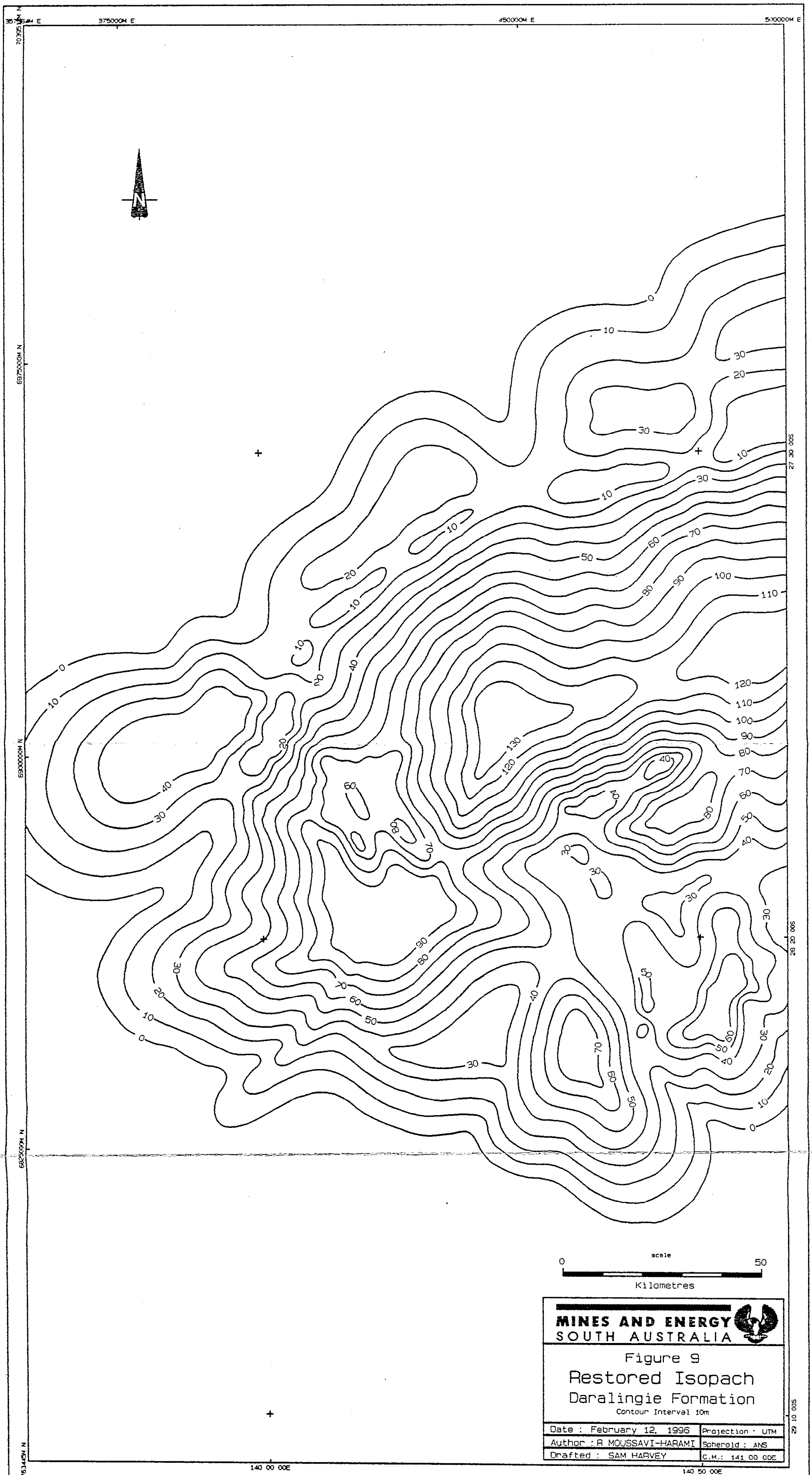
N
scale
0
50
Kilometres
MINES AND ENERGY
SOUTH AUSTRALIA
Figure 7
Restored Isopach
Epsilon Formation
Contour Interval 10m
Date : February 12, 1996
Projection : UTM
Author : R MOUSSAVI-HARAMI
Spheroid : ANS
Drafted : SAM HARVEY
C.M.: 141 00 00E



MINES AND ENERGY
SOUTH AUSTRALIA
Figure 8
Restored Isopach
Roseneath Shale
Contour Interval 10m
scale
0
50
Kilometres
Date : February 12, 1996
Author : R MOUSSAVI-HARAMI
Drafted : SAM HARVEY
Projection : UTM
Spheroid : ANS
C.M.: 141 00 00E
375000M E
450000M E
500000M E
6975000M N
6900000M N
6825000M N
140 00 00E
140 50 00E
27 30 00S
28 20 00S
29 10 00S



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6900000M N
6825000M N
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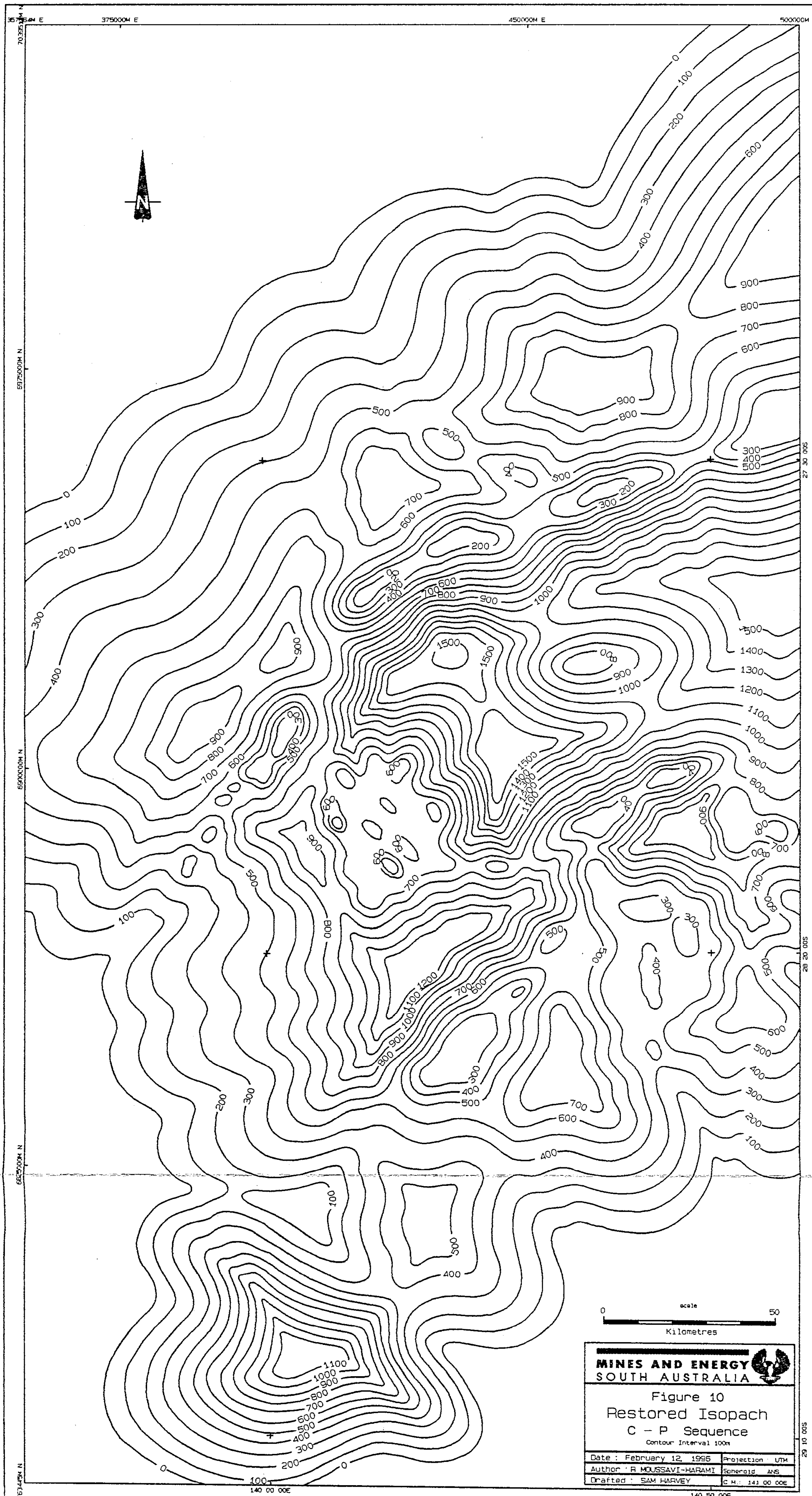
28 20 00S
29 10 00S
140 00 00E
140 50 00E
N
scale
0
50
Kilometres
MINES AND ENERGY
SOUTH AUSTRALIA
Figure 9
Restored Isopach
Daralingie Formation
Contour Interval 10m
Date : February 12, 1996
Projection : UTM
Author : R MOUSSAVI-HARAMI
Scheroid : ANS
Drafted : SAM HARVEY
C.M.: 141 00 00E



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450000M E
500000M E
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28 20 00S
29 10 00S
140 00 00E
140 50 00E
scale
0
50
Kilometres
MINES AND ENERGY
SOUTH AUSTRALIA
Figure 10
Restored Isopach
C – P Sequence
Contour Interval 100m
Date : February 12, 1996
Author : R MOUSSAVI-HARAMI
Drafted : SAM HARVEY
Projection : UTM
Spheroid ANS
C.M.: 141 00 00E

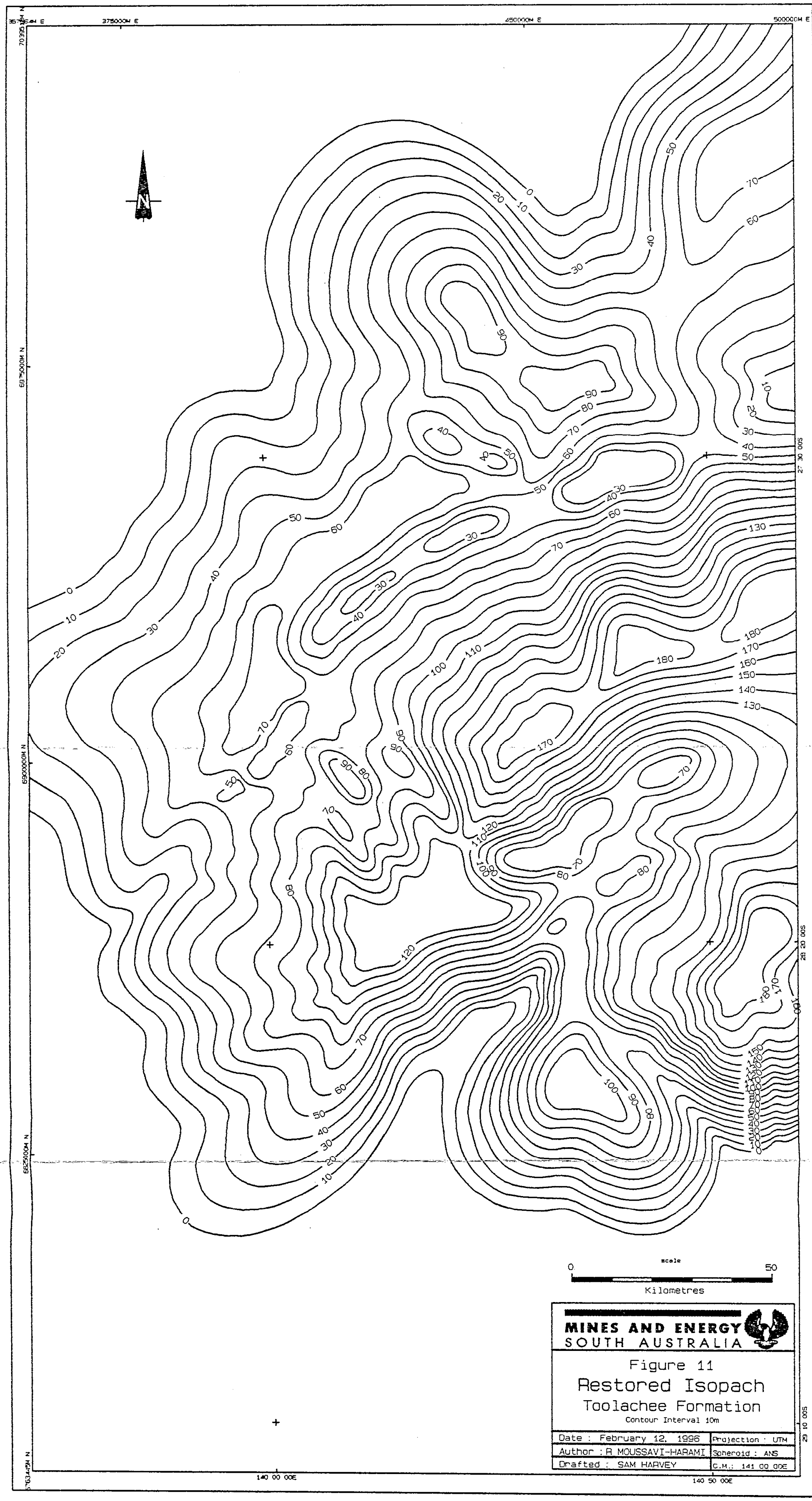
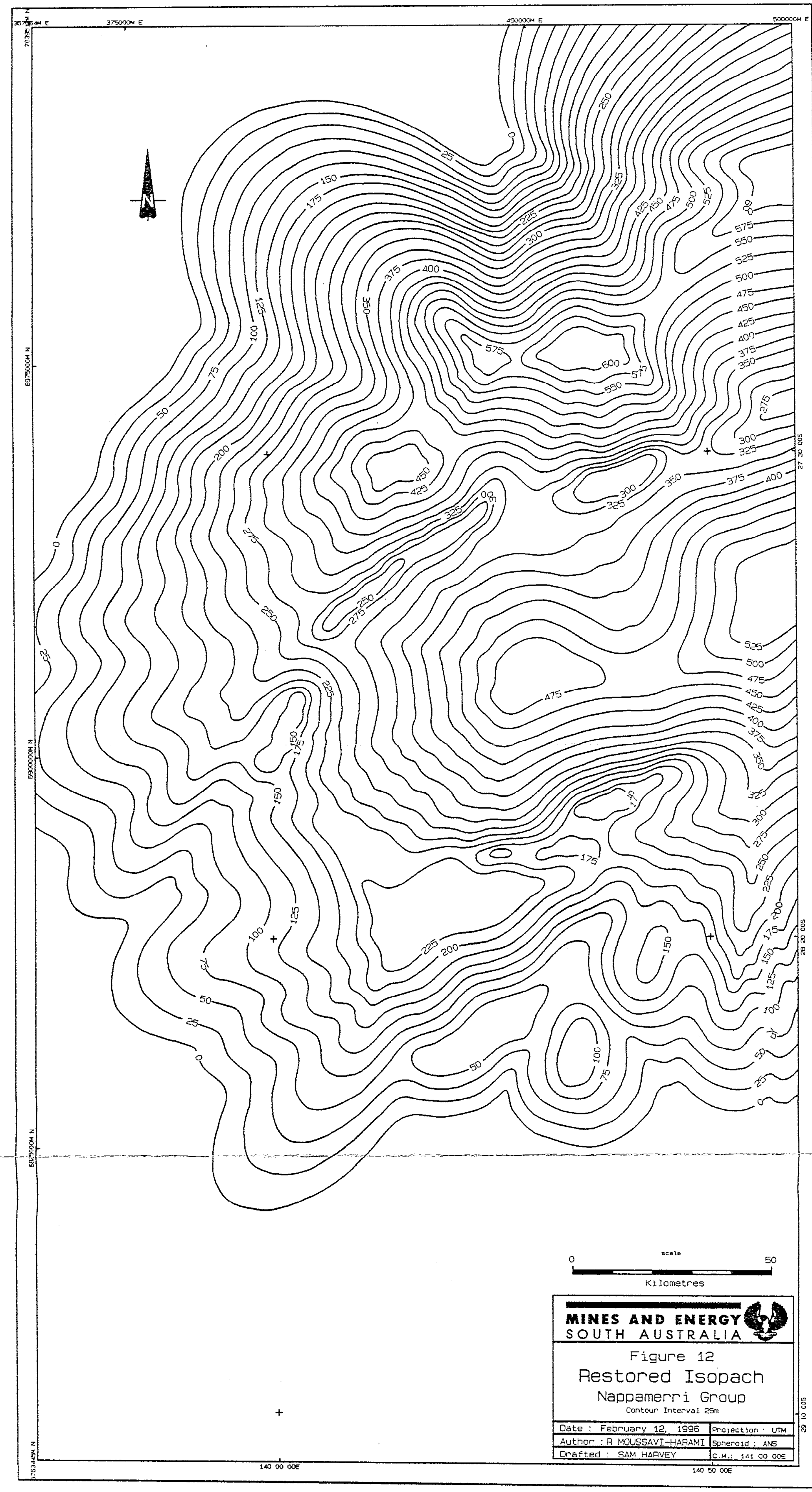


Figure 11
Restored Isopach
Toolachee Formation
Contour Interval 10m

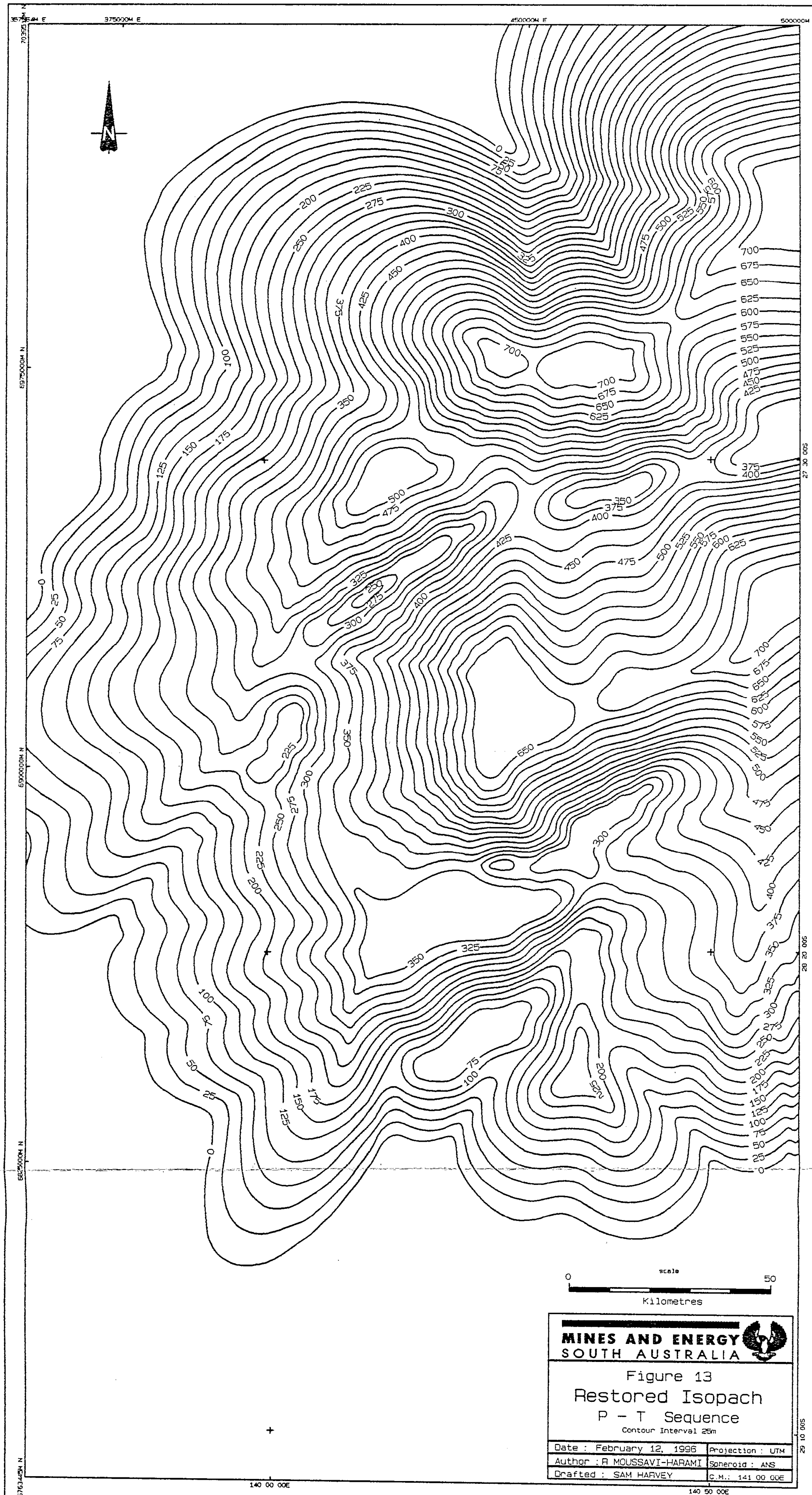
Date : February 12, 1996	Projection : UTM
Author : R MOUSSAVI-HARAMI	Spheroid : ANS
Drafted : SAM HARVEY	C.M.: 141 00 00E



MINES AND ENERGY
SOUTH AUSTRALIA

Figure 12
Restored Isopach
Nappamerri Group
Contour Interval 25m

Date : February 12, 1996	Projection : UTM
Author : R MOUSSAVI-HARAMI	Spheroid : ANS
Drafted : SAM HARVEY	C.M.: 141 00 00E



MINES AND ENERGY SOUTH AUSTRALIA

Figure 13
Restored Isopach
P - T Sequence
Contour Interval 25m

Date : February 12, 1996	Projection : UTM
Author : R MOUSSAVI-HARAMI	Spheroid : ANS
Drafted : SAM HARVEY	C.M.: 141 00 00E

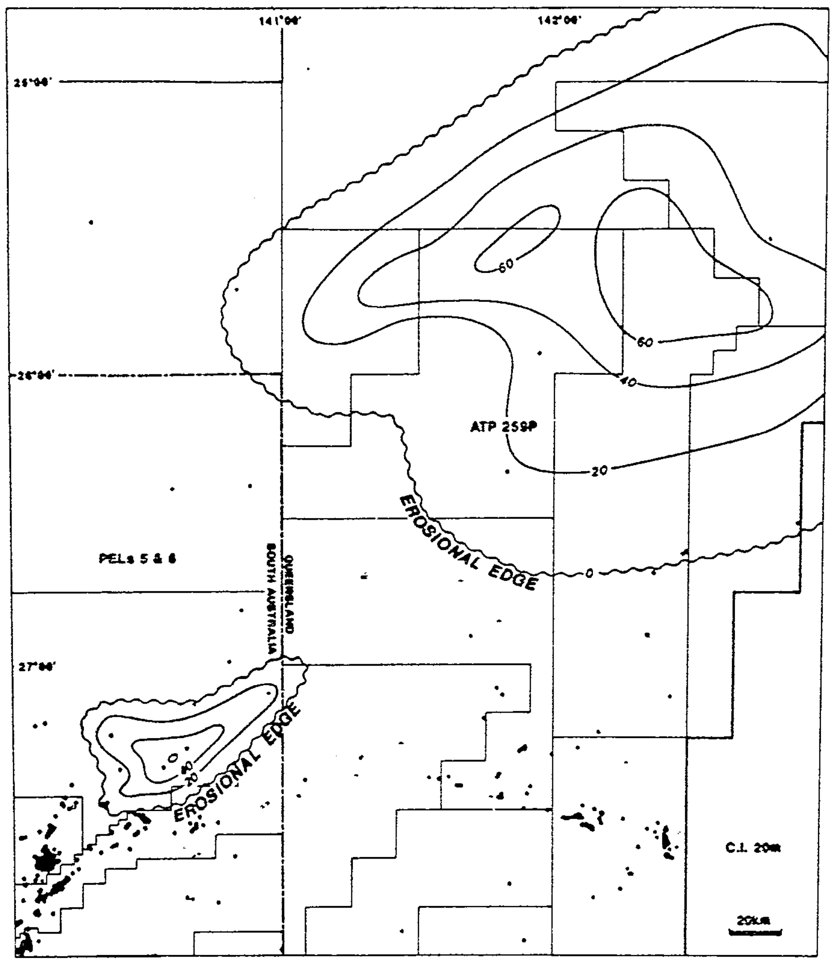


Figure 14 Isopach map of Late Triassic Cuddapan Formation (After Powis, 1989).

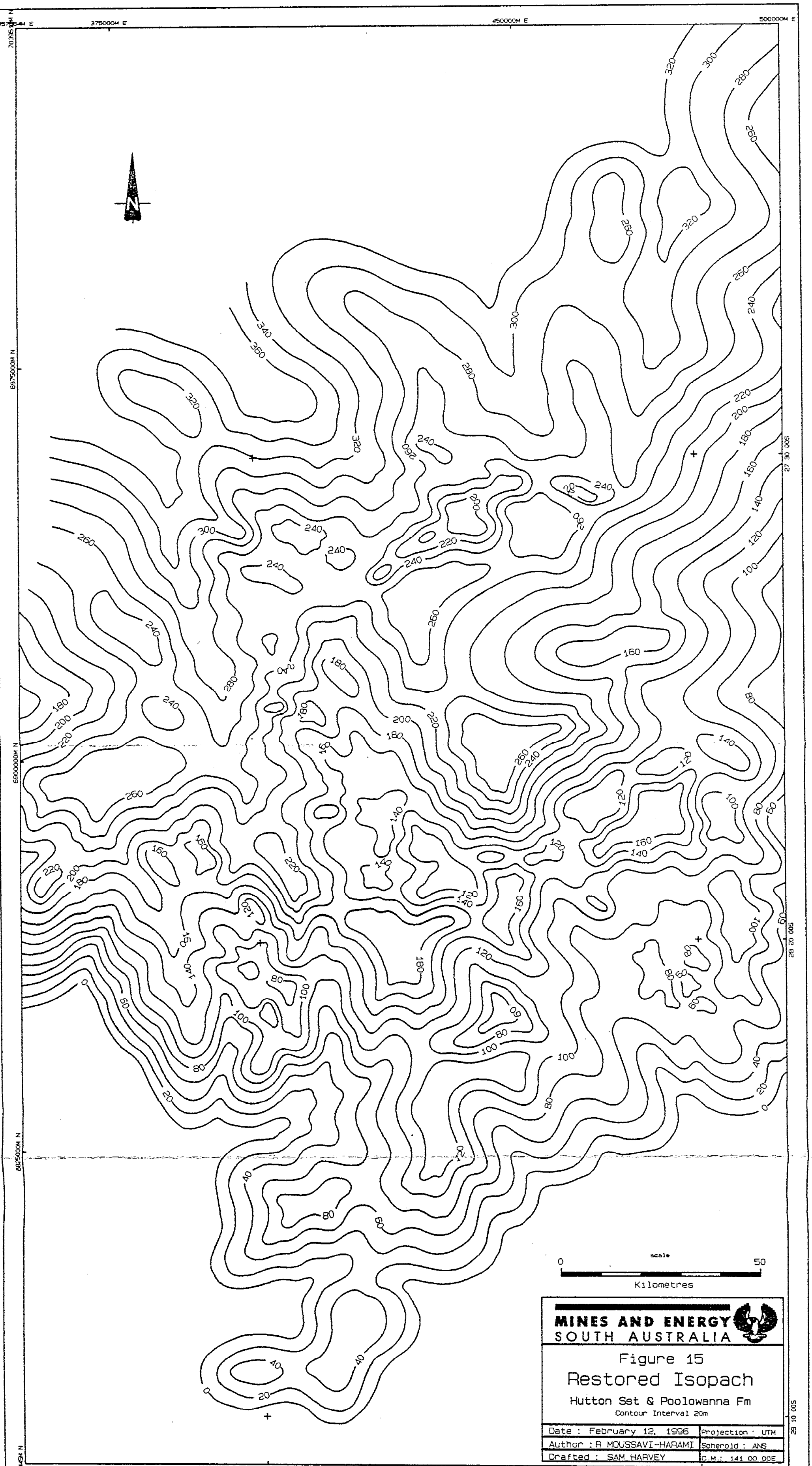


Figure 15
Restored Isopach
Hutton Sst & Poolowanna Fm

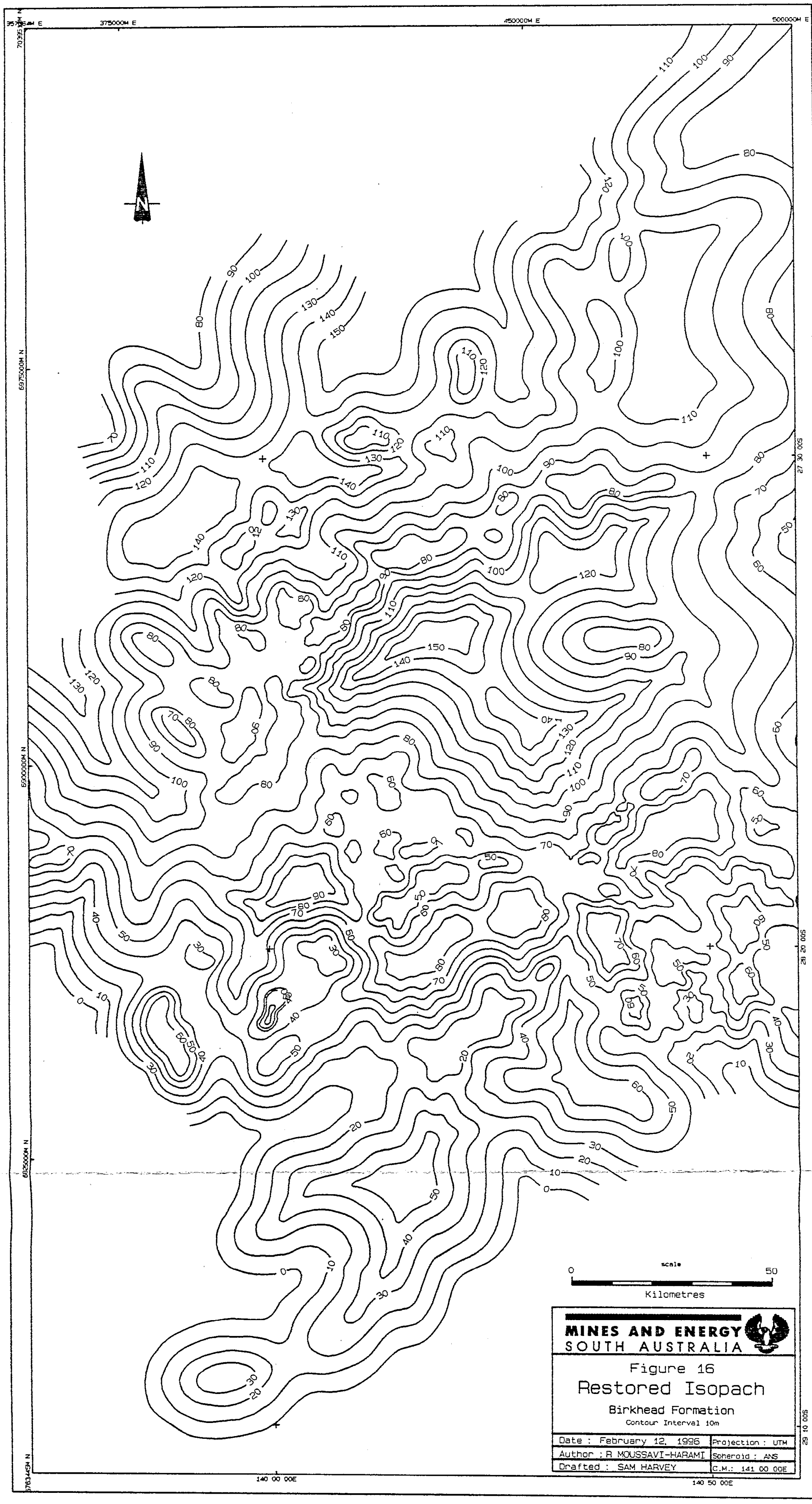
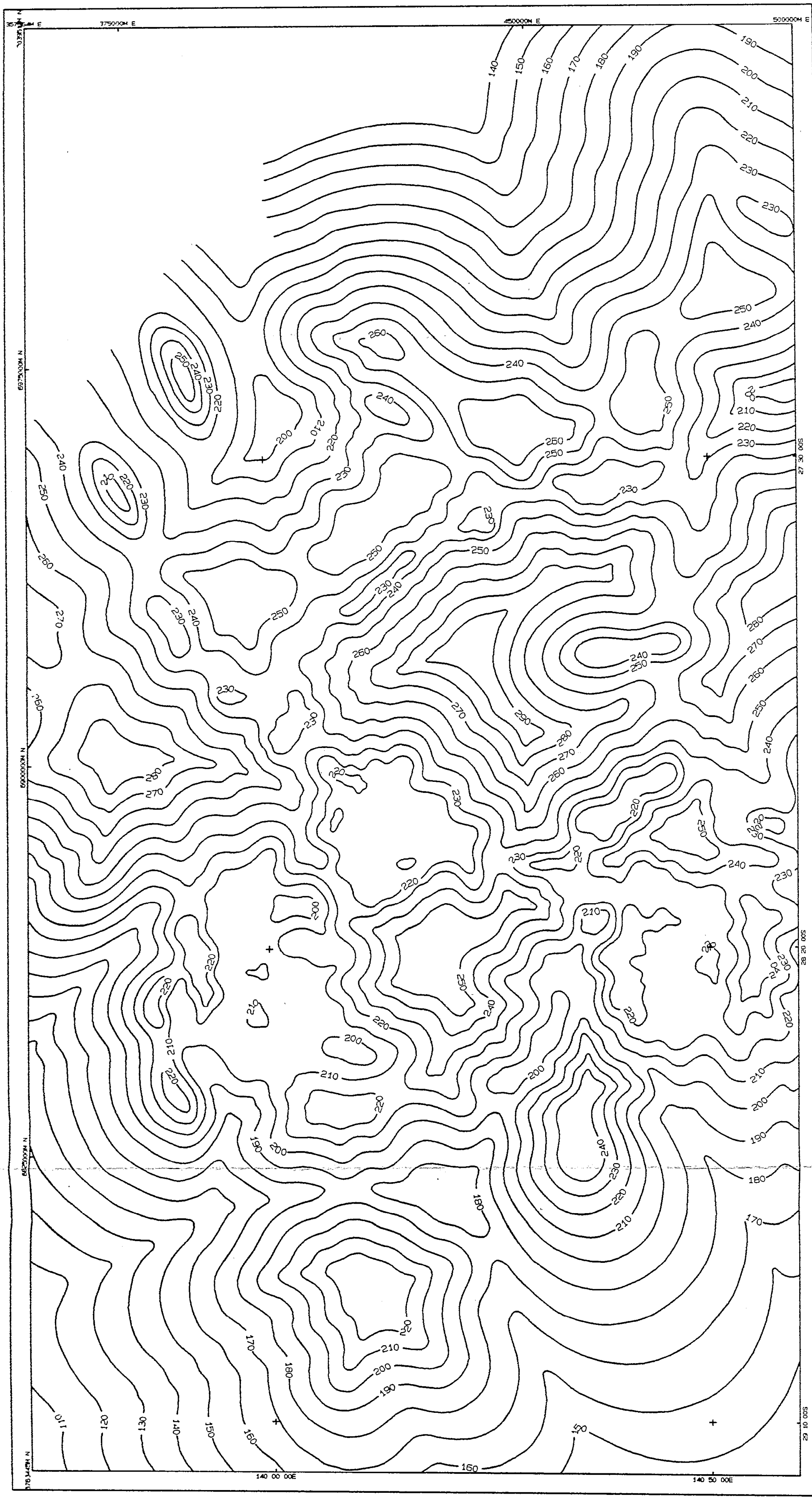


Figure 16
Restored Isopach
Birkhead Formation
Contour Interval 10m



scale

0 50

Kilometres

MINES AND ENERGY
SOUTH AUSTRALIA

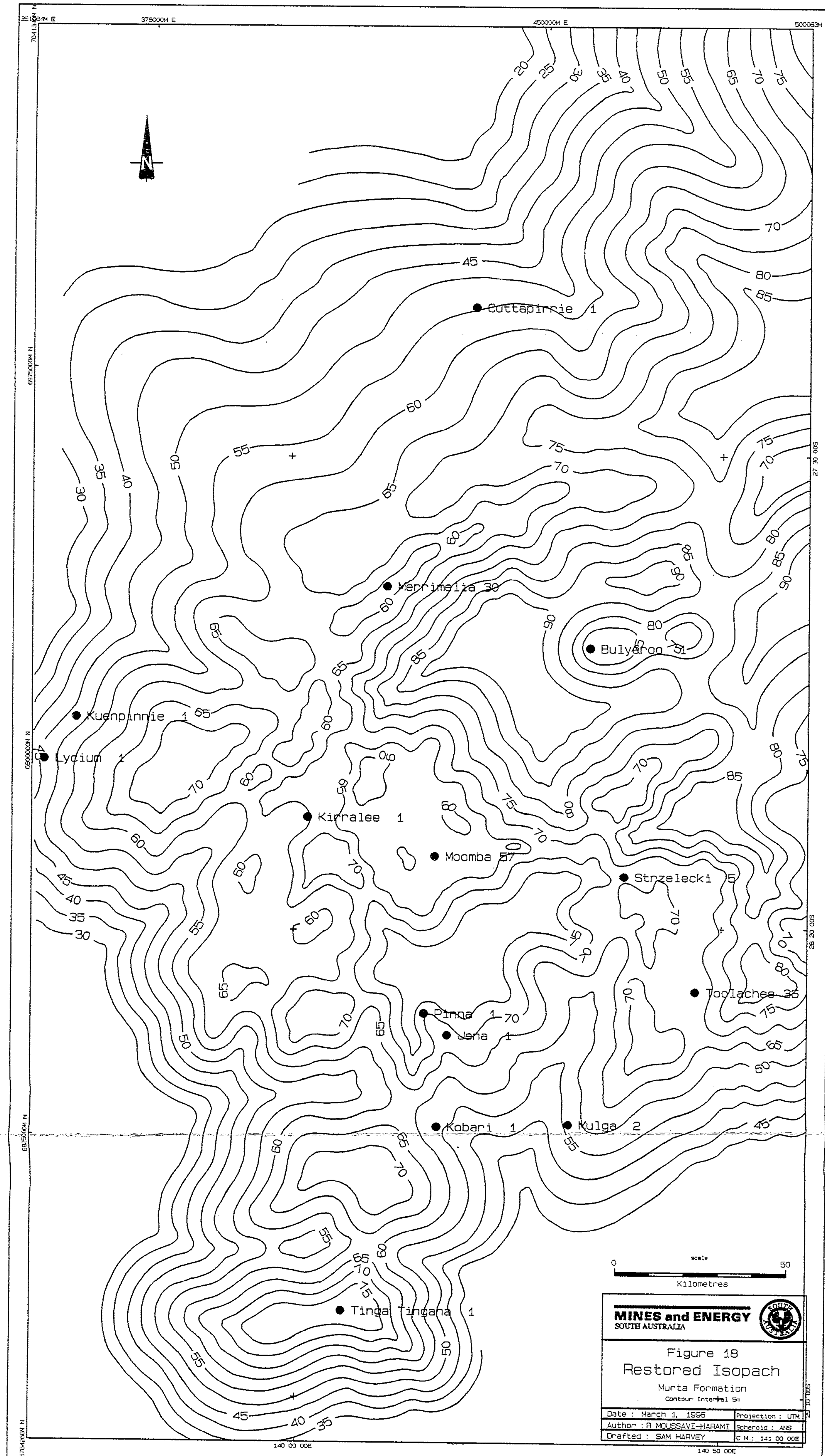
Figure 17

Restored Isopach

Westbourne Fm, Namur & Adori Ssts

Contour Interval 10m

Date : February 12, 1996	Projection : UTM
Author : R MOUSSAVI-HARAMI	Spheroid : ANS
Drafted : SAM HARVEY	C.M.: 141 00 00E



375000M E
450000M E
500063M E
6975000M N
6900000M N
6825000M N
27 30 00S
28 20 00S
140 00 00E
140 50 00E
N
Cuttapirrie 1
Merrimelia 30
Bulyaroo 1
Kuenpinnie 1
Lycium 1
Kirralee 1
Moomba 57
Strzelecki 5
Toolachee 35
Pinna 1
Jena 1
Kobari 1
Mulga 2
Tinga Tingana 1
scale
0
50
Kilometres
MINES and ENERGY
SOUTH AUSTRALIA
Figure 18
Restored Isopach
Murta Formation
Contour Interval 5m
Date : March 1, 1996
Author : R MOUSSAVI-HARAMI
Drafted : SAM HARVEY
Projection : UTM
Spheroid : ANS
C.M. : 141 00 00E

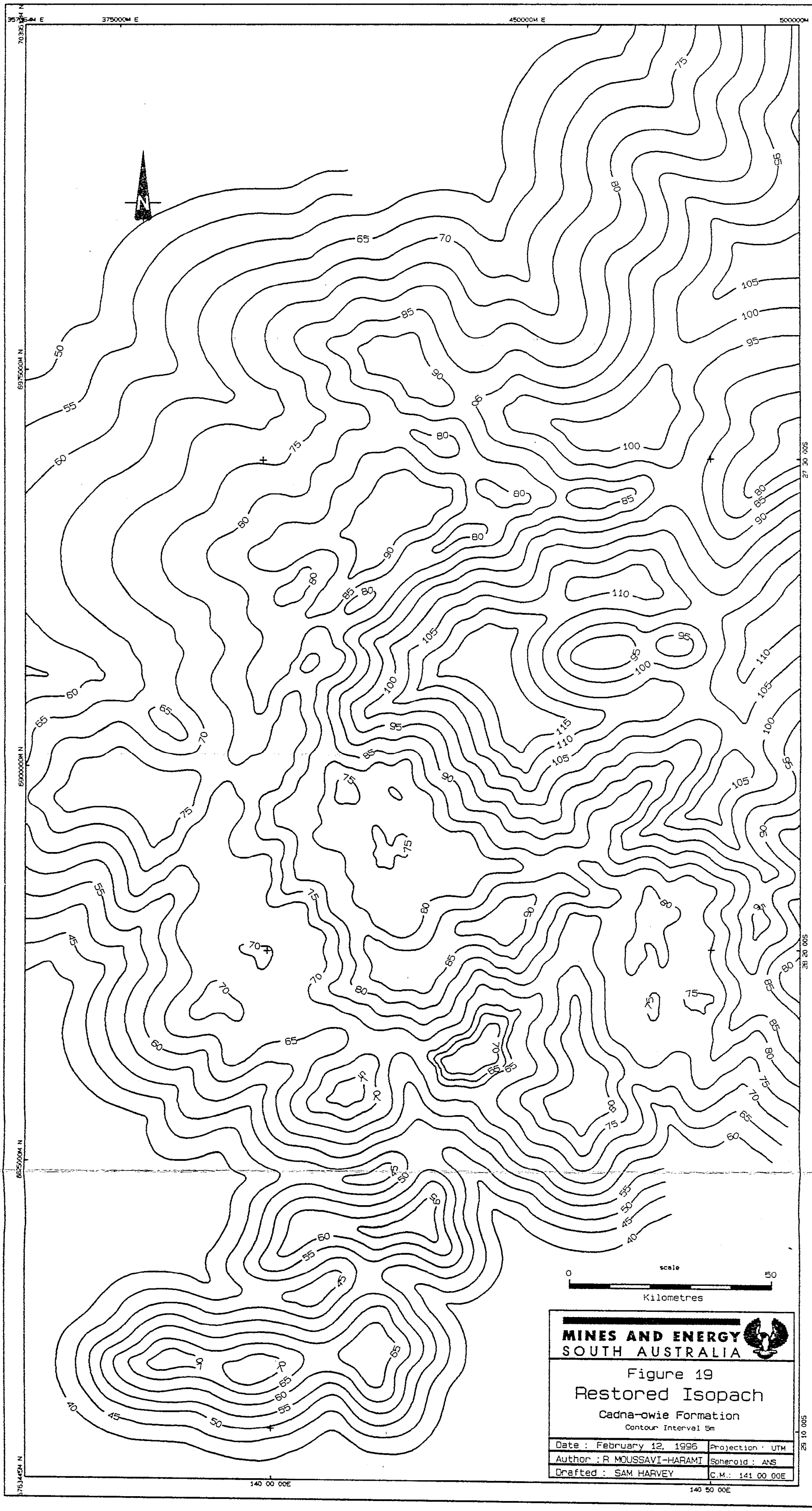
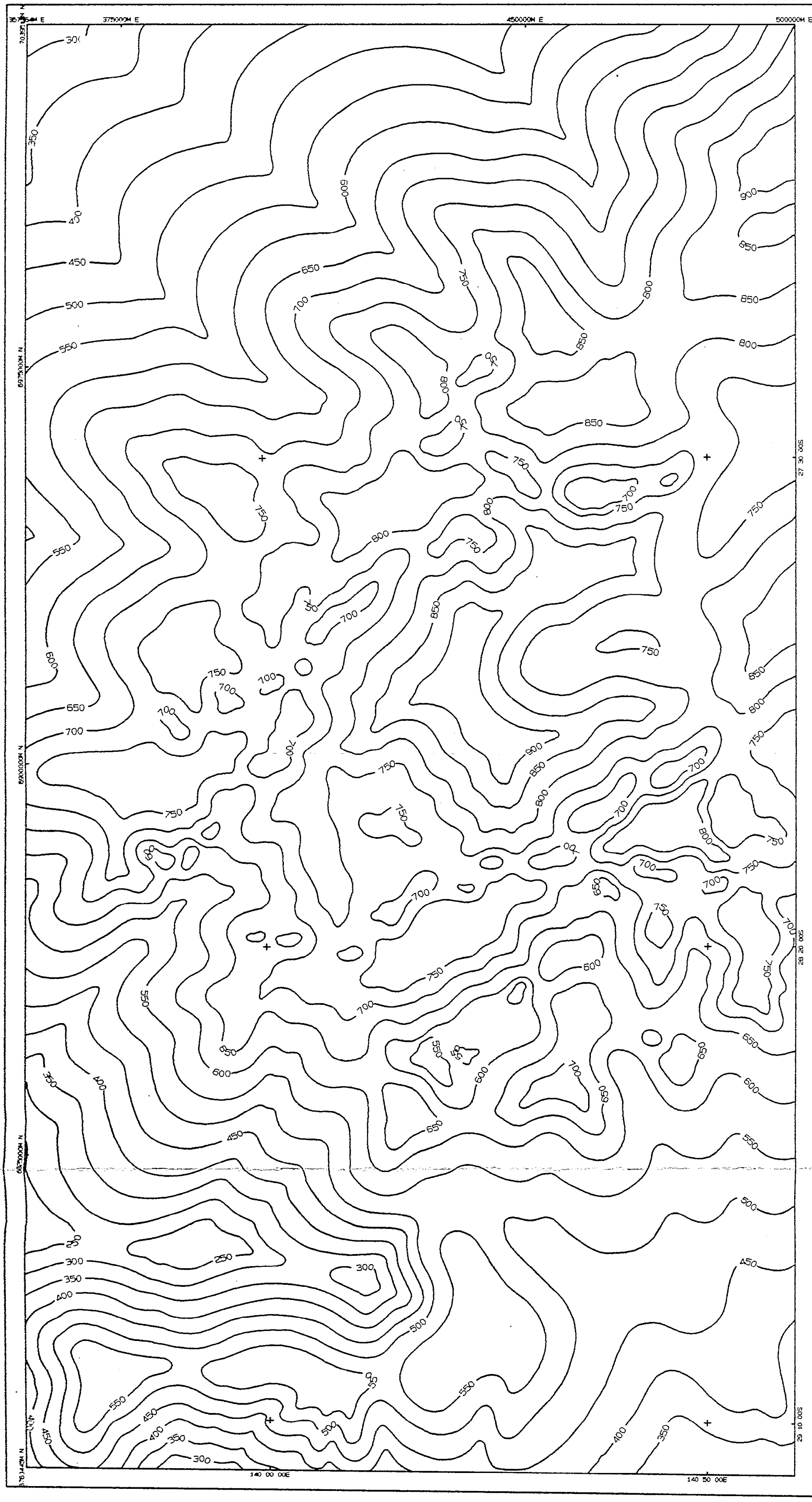


Figure 19
Restored Isopach
Cadna-owie Formation



scale

0 50

Kilometres

MINES AND ENERGY
SOUTH AUSTRALIA

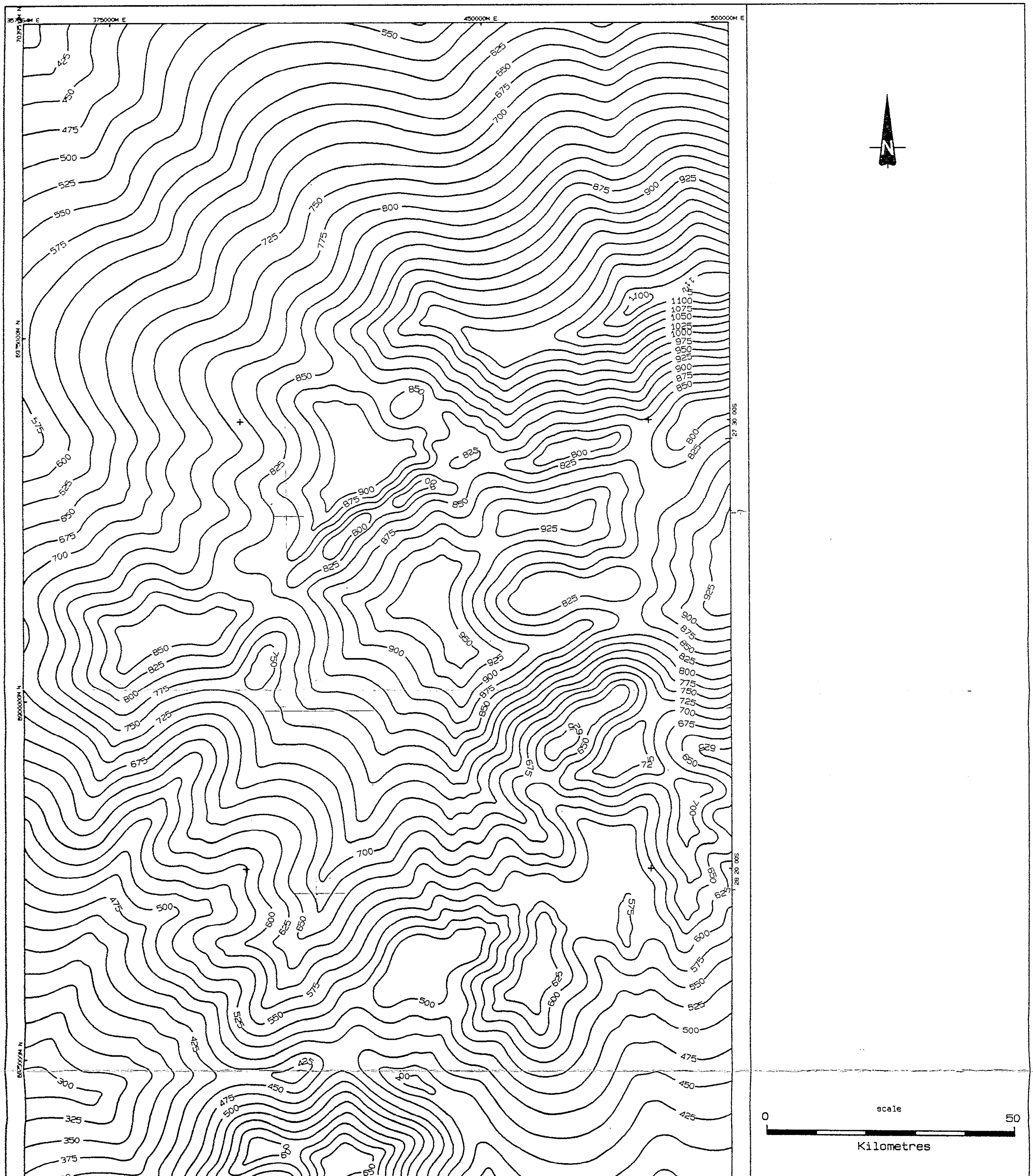
Figure 20

Restored Isopach

Marree Sbgrp & Mackunda Formation

Contour Interval 50m

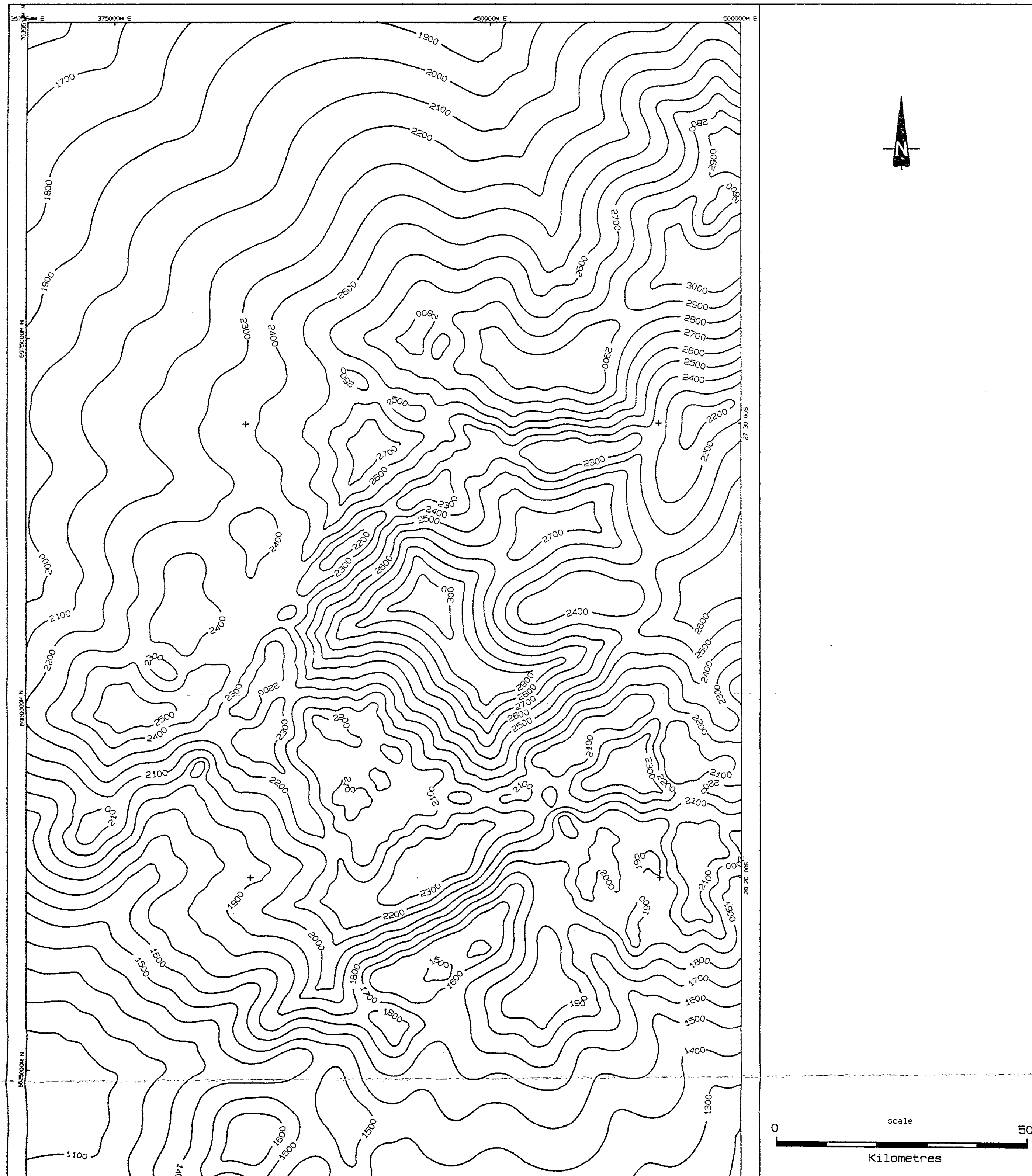
Date : February 12, 1996	Projection : UTM
Author : R MOUSSAVI-HARAMI	Spheroid : ANS
Drafted : SAM HARVEY	C.M.: 141 00 00E



MINES AND ENERGY
SOUTH AUSTRALIA

Figure 21
Restored Isopach
Winton Formation
Contour Interval 25m

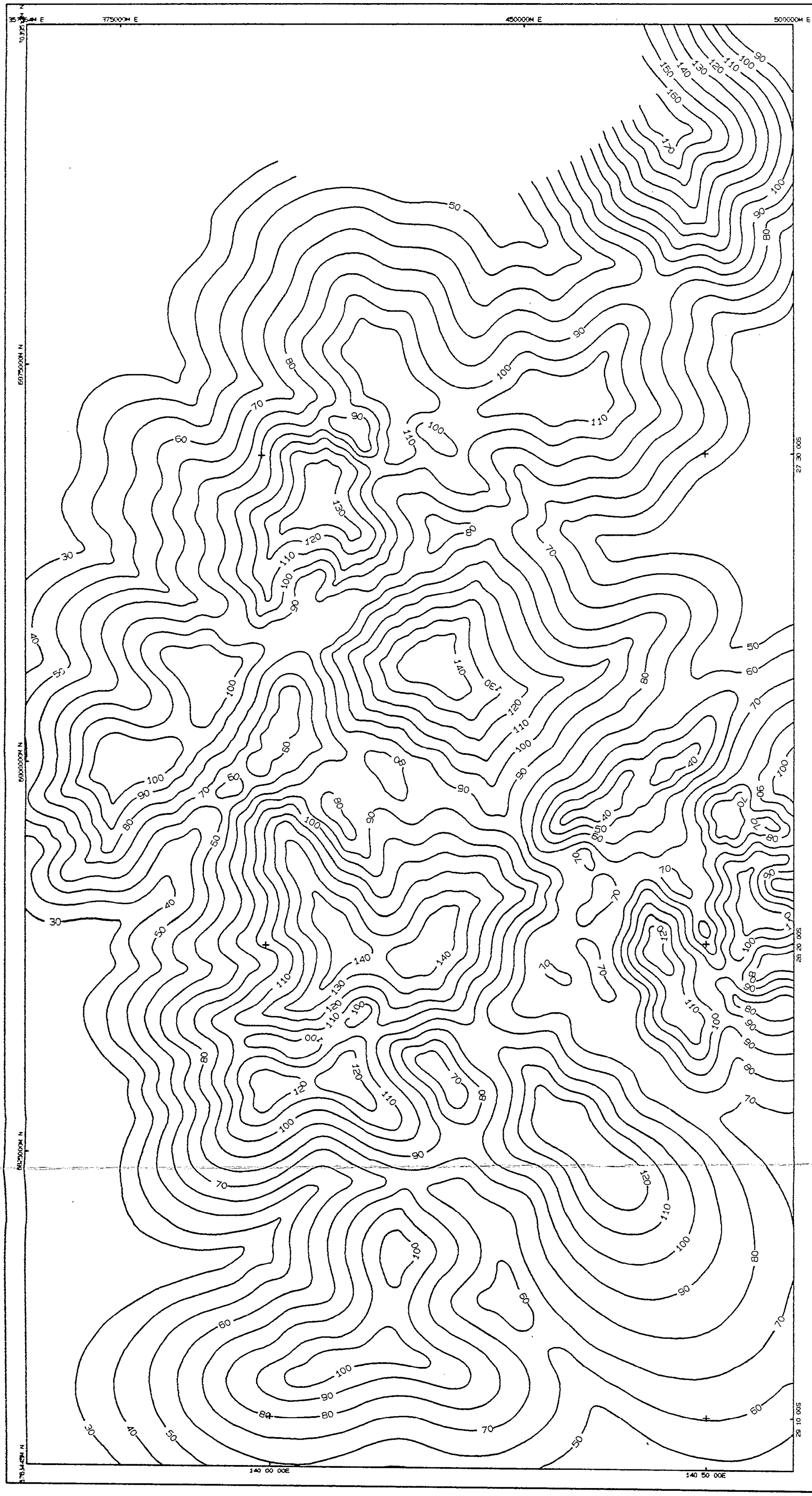
Date : February 12, 1996	Projection : UTM
Author : R MOUSSAVI-HARAMI	Spheroid : ANS
Drafted : SAM HARVEY	C.M.: 141 00 00E



MINES AND ENERGY
SOUTH AUSTRALIA

Figure 22
Restored Isopach
J – K Sequence
Contour Interval 100m

Date : February 12, 1996	Projection : UTM
Author : R MOUSSAVI-HARAMI	Spheroid : ANS
Drafted : SAM HARVEY	C.M.: 141 00 00E



N

scale

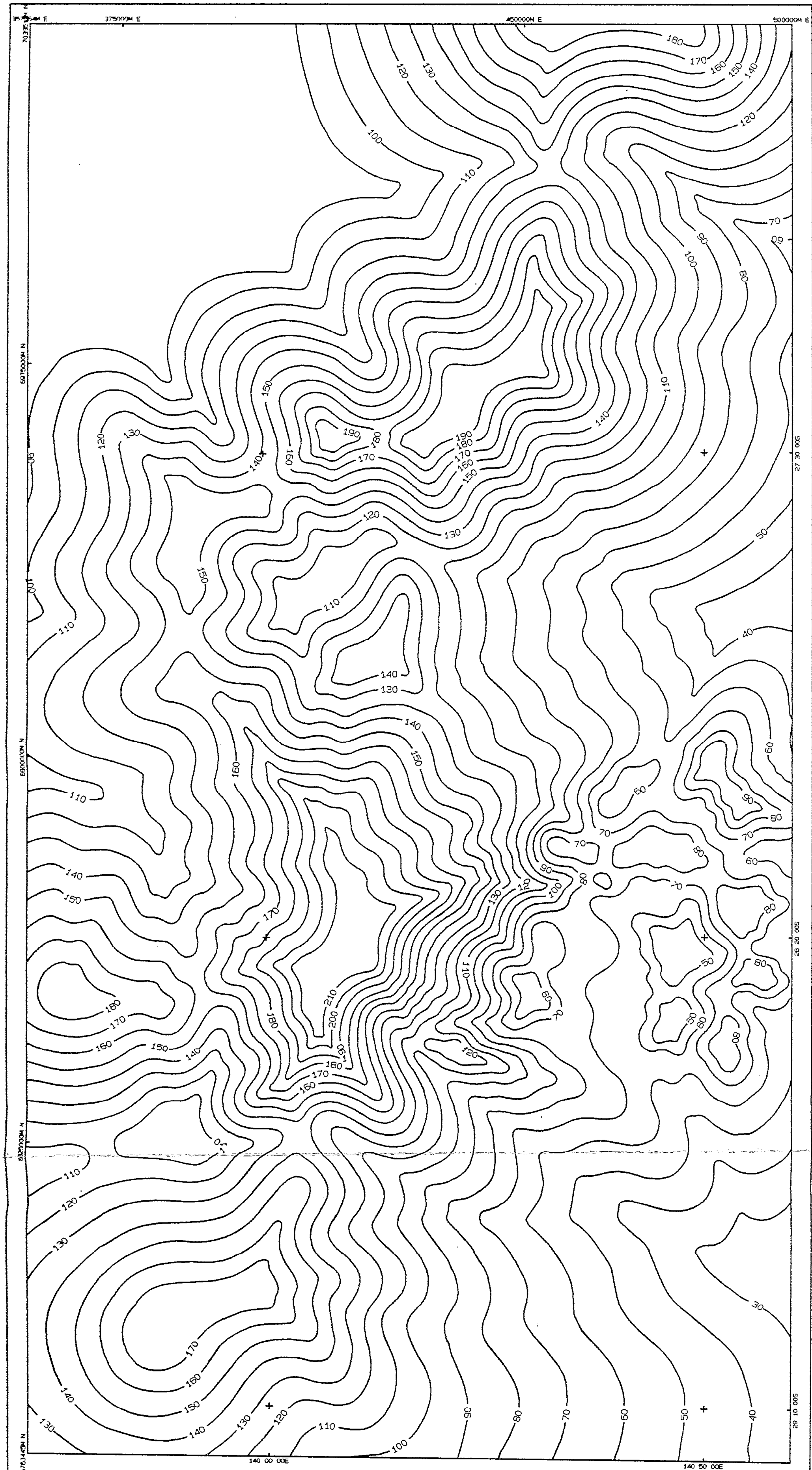
0 50

Kilometres

MINES AND ENERGY
SOUTH AUSTRALIA

Figure 23
Restored Isopach
Eyre Formation
Contour Interval 10m

Date : February 12, 1996	Projection : UTM
Author : R MOUSSAVI-HARAMI	Spheroid : ANS
Drafted : SAM HARVEY	C.M.: 141 00 00E



scale

0 50

Kilometres

MINES AND ENERGY
SOUTH AUSTRALIA

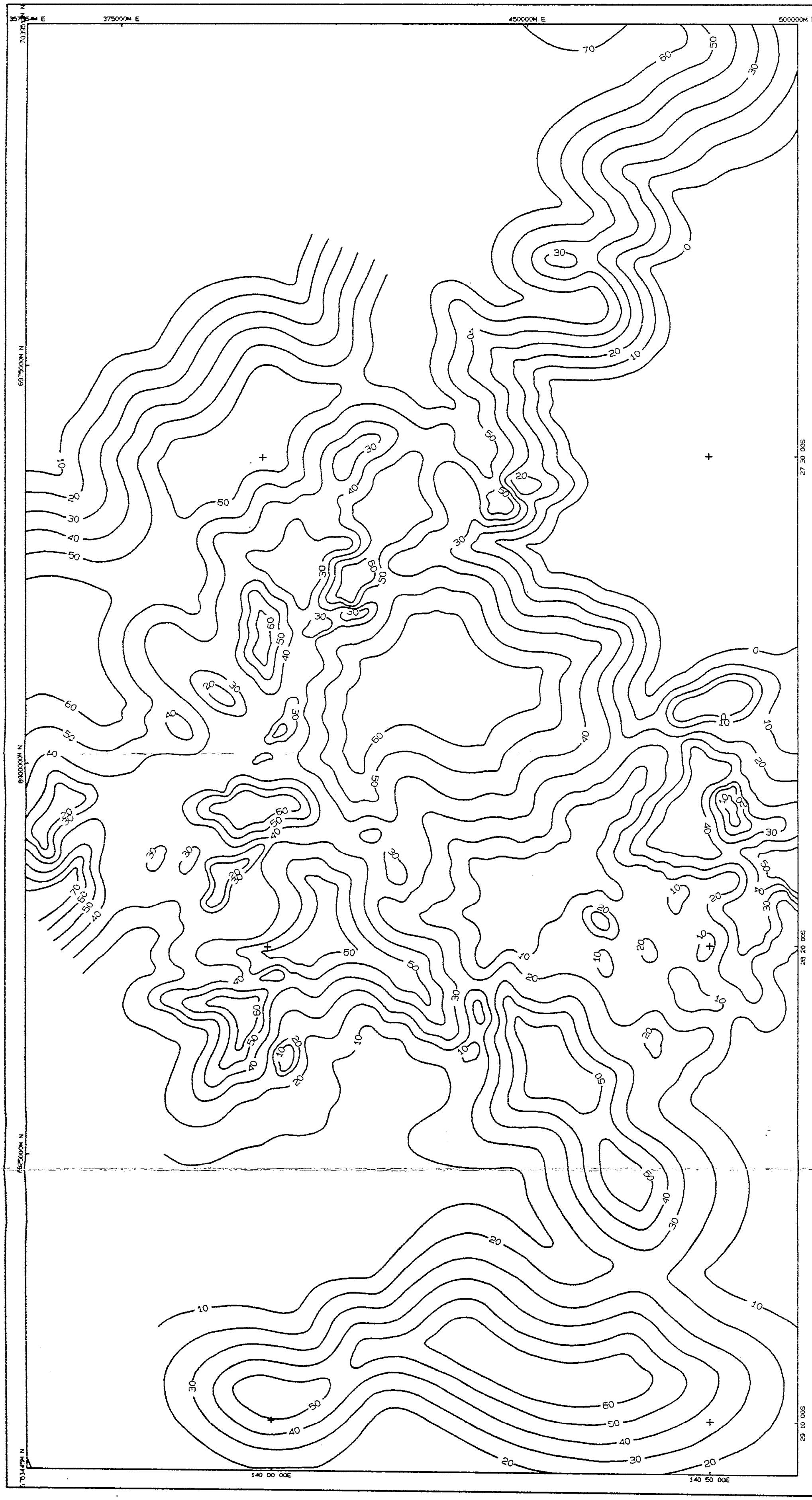
Figure 24

Restored Isopach

Namba Formation

Contour Interval 10m

Date : February 12, 1996	Projection : UTM
Author : R MOUSSAVI-HARAMI	Spheroid : ANS
Drafted : SAM HARVEY	C.M.: 141 00 00E



scale

0 50

Kilometres

MINES AND ENERGY
SOUTH AUSTRALIA

Figure 25

Isopach Map

Late Pliocene-Quaternary

Contour Interval 10m

Date : February 12, 1996	Projection : UTM
Author : R MOUSSAVI-HARAMI	Spheroid : ANS
Drafted : SAM HARVEY	C.M.: 141 00 00E

APPENDIX I

DATA REPORT

```
BasinMod Data Report
Licensed to: Natn'l Centre for Petroleum Geology & Geophysics
             Mr. Peter Tingate
    Version: 4.20
 Model Name: BULYEROO-1
  File Name: BULYEROO-1.mod
       Date: Feb  5, 1996
       Time: 12:15 pm
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Stratigraphy Table

Formation or Event Name	Type	Begin Age (Ma)	Well Top (m)	Present Thick (m)	Lithology
QT/T	F	3.3	0	55	Sandstone
HIATUS-1	H	5.3			
NAMBA FM.	F	29.3	55	21	nam14
HIATUS-2	H	38			
EYRE FM.	F	60	76	77	eyr14
HIATUS-3	H	90			
WINTON FM.	F	97.5	153	808	win14
MACKUNDA FM.	F	100	961	82	mac14
ALLARU/OOD..	F	105.5	1043	289	all14
COORIKIANA Sst.	F	108	1332	17	coo14
BULLDOG SHALE	F	117.5	1349	363	bull14
CADNA-OWIE FM.	F	135.5	1712	89	cad14
MURTA FM.	F	141.5	1801	55	mur14
McKINLAY Mbr.	F	145	1856	10	mck14
NAMUR Sst.	F	151	1866	62	namu14
WESTBOURNE FM.	F	159	1928	81	west14
ADORI FM.	F	165	2009	87	ador14
BIRKHEAD FM.	F	175	2096	86	bir14
HUTTON Sst.	F	188	2182	56	hut14
POOLOWANNA FM.	F	193	2238	84	pool14
HIATUS-4	H	236.5			
NAPPAMERRI GP.	F	249	2322	397	napp14
TOOLACHEE FM.	F	253.5	2719	95	too14
HIATUS-5	H	256			
DARALINGIE FM.	F	258.5	2814	101	dara14
ROSENEATH SHALE	F	261.5	2915	60	rose14
EPSILON FM.	F	263.5	2975	122	epsi14
MURTEREE SHAle	F	264.5	3097	70	mutt14
PATCHAWARRA FM.	F	274	3167	321	pat14

Formation or Event Name	Type	Lith Pat
QT/T	F	
HIATUS-1	H	
NAMBA FM.	F	1
HIATUS-2	H	
EYRE FM.	F	
HIATUS-3	H	
WINTON FM.	F	
MACKUNDA FM.	F	
ALLARU/OOD..	F	
COORIKIANA Sst.	F	
BULLDOG SHALE	F	
CADNA-OWIE FM.	F	
MURTA FM.	F	
McKINLAY Mbr.	F	

NAMUR Sst.	F
WESTBOURNE FM.	F
ADORI FM.	F
BIRKHEAD FM.	F
HUTTON Sst.	F
POOLOWANNA FM.	F
HIATUS-4	H
NAPPAMERRI GP.	F
TOOLACHEE FM.	F
HIATUS-5	H
DARALINGIE FM.	F
ROSENEATH SHALE	F
EPSILON FM.	F
MURTEREE SHAle	F
PATCHAWARRA FM.	F

Lithology Mixes Table

Lithology Name	% Sandstone	% Siltstone	% Shale	% Kerogen	Total %
Sandstone	100				100.0
nam14	20	40	40		100.0
eyr14	80	15	5		100.0
win14	24	56	19	1	100.0
mac14	40	40	20		100.0
all14	22.5	43.5	34		100.0
coo14	80	20			100.0
bull14		20	80		100.0
cad14	70	20	10		100.0
mur14	16	63	21		100.0
mck14	50	50			100.0
namu14	84	12	4		100.0
west14	48	39	13		100.0
ador14	96	4			100.0
bir14	34	46.5	15.5	4	100.0
hut14	100				100.0
pool14	55	30	10	5	100.0
napp14	14	64.5	21.5		100.0
too14	39	27	9	25	100.0
dara14	28	48	16	8	100.0
rose14		75	25		100.0
epsi14	14	58.5	19.5	8	100.0
mutt14		75	25		100.0
pat14	34	45	15	6	100.0

Lithology Values Table

Lithology Name	Initial Porosity	Compaction Factor (FM)	Exponential Factor (SC)	Density (g/cm^3)
Sandstone	0.45	1.75	0.27	2.64
Siltstone	0.55	2.2	0.41	2.64
Shale	0.6	2.4	0.51	2.6
Limestone	0.6	1.5	0.22	2.72
Dolomite	0.6	1.5	0.22	2.85
Evaporite	0	0	0	2.15
Coal	0.9	3.5	0.7	1.8
Igneous	0	0	0	2.65
nam1	0.54	2.16	0.40	2.631
eyr1	0.46	1.83	0.29	2.638
win1	0.55	2.20	0.41	2.610
mac1	0.54	2.17	0.40	2.631
all1	0.55	2.21	0.42	2.630
coo1	0.5	1.97	0.34	2.64
bull1	0.59	2.36	0.49	2.608

cad1	0.50	1.99	0.34	2.635
mur1	0.55	2.21	0.42	2.630
mck1	0.51	2.05	0.36	2.634
namu1	0.46	1.81	0.28	2.638
bir1	0.54	2.16	0.40	2.607
hut1	0.46	1.83	0.29	2.64
pool1	0.61	2.43	0.46	2.465
napp1	0.53	2.12	0.39	2.632
too1	0.62	2.45	0.46	2.440
dara1	0.59	2.35	0.45	2.523
rose1	0.56	2.25	0.43	2.63
epsi1	0.57	2.27	0.43	2.581
mutt1	0.56	2.25	0.43	2.63
pat1	0.57	2.29	0.43	2.548
nam14	0.55	2.19	0.42	2.624
eyr14	0.47	1.85	0.30	2.638
win14	0.53	2.14	0.39	2.624
mac14	0.52	2.06	0.37	2.632
all14	0.54	2.16	0.41	2.626
coo14	0.47	1.84	0.29	2.64
bull14	0.59	2.36	0.49	2.608
cad14	0.48	1.90	0.32	2.636
mur14	0.54	2.17	0.40	2.631
mck14	0.5	1.97	0.34	2.64
namu14	0.46	1.83	0.29	2.638
west14	0.50	2.01	0.35	2.634
ador14	0.45	1.76	0.27	2.64
bir14	0.53	2.13	0.38	2.600
hut14	0.45	1.75	0.27	2.64
pool14	0.51	2.03	0.35	2.594
napp14	0.54	2.18	0.41	2.631
too14	0.60	2.36	0.43	2.426
dara14	0.55	2.21	0.41	2.566
rose14	0.56	2.25	0.43	2.63
epsi14	0.57	2.28	0.43	2.565
mutt14	0.56	2.25	0.43	2.63
pat14	0.54	2.15	0.39	2.583

Lithology Name	Grain Size (mm)	Matrix Conductivity (W/m*deg C)	Matrix Cond. Correction
Sandstone	0.5	4.4	270
Siltstone	0.0156	2	170
Shale	0.0004	1.5	-180
Limestone	0.5	2.9	350
Dolomite	0.5	4.8	300
Evaporite	0.0004	5.4	470
Coal	0.0004	0.3	250
Igneous	0.0001	2.9	380
nam1	0.0137	2.329	116.2
eyr1	0.2479	3.996	240
win1	0.0109	2.200	113
mac1	0.0125	2.279	112.5
all1	0.0088	2.077	97.5
coo1	0.0883	3.2	220
bull1	0.0008	1.6	-110
cad1	0.0609	3.188	180
mur1	0.0088	2.077	97.5
mck1	0.0360	2.885	157.5
namu1	0.2954	4.097	247.5
bir1	0.0166	2.435	133.4
hut1	0.2678	3.968	252
pool1	0.0066	1.913	142.2
napp1	0.0195	2.531	131.2

too1	0.0069	1.942	152.9
dara1	0.0070	1.948	124.9
rose1	0.0062	1.875	82.5
epsi1	0.0082	2.033	111.3
mutt1	0.0062	1.875	82.5
pat1	0.0095	2.121	129.2
nam14	0.0072	2.28	50
eyr14	0.2080	3.895	232.5
win14	0.0172	2.464	128.3
mac14	0.0300	2.86	140
all14	0.0097	2.37	73.5
coo14	0.2499	3.92	250
bull14	0.0008	1.6	-110
cad14	0.1224	3.63	205
mur14	0.0125	2.279	112.5
mck14	0.0883	3.2	220
namu14	0.2479	3.996	240
west14	0.0511	3.087	172.5
ador14	0.4352	4.304	266
bir14	0.0248	2.670	152.9
hut14	0.5	4.4	270
pool14	0.0606	3.185	194
napp14	0.0115	2.228	108.7
too14	0.0173	2.466	197.5
dara14	0.0170	2.456	148.4
rose14	0.0062	1.875	82.5
epsi14	0.0092	2.102	122.1
mutt14	0.0062	1.875	82.5
pat14	0.0234	2.639	156.3

Lithology Name	Heat Capacity (kJ/m^3*deg C)	Heat Capacity Correction
Sandstone	2800	0
Siltstone	2650	0
Shale	2100	0
Limestone	2600	0
Dolomite	2600	0
Evaporite	1750	0
Coal	950	0
Igneous	2500	0
nam1	2564.	0
eyr1	2754	0
win1	2513.	0
mac1	2558.	0
all1	2535.	0
coo1	2725	0
bull1	2210	0
cad1	2662	0
mur1	2535.	0
mck1	2627.	0
namu1	2765.	0
bir1	2536	0
hut1	2773	0
pool1	2240.	0
napp1	2587.	0
too1	2202	0
dara1	2341	0
rose1	2512.	0
epsi1	2447.	0
mutt1	2512.	0
pat1	2402.	0
nam14	2460	0
eyr14	2742.	0

win14	2564.	0
mac14	2600	0
all14	2496.	0
coo14	2770	0
bull14	2210	0
cad14	2700	0
mur14	2558.	0
mck14	2725	0
namu14	2754	0
west14	2650.	0
ador14	2794	0
bir14	2547.	0
hut14	2800	0
pool14	2592.	0
napp14	2552.	0
too14	2234	0
dara14	2468	0
rose14	2512.	0
epsi14	2427.	0
mutt14	2512.	0
pat14	2516.	0

Lithology Fluid Flow Table

Lithology Name	Initial Porosity A	Initial Porosity B	A	B (1/Pa)	Fraction A
Sandstone	0.0000	0.4500	0.0000	1.350000e-08	0.000
Siltstone	0.5500	0.0000	-0.800	0.000000e+00	1.000
Shale	0.6000	0.0000	-0.800	0.000000e+00	1.000
Limestone	0.6000	0.0000	-0.800	0.000000e+00	1.000
Dolomite	0.6000	0.0000	-0.800	0.000000e+00	1.000
Evaporite	0.0000	0.0000	-0.800	1.350000e-08	0.000
Coal	0.9000	0.0000	-0.800	0.000000e+00	1.000
Igneous	0.0000	0.0000	-0.800	1.350000e-08	0.000
nam1	0.5625	0.4500	-0.800	1.350000e-08	0.820
eyr1	0.5625	0.4500	-0.800	1.350000e-08	0.160
win1	0.5725	0.4500	-0.800	1.350000e-08	0.855
mac1	0.5625	0.4500	-0.800	1.350000e-08	0.840
all1	0.5625	0.4500	-0.800	1.350000e-08	0.920
coo1	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull1	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad1	0.5625	0.4500	-0.800	1.350000e-08	0.480
mur1	0.5625	0.4500	-0.800	1.350000e-08	0.920
mck1	0.5625	0.4500	-0.800	1.350000e-08	0.600
namu1	0.5625	0.4500	-0.800	1.350000e-08	0.120
bir1	0.5756	0.4500	-0.800	1.350000e-08	0.760
hut1	0.5500	0.4500	-0.800	1.350000e-08	0.180
pool1	0.6409	0.4500	-0.800	1.350000e-08	0.860
napp1	0.5625	0.4500	-0.800	1.350000e-08	0.740
too1	0.6560	0.4500	-0.800	1.350000e-08	0.830
dara1	0.6117	0.4500	-0.800	1.350000e-08	0.890
rose1	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi1	0.5850	0.4500	-0.800	1.350000e-08	0.900
mutt1	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat1	0.6026	0.4500	-0.800	1.350000e-08	0.840
nam14	0.5750	0.4500	-0.800	1.350000e-08	0.800
eyr14	0.5625	0.4500	-0.800	1.350000e-08	0.200
win14	0.5671	0.4500	-0.800	1.350000e-08	0.760
mac14	0.5666	0.4500	-0.800	1.350000e-08	0.600
all14	0.5719	0.4500	-0.800	1.350000e-08	0.775
coo14	0.5500	0.4500	-0.800	1.350000e-08	0.200
bull14	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad14	0.5666	0.4500	-0.800	1.350000e-08	0.300

mur14	0.5625	0.4500	-0.800	1.350000e-08	0.840
mck14	0.5500	0.4500	-0.800	1.350000e-08	0.500
namu14	0.5625	0.4500	-0.800	1.350000e-08	0.160
west14	0.5625	0.4500	-0.800	1.350000e-08	0.520
ador14	0.5500	0.4500	-0.800	1.350000e-08	0.040
bir14	0.5829	0.4500	-0.800	1.350000e-08	0.660
hut14	0.0000	0.4500	0.0000	1.350000e-08	0.000
pool14	0.6000	0.4500	-0.800	1.350000e-08	0.450
napp14	0.5625	0.4500	-0.800	1.350000e-08	0.860
too14	0.7008	0.4500	-0.800	1.350000e-08	0.610
dara14	0.6000	0.4500	-0.800	1.350000e-08	0.720
rose14	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi14	0.5938	0.4500	-0.800	1.350000e-08	0.860
mutt14	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat14	0.5931	0.4500	-0.800	1.350000e-08	0.660

Lithology Name	Initial Permeability (milliDarcys)	Permeability Power
Sandstone	2.786221e+04	5.500
Siltstone	1.013171e-01	5.500
Shale	1.013171e-01	5.500
Limestone	2.786221e+04	5.500
Dolomite	2.786221e+04	5.500
Evaporite	1.013171e-08	5.500
Coal	1.013171e-01	5.500
Igneous	1.013171e-08	5.500
nam1	9.655232e-01	5.500
eyr1	3.755972e+03	5.500
win1	6.228538e-01	5.500
mac1	7.515815e-01	5.500
all1	2.759494e-01	5.500
coo1	5.313115e+01	5.500
bull1	1.013171e-01	5.500
cad1	6.825522e+01	5.500
mur1	2.759494e-01	5.500
mck1	1.518504e+01	5.500
namu1	6.198629e+03	5.500
bir1	2.047023e+00	5.500
hut1	2.923719e+03	5.500
pool1	5.850452e-01	5.500
napp1	2.629719e+00	5.500
too1	8.518624e-01	5.500
dara1	4.017996e-01	5.500
rose1	1.013171e-01	5.500
epsi1	3.544999e-01	5.500
mutt1	1.013171e-01	5.500
pat1	7.515815e-01	5.500
nam14	1.240365e+00	5.500
eyr14	2.275878e+03	5.500
win14	2.047023e+00	5.500
mac14	1.518504e+01	5.500
all14	1.696417e+00	5.500
coo14	2.275878e+03	5.500
bull14	1.013171e-01	5.500
cad14	6.504527e+02	5.500
mur14	7.515815e-01	5.500
mck14	5.313115e+01	5.500
namu14	3.755972e+03	5.500
west14	4.135829e+01	5.500
ador14	1.688271e+04	5.500
bir14	7.162357e+00	5.500
hut14	2.786221e+04	5.500

pool14	9.938385e+01	5.500
napp14	5.850452e-01	5.500
too14	1.339746e+01	5.500
dara14	3.378283e+00	5.500
rose14	1.013171e-01	5.500
epsi14	5.850452e-01	5.500
mutt14	1.013171e-01	5.500
pat14	7.162357e+00	5.500

Geothermal Gradient Table

Time (Ma)	Depth 1 (m)
0	0

Maturity conversion method: Table
TTI = 4.191876 + 1.817512 * log10(Ro)
Data fit: Least Squares

Model Units

```
                 Depth = (m)
              Distance = (m)
  Thermal Conductivity = (W/m*deg C)
         Heat Capacity = (kJ/m^3*deg C)
             Heat Flow = (mW/m^2)
           Temperature = (deg C)
       Heat Generation = (muW/m^3)
              Gradient = (deg C/100 m)
     Activation Energy = (kcal/mole)
      Frequency Factor = (1/my)
            HC Density = (g/cm^3)
              Pressure = (MPa)
            Grain Size = (mm)
      Seismic Velocity = (m/s)
            Event Time = (msec)
              Maturity = (%Ro)
         HC Generation = (mg/g TOC)
```

Calculation Options

```
              Compaction = Sclater & Christie
   Porosity Depth Method = Linear
Permeability Calculation = Modified Kozeny-Carman
  Geothermal Calculation = Gradient
    Maturity Calculation = LLNL
   Expulsion Calculation = None
           Time Interval = 1.00
          Depth Interval = 1000.00
         Integrate Depth = No
```

Advanced Options

```
      TTI Reference Temp = 105.00
       TTI Doubling Temp = 10.00
     Rock-Eval Correction = 35.00
            Thermal Gain = 1.000
Critical Fracturing Fraction = 0.850
    Fracture Closure Rate = 0.050
 Conductivity Calculation = Deming/Chapman
               Initial S1 = 3.00
```

Rifting HF Options

```
  Use Rifting Heat Flow = No
        Start Rift Time = 0.00
          End Rift Time = 0.00
         Auto-Calc Beta = No
```

Rifting Heat Flow Beta = 2.00

Present Day Info

Model Name = BULYEROO-1
Model Description =
Current Surface Temp = 20.00
Current Elevation = 0.00
Current Heat Flow = 63.00

Seismic Parameters

Shot Point = 0
X = 0.00000000
Y = 0.00000000

```
+-----------------------------------------+
| BasinMod Data Report                    |
| Licensed to: Natn'l Centre for Petroleum Geology & Geophysics |
|              Mr. Peter Tingate          |
|     Version: 4.20                       |
|  Model Name: BULYEROO-1 EROSION         |
|   File Name: BULYEROO-1 EROSION.mod     |
|        Date: Feb  5, 1996               |
|        Time: 12:16 pm                   |
+-----------------------------------------+
```

Stratigraphy Table

Formation or Event Name	Type	Begin Age (Ma)	Well Top (m)	Present Thick (m)	Missing Thick (m)
QT/T	F	3.3	0	55	
EROSION-1	E	4.3			-54
MISSING SEC-1	D	5.3			54
NAMBA FM.	F	29.3	55	21	
EROSION-2	E	34			-28
MISSING SEC-2	D	38			28
EYRE FM.	F	60	76	77	
EROSION-3	E	75			-230
MISSING SEC-3	D	90			230
WINTON FM.	F	97.5	153	808	
MACKUNDA FM.	F	100	961	82	
ALLARU/OOD..	F	105.5	1043	289	
COORIKIANA Sst.	F	108	1332	17	
BULLDOG SHALE	F	117.5	1349	363	
CADNA-OWIE FM.	F	135.5	1712	89	
MURTA FM.	F	141.5	1801	55	
McKINLAY Mbr.	F	145	1856	10	
NAMUR Sst.	F	151	1866	62	
WESTBOURNE FM.	F	159	1928	81	
ADORI FM.	F	165	2009	87	
BIRKHEAD FM.	F	175	2096	86	
HUTTON Sst.	F	188	2182	56	
POOLOWANNA FM.	F	193	2238	84	
EROSION-4	E	213			-108
MISSING SEC-4	D	236.5			108
NAPPAMERRI GP.	F	249	2322	397	
TOOLACHEE FM.	F	253.5	2719	95	
EROSION-5	E	254.5			-75
MISSING SEC-5	D	256			75
DARALINGIE FM.	F	258.5	2814	101	
ROSENEATH SHALE	F	261.5	2915	60	
EPSILON FM.	F	263.5	2975	122	
MURTEREE SHAle	F	264.5	3097	70	
PATCHAWARRA FM.	F	274	3167	321	

Formation or Event Name	Type	Lithology	Lith Pat
QT/T	F	Sandstone	
EROSION-1	E		
MISSING SEC-1	D	Sandstone	
NAMBA FM.	F	nam14	1
EROSION-2	E		
MISSING SEC-2	D	Sandstone	
EYRE FM.	F	eyr14	
EROSION-3	E		
MISSING SEC-3	D	Sandstone	

WINTON FM.	F	win14
MACKUNDA FM.	F	mac14
ALLARU/OOD..	F	all14
COORIKIANA Sst.	F	coo14
BULLDOG SHALE	F	bull14
CADNA-OWIE FM.	F	cad14
MURTA FM.	F	mur14
McKINLAY Mbr.	F	mck14
NAMUR Sst.	F	namu14
WESTBOURNE FM.	F	west14
ADORI FM.	F	ador14
BIRKHEAD FM.	F	bir14
HUTTON Sst.	F	hut14
POOLOWANNA FM.	F	pool14
EROSION-4	E	
MISSING SEC-4	D	Sandstone
NAPPAMERRI GP.	F	napp14
TOOLACHEE FM.	F	too14
EROSION-5	E	
MISSING SEC-5	D	Sandstone
DARALINGIE FM.	F	dara14
ROSENEATH SHALE	F	rose14
EPSILON FM.	F	epsi14
MURTEREE SHAle	F	mutt14
PATCHAWARRA FM.	F	pat14

Lithology Mixes Table

Lithology Name	% Sandstone	% Siltstone	% Shale	% Kerogen	Total %
Sandstone	100				100.0
nam14	20	40	40		100.0
eyr14	80	15	5		100.0
win14	24	56	19	1	100.0
mac14	40	40	20		100.0
all14	22.5	43.5	34		100.0
coo14	80	20			100.0
bull14		20	80		100.0
cad14	70	20	10		100.0
mur14	16	63	21		100.0
mck14	50	50			100.0
namu14	84	12	4		100.0
west14	48	39	13		100.0
ador14	96	4			100.0
bir14	34	46.5	15.5	4	100.0
hut14	100				100.0
pool14	55	30	10	5	100.0
napp14	14	64.5	21.5		100.0
too14	39	27	9	25	100.0
dara14	28	48	16	8	100.0
rose14		75	25		100.0
epsi14	14	58.5	19.5	8	100.0
mutt14		75	25		100.0
pat14	34	45	15	6	100.0

Lithology Values Table

Lithology Name	Initial Porosity	Compaction Factor (FM)	Exponential Factor (SC)	Density (g/cm^3)
Sandstone	0.45	1.75	0.27	2.64
Siltstone	0.55	2.2	0.41	2.64
Shale	0.6	2.4	0.51	2.6
Limestone	0.6	1.5	0.22	2.72
Dolomite	0.6	1.5	0.22	2.85

Evaporite	0	0	0	2.15
Coal	0.9	3.5	0.7	1.8
Igneous	0	0	0	2.65
nam1	0.54	2.16	0.40	2.631
eyr1	0.46	1.83	0.29	2.638
win1	0.55	2.20	0.41	2.610
mac1	0.54	2.17	0.40	2.631
all1	0.55	2.21	0.42	2.630
coo1	0.5	1.97	0.34	2.64
bull1	0.59	2.36	0.49	2.608
cad1	0.50	1.99	0.34	2.635
mur1	0.55	2.21	0.42	2.630
mck1	0.51	2.05	0.36	2.634
namu1	0.46	1.81	0.28	2.638
bir1	0.54	2.16	0.40	2.607
hut1	0.46	1.83	0.29	2.64
pool1	0.61	2.43	0.46	2.465
napp1	0.53	2.12	0.39	2.632
too1	0.62	2.45	0.46	2.440
dara1	0.59	2.35	0.45	2.523
rose1	0.56	2.25	0.43	2.63
epsi1	0.57	2.27	0.43	2.581
mutt1	0.56	2.25	0.43	2.63
pat1	0.57	2.29	0.43	2.548
nam14	0.55	2.19	0.42	2.624
eyr14	0.47	1.85	0.30	2.638
win14	0.53	2.14	0.39	2.624
mac14	0.52	2.06	0.37	2.632
all14	0.54	2.16	0.41	2.626
coo14	0.47	1.84	0.29	2.64
bull14	0.59	2.36	0.49	2.608
cad14	0.48	1.90	0.32	2.636
mur14	0.54	2.17	0.40	2.631
mck14	0.5	1.97	0.34	2.64
namu14	0.46	1.83	0.29	2.638
west14	0.50	2.01	0.35	2.634
ador14	0.45	1.76	0.27	2.64
bir14	0.53	2.13	0.38	2.600
hut14	0.45	1.75	0.27	2.64
pool14	0.51	2.03	0.35	2.594
napp14	0.54	2.18	0.41	2.631
too14	0.60	2.36	0.43	2.426
dara14	0.55	2.21	0.41	2.566
rose14	0.56	2.25	0.43	2.63
epsi14	0.57	2.28	0.43	2.565
mutt14	0.56	2.25	0.43	2.63
pat14	0.54	2.15	0.39	2.583

Lithology Name	Grain Size (mm)	Matrix Conductivity (W/m*deg C)	Matrix Cond. Correction
Sandstone	0.5	4.4	270
Siltstone	0.0156	2	170
Shale	0.0004	1.5	-180
Limestone	0.5	2.9	350
Dolomite	0.5	4.8	300
Evaporite	0.0004	5.4	470
Coal	0.0004	0.3	250
Igneous	0.0001	2.9	380
nam1	0.0137	2.329	116.2
eyr1	0.2479	3.996	240
win1	0.0109	2.200	113
mac1	0.0125	2.279	112.5
all1	0.0088	2.077	97.5

cool	0.0883	3.2	220
bull1	0.0008	1.6	-110
cad1	0.0609	3.188	180
mur1	0.0088	2.077	97.5
mck1	0.0360	2.885	157.5
namu1	0.2954	4.097	247.5
bir1	0.0166	2.435	133.4
hut1	0.2678	3.968	252
pool1	0.0066	1.913	142.2
napp1	0.0195	2.531	131.2
too1	0.0069	1.942	152.9
dara1	0.0070	1.948	124.9
rose1	0.0062	1.875	82.5
epsi1	0.0082	2.033	111.3
mutt1	0.0062	1.875	82.5
pat1	0.0095	2.121	129.2
nam14	0.0072	2.28	50
eyr14	0.2080	3.895	232.5
win14	0.0172	2.464	128.3
mac14	0.0300	2.86	140
all14	0.0097	2.37	73.5
coo14	0.2499	3.92	250
bull14	0.0008	1.6	-110
cad14	0.1224	3.63	205
mur14	0.0125	2.279	112.5
mck14	0.0883	3.2	220
namu14	0.2479	3.996	240
west14	0.0511	3.087	172.5
ador14	0.4352	4.304	266
bir14	0.0248	2.670	152.9
hut14	0.5	4.4	270
pool14	0.0606	3.185	194
napp14	0.0115	2.228	108.7
too14	0.0173	2.466	197.5
dara14	0.0170	2.456	148.4
rose14	0.0062	1.875	82.5
epsi14	0.0092	2.102	122.1
mutt14	0.0062	1.875	82.5
pat14	0.0234	2.639	156.3

Lithology Name	Heat Capacity (kJ/m^3*deg C)	Heat Capacity Correction
Sandstone	2800	0
Siltstone	2650	0
Shale	2100	0
Limestone	2600	0
Dolomite	2600	0
Evaporite	1750	0
Coal	950	0
Igneous	2500	0
nam1	2564.	0
eyr1	2754	0
win1	2513.	0
mac1	2558.	0
all1	2535.	0
coo1	2725	0
bull1	2210	0
cad1	2662	0
mur1	2535.	0
mck1	2627.	0
namu1	2765.	0
bir1	2536	0
hut1	2773	0

pool1	2240.	0
napp1	2587.	0
too1	2202	0
dara1	2341	0
rose1	2512.	0
epsi1	2447.	0
mutt1	2512.	0
pat1	2402.	0
nam14	2460	0
eyr14	2742.	0
win14	2564.	0
mac14	2600	0
all14	2496.	0
coo14	2770	0
bull14	2210	0
cad14	2700	0
mur14	2558.	0
mck14	2725	0
namu14	2754	0
west14	2650.	0
ador14	2794	0
bir14	2547.	0
hut14	2800	0
pool14	2592.	0
napp14	2552.	0
too14	2234	0
dara14	2468	0
rose14	2512.	0
epsi14	2427.	0
mutt14	2512.	0
pat14	2516.	0

Lithology Fluid Flow Table

Lithology Name	Initial Porosity A	Initial Porosity B	A	B (1/Pa)	Fraction A
Sandstone	0.0000	0.4500	0.0000	1.350000e-08	0.000
Siltstone	0.5500	0.0000	-0.800	0.000000e+00	1.000
Shale	0.6000	0.0000	-0.800	0.000000e+00	1.000
Limestone	0.6000	0.0000	-0.800	0.000000e+00	1.000
Dolomite	0.6000	0.0000	-0.800	0.000000e+00	1.000
Evaporite	0.0000	0.0000	-0.800	1.350000e-08	0.000
Coal	0.9000	0.0000	-0.800	0.000000e+00	1.000
Igneous	0.0000	0.0000	-0.800	1.350000e-08	0.000
nam1	0.5625	0.4500	-0.800	1.350000e-08	0.820
eyr1	0.5625	0.4500	-0.800	1.350000e-08	0.160
win1	0.5725	0.4500	-0.800	1.350000e-08	0.855
mac1	0.5625	0.4500	-0.800	1.350000e-08	0.840
all1	0.5625	0.4500	-0.800	1.350000e-08	0.920
coo1	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull1	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad1	0.5625	0.4500	-0.800	1.350000e-08	0.480
mur1	0.5625	0.4500	-0.800	1.350000e-08	0.920
mck1	0.5625	0.4500	-0.800	1.350000e-08	0.600
namu1	0.5625	0.4500	-0.800	1.350000e-08	0.120
bir1	0.5756	0.4500	-0.800	1.350000e-08	0.760
hut1	0.5500	0.4500	-0.800	1.350000e-08	0.180
pool1	0.6409	0.4500	-0.800	1.350000e-08	0.860
napp1	0.5625	0.4500	-0.800	1.350000e-08	0.740
too1	0.6560	0.4500	-0.800	1.350000e-08	0.830
dara1	0.6117	0.4500	-0.800	1.350000e-08	0.890
rose1	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi1	0.5850	0.4500	-0.800	1.350000e-08	0.900

mutt1	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat1	0.6026	0.4500	-0.800	1.350000e-08	0.840
nam14	0.5750	0.4500	-0.800	1.350000e-08	0.800
eyr14	0.5625	0.4500	-0.800	1.350000e-08	0.200
win14	0.5671	0.4500	-0.800	1.350000e-08	0.760
mac14	0.5666	0.4500	-0.800	1.350000e-08	0.600
all14	0.5719	0.4500	-0.800	1.350000e-08	0.775
coo14	0.5500	0.4500	-0.800	1.350000e-08	0.200
bull14	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad14	0.5666	0.4500	-0.800	1.350000e-08	0.300
mur14	0.5625	0.4500	-0.800	1.350000e-08	0.840
mck14	0.5500	0.4500	-0.800	1.350000e-08	0.500
namu14	0.5625	0.4500	-0.800	1.350000e-08	0.160
west14	0.5625	0.4500	-0.800	1.350000e-08	0.520
ador14	0.5500	0.4500	-0.800	1.350000e-08	0.040
bir14	0.5829	0.4500	-0.800	1.350000e-08	0.660
hut14	0.0000	0.4500	0.0000	1.350000e-08	0.000
pool14	0.6000	0.4500	-0.800	1.350000e-08	0.450
napp14	0.5625	0.4500	-0.800	1.350000e-08	0.860
too14	0.7008	0.4500	-0.800	1.350000e-08	0.610
dara14	0.6000	0.4500	-0.800	1.350000e-08	0.720
rose14	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi14	0.5938	0.4500	-0.800	1.350000e-08	0.860
mutt14	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat14	0.5931	0.4500	-0.800	1.350000e-08	0.660

Lithology Name	Initial Permeability (milliDarcys)	Permeability Power
Sandstone	2.786221e+04	5.500
Siltstone	1.013171e-01	5.500
Shale	1.013171e-01	5.500
Limestone	2.786221e+04	5.500
Dolomite	2.786221e+04	5.500
Evaporite	1.013171e-08	5.500
Coal	1.013171e-01	5.500
Igneous	1.013171e-08	5.500
nam1	9.655232e-01	5.500
eyr1	3.755972e+03	5.500
win1	6.228538e-01	5.500
mac1	7.515815e-01	5.500
all1	2.759494e-01	5.500
coo1	5.313115e+01	5.500
bull1	1.013171e-01	5.500
cad1	6.825522e+01	5.500
mur1	2.759494e-01	5.500
mck1	1.518504e+01	5.500
namu1	6.198629e+03	5.500
bir1	2.047023e+00	5.500
hut1	2.923719e+03	5.500
pool1	5.850452e-01	5.500
napp1	2.629719e+00	5.500
too1	8.518624e-01	5.500
dara1	4.017996e-01	5.500
rose1	1.013171e-01	5.500
epsi1	3.544999e-01	5.500
mutt1	1.013171e-01	5.500
pat1	7.515815e-01	5.500
nam14	1.240365e+00	5.500
eyr14	2.275878e+03	5.500
win14	2.047023e+00	5.500
mac14	1.518504e+01	5.500
all14	1.696417e+00	5.500

coo14	2.275878e+03	5.500
bull14	1.013171e-01	5.500
cad14	6.504527e+02	5.500
mur14	7.515815e-01	5.500
mck14	5.313115e+01	5.500
namu14	3.755972e+03	5.500
west14	4.135829e+01	5.500
ador14	1.688271e+04	5.500
bir14	7.162357e+00	5.500
hut14	2.786221e+04	5.500
pool14	9.938385e+01	5.500
napp14	5.850452e-01	5.500
too14	1.339746e+01	5.500
dara14	3.378283e+00	5.500
rose14	1.013171e-01	5.500
epsi14	5.850452e-01	5.500
mutt14	1.013171e-01	5.500
pat14	7.162357e+00	5.500

Geothermal Gradient Table

Time (Ma)	Depth 1 (m)
0	0

Maturity conversion method: Table
TTI = 4.191876 + 1.817512 * log10(Ro)
Data fit: Least Squares

Model Units

Depth = (m)
Distance = (m)
Thermal Conductivity = (W/m*deg C)
Heat Capacity = (kJ/m^3*deg C)
Heat Flow = (mW/m^2)
Temperature = (deg C)
Heat Generation = (muW/m^3)
Gradient = (deg C/100 m)
Activation Energy = (kcal/mole)
Frequency Factor = (1/my)
HC Density = (g/cm^3)
Pressure = (MPa)
Grain Size = (mm)
Seismic Velocity = (m/s)
Event Time = (msec)
Maturity = (%Ro)
HC Generation = (mg/g TOC)

Calculation Options

Compaction = Sclater & Christie
Porosity Depth Method = Linear
Permeability Calculation = Modified Kozeny-Carman
Geothermal Calculation = Gradient
Maturity Calculation = LLNL
Expulsion Calculation = None
Time Interval = 1.00
Depth Interval = 1000.00
Integrate Depth = No

Advanced Options

TTI Reference Temp = 105.00
TTI Doubling Temp = 10.00
Rock-Eval Correction = 35.00
Thermal Gain = 1.000

```
Critical Fracturing Fraction = 0.850
       Fracture Closure Rate = 0.050
    Conductivity Calculation = Deming/Chapman
                  Initial S1 = 3.00

Rifting HF Options
       Use Rifting Heat Flow = No
             Start Rift Time = 0.00
               End Rift Time = 0.00
              Auto-Calc Beta = No
      Rifting Heat Flow Beta = 2.00

Present Day Info
                  Model Name = BULYEROO-1 EROSION
           Model Description =
        Current Surface Temp = 20.00
           Current Elevation = 0.00
           Current Heat Flow = 63.00

Seismic Parameters
                  Shot Point = 0
                           X = 0.00000000
                           Y = 0.00000000
```

BasinMod Data Report
Licensed to: Natn'l Centre for Petroleum Geology & Geophysics
Mr. Peter Tingate
Version: 4.20
Model Name: CUTTAPIRRIE-1
File Name: CUTTAPIRRIE-1.mod
Date: Feb 5, 1996
Time: 12:17 pm

Stratigraphy Table

Formation or Event Name	Type	Begin Age (Ma)	Well Top (m)	Present Thick (m)	Lithology
QT/T	F	3.3	0	54	Sandstone
HIATUS-1	H	5.3			
NAMBA FM.	F	29.3	54	97	nam13
HIATUS-2	H	38			
EYRE FM.	F	60	151	61	eyr13
HIATUS-3	H	90			
WINTON FM.	F	97.5	212	878	win13
MACKUNDA FM.	F	100	1090	117	mac13
ALLARU/OOD..	F	101	1207	175	all13
TOOLEBUC FM.	F	102.5	1382	18	tool13
WALLUMBILLA FM.	F	117.5	1400	356	wall13
CADNA-OWIE FM.	F	135.5	1756	73	cad13
MURTA FM.	F	141.5	1829	49	mur13
McKINLAY Mbr.	F	145	1878	3	mck13
NAMUR Sst.	F	151	1881	61	namu13
WESTBOURNE FM.	F	159	1942	129	west13
ADORI Sst.	F	165	2071	12	ador13
BIRKHEAD FM.	F	175	2083	115	bir13
HUTTON Sst.	F	188	2198	204	hut13
POOLOWANNA FM.	F	193	2402	74	pool13
HIATUS-4	H	236.5			
NAPPAMERRI GP.	F	249	2476	281	napp13
TOOLACHEE FM.	F	253.5	2757	34	too13
HIATUS-5	H	264.5			
PATCHAWARRA FM.	F	274	2791	120	pat13
TIRRAWARRA Sst.	F	280	2911	20	tir13
MERRIMELIA FM.	F	285.5	2931	55	merr13

Formation or Event Name	Type	Lith Pat
QT/T	F	
HIATUS-1	H	
NAMBA FM.	F	1
HIATUS-2	H	
EYRE FM.	F	
HIATUS-3	H	
WINTON FM.	F	
MACKUNDA FM.	F	
ALLARU/OOD..	F	
TOOLEBUC FM.	F	
WALLUMBILLA FM.	F	
CADNA-OWIE FM.	F	
MURTA FM.	F	
McKINLAY Mbr.	F	
NAMUR Sst.	F	
WESTBOURNE FM.	F	

ADORI Sst.	F
BIRKHEAD FM.	F
HUTTON Sst.	F
POOLOWANNA FM.	F
HIATUS-4	H
NAPPAMERRI GP.	F
TOOLACHEE FM.	F
HIATUS-5	H
PATCHAWARRA FM.	F
TIRRAWARRA Sst.	F
MERRIMELIA FM.	F

Lithology Mixes Table

Lithology Name	% Sandstone	% Siltstone	% Shale	% Limestone
Sandstone	100			
nam13	25	35	40	
eyr13	75	20	5	
win13	22	35	37	4
mac13	18	50	30	2
all13	20	50	30	
tool13		20	80	
wall13		20	80	
cad13	72	21	7	
mur13	20	60	20	
mck13	50	50		
namu13	84	12	4	
west13	32	51	17	
ador13	100			
bir13	30	46.5	15.5	
hut13	100			
pool13	60	28	10	
napp13	44	42	14	
too13	13	54	18	
pat13	30	37.5	12.5	
tir13	44	42	14	
merr13	50	35	15	

Lithology Name	% Kerogen	Total %
Sandstone		100.0
nam13		100.0
eyr13		100.0
win13	2	100.0
mac13		100.0
all13		100.0
tool13		100.0
wall13		100.0
cad13		100.0
mur13		100.0
mck13		100.0
namu13		100.0
west13		100.0
ador13		100.0
bir13	8	100.0
hut13		100.0
pool13	2	100.0
napp13		100.0
too13	15	100.0
pat13	20	100.0
tir13		100.0
merr13		100.0

Lithology Values Table

Lithology Name	Initial Porosity	Compaction Factor (FM)	Exponential Factor (SC)	Density (g/cm^3)
Sandstone	0.45	1.75	0.27	2.64
Siltstone	0.55	2.2	0.41	2.64
Shale	0.6	2.4	0.51	2.6
Limestone	0.6	1.5	0.22	2.72
Dolomite	0.6	1.5	0.22	2.85
Evaporite	0	0	0	2.15
Coal	0.9	3.5	0.7	1.8
Igneous	0	0	0	2.65
nam1	0.54	2.16	0.40	2.631
eyr1	0.46	1.83	0.29	2.638
win1	0.55	2.20	0.41	2.610
mac1	0.54	2.17	0.40	2.631
all1	0.55	2.21	0.42	2.630
coo1	0.5	1.97	0.34	2.64
bull1	0.59	2.36	0.49	2.608
cad1	0.50	1.99	0.34	2.635
mur1	0.55	2.21	0.42	2.630
mck1	0.51	2.05	0.36	2.634
namu1	0.46	1.81	0.28	2.638
bir1	0.54	2.16	0.40	2.607
hut1	0.46	1.83	0.29	2.64
pool1	0.61	2.43	0.46	2.465
napp1	0.53	2.12	0.39	2.632
too1	0.62	2.45	0.46	2.440
dara1	0.59	2.35	0.45	2.523
rose1	0.56	2.25	0.43	2.63
epsi1	0.57	2.27	0.43	2.581
mutt1	0.56	2.25	0.43	2.63
pat1	0.57	2.29	0.43	2.548
nam13	0.54	2.16	0.41	2.624
eyr13	0.47	1.87	0.31	2.638
win13	0.55	2.17	0.41	2.611
mac13	0.54	2.16	0.41	2.629
all13	0.54	2.17	0.41	2.628
tool13	0.59	2.36	0.49	2.608
wall13	0.59	2.36	0.49	2.608
cad13	0.48	1.89	0.31	2.637
mur13	0.54	2.15	0.40	2.632
mck13	0.5	1.97	0.34	2.64
namu13	0.46	1.83	0.29	2.638
west13	0.52	2.09	0.38	2.633
ador13	0.45	1.75	0.27	2.64
bir13	0.55	2.2	0.40	2.566
hut13	0.45	1.75	0.27	2.64
pool13	0.50	1.97	0.34	2.619
napp13	0.51	2.03	0.36	2.634
too13	0.59	2.37	0.45	2.506
pat13	0.59	2.35	0.43	2.467
tir13	0.51	2.03	0.36	2.634
merr13	0.50	2.00	0.35	2.634

Lithology Name	Grain Size (mm)	Matrix Conductivity (W/m*deg C)	Matrix Cond. Correction
Sandstone	0.5	4.4	270
Siltstone	0.0156	2	170
Shale	0.0004	1.5	-180
Limestone	0.5	2.9	350
Dolomite	0.5	4.8	300

Evaporite	0.0004	5.4	470
Coal	0.0004	0.3	250
Igneous	0.0001	2.9	380
nam1	0.0137	2.329	116.2
eyr1	0.2479	3.996	240
win1	0.0109	2.200	113
mac1	0.0125	2.279	112.5
all1	0.0088	2.077	97.5
coo1	0.0883	3.2	220
bull1	0.0008	1.6	-110
cad1	0.0609	3.188	180
mur1	0.0088	2.077	97.5
mck1	0.0360	2.885	157.5
namu1	0.2954	4.097	247.5
bir1	0.0166	2.435	133.4
hut1	0.2678	3.968	252
pool1	0.0066	1.913	142.2
napp1	0.0195	2.531	131.2
too1	0.0069	1.942	152.9
dara1	0.0070	1.948	124.9
rose1	0.0062	1.875	82.5
epsi1	0.0082	2.033	111.3
mutt1	0.0062	1.875	82.5
pat1	0.0095	2.121	129.2
nam13	0.0085	2.4	55
eyr13	0.1749	3.775	227.5
win13	0.0092	2.345	71.3
mac13	0.0103	2.3	86.6
all13	0.0103	2.33	85
tool13	0.0008	1.6	-110
wall13	0.0008	1.6	-110
cad13	0.1465	3.693	217.5
mur13	0.0149	2.38	120
mck13	0.0883	3.2	220
namu13	0.2479	3.996	240
west13	0.0253	2.683	142.5
ador13	0.5	4.4	270
bir13	0.0186	2.506	152.1
hut13	0.5	4.4	270
pool13	0.0804	3.356	196.6
napp13	0.0429	2.986	165
too13	0.0073	1.967	132
pat13	0.0134	2.317	172.2
tir13	0.0429	2.986	165
merr13	0.0509	3.125	167.5

Lithology Name	Heat Capacity (kJ/m^3*deg C)	Heat Capacity Correction
Sandstone	2800	0
Siltstone	2650	0
Shale	2100	0
Limestone	2600	0
Dolomite	2600	0
Evaporite	1750	0
Coal	950	0
Igneous	2500	0
nam1	2564.	0
eyr1	2754	0
win1	2513.	0
mac1	2558.	0
all1	2535.	0
coo1	2725	0
bull1	2210	0

cad1	2662	0
mur1	2535.	0
mck1	2627.	0
namu1	2765.	0
bir1	2536	0
hut1	2773	0
pool1	2240.	0
napp1	2587.	0
too1	2202	0
dara1	2341	0
rose1	2512.	0
epsi1	2447.	0
mutt1	2512.	0
pat1	2402.	0
nam13	2467.	0
eyr13	2735	0
win13	2443.	0
mac13	2511	0
all13	2515	0
tool13	2210	0
wall13	2210	0
cad13	2719.	0
mur13	2570	0
mck13	2725	0
namu13	2754	0
west13	2604.	0
ador13	2800	0
bir13	2473.	0
hut13	2800	0
pool13	2651	0
napp13	2639	0
too13	2315.	0
pat13	2286.	0
tir13	2639	0
merr13	2642.	0

Lithology Fluid Flow Table

Lithology Name	Initial Porosity A	Initial Porosity B	A	B (1/Pa)	Fraction A
Sandstone	0.0000	0.4500	0.0000	1.350000e-08	0.000
Siltstone	0.5500	0.0000	-0.800	0.000000e+00	1.000
Shale	0.6000	0.0000	-0.800	0.000000e+00	1.000
Limestone	0.6000	0.0000	-0.800	0.000000e+00	1.000
Dolomite	0.6000	0.0000	-0.800	0.000000e+00	1.000
Evaporite	0.0000	0.0000	-0.800	1.350000e-08	0.000
Coal	0.9000	0.0000	-0.800	0.000000e+00	1.000
Igneous	0.0000	0.0000	-0.800	1.350000e-08	0.000
nam1	0.5625	0.4500	-0.800	1.350000e-08	0.820
eyr1	0.5625	0.4500	-0.800	1.350000e-08	0.160
win1	0.5725	0.4500	-0.800	1.350000e-08	0.855
mac1	0.5625	0.4500	-0.800	1.350000e-08	0.840
all1	0.5625	0.4500	-0.800	1.350000e-08	0.920
coo1	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull1	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad1	0.5625	0.4500	-0.800	1.350000e-08	0.480
mur1	0.5625	0.4500	-0.800	1.350000e-08	0.920
mck1	0.5625	0.4500	-0.800	1.350000e-08	0.600
namu1	0.5625	0.4500	-0.800	1.350000e-08	0.120
bir1	0.5756	0.4500	-0.800	1.350000e-08	0.760
hut1	0.5500	0.4500	-0.800	1.350000e-08	0.180
pool1	0.6409	0.4500	-0.800	1.350000e-08	0.860
napp1	0.5625	0.4500	-0.800	1.350000e-08	0.740

too1	0.6560	0.4500	-0.800	1.350000e-08	0.830
dara1	0.6117	0.4500	-0.800	1.350000e-08	0.890
rose1	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi1	0.5850	0.4500	-0.800	1.350000e-08	0.900
mutt1	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat1	0.6026	0.4500	-0.800	1.350000e-08	0.840
nam13	0.5766	0.4500	-0.800	1.350000e-08	0.750
eyr13	0.5600	0.4500	-0.800	1.350000e-08	0.250
win13	0.5852	0.4500	-0.800	1.350000e-08	0.780
mac13	0.5695	0.4500	-0.800	1.350000e-08	0.820
all13	0.5687	0.4500	-0.800	1.350000e-08	0.800
tool13	0.5900	0.0000	-0.800	0.000000e+00	1.000
wall13	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad13	0.5625	0.4500	-0.800	1.350000e-08	0.280
mur13	0.5625	0.4500	-0.800	1.350000e-08	0.800
mck13	0.5500	0.4500	-0.800	1.350000e-08	0.500
namu13	0.5625	0.4500	-0.800	1.350000e-08	0.160
west13	0.5625	0.4500	-0.800	1.350000e-08	0.680
ador13	0.0000	0.4500	0.0000	1.350000e-08	0.000
bir13	0.6010	0.4500	-0.800	1.350000e-08	0.700
hut13	0.0000	0.4500	0.0000	1.350000e-08	0.000
pool13	0.5800	0.4500	-0.800	1.350000e-08	0.400
napp13	0.5625	0.4500	-0.800	1.350000e-08	0.560
too13	0.6206	0.4500	-0.800	1.350000e-08	0.870
pat13	0.6589	0.4500	-0.800	1.350000e-08	0.700
tir13	0.5625	0.4500	-0.800	1.350000e-08	0.560
merr13	0.5650	0.4500	-0.800	1.350000e-08	0.500

Lithology Name	Initial Permeability (milliDarcys)	Permeability Power
Sandstone	2.786221e+04	5.500
Siltstone	1.013171e-01	5.500
Shale	1.013171e-01	5.500
Limestone	2.786221e+04	5.500
Dolomite	2.786221e+04	5.500
Evaporite	1.013171e-08	5.500
Coal	1.013171e-01	5.500
Igneous	1.013171e-08	5.500
nam1	9.655232e-01	5.500
eyr1	3.755972e+03	5.500
win1	6.228538e-01	5.500
mac1	7.515815e-01	5.500
all1	2.759494e-01	5.500
coo1	5.313115e+01	5.500
bull1	1.013171e-01	5.500
cad1	6.825522e+01	5.500
mur1	2.759494e-01	5.500
mck1	1.518504e+01	5.500
namu1	6.198629e+03	5.500
bir1	2.047023e+00	5.500
hut1	2.923719e+03	5.500
pool1	5.850452e-01	5.500
napp1	2.629719e+00	5.500
too1	8.518624e-01	5.500
dara1	4.017996e-01	5.500
rose1	1.013171e-01	5.500
epsi1	3.544999e-01	5.500
mutt1	1.013171e-01	5.500
pat1	7.515815e-01	5.500
nam13	2.320150e+00	5.500
eyr13	1.216697e+03	5.500
win13	2.629719e+00	5.500

mac13	1.240365e+00	5.500
all13	1.240365e+00	5.500
tool13	1.013171e-01	5.500
wall13	1.013171e-01	5.500
cad13	8.356076e+02	5.500
mur13	1.240365e+00	5.500
mck13	5.313115e+01	5.500
namu13	3.755972e+03	5.500
west13	5.575314e+00	5.500
ador13	2.786221e+04	5.500
bir13	4.339930e+00	5.500
hut13	2.786221e+04	5.500
pool13	1.859013e+02	5.500
napp13	2.506047e+01	5.500
too13	5.161740e-01	5.500
pat13	4.339930e+00	5.500
tir13	2.506047e+01	5.500
merr13	5.313115e+01	5.500

Geothermal Gradient Table

Time (Ma)	Depth 1 (m)
0	0

Maturity conversion method: Table
TTI = 4.191876 + 1.817512 * log10(Ro)
Data fit: Least Squares

Model Units

Depth = (m)
Distance = (m)
Thermal Conductivity = (W/m*deg C)
Heat Capacity = (kJ/m^3*deg C)
Heat Flow = (mW/m^2)
Temperature = (deg C)
Heat Generation = (muW/m^3)
Gradient = (deg C/100 m)
Activation Energy = (kcal/mole)
Frequency Factor = (1/my)
HC Density = (g/cm^3)
Pressure = (MPa)
Grain Size = (mm)
Seismic Velocity = (m/s)
Event Time = (msec)
Maturity = (%Ro)
HC Generation = (mg/g TOC)

Calculation Options

Compaction = Sclater & Christie
Porosity Depth Method = Linear
Permeability Calculation = Modified Kozeny-Carman
Geothermal Calculation = Gradient
Maturity Calculation = LLNL
Expulsion Calculation = None
Time Interval = 1.00
Depth Interval = 1000.00
Integrate Depth = No

Advanced Options

TTI Reference Temp = 105.00
TTI Doubling Temp = 10.00
Rock-Eval Correction = 35.00
Thermal Gain = 1.000

```
Critical Fracturing Fraction = 0.850
      Fracture Closure Rate = 0.050
   Conductivity Calculation = Deming/Chapman
                 Initial S1 = 3.00

Rifting HF Options
      Use Rifting Heat Flow = No
            Start Rift Time = 0.00
              End Rift Time = 0.00
             Auto-Calc Beta = No
     Rifting Heat Flow Beta = 2.00

Present Day Info
                 Model Name = CUTTAPIRRIE-1
          Model Description =
       Current Surface Temp = 20.00
          Current Elevation = 0.00
          Current Heat Flow = 63.00

Seismic Parameters
                 Shot Point = 0
                          X = 0.00000000
                          Y = 0.00000000
```

BasinMod Data Report
Licensed to: Natn'l Centre for Petroleum Geology & Geophysics
Mr. Peter Tingate
Version: 4.20
Model Name: CUTTAPIRRIE-1 ERO.
File Name: CUTTAPIRRIE-1 EROSION.mod
Date: Feb 5, 1996
Time: 12:18 pm

Stratigraphy Table

Formation or Event Name	Type	Begin Age (Ma)	Well Top (m)	Present Thick (m)	Missing Thick (m)
QT/T	F	3.3	0	54	
EROSION-1	E	4.3			-55
MISSING SEC-1	D	5.3			55
NAMBA FM.	F	29.3	54	97	
EROSION-2	E	34			-19
MISSING SEC-2	D	38			19
EYRE FM.	F	60	151	61	
EROSION-3	E	75			-440
MISSING SEC-3	D	90			440
WINTON FM.	F	97.5	212	878	
MACKUNDA FM.	F	100	1090	117	
ALLARU/OOD..	F	101	1207	175	
TOOLEBUC FM.	F	102.5	1382	18	
WALLUMBILLA FM.	F	117.5	1400	356	
CADNA-OWIE FM.	F	135.5	1756	73	
MURTA FM.	F	141.5	1829	49	
McKINLAY Mbr.	F	145	1878	3	
NAMUR Sst.	F	151	1881	61	
WESTBOURNE FM.	F	159	1942	129	
ADORI Sst.	F	165	2071	12	
BIRKHEAD FM.	F	175	2083	115	
HUTTON Sst.	F	188	2198	204	
POOLOWANNA FM.	F	193	2402	74	
EROSION-4	E	213			-285
MISSING SEC-4	D	236.5			285
NAPPAMERRI GP.	F	249	2476	281	
TOOLACHEE FM.	F	253.5	2757	34	
EROSION-5	E	256			-230
MISSING SEC-5	D	264.5			230
PATCHAWARRA FM.	F	274	2791	120	
TIRRAWARRA Sst.	F	280	2911	20	
MERRIMELIA FM.	F	285.5	2931	55	

Formation or Event Name	Type	Lithology	Lith Pat
QT/T	F	Sandstone	
EROSION-1	E		
MISSING SEC-1	D	Sandstone	
NAMBA FM.	F	nam13	1
EROSION-2	E		
MISSING SEC-2	D	Sandstone	
EYRE FM.	F	eyr13	
EROSION-3	E		
MISSING SEC-3	D	Sandstone	
WINTON FM.	F	win13	
MACKUNDA FM.	F	mac13	

ALLARU/OOD..	F	all13
TOOLEBUC FM.	F	tool13
WALLUMBILLA FM.	F	wall13
CADNA-OWIE FM.	F	cad13
MURTA FM.	F	mur13
McKINLAY Mbr.	F	mck13
NAMUR Sst.	F	namu13
WESTBOURNE FM.	F	west13
ADORI Sst.	F	ador13
BIRKHEAD FM.	F	bir13
HUTTON Sst.	F	hut13
POOLOWANNA FM.	F	pool13
EROSION-4	E	
MISSING SEC-4	D	Sandstone
NAPPAMERRI GP.	F	napp13
TOOLACHEE FM.	F	too13
EROSION-5	E	
MISSING SEC-5	D	Sandstone
PATCHAWARRA FM.	F	pat13
TIRRAWARRA Sst.	F	tir13
MERRIMELIA FM.	F	merr13

Lithology Mixes Table

Lithology Name	% Sandstone	% Siltstone	% Shale	% Limestone
Sandstone	100			
nam13	25	35	40	
eyr13	75	20	5	
win13	22	35	37	4
mac13	18	50	30	2
all13	20	50	30	
tool13		20	80	
wall13		20	80	
cad13	72	21	7	
mur13	20	60	20	
mck13	50	50		
namu13	84	12	4	
west13	32	51	17	
ador13	100			
bir13	30	46.5	15.5	
hut13	100			
pool13	60	28	10	
napp13	44	42	14	
too13	13	54	18	
pat13	30	37.5	12.5	
tir13	44	42	14	
merr13	50	35	15	

Lithology Name	% Kerogen	Total %
Sandstone		100.0
nam13		100.0
eyr13		100.0
win13	2	100.0
mac13		100.0
all13		100.0
tool13		100.0
wall13		100.0
cad13		100.0
mur13		100.0
mck13		100.0
namu13		100.0

west13		100.0
ador13		100.0
bir13	8	100.0
hut13		100.0
pool13	2	100.0
napp13		100.0
too13	15	100.0
pat13	20	100.0
tir13		100.0
merr13		100.0

Lithology Values Table

Lithology Name	Initial Porosity	Compaction Factor (FM)	Exponential Factor (SC)	Density (g/cm^3)
Sandstone	0.45	1.75	0.27	2.64
Siltstone	0.55	2.2	0.41	2.64
Shale	0.6	2.4	0.51	2.6
Limestone	0.6	1.5	0.22	2.72
Dolomite	0.6	1.5	0.22	2.85
Evaporite	0	0	0	2.15
Coal	0.9	3.5	0.7	1.8
Igneous	0	0	0	2.65
nam1	0.54	2.16	0.40	2.631
eyr1	0.46	1.83	0.29	2.638
win1	0.55	2.20	0.41	2.610
mac1	0.54	2.17	0.40	2.631
all1	0.55	2.21	0.42	2.630
coo1	0.5	1.97	0.34	2.64
bull1	0.59	2.36	0.49	2.608
cad1	0.50	1.99	0.34	2.635
mur1	0.55	2.21	0.42	2.630
mck1	0.51	2.05	0.36	2.634
namu1	0.46	1.81	0.28	2.638
bir1	0.54	2.16	0.40	2.607
hut1	0.46	1.83	0.29	2.64
pool1	0.61	2.43	0.46	2.465
napp1	0.53	2.12	0.39	2.632
too1	0.62	2.45	0.46	2.440
dara1	0.59	2.35	0.45	2.523
rose1	0.56	2.25	0.43	2.63
epsi1	0.57	2.27	0.43	2.581
mutt1	0.56	2.25	0.43	2.63
pat1	0.57	2.29	0.43	2.548
nam13	0.54	2.16	0.41	2.624
eyr13	0.47	1.87	0.31	2.638
win13	0.55	2.17	0.41	2.611
mac13	0.54	2.16	0.41	2.629
all13	0.54	2.17	0.41	2.628
tool13	0.59	2.36	0.49	2.608
wall13	0.59	2.36	0.49	2.608
cad13	0.48	1.89	0.31	2.637
mur13	0.54	2.15	0.40	2.632
mck13	0.5	1.97	0.34	2.64
namu13	0.46	1.83	0.29	2.638
west13	0.52	2.09	0.38	2.633
ador13	0.45	1.75	0.27	2.64
bir13	0.55	2.2	0.40	2.566
hut13	0.45	1.75	0.27	2.64
pool13	0.50	1.97	0.34	2.619
napp13	0.51	2.03	0.36	2.634
too13	0.59	2.37	0.45	2.506
pat13	0.59	2.35	0.43	2.467
tir13	0.51	2.03	0.36	2.634

merr13	0.50	2.00	0.35	2.634

Lithology Name	Grain Size (mm)	Matrix Conductivity (W/m*deg C)	Matrix Cond. Correction
Sandstone	0.5	4.4	270
Siltstone	0.0156	2	170
Shale	0.0004	1.5	-180
Limestone	0.5	2.9	350
Dolomite	0.5	4.8	300
Evaporite	0.0004	5.4	470
Coal	0.0004	0.3	250
Igneous	0.0001	2.9	380
nam1	0.0137	2.329	116.2
eyr1	0.2479	3.996	240
win1	0.0109	2.200	113
mac1	0.0125	2.279	112.5
all1	0.0088	2.077	97.5
coo1	0.0883	3.2	220
bull1	0.0008	1.6	-110
cad1	0.0609	3.188	180
mur1	0.0088	2.077	97.5
mck1	0.0360	2.885	157.5
namu1	0.2954	4.097	247.5
bir1	0.0166	2.435	133.4
hut1	0.2678	3.968	252
pool1	0.0066	1.913	142.2
napp1	0.0195	2.531	131.2
too1	0.0069	1.942	152.9
dara1	0.0070	1.948	124.9
rose1	0.0062	1.875	82.5
epsi1	0.0082	2.033	111.3
mutt1	0.0062	1.875	82.5
pat1	0.0095	2.121	129.2
nam13	0.0085	2.4	55
eyr13	0.1749	3.775	227.5
win13	0.0092	2.345	71.3
mac13	0.0103	2.3	86.6
all13	0.0103	2.33	85
tool13	0.0008	1.6	-110
wall13	0.0008	1.6	-110
cad13	0.1465	3.693	217.5
mur13	0.0149	2.38	120
mck13	0.0883	3.2	220
namu13	0.2479	3.996	240
west13	0.0253	2.683	142.5
ador13	0.5	4.4	270
bir13	0.0186	2.506	152.1
hut13	0.5	4.4	270
pool13	0.0804	3.356	196.6
napp13	0.0429	2.986	165
too13	0.0073	1.967	132
pat13	0.0134	2.317	172.2
tir13	0.0429	2.986	165
merr13	0.0509	3.125	167.5

Lithology Name	Heat Capacity (kJ/m^3*deg C)	Heat Capacity Correction
Sandstone	2800	0
Siltstone	2650	0
Shale	2100	0
Limestone	2600	0
Dolomite	2600	0

Evaporite	1750	0
Coal	950	0
Igneous	2500	0
nam1	2564.	0
eyr1	2754	0
win1	2513.	0
mac1	2558.	0
all1	2535.	0
coo1	2725	0
bull1	2210	0
cad1	2662	0
mur1	2535.	0
mck1	2627.	0
namu1	2765.	0
bir1	2536	0
hut1	2773	0
pool1	2240.	0
napp1	2587.	0
too1	2202	0
dara1	2341	0
rose1	2512.	0
epsi1	2447.	0
mutt1	2512.	0
pat1	2402.	0
nam13	2467.	0
eyr13	2735	0
win13	2443.	0
mac13	2511	0
all13	2515	0
tool13	2210	0
wall13	2210	0
cad13	2719.	0
mur13	2570	0
mck13	2725	0
namu13	2754	0
west13	2604.	0
ador13	2800	0
bir13	2473.	0
hut13	2800	0
pool13	2651	0
napp13	2639	0
too13	2315.	0
pat13	2286.	0
tir13	2639	0
merr13	2642.	0

Lithology Fluid Flow Table

Lithology Name	Initial Porosity A	Initial Porosity B	A	B (1/Pa)	Fraction A
Sandstone	0.0000	0.4500	0.0000	1.350000e-08	0.000
Siltstone	0.5500	0.0000	-0.800	0.000000e+00	1.000
Shale	0.6000	0.0000	-0.800	0.000000e+00	1.000
Limestone	0.6000	0.0000	-0.800	0.000000e+00	1.000
Dolomite	0.6000	0.0000	-0.800	0.000000e+00	1.000
Evaporite	0.0000	0.0000	-0.800	1.350000e-08	0.000
Coal	0.9000	0.0000	-0.800	0.000000e+00	1.000
Igneous	0.0000	0.0000	-0.800	1.350000e-08	0.000
nam1	0.5625	0.4500	-0.800	1.350000e-08	0.820
eyr1	0.5625	0.4500	-0.800	1.350000e-08	0.160
win1	0.5725	0.4500	-0.800	1.350000e-08	0.855
mac1	0.5625	0.4500	-0.800	1.350000e-08	0.840
all1	0.5625	0.4500	-0.800	1.350000e-08	0.920

coo1	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull1	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad1	0.5625	0.4500	-0.800	1.350000e-08	0.480
mur1	0.5625	0.4500	-0.800	1.350000e-08	0.920
mck1	0.5625	0.4500	-0.800	1.350000e-08	0.600
namu1	0.5625	0.4500	-0.800	1.350000e-08	0.120
bir1	0.5756	0.4500	-0.800	1.350000e-08	0.760
hut1	0.5500	0.4500	-0.800	1.350000e-08	0.180
pool1	0.6409	0.4500	-0.800	1.350000e-08	0.860
napp1	0.5625	0.4500	-0.800	1.350000e-08	0.740
too1	0.6560	0.4500	-0.800	1.350000e-08	0.830
dara1	0.6117	0.4500	-0.800	1.350000e-08	0.890
rose1	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi1	0.5850	0.4500	-0.800	1.350000e-08	0.900
mutt1	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat1	0.6026	0.4500	-0.800	1.350000e-08	0.840
nam13	0.5766	0.4500	-0.800	1.350000e-08	0.750
eyr13	0.5600	0.4500	-0.800	1.350000e-08	0.250
win13	0.5852	0.4500	-0.800	1.350000e-08	0.780
mac13	0.5695	0.4500	-0.800	1.350000e-08	0.820
all13	0.5687	0.4500	-0.800	1.350000e-08	0.800
tool13	0.5900	0.0000	-0.800	0.000000e+00	1.000
wall13	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad13	0.5625	0.4500	-0.800	1.350000e-08	0.280
mur13	0.5625	0.4500	-0.800	1.350000e-08	0.800
mck13	0.5500	0.4500	-0.800	1.350000e-08	0.500
namu13	0.5625	0.4500	-0.800	1.350000e-08	0.160
west13	0.5625	0.4500	-0.800	1.350000e-08	0.680
ador13	0.0000	0.4500	0.0000	1.350000e-08	0.000
bir13	0.6010	0.4500	-0.800	1.350000e-08	0.700
hut13	0.0000	0.4500	0.0000	1.350000e-08	0.000
pool13	0.5800	0.4500	-0.800	1.350000e-08	0.400
napp13	0.5625	0.4500	-0.800	1.350000e-08	0.560
too13	0.6206	0.4500	-0.800	1.350000e-08	0.870
pat13	0.6589	0.4500	-0.800	1.350000e-08	0.700
tir13	0.5625	0.4500	-0.800	1.350000e-08	0.560
merr13	0.5650	0.4500	-0.800	1.350000e-08	0.500

Lithology Name	Initial Permeability (milliDarcys)	Permeability Power
Sandstone	2.786221e+04	5.500
Siltstone	1.013171e-01	5.500
Shale	1.013171e-01	5.500
Limestone	2.786221e+04	5.500
Dolomite	2.786221e+04	5.500
Evaporite	1.013171e-08	5.500
Coal	1.013171e-01	5.500
Igneous	1.013171e-08	5.500
nam1	9.655232e-01	5.500
eyr1	3.755972e+03	5.500
win1	6.228538e-01	5.500
mac1	7.515815e-01	5.500
all1	2.759494e-01	5.500
coo1	5.313115e+01	5.500
bull1	1.013171e-01	5.500
cad1	6.825522e+01	5.500
mur1	2.759494e-01	5.500
mck1	1.518504e+01	5.500
namu1	6.198629e+03	5.500
bir1	2.047023e+00	5.500
hut1	2.923719e+03	5.500
pool1	5.850452e-01	5.500

napp1	2.629719e+00	5.500
too1	8.518624e-01	5.500
dara1	4.017996e-01	5.500
rose1	1.013171e-01	5.500
epsi1	3.544999e-01	5.500
mutt1	1.013171e-01	5.500
pat1	7.515815e-01	5.500
nam13	2.320150e+00	5.500
eyr13	1.216697e+03	5.500
win13	2.629719e+00	5.500
mac13	1.240365e+00	5.500
all13	1.240365e+00	5.500
tool13	1.013171e-01	5.500
wall13	1.013171e-01	5.500
cad13	8.356076e+02	5.500
mur13	1.240365e+00	5.500
mck13	5.313115e+01	5.500
namu13	3.755972e+03	5.500
west13	5.575314e+00	5.500
ador13	2.786221e+04	5.500
bir13	4.339930e+00	5.500
hut13	2.786221e+04	5.500
pool13	1.859013e+02	5.500
napp13	2.506047e+01	5.500
too13	5.161740e-01	5.500
pat13	4.339930e+00	5.500
tir13	2.506047e+01	5.500
merr13	5.313115e+01	5.500

Geothermal Gradient Table

Time (Ma)	Depth 1 (m)
0	0

Maturity conversion method: Table
TTI = 4.191876 + 1.817512 * log10(Ro)
Data fit: Least Squares

Model Units

Depth = (m)
Distance = (m)
Thermal Conductivity = (W/m*deg C)
Heat Capacity = (kJ/m^3*deg C)
Heat Flow = (mW/m^2)
Temperature = (deg C)
Heat Generation = (muW/m^3)
Gradient = (deg C/100 m)
Activation Energy = (kcal/mole)
Frequency Factor = (1/my)
HC Density = (g/cm^3)
Pressure = (MPa)
Grain Size = (mm)
Seismic Velocity = (m/s)
Event Time = (msec)
Maturity = (%Ro)
HC Generation = (mg/g TOC)

Calculation Options

Compaction = Sclater & Christie
Porosity Depth Method = Linear
Permeability Calculation = Modified Kozeny-Carman
Geothermal Calculation = Gradient
Maturity Calculation = LLNL

```
        Expulsion Calculation = None
                Time Interval = 1.00
               Depth Interval = 1000.00
              Integrate Depth = No

Advanced Options
           TTI Reference Temp = 105.00
            TTI Doubling Temp = 10.00
         Rock-Eval Correction = 35.00
                 Thermal Gain = 1.000
Critical Fracturing Fraction = 0.850
       Fracture Closure Rate = 0.050
   Conductivity Calculation = Deming/Chapman
                  Initial S1 = 3.00

Rifting HF Options
      Use Rifting Heat Flow = No
            Start Rift Time = 0.00
              End Rift Time = 0.00
             Auto-Calc Beta = No
     Rifting Heat Flow Beta = 2.00

Present Day Info
                 Model Name = CUTTAPIRRIE-1 ERO.
          Model Description =
       Current Surface Temp = 20.00
          Current Elevation = 0.00
          Current Heat Flow = 63.00

Seismic Parameters
                 Shot Point = 0
                          X = 0.00000000
                          Y = 0.00000000
```

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+----------------------------------------------+
| BasinMod Data Report                         |
| Licensed to: Natn'l Centre for Petroleum Geology & Geophysics |
|              Mr. Peter Tingate               |
|     Version: 4.20                            |
|  Model Name: JENA-1                          |
|   File Name: JENA-1.mod                      |
|        Date: Feb  5, 1996                    |
|        Time: 12:13 pm                        |
+----------------------------------------------+
```

Stratigraphy Table

Formation or Event Name	Type	Begin Age (Ma)	Well Top (m)	Present Thick (m)	Lithology
QT/T	F	3.3	0	18	Sandstone
HIATUS-1	H	5.3			
NAMBA FM.	F	29.3	18	103	nam12
HIATUS-2	H	38			
EYRE FM.	F	60	121	46	eyr12
HIATUS-3	H	90			
WINTON FM.	F	97.5	167	434	win12
MACKUNDA FM.	F	100	601	100	mac12
ALLARU/OOD..	F	105.5	701	196	all12
COORIKIANA Sst.	F	108	897	11	coo12
BULLDOG SHALE	F	117.5	908	220	bull12
CADNA-OWIE FM.	F	135.5	1128	61	cad12
MURTA FM.	F	141.5	1189	46	mur12
McKINLAY Mbr.	F	145	1235	9	mck12
NAMUR Sst.	F	151	1244	62	namu12
WESTBOURNE FM.	F	165	1306	149	west12
BIRKHEAD FM.	F	175	1455	18	bir12
HUTTON Sst.	F	188	1473	98	hut12

Formation or Event Name	Type	Lith Pat
QT/T	F	
HIATUS-1	H	
NAMBA FM.	F	1
HIATUS-2	H	
EYRE FM.	F	
HIATUS-3	H	
WINTON FM.	F	
MACKUNDA FM.	F	
ALLARU/OOD..	F	
COORIKIANA Sst.	F	
BULLDOG SHALE	F	
CADNA-OWIE FM.	F	
MURTA FM.	F	
McKINLAY Mbr.	F	
NAMUR Sst.	F	
WESTBOURNE FM.	F	
BIRKHEAD FM.	F	
HUTTON Sst.	F	

Lithology Mixes Table

Lithology Name	% Sandstone	% Siltstone	% Shale	% Limestone
Sandstone	100			
nam12	30	34	34	2

eyr12	90	10	
win12	18	60	20
mac12	16	63	21
all12	12	46	42
coo12	50	50	
bull12		20	80
cad12	60	30	10
mur12	4	72	24
mck12	50	50	
namu12	92	6	2
west12	65	25	10
bir12	44	42	14
hut12	85	10	5

Lithology Name	% Kerogen	Total %
Sandstone		100.0
nam12		100.0
eyr12		100.0
win12	2	100.0
mac12		100.0
all12		100.0
coo12		100.0
bull12		100.0
cad12		100.0
mur12		100.0
mck12		100.0
namu12		100.0
west12		100.0
bir12		100.0
hut12		100.0

Lithology Values Table

Lithology Name	Initial Porosity	Compaction Factor (FM)	Exponential Factor (SC)	Density (g/cm^3)
Sandstone	0.45	1.75	0.27	2.64
Siltstone	0.55	2.2	0.41	2.64
Shale	0.6	2.4	0.51	2.6
Limestone	0.6	1.5	0.22	2.72
Dolomite	0.6	1.5	0.22	2.85
Evaporite	0	0	0	2.15
Coal	0.9	3.5	0.7	1.8
Igneous	0	0	0	2.65
nam1	0.54	2.16	0.40	2.631
eyr1	0.46	1.83	0.29	2.638
win1	0.55	2.20	0.41	2.610
mac1	0.54	2.17	0.40	2.631
all1	0.55	2.21	0.42	2.630
coo1	0.5	1.97	0.34	2.64
bull1	0.59	2.36	0.49	2.608
cad1	0.50	1.99	0.34	2.635
mur1	0.55	2.21	0.42	2.630
mck1	0.51	2.05	0.36	2.634
namu1	0.46	1.81	0.28	2.638
bir1	0.54	2.16	0.40	2.607
hut1	0.46	1.83	0.29	2.64
pool1	0.61	2.43	0.46	2.465
napp1	0.53	2.12	0.39	2.632
too1	0.62	2.45	0.46	2.440
dara1	0.59	2.35	0.45	2.523
rose1	0.56	2.25	0.43	2.63
epsi1	0.57	2.27	0.43	2.581

mutt1	0.56	2.25	0.43	2.63
pat1	0.57	2.29	0.43	2.548
nam12	0.53	2.11	0.39	2.628
eyr12	0.46	1.79	0.28	2.64
win12	0.54	2.18	0.41	2.615
mac12	0.54	2.17	0.40	2.631
all12	0.55	2.23	0.43	2.623
coo12	0.5	1.97	0.34	2.64
bull12	0.59	2.36	0.49	2.608
cad12	0.49	1.95	0.33	2.636
mur12	0.55	2.23	0.42	2.630
mck12	0.5	1.97	0.34	2.64
namu12	0.45	1.79	0.28	2.639
west12	0.49	1.92	0.32	2.636
bir12	0.51	2.03	0.36	2.634
hut12	0.46	1.82	0.29	2.638

Lithology Name	Grain Size (mm)	Matrix Conductivity (W/m*deg C)	Matrix Cond. Correction
Sandstone	0.5	4.4	270
Siltstone	0.0156	2	170
Shale	0.0004	1.5	-180
Limestone	0.5	2.9	350
Dolomite	0.5	4.8	300
Evaporite	0.0004	5.4	470
Coal	0.0004	0.3	250
Igneous	0.0001	2.9	380
nam1	0.0137	2.329	116.2
eyr1	0.2479	3.996	240
win1	0.0109	2.200	113
mac1	0.0125	2.279	112.5
all1	0.0088	2.077	97.5
coo1	0.0883	3.2	220
bull1	0.0008	1.6	-110
cad1	0.0609	3.188	180
mur1	0.0088	2.077	97.5
mck1	0.0360	2.885	157.5
namu1	0.2954	4.097	247.5
bir1	0.0166	2.435	133.4
hut1	0.2678	3.968	252
pool1	0.0066	1.913	142.2
napp1	0.0195	2.531	131.2
too1	0.0069	1.942	152.9
dara1	0.0070	1.948	124.9
rose1	0.0062	1.875	82.5
epsi1	0.0082	2.033	111.3
mutt1	0.0062	1.875	82.5
pat1	0.0095	2.121	129.2
nam12	0.0136	2.568	84.6
eyr12	0.3534	4.16	260
win12	0.0130	2.298	119.6
mac12	0.0125	2.279	112.5
all12	0.0050	2.078	35
coo12	0.0883	3.2	220
bull12	0.0008	1.6	-110
cad12	0.0866	3.39	195
mur12	0.0074	1.976	90
mck12	0.0883	3.2	220
namu12	0.3521	4.198	255
west12	0.1029	3.51	200
bir12	0.0429	2.986	165
hut12	0.2474	4.015	237.5

Lithology Name	Heat Capacity (kJ/m^3*deg C)	Heat Capacity Correction
Sandstone	2800	0
Siltstone	2650	0
Shale	2100	0
Limestone	2600	0
Dolomite	2600	0
Evaporite	1750	0
Coal	950	0
Igneous	2500	0
nam1	2564.	0
eyr1	2754	0
win1	2513.	0
mac1	2558.	0
all1	2535.	0
coo1	2725	0
bull1	2210	0
cad1	2662	0
mur1	2535.	0
mck1	2627.	0
namu1	2765.	0
bir1	2536	0
hut1	2773	0
pool1	2240.	0
napp1	2587.	0
too1	2202	0
dara1	2341	0
rose1	2512.	0
epsi1	2447.	0
mutt1	2512.	0
pat1	2402.	0
nam12	2507	0
eyr12	2785	0
win12	2533	0
mac12	2558.	0
all12	2437	0
coo12	2725	0
bull12	2210	0
cad12	2685	0
mur12	2524	0
mck12	2725	0
namu12	2777	0
west12	2692.	0
bir12	2639	0
hut12	2750	0

Lithology Fluid Flow Table

Lithology Name	Initial Porosity A	Initial Porosity B	A	B (1/Pa)	Fraction A
Sandstone	0.0000	0.4500	0.0000	1.350000e-08	0.000
Siltstone	0.5500	0.0000	-0.800	0.000000e+00	1.000
Shale	0.6000	0.0000	-0.800	0.000000e+00	1.000
Limestone	0.6000	0.0000	-0.800	0.000000e+00	1.000
Dolomite	0.6000	0.0000	-0.800	0.000000e+00	1.000
Evaporite	0.0000	0.0000	-0.800	1.350000e-08	0.000
Coal	0.9000	0.0000	-0.800	0.000000e+00	1.000
Igneous	0.0000	0.0000	-0.800	1.350000e-08	0.000
nam1	0.5625	0.4500	-0.800	1.350000e-08	0.820
eyr1	0.5625	0.4500	-0.800	1.350000e-08	0.160
win1	0.5725	0.4500	-0.800	1.350000e-08	0.855
mac1	0.5625	0.4500	-0.800	1.350000e-08	0.840

all1	0.5625	0.4500	-0.800	1.350000e-08	0.920
coo1	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull1	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad1	0.5625	0.4500	-0.800	1.350000e-08	0.480
mur1	0.5625	0.4500	-0.800	1.350000e-08	0.920
mck1	0.5625	0.4500	-0.800	1.350000e-08	0.600
namu1	0.5625	0.4500	-0.800	1.350000e-08	0.120
bir1	0.5756	0.4500	-0.800	1.350000e-08	0.760
hut1	0.5500	0.4500	-0.800	1.350000e-08	0.180
pool1	0.6409	0.4500	-0.800	1.350000e-08	0.860
napp1	0.5625	0.4500	-0.800	1.350000e-08	0.740
too1	0.6560	0.4500	-0.800	1.350000e-08	0.830
dara1	0.6117	0.4500	-0.800	1.350000e-08	0.890
rose1	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi1	0.5850	0.4500	-0.800	1.350000e-08	0.900
mutt1	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat1	0.6026	0.4500	-0.800	1.350000e-08	0.840
nam12	0.5757	0.4500	-0.800	1.350000e-08	0.700
eyr12	0.5500	0.4500	-0.800	1.350000e-08	0.100
win12	0.5707	0.4500	-0.800	1.350000e-08	0.820
mac12	0.5625	0.4500	-0.800	1.350000e-08	0.840
all12	0.5738	0.4500	-0.800	1.350000e-08	0.880
coo12	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull12	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad12	0.5625	0.4500	-0.800	1.350000e-08	0.400
mur12	0.5625	0.4500	-0.800	1.350000e-08	0.960
mck12	0.5500	0.4500	-0.800	1.350000e-08	0.500
namu12	0.5625	0.4500	-0.800	1.350000e-08	0.080
west12	0.5642	0.4500	-0.800	1.350000e-08	0.350
bir12	0.5625	0.4500	-0.800	1.350000e-08	0.560
hut12	0.5666	0.4500	-0.800	1.350000e-08	0.150

Lithology Name	Initial Permeability (milliDarcys)	Permeability Power
Sandstone	2.786221e+04	5.500
Siltstone	1.013171e-01	5.500
Shale	1.013171e-01	5.500
Limestone	2.786221e+04	5.500
Dolomite	2.786221e+04	5.500
Evaporite	1.013171e-08	5.500
Coal	1.013171e-01	5.500
Igneous	1.013171e-08	5.500
nam1	9.655232e-01	5.500
eyr1	3.755972e+03	5.500
win1	6.228538e-01	5.500
mac1	7.515815e-01	5.500
all1	2.759494e-01	5.500
coo1	5.313115e+01	5.500
bull1	1.013171e-01	5.500
cad1	6.825522e+01	5.500
mur1	2.759494e-01	5.500
mck1	1.518504e+01	5.500
namu1	6.198629e+03	5.500
bir1	2.047023e+00	5.500
hut1	2.923719e+03	5.500
pool1	5.850452e-01	5.500
napp1	2.629719e+00	5.500
too1	8.518624e-01	5.500
dara1	4.017996e-01	5.500
rose1	1.013171e-01	5.500
epsi1	3.544999e-01	5.500
mutt1	1.013171e-01	5.500

pat1	7.515815e-01	5.500
nam12	5.575314e+00	5.500
eyr12	7.963102e+03	5.500
win12	9.655232e-01	5.500
mac12	7.515815e-01	5.500
all12	4.554102e-01	5.500
coo12	5.313115e+01	5.500
bull12	1.013171e-01	5.500
cad12	1.859013e+02	5.500
mur12	1.672077e-01	5.500
mck12	5.313115e+01	5.500
namu12	1.022984e+04	5.500
west12	3.477356e+02	5.500
bir12	2.506047e+01	5.500
hut12	4.257118e+03	5.500

Geothermal Gradient Table

Time (Ma)	Depth 1 (m)
0	0

Maturity conversion method: Table
TTI = 4.191876 + 1.817512 * log10(Ro)
Data fit: Least Squares

Model Units

Depth =	(m)
Distance =	(m)
Thermal Conductivity =	(W/m*deg C)
Heat Capacity =	(kJ/m^3*deg C)
Heat Flow =	(mW/m^2)
Temperature =	(deg C)
Heat Generation =	(muW/m^3)
Gradient =	(deg C/100 m)
Activation Energy =	(kcal/mole)
Frequency Factor =	(1/my)
HC Density =	(g/cm^3)
Pressure =	(MPa)
Grain Size =	(mm)
Seismic Velocity =	(m/s)
Event Time =	(msec)
Maturity =	(%Ro)
HC Generation =	(mg/g TOC)

Calculation Options

Compaction =	Sclater & Christie
Porosity Depth Method =	Linear
Permeability Calculation =	Modified Kozeny-Carman
Geothermal Calculation =	Gradient
Maturity Calculation =	LLNL
Expulsion Calculation =	None
Time Interval =	1.00
Depth Interval =	1000.00
Integrate Depth =	No

Advanced Options

TTI Reference Temp =	105.00
TTI Doubling Temp =	10.00
Rock-Eval Correction =	35.00
Thermal Gain =	1.000
Critical Fracturing Fraction =	0.850
Fracture Closure Rate =	0.050
Conductivity Calculation =	Deming/Chapman

Initial S1 = 3.00

Rifting HF Options
Use Rifting Heat Flow = No
Start Rift Time = 0.00
End Rift Time = 0.00
Auto-Calc Beta = No
Rifting Heat Flow Beta = 2.00

Present Day Info
Model Name = JENA-1
Model Description =
Current Surface Temp = 20.00
Current Elevation = 0.00
Current Heat Flow = 63.00

Seismic Parameters
Shot Point = 0
X = 0.00000000
Y = 0.00000000

BasinMod Data Report
Licensed to: Natn'l Centre for Petroleum Geology & Geophysics
Mr. Peter Tingate
Version: 4.20
Model Name: JENA-1 EROSION
File Name: JENA-1 EROSION.mod
Date: Feb 5, 1996
Time: 12:14 pm

Stratigraphy Table

Formation or Event Name	Type	Begin Age (Ma)	Well Top (m)	Present Thick (m)	Missing Thick (m)
QT/T	F	3.3	0	18	
EROSION-1	E	4.3			-22
MISSING SEC-1	D	5.3			22
NAMBA FM.	F	29.3	18	103	
EROSION-2	E	34			-25
MISSING SEC-2	D	38			25
EYRE FM.	F	60	121	46	
EROSION-3	E	75			-150
MISSING SEC-3	D	90			150
WINTON FM.	F	97.5	167	434	
MACKUNDA FM.	F	100	601	100	
ALLARU/OOD..	F	105.5	701	196	
COORIKIANA Sst.	F	108	897	11	
BULLDOG SHALE	F	117.5	908	220	
CADNA-OWIE FM.	F	135.5	1128	61	
MURTA FM.	F	141.5	1189	46	
cKINLAY Mbr.	F	145	1235	9	
NAMUR Sst.	F	151	1244	62	
WESTBOURNE FM.	F	165	1306	149	
BIRKHEAD FM.	F	175	1455	18	
HUTTON Sst.	F	188	1473	98	

Formation or Event Name	Type	Lithology	Lith Pat
QT/T	F	Sandstone	
EROSION-1	E		
MISSING SEC-1	D	Sandstone	
NAMBA FM.	F	nam12	1
EROSION-2	E		
MISSING SEC-2	D	Sandstone	
EYRE FM.	F	eyr12	
EROSION-3	E		
MISSING SEC-3	D	Sandstone	
WINTON FM.	F	win12	
MACKUNDA FM.	F	mac12	
ALLARU/OOD..	F	all12	
COORIKIANA Sst.	F	coo12	
BULLDOG SHALE	F	bull12	
CADNA-OWIE FM.	F	cad12	
MURTA FM.	F	mur12	
cKINLAY Mbr.	F	mck12	
NAMUR Sst.	F	namu12	
WESTBOURNE FM.	F	west12	
BIRKHEAD FM.	F	bir12	
HUTTON Sst.	F	hut12	

Lithology Mixes Table

Lithology Name	% Sandstone	% Siltstone	% Shale	% Limestone
Sandstone	100			
nam12	30	34	34	2
eyr12	90	10		
win12	18	60	20	
mac12	16	63	21	
all12	12	46	42	
coo12	50	50		
bull12		20	80	
cad12	60	30	10	
mur12	4	72	24	
mck12	50	50		
namu12	92	6	2	
west12	65	25	10	
bir12	44	42	14	
hut12	85	10	5	

Lithology Name	% Kerogen	Total %
Sandstone		100.0
nam12		100.0
eyr12		100.0
win12	2	100.0
mac12		100.0
all12		100.0
coo12		100.0
bull12		100.0
cad12		100.0
mur12		100.0
mck12		100.0
namu12		100.0
west12		100.0
bir12		100.0
hut12		100.0

Lithology Values Table

Lithology Name	Initial Porosity	Compaction Factor (FM)	Exponential Factor (SC)	Density (g/cm^3)
Sandstone	0.45	1.75	0.27	2.64
Siltstone	0.55	2.2	0.41	2.64
Shale	0.6	2.4	0.51	2.6
Limestone	0.6	1.5	0.22	2.72
Dolomite	0.6	1.5	0.22	2.85
Evaporite	0	0	0	2.15
Coal	0.9	3.5	0.7	1.8
Igneous	0	0	0	2.65
nam1	0.54	2.16	0.40	2.631
eyr1	0.46	1.83	0.29	2.638
win1	0.55	2.20	0.41	2.610
mac1	0.54	2.17	0.40	2.631
all1	0.55	2.21	0.42	2.630
coo1	0.5	1.97	0.34	2.64
bull1	0.59	2.36	0.49	2.608
cad1	0.50	1.99	0.34	2.635
mur1	0.55	2.21	0.42	2.630
mck1	0.51	2.05	0.36	2.634
namu1	0.46	1.81	0.28	2.638
bir1	0.54	2.16	0.40	2.607
hut1	0.46	1.83	0.29	2.64

pool1	0.61	2.43	0.46	2.465
napp1	0.53	2.12	0.39	2.632
too1	0.62	2.45	0.46	2.440
dara1	0.59	2.35	0.45	2.523
rose1	0.56	2.25	0.43	2.63
epsi1	0.57	2.27	0.43	2.581
mutt1	0.56	2.25	0.43	2.63
pat1	0.57	2.29	0.43	2.548
nam12	0.53	2.11	0.39	2.628
eyr12	0.46	1.79	0.28	2.64
win12	0.54	2.18	0.41	2.615
mac12	0.54	2.17	0.40	2.631
all12	0.55	2.23	0.43	2.623
coo12	0.5	1.97	0.34	2.64
bull12	0.59	2.36	0.49	2.608
cad12	0.49	1.95	0.33	2.636
mur12	0.55	2.23	0.42	2.630
mck12	0.5	1.97	0.34	2.64
namu12	0.45	1.79	0.28	2.639
west12	0.49	1.92	0.32	2.636
bir12	0.51	2.03	0.36	2.634
hut12	0.46	1.82	0.29	2.638

Lithology Name	Grain Size (mm)	Matrix Conductivity (W/m*deg C)	Matrix Cond. Correction
Sandstone	0.5	4.4	270
Siltstone	0.0156	2	170
Shale	0.0004	1.5	-180
Limestone	0.5	2.9	350
Dolomite	0.5	4.8	300
Evaporite	0.0004	5.4	470
Coal	0.0004	0.3	250
Igneous	0.0001	2.9	380
nam1	0.0137	2.329	116.2
eyr1	0.2479	3.996	240
win1	0.0109	2.200	113
mac1	0.0125	2.279	112.5
all1	0.0088	2.077	97.5
coo1	0.0883	3.2	220
bull1	0.0008	1.6	-110
cad1	0.0609	3.188	180
mur1	0.0088	2.077	97.5
mck1	0.0360	2.885	157.5
namu1	0.2954	4.097	247.5
bir1	0.0166	2.435	133.4
hut1	0.2678	3.968	252
pool1	0.0066	1.913	142.2
napp1	0.0195	2.531	131.2
too1	0.0069	1.942	152.9
dara1	0.0070	1.948	124.9
rose1	0.0062	1.875	82.5
epsi1	0.0082	2.033	111.3
mutt1	0.0062	1.875	82.5
pat1	0.0095	2.121	129.2
nam12	0.0136	2.568	84.6
eyr12	0.3534	4.16	260
win12	0.0130	2.298	119.6
mac12	0.0125	2.279	112.5
all12	0.0050	2.078	35
coo12	0.0883	3.2	220
bull12	0.0008	1.6	-110
cad12	0.0866	3.39	195
mur12	0.0074	1.976	90

mck12	0.0883	3.2	220
namu12	0.3521	4.198	255
west12	0.1029	3.51	200
bir12	0.0429	2.986	165
hut12	0.2474	4.015	237.5

Lithology Name	Heat Capacity (kJ/m^3*deg C)	Heat Capacity Correction
Sandstone	2800	0
Siltstone	2650	0
Shale	2100	0
Limestone	2600	0
Dolomite	2600	0
Evaporite	1750	0
Coal	950	0
Igneous	2500	0
nam1	2564.	0
eyr1	2754	0
win1	2513.	0
mac1	2558.	0
all1	2535.	0
coo1	2725	0
bull1	2210	0
cad1	2662	0
mur1	2535.	0
mck1	2627.	0
namu1	2765.	0
bir1	2536	0
hut1	2773	0
pool1	2240.	0
napp1	2587.	0
too1	2202	0
dara1	2341	0
rose1	2512.	0
epsi1	2447.	0
mutt1	2512.	0
pat1	2402.	0
nam12	2507	0
eyr12	2785	0
win12	2533	0
mac12	2558.	0
all12	2437	0
coo12	2725	0
bull12	2210	0
cad12	2685	0
mur12	2524	0
mck12	2725	0
namu12	2777	0
west12	2692.	0
bir12	2639	0
hut12	2750	0

Lithology Fluid Flow Table

Lithology Name	Initial Porosity A	Initial Porosity B	A	B (1/Pa)	Fraction A
Sandstone	0.0000	0.4500	0.0000	1.350000e-08	0.000
Siltstone	0.5500	0.0000	-0.800	0.000000e+00	1.000
Shale	0.6000	0.0000	-0.800	0.000000e+00	1.000
Limestone	0.6000	0.0000	-0.800	0.000000e+00	1.000
Dolomite	0.6000	0.0000	-0.800	0.000000e+00	1.000
Evaporite	0.0000	0.0000	-0.800	1.350000e-08	0.000

Coal	0.9000	0.0000	-0.800	0.000000e+00	1.000
Igneous	0.0000	0.0000	-0.800	1.350000e-08	0.000
nam1	0.5625	0.4500	-0.800	1.350000e-08	0.820
eyr1	0.5625	0.4500	-0.800	1.350000e-08	0.160
win1	0.5725	0.4500	-0.800	1.350000e-08	0.855
mac1	0.5625	0.4500	-0.800	1.350000e-08	0.840
all1	0.5625	0.4500	-0.800	1.350000e-08	0.920
coo1	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull1	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad1	0.5625	0.4500	-0.800	1.350000e-08	0.480
mur1	0.5625	0.4500	-0.800	1.350000e-08	0.920
mck1	0.5625	0.4500	-0.800	1.350000e-08	0.600
namu1	0.5625	0.4500	-0.800	1.350000e-08	0.120
bir1	0.5756	0.4500	-0.800	1.350000e-08	0.760
hut1	0.5500	0.4500	-0.800	1.350000e-08	0.180
pool1	0.6409	0.4500	-0.800	1.350000e-08	0.860
napp1	0.5625	0.4500	-0.800	1.350000e-08	0.740
too1	0.6560	0.4500	-0.800	1.350000e-08	0.830
dara1	0.6117	0.4500	-0.800	1.350000e-08	0.890
rose1	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi1	0.5850	0.4500	-0.800	1.350000e-08	0.900
mutt1	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat1	0.6026	0.4500	-0.800	1.350000e-08	0.840
nam12	0.5757	0.4500	-0.800	1.350000e-08	0.700
eyr12	0.5500	0.4500	-0.800	1.350000e-08	0.100
win12	0.5707	0.4500	-0.800	1.350000e-08	0.820
mac12	0.5625	0.4500	-0.800	1.350000e-08	0.840
all12	0.5738	0.4500	-0.800	1.350000e-08	0.880
coo12	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull12	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad12	0.5625	0.4500	-0.800	1.350000e-08	0.400
mur12	0.5625	0.4500	-0.800	1.350000e-08	0.960
mck12	0.5500	0.4500	-0.800	1.350000e-08	0.500
namu12	0.5625	0.4500	-0.800	1.350000e-08	0.080
west12	0.5642	0.4500	-0.800	1.350000e-08	0.350
bir12	0.5625	0.4500	-0.800	1.350000e-08	0.560
hut12	0.5666	0.4500	-0.800	1.350000e-08	0.150

Lithology Name	Initial Permeability (milliDarcys)	Permeability Power
Sandstone	2.786221e+04	5.500
Siltstone	1.013171e-01	5.500
Shale	1.013171e-01	5.500
Limestone	2.786221e+04	5.500
Dolomite	2.786221e+04	5.500
Evaporite	1.013171e-08	5.500
Coal	1.013171e-01	5.500
Igneous	1.013171e-08	5.500
nam1	9.655232e-01	5.500
eyr1	3.755972e+03	5.500
win1	6.228538e-01	5.500
mac1	7.515815e-01	5.500
all1	2.759494e-01	5.500
coo1	5.313115e+01	5.500
bull1	1.013171e-01	5.500
cad1	6.825522e+01	5.500
mur1	2.759494e-01	5.500
mck1	1.518504e+01	5.500
namu1	6.198629e+03	5.500
bir1	2.047023e+00	5.500
hut1	2.923719e+03	5.500
pool1	5.850452e-01	5.500

napp1	2.629719e+00	5.500
too1	8.518624e-01	5.500
dara1	4.017996e-01	5.500
rose1	1.013171e-01	5.500
epsi1	3.544999e-01	5.500
mutt1	1.013171e-01	5.500
pat1	7.515815e-01	5.500
nam12	5.575314e+00	5.500
eyr12	7.963102e+03	5.500
win12	9.655232e-01	5.500
mac12	7.515815e-01	5.500
all12	4.554102e-01	5.500
coo12	5.313115e+01	5.500
bull12	1.013171e-01	5.500
cad12	1.859013e+02	5.500
mur12	1.672077e-01	5.500
mck12	5.313115e+01	5.500
namu12	1.022984e+04	5.500
west12	3.477356e+02	5.500
bir12	2.506047e+01	5.500
hut12	4.257118e+03	5.500

Geothermal Gradient Table

Time (Ma)	Depth 1 (m)
0	0

Maturity conversion method: Table
TTI = 4.191876 + 1.817512 * log10(Ro)
Data fit: Least Squares

Model Units

Depth = (m)
Distance = (m)
Thermal Conductivity = (W/m*deg C)
Heat Capacity = (kJ/m^3*deg C)
Heat Flow = (mW/m^2)
Temperature = (deg C)
Heat Generation = (muW/m^3)
Gradient = (deg C/100 m)
Activation Energy = (kcal/mole)
Frequency Factor = (1/my)
HC Density = (g/cm^3)
Pressure = (MPa)
Grain Size = (mm)
Seismic Velocity = (m/s)
Event Time = (msec)
Maturity = (%Ro)
HC Generation = (mg/g TOC)

Calculation Options

Compaction = Sclater & Christie
Porosity Depth Method = Linear
Permeability Calculation = Modified Kozeny-Carman
Geothermal Calculation = Gradient
Maturity Calculation = LLNL
Expulsion Calculation = None
Time Interval = 1.00
Depth Interval = 1000.00
Integrate Depth = No

Advanced Options

TTI Reference Temp = 105.00

```
          TTI Doubling Temp = 10.00
       Rock-Eval Correction = 35.00
               Thermal Gain = 1.000
Critical Fracturing Fraction = 0.850
      Fracture Closure Rate = 0.050
   Conductivity Calculation = Deming/Chapman
                 Initial S1 = 3.00

Rifting HF Options
      Use Rifting Heat Flow = No
            Start Rift Time = 0.00
              End Rift Time = 0.00
             Auto-Calc Beta = No
     Rifting Heat Flow Beta = 2.00

Present Day Info
                 Model Name = JENA-1 EROSION
          Model Description =
       Current Surface Temp = 20.00
          Current Elevation = 0.00
          Current Heat Flow = 63.00

Seismic Parameters
                 Shot Point = 0
                          X = 0.00000000
                          Y = 0.00000000
```

BasinMod Data Report
Licensed to: Natn'l Centre for Petroleum Geology & Geophysics
Mr. Peter Tingate
Version: 4.20
Model Name: KIRRALEE-1
File Name: KIRRALEE-1.mod
Date: Feb 5, 1996
Time: 12:19 pm

Stratigraphy Table

Formation or Event Name	Type	Begin Age (Ma)	Well Top (m)	Present Thick (m)	Lithology
QT/T	F	3.3	0	44	Sandstone
HIATUS-1	H	5.3			
NAMBA FM.	F	29.3	44	157	nam11
HIATUS-2	H	38			
EYRE FM.	F	60	201	109	eyr11
HIATUS-3	H	90			
WINTON FM.	F	97.5	310	678	win11
MACKUNDA FM.	F	100	988	84	mac11
ALLARU Mdst..	F	101	1072	172	all11
TOOLEBUC FM.	F	102.5	1244	12	tool11
OODNADATTA FM.	F	105.5	1256	132	ood11
COORIKIANA Sst.	F	108	1388	18	coo11
BULLDOG SHALE	F	117.5	1406	244	bull11
CADNA-OWIE FM.	F	135.5	1650	68	cad11
MURTA FM.	F	141.5	1718	43	mur11
McKINLAY Mbr.	F	145	1761	6	mck11
NAMUR Sst.	F	151	1767	72	namu11
WESTBOURNE FM.	F	159	1839	88	west11
ADORI Sst.	F	165	1927	53	ador11
BIRKHEAD FM.	F	175	1980	54	bir11
HUTTON Sst.	F	188	2034	172	hut11
POOLOWANNA FM.	F	193	2206	44	pool1
HIATUS-4	H	236.5			
NAPPAMERRI GP.	F	249	2250	145	napp11
TOOLACHEE FM.	F	253.5	2395	54	tool1
HIATUS-5	H	256			
DARALINGIE FM.	F	258.5	2449	24	dara11
ROSENEATH SHALE	F	261.5	2473	31	rose11
EPSILON FM.	F	263.5	2504	76	epsi11
MURTEREE SHAle	F	264.5	2580	37	mutt11
PATCHAWARRA FM.	F	274	2617	370	pat11
TIRRAWARRA Sst.	F	280	2987	49	tir11
MERRIMELIA FM.	F	285.5	3036	106	merr11

Formation or Event Name	Type	Lith Pat
QT/T	F	
HIATUS-1	H	
NAMBA FM.	F	1
HIATUS-2	H	
EYRE FM.	F	
HIATUS-3	H	
WINTON FM.	F	
MACKUNDA FM.	F	
ALLARU Mdst..	F	
TOOLEBUC FM.	F	

OODNADATTA FM.	F
COORIKIANA Sst.	F
BULLDOG SHALE	F
CADNA-OWIE FM.	F
MURTA FM.	F
McKINLAY Mbr.	F
NAMUR Sst.	F
STBOURNE FM.	F
ADORI Sst.	F
BIRKHEAD FM.	F
HUTTON Sst.	F
POOLOWANNA FM.	F
HIATUS-4	H
NAPPAMERRI GP.	F
TOOLACHEE FM.	F
HIATUS-5	H
DARALINGIE FM.	F
ROSENEATH SHALE	F
EPSILON FM.	F
MURTEREE SHAle	F
PATCHAWARRA FM.	F
TIRRAWARRA Sst.	F
MERRIMELIA FM.	F

Lithology Mixes Table

Lithology Name	% Sandstone	% Siltstone	% Shale	% Limestone
Sandstone	100			
nam11	20	28	35	17
eyr11	65	25	10	
win11	15	25	58	
mac11	13	57	30	
all11	10	45	45	
tool11		30	70	
ood11	10	70	20	
coo11	60	40		
bull11		25	75	
cad11	72	20	8	
mur11	8	70	22	
mck11	50	50		
namu11	90	7	3	
west11	75	18	7	
ador11	100			
bir11	30	45	23	
hut11	90	5	5	
pool11	40	30	23	
napp11	12	58	30	
too11	26	15	35	
dara11	3	25	27	
rose11		75	25	
epsi11	12	65	18	
mutt11		75	25	
pat11	21	43	21	
tir11	90	7	3	
merr11	70	30		

Lithology Name	% Kerogen	Total %
Sandstone		100.0
nam11		100.0
eyr11		100.0
win11	2	100.0

mac11		100.0
all11		100.0
tool11		100.0
ood11		100.0
coo11		100.0
bull11		100.0
cad11		100.0
mur11		100.0
mck11		100.0
namu11		100.0
west11		100.0
ador11		100.0
bir11	2	100.0
hut11		100.0
pool11	7	100.0
napp11		100.0
too11	24	100.0
dara11	45	100.0
rose11		100.0
epsi11	5	100.0
mutt11		100.0
pat11	15	100.0
tir11		100.0
merr11		100.0

Lithology Values Table

Lithology Name	Initial Porosity	Compaction Factor (FM)	Exponential Factor (SC)	Density (g/cm^3)
Sandstone	0.45	1.75	0.27	2.64
Siltstone	0.55	2.2	0.41	2.64
Shale	0.6	2.4	0.51	2.6
Limestone	0.6	1.5	0.22	2.72
Dolomite	0.6	1.5	0.22	2.85
Evaporite	0	0	0	2.15
Coal	0.9	3.5	0.7	1.8
Igneous	0	0	0	2.65
nam1	0.54	2.16	0.40	2.631
eyr1	0.46	1.83	0.29	2.638
win1	0.55	2.20	0.41	2.610
mac1	0.54	2.17	0.40	2.631
all1	0.55	2.21	0.42	2.630
coo1	0.5	1.97	0.34	2.64
bull1	0.59	2.36	0.49	2.608
cad1	0.50	1.99	0.34	2.635
mur1	0.55	2.21	0.42	2.630
mck1	0.51	2.05	0.36	2.634
namu1	0.46	1.81	0.28	2.638
bir1	0.54	2.16	0.40	2.607
hut1	0.46	1.83	0.29	2.64
pool1	0.61	2.43	0.46	2.465
napp1	0.53	2.12	0.39	2.632
too1	0.62	2.45	0.46	2.440
dara1	0.59	2.35	0.45	2.523
rose1	0.56	2.25	0.43	2.63
epsi1	0.57	2.27	0.43	2.581
mutt1	0.56	2.25	0.43	2.63
pat1	0.57	2.29	0.43	2.548
nam11	0.55	2.06	0.38	2.639
eyr11	0.49	1.92	0.32	2.636
win11	0.57	2.27	0.45	2.6
mac11	0.55	2.20	0.42	2.628
all11	0.56	2.24	0.44	2.622
tool11	0.58	2.34	0.48	2.612

ood11	0.55	2.19	0.41	2.632
coo11	0.49	1.93	0.32	2.64
bull11	0.58	2.35	0.48	2.61
cad11	0.48	1.89	0.31	2.636
mur11	0.55	2.20	0.42	2.631
mck11	0.5	1.97	0.34	2.64
namu11	0.46	1.80	0.28	2.638
west11	0.47	1.87	0.31	2.637
ador11	0.45	1.75	0.27	2.64
bir11	0.53	2.13	0.39	2.614
hut11	0.46	1.80	0.28	2.638
pool11	0.54	2.15	0.39	2.572
napp11	0.55	2.20	0.42	2.628
too11	0.62	2.46	0.47	2.424
dara11	0.71	2.82	0.56	2.251
rose11	0.56	2.25	0.43	2.63
epsi11	0.56	2.24	0.42	2.590
mutt11	0.56	2.25	0.43	2.63
pat11	0.59	2.34	0.44	2.505
tir11	0.46	1.80	0.28	2.638
merr11	0.48	1.88	0.31	2.64

Lithology Name	Grain Size (mm)	Matrix Conductivity (W/m*deg C)	Matrix Cond. Correction
Sandstone	0.5	4.4	270
Siltstone	0.0156	2	170
Shale	0.0004	1.5	-180
Limestone	0.5	2.9	350
Dolomite	0.5	4.8	300
Evaporite	0.0004	5.4	470
Coal	0.0004	0.3	250
Igneous	0.0001	2.9	380
nam1	0.0137	2.329	116.2
eyr1	0.2479	3.996	240
win1	0.0109	2.200	113
mac1	0.0125	2.279	112.5
all1	0.0088	2.077	97.5
coo1	0.0883	3.2	220
bull1	0.0008	1.6	-110
cad1	0.0609	3.188	180
mur1	0.0088	2.077	97.5
mck1	0.0360	2.885	157.5
namu1	0.2954	4.097	247.5
bir1	0.0166	2.435	133.4
hut1	0.2678	3.968	252
pool1	0.0066	1.913	142.2
napp1	0.0195	2.531	131.2
too1	0.0069	1.942	152.9
dara1	0.0070	1.948	124.9
rose1	0.0062	1.875	82.5
epsi1	0.0082	2.033	111.3
mutt1	0.0062	1.875	82.5
pat1	0.0095	2.121	129.2
nam11	0.0156	2.458	98.1
eyr11	0.1029	3.51	200
win11	0.0029	2.036	-16.4
mac11	0.0081	2.162	78
all11	0.0042	2.015	22.5
tool11	0.0012	1.65	-75
ood11	0.0106	2.14	110
coo11	0.1249	3.44	230
bull11	0.0009	1.625	-92.5
cad11	0.1412	3.688	214

mur11	0.0091	2.082	101
mck11	0.0883	3.2	220
namu11	0.3167	4.145	249.5
west11	0.1626	3.765	220.5
ador11	0.5	4.4	270
bir11	0.0176	2.571	121.1
hut11	0.2943	4.135	242.5
pool11	0.0208	2.726	135.1
napp11	0.0078	2.138	77
too11	0.0044	2.041	92.7
dara11	0.0012	1.172	114.5
rose11	0.0062	1.875	82.5
epsi11	0.0101	2.113	123
mutt11	0.0062	1.875	82.5
pat11	0.0086	2.144	129.5
tir11	0.3167	4.145	249.5
merr11	0.1766	3.68	240

Lithology Name	Heat Capacity (kJ/m^3*deg C)	Heat Capacity Correction
Sandstone	2800	0
Siltstone	2650	0
Shale	2100	0
Limestone	2600	0
Dolomite	2600	0
Evaporite	1750	0
Coal	950	0
Igneous	2500	0
nam1	2564.	0
eyr1	2754	0
win1	2513.	0
mac1	2558.	0
all1	2535.	0
coo1	2725	0
bull1	2210	0
cad1	2662	0
mur1	2535.	0
mck1	2627.	0
namu1	2765.	0
bir1	2536	0
hut1	2773	0
pool1	2240.	0
napp1	2587.	0
too1	2202	0
dara1	2341	0
rose1	2512.	0
epsi1	2447.	0
mutt1	2512.	0
pat1	2402.	0
nam11	2479	0
eyr11	2692.	0
win11	2319.	0
mac11	2504.	0
all11	2417.	0
tool11	2265	0
ood11	2555	0
coo11	2740	0
bull11	2237.	0
cad11	2714	0
mur11	2541	0
mck11	2725	0
namu11	2768.	0
west11	2724	0

ador11	2800	0
bir11	2534.	0
hut11	2757.	0
pool11	2464.	0
napp11	2503	0
too11	2088.	0
dara11	1741	0
rose11	2512.	0
epsi11	2484	0
mutt11	2512.	0
pat11	2311	0
tir11	2768.	0
merr11	2755	0

Lithology Fluid Flow Table

Lithology Name	Initial Porosity A	Initial Porosity B	A	B (1/Pa)	Fraction A
Sandstone	0.0000	0.4500	0.0000	1.350000e-08	0.000
Siltstone	0.5500	0.0000	-0.800	0.000000e+00	1.000
Shale	0.6000	0.0000	-0.800	0.000000e+00	1.000
Limestone	0.6000	0.0000	-0.800	0.000000e+00	1.000
Dolomite	0.6000	0.0000	-0.800	0.000000e+00	1.000
Evaporite	0.0000	0.0000	-0.800	1.350000e-08	0.000
Coal	0.9000	0.0000	-0.800	0.000000e+00	1.000
Igneous	0.0000	0.0000	-0.800	1.350000e-08	0.000
nam1	0.5625	0.4500	-0.800	1.350000e-08	0.820
eyr1	0.5625	0.4500	-0.800	1.350000e-08	0.160
win1	0.5725	0.4500	-0.800	1.350000e-08	0.855
mac1	0.5625	0.4500	-0.800	1.350000e-08	0.840
all1	0.5625	0.4500	-0.800	1.350000e-08	0.920
coo1	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull1	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad1	0.5625	0.4500	-0.800	1.350000e-08	0.480
mur1	0.5625	0.4500	-0.800	1.350000e-08	0.920
mck1	0.5625	0.4500	-0.800	1.350000e-08	0.600
namu1	0.5625	0.4500	-0.800	1.350000e-08	0.120
bir1	0.5756	0.4500	-0.800	1.350000e-08	0.760
hut1	0.5500	0.4500	-0.800	1.350000e-08	0.180
pool1	0.6409	0.4500	-0.800	1.350000e-08	0.860
napp1	0.5625	0.4500	-0.800	1.350000e-08	0.740
too1	0.6560	0.4500	-0.800	1.350000e-08	0.830
dara1	0.6117	0.4500	-0.800	1.350000e-08	0.890
rose1	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi1	0.5850	0.4500	-0.800	1.350000e-08	0.900
mutt1	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat1	0.6026	0.4500	-0.800	1.350000e-08	0.840
nam11	0.5825	0.4500	-0.800	1.350000e-08	0.800
eyr11	0.5642	0.4500	-0.800	1.350000e-08	0.350
win11	0.5923	0.4500	-0.800	1.350000e-08	0.850
mac11	0.5672	0.4500	-0.800	1.350000e-08	0.870
all11	0.5750	0.4500	-0.800	1.350000e-08	0.900
tool11	0.5850	0.0000	-0.800	0.000000e+00	1.000
ood11	0.5611	0.4500	-0.800	1.350000e-08	0.900
coo11	0.5500	0.4500	-0.800	1.350000e-08	0.400
bull11	0.5875	0.0000	-0.800	0.000000e+00	1.000
cad11	0.5642	0.4500	-0.800	1.350000e-08	0.280
mur11	0.5619	0.4500	-0.800	1.350000e-08	0.920
mck11	0.5500	0.4500	-0.800	1.350000e-08	0.500
namu11	0.5650	0.4500	-0.800	1.350000e-08	0.100
west11	0.5640	0.4500	-0.800	1.350000e-08	0.250
ador11	0.0000	0.4500	0.0000	1.350000e-08	0.000
bir11	0.5764	0.4500	-0.800	1.350000e-08	0.700

hut11	0.5750	0.4500	-0.800	1.350000e-08	0.100
pool11	0.6100	0.4500	-0.800	1.350000e-08	0.600
napp11	0.5670	0.4500	-0.800	1.350000e-08	0.880
too11	0.6871	0.4500	-0.800	1.350000e-08	0.740
dara11	0.7262	0.4500	-0.800	1.350000e-08	0.970
rose11	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi11	0.5801	0.4500	-0.800	1.350000e-08	0.880
mutt11	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat11	0.6297	0.4500	-0.800	1.350000e-08	0.790
tir11	0.5650	0.4500	-0.800	1.350000e-08	0.100
merr11	0.5500	0.4500	-0.800	1.350000e-08	0.300

Lithology Name	Initial Permeability (milliDarcys)	Permeability Power
Sandstone	2.786221e+04	5.500
Siltstone	1.013171e-01	5.500
Shale	1.013171e-01	5.500
Limestone	2.786221e+04	5.500
Dolomite	2.786221e+04	5.500
Evaporite	1.013171e-08	5.500
Coal	1.013171e-01	5.500
Igneous	1.013171e-08	5.500
nam1	9.655232e-01	5.500
eyr1	3.755972e+03	5.500
win1	6.228538e-01	5.500
mac1	7.515815e-01	5.500
all1	2.759494e-01	5.500
coo1	5.313115e+01	5.500
bull1	1.013171e-01	5.500
cad1	6.825522e+01	5.500
mur1	2.759494e-01	5.500
mck1	1.518504e+01	5.500
namu1	6.198629e+03	5.500
bir1	2.047023e+00	5.500
hut1	2.923719e+03	5.500
pool1	5.850452e-01	5.500
napp1	2.629719e+00	5.500
too1	8.518624e-01	5.500
dara1	4.017996e-01	5.500
rose1	1.013171e-01	5.500
epsi1	3.544999e-01	5.500
mutt1	1.013171e-01	5.500
pat1	7.515815e-01	5.500
nam11	1.042884e+01	5.500
eyr11	3.477356e+02	5.500
win11	6.631057e-01	5.500
mac11	5.161740e-01	5.500
all11	3.544999e-01	5.500
tool11	1.013171e-01	5.500
ood11	3.544999e-01	5.500
coo11	1.859013e+02	5.500
bull11	1.013171e-01	5.500
cad11	8.356076e+02	5.500
mur11	2.759494e-01	5.500
mck11	5.313115e+01	5.500
namu11	7.963102e+03	5.500
west11	1.216697e+03	5.500
ador11	2.786221e+04	5.500
bir11	4.339930e+00	5.500
hut11	7.963102e+03	5.500
pool11	1.518504e+01	5.500
napp11	4.554102e-01	5.500

tool1	2.629719e+00	5.500
daral1	1.475240e-01	5.500
rosel1	1.013171e-01	5.500
epsil1	4.554102e-01	5.500
mutt11	1.013171e-01	5.500
pat11	1.405862e+00	5.500
tir11	7.963102e+03	5.500
merr11	6.504527e+02	5.500

Geothermal Gradient Table

Time (Ma)	Depth 1 (m)
0	0

Maturity conversion method: Table
TTI = 4.191876 + 1.817512 * log10(Ro)
Data fit: Least Squares

Model Units

```
                   Depth = (m)
                Distance = (m)
    Thermal Conductivity = (W/m*deg C)
           Heat Capacity = (kJ/m^3*deg C)
               Heat Flow = (mW/m^2)
             Temperature = (deg C)
         Heat Generation = (muW/m^3)
                Gradient = (deg C/100 m)
       Activation Energy = (kcal/mole)
        Frequency Factor = (1/my)
              HC Density = (g/cm^3)
                Pressure = (MPa)
              Grain Size = (mm)
        Seismic Velocity = (m/s)
              Event Time = (msec)
                Maturity = (%Ro)
           HC Generation = (mg/g TOC)
```

Calculation Options

```
             Compaction = Sclater & Christie
  Porosity Depth Method = Linear
Permeability Calculation = Modified Kozeny-Carman
  Geothermal Calculation = Gradient
    Maturity Calculation = LLNL
   Expulsion Calculation = None
          Time Interval = 1.00
         Depth Interval = 1000.00
        Integrate Depth = No
```

Advanced Options

```
         TTI Reference Temp = 105.00
          TTI Doubling Temp = 10.00
       Rock-Eval Correction = 35.00
               Thermal Gain = 1.000
Critical Fracturing Fraction = 0.850
      Fracture Closure Rate = 0.050
   Conductivity Calculation = Deming/Chapman
                 Initial S1 = 3.00
```

Rifting HF Options

```
Use Rifting Heat Flow = No
      Start Rift Time = 0.00
        End Rift Time = 0.00
       Auto-Calc Beta = No
```

```
      Rifting Heat Flow Beta = 2.00

Present Day Info
                  Model Name = KIRRALEE-1
           Model Description =
        Current Surface Temp = 20.00
           Current Elevation = 0.00
           Current Heat Flow = 63.00

Seismic Parameters
                  Shot Point = 0
                           X = 0.00000000
                           Y = 0.00000000
```

BasinMod Data Report
Licensed to: Natn'l Centre for Petroleum Geology & Geophysics
Mr. Peter Tingate
Version: 4.20
Model Name: KIRRALEE-1 EROSION
File Name: KIRRALEE-1 EROSION.mod
Date: Feb 5, 1996
Time: 12:20 pm

Stratigraphy Table

Formation or Event Name	Type	Begin Age (Ma)	Well Top (m)	Present Thick (m)	Missing Thick (m)
QT/T	F	3.3	0	44	
EROSION-1	E	4.3			-18
MISSING SEC-1	D	5.3			18
NAMBA FM.	F	29.3	44	157	
EROSION-2	E	34			-16
MISSING SEC-2	D	38			16
EYRE FM.	F	60	201	109	
EROSION-3	E	75			-310
MISSING SEC-3	D	90			310
WINTON FM.	F	97.5	310	678	
MACKUNDA FM.	F	100	988	84	
ALLARU Mdst..	F	101	1072	172	
TOOLEBUC FM.	F	102.5	1244	12	
OODNADATTA FM.	F	105.5	1256	132	
COORIKIANA Sst.	F	108	1388	18	
BULLDOG SHALE	F	117.5	1406	244	
DNA-OWIE FM.	F	135.5	1650	68	
MURTA FM.	F	141.5	1718	43	
McKINLAY Mbr.	F	145	1761	6	
NAMUR Sst.	F	151	1767	72	
WESTBOURNE FM.	F	159	1839	88	
ADORI Sst.	F	165	1927	53	
BIRKHEAD FM.	F	175	1980	54	
HUTTON Sst.	F	188	2034	172	
POOLOWANNA FM.	F	193	2206	44	
EROSION-4	E	213			-66
MISSING SEC-4	D	236.5			66
NAPPAMERRI GP.	F	249	2250	145	
TOOLACHEE FM.	F	253.5	2395	54	
EROSION-5	E	254.5			-157
MISSING SEC-5	D	256			157
DARALINGIE FM.	F	258.5	2449	24	
ROSENEATH SHALE	F	261.5	2473	31	
EPSILON FM.	F	263.5	2504	76	
MURTEREE SHAle	F	264.5	2580	37	
PATCHAWARRA FM.	F	274	2617	370	
TIRRAWARRA Sst.	F	280	2987	49	
MERRIMELIA FM.	F	285.5	3036	106	

Formation or Event Name	Type	Lithology	Lith Pat
QT/T	F	Sandstone	
EROSION-1	E		
MISSING SEC-1	D	Sandstone	
NAMBA FM.	F	nam11	1
EROSION-2	E		

MISSING SEC-2	D	Sandstone
EYRE FM.	F	eyr11
EROSION-3	E	
MISSING SEC-3	D	Sandstone
WINTON FM.	F	win11
MACKUNDA FM.	F	mac11
ALLARU Mdst..	F	all11
TOOLEBUC FM.	F	tool11
OODNADATTA FM.	F	ood11
COORIKIANA Sst.	F	coo11
BULLDOG SHALE	F	bull11
CADNA-OWIE FM.	F	cad11
MURTA FM.	F	mur11
McKINLAY Mbr.	F	mck11
NAMUR Sst.	F	namu11
WESTBOURNE FM.	F	west11
ADORI Sst.	F	ador11
BIRKHEAD FM.	F	bir11
HUTTON Sst.	F	hut11
POOLOWANNA FM.	F	pool1
EROSION-4	E	
MISSING SEC-4	D	Sandstone
NAPPAMERRI GP.	F	napp11
TOOLACHEE FM.	F	too11
EROSION-5	E	
MISSING SEC-5	D	Sandstone
DARALINGIE FM.	F	dara11
ROSENEATH SHALE	F	rose11
EPSILON FM.	F	epsi11
MURTEREE SHAle	F	mutt11
PATCHAWARRA FM.	F	pat11
TIRRAWARRA Sst.	F	tir11
MERRIMELIA FM.	F	merr11

Lithology Mixes Table

Lithology Name	% Sandstone	% Siltstone	% Shale	% Limestone
Sandstone	100			
nam11	20	28	35	17
eyr11	65	25	10	
win11	15	25	58	
mac11	13	57	30	
all11	10	45	45	
tool11		30	70	
ood11	10	70	20	
coo11	60	40		
bull11		25	75	
cad11	72	20	8	
mur11	8	70	22	
mck11	50	50		
namu11	90	7	3	
west11	75	18	7	
ador11	100			
bir11	30	45	23	
hut11	90	5	5	
pool11	40	30	23	
napp11	12	58	30	
too11	26	15	35	
dara11	3	25	27	
rose11		75	25	
epsi11	12	65	18	
mutt11		75	25	
pat11	21	43	21	

tir11	90	7	3
merr11	70	30	

Lithology Name	% Kerogen	Total %
Sandstone		100.0
nam11		100.0
eyr11		100.0
win11	2	100.0
mac11		100.0
all11		100.0
tool11		100.0
ood11		100.0
coo11		100.0
bull11		100.0
cad11		100.0
mur11		100.0
mck11		100.0
namu11		100.0
west11		100.0
ador11		100.0
bir11	2	100.0
hut11		100.0
pool11	7	100.0
napp11		100.0
too11	24	100.0
dara11	45	100.0
rose11		100.0
epsi11	5	100.0
mutt11		100.0
pat11	15	100.0
tir11		100.0
merr11		100.0

Lithology Values Table

Lithology Name	Initial Porosity	Compaction Factor (FM)	Exponential Factor (SC)	Density (g/cm^3)
Sandstone	0.45	1.75	0.27	2.64
Siltstone	0.55	2.2	0.41	2.64
Shale	0.6	2.4	0.51	2.6
Limestone	0.6	1.5	0.22	2.72
Dolomite	0.6	1.5	0.22	2.85
Evaporite	0	0	0	2.15
Coal	0.9	3.5	0.7	1.8
Igneous	0	0	0	2.65
nam1	0.54	2.16	0.40	2.631
eyr1	0.46	1.83	0.29	2.638
win1	0.55	2.20	0.41	2.610
mac1	0.54	2.17	0.40	2.631
all1	0.55	2.21	0.42	2.630
coo1	0.5	1.97	0.34	2.64
bull1	0.59	2.36	0.49	2.608
cad1	0.50	1.99	0.34	2.635
mur1	0.55	2.21	0.42	2.630
mck1	0.51	2.05	0.36	2.634
namu1	0.46	1.81	0.28	2.638
bir1	0.54	2.16	0.40	2.607
hut1	0.46	1.83	0.29	2.64
pool1	0.61	2.43	0.46	2.465
napp1	0.53	2.12	0.39	2.632
too1	0.62	2.45	0.46	2.440
dara1	0.59	2.35	0.45	2.523

rose1	0.56	2.25	0.43	2.63
epsi1	0.57	2.27	0.43	2.581
mutt1	0.56	2.25	0.43	2.63
pat1	0.57	2.29	0.43	2.548
nam11	0.55	2.06	0.38	2.639
eyr11	0.49	1.92	0.32	2.636
win11	0.57	2.27	0.45	2.6
mac11	0.55	2.20	0.42	2.628
all11	0.56	2.24	0.44	2.622
tool11	0.58	2.34	0.48	2.612
ood11	0.55	2.19	0.41	2.632
coo11	0.49	1.93	0.32	2.64
bull11	0.58	2.35	0.48	2.61
cad11	0.48	1.89	0.31	2.636
mur11	0.55	2.20	0.42	2.631
mck11	0.5	1.97	0.34	2.64
namu11	0.46	1.80	0.28	2.638
west11	0.47	1.87	0.31	2.637
ador11	0.45	1.75	0.27	2.64
bir11	0.53	2.13	0.39	2.614
hut11	0.46	1.80	0.28	2.638
pool11	0.54	2.15	0.39	2.572
napp11	0.55	2.20	0.42	2.628
too11	0.62	2.46	0.47	2.424
dara11	0.71	2.82	0.56	2.251
rose11	0.56	2.25	0.43	2.63
epsi11	0.56	2.24	0.42	2.590
mutt11	0.56	2.25	0.43	2.63
pat11	0.59	2.34	0.44	2.505
tir11	0.46	1.80	0.28	2.638
merr11	0.48	1.88	0.31	2.64

Lithology Name	Grain Size (mm)	Matrix Conductivity (W/m*deg C)	Matrix Cond. Correction
Sandstone	0.5	4.4	270
Siltstone	0.0156	2	170
Shale	0.0004	1.5	-180
Limestone	0.5	2.9	350
Dolomite	0.5	4.8	300
Evaporite	0.0004	5.4	470
Coal	0.0004	0.3	250
Igneous	0.0001	2.9	380
nam1	0.0137	2.329	116.2
eyr1	0.2479	3.996	240
win1	0.0109	2.200	113
mac1	0.0125	2.279	112.5
all1	0.0088	2.077	97.5
coo1	0.0883	3.2	220
bull1	0.0008	1.6	-110
cad1	0.0609	3.188	180
mur1	0.0088	2.077	97.5
mck1	0.0360	2.885	157.5
namu1	0.2954	4.097	247.5
bir1	0.0166	2.435	133.4
hut1	0.2678	3.968	252
pool1	0.0066	1.913	142.2
napp1	0.0195	2.531	131.2
too1	0.0069	1.942	152.9
dara1	0.0070	1.948	124.9
rose1	0.0062	1.875	82.5
epsi1	0.0082	2.033	111.3
mutt1	0.0062	1.875	82.5
pat1	0.0095	2.121	129.2

nam11	0.0156	2.458	98.1
eyr11	0.1029	3.51	200
win11	0.0029	2.036	-16.4
mac11	0.0081	2.162	78
all11	0.0042	2.015	22.5
tool11	0.0012	1.65	-75
ood11	0.0106	2.14	110
coo11	0.1249	3.44	230
bull11	0.0009	1.625	-92.5
cad11	0.1412	3.688	214
mur11	0.0091	2.082	101
mck11	0.0883	3.2	220
namu11	0.3167	4.145	249.5
west11	0.1626	3.765	220.5
ador11	0.5	4.4	270
bir11	0.0176	2.571	121.1
hut11	0.2943	4.135	242.5
pool11	0.0208	2.726	135.1
napp11	0.0078	2.138	77
too11	0.0044	2.041	92.7
dara11	0.0012	1.172	114.5
rose11	0.0062	1.875	82.5
epsi11	0.0101	2.113	123
mutt11	0.0062	1.875	82.5
pat11	0.0086	2.144	129.5
tir11	0.3167	4.145	249.5
merr11	0.1766	3.68	240

Lithology Name	Heat Capacity (kJ/m^3*deg C)	Heat Capacity Correction
Sandstone	2800	0
Siltstone	2650	0
Shale	2100	0
Limestone	2600	0
Dolomite	2600	0
Evaporite	1750	0
Coal	950	0
Igneous	2500	0
nam1	2564.	0
eyr1	2754	0
win1	2513.	0
mac1	2558.	0
all1	2535.	0
coo1	2725	0
bull1	2210	0
cad1	2662	0
mur1	2535.	0
mck1	2627.	0
namu1	2765.	0
bir1	2536	0
hut1	2773	0
pool1	2240.	0
napp1	2587.	0
too1	2202	0
dara1	2341	0
rose1	2512.	0
epsi1	2447.	0
mutt1	2512.	0
pat1	2402.	0
nam11	2479	0
eyr11	2692.	0
win11	2319.	0
mac11	2504.	0

all11	2417.	0
tool11	2265	0
ood11	2555	0
coo11	2740	0
bull11	2237.	0
cad11	2714	0
mur11	2541	0
mck11	2725	0
namu11	2768.	0
west11	2724	0
ador11	2800	0
bir11	2534.	0
hut11	2757.	0
pool11	2464.	0
napp11	2503	0
too11	2088.	0
dara11	1741	0
rose11	2512.	0
epsi11	2484	0
mutt11	2512.	0
pat11	2311	0
tir11	2768.	0
merr11	2755	0

Lithology Fluid Flow Table

Lithology Name	Initial Porosity A	Initial Porosity B	A	B (1/Pa)	Fraction A
Sandstone	0.0000	0.4500	0.0000	1.350000e-08	0.000
Siltstone	0.5500	0.0000	-0.800	0.000000e+00	1.000
Shale	0.6000	0.0000	-0.800	0.000000e+00	1.000
Limestone	0.6000	0.0000	-0.800	0.000000e+00	1.000
Dolomite	0.6000	0.0000	-0.800	0.000000e+00	1.000
Evaporite	0.0000	0.0000	-0.800	1.350000e-08	0.000
Coal	0.9000	0.0000	-0.800	0.000000e+00	1.000
Igneous	0.0000	0.0000	-0.800	1.350000e-08	0.000
nam1	0.5625	0.4500	-0.800	1.350000e-08	0.820
eyr1	0.5625	0.4500	-0.800	1.350000e-08	0.160
win1	0.5725	0.4500	-0.800	1.350000e-08	0.855
mac1	0.5625	0.4500	-0.800	1.350000e-08	0.840
all1	0.5625	0.4500	-0.800	1.350000e-08	0.920
coo1	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull1	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad1	0.5625	0.4500	-0.800	1.350000e-08	0.480
mur1	0.5625	0.4500	-0.800	1.350000e-08	0.920
mck1	0.5625	0.4500	-0.800	1.350000e-08	0.600
namu1	0.5625	0.4500	-0.800	1.350000e-08	0.120
bir1	0.5756	0.4500	-0.800	1.350000e-08	0.760
hut1	0.5500	0.4500	-0.800	1.350000e-08	0.180
pool1	0.6409	0.4500	-0.800	1.350000e-08	0.860
napp1	0.5625	0.4500	-0.800	1.350000e-08	0.740
too1	0.6560	0.4500	-0.800	1.350000e-08	0.830
dara1	0.6117	0.4500	-0.800	1.350000e-08	0.890
rose1	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi1	0.5850	0.4500	-0.800	1.350000e-08	0.900
mutt1	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat1	0.6026	0.4500	-0.800	1.350000e-08	0.840
nam11	0.5825	0.4500	-0.800	1.350000e-08	0.800
eyr11	0.5642	0.4500	-0.800	1.350000e-08	0.350
win11	0.5923	0.4500	-0.800	1.350000e-08	0.850
mac11	0.5672	0.4500	-0.800	1.350000e-08	0.870
all11	0.5750	0.4500	-0.800	1.350000e-08	0.900
tool11	0.5850	0.0000	-0.800	0.000000e+00	1.000

ood11	0.5611	0.4500	-0.800	1.350000e-08	0.900
coo11	0.5500	0.4500	-0.800	1.350000e-08	0.400
bull11	0.5875	0.0000	-0.800	0.000000e+00	1.000
cad11	0.5642	0.4500	-0.800	1.350000e-08	0.280
mur11	0.5619	0.4500	-0.800	1.350000e-08	0.920
mck11	0.5500	0.4500	-0.800	1.350000e-08	0.500
namu11	0.5650	0.4500	-0.800	1.350000e-08	0.100
west11	0.5640	0.4500	-0.800	1.350000e-08	0.250
ador11	0.0000	0.4500	0.0000	1.350000e-08	0.000
bir11	0.5764	0.4500	-0.800	1.350000e-08	0.700
hut11	0.5750	0.4500	-0.800	1.350000e-08	0.100
pool11	0.6100	0.4500	-0.800	1.350000e-08	0.600
napp11	0.5670	0.4500	-0.800	1.350000e-08	0.880
too11	0.6871	0.4500	-0.800	1.350000e-08	0.740
dara11	0.7262	0.4500	-0.800	1.350000e-08	0.970
rose11	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi11	0.5801	0.4500	-0.800	1.350000e-08	0.880
mutt11	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat11	0.6297	0.4500	-0.800	1.350000e-08	0.790
tir11	0.5650	0.4500	-0.800	1.350000e-08	0.100
merr11	0.5500	0.4500	-0.800	1.350000e-08	0.300

Lithology Name	Initial Permeability (milliDarcys)	Permeability Power
Sandstone	2.786221e+04	5.500
Siltstone	1.013171e-01	5.500
Shale	1.013171e-01	5.500
Limestone	2.786221e+04	5.500
Dolomite	2.786221e+04	5.500
Evaporite	1.013171e-08	5.500
Coal	1.013171e-01	5.500
Igneous	1.013171e-08	5.500
nam1	9.655232e-01	5.500
eyr1	3.755972e+03	5.500
win1	6.228538e-01	5.500
mac1	7.515815e-01	5.500
all1	2.759494e-01	5.500
coo1	5.313115e+01	5.500
bull1	1.013171e-01	5.500
cad1	6.825522e+01	5.500
mur1	2.759494e-01	5.500
mck1	1.518504e+01	5.500
namu1	6.198629e+03	5.500
bir1	2.047023e+00	5.500
hut1	2.923719e+03	5.500
pool1	5.850452e-01	5.500
napp1	2.629719e+00	5.500
too1	8.518624e-01	5.500
dara1	4.017996e-01	5.500
rose1	1.013171e-01	5.500
epsi1	3.544999e-01	5.500
mutt1	1.013171e-01	5.500
pat1	7.515815e-01	5.500
nam11	1.042884e+01	5.500
eyr11	3.477356e+02	5.500
win11	6.631057e-01	5.500
mac11	5.161740e-01	5.500
all11	3.544999e-01	5.500
tool11	1.013171e-01	5.500
ood11	3.544999e-01	5.500
coo11	1.859013e+02	5.500
bull11	1.013171e-01	5.500

cad11	8.356076e+02	5.500
mur11	2.759494e-01	5.500
mck11	5.313115e+01	5.500
namu11	7.963102e+03	5.500
west11	1.216697e+03	5.500
ador11	2.786221e+04	5.500
bir11	4.339930e+00	5.500
hut11	7.963102e+03	5.500
pool11	1.518504e+01	5.500
napp11	4.554102e-01	5.500
too11	2.629719e+00	5.500
dara11	1.475240e-01	5.500
rose11	1.013171e-01	5.500
epsi11	4.554102e-01	5.500
mutt11	1.013171e-01	5.500
pat11	1.405862e+00	5.500
tir11	7.963102e+03	5.500
merr11	6.504527e+02	5.500

Geothermal Gradient Table

Time (Ma)	Depth 1 (m)
0	0

Maturity conversion method: Table
TTI = 4.191876 + 1.817512 * log10(Ro)
Data fit: Least Squares

Model Units

Depth =	(m)
Distance =	(m)
Thermal Conductivity =	(W/m*deg C)
Heat Capacity =	(kJ/m^3*deg C)
Heat Flow =	(mW/m^2)
Temperature =	(deg C)
Heat Generation =	(muW/m^3)
Gradient =	(deg C/100 m)
Activation Energy =	(kcal/mole)
Frequency Factor =	(1/my)
HC Density =	(g/cm^3)
Pressure =	(MPa)
Grain Size =	(mm)
Seismic Velocity =	(m/s)
Event Time =	(msec)
Maturity =	(%Ro)
HC Generation =	(mg/g TOC)

Calculation Options

Compaction =	Sclater & Christie
Porosity Depth Method =	Linear
Permeability Calculation =	Modified Kozeny-Carman
Geothermal Calculation =	Gradient
Maturity Calculation =	LLNL
Expulsion Calculation =	None
Time Interval =	1.00
Depth Interval =	1000.00
Integrate Depth =	No

Advanced Options

TTI Reference Temp =	105.00
TTI Doubling Temp =	10.00
Rock-Eval Correction =	35.00
Thermal Gain =	1.000

```
Critical Fracturing Fraction = 0.850
       Fracture Closure Rate = 0.050
    Conductivity Calculation = Deming/Chapman
                  Initial S1 = 3.00

Rifting HF Options
      Use Rifting Heat Flow = No
           Start Rift Time = 0.00
             End Rift Time = 0.00
            Auto-Calc Beta = No
     Rifting Heat Flow Beta = 2.00

Present Day Info
                 Model Name = KIRRALEE-1 EROSION
          Model Description =
       Current Surface Temp = 20.00
          Current Elevation = 0.00
          Current Heat Flow = 63.00

Seismic Parameters
                 Shot Point = 0
                          X = 0.00000000
                          Y = 0.00000000
```

BasinMod Data Report
Licensed to: Natn'l Centre for Petroleum Geology & Geophysics
Mr. Peter Tingate
Version: 4.20
Model Name: KOBARI-1
File Name: KOBARI-1.mod
Date: Feb 5, 1996
Time: 12:22 pm

Stratigraphy Table

Formation or Event Name	Type	Begin Age (Ma)	Well Top (m)	Present Thick (m)	Lithology
QT/T	F	3.3	0	18	Sandstone
HIATUS-1	H	5.3			
NAMBA FM.	F	29.3	18	92	nam10
HIATUS-2	H	38			
EYRE FM.	F	60	110	59	eyr10
HIATUS-3	H	90			
WINTON FM.	F	97.5	169	401	win10
MACKUNDA FM.	F	100	570	27	mac10
ALLARU/OOD..	F	105.5	597	337	all10
COORIKIANA Sst.	F	108	934	7	coo10
BULLDOG SHALE	F	117.5	941	217	bull10
CADNA-OWIE FM.	F	135.5	1158	41	cad10
MURTA FM.	F	141.5	1199	45	mur10
McKINLAY Mbr.	F	145	1244	11	mck10
NAMUR Sst.	F	151	1255	55	namu10
WESTBOURNE FM.	F	165	1310	137	west10
BIRKHEAD FM.	F	175	1447	33	bir10
HUTTON Sst.	F	188	1480	37	hut10
POOLOWANNA FM.	F	193	1517	60	pool10
HIATUS-4	H	263.5			
MURTEREE SHALE	F	264.5	1577	17	mutt10
PATCHAWARRA FM.	F	274	1594	123	pat10

Formation or Event Name	Type	Lith Pat
QT/T	F	
HIATUS-1	H	
NAMBA FM.	F	1
HIATUS-2	H	
EYRE FM.	F	
HIATUS-3	H	
WINTON FM.	F	
MACKUNDA FM.	F	
ALLARU/OOD..	F	
COORIKIANA Sst.	F	
BULLDOG SHALE	F	
CADNA-OWIE FM.	F	
MURTA FM.	F	
McKINLAY Mbr.	F	
NAMUR Sst.	F	
STBOURNE FM.	F	
BIRKHEAD FM.	F	
HUTTON Sst.	F	
POOLOWANNA FM.	F	
HIATUS-4	H	
MURTEREE SHALE	F	

PATCHAWARRA FM. F

Lithology Mixes Table

Lithology Name	% Sandstone	% Siltstone	% Shale	% Limestone
Sandstone	100			
nam10	18	42	30	10
eyr10	80	20		
win10	10	43	47	
mac10	12	58	30	
all10	9	51	40	
coo10	50	50		
bull10		40	60	
cad10	40	50	10	
mur10	27	58	15	
mck10	78	22		
namu10	95	5		
west10	80	14	6	
bir10	30	48	22	
hut10	100			
pool10	38	43	19	
mutt10		75	25	
pat10	38	45	15	

Lithology Name	% Kerogen	Total %
Sandstone		100.0
nam10		100.0
eyr10		100.0
win10		100.0
mac10		100.0
all10		100.0
coo10		100.0
bull10		100.0
cad10		100.0
mur10		100.0
mck10		100.0
namu10		100.0
west10		100.0
bir10		100.0
hut10		100.0
pool10		100.0
mutt10		100.0
pat10	2	100.0

Lithology Values Table

Lithology Name	Initial Porosity	Compaction Factor (FM)	Exponential Factor (SC)	Density (g/cm^3)
Sandstone	0.45	1.75	0.27	2.64
Siltstone	0.55	2.2	0.41	2.64
Shale	0.6	2.4	0.51	2.6
Limestone	0.6	1.5	0.22	2.72
Dolomite	0.6	1.5	0.22	2.85
Evaporite	0	0	0	2.15
Coal	0.9	3.5	0.7	1.8
Igneous	0	0	0	2.65
nam1	0.54	2.16	0.40	2.631
eyr1	0.46	1.83	0.29	2.638
win1	0.55	2.20	0.41	2.610
mac1	0.54	2.17	0.40	2.631
all1	0.55	2.21	0.42	2.630

cool	0.5	1.97	0.34	2.64
bull1	0.59	2.36	0.49	2.608
cad1	0.50	1.99	0.34	2.635
mur1	0.55	2.21	0.42	2.630
mck1	0.51	2.05	0.36	2.634
namu1	0.46	1.81	0.28	2.638
bir1	0.54	2.16	0.40	2.607
hut1	0.46	1.83	0.29	2.64
pool1	0.61	2.43	0.46	2.465
napp1	0.53	2.12	0.39	2.632
tool	0.62	2.45	0.46	2.440
dara1	0.59	2.35	0.45	2.523
rose1	0.56	2.25	0.43	2.63
epsi1	0.57	2.27	0.43	2.581
mutt1	0.56	2.25	0.43	2.63
pat1	0.57	2.29	0.43	2.548
nam10	0.55	2.10	0.39	2.636
eyr10	0.47	1.84	0.29	2.64
win10	0.56	2.24	0.44	2.621
mac10	0.55	2.20	0.42	2.628
all10	0.56	2.23	0.43	2.624
coo10	0.5	1.97	0.34	2.64
bull10	0.58	2.32	0.47	2.616
cad10	0.51	2.04	0.36	2.636
mur10	0.53	2.10	0.38	2.634
mck10	0.47	1.84	0.30	2.64
namu10	0.45	1.77	0.27	2.64
west10	0.47	1.85	0.30	2.637
bir10	0.53	2.10	0.39	2.631
hut10	0.45	1.75	0.27	2.64
pool10	0.52	2.06	0.37	2.632
mutt10	0.56	2.25	0.43	2.63
pat10	0.52	2.08	0.37	2.617

Lithology Name	Grain Size (mm)	Matrix Conductivity (W/m*deg C)	Matrix Cond. Correction
Sandstone	0.5	4.4	270
Siltstone	0.0156	2	170
Shale	0.0004	1.5	-180
Limestone	0.5	2.9	350
Dolomite	0.5	4.8	300
Evaporite	0.0004	5.4	470
Coal	0.0004	0.3	250
Igneous	0.0001	2.9	380
nam1	0.0137	2.329	116.2
eyr1	0.2479	3.996	240
win1	0.0109	2.200	113
mac1	0.0125	2.279	112.5
all1	0.0088	2.077	97.5
cool	0.0883	3.2	220
bull1	0.0008	1.6	-110
cad1	0.0609	3.188	180
mur1	0.0088	2.077	97.5
mck1	0.0360	2.885	157.5
namu1	0.2954	4.097	247.5
bir1	0.0166	2.435	133.4
hut1	0.2678	3.968	252
pool1	0.0066	1.913	142.2
napp1	0.0195	2.531	131.2
tool	0.0069	1.942	152.9
dara1	0.0070	1.948	124.9
rose1	0.0062	1.875	82.5
epsi1	0.0082	2.033	111.3

mutt1	0.0062	1.875	82.5
pat1	0.0095	2.121	129.2
nam10	0.0137	2.372	101
eyr10	0.2499	3.92	250
win10	0.0039	2.005	15.5
mac10	0.0078	2.138	77
all10	0.0049	2.016	39
coo10	0.0883	3.2	220
bull10	0.0017	1.7	-40
cad10	0.0432	2.91	175
mur10	0.0229	2.573	144.5
mck10	0.2331	3.872	248
namu10	0.4204	4.28	265
west10	0.2006	3.89	229
bir10	0.0197	2.61	123
hut10	0.5	4.4	270
pool10	0.0290	2.817	141.5
mutt10	0.0062	1.875	82.5
pat10	0.0312	2.803	157.1

Lithology Name	Heat Capacity (kJ/m^3*deg C)	Heat Capacity Correction
Sandstone	2800	0
Siltstone	2650	0
Shale	2100	0
Limestone	2600	0
Dolomite	2600	0
Evaporite	1750	0
Coal	950	0
Igneous	2500	0
nam1	2564.	0
eyr1	2754	0
win1	2513.	0
mac1	2558.	0
all1	2535.	0
coo1	2725	0
bull1	2210	0
cad1	2662	0
mur1	2535.	0
mck1	2627.	0
namu1	2765.	0
bir1	2536	0
hut1	2773	0
pool1	2240.	0
napp1	2587.	0
too1	2202	0
dara1	2341	0
rose1	2512.	0
epsi1	2447.	0
mutt1	2512.	0
pat1	2402.	0
nam10	2507	0
eyr10	2770	0
win10	2406.	0
mac10	2503	0
all10	2443.	0
coo10	2725	0
bull10	2320	0
cad10	2655	0
mur10	2608	0
mck10	2767	0
namu10	2792.	0
west10	2737	0

bir10	2574	0
hut10	2800	0
pool10	2602.	0
mutt10	2512.	0
pat10	2590.	0

Lithology Fluid Flow Table

Lithology Name	Initial Porosity A	Initial Porosity B	A	B (1/Pa)	Fraction A
Sandstone	0.0000	0.4500	0.0000	1.350000e-08	0.000
Siltstone	0.5500	0.0000	-0.800	0.000000e+00	1.000
Shale	0.6000	0.0000	-0.800	0.000000e+00	1.000
Limestone	0.6000	0.0000	-0.800	0.000000e+00	1.000
Dolomite	0.6000	0.0000	-0.800	0.000000e+00	1.000
Evaporite	0.0000	0.0000	-0.800	1.350000e-08	0.000
Coal	0.9000	0.0000	-0.800	0.000000e+00	1.000
Igneous	0.0000	0.0000	-0.800	1.350000e-08	0.000
nam1	0.5625	0.4500	-0.800	1.350000e-08	0.820
eyr1	0.5625	0.4500	-0.800	1.350000e-08	0.160
win1	0.5725	0.4500	-0.800	1.350000e-08	0.855
mac1	0.5625	0.4500	-0.800	1.350000e-08	0.840
all1	0.5625	0.4500	-0.800	1.350000e-08	0.920
coo1	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull1	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad1	0.5625	0.4500	-0.800	1.350000e-08	0.480
mur1	0.5625	0.4500	-0.800	1.350000e-08	0.920
mck1	0.5625	0.4500	-0.800	1.350000e-08	0.600
namu1	0.5625	0.4500	-0.800	1.350000e-08	0.120
bir1	0.5756	0.4500	-0.800	1.350000e-08	0.760
hut1	0.5500	0.4500	-0.800	1.350000e-08	0.180
pool1	0.6409	0.4500	-0.800	1.350000e-08	0.860
napp1	0.5625	0.4500	-0.800	1.350000e-08	0.740
too1	0.6560	0.4500	-0.800	1.350000e-08	0.830
dara1	0.6117	0.4500	-0.800	1.350000e-08	0.890
rose1	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi1	0.5850	0.4500	-0.800	1.350000e-08	0.900
mutt1	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat1	0.6026	0.4500	-0.800	1.350000e-08	0.840
nam10	0.5743	0.4500	-0.800	1.350000e-08	0.820
eyr10	0.5500	0.4500	-0.800	1.350000e-08	0.200
win10	0.5761	0.4500	-0.800	1.350000e-08	0.900
mac10	0.5670	0.4500	-0.800	1.350000e-08	0.880
all10	0.5719	0.4500	-0.800	1.350000e-08	0.910
coo10	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull10	0.5800	0.0000	-0.800	0.000000e+00	1.000
cad10	0.5583	0.4500	-0.800	1.350000e-08	0.600
mur10	0.5602	0.4500	-0.800	1.350000e-08	0.730
mck10	0.5500	0.4500	-0.800	1.350000e-08	0.220
namu10	0.5500	0.4500	-0.800	1.350000e-08	0.050
west10	0.5650	0.4500	-0.800	1.350000e-08	0.200
bir10	0.5657	0.4500	-0.800	1.350000e-08	0.700
hut10	0.0000	0.4500	0.0000	1.350000e-08	0.000
pool10	0.5653	0.4500	-0.800	1.350000e-08	0.620
mutt10	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat10	0.5733	0.4500	-0.800	1.350000e-08	0.620

Lithology Name	Initial Permeability (milliDarcys)	Permeability Power
Sandstone	2.786221e+04	5.500
Siltstone	1.013171e-01	5.500

Shale	1.013171e-01	5.500
Limestone	2.786221e+04	5.500
Dolomite	2.786221e+04	5.500
Evaporite	1.013171e-08	5.500
Coal	1.013171e-01	5.500
Igneous	1.013171e-08	5.500
nam1	9.655232e-01	5.500
eyr1	3.755972e+03	5.500
win1	6.228538e-01	5.500
mac1	7.515815e-01	5.500
all1	2.759494e-01	5.500
coo1	5.313115e+01	5.500
bull1	1.013171e-01	5.500
cad1	6.825522e+01	5.500
mur1	2.759494e-01	5.500
mck1	1.518504e+01	5.500
namu1	6.198629e+03	5.500
bir1	2.047023e+00	5.500
hut1	2.923719e+03	5.500
pool1	5.850452e-01	5.500
napp1	2.629719e+00	5.500
too1	8.518624e-01	5.500
dara1	4.017996e-01	5.500
rose1	1.013171e-01	5.500
epsi1	3.544999e-01	5.500
mutt1	1.013171e-01	5.500
pat1	7.515815e-01	5.500
nam10	3.378283e+00	5.500
eyr10	2.275878e+03	5.500
win10	3.544999e-01	5.500
mac10	4.554102e-01	5.500
all10	3.127683e-01	5.500
coo10	5.313115e+01	5.500
bull10	1.013171e-01	5.500
cad10	1.518504e+01	5.500
mur10	2.980593e+00	5.500
mck10	1.771586e+03	5.500
namu10	1.489529e+04	5.500
west10	2.275878e+03	5.500
bir10	4.339930e+00	5.500
hut10	2.786221e+04	5.500
pool10	1.182032e+01	5.500
mutt10	1.013171e-01	5.500
pat10	1.182032e+01	5.500

Geothermal Gradient Table

Time (Ma)	Depth 1 (m)
0	0

Maturity conversion method: Table
TTI = 4.191876 + 1.817512 * log10(Ro)
Data fit: Least Squares

Model Units

Depth	=	(m)
Distance	=	(m)
Thermal Conductivity	=	(W/m*deg C)
Heat Capacity	=	(kJ/m^3*deg C)
Heat Flow	=	(mW/m^2)
Temperature	=	(deg C)
Heat Generation	=	(muW/m^3)
Gradient	=	(deg C/100 m)

```
            Activation Energy = (kcal/mole)
             Frequency Factor = (1/my)
                   HC Density = (g/cm^3)
                     Pressure = (MPa)
                   Grain Size = (mm)
             Seismic Velocity = (m/s)
                   Event Time = (msec)
                     Maturity = (%Ro)
                HC Generation = (mg/g TOC)

Calculation Options
                   Compaction = Sclater & Christie
       Porosity Depth Method = Linear
    Permeability Calculation = Modified Kozeny-Carman
      Geothermal Calculation = Gradient
        Maturity Calculation = LLNL
       Expulsion Calculation = None
               Time Interval = 1.00
              Depth Interval = 1000.00
             Integrate Depth = No

Advanced Options
          TTI Reference Temp = 105.00
           TTI Doubling Temp = 10.00
        Rock-Eval Correction = 35.00
                Thermal Gain = 1.000
Critical Fracturing Fraction = 0.850
       Fracture Closure Rate = 0.050
    Conductivity Calculation = Deming/Chapman
                  Initial S1 = 3.00

Rifting HF Options
      Use Rifting Heat Flow = No
            Start Rift Time = 0.00
              End Rift Time = 0.00
             Auto-Calc Beta = No
      Rifting Heat Flow Beta = 2.00

Present Day Info
                  Model Name = KOBARI-1
           Model Description =
        Current Surface Temp = 20.00
           Current Elevation = 0.00
           Current Heat Flow = 63.00

Seismic Parameters
                  Shot Point = 0
                           X = 0.00000000
                           Y = 0.00000000
```

BasinMod Data Report
Licensed to: Natn'l Centre for Petroleum Geology & Geophysics
Mr. Peter Tingate
Version: 4.20
Model Name: KOBARI-1 EROSION
File Name: KOBARI-1 EROSION.mod
Date: Feb 5, 1996
Time: 12:22 pm

Stratigraphy Table

Formation or Event Name	Type	Begin Age (Ma)	Well Top (m)	Present Thick (m)	Missing Thick (m)
QT/T	F	3.3	0	18	
EROSION-1	E	4.3			-32
MISSING SEC-1	D	5.3			32
NAMBA FM.	F	29.3	18	92	
EROSION-2	E	34			-36
MISSING SEC-2	D	38			36
EYRE FM.	F	60	110	59	
EROSION-3	E	75			-240
MISSING SEC-3	D	90			240
WINTON FM.	F	97.5	169	401	
MACKUNDA FM.	F	100	570	27	
ALLARU/OOD..	F	105.5	597	337	
COORIKIANA Sst.	F	108	934	7	
BULLDOG SHALE	F	117.5	941	217	
CADNA-OWIE FM.	F	135.5	1158	41	
MURTA FM.	F	141.5	1199	45	
McKINLAY Mbr.	F	145	1244	11	
NAMUR Sst.	F	151	1255	55	
WESTBOURNE FM.	F	165	1310	137	
BIRKHEAD FM.	F	175	1447	33	
HUTTON Sst.	F	188	1480	37	
POOLOWANNA FM.	F	193	1517	60	
EROSION-4	E	256			-210
MISSING SEC-4	D	263.5			210
MURTEREE SHALE	F	264.5	1577	17	
PATCHAWARRA FM.	F	274	1594	123	

Formation or Event Name	Type	Lithology	Lith Pat
QT/T	F	Sandstone	
EROSION-1	E		
MISSING SEC-1	D	Sandstone	
NAMBA FM.	F	nam10	1
EROSION-2	E		
MISSING SEC-2	D	Sandstone	
EYRE FM.	F	eyr10	
EROSION-3	E		
MISSING SEC-3	D	Sandstone	
WINTON FM.	F	win10	
MACKUNDA FM.	F	mac10	
ALLARU/OOD..	F	all10	
COORIKIANA Sst.	F	coo10	
BULLDOG SHALE	F	bull10	
CADNA-OWIE FM.	F	cad10	
MURTA FM.	F	mur10	
McKINLAY Mbr.	F	mck10	

NAMUR Sst.	F	namu10
WESTBOURNE FM.	F	west10
BIRKHEAD FM.	F	bir10
HUTTON Sst.	F	hut10
POOLOWANNA FM.	F	pool10
EROSION-4	E	
MISSING SEC-4	D	Sandstone
MURTEREE SHALE	F	mutt10
PATCHAWARRA FM.	F	pat10

Lithology Mixes Table

Lithology Name	% Sandstone	% Siltstone	% Shale	% Limestone
Sandstone	100			
nam10	18	42	30	10
eyr10	80	20		
win10	10	43	47	
mac10	12	58	30	
all10	9	51	40	
coo10	50	50		
bull10		40	60	
cad10	40	50	10	
mur10	27	58	15	
mck10	78	22		
namu10	95	5		
west10	80	14	6	
bir10	30	48	22	
hut10	100			
pool10	38	43	19	
mutt10		75	25	
pat10	38	45	15	

Lithology Name	% Kerogen	Total %
Sandstone		100.0
nam10		100.0
eyr10		100.0
win10		100.0
mac10		100.0
all10		100.0
coo10		100.0
bull10		100.0
cad10		100.0
mur10		100.0
mck10		100.0
namu10		100.0
west10		100.0
bir10		100.0
hut10		100.0
pool10		100.0
mutt10		100.0
pat10	2	100.0

Lithology Values Table

Lithology Name	Initial Porosity	Compaction Factor (FM)	Exponential Factor (SC)	Density (g/cm^3)
Sandstone	0.45	1.75	0.27	2.64
Siltstone	0.55	2.2	0.41	2.64
Shale	0.6	2.4	0.51	2.6
Limestone	0.6	1.5	0.22	2.72
Dolomite	0.6	1.5	0.22	2.85

Evaporite	0	0	0	2.15
Coal	0.9	3.5	0.7	1.8
Igneous	0	0	0	2.65
nam1	0.54	2.16	0.40	2.631
eyr1	0.46	1.83	0.29	2.638
win1	0.55	2.20	0.41	2.610
mac1	0.54	2.17	0.40	2.631
all1	0.55	2.21	0.42	2.630
coo1	0.5	1.97	0.34	2.64
bull1	0.59	2.36	0.49	2.608
cad1	0.50	1.99	0.34	2.635
mur1	0.55	2.21	0.42	2.630
mck1	0.51	2.05	0.36	2.634
namu1	0.46	1.81	0.28	2.638
bir1	0.54	2.16	0.40	2.607
hut1	0.46	1.83	0.29	2.64
pool1	0.61	2.43	0.46	2.465
napp1	0.53	2.12	0.39	2.632
too1	0.62	2.45	0.46	2.440
dara1	0.59	2.35	0.45	2.523
rose1	0.56	2.25	0.43	2.63
epsi1	0.57	2.27	0.43	2.581
mutt1	0.56	2.25	0.43	2.63
pat1	0.57	2.29	0.43	2.548
nam10	0.55	2.10	0.39	2.636
eyr10	0.47	1.84	0.29	2.64
win10	0.56	2.24	0.44	2.621
mac10	0.55	2.20	0.42	2.628
all10	0.56	2.23	0.43	2.624
coo10	0.5	1.97	0.34	2.64
bull10	0.58	2.32	0.47	2.616
cad10	0.51	2.04	0.36	2.636
mur10	0.53	2.10	0.38	2.634
mck10	0.47	1.84	0.30	2.64
namu10	0.45	1.77	0.27	2.64
west10	0.47	1.85	0.30	2.637
bir10	0.53	2.10	0.39	2.631
hut10	0.45	1.75	0.27	2.64
pool10	0.52	2.06	0.37	2.632
mutt10	0.56	2.25	0.43	2.63
pat10	0.52	2.08	0.37	2.617

Lithology Name	Grain Size (mm)	Matrix Conductivity (W/m*deg C)	Matrix Cond. Correction
Sandstone	0.5	4.4	270
Siltstone	0.0156	2	170
Shale	0.0004	1.5	-180
Limestone	0.5	2.9	350
Dolomite	0.5	4.8	300
Evaporite	0.0004	5.4	470
Coal	0.0004	0.3	250
Igneous	0.0001	2.9	380
nam1	0.0137	2.329	116.2
eyr1	0.2479	3.996	240
win1	0.0109	2.200	113
mac1	0.0125	2.279	112.5
all1	0.0088	2.077	97.5
coo1	0.0883	3.2	220
bull1	0.0008	1.6	-110
cad1	0.0609	3.188	180
mur1	0.0088	2.077	97.5
mck1	0.0360	2.885	157.5
namu1	0.2954	4.097	247.5

bir1	0.0166	2.435	133.4
hut1	0.2678	3.968	252
pool1	0.0066	1.913	142.2
napp1	0.0195	2.531	131.2
too1	0.0069	1.942	152.9
dara1	0.0070	1.948	124.9
rose1	0.0062	1.875	82.5
epsi1	0.0082	2.033	111.3
mutt1	0.0062	1.875	82.5
pat1	0.0095	2.121	129.2
nam10	0.0137	2.372	101
eyr10	0.2499	3.92	250
win10	0.0039	2.005	15.5
mac10	0.0078	2.138	77
all10	0.0049	2.016	39
coo10	0.0883	3.2	220
bull10	0.0017	1.7	-40
cad10	0.0432	2.91	175
mur10	0.0229	2.573	144.5
mck10	0.2331	3.872	248
namu10	0.4204	4.28	265
west10	0.2006	3.89	229
bir10	0.0197	2.61	123
hut10	0.5	4.4	270
pool10	0.0290	2.817	141.5
mutt10	0.0062	1.875	82.5
pat10	0.0312	2.803	157.1

Lithology Name	Heat Capacity (kJ/m^3*deg C)	Heat Capacity Correction
Sandstone	2800	0
Siltstone	2650	0
Shale	2100	0
Limestone	2600	0
Dolomite	2600	0
Evaporite	1750	0
Coal	950	0
Igneous	2500	0
nam1	2564.	0
eyr1	2754	0
win1	2513.	0
mac1	2558.	0
all1	2535.	0
coo1	2725	0
bull1	2210	0
cad1	2662	0
mur1	2535.	0
mck1	2627.	0
namu1	2765.	0
bir1	2536	0
hut1	2773	0
pool1	2240.	0
napp1	2587.	0
too1	2202	0
dara1	2341	0
rose1	2512.	0
epsi1	2447.	0
mutt1	2512.	0
pat1	2402.	0
nam10	2507	0
eyr10	2770	0
win10	2406.	0
mac10	2503	0

all10	2443.	0
coo10	2725	0
bull10	2320	0
cad10	2655	0
mur10	2608	0
mck10	2767	0
namu10	2792.	0
west10	2737	0
bir10	2574	0
hut10	2800	0
pool10	2602.	0
mutt10	2512.	0
pat10	2590.	0

Lithology Fluid Flow Table

Lithology Name	Initial Porosity A	Initial Porosity B	A	B (1/Pa)	Fraction A
Sandstone	0.0000	0.4500	0.0000	1.350000e-08	0.000
Siltstone	0.5500	0.0000	-0.800	0.000000e+00	1.000
Shale	0.6000	0.0000	-0.800	0.000000e+00	1.000
Limestone	0.6000	0.0000	-0.800	0.000000e+00	1.000
Dolomite	0.6000	0.0000	-0.800	0.000000e+00	1.000
Evaporite	0.0000	0.0000	-0.800	1.350000e-08	0.000
Coal	0.9000	0.0000	-0.800	0.000000e+00	1.000
Igneous	0.0000	0.0000	-0.800	1.350000e-08	0.000
nam1	0.5625	0.4500	-0.800	1.350000e-08	0.820
eyr1	0.5625	0.4500	-0.800	1.350000e-08	0.160
win1	0.5725	0.4500	-0.800	1.350000e-08	0.855
mac1	0.5625	0.4500	-0.800	1.350000e-08	0.840
all1	0.5625	0.4500	-0.800	1.350000e-08	0.920
coo1	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull1	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad1	0.5625	0.4500	-0.800	1.350000e-08	0.480
mur1	0.5625	0.4500	-0.800	1.350000e-08	0.920
mck1	0.5625	0.4500	-0.800	1.350000e-08	0.600
namu1	0.5625	0.4500	-0.800	1.350000e-08	0.120
bir1	0.5756	0.4500	-0.800	1.350000e-08	0.760
hut1	0.5500	0.4500	-0.800	1.350000e-08	0.180
pool1	0.6409	0.4500	-0.800	1.350000e-08	0.860
napp1	0.5625	0.4500	-0.800	1.350000e-08	0.740
too1	0.6560	0.4500	-0.800	1.350000e-08	0.830
dara1	0.6117	0.4500	-0.800	1.350000e-08	0.890
rose1	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi1	0.5850	0.4500	-0.800	1.350000e-08	0.900
mutt1	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat1	0.6026	0.4500	-0.800	1.350000e-08	0.840
nam10	0.5743	0.4500	-0.800	1.350000e-08	0.820
eyr10	0.5500	0.4500	-0.800	1.350000e-08	0.200
win10	0.5761	0.4500	-0.800	1.350000e-08	0.900
mac10	0.5670	0.4500	-0.800	1.350000e-08	0.880
all10	0.5719	0.4500	-0.800	1.350000e-08	0.910
coo10	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull10	0.5800	0.0000	-0.800	0.000000e+00	1.000
cad10	0.5583	0.4500	-0.800	1.350000e-08	0.600
mur10	0.5602	0.4500	-0.800	1.350000e-08	0.730
mck10	0.5500	0.4500	-0.800	1.350000e-08	0.220
namu10	0.5500	0.4500	-0.800	1.350000e-08	0.050
west10	0.5650	0.4500	-0.800	1.350000e-08	0.200
bir10	0.5657	0.4500	-0.800	1.350000e-08	0.700
hut10	0.0000	0.4500	0.0000	1.350000e-08	0.000
pool10	0.5653	0.4500	-0.800	1.350000e-08	0.620
mutt10	0.5625	0.0000	-0.800	0.000000e+00	1.000

pat10	0.5733	0.4500	-0.800	1.350000e-08	0.620

Lithology Name	Initial Permeability (milliDarcys)	Permeability Power
Sandstone	2.786221e+04	5.500
Siltstone	1.013171e-01	5.500
Shale	1.013171e-01	5.500
Limestone	2.786221e+04	5.500
Dolomite	2.786221e+04	5.500
Evaporite	1.013171e-08	5.500
Coal	1.013171e-01	5.500
Igneous	1.013171e-08	5.500
nam1	9.655232e-01	5.500
eyr1	3.755972e+03	5.500
win1	6.228538e-01	5.500
mac1	7.515815e-01	5.500
all1	2.759494e-01	5.500
coo1	5.313115e+01	5.500
bull1	1.013171e-01	5.500
cad1	6.825522e+01	5.500
mur1	2.759494e-01	5.500
mck1	1.518504e+01	5.500
namu1	6.198629e+03	5.500
bir1	2.047023e+00	5.500
hut1	2.923719e+03	5.500
pool1	5.850452e-01	5.500
napp1	2.629719e+00	5.500
too1	8.518624e-01	5.500
dara1	4.017996e-01	5.500
rose1	1.013171e-01	5.500
epsi1	3.544999e-01	5.500
mutt1	1.013171e-01	5.500
pat1	7.515815e-01	5.500
nam10	3.378283e+00	5.500
eyr10	2.275878e+03	5.500
win10	3.544999e-01	5.500
mac10	4.554102e-01	5.500
all10	3.127683e-01	5.500
coo10	5.313115e+01	5.500
bull10	1.013171e-01	5.500
cad10	1.518504e+01	5.500
mur10	2.980593e+00	5.500
mck10	1.771586e+03	5.500
namu10	1.489529e+04	5.500
west10	2.275878e+03	5.500
bir10	4.339930e+00	5.500
hut10	2.786221e+04	5.500
pool10	1.182032e+01	5.500
mutt10	1.013171e-01	5.500
pat10	1.182032e+01	5.500

Geothermal Gradient Table

Time (Ma)	Depth 1 (m)
0	0

Maturity conversion method: Table
TTI = 4.191876 + 1.817512 * log10(Ro)
Data fit: Least Squares

Model Units

```
                   Depth = (m)
                Distance = (m)
    Thermal Conductivity = (W/m*deg C)
           Heat Capacity = (kJ/m^3*deg C)
               Heat Flow = (mW/m^2)
             Temperature = (deg C)
         Heat Generation = (muW/m^3)
                Gradient = (deg C/100 m)
       Activation Energy = (kcal/mole)
        Frequency Factor = (1/my)
              HC Density = (g/cm^3)
                Pressure = (MPa)
              Grain Size = (mm)
        Seismic Velocity = (m/s)
              Event Time = (msec)
                Maturity = (%Ro)
           HC Generation = (mg/g TOC)

Calculation Options
              Compaction = Sclater & Christie
    Porosity Depth Method = Linear
Permeability Calculation = Modified Kozeny-Carman
  Geothermal Calculation = Gradient
    Maturity Calculation = LLNL
   Expulsion Calculation = None
           Time Interval = 1.00
          Depth Interval = 1000.00
         Integrate Depth = No

Advanced Options
      TTI Reference Temp = 105.00
       TTI Doubling Temp = 10.00
    Rock-Eval Correction = 35.00
            Thermal Gain = 1.000
Critical Fracturing Fraction = 0.850
   Fracture Closure Rate = 0.050
Conductivity Calculation = Deming/Chapman
              Initial S1 = 3.00

Rifting HF Options
   Use Rifting Heat Flow = No
        Start Rift Time = 0.00
          End Rift Time = 0.00
         Auto-Calc Beta = No
  Rifting Heat Flow Beta = 2.00

Present Day Info
              Model Name = KOBARI-1 EROSION
       Model Description =
    Current Surface Temp = 20.00
       Current Elevation = 0.00
       Current Heat Flow = 63.00

Seismic Parameters
              Shot Point = 0
                       X = 0.00000000
                       Y = 0.00000000
```

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+------------------------------------------------+
| BasinMod Data Report                           |
| Licensed to: Natn'l Centre for Petroleum Geology & Geophysics |
|              Mr. Peter Tingate                 |
|     Version: 4.20                              |
|  Model Name: KUENPINNIE-1                      |
|   File Name: KUENPINNIE-1.mod                  |
|        Date: Feb  5, 1996                      |
|        Time: 12:23 pm                          |
+------------------------------------------------+
```

Stratigraphy Table

Formation or Event Name	Type	Begin Age (Ma)	Well Top (m)	Present Thick (m)	Lithology
QT/T	F	3.3	0	55	Sandstone
HIATUS-1	H	5.3			
NAMBA FM.	F	29.3	55	106	nam9
HIATUS-2	H	38			
EYRE FM.	F	60	161	48	eyr9
HIATUS-3	H	90			
WINTON FM.	F	97.5	209	661	win9
MACKUNDA FM.	F	100	870	64	mac9
ALLARU Mdst.	F	101	934	258	all9
TOOLEBUC FM.	F	102.5	1192	11	tool9
WALLUMBILLA FM.	F	117.5	1203	309	wall9
CADNA-OWIE FM.	F	135.5	1512	63	cad9
MURTA FM.	F	141.5	1575	40	mur9
McKINLAY Mbr.	F	145	1615	2	mck9
NAMUR Sst.	F	151	1617	65	namu9
WESTBOURNE FM.	F	159	1682	146	west9
ADORI Sst.	F	165	1828	49	ador9
BIRKHEAD FM.	F	175	1877	98	bir9
HUTTON Sst.	F	188	1975	164	hut9
POOLOWANNA FM.	F	193	2139	21	pool9
HIATUS-4	H	261.5			
EPSILON FM.	F	263.5	2160	26	epsi9
MURTEREE SHAle	F	264.5	2186	14	mutt9
PATCHAWARRA FM.	F	274	2200	269	pat9
TIRRAWARRA Sst.	F	280	2469	20	tir9
MERRIMELIA FM.	F	285.5	2489	52	merr9

Formation or Event Name	Type	Lith Pat
QT/T	F	
HIATUS-1	H	
NAMBA FM.	F	1
HIATUS-2	H	
EYRE FM.	F	
HIATUS-3	H	
WINTON FM.	F	
MACKUNDA FM.	F	
ALLARU Mdst.	F	
TOOLEBUC FM.	F	
WALLUMBILLA FM.	F	
CADNA-OWIE FM.	F	
MURTA FM.	F	
McKINLAY Mbr.	F	
NAMUR Sst.	F	
WESTBOURNE FM.	F	
ADORI Sst.	F	

BIRKHEAD FM.	F
HUTTON Sst.	F
POOLOWANNA FM.	F
HIATUS-4	H
EPSILON FM.	F
MURTEREE SHAle	F
PATCHAWARRA FM.	F
TIRRAWARRA Sst.	F
MERRIMELIA FM.	F

Lithology Mixes Table

Lithology Name	% Sandstone	% Siltstone	% Shale	% Limestone
Sandstone	100			
nam9	15	40	33	12
eyr9	76	20	4	
win9	17	50	32	
mac9	11	60	29	
all9	4	60	36	
tool9		26.5	73.5	
wall9		30	70	
cad9	36	54	10	
mur9	9	77	14	
mck9	50	50		
namu9	79	21		
west9	62	27	11	
ador9	95	5		
bir9	32	40	28	
hut9	79	21		
pool9	16	40	29	
epsi9	12	49	20	
mutt9		75	25	
pat9	17	45.5	15.5	
tir9	80	20		
merr9	18	61.5	20.5	

Lithology Name	% Kerogen	Total %
Sandstone		100.0
nam9		100.0
eyr9		100.0
win9	1	100.0
mac9		100.0
all9		100.0
tool9		100.0
wall9		100.0
cad9		100.0
mur9		100.0
mck9		100.0
namu9		100.0
west9		100.0
ador9		100.0
bir9		100.0
hut9		100.0
pool9	15	100.0
epsi9	19	100.0
mutt9		100.0
pat9	22	100.0
tir9		100.0
merr9		100.0

Lithology Values Table

Lithology Name	Initial Porosity	Compaction Factor (FM)	Exponential Factor (SC)	Density (g/cm^3)
Sandstone	0.45	1.75	0.27	2.64
Siltstone	0.55	2.2	0.41	2.64
Shale	0.6	2.4	0.51	2.6
Limestone	0.6	1.5	0.22	2.72
Dolomite	0.6	1.5	0.22	2.85
Evaporite	0	0	0	2.15
Coal	0.9	3.5	0.7	1.8
Igneous	0	0	0	2.65
nam1	0.54	2.16	0.40	2.631
eyr1	0.46	1.83	0.29	2.638
win1	0.55	2.20	0.41	2.610
mac1	0.54	2.17	0.40	2.631
all1	0.55	2.21	0.42	2.630
coo1	0.5	1.97	0.34	2.64
bull1	0.59	2.36	0.49	2.608
cad1	0.50	1.99	0.34	2.635
mur1	0.55	2.21	0.42	2.630
mck1	0.51	2.05	0.36	2.634
namu1	0.46	1.81	0.28	2.638
bir1	0.54	2.16	0.40	2.607
hut1	0.46	1.83	0.29	2.64
pool1	0.61	2.43	0.46	2.465
napp1	0.53	2.12	0.39	2.632
too1	0.62	2.45	0.46	2.440
dara1	0.59	2.35	0.45	2.523
rose1	0.56	2.25	0.43	2.63
epsi1	0.57	2.27	0.43	2.581
mutt1	0.56	2.25	0.43	2.63
pat1	0.57	2.29	0.43	2.548
nam9	0.55	2.11	0.39	2.636
eyr9	0.47	1.86	0.30	2.638
win9	0.55	2.20	0.42	2.618
mac9	0.55	2.20	0.42	2.628
all9	0.56	2.25	0.44	2.625
tool9	0.58	2.34	0.48	2.610
wall9	0.58	2.34	0.48	2.612
cad9	0.51	2.05	0.36	2.636
mur9	0.54	2.18	0.41	2.634
mck9	0.5	1.97	0.34	2.64
namu9	0.47	1.84	0.29	2.64
west9	0.49	1.94	0.33	2.635
ador9	0.45	1.77	0.27	2.64
bir9	0.53	2.11	0.39	2.628
hut9	0.47	1.84	0.29	2.64
pool9	0.60	2.38	0.46	2.502
epsi9	0.61	2.43	0.46	2.472
mutt9	0.56	2.25	0.43	2.63
pat9	0.61	2.44	0.46	2.449
tir9	0.47	1.84	0.29	2.64
merr9	0.54	2.16	0.40	2.631

Lithology Name	Grain Size (mm)	Matrix Conductivity (W/m*deg C)	Matrix Cond. Correction
Sandstone	0.5	4.4	270
Siltstone	0.0156	2	170
Shale	0.0004	1.5	-180
Limestone	0.5	2.9	350
Dolomite	0.5	4.8	300
Evaporite	0.0004	5.4	470
Coal	0.0004	0.3	250

Igneous	0.0001	2.9	380
nam1	0.0137	2.329	116.2
eyr1	0.2479	3.996	240
win1	0.0109	2.200	113
mac1	0.0125	2.279	112.5
all1	0.0088	2.077	97.5
coo1	0.0883	3.2	220
bull1	0.0008	1.6	-110
cad1	0.0609	3.188	180
mur1	0.0088	2.077	97.5
mck1	0.0360	2.885	157.5
namu1	0.2954	4.097	247.5
bir1	0.0166	2.435	133.4
hut1	0.2678	3.968	252
pool1	0.0066	1.913	142.2
napp1	0.0195	2.531	131.2
too1	0.0069	1.942	152.9
dara1	0.0070	1.948	124.9
rose1	0.0062	1.875	82.5
epsi1	0.0082	2.033	111.3
mutt1	0.0062	1.875	82.5
pat1	0.0095	2.121	129.2
nam9	0.0118	2.303	91.1
eyr9	0.1878	3.804	232
win9	0.0083	2.231	75.8
mac9	0.0078	2.119	79.5
all9	0.0047	1.916	48
tool9	0.0010	1.632	-87.2
wall9	0.0012	1.65	-75
cad9	0.0376	2.814	171
mur9	0.0127	2.146	130
mck9	0.0883	3.2	220
namu9	0.2414	3.896	249
west9	0.0894	3.433	193.5
ador9	0.4204	4.28	265
bir9	0.0169	2.628	104
hut9	0.2414	3.896	249
pool9	0.0054	1.984	96.5
epsi9	0.0056	1.865	127.2
mutt9	0.0062	1.875	82.5
pat9	0.0071	1.956	150.3
tir9	0.2499	3.92	250
merr9	0.0137	2.329	116.2

Lithology Name	Heat Capacity (kJ/m^3*deg C)	Heat Capacity Correction
Sandstone	2800	0
Siltstone	2650	0
Shale	2100	0
Limestone	2600	0
Dolomite	2600	0
Evaporite	1750	0
Coal	950	0
Igneous	2500	0
nam1	2564.	0
eyr1	2754	0
win1	2513.	0
mac1	2558.	0
all1	2535.	0
coo1	2725	0
bull1	2210	0
cad1	2662	0
mur1	2535.	0

mck1	2627.	0
namu1	2765.	0
bir1	2536	0
hut1	2773	0
pool1	2240.	0
napp1	2587.	0
too1	2202	0
dara1	2341	0
rose1	2512.	0
epsi1	2447.	0
mutt1	2512.	0
pat1	2402.	0
nam9	2485	0
eyr9	2742	0
win9	2482.	0
mac9	2507	0
all9	2458	0
tool9	2245.	0
wall9	2265	0
cad9	2649	0
mur9	2586.	0
mck9	2725	0
namu9	2768.	0
west9	2682.	0
ador9	2792.	0
bir9	2544	0
hut9	2768.	0
pool9	2259.	0
epsi9	2235	0
mutt9	2512.	0
pat9	2216.	0
tir9	2770	0
merr9	2564.	0

Lithology Fluid Flow Table

Lithology Name	Initial Porosity A	Initial Porosity B	A	B (1/Pa)	Fraction A
Sandstone	0.0000	0.4500	0.0000	1.350000e-08	0.000
Siltstone	0.5500	0.0000	-0.800	0.000000e+00	1.000
Shale	0.6000	0.0000	-0.800	0.000000e+00	1.000
Limestone	0.6000	0.0000	-0.800	0.000000e+00	1.000
Dolomite	0.6000	0.0000	-0.800	0.000000e+00	1.000
Evaporite	0.0000	0.0000	-0.800	1.350000e-08	0.000
Coal	0.9000	0.0000	-0.800	0.000000e+00	1.000
Igneous	0.0000	0.0000	-0.800	1.350000e-08	0.000
nam1	0.5625	0.4500	-0.800	1.350000e-08	0.820
eyr1	0.5625	0.4500	-0.800	1.350000e-08	0.160
win1	0.5725	0.4500	-0.800	1.350000e-08	0.855
mac1	0.5625	0.4500	-0.800	1.350000e-08	0.840
all1	0.5625	0.4500	-0.800	1.350000e-08	0.920
coo1	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull1	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad1	0.5625	0.4500	-0.800	1.350000e-08	0.480
mur1	0.5625	0.4500	-0.800	1.350000e-08	0.920
mck1	0.5625	0.4500	-0.800	1.350000e-08	0.600
namu1	0.5625	0.4500	-0.800	1.350000e-08	0.120
bir1	0.5756	0.4500	-0.800	1.350000e-08	0.760
hut1	0.5500	0.4500	-0.800	1.350000e-08	0.180
pool1	0.6409	0.4500	-0.800	1.350000e-08	0.860
napp1	0.5625	0.4500	-0.800	1.350000e-08	0.740
too1	0.6560	0.4500	-0.800	1.350000e-08	0.830
dara1	0.6117	0.4500	-0.800	1.350000e-08	0.890

rose1	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi1	0.5850	0.4500	-0.800	1.350000e-08	0.900
mutt1	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat1	0.6026	0.4500	-0.800	1.350000e-08	0.840
nam9	0.5764	0.4500	-0.800	1.350000e-08	0.850
eyr9	0.5583	0.4500	-0.800	1.350000e-08	0.240
win9	0.5734	0.4500	-0.800	1.350000e-08	0.830
mac9	0.5662	0.4500	-0.800	1.350000e-08	0.890
all9	0.5687	0.4500	-0.800	1.350000e-08	0.960
tool9	0.5867	0.0000	-0.800	0.000000e+00	1.000
wall9	0.5850	0.0000	-0.800	0.000000e+00	1.000
cad9	0.5578	0.4500	-0.800	1.350000e-08	0.640
mur9	0.5576	0.4500	-0.800	1.350000e-08	0.910
mck9	0.5500	0.4500	-0.800	1.350000e-08	0.500
namu9	0.5500	0.4500	-0.800	1.350000e-08	0.210
west9	0.5644	0.4500	-0.800	1.350000e-08	0.380
ador9	0.5500	0.4500	-0.800	1.350000e-08	0.050
bir9	0.5705	0.4500	-0.800	1.350000e-08	0.680
hut9	0.5500	0.4500	-0.800	1.350000e-08	0.210
pool9	0.6297	0.4500	-0.800	1.350000e-08	0.840
epsi9	0.6369	0.4500	-0.800	1.350000e-08	0.880
mutt9	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat9	0.6521	0.4500	-0.800	1.350000e-08	0.830
tir9	0.5500	0.4500	-0.800	1.350000e-08	0.200
merr9	0.5625	0.4500	-0.800	1.350000e-08	0.820

Lithology Name	Initial Permeability (milliDarcys)	Permeability Power
Sandstone	2.786221e+04	5.500
Siltstone	1.013171e-01	5.500
Shale	1.013171e-01	5.500
Limestone	2.786221e+04	5.500
Dolomite	2.786221e+04	5.500
Evaporite	1.013171e-08	5.500
Coal	1.013171e-01	5.500
Igneous	1.013171e-08	5.500
nam1	9.655232e-01	5.500
eyr1	3.755972e+03	5.500
win1	6.228538e-01	5.500
mac1	7.515815e-01	5.500
all1	2.759494e-01	5.500
coo1	5.313115e+01	5.500
bull1	1.013171e-01	5.500
cad1	6.825522e+01	5.500
mur1	2.759494e-01	5.500
mck1	1.518504e+01	5.500
namu1	6.198629e+03	5.500
bir1	2.047023e+00	5.500
hut1	2.923719e+03	5.500
pool1	5.850452e-01	5.500
napp1	2.629719e+00	5.500
too1	8.518624e-01	5.500
dara1	4.017996e-01	5.500
rose1	1.013171e-01	5.500
epsi1	3.544999e-01	5.500
mutt1	1.013171e-01	5.500
pat1	7.515815e-01	5.500
nam9	2.980593e+00	5.500
eyr9	1.379036e+03	5.500
win9	8.518624e-01	5.500
mac9	4.017996e-01	5.500
all9	1.672077e-01	5.500

tool9	1.013171e-01	5.500
wall9	1.013171e-01	5.500
cad9	9.201161e+00	5.500
mur9	3.127683e-01	5.500
mck9	5.313115e+01	5.500
namu9	2.007963e+03	5.500
west9	2.388192e+02	5.500
ador9	1.489529e+04	5.500
bir9	5.575314e+00	5.500
hut9	2.007963e+03	5.500
pool9	7.515815e-01	5.500
epsi9	4.554102e-01	5.500
mutt9	1.013171e-01	5.500
pat9	8.518624e-01	5.500
tir9	2.275878e+03	5.500
merr9	9.655232e-01	5.500

Geothermal Gradient Table

Time (Ma)	Depth 1 (m)
0	0

Maturity conversion method: Table
TTI = 4.191876 + 1.817512 * log10(Ro)
Data fit: Least Squares

Model Units

Depth =	(m)
Distance =	(m)
Thermal Conductivity =	(W/m*deg C)
Heat Capacity =	(kJ/m^3*deg C)
Heat Flow =	(mW/m^2)
Temperature =	(deg C)
Heat Generation =	(muW/m^3)
Gradient =	(deg C/100 m)
Activation Energy =	(kcal/mole)
Frequency Factor =	(1/my)
HC Density =	(g/cm^3)
Pressure =	(MPa)
Grain Size =	(mm)
Seismic Velocity =	(m/s)
Event Time =	(msec)
Maturity =	(%Ro)
HC Generation =	(mg/g TOC)

Calculation Options

Compaction =	Sclater & Christie
Porosity Depth Method =	Linear
Permeability Calculation =	Modified Kozeny-Carman
Geothermal Calculation =	Gradient
Maturity Calculation =	LLNL
Expulsion Calculation =	None
Time Interval =	1.00
Depth Interval =	1000.00
Integrate Depth =	No

Advanced Options

TTI Reference Temp =	105.00
TTI Doubling Temp =	10.00
Rock-Eval Correction =	35.00
Thermal Gain =	1.000
Critical Fracturing Fraction =	0.850
Fracture Closure Rate =	0.050

```
    Conductivity Calculation = Deming/Chapman
                  Initial S1 = 3.00

Rifting HF Options
      Use Rifting Heat Flow = No
            Start Rift Time = 0.00
              End Rift Time = 0.00
             Auto-Calc Beta = No
     Rifting Heat Flow Beta = 2.00

Present Day Info
                 Model Name = KUENPINNIE-1
          Model Description =
       Current Surface Temp = 20.00
          Current Elevation = 0.00
          Current Heat Flow = 63.00

Seismic Parameters
                 Shot Point = 0
                          X = 0.00000000
                          Y = 0.00000000
```

```
+-----------------------------------------+
| BasinMod Data Report                     |
| Licensed to: Natn'l Centre for Petroleum Geology & Geophysics |
|              Mr. Peter Tingate           |
|     Version: 4.20                        |
|  Model Name: KUENPINNIE-1 EROSION        |
|   File Name: KUENPINNIE-1 EROSION.mod    |
|        Date: Feb  5, 1996                |
|        Time: 12:24 pm                    |
+-----------------------------------------+
```

Stratigraphy Table

Formation or Event Name	Type	Begin Age (Ma)	Well Top (m)	Present Thick (m)	Missing Thick (m)
QT/T	F	3.3	0	55	
EROSION-1	E	4.3			-15
MISSING SEC-1	D	5.3			15
NAMBA FM.	F	29.3	55	106	
EROSION-2	E	34			-12
MISSING SEC-2	D	38			12
EYRE FM.	F	60	161	48	
EROSION-3	E	75			-250
MISSING SEC-3	D	90			250
WINTON FM.	F	97.5	209	661	
MACKUNDA FM.	F	100	870	64	
ALLARU Mdst.	F	101	934	258	
TOOLEBUC FM.	F	102.5	1192	11	
WALLUMBILLA FM.	F	117.5	1203	309	
CADNA-OWIE FM.	F	135.5	1512	63	
MURTA FM.	F	141.5	1575	40	
McKINLAY Mbr.	F	145	1615	2	
NAMUR Sst.	F	151	1617	65	
WESTBOURNE FM.	F	159	1682	146	
ADORI Sst.	F	165	1828	49	
BIRKHEAD FM.	F	175	1877	98	
HUTTON Sst.	F	188	1975	164	
POOLOWANNA FM.	F	193	2139	21	
EROSION-4	E	236.5			-100
MISSING SEC-4	D	253.5			100
EROSION-5	E	256			-121
MISSING SEC-5	D	261.5			121
EPSILON FM.	F	263.5	2160	26	
MURTEREE SHAle	F	264.5	2186	14	
PATCHAWARRA FM.	F	274	2200	269	
TIRRAWARRA Sst.	F	280	2469	20	
MERRIMELIA FM.	F	285.5	2489	52	

Formation or Event Name	Type	Lithology	Lith Pat
QT/T	F	Sandstone	
EROSION-1	E		
MISSING SEC-1	D	Sandstone	
NAMBA FM.	F	nam9	1
EROSION-2	E		
MISSING SEC-2	D	Sandstone	
EYRE FM.	F	eyr9	
EROSION-3	E		
MISSING SEC-3	D	Sandstone	
WINTON FM.	F	win9	
MACKUNDA FM.	F	mac9	

ALLARU Mdst.	F	all9
TOOLEBUC FM.	F	tool9
WALLUMBILLA FM.	F	wall9
CADNA-OWIE FM.	F	cad9
MURTA FM.	F	mur9
McKINLAY Mbr.	F	mck9
NAMUR Sst.	F	namu9
WESTBOURNE FM.	F	west9
ADORI Sst.	F	ador9
BIRKHEAD FM.	F	bir9
HUTTON Sst.	F	hut9
POOLOWANNA FM.	F	pool9
EROSION-4	E	
MISSING SEC-4	D	Sandstone
EROSION-5	E	
MISSING SEC-5	D	Sandstone
EPSILON FM.	F	epsi9
MURTEREE SHAle	F	mutt9
PATCHAWARRA FM.	F	pat9
TIRRAWARRA Sst.	F	tir9
MERRIMELIA FM.	F	merr9

Lithology Mixes Table

Lithology Name	% Sandstone	% Siltstone	% Shale	% Limestone
Sandstone	100			
nam9	15	40	33	12
eyr9	76	20	4	
win9	17	50	32	
mac9	11	60	29	
all9	4	60	36	
tool9		26.5	73.5	
wall9		30	70	
cad9	36	54	10	
mur9	9	77	14	
mck9	50	50		
namu9	79	21		
west9	62	27	11	
ador9	95	5		
bir9	32	40	28	
hut9	79	21		
pool9	16	40	29	
epsi9	12	49	20	
mutt9		75	25	
pat9	17	45.5	15.5	
tir9	80	20		
merr9	18	61.5	20.5	

Lithology Name	% Kerogen	Total %
Sandstone		100.0
nam9		100.0
eyr9		100.0
win9	1	100.0
mac9		100.0
all9		100.0
tool9		100.0
wall9		100.0
cad9		100.0
mur9		100.0
mck9		100.0
namu9		100.0

west9		100.0
ador9		100.0
bir9		100.0
hut9		100.0
pool9	15	100.0
epsi9	19	100.0
mutt9		100.0
pat9	22	100.0
tir9		100.0
merr9		100.0

Lithology Values Table

Lithology Name	Initial Porosity	Compaction Factor (FM)	Exponential Factor (SC)	Density (g/cm^3)
Sandstone	0.45	1.75	0.27	2.64
Siltstone	0.55	2.2	0.41	2.64
Shale	0.6	2.4	0.51	2.6
Limestone	0.6	1.5	0.22	2.72
Dolomite	0.6	1.5	0.22	2.85
Evaporite	0	0	0	2.15
Coal	0.9	3.5	0.7	1.8
Igneous	0	0	0	2.65
nam1	0.54	2.16	0.40	2.631
eyr1	0.46	1.83	0.29	2.638
win1	0.55	2.20	0.41	2.610
mac1	0.54	2.17	0.40	2.631
all1	0.55	2.21	0.42	2.630
coo1	0.5	1.97	0.34	2.64
bull1	0.59	2.36	0.49	2.608
cad1	0.50	1.99	0.34	2.635
mur1	0.55	2.21	0.42	2.630
mck1	0.51	2.05	0.36	2.634
namu1	0.46	1.81	0.28	2.638
bir1	0.54	2.16	0.40	2.607
hut1	0.46	1.83	0.29	2.64
pool1	0.61	2.43	0.46	2.465
napp1	0.53	2.12	0.39	2.632
too1	0.62	2.45	0.46	2.440
dara1	0.59	2.35	0.45	2.523
rose1	0.56	2.25	0.43	2.63
epsi1	0.57	2.27	0.43	2.581
mutt1	0.56	2.25	0.43	2.63
pat1	0.57	2.29	0.43	2.548
nam9	0.55	2.11	0.39	2.636
eyr9	0.47	1.86	0.30	2.638
win9	0.55	2.20	0.42	2.618
mac9	0.55	2.20	0.42	2.628
all9	0.56	2.25	0.44	2.625
tool9	0.58	2.34	0.48	2.610
wall9	0.58	2.34	0.48	2.612
cad9	0.51	2.05	0.36	2.636
mur9	0.54	2.18	0.41	2.634
mck9	0.5	1.97	0.34	2.64
namu9	0.47	1.84	0.29	2.64
west9	0.49	1.94	0.33	2.635
ador9	0.45	1.77	0.27	2.64
bir9	0.53	2.11	0.39	2.628
hut9	0.47	1.84	0.29	2.64
pool9	0.60	2.38	0.46	2.502
epsi9	0.61	2.43	0.46	2.472
mutt9	0.56	2.25	0.43	2.63
pat9	0.61	2.44	0.46	2.449
tir9	0.47	1.84	0.29	2.64

merr9	0.54	2.16	0.40	2.631

Lithology Name	Grain Size (mm)	Matrix Conductivity (W/m*deg C)	Matrix Cond. Correction
Sandstone	0.5	4.4	270
Siltstone	0.0156	2	170
Shale	0.0004	1.5	-180
Limestone	0.5	2.9	350
Dolomite	0.5	4.8	300
Evaporite	0.0004	5.4	470
Coal	0.0004	0.3	250
Igneous	0.0001	2.9	380
nam1	0.0137	2.329	116.2
eyr1	0.2479	3.996	240
win1	0.0109	2.200	113
mac1	0.0125	2.279	112.5
all1	0.0088	2.077	97.5
coo1	0.0883	3.2	220
bull1	0.0008	1.6	-110
cad1	0.0609	3.188	180
mur1	0.0088	2.077	97.5
mck1	0.0360	2.885	157.5
namu1	0.2954	4.097	247.5
bir1	0.0166	2.435	133.4
hut1	0.2678	3.968	252
pool1	0.0066	1.913	142.2
napp1	0.0195	2.531	131.2
too1	0.0069	1.942	152.9
dara1	0.0070	1.948	124.9
rose1	0.0062	1.875	82.5
epsi1	0.0082	2.033	111.3
mutt1	0.0062	1.875	82.5
pat1	0.0095	2.121	129.2
nam9	0.0118	2.303	91.1
eyr9	0.1878	3.804	232
win9	0.0083	2.231	75.8
mac9	0.0078	2.119	79.5
all9	0.0047	1.916	48
tool9	0.0010	1.632	-87.2
wall9	0.0012	1.65	-75
cad9	0.0376	2.814	171
mur9	0.0127	2.146	130
mck9	0.0883	3.2	220
namu9	0.2414	3.896	249
west9	0.0894	3.433	193.5
ador9	0.4204	4.28	265
bir9	0.0169	2.628	104
hut9	0.2414	3.896	249
pool9	0.0054	1.984	96.5
epsi9	0.0056	1.865	127.2
mutt9	0.0062	1.875	82.5
pat9	0.0071	1.956	150.3
tir9	0.2499	3.92	250
merr9	0.0137	2.329	116.2

Lithology Name	Heat Capacity (kJ/m^3*deg C)	Heat Capacity Correction
Sandstone	2800	0
Siltstone	2650	0
Shale	2100	0
Limestone	2600	0
Dolomite	2600	0

Evaporite	1750	0
Coal	950	0
Igneous	2500	0
nam1	2564.	0
eyr1	2754	0
win1	2513.	0
mac1	2558.	0
all1	2535.	0
coo1	2725	0
bull1	2210	0
cad1	2662	0
mur1	2535.	0
mck1	2627.	0
namu1	2765.	0
bir1	2536	0
hut1	2773	0
pool1	2240.	0
napp1	2587.	0
too1	2202	0
dara1	2341	0
rose1	2512.	0
epsi1	2447.	0
mutt1	2512.	0
pat1	2402.	0
nam9	2485	0
eyr9	2742	0
win9	2482.	0
mac9	2507	0
all9	2458	0
tool9	2245.	0
wall9	2265	0
cad9	2649	0
mur9	2586.	0
mck9	2725	0
namu9	2768.	0
west9	2682.	0
ador9	2792.	0
bir9	2544	0
hut9	2768.	0
pool9	2259.	0
epsi9	2235	0
mutt9	2512.	0
pat9	2216.	0
tir9	2770	0
merr9	2564.	0

Lithology Fluid Flow Table

Lithology Name	Initial Porosity A	Initial Porosity B	A	B (1/Pa)	Fraction A
Sandstone	0.0000	0.4500	0.0000	1.350000e-08	0.000
Siltstone	0.5500	0.0000	-0.800	0.000000e+00	1.000
Shale	0.6000	0.0000	-0.800	0.000000e+00	1.000
Limestone	0.6000	0.0000	-0.800	0.000000e+00	1.000
Dolomite	0.6000	0.0000	-0.800	0.000000e+00	1.000
Evaporite	0.0000	0.0000	-0.800	1.350000e-08	0.000
Coal	0.9000	0.0000	-0.800	0.000000e+00	1.000
Igneous	0.0000	0.0000	-0.800	1.350000e-08	0.000
nam1	0.5625	0.4500	-0.800	1.350000e-08	0.820
eyr1	0.5625	0.4500	-0.800	1.350000e-08	0.160
win1	0.5725	0.4500	-0.800	1.350000e-08	0.855
mac1	0.5625	0.4500	-0.800	1.350000e-08	0.840
all1	0.5625	0.4500	-0.800	1.350000e-08	0.920

cool	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull1	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad1	0.5625	0.4500	-0.800	1.350000e-08	0.480
mur1	0.5625	0.4500	-0.800	1.350000e-08	0.920
mck1	0.5625	0.4500	-0.800	1.350000e-08	0.600
namu1	0.5625	0.4500	-0.800	1.350000e-08	0.120
bir1	0.5756	0.4500	-0.800	1.350000e-08	0.760
hut1	0.5500	0.4500	-0.800	1.350000e-08	0.180
pool1	0.6409	0.4500	-0.800	1.350000e-08	0.860
napp1	0.5625	0.4500	-0.800	1.350000e-08	0.740
too1	0.6560	0.4500	-0.800	1.350000e-08	0.830
dara1	0.6117	0.4500	-0.800	1.350000e-08	0.890
rose1	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi1	0.5850	0.4500	-0.800	1.350000e-08	0.900
mutt1	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat1	0.6026	0.4500	-0.800	1.350000e-08	0.840
nam9	0.5764	0.4500	-0.800	1.350000e-08	0.850
eyr9	0.5583	0.4500	-0.800	1.350000e-08	0.240
win9	0.5734	0.4500	-0.800	1.350000e-08	0.830
mac9	0.5662	0.4500	-0.800	1.350000e-08	0.890
all9	0.5687	0.4500	-0.800	1.350000e-08	0.960
tool9	0.5867	0.0000	-0.800	0.000000e+00	1.000
wall9	0.5850	0.0000	-0.800	0.000000e+00	1.000
cad9	0.5578	0.4500	-0.800	1.350000e-08	0.640
mur9	0.5576	0.4500	-0.800	1.350000e-08	0.910
mck9	0.5500	0.4500	-0.800	1.350000e-08	0.500
namu9	0.5500	0.4500	-0.800	1.350000e-08	0.210
west9	0.5644	0.4500	-0.800	1.350000e-08	0.380
ador9	0.5500	0.4500	-0.800	1.350000e-08	0.050
bir9	0.5705	0.4500	-0.800	1.350000e-08	0.680
hut9	0.5500	0.4500	-0.800	1.350000e-08	0.210
pool9	0.6297	0.4500	-0.800	1.350000e-08	0.840
epsi9	0.6369	0.4500	-0.800	1.350000e-08	0.880
mutt9	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat9	0.6521	0.4500	-0.800	1.350000e-08	0.830
tir9	0.5500	0.4500	-0.800	1.350000e-08	0.200
merr9	0.5625	0.4500	-0.800	1.350000e-08	0.820

Lithology Name	Initial Permeability (milliDarcys)	Permeability Power
Sandstone	2.786221e+04	5.500
Siltstone	1.013171e-01	5.500
Shale	1.013171e-01	5.500
Limestone	2.786221e+04	5.500
Dolomite	2.786221e+04	5.500
Evaporite	1.013171e-08	5.500
Coal	1.013171e-01	5.500
Igneous	1.013171e-08	5.500
nam1	9.655232e-01	5.500
eyr1	3.755972e+03	5.500
win1	6.228538e-01	5.500
mac1	7.515815e-01	5.500
all1	2.759494e-01	5.500
cool	5.313115e+01	5.500
bull1	1.013171e-01	5.500
cad1	6.825522e+01	5.500
mur1	2.759494e-01	5.500
mck1	1.518504e+01	5.500
namu1	6.198629e+03	5.500
bir1	2.047023e+00	5.500
hut1	2.923719e+03	5.500
pool1	5.850452e-01	5.500

nappl	2.629719e+00	5.500
tool	8.518624e-01	5.500
dara1	4.017996e-01	5.500
rose1	1.013171e-01	5.500
epsi1	3.544999e-01	5.500
mutt1	1.013171e-01	5.500
pat1	7.515815e-01	5.500
nam9	2.980593e+00	5.500
eyr9	1.379036e+03	5.500
win9	8.518624e-01	5.500
mac9	4.017996e-01	5.500
all9	1.672077e-01	5.500
tool9	1.013171e-01	5.500
wall9	1.013171e-01	5.500
cad9	9.201161e+00	5.500
mur9	3.127683e-01	5.500
mck9	5.313115e+01	5.500
namu9	2.007963e+03	5.500
west9	2.388192e+02	5.500
ador9	1.489529e+04	5.500
bir9	5.575314e+00	5.500
hut9	2.007963e+03	5.500
pool9	7.515815e-01	5.500
epsi9	4.554102e-01	5.500
mutt9	1.013171e-01	5.500
pat9	8.518624e-01	5.500
tir9	2.275878e+03	5.500
merr9	9.655232e-01	5.500

Geothermal Gradient Table

Time (Ma)	Depth 1 (m)
0	0

Maturity conversion method: Table
TTI = 4.191876 + 1.817512 * log10(Ro)
Data fit: Least Squares

Model Units

Depth =	(m)
Distance =	(m)
Thermal Conductivity =	(W/m*deg C)
Heat Capacity =	(kJ/m^3*deg C)
Heat Flow =	(mW/m^2)
Temperature =	(deg C)
Heat Generation =	(muW/m^3)
Gradient =	(deg C/100 m)
Activation Energy =	(kcal/mole)
Frequency Factor =	(1/my)
HC Density =	(g/cm^3)
Pressure =	(MPa)
Grain Size =	(mm)
Seismic Velocity =	(m/s)
Event Time =	(msec)
Maturity =	(%Ro)
HC Generation =	(mg/g TOC)

Calculation Options

Compaction =	Sclater & Christie
Porosity Depth Method =	Linear
Permeability Calculation =	Modified Kozeny-Carman
Geothermal Calculation =	Gradient
Maturity Calculation =	LLNL

```
        Expulsion Calculation = None
                Time Interval = 1.00
               Depth Interval = 1000.00
              Integrate Depth = No

Advanced Options
           TTI Reference Temp = 105.00
            TTI Doubling Temp = 10.00
        Rock-Eval Correction = 35.00
                 Thermal Gain = 1.000
Critical Fracturing Fraction = 0.850
        Fracture Closure Rate = 0.050
    Conductivity Calculation = Deming/Chapman
                   Initial S1 = 3.00

Rifting HF Options
       Use Rifting Heat Flow = No
             Start Rift Time = 0.00
               End Rift Time = 0.00
              Auto-Calc Beta = No
      Rifting Heat Flow Beta = 2.00

Present Day Info
                  Model Name = KUENPINNIE-1 EROSION
           Model Description =
        Current Surface Temp = 20.00
           Current Elevation = 0.00
           Current Heat Flow = 63.00

Seismic Parameters
                  Shot Point = 0
                           X = 0.00000000
                           Y = 0.00000000
```

BasinMod Data Report
Licensed to: Natn'l Centre for Petroleum Geology & Geophysics
Mr. Peter Tingate
Version: 4.20
Model Name: LYCIUM-1
File Name: LYCIUM-1.mod
Date: Feb 5, 1996
Time: 12:26 pm

Stratigraphy Table

Formation or Event Name	Type	Begin Age (Ma)	Well Top (m)	Present Thick (m)	Lithology
QT/T	F	3.3	0	55	Sandstone
HIATUS-1	H	5.3			
NAMBA FM.	F	29.3	55	93	nam8
HIATUS-2	H	38			
EYRE FM.	F	60	148	16	eyr8
HIATUS-3	H	90			
WINTON FM.	F	97.5	164	593	win8
MACKUNDA FM.	F	100	757	44	mac8
ALLARU Mdst.	F	101	801	234	all8
TOOLEBUC FM.	F	102.5	1035	6	tool8
OODNADATTA FM.	F	105.5	1041	106	ood8
COORIKIANA Sst.	F	108	1147	10	coo8
BULLDOG SHALE	F	117.5	1157	220	bull8
CADNA-OWIE FM.	F	135.5	1377	60	cad8
MURTA FM.	F	141.5	1437	33	mur8
McKINLAY Mbr.	F	145	1470	8	mck8
NAMUR Sst.	F	151	1478	53	namu8
WESTBOURNE FM.	F	159	1531	82	west8
ADORI Sst.	F	165	1613	129	ador8
BIRKHEAD FM.	F	175	1742	43	bir8
HUTTON Sst.	F	188	1785	158	hut8
POOLOWANNA FM.	F	193	1943	52	pool8
HIATUS-4	H	264.5			
PATCHAWARRA FM.	F	274	1995	189	pat8
TIRRAWARRA Sst.	F	280	2184	26	tir8

Formation or Event Name	Type	Lith Pat
QT/T	F	
HIATUS-1	H	
NAMBA FM.	F	1
HIATUS-2	H	
EYRE FM.	F	
HIATUS-3	H	
WINTON FM.	F	
MACKUNDA FM.	F	
ALLARU Mdst.	F	
TOOLEBUC FM.	F	
OODNADATTA FM.	F	
COORIKIANA Sst.	F	
BULLDOG SHALE	F	
CADNA-OWIE FM.	F	
MURTA FM.	F	
McKINLAY Mbr.	F	
NAMUR Sst.	F	
WESTBOURNE FM.	F	

ADORI Sst.	F
BIRKHEAD FM.	F
HUTTON Sst.	F
POOLOWANNA FM.	F
HIATUS-4	H
PATCHAWARRA FM.	F
TIRRAWARRA Sst.	F

Lithology Mixes Table

Lithology Name	% Sandstone	% Siltstone	% Shale	% Limestone
Sandstone	100			
nam8	30	33	27	10
eyr8	70	22	8	
win8	20	46	34	
mac8	9	70	21	
all8	6	54	40	
tool8		26	74	
ood8	5	65	30	
coo8	50	50		
bull8		30	70	
cad8	36	54	10	
mur8	8	79	13	
mck8	50	50		
namu8	78	18.5	3.5	
west8	72	21	7	
ador8	95	5		
bir8	29	46	25	
hut8	75	17.5	7	
pool8	27	45	24.5	
pat8	20	42.5	14.5	
tir8	90	10		

Lithology Name	% Kerogen	Total %
Sandstone		100.0
nam8		100.0
eyr8		100.0
win8		100.0
mac8		100.0
all8		100.0
tool8		100.0
ood8		100.0
coo8		100.0
bull8		100.0
cad8		100.0
mur8		100.0
mck8		100.0
namu8		100.0
west8		100.0
ador8		100.0
bir8		100.0
hut8	.5	100.0
pool8	3.5	100.0
pat8	23	100.0
tir8		100.0

Lithology Values Table

Lithology Name	Initial Porosity	Compaction Factor (FM)	Exponential Factor (SC)	Density (g/cm^3)
Sandstone	0.45	1.75	0.27	2.64

Siltstone	0.55	2.2	0.41	2.64
Shale	0.6	2.4	0.51	2.6
Limestone	0.6	1.5	0.22	2.72
Dolomite	0.6	1.5	0.22	2.85
Evaporite	0	0	0	2.15
Coal	0.9	3.5	0.7	1.8
Igneous	0	0	0	2.65
nam1	0.54	2.16	0.40	2.631
eyr1	0.46	1.83	0.29	2.638
win1	0.55	2.20	0.41	2.610
mac1	0.54	2.17	0.40	2.631
all1	0.55	2.21	0.42	2.630
coo1	0.5	1.97	0.34	2.64
bull1	0.59	2.36	0.49	2.608
cad1	0.50	1.99	0.34	2.635
mur1	0.55	2.21	0.42	2.630
mck1	0.51	2.05	0.36	2.634
namu1	0.46	1.81	0.28	2.638
bir1	0.54	2.16	0.40	2.607
hut1	0.46	1.83	0.29	2.64
pool1	0.61	2.43	0.46	2.465
napp1	0.53	2.12	0.39	2.632
too1	0.62	2.45	0.46	2.440
dara1	0.59	2.35	0.45	2.523
rose1	0.56	2.25	0.43	2.63
epsi1	0.57	2.27	0.43	2.581
mutt1	0.56	2.25	0.43	2.63
pat1	0.57	2.29	0.43	2.548
nam8	0.53	2.04	0.37	2.637
eyr8	0.48	1.90	0.32	2.636
win8	0.54	2.17	0.41	2.626
mac8	0.55	2.20	0.41	2.631
all8	0.56	2.25	0.44	2.624
tool8	0.58	2.34	0.48	2.610
ood8	0.56	2.23	0.43	2.628
coo8	0.5	1.97	0.34	2.64
bull8	0.58	2.34	0.48	2.612
cad8	0.51	2.05	0.36	2.636
mur8	0.54	2.19	0.41	2.634
mck8	0.5	1.97	0.34	2.64
namu8	0.47	1.85	0.30	2.638
west8	0.48	1.89	0.31	2.637
ador8	0.45	1.77	0.27	2.64
bir8	0.53	2.11	0.39	2.63
hut8	0.48	1.88	0.31	2.633
pool8	0.54	2.17	0.40	2.600
pat8	0.61	2.43	0.46	2.441
tir8	0.46	1.79	0.28	2.64

Lithology Name	Grain Size (mm)	Matrix Conductivity (W/m*deg C)	Matrix Cond. Correction
Sandstone	0.5	4.4	270
Siltstone	0.0156	2	170
Shale	0.0004	1.5	-180
Limestone	0.5	2.9	350
Dolomite	0.5	4.8	300
Evaporite	0.0004	5.4	470
Coal	0.0004	0.3	250
Igneous	0.0001	2.9	380
nam1	0.0137	2.329	116.2
eyr1	0.2479	3.996	240
win1	0.0109	2.200	113
mac1	0.0125	2.279	112.5

all1	0.0088	2.077	97.5
coo1	0.0883	3.2	220
bull1	0.0008	1.6	-110
cad1	0.0609	3.188	180
mur1	0.0088	2.077	97.5
mck1	0.0360	2.885	157.5
namu1	0.2954	4.097	247.5
bir1	0.0166	2.435	133.4
hut1	0.2678	3.968	252
pool1	0.0066	1.913	142.2
napp1	0.0195	2.531	131.2
too1	0.0069	1.942	152.9
dara1	0.0070	1.948	124.9
rose1	0.0062	1.875	82.5
epsi1	0.0082	2.033	111.3
mutt1	0.0062	1.875	82.5
pat1	0.0095	2.121	129.2
nam8	0.0232	2.675	123.5
eyr8	0.1318	3.64	212
win8	0.0089	2.31	71
mac8	0.0098	2.111	105.5
all8	0.0044	1.944	36
tool8	0.0010	1.63	-89
ood8	0.0061	1.97	70
coo8	0.0883	3.2	220
bull8	0.0012	1.65	-75
cad8	0.0376	2.814	171
mur8	0.0127	2.127	132.5
mck8	0.0883	3.2	220
namu8	0.2051	3.854	235.7
west8	0.1465	3.693	217.5
ador8	0.4204	4.28	265
bir8	0.0170	2.571	111.5
hut8	0.1596	3.756	220.9
pool8	0.0142	2.466	114.0
pat8	0.0079	2.016	157.6
tir8	0.3534	4.16	260

Lithology Name	Heat Capacity (kJ/m^3*deg C)	Heat Capacity Correction
Sandstone	2800	0
Siltstone	2650	0
Shale	2100	0
Limestone	2600	0
Dolomite	2600	0
Evaporite	1750	0
Coal	950	0
Igneous	2500	0
nam1	2564.	0
eyr1	2754	0
win1	2513.	0
mac1	2558.	0
all1	2535.	0
coo1	2725	0
bull1	2210	0
cad1	2662	0
mur1	2535.	0
mck1	2627.	0
namu1	2765.	0
bir1	2536	0
hut1	2773	0
pool1	2240.	0
napp1	2587.	0

too1	2202	0
dara1	2341	0
rose1	2512.	0
epsi1	2447.	0
mutt1	2512.	0
pat1	2402.	0
nam8	2541.	0
eyr8	2711	0
win8	2493	0
mac8	2548	0
all8	2439	0
tool8	2243	0
ood8	2492.	0
coo8	2725	0
bull8	2265	0
cad8	2649	0
mur8	2590.	0
mck8	2725	0
namu8	2747.	0
west8	2719.	0
ador8	2792.	0
bir8	2556	0
hut8	2715.	0
pool8	2496.	0
pat8	2209.	0
tir8	2785	0

Lithology Fluid Flow Table

Lithology Name	Initial Porosity A	Initial Porosity B	A	B (1/Pa)	Fraction A
Sandstone	0.0000	0.4500	0.0000	1.350000e-08	0.000
Siltstone	0.5500	0.0000	-0.800	0.000000e+00	1.000
Shale	0.6000	0.0000	-0.800	0.000000e+00	1.000
Limestone	0.6000	0.0000	-0.800	0.000000e+00	1.000
Dolomite	0.6000	0.0000	-0.800	0.000000e+00	1.000
Evaporite	0.0000	0.0000	-0.800	1.350000e-08	0.000
Coal	0.9000	0.0000	-0.800	0.000000e+00	1.000
Igneous	0.0000	0.0000	-0.800	1.350000e-08	0.000
nam1	0.5625	0.4500	-0.800	1.350000e-08	0.820
eyr1	0.5625	0.4500	-0.800	1.350000e-08	0.160
win1	0.5725	0.4500	-0.800	1.350000e-08	0.855
mac1	0.5625	0.4500	-0.800	1.350000e-08	0.840
all1	0.5625	0.4500	-0.800	1.350000e-08	0.920
coo1	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull1	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad1	0.5625	0.4500	-0.800	1.350000e-08	0.480
mur1	0.5625	0.4500	-0.800	1.350000e-08	0.920
mck1	0.5625	0.4500	-0.800	1.350000e-08	0.600
namu1	0.5625	0.4500	-0.800	1.350000e-08	0.120
bir1	0.5756	0.4500	-0.800	1.350000e-08	0.760
hut1	0.5500	0.4500	-0.800	1.350000e-08	0.180
pool1	0.6409	0.4500	-0.800	1.350000e-08	0.860
napp1	0.5625	0.4500	-0.800	1.350000e-08	0.740
too1	0.6560	0.4500	-0.800	1.350000e-08	0.830
dara1	0.6117	0.4500	-0.800	1.350000e-08	0.890
rose1	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi1	0.5850	0.4500	-0.800	1.350000e-08	0.900
mutt1	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat1	0.6026	0.4500	-0.800	1.350000e-08	0.840
nam8	0.5764	0.4500	-0.800	1.350000e-08	0.700
eyr8	0.5633	0.4500	-0.800	1.350000e-08	0.300
win8	0.5712	0.4500	-0.800	1.350000e-08	0.800

mac8	0.5615	0.4500	-0.800	1.350000e-08	0.910
all8	0.5712	0.4500	-0.800	1.350000e-08	0.940
tool8	0.5870	0.0000	-0.800	0.000000e+00	1.000
ood8	0.5657	0.4500	-0.800	1.350000e-08	0.950
coo8	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull8	0.5850	0.0000	-0.800	0.000000e+00	1.000
cad8	0.5578	0.4500	-0.800	1.350000e-08	0.640
mur8	0.5570	0.4500	-0.800	1.350000e-08	0.920
mck8	0.5500	0.4500	-0.800	1.350000e-08	0.500
namu8	0.5579	0.4500	-0.800	1.350000e-08	0.220
west8	0.5625	0.4500	-0.800	1.350000e-08	0.280
ador8	0.5500	0.4500	-0.800	1.350000e-08	0.050
bir8	0.5676	0.4500	-0.800	1.350000e-08	0.710
hut8	0.5710	0.4500	-0.800	1.350000e-08	0.250
pool8	0.5835	0.4500	-0.800	1.350000e-08	0.730
pat8	0.6596	0.4500	-0.800	1.350000e-08	0.800
tir8	0.5500	0.4500	-0.800	1.350000e-08	0.100

Lithology Name	Initial Permeability (milliDarcys)	Permeability Power
Sandstone	2.786221e+04	5.500
Siltstone	1.013171e-01	5.500
Shale	1.013171e-01	5.500
Limestone	2.786221e+04	5.500
Dolomite	2.786221e+04	5.500
Evaporite	1.013171e-08	5.500
Coal	1.013171e-01	5.500
Igneous	1.013171e-08	5.500
nam1	9.655232e-01	5.500
eyr1	3.755972e+03	5.500
win1	6.228538e-01	5.500
mac1	7.515815e-01	5.500
all1	2.759494e-01	5.500
coo1	5.313115e+01	5.500
bull1	1.013171e-01	5.500
cad1	6.825522e+01	5.500
mur1	2.759494e-01	5.500
mck1	1.518504e+01	5.500
namu1	6.198629e+03	5.500
bir1	2.047023e+00	5.500
hut1	2.923719e+03	5.500
pool1	5.850452e-01	5.500
napp1	2.629719e+00	5.500
too1	8.518624e-01	5.500
dara1	4.017996e-01	5.500
rose1	1.013171e-01	5.500
epsi1	3.544999e-01	5.500
mutt1	1.013171e-01	5.500
pat1	7.515815e-01	5.500
nam8	1.518504e+01	5.500
eyr8	6.504527e+02	5.500
win8	1.240365e+00	5.500
mac8	3.127683e-01	5.500
all8	2.148042e-01	5.500
tool8	1.013171e-01	5.500
ood8	1.895176e-01	5.500
coo8	5.313115e+01	5.500
bull8	1.013171e-01	5.500
cad8	9.201161e+00	5.500
mur8	2.759494e-01	5.500
mck8	5.313115e+01	5.500
namu8	1.771586e+03	5.500

west8	8.356076e+02	5.500
ador8	1.489529e+04	5.500
bir8	3.829035e+00	5.500
hut8	1.216697e+03	5.500
pool8	2.980593e+00	5.500
pat8	1.240365e+00	5.500
tir8	7.963102e+03	5.500

Geothermal Gradient Table

Time (Ma)	Depth 1 (m)
0	0

Maturity conversion method: Table
TTI = 4.191876 + 1.817512 * log10(Ro)
Data fit: Least Squares

Model Units

Depth =	(m)
Distance =	(m)
Thermal Conductivity =	(W/m*deg C)
Heat Capacity =	(kJ/m^3*deg C)
Heat Flow =	(mW/m^2)
Temperature =	(deg C)
Heat Generation =	(muW/m^3)
Gradient =	(deg C/100 m)
Activation Energy =	(kcal/mole)
Frequency Factor =	(1/my)
HC Density =	(g/cm^3)
Pressure =	(MPa)
Grain Size =	(mm)
Seismic Velocity =	(m/s)
Event Time =	(msec)
Maturity =	(%Ro)
HC Generation =	(mg/g TOC)

Calculation Options

Compaction =	Sclater & Christie
Porosity Depth Method =	Linear
Permeability Calculation =	Modified Kozeny-Carman
Geothermal Calculation =	Gradient
Maturity Calculation =	LLNL
Expulsion Calculation =	None
Time Interval =	1.00
Depth Interval =	500.00
Integrate Depth =	No

Advanced Options

TTI Reference Temp =	105.00
TTI Doubling Temp =	10.00
Rock-Eval Correction =	35.00
Thermal Gain =	1.000
Critical Fracturing Fraction =	0.850
Fracture Closure Rate =	0.050
Conductivity Calculation =	Deming/Chapman
Initial S1 =	3.00

Rifting HF Options

Use Rifting Heat Flow =	No
Start Rift Time =	0.00
End Rift Time =	0.00
Auto-Calc Beta =	No
Rifting Heat Flow Beta =	2.00

Present Day Info

Model Name =	LYCIUM-1
Model Description =	
Current Surface Temp =	20.00
Current Elevation =	0.00
Current Heat Flow =	63.00

Seismic Parameters

Shot Point =	0
X =	0.00000000
Y =	0.00000000

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+-----------------------------------------+
| BasinMod Data Report                    |
| Licensed to: Natn'l Centre for Petroleum Geology & Geophysics |
|              Mr. Peter Tingate          |
|     Version: 4.20                       |
|  Model Name: LYCIUM-1 EROSION           |
|   File Name: LYCIUM-1 EROSION.mod       |
|        Date: Feb  5, 1996               |
|        Time: 12:26 pm                   |
+-----------------------------------------+
```

Stratigraphy Table

Formation or Event Name	Type	Begin Age (Ma)	Well Top (m)	Present Thick (m)	Missing Thick (m)
QT/T	F	3.3	0	55	
EROSION-1	E	4.3			-17
MISSING SEC-1	D	5.3			17
NAMBA FM.	F	29.3	55	93	
EROSION-2	E	34			-20
MISSING SEC-2	D	38			20
EYRE FM.	F	60	148	16	
EROSION-3	E	75			-320
MISSING SEC-3	D	90			320
WINTON FM.	F	97.5	164	593	
MACKUNDA FM.	F	100	757	44	
ALLARU Mdst.	F	101	801	234	
TOOLEBUC FM.	F	102.5	1035	6	
OODNADATTA FM.	F	105.5	1041	106	
COORIKIANA Sst.	F	108	1147	10	
BULLDOG SHALE	F	117.5	1157	220	
DNA-OWIE FM.	F	135.5	1377	60	
MURTA FM.	F	141.5	1437	33	
McKINLAY Mbr.	F	145	1470	8	
NAMUR Sst.	F	151	1478	53	
WESTBOURNE FM.	F	159	1531	82	
ADORI Sst.	F	165	1613	129	
BIRKHEAD FM.	F	175	1742	43	
HUTTON Sst.	F	188	1785	158	
POOLOWANNA FM.	F	193	1943	52	
EROSSION-4	E	236.5			-45
MISSING SEC-4	D	253.5			45
EROSION-5	E	256			-185
MISSING SEC-5	D	264.5			185
PATCHAWARRA FM.	F	274	1995	189	
TIRRAWARRA Sst.	F	280	2184	26	

Formation or Event Name	Type	Lithology	Lith Pat
QT/T	F	Sandstone	
EROSION-1	E		
MISSING SEC-1	D	Sandstone	
NAMBA FM.	F	nam8	1
EROSION-2	E		
MISSING SEC-2	D	Sandstone	
EYRE FM.	F	eyr8	
EROSION-3	E		
MISSING SEC-3	D	Sandstone	
WINTON FM.	F	win8	
MACKUNDA FM.	F	mac8	
ALLARU Mdst.	F	all8	

TOOLEBUC FM.	F	tool8
OODNADATTA FM.	F	ood8
COORIKIANA Sst.	F	coo8
BULLDOG SHALE	F	bull8
CADNA-OWIE FM.	F	cad8
MURTA FM.	F	mur8
McKINLAY Mbr.	F	mck8
NAMUR Sst.	F	namu8
WESTBOURNE FM.	F	west8
ADORI Sst.	F	ador8
BIRKHEAD FM.	F	bir8
HUTTON Sst.	F	hut8
POOLOWANNA FM.	F	pool8
EROSSION-4	E	
MISSING SEC-4	D	Sandstone
EROSION-5	E	
MISSING SEC-5	D	Sandstone
PATCHAWARRA FM.	F	pat8
TIRRAWARRA Sst.	F	tir8

Lithology Mixes Table

Lithology Name	% Sandstone	% Siltstone	% Shale	% Limestone
Sandstone	100			
nam8	30	33	27	10
eyr8	70	22	8	
win8	20	46	34	
mac8	9	70	21	
all8	6	54	40	
tool8		26	74	
ood8	5	65	30	
coo8	50	50		
bull8		30	70	
cad8	36	54	10	
mur8	8	79	13	
mck8	50	50		
namu8	78	18.5	3.5	
west8	72	21	7	
ador8	95	5		
bir8	29	46	25	
hut8	75	17.5	7	
pool8	27	45	24.5	
pat8	20	42.5	14.5	
tir8	90	10		

Lithology Name	% Kerogen	Total %
Sandstone		100.0
nam8		100.0
eyr8		100.0
win8		100.0
mac8		100.0
all8		100.0
tool8		100.0
ood8		100.0
coo8		100.0
bull8		100.0
cad8		100.0
mur8		100.0
mck8		100.0
namu8		100.0
west8		100.0

ador8		100.0
bir8		100.0
hut8	.5	100.0
pool8	3.5	100.0
pat8	23	100.0
tir8		100.0

Lithology Values Table

Lithology Name	Initial Porosity	Compaction Factor (FM)	Exponential Factor (SC)	Density (g/cm^3)
Sandstone	0.45	1.75	0.27	2.64
Siltstone	0.55	2.2	0.41	2.64
Shale	0.6	2.4	0.51	2.6
Limestone	0.6	1.5	0.22	2.72
Dolomite	0.6	1.5	0.22	2.85
Evaporite	0	0	0	2.15
Coal	0.9	3.5	0.7	1.8
Igneous	0	0	0	2.65
nam1	0.54	2.16	0.40	2.631
eyr1	0.46	1.83	0.29	2.638
win1	0.55	2.20	0.41	2.610
mac1	0.54	2.17	0.40	2.631
all1	0.55	2.21	0.42	2.630
coo1	0.5	1.97	0.34	2.64
bull1	0.59	2.36	0.49	2.608
cad1	0.50	1.99	0.34	2.635
mur1	0.55	2.21	0.42	2.630
mck1	0.51	2.05	0.36	2.634
namu1	0.46	1.81	0.28	2.638
bir1	0.54	2.16	0.40	2.607
hut1	0.46	1.83	0.29	2.64
pool1	0.61	2.43	0.46	2.465
napp1	0.53	2.12	0.39	2.632
too1	0.62	2.45	0.46	2.440
dara1	0.59	2.35	0.45	2.523
rose1	0.56	2.25	0.43	2.63
epsi1	0.57	2.27	0.43	2.581
mutt1	0.56	2.25	0.43	2.63
pat1	0.57	2.29	0.43	2.548
nam8	0.53	2.04	0.37	2.637
eyr8	0.48	1.90	0.32	2.636
win8	0.54	2.17	0.41	2.626
mac8	0.55	2.20	0.41	2.631
all8	0.56	2.25	0.44	2.624
tool8	0.58	2.34	0.48	2.610
ood8	0.56	2.23	0.43	2.628
coo8	0.5	1.97	0.34	2.64
bull8	0.58	2.34	0.48	2.612
cad8	0.51	2.05	0.36	2.636
mur8	0.54	2.19	0.41	2.634
mck8	0.5	1.97	0.34	2.64
namu8	0.47	1.85	0.30	2.638
west8	0.48	1.89	0.31	2.637
ador8	0.45	1.77	0.27	2.64
bir8	0.53	2.11	0.39	2.63
hut8	0.48	1.88	0.31	2.633
pool8	0.54	2.17	0.40	2.600
pat8	0.61	2.43	0.46	2.441
tir8	0.46	1.79	0.28	2.64

Lithology Name	Grain Size (mm)	Matrix Conductivity (W/m*deg C)	Matrix Cond. Correction

Sandstone	0.5	4.4	270
Siltstone	0.0156	2	170
Shale	0.0004	1.5	-180
Limestone	0.5	2.9	350
Dolomite	0.5	4.8	300
Evaporite	0.0004	5.4	470
Coal	0.0004	0.3	250
Igneous	0.0001	2.9	380
nam1	0.0137	2.329	116.2
eyr1	0.2479	3.996	240
win1	0.0109	2.200	113
mac1	0.0125	2.279	112.5
all1	0.0088	2.077	97.5
coo1	0.0883	3.2	220
bull1	0.0008	1.6	-110
cad1	0.0609	3.188	180
mur1	0.0088	2.077	97.5
mck1	0.0360	2.885	157.5
namu1	0.2954	4.097	247.5
bir1	0.0166	2.435	133.4
hut1	0.2678	3.968	252
pool1	0.0066	1.913	142.2
napp1	0.0195	2.531	131.2
too1	0.0069	1.942	152.9
dara1	0.0070	1.948	124.9
rose1	0.0062	1.875	82.5
epsi1	0.0082	2.033	111.3
mutt1	0.0062	1.875	82.5
pat1	0.0095	2.121	129.2
nam8	0.0232	2.675	123.5
eyr8	0.1318	3.64	212
win8	0.0089	2.31	71
mac8	0.0098	2.111	105.5
all8	0.0044	1.944	36
tool8	0.0010	1.63	-89
ood8	0.0061	1.97	70
coo8	0.0883	3.2	220
bull8	0.0012	1.65	-75
cad8	0.0376	2.814	171
mur8	0.0127	2.127	132.5
mck8	0.0883	3.2	220
namu8	0.2051	3.854	235.7
west8	0.1465	3.693	217.5
ador8	0.4204	4.28	265
bir8	0.0170	2.571	111.5
hut8	0.1596	3.756	220.9
pool8	0.0142	2.466	114.0
pat8	0.0079	2.016	157.6
tir8	0.3534	4.16	260

Lithology Name	Heat Capacity (kJ/m^3*deg C)	Heat Capacity Correction
Sandstone	2800	0
Siltstone	2650	0
Shale	2100	0
Limestone	2600	0
Dolomite	2600	0
Evaporite	1750	0
Coal	950	0
Igneous	2500	0
nam1	2564.	0
eyr1	2754	0
win1	2513.	0

mac1	2558.	0
all1	2535.	0
coo1	2725	0
bull1	2210	0
cad1	2662	0
mur1	2535.	0
mck1	2627.	0
namu1	2765.	0
bir1	2536	0
hut1	2773	0
pool1	2240.	0
napp1	2587.	0
too1	2202	0
dara1	2341	0
rose1	2512.	0
epsi1	2447.	0
mutt1	2512.	0
pat1	2402.	0
nam8	2541.	0
eyr8	2711	0
win8	2493	0
mac8	2548	0
all8	2439	0
tool8	2243	0
ood8	2492.	0
coo8	2725	0
bull8	2265	0
cad8	2649	0
mur8	2590.	0
mck8	2725	0
namu8	2747.	0
west8	2719.	0
ador8	2792.	0
bir8	2556	0
hut8	2715.	0
pool8	2496.	0
pat8	2209.	0
tir8	2785	0

Lithology Fluid Flow Table

Lithology Name	Initial Porosity A	Initial Porosity B	A	B (1/Pa)	Fraction A
Sandstone	0.0000	0.4500	0.0000	1.350000e-08	0.000
Siltstone	0.5500	0.0000	-0.800	0.000000e+00	1.000
Shale	0.6000	0.0000	-0.800	0.000000e+00	1.000
Limestone	0.6000	0.0000	-0.800	0.000000e+00	1.000
Dolomite	0.6000	0.0000	-0.800	0.000000e+00	1.000
Evaporite	0.0000	0.0000	-0.800	1.350000e-08	0.000
Coal	0.9000	0.0000	-0.800	0.000000e+00	1.000
Igneous	0.0000	0.0000	-0.800	1.350000e-08	0.000
nam1	0.5625	0.4500	-0.800	1.350000e-08	0.820
eyr1	0.5625	0.4500	-0.800	1.350000e-08	0.160
win1	0.5725	0.4500	-0.800	1.350000e-08	0.855
mac1	0.5625	0.4500	-0.800	1.350000e-08	0.840
all1	0.5625	0.4500	-0.800	1.350000e-08	0.920
coo1	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull1	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad1	0.5625	0.4500	-0.800	1.350000e-08	0.480
mur1	0.5625	0.4500	-0.800	1.350000e-08	0.920
mck1	0.5625	0.4500	-0.800	1.350000e-08	0.600
namu1	0.5625	0.4500	-0.800	1.350000e-08	0.120
bir1	0.5756	0.4500	-0.800	1.350000e-08	0.760

hut1	0.5500	0.4500	-0.800	1.350000e-08	0.180
pool1	0.6409	0.4500	-0.800	1.350000e-08	0.860
napp1	0.5625	0.4500	-0.800	1.350000e-08	0.740
too1	0.6560	0.4500	-0.800	1.350000e-08	0.830
dara1	0.6117	0.4500	-0.800	1.350000e-08	0.890
rose1	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi1	0.5850	0.4500	-0.800	1.350000e-08	0.900
mutt1	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat1	0.6026	0.4500	-0.800	1.350000e-08	0.840
nam8	0.5764	0.4500	-0.800	1.350000e-08	0.700
eyr8	0.5633	0.4500	-0.800	1.350000e-08	0.300
win8	0.5712	0.4500	-0.800	1.350000e-08	0.800
mac8	0.5615	0.4500	-0.800	1.350000e-08	0.910
all8	0.5712	0.4500	-0.800	1.350000e-08	0.940
tool8	0.5870	0.0000	-0.800	0.000000e+00	1.000
ood8	0.5657	0.4500	-0.800	1.350000e-08	0.950
coo8	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull8	0.5850	0.0000	-0.800	0.000000e+00	1.000
cad8	0.5578	0.4500	-0.800	1.350000e-08	0.640
mur8	0.5570	0.4500	-0.800	1.350000e-08	0.920
mck8	0.5500	0.4500	-0.800	1.350000e-08	0.500
namu8	0.5579	0.4500	-0.800	1.350000e-08	0.220
west8	0.5625	0.4500	-0.800	1.350000e-08	0.280
ador8	0.5500	0.4500	-0.800	1.350000e-08	0.050
bir8	0.5676	0.4500	-0.800	1.350000e-08	0.710
hut8	0.5710	0.4500	-0.800	1.350000e-08	0.250
pool8	0.5835	0.4500	-0.800	1.350000e-08	0.730
pat8	0.6596	0.4500	-0.800	1.350000e-08	0.800
tir8	0.5500	0.4500	-0.800	1.350000e-08	0.100

Lithology Name	Initial Permeability (milliDarcys)	Permeability Power
Sandstone	2.786221e+04	5.500
Siltstone	1.013171e-01	5.500
Shale	1.013171e-01	5.500
Limestone	2.786221e+04	5.500
Dolomite	2.786221e+04	5.500
Evaporite	1.013171e-08	5.500
Coal	1.013171e-01	5.500
Igneous	1.013171e-08	5.500
nam1	9.655232e-01	5.500
eyr1	3.755972e+03	5.500
win1	6.228538e-01	5.500
mac1	7.515815e-01	5.500
all1	2.759494e-01	5.500
coo1	5.313115e+01	5.500
bull1	1.013171e-01	5.500
cad1	6.825522e+01	5.500
mur1	2.759494e-01	5.500
mck1	1.518504e+01	5.500
namu1	6.198629e+03	5.500
bir1	2.047023e+00	5.500
hut1	2.923719e+03	5.500
pool1	5.850452e-01	5.500
napp1	2.629719e+00	5.500
too1	8.518624e-01	5.500
dara1	4.017996e-01	5.500
rose1	1.013171e-01	5.500
epsi1	3.544999e-01	5.500
mutt1	1.013171e-01	5.500
pat1	7.515815e-01	5.500
nam8	1.518504e+01	5.500

eyr8	6.504527e+02	5.500
win8	1.240365e+00	5.500
mac8	3.127683e-01	5.500
all8	2.148042e-01	5.500
tool8	1.013171e-01	5.500
ood8	1.895176e-01	5.500
coo8	5.313115e+01	5.500
bull8	1.013171e-01	5.500
cad8	9.201161e+00	5.500
mur8	2.759494e-01	5.500
mck8	5.313115e+01	5.500
namu8	1.771586e+03	5.500
west8	8.356076e+02	5.500
ador8	1.489529e+04	5.500
bir8	3.829035e+00	5.500
hut8	1.216697e+03	5.500
pool8	2.980593e+00	5.500
pat8	1.240365e+00	5.500
tir8	7.963102e+03	5.500

Geothermal Gradient Table

Time (Ma)	Depth 1 (m)
0	0

Maturity conversion method: Table
TTI = 4.191876 + 1.817512 * log10(Ro)
Data fit: Least Squares

Model Units

Depth = (m)
Distance = (m)
Thermal Conductivity = (W/m*deg C)
Heat Capacity = (kJ/m^3*deg C)
Heat Flow = (mW/m^2)
Temperature = (deg C)
Heat Generation = (muW/m^3)
Gradient = (deg C/100 m)
Activation Energy = (kcal/mole)
Frequency Factor = (1/my)
HC Density = (g/cm^3)
Pressure = (MPa)
Grain Size = (mm)
Seismic Velocity = (m/s)
Event Time = (msec)
Maturity = (%Ro)
HC Generation = (mg/g TOC)

Calculation Options

Compaction = Sclater & Christie
Porosity Depth Method = Linear
Permeability Calculation = Modified Kozeny-Carman
Geothermal Calculation = Gradient
Maturity Calculation = LLNL
Expulsion Calculation = None
Time Interval = 1.00
Depth Interval = 500.00
Integrate Depth = Yes

Advanced Options

TTI Reference Temp = 105.00
TTI Doubling Temp = 10.00
Rock-Eval Correction = 35.00

```
                 Thermal Gain = 1.000
Critical Fracturing Fraction = 0.850
       Fracture Closure Rate = 0.050
    Conductivity Calculation = Deming/Chapman
                  Initial S1 = 3.00

Rifting HF Options
       Use Rifting Heat Flow = No
             Start Rift Time = 0.00
               End Rift Time = 0.00
              Auto-Calc Beta = No
      Rifting Heat Flow Beta = 2.00

Present Day Info
                  Model Name = LYCIUM-1 EROSION
           Model Description =
        Current Surface Temp = 20.00
           Current Elevation = 0.00
           Current Heat Flow = 63.00

Seismic Parameters
                  Shot Point = 0
                           X = 0.00000000
                           Y = 0.00000000
```

BasinMod Data Report
Licensed to: Natn'l Centre for Petroleum Geology & Geophysics
Mr. Peter Tingate
Version: 4.20
Model Name: MERRIMELIA-30
File Name: MERRIMELIA-30.mod
Date: Feb 5, 1996
Time: 12:30 pm

Stratigraphy Table

Formation or Event Name	Type	Begin Age (Ma)	Well Top (m)	Present Thick (m)	Lithology
QT/T	F	3.3	0	41	Sandstone
HIATUS-1	H	5.3			
NAMBA FM.	F	29.3	41	89	nam7
HIATUS-2	H	38			
EYRE FM.	F	60	130	66	eyr7
HIATUS-3	H	90			
WINTON FM.	F	97.5	196	677	win7
MACKUNDA FM.	F	100	873	50	mac7
ALLARU Mdst...	F	101	923	194	all7
TOOLEBUC FM.	F	102.5	1117	10	tool7
WALLUMBILLA FM.	F	105.5	1127	103	wall7
COORIKIANA Sst.	F	108	1230	21	coo7
BULLDOG SHALE	F	117.5	1251	265	bull7
CADNA-OWIE FM.	F	135.5	1516	56	cad7
MURTA FM.	F	141.5	1572	39	mur7
McKINLAY Mbr.	F	145	1611	7	mck7
NAMUR Sst.	F	151	1618	62	namu7
WESTBOURNE FM.	F	159	1680	107	west7
ADORI Sst.	F	165	1787	28	ador7
BIRKHEAD FM.	F	175	1815	67	bir7
HUTTON Sst.	F	188	1882	191	hut7
POOLOWANNA FM.	F	193	2073	38	pool7
HIATUS-4	H	236.5			
NAPPAMERRI GP.	F	249	2111	85	napp7
HIATUS-5	H	280			
MERRIMELIA FM.	F	285.5	2196	53	merr7

Formation or Event Name	Type	Lith Pat
QT/T	F	
HIATUS-1	H	
NAMBA FM.	F	1
HIATUS-2	H	
EYRE FM.	F	
HIATUS-3	H	
WINTON FM.	F	
MACKUNDA FM.	F	
ALLARU Mdst...	F	
TOOLEBUC FM.	F	
WALLUMBILLA FM.	F	
COORIKIANA Sst.	F	
BULLDOG SHALE	F	
CADNA-OWIE FM.	F	
MURTA FM.	F	
McKINLAY Mbr.	F	
NAMUR Sst.	F	

WESTBOURNE FM.	F
ADORI Sst.	F
BIRKHEAD FM.	F
HUTTON Sst.	F
POOLOWANNA FM.	F
HIATUS-4	H
NAPPAMERRI GP.	F
HIATUS-5	H
MERRIMELIA FM.	F

Lithology Mixes Table

Lithology Name	Lithology Pattern	% Sandstone	% Siltstone	% Shale
Sandstone		100		
nam7		16	63	21
eyr7		72	18	10
win7		30	49.5	16.5
mac7		36	48	16
all7		20	60	20
tool7			25	75
wall7			20	80
coo7		45	55	
bull7			20	80
cad7		60	30	10
mur7		4	66	30
mck7		50	50	
namu7		86	9	5
west7		24	57	19
ador7		95	5	
bir7		12	63.5	21.5
hut7		92	8	
pool7		72	21	7
napp7		12	66	22
merr7		38	46.5	15.5
Igneous3	8			

Lithology Name	% Kerogen	% Igneous	Total %
Sandstone			100.0
nam7			100.0
eyr7			100.0
win7	4		100.0
mac7			100.0
all7			100.0
tool7			100.0
wall7			100.0
coo7			100.0
bull7			100.0
cad7			100.0
mur7			100.0
mck7			100.0
namu7			100.0
west7			100.0
ador7			100.0
bir7	3		100.0
hut7			100.0
pool7			100.0
napp7			100.0
merr7			100.0
Igneous3		100.0	100.0

Lithology Values Table

Lithology Name	Initial Porosity	Compaction Factor (FM)	Exponential Factor (SC)	Density (g/cm^3)
Sandstone	0.45	1.75	0.27	2.64
Siltstone	0.55	2.2	0.41	2.64
Shale	0.6	2.4	0.51	2.6
Limestone	0.6	1.5	0.22	2.72
Dolomite	0.6	1.5	0.22	2.85
Evaporite	0	0	0	2.15
Coal	0.9	3.5	0.7	1.8
Igneous	0	0	0	2.65
nam1	0.54	2.16	0.40	2.631
eyr1	0.46	1.83	0.29	2.638
win1	0.55	2.20	0.41	2.610
mac1	0.54	2.17	0.40	2.631
all1	0.55	2.21	0.42	2.630
coo1	0.5	1.97	0.34	2.64
bull1	0.59	2.36	0.49	2.608
cad1	0.50	1.99	0.34	2.635
mur1	0.55	2.21	0.42	2.630
mck1	0.51	2.05	0.36	2.634
namu1	0.46	1.81	0.28	2.638
bir1	0.54	2.16	0.40	2.607
hut1	0.46	1.83	0.29	2.64
pool1	0.61	2.43	0.46	2.465
napp1	0.53	2.12	0.39	2.632
too1	0.62	2.45	0.46	2.440
dara1	0.59	2.35	0.45	2.523
rose1	0.56	2.25	0.43	2.63
epsi1	0.57	2.27	0.43	2.581
mutt1	0.56	2.25	0.43	2.63
pat1	0.57	2.29	0.43	2.548
nam7	0.54	2.17	0.40	2.631
eyr7	0.48	1.89	0.31	2.636
win7	0.54	2.15	0.39	2.599
mac7	0.52	2.07	0.37	2.633
all7	0.54	2.15	0.40	2.632
tool7	0.58	2.35	0.48	2.61
wall7	0.59	2.36	0.49	2.608
coo7	0.50	1.99	0.34	2.64
bull7	0.59	2.36	0.49	2.608
cad7	0.49	1.95	0.33	2.636
mur7	0.56	2.24	0.43	2.628
mck7	0.5	1.97	0.34	2.64
namu7	0.46	1.82	0.29	2.638
west7	0.53	2.13	0.39	2.632
ador7	0.45	1.77	0.27	2.64
bir7	0.55	2.22	0.42	2.606
hut7	0.45	1.78	0.28	2.64
pool7	0.48	1.89	0.31	2.637
napp7	0.54	2.19	0.41	2.631
merr7	0.51	2.06	0.37	2.633
Igneous3	0	0	0	2.65

Lithology Name	Grain Size (mm)	Matrix Conductivity (W/m*deg C)	Matrix Cond. Correction
Sandstone	0.5	4.4	270
Siltstone	0.0156	2	170
Shale	0.0004	1.5	-180
Limestone	0.5	2.9	350
Dolomite	0.5	4.8	300
Evaporite	0.0004	5.4	470
Coal	0.0004	0.3	250

Igneous	0.0001	2.9	380
nam1	0.0137	2.329	116.2
eyr1	0.2479	3.996	240
win1	0.0109	2.200	113
mac1	0.0125	2.279	112.5
all1	0.0088	2.077	97.5
coo1	0.0883	3.2	220
bull1	0.0008	1.6	-110
cad1	0.0609	3.188	180
mur1	0.0088	2.077	97.5
mck1	0.0360	2.885	157.5
namu1	0.2954	4.097	247.5
bir1	0.0166	2.435	133.4
hut1	0.2678	3.968	252
pool1	0.0066	1.913	142.2
napp1	0.0195	2.531	131.2
too1	0.0069	1.942	152.9
dara1	0.0070	1.948	124.9
rose1	0.0062	1.875	82.5
epsi1	0.0082	2.033	111.3
mutt1	0.0062	1.875	82.5
pat1	0.0095	2.121	129.2
nam7	0.0125	2.279	112.5
eyr7	0.1312	3.678	207
win7	0.0208	2.569	145.4
mac7	0.0302	2.784	150
all7	0.0149	2.38	120
tool7	0.0009	1.625	-92.5
wall7	0.0008	1.6	-110
coo7	0.0742	3.08	215
bull7	0.0008	1.6	-110
cad7	0.0866	3.39	195
mur7	0.0059	1.946	69
mck7	0.0883	3.2	220
namu7	0.2562	4.039	238.5
west7	0.0178	2.481	127.5
ador7	0.4204	4.28	265
bir7	0.0096	2.129	109.1
hut7	0.3788	4.208	262
pool7	0.1465	3.693	217.5
napp7	0.0105	2.178	105
merr7	0.0330	2.834	153.7
Igneous3	0.0001	2.9	380

Lithology Name	Heat Capacity (kJ/m^3*deg C)	Heat Capacity Correction
Sandstone	2800	0
Siltstone	2650	0
Shale	2100	0
Limestone	2600	0
Dolomite	2600	0
Evaporite	1750	0
Coal	950	0
Igneous	2500	0
nam1	2564.	0
eyr1	2754	0
win1	2513.	0
mac1	2558.	0
all1	2535.	0
coo1	2725	0
bull1	2210	0
cad1	2662	0
mur1	2535.	0

mck1	2627.	0
namu1	2765.	0
bir1	2536	0
hut1	2773	0
pool1	2240.	0
napp1	2587.	0
too1	2202	0
dara1	2341	0
rose1	2512.	0
epsi1	2447.	0
mutt1	2512.	0
pat1	2402.	0
nam7	2558.	0
eyr7	2703	0
win7	2536.	0
mac7	2616	0
all7	2570	0
tool7	2237.	0
wall7	2210	0
coo7	2717.	0
bull7	2210	0
cad7	2685	0
mur7	2491	0
mck7	2725	0
namu7	2751.	0
west7	2581.	0
ador7	2792.	0
bir7	2498.	0
hut7	2788	0
pool7	2719.	0
napp7	2547	0
merr7	2621.	0
Igneous3	2500	0

Lithology Fluid Flow Table

Lithology Name	Initial Porosity A	Initial Porosity B	A	B (1/Pa)	Fraction A
Sandstone	0.0000	0.4500	0.0000	1.350000e-08	0.000
Siltstone	0.5500	0.0000	-0.800	0.000000e+00	1.000
Shale	0.6000	0.0000	-0.800	0.000000e+00	1.000
Limestone	0.6000	0.0000	-0.800	0.000000e+00	1.000
Dolomite	0.6000	0.0000	-0.800	0.000000e+00	1.000
Evaporite	0.0000	0.0000	-0.800	1.350000e-08	0.000
Coal	0.9000	0.0000	-0.800	0.000000e+00	1.000
Igneous	0.0000	0.0000	-0.800	1.350000e-08	0.000
nam1	0.5625	0.4500	-0.800	1.350000e-08	0.820
eyr1	0.5625	0.4500	-0.800	1.350000e-08	0.160
win1	0.5725	0.4500	-0.800	1.350000e-08	0.855
mac1	0.5625	0.4500	-0.800	1.350000e-08	0.840
all1	0.5625	0.4500	-0.800	1.350000e-08	0.920
coo1	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull1	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad1	0.5625	0.4500	-0.800	1.350000e-08	0.480
mur1	0.5625	0.4500	-0.800	1.350000e-08	0.920
mck1	0.5625	0.4500	-0.800	1.350000e-08	0.600
namu1	0.5625	0.4500	-0.800	1.350000e-08	0.120
bir1	0.5756	0.4500	-0.800	1.350000e-08	0.760
hut1	0.5500	0.4500	-0.800	1.350000e-08	0.180
pool1	0.6409	0.4500	-0.800	1.350000e-08	0.860
napp1	0.5625	0.4500	-0.800	1.350000e-08	0.740
too1	0.6560	0.4500	-0.800	1.350000e-08	0.830
dara1	0.6117	0.4500	-0.800	1.350000e-08	0.890

rose1	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi1	0.5850	0.4500	-0.800	1.350000e-08	0.900
mutt1	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat1	0.6026	0.4500	-0.800	1.350000e-08	0.840
nam7	0.5625	0.4500	-0.800	1.350000e-08	0.840
eyr7	0.5678	0.4500	-0.800	1.350000e-08	0.280
win7	0.5817	0.4500	-0.800	1.350000e-08	0.700
mac7	0.5625	0.4500	-0.800	1.350000e-08	0.640
all7	0.5625	0.4500	-0.800	1.350000e-08	0.800
tool7	0.5875	0.0000	-0.800	0.000000e+00	1.000
wall7	0.5900	0.0000	-0.800	0.000000e+00	1.000
coo7	0.5500	0.4500	-0.800	1.350000e-08	0.550
bull7	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad7	0.5625	0.4500	-0.800	1.350000e-08	0.400
mur7	0.5656	0.4500	-0.800	1.350000e-08	0.960
mck7	0.5500	0.4500	-0.800	1.350000e-08	0.500
namu7	0.5678	0.4500	-0.800	1.350000e-08	0.140
west7	0.5625	0.4500	-0.800	1.350000e-08	0.760
ador7	0.5500	0.4500	-0.800	1.350000e-08	0.050
bir7	0.5741	0.4500	-0.800	1.350000e-08	0.880
hut7	0.5500	0.4500	-0.800	1.350000e-08	0.080
pool7	0.5625	0.4500	-0.800	1.350000e-08	0.280
napp7	0.5625	0.4500	-0.800	1.350000e-08	0.880
merr7	0.5625	0.4500	-0.800	1.350000e-08	0.620
Igneous3	0.0000	0.0000	-0.800	1.350000e-08	0.000

Lithology Name	Initial Permeability (milliDarcys)	Permeability Power
Sandstone	2.786221e+04	5.500
Siltstone	1.013171e-01	5.500
Shale	1.013171e-01	5.500
Limestone	2.786221e+04	5.500
Dolomite	2.786221e+04	5.500
Evaporite	1.013171e-08	5.500
Coal	1.013171e-01	5.500
Igneous	1.013171e-08	5.500
nam1	9.655232e-01	5.500
eyr1	3.755972e+03	5.500
win1	6.228538e-01	5.500
mac1	7.515815e-01	5.500
all1	2.759494e-01	5.500
coo1	5.313115e+01	5.500
bull1	1.013171e-01	5.500
cad1	6.825522e+01	5.500
mur1	2.759494e-01	5.500
mck1	1.518504e+01	5.500
namu1	6.198629e+03	5.500
bir1	2.047023e+00	5.500
hut1	2.923719e+03	5.500
pool1	5.850452e-01	5.500
napp1	2.629719e+00	5.500
too1	8.518624e-01	5.500
dara1	4.017996e-01	5.500
rose1	1.013171e-01	5.500
epsi1	3.544999e-01	5.500
mutt1	1.013171e-01	5.500
pat1	7.515815e-01	5.500
nam7	7.515815e-01	5.500
eyr7	8.356076e+02	5.500
win7	4.339930e+00	5.500
mac7	9.201161e+00	5.500
all7	1.240365e+00	5.500

tool7	1.013171e-01	5.500
wall7	1.013171e-01	5.500
coo7	2.840420e+01	5.500
bull7	1.013171e-01	5.500
cad7	1.859013e+02	5.500
mur7	1.672077e-01	5.500
mck7	5.313115e+01	5.500
namu7	4.825129e+03	5.500
west7	2.047023e+00	5.500
ador7	1.489529e+04	5.500
bir7	4.554102e-01	5.500
hut7	1.022984e+04	5.500
pool7	8.356076e+02	5.500
napp7	4.554102e-01	5.500
merr7	1.182032e+01	5.500
Igneous3	1.013171e-08	5.500

Geothermal Gradient Table

Time (Ma)	Depth 1 (m)
0	0

Maturity conversion method: Table
TTI = 4.191876 + 1.817512 * log10(Ro)
Data fit: Least Squares

Model Units

Depth = (m)
Distance = (m)
Thermal Conductivity = (W/m*deg C)
Heat Capacity = (kJ/m^3*deg C)
Heat Flow = (mW/m^2)
Temperature = (deg C)
Heat Generation = (muW/m^3)
Gradient = (deg C/100 m)
Activation Energy = (kcal/mole)
Frequency Factor = (1/my)
HC Density = (g/cm^3)
Pressure = (MPa)
Grain Size = (mm)
Seismic Velocity = (m/s)
Event Time = (msec)
Maturity = (%Ro)
HC Generation = (mg/g TOC)

Calculation Options

Compaction = Sclater & Christie
Porosity Depth Method = Linear
Permeability Calculation = Modified Kozeny-Carman
Geothermal Calculation = Gradient
Maturity Calculation = LLNL
Expulsion Calculation = None
Time Interval = 1.00
Depth Interval = 500.00
Integrate Depth = No

Advanced Options

TTI Reference Temp = 105.00
TTI Doubling Temp = 10.00
Rock-Eval Correction = 35.00
Thermal Gain = 1.000
Critical Fracturing Fraction = 0.850
Fracture Closure Rate = 0.050

```
    Conductivity Calculation = Deming/Chapman
                  Initial S1 = 3.00

Rifting HF Options
       Use Rifting Heat Flow = No
             Start Rift Time = 0.00
               End Rift Time = 0.00
              Auto-Calc Beta = No
      Rifting Heat Flow Beta = 2.00

Present Day Info
                  Model Name = MERRIMELIA-30
           Model Description =
        Current Surface Temp = 20.00
           Current Elevation = 0.00
           Current Heat Flow = 63.00

Seismic Parameters
                  Shot Point = 0
                           X = 0.00000000
                           Y = 0.00000000
```

```
+----------------------------------------------------+
| BasinMod Data Report                               |
| Licensed to: Natn'l Centre for Petroleum Geology & Geophysics |
|              Mr. Peter Tingate                     |
|     Version: 4.20                                  |
|  Model Name: MERRIMELIA-30 ERO.                    |
|   File Name: MERRIMELIA-30 EROSION.mod             |
|        Date: Feb  5, 1996                          |
|        Time: 12:30 pm                              |
+----------------------------------------------------+
```

Stratigraphy Table

Formation or Event Name	Type	Begin Age (Ma)	Well Top (m)	Present Thick (m)	Missing Thick (m)
QT/T	F	3.3	0	41	
EROSION-1	E	4.3			-35
MISSING SEC-1	D	5.3			35
NAMBA FM.	F	29.3	41	89	
EROSION-2	E	34			-20
MISSING SEC-2	D	38			20
EYRE FM.	F	60	130	66	
EROSION-3	E	75			-200
MISSING SEC-3	D	90			200
WINTON FM.	F	97.5	196	677	
MACKUNDA FM.	F	100	873	50	
ALLARU Mdst...	F	101	923	194	
TOOLEBUC FM.	F	102.5	1117	10	
WALLUMBILLA FM.	F	105.5	1127	103	
COORIKIANA Sst.	F	108	1230	21	
BULLDOG SHALE	F	117.5	1251	265	
CADNA-OWIE FM.	F	135.5	1516	56	
MURTA FM.	F	141.5	1572	39	
McKINLAY Mbr.	F	145	1611	7	
NAMUR Sst.	F	151	1618	62	
WESTBOURNE FM.	F	159	1680	107	
ADORI Sst.	F	165	1787	28	
BIRKHEAD FM.	F	175	1815	67	
HUTTON Sst.	F	188	1882	191	
POOLOWANNA FM.	F	193	2073	38	
EROSION-4	E	213			-165
MISSING SEC-4	D	236.5			165
NAPPAMERRI GP.	F	249	2111	85	
EROSION-5	E	256			-97
MISSING SEC-5	D	280			97
MERRIMELIA FM.	F	285.5	2196	53	

Formation or Event Name	Type	Lithology	Lith Pat
QT/T	F	Sandstone	
EROSION-1	E		
MISSING SEC-1	D	Sandstone	
NAMBA FM.	F	nam7	1
EROSION-2	E		
MISSING SEC-2	D	Sandstone	
EYRE FM.	F	eyr7	
EROSION-3	E		
MISSING SEC-3	D	Sandstone	
WINTON FM.	F	win7	
MACKUNDA FM.	F	mac7	
ALLARU Mdst...	F	all7	

TOOLEBUC FM.	F	tool7
WALLUMBILLA FM.	F	wall7
COORIKIANA Sst.	F	coo7
BULLDOG SHALE	F	bull7
CADNA-OWIE FM.	F	cad7
MURTA FM.	F	mur7
McKINLAY Mbr.	F	mck7
NAMUR Sst.	F	namu7
WESTBOURNE FM.	F	west7
ADORI Sst.	F	ador7
BIRKHEAD FM.	F	bir7
HUTTON Sst.	F	hut7
POOLOWANNA FM.	F	pool7
EROSION-4	E	
MISSING SEC-4	D	Sandstone
NAPPAMERRI GP.	F	napp7
EROSION-5	E	
MISSING SEC-5	D	Sandstone
MERRIMELIA FM.	F	merr7

Lithology Mixes Table

Lithology Name	Lithology Pattern	% Sandstone	% Siltstone	% Shale
Sandstone		100		
nam7		16	63	21
eyr7		72	18	10
win7		30	49.5	16.5
mac7		36	48	16
all7		20	60	20
tool7			25	75
wall7			20	80
coo7		45	55	
bull7			20	80
cad7		60	30	10
mur7		4	66	30
mck7		50	50	
namu7		86	9	5
west7		24	57	19
ador7		95	5	
bir7		12	63.5	21.5
hut7		92	8	
pool7		72	21	7
napp7		12	66	22
merr7		38	46.5	15.5
Igneous3	8			

Lithology Name	% Kerogen	% Igneous	Total %
Sandstone			100.0
nam7			100.0
eyr7			100.0
win7	4		100.0
mac7			100.0
all7			100.0
tool7			100.0
wall7			100.0
coo7			100.0
bull7			100.0
cad7			100.0
mur7			100.0
mck7			100.0
namu7			100.0

west7			100.0
ador7			100.0
bir7	3		100.0
hut7			100.0
pool7			100.0
napp7			100.0
merr7			100.0
Igneous3		100.0	100.0

Lithology Values Table

Lithology Name	Initial Porosity	Compaction Factor (FM)	Exponential Factor (SC)	Density (g/cm^3)
Sandstone	0.45	1.75	0.27	2.64
Siltstone	0.55	2.2	0.41	2.64
Shale	0.6	2.4	0.51	2.6
Limestone	0.6	1.5	0.22	2.72
Dolomite	0.6	1.5	0.22	2.85
Evaporite	0	0	0	2.15
Coal	0.9	3.5	0.7	1.8
Igneous	0	0	0	2.65
nam1	0.54	2.16	0.40	2.631
eyr1	0.46	1.83	0.29	2.638
win1	0.55	2.20	0.41	2.610
mac1	0.54	2.17	0.40	2.631
all1	0.55	2.21	0.42	2.630
coo1	0.5	1.97	0.34	2.64
bull1	0.59	2.36	0.49	2.608
cad1	0.50	1.99	0.34	2.635
mur1	0.55	2.21	0.42	2.630
mck1	0.51	2.05	0.36	2.634
namu1	0.46	1.81	0.28	2.638
bir1	0.54	2.16	0.40	2.607
hut1	0.46	1.83	0.29	2.64
pool1	0.61	2.43	0.46	2.465
napp1	0.53	2.12	0.39	2.632
too1	0.62	2.45	0.46	2.440
dara1	0.59	2.35	0.45	2.523
rose1	0.56	2.25	0.43	2.63
epsi1	0.57	2.27	0.43	2.581
mutt1	0.56	2.25	0.43	2.63
pat1	0.57	2.29	0.43	2.548
nam7	0.54	2.17	0.40	2.631
eyr7	0.48	1.89	0.31	2.636
win7	0.54	2.15	0.39	2.599
mac7	0.52	2.07	0.37	2.633
all7	0.54	2.15	0.40	2.632
tool7	0.58	2.35	0.48	2.61
wall7	0.59	2.36	0.49	2.608
coo7	0.50	1.99	0.34	2.64
bull7	0.59	2.36	0.49	2.608
cad7	0.49	1.95	0.33	2.636
mur7	0.56	2.24	0.43	2.628
mck7	0.5	1.97	0.34	2.64
namu7	0.46	1.82	0.29	2.638
west7	0.53	2.13	0.39	2.632
ador7	0.45	1.77	0.27	2.64
bir7	0.55	2.22	0.42	2.606
hut7	0.45	1.78	0.28	2.64
pool7	0.48	1.89	0.31	2.637
napp7	0.54	2.19	0.41	2.631
merr7	0.51	2.06	0.37	2.633
Igneous3	0	0	0	2.65

Lithology Name	Grain Size (mm)	Matrix Conductivity (W/m*deg C)	Matrix Cond. Correction
Sandstone	0.5	4.4	270
Siltstone	0.0156	2	170
Shale	0.0004	1.5	-180
Limestone	0.5	2.9	350
Dolomite	0.5	4.8	300
Evaporite	0.0004	5.4	470
Coal	0.0004	0.3	250
Igneous	0.0001	2.9	380
nam1	0.0137	2.329	116.2
eyr1	0.2479	3.996	240
win1	0.0109	2.200	113
mac1	0.0125	2.279	112.5
all1	0.0088	2.077	97.5
coo1	0.0883	3.2	220
bull1	0.0008	1.6	-110
cad1	0.0609	3.188	180
mur1	0.0088	2.077	97.5
mck1	0.0360	2.885	157.5
namu1	0.2954	4.097	247.5
bir1	0.0166	2.435	133.4
hut1	0.2678	3.968	252
pool1	0.0066	1.913	142.2
napp1	0.0195	2.531	131.2
too1	0.0069	1.942	152.9
dara1	0.0070	1.948	124.9
rose1	0.0062	1.875	82.5
epsi1	0.0082	2.033	111.3
mutt1	0.0062	1.875	82.5
pat1	0.0095	2.121	129.2
nam7	0.0125	2.279	112.5
eyr7	0.1312	3.678	207
win7	0.0208	2.569	145.4
mac7	0.0302	2.784	150
all7	0.0149	2.38	120
tool7	0.0009	1.625	-92.5
wall7	0.0008	1.6	-110
coo7	0.0742	3.08	215
bull7	0.0008	1.6	-110
cad7	0.0866	3.39	195
mur7	0.0059	1.946	69
mck7	0.0883	3.2	220
namu7	0.2562	4.039	238.5
west7	0.0178	2.481	127.5
ador7	0.4204	4.28	265
bir7	0.0096	2.129	109.1
hut7	0.3788	4.208	262
pool7	0.1465	3.693	217.5
napp7	0.0105	2.178	105
merr7	0.0330	2.834	153.7
Igneous3	0.0001	2.9	380

Lithology Name	Heat Capacity (kJ/m^3*deg C)	Heat Capacity Correction
Sandstone	2800	0
Siltstone	2650	0
Shale	2100	0
Limestone	2600	0
Dolomite	2600	0
Evaporite	1750	0
Coal	950	0

Igneous	2500	0
nam1	2564.	0
eyr1	2754	0
win1	2513.	0
mac1	2558.	0
all1	2535.	0
coo1	2725	0
bull1	2210	0
cad1	2662	0
mur1	2535.	0
mck1	2627.	0
namu1	2765.	0
bir1	2536	0
hut1	2773	0
pool1	2240.	0
napp1	2587.	0
too1	2202	0
dara1	2341	0
rose1	2512.	0
epsi1	2447.	0
mutt1	2512.	0
pat1	2402.	0
nam7	2558.	0
eyr7	2703	0
win7	2536.	0
mac7	2616	0
all7	2570	0
tool7	2237.	0
wall7	2210	0
coo7	2717.	0
bull7	2210	0
cad7	2685	0
mur7	2491	0
mck7	2725	0
namu7	2751.	0
west7	2581.	0
ador7	2792.	0
bir7	2498.	0
hut7	2788	0
pool7	2719.	0
napp7	2547	0
merr7	2621.	0
Igneous3	2500	0

Lithology Fluid Flow Table

Lithology Name	Initial Porosity A	Initial Porosity B	A	B (1/Pa)	Fraction A
Sandstone	0.0000	0.4500	0.0000	1.350000e-08	0.000
Siltstone	0.5500	0.0000	-0.800	0.000000e+00	1.000
Shale	0.6000	0.0000	-0.800	0.000000e+00	1.000
Limestone	0.6000	0.0000	-0.800	0.000000e+00	1.000
Dolomite	0.6000	0.0000	-0.800	0.000000e+00	1.000
Evaporite	0.0000	0.0000	-0.800	1.350000e-08	0.000
Coal	0.9000	0.0000	-0.800	0.000000e+00	1.000
Igneous	0.0000	0.0000	-0.800	1.350000e-08	0.000
nam1	0.5625	0.4500	-0.800	1.350000e-08	0.820
eyr1	0.5625	0.4500	-0.800	1.350000e-08	0.160
win1	0.5725	0.4500	-0.800	1.350000e-08	0.855
mac1	0.5625	0.4500	-0.800	1.350000e-08	0.840
all1	0.5625	0.4500	-0.800	1.350000e-08	0.920
coo1	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull1	0.5900	0.0000	-0.800	0.000000e+00	1.000

cad1	0.5625	0.4500	-0.800	1.350000e-08	0.480
mur1	0.5625	0.4500	-0.800	1.350000e-08	0.920
mck1	0.5625	0.4500	-0.800	1.350000e-08	0.600
namu1	0.5625	0.4500	-0.800	1.350000e-08	0.120
bir1	0.5756	0.4500	-0.800	1.350000e-08	0.760
hut1	0.5500	0.4500	-0.800	1.350000e-08	0.180
pool1	0.6409	0.4500	-0.800	1.350000e-08	0.860
napp1	0.5625	0.4500	-0.800	1.350000e-08	0.740
too1	0.6560	0.4500	-0.800	1.350000e-08	0.830
dara1	0.6117	0.4500	-0.800	1.350000e-08	0.890
rose1	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi1	0.5850	0.4500	-0.800	1.350000e-08	0.900
mutt1	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat1	0.6026	0.4500	-0.800	1.350000e-08	0.840
nam7	0.5625	0.4500	-0.800	1.350000e-08	0.840
eyr7	0.5678	0.4500	-0.800	1.350000e-08	0.280
win7	0.5817	0.4500	-0.800	1.350000e-08	0.700
mac7	0.5625	0.4500	-0.800	1.350000e-08	0.640
all7	0.5625	0.4500	-0.800	1.350000e-08	0.800
tool7	0.5875	0.0000	-0.800	0.000000e+00	1.000
wall7	0.5900	0.0000	-0.800	0.000000e+00	1.000
coo7	0.5500	0.4500	-0.800	1.350000e-08	0.550
bull7	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad7	0.5625	0.4500	-0.800	1.350000e-08	0.400
mur7	0.5656	0.4500	-0.800	1.350000e-08	0.960
mck7	0.5500	0.4500	-0.800	1.350000e-08	0.500
namu7	0.5678	0.4500	-0.800	1.350000e-08	0.140
west7	0.5625	0.4500	-0.800	1.350000e-08	0.760
ador7	0.5500	0.4500	-0.800	1.350000e-08	0.050
bir7	0.5741	0.4500	-0.800	1.350000e-08	0.880
hut7	0.5500	0.4500	-0.800	1.350000e-08	0.080
pool7	0.5625	0.4500	-0.800	1.350000e-08	0.280
napp7	0.5625	0.4500	-0.800	1.350000e-08	0.880
merr7	0.5625	0.4500	-0.800	1.350000e-08	0.620
Igneous3	0.0000	0.0000	-0.800	1.350000e-08	0.000

Lithology Name	Initial Permeability (milliDarcys)	Permeability Power
Sandstone	2.786221e+04	5.500
Siltstone	1.013171e-01	5.500
Shale	1.013171e-01	5.500
Limestone	2.786221e+04	5.500
Dolomite	2.786221e+04	5.500
Evaporite	1.013171e-08	5.500
Coal	1.013171e-01	5.500
Igneous	1.013171e-08	5.500
nam1	9.655232e-01	5.500
eyr1	3.755972e+03	5.500
win1	6.228538e-01	5.500
mac1	7.515815e-01	5.500
all1	2.759494e-01	5.500
coo1	5.313115e+01	5.500
bull1	1.013171e-01	5.500
cad1	6.825522e+01	5.500
mur1	2.759494e-01	5.500
mck1	1.518504e+01	5.500
namu1	6.198629e+03	5.500
bir1	2.047023e+00	5.500
hut1	2.923719e+03	5.500
pool1	5.850452e-01	5.500
napp1	2.629719e+00	5.500
too1	8.518624e-01	5.500

dara1	4.017996e-01	5.500
rose1	1.013171e-01	5.500
epsi1	3.544999e-01	5.500
mutt1	1.013171e-01	5.500
pat1	7.515815e-01	5.500
nam7	7.515815e-01	5.500
eyr7	8.356076e+02	5.500
win7	4.339930e+00	5.500
mac7	9.201161e+00	5.500
all7	1.240365e+00	5.500
tool7	1.013171e-01	5.500
wall7	1.013171e-01	5.500
coo7	2.840420e+01	5.500
bull7	1.013171e-01	5.500
cad7	1.859013e+02	5.500
mur7	1.672077e-01	5.500
mck7	5.313115e+01	5.500
namu7	4.825129e+03	5.500
west7	2.047023e+00	5.500
ador7	1.489529e+04	5.500
bir7	4.554102e-01	5.500
hut7	1.022984e+04	5.500
pool7	8.356076e+02	5.500
napp7	4.554102e-01	5.500
merr7	1.182032e+01	5.500
Igneous3	1.013171e-08	5.500

Geothermal Gradient Table

Time (Ma)	Depth 1 (m)
0	0

Maturity conversion method: Table
TTI = 4.191876 + 1.817512 * log10(Ro)
Data fit: Least Squares

Model Units

Depth	=	(m)
Distance	=	(m)
Thermal Conductivity	=	(W/m*deg C)
Heat Capacity	=	(kJ/m^3*deg C)
Heat Flow	=	(mW/m^2)
Temperature	=	(deg C)
Heat Generation	=	(muW/m^3)
Gradient	=	(deg C/100 m)
Activation Energy	=	(kcal/mole)
Frequency Factor	=	(1/my)
HC Density	=	(g/cm^3)
Pressure	=	(MPa)
Grain Size	=	(mm)
Seismic Velocity	=	(m/s)
Event Time	=	(msec)
Maturity	=	(%Ro)
HC Generation	=	(mg/g TOC)

Calculation Options

Compaction	=	Sclater & Christie
Porosity Depth Method	=	Linear
Permeability Calculation	=	Modified Kozeny-Carman
Geothermal Calculation	=	Gradient
Maturity Calculation	=	LLNL
Expulsion Calculation	=	None
Time Interval	=	1.00

```
              Depth Interval = 500.00
             Integrate Depth = No

Advanced Options
         TTI Reference Temp = 105.00
          TTI Doubling Temp = 10.00
       Rock-Eval Correction = 35.00
               Thermal Gain = 1.000
Critical Fracturing Fraction = 0.850
      Fracture Closure Rate = 0.050
   Conductivity Calculation = Deming/Chapman
                 Initial S1 = 3.00

Rifting HF Options
      Use Rifting Heat Flow = No
            Start Rift Time = 0.00
              End Rift Time = 0.00
             Auto-Calc Beta = No
     Rifting Heat Flow Beta = 2.00

Present Day Info
                 Model Name = MERRIMELIA-30 ERO.
          Model Description =
       Current Surface Temp = 20.00
          Current Elevation = 0.00
          Current Heat Flow = 63.00

Seismic Parameters
                 Shot Point = 0
                          X = 0.00000000
                          Y = 0.00000000
```

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+-----------------------------------------------+
| BasinMod Data Report                          |
| Licensed to: Natn'l Centre for Petroleum Geology & Geophysics |
|              Mr. Peter Tingate                |
|     Version: 4.20                             |
|  Model Name: MOOMBA-57                        |
|   File Name: MOOMBA-57.mod                    |
|        Date: Feb  5, 1996                     |
|        Time: 12:31 pm                         |
+-----------------------------------------------+
```

Stratigraphy Table

Formation or Event Name	Type	Begin Age (Ma)	Well Top (m)	Present Thick (m)	Lithology
QT/T	F	3.3	0	38	Sandstone
HIATUS-1	H	5.3			
NAMBA FM.	F	29.3	38	161	nam6
HIATUS-2	H	38			
EYRE FM.	F	60	199	118	eyr6
HIATUS-3	H	90			
WINTON FM.	F	97.5	317	647	win6
MACKUNDA FM.	F	100	964	91	mac6
ALLARU/OOD..	F	105.5	1055	299	all6
COORIKIANA Sst.	F	108	1354	7	coo6
BULLDOG SHALE	F	117.5	1361	303	bull6
CADNA-OWIE FM.	F	135.5	1664	73	cad6
MURTA FM.	F	141.5	1737	45	mur6
McKINLAY Mbr.	F	145	1782	7	mck6
NAMUR Sst.	F	151	1789	51	namu6
WESTBOURNE FM.	F	159	1840	69	west6
ADORI Sst.	F	165	1909	76	ador6
BIRKHEAD FM.	F	175	1985	48	bir6
HUTTON Sst.	F	188	2033	80	hut6
POOLOWANNA FM.	F	193	2113	72	pool6
HIATUS-4	H	236.5			
NAPPAMERRI GP.	F	249	2185	169	napp6
TOOLACHEE FM.	F	253.5	2354	117	too6
HIATUS-5	H	256			
DARALINGIE FM.	F	258.5	2471	80	dara6
ROSENEATH SHALE	F	261.5	2551	79	rose6
EPSILON FM.	F	263.5	2630	96	epsi6
MURTEREE SHAle	F	264.5	2726	71	mutt6
PATCHAWARRA FM.	F	274	2797	264	pat6

Formation or Event Name	Type	Lith Pat
QT/T	F	
HIATUS-1	H	
NAMBA FM.	F	1
HIATUS-2	H	
EYRE FM.	F	
HIATUS-3	H	
WINTON FM.	F	
MACKUNDA FM.	F	
ALLARU/OOD..	F	
COORIKIANA Sst.	F	
BULLDOG SHALE	F	
CADNA-OWIE FM.	F	
MURTA FM.	F	
McKINLAY Mbr.	F	

NAMUR Sst.	F
WESTBOURNE FM.	F
ADORI Sst.	F
BIRKHEAD FM.	F
HUTTON Sst.	F
POOLOWANNA FM.	F
HIATUS-4	H
[illegible]PPAMERRI GP.	F
TOOLACHEE FM.	F
HIATUS-5	H
DARALINGIE FM.	F
ROSENEATH SHALE	F
EPSILON FM.	F
MURTEREE SHAle	F
PATCHAWARRA FM.	F

Lithology Mixes Table

Lithology Name	% Sandstone	% Siltstone	% Shale	% Limestone
Sandstone	100			
nam6	29	30	22	19
eyr6	65	23	12	
win6	25	54	18	
mac6	42	43.5	14.5	
all6	9	68	23	
coo6	100			
bul16		20	80	
cad6	78	16.5	5.5	
mur6	10	67.5	22.5	
mck6	50	50		
namu6	80	15	5	
west6	60	30	10	
ador6	80	20		
bir6	10	64	20	
hut6	80	20		
pool6	50	32	16	
napp6	6	70.5	23.5	
too6	41	36	12	
dara6	18	52.5	17.5	
rose6		75	25	
epsi6	7.5	63	21	
mutt6		75	25	
pat6	19	52.5	17.5	

Lithology Name	% Kerogen	Total %
Sandstone		100.0
nam6		100.0
eyr6		100.0
win6	3	100.0
mac6		100.0
all6		100.0
coo6		100.0
bul16		100.0
cad6		100.0
mur6		100.0
mck6		100.0
namu6		100.0
west6		100.0
ador6		100.0
bir6	6	100.0
hut6		100.0

pool6	2	100.0
napp6		100.0
too6	11	100.0
dara6	12	100.0
rose6		100.0
epsi6	8.5	100.0
mutt6		100.0
pat6	11	100.0

Lithology Values Table

Lithology Name	Initial Porosity	Compaction Factor (FM)	Exponential Factor (SC)	Density (g/cm^3)
Sandstone	0.45	1.75	0.27	2.64
Siltstone	0.55	2.2	0.41	2.64
Shale	0.6	2.4	0.51	2.6
Limestone	0.6	1.5	0.22	2.72
Dolomite	0.6	1.5	0.22	2.85
Evaporite	0	0	0	2.15
Coal	0.9	3.5	0.7	1.8
Igneous	0	0	0	2.65
nam1	0.54	2.16	0.40	2.631
eyr1	0.46	1.83	0.29	2.638
win1	0.55	2.20	0.41	2.610
mac1	0.54	2.17	0.40	2.631
all1	0.55	2.21	0.42	2.630
coo1	0.5	1.97	0.34	2.64
bull1	0.59	2.36	0.49	2.608
cad1	0.50	1.99	0.34	2.635
mur1	0.55	2.21	0.42	2.630
mck1	0.51	2.05	0.36	2.634
namu1	0.46	1.81	0.28	2.638
bir1	0.54	2.16	0.40	2.607
hut1	0.46	1.83	0.29	2.64
pool1	0.61	2.43	0.46	2.465
napp1	0.53	2.12	0.39	2.632
too1	0.62	2.45	0.46	2.440
dara1	0.59	2.35	0.45	2.523
rose1	0.56	2.25	0.43	2.63
epsi1	0.57	2.27	0.43	2.581
mutt1	0.56	2.25	0.43	2.63
pat1	0.57	2.29	0.43	2.548
nam6	0.54	1.98	0.35	2.646
eyr6	0.49	1.93	0.33	2.635
win6	0.54	2.16	0.40	2.607
mac6	0.51	2.04	0.36	2.634
all6	0.55	2.20	0.42	2.630
coo6	0.45	1.75	0.27	2.64
bull6	0.59	2.36	0.49	2.608
cad6	0.47	1.86	0.30	2.637
mur6	0.55	2.2	0.41	2.631
mck6	0.5	1.97	0.34	2.64
namu6	0.47	1.85	0.30	2.638
west6	0.49	1.95	0.33	2.636
ador6	0.47	1.84	0.29	2.64
bir6	0.57	2.27	0.43	2.581
hut6	0.47	1.84	0.29	2.64
pool6	0.51	2.03	0.36	2.616
napp6	0.55	2.22	0.42	2.630
too6	0.55	2.18	0.39	2.542
dara6	0.58	2.31	0.43	2.532
rose6	0.56	2.25	0.43	2.63
epsi6	0.58	2.31	0.44	2.560
mutt6	0.56	2.25	0.43	2.63

pat6	0.57	2.29	0.43	2.540

Lithology Name	Grain Size (mm)	Matrix Conductivity (W/m*deg C)	Matrix Cond. Correction
Sandstone	0.5	4.4	270
Siltstone	0.0156	2	170
Shale	0.0004	1.5	-180
Limestone	0.5	2.9	350
Dolomite	0.5	4.8	300
Evaporite	0.0004	5.4	470
Coal	0.0004	0.3	250
Igneous	0.0001	2.9	380
nam1	0.0137	2.329	116.2
eyr1	0.2479	3.996	240
win1	0.0109	2.200	113
mac1	0.0125	2.279	112.5
all1	0.0088	2.077	97.5
coo1	0.0883	3.2	220
bull1	0.0008	1.6	-110
cad1	0.0609	3.188	180
mur1	0.0088	2.077	97.5
mck1	0.0360	2.885	157.5
namu1	0.2954	4.097	247.5
bir1	0.0166	2.435	133.4
hut1	0.2678	3.968	252
pool1	0.0066	1.913	142.2
napp1	0.0195	2.531	131.2
too1	0.0069	1.942	152.9
dara1	0.0070	1.948	124.9
rose1	0.0062	1.875	82.5
epsi1	0.0082	2.033	111.3
mutt1	0.0062	1.875	82.5
pat1	0.0095	2.121	129.2
nam6	0.0368	2.757	156.2
eyr6	0.0957	3.5	193
win6	0.0171	2.459	134.4
mac6	0.0393	2.935	161.2
all6	0.0091	2.101	98.5
coo6	0.5	4.4	270
bull6	0.0008	1.6	-110
cad6	0.1906	3.844	228.7
mur6	0.0096	2.127	101.2
mck6	0.0883	3.2	220
namu6	0.2080	3.895	232.5
west6	0.0866	3.39	195
ador6	0.2499	3.92	250
bir6	0.0085	2.038	114.8
hut6	0.2499	3.92	250
pool6	0.0456	3.086	165.6
napp6	0.0081	2.026	93.75
too6	0.0278	2.737	177.8
dara6	0.0098	2.140	136.3
rose6	0.0062	1.875	82.5
epsi6	0.0068	1.930	110.8
mutt6	0.0062	1.875	82.5
pat6	0.0106	2.181	136.5

Lithology Name	Heat Capacity (kJ/m^3*deg C)	Heat Capacity Correction
Sandstone	2800	0
Siltstone	2650	0
Shale	2100	0

Limestone	2600	0
Dolomite	2600	0
Evaporite	1750	0
Coal	950	0
Igneous	2500	0
nam1	2564.	0
eyr1	2754	0
win1	2513.	0
mac1	2558.	0
all1	2535.	0
coo1	2725	0
bull1	2210	0
cad1	2662	0
mur1	2535.	0
mck1	2627.	0
namu1	2765.	0
bir1	2536	0
hut1	2773	0
pool1	2240.	0
napp1	2587.	0
too1	2202	0
dara1	2341	0
rose1	2512.	0
epsi1	2447.	0
mutt1	2512.	0
pat1	2402.	0
nam6	2563	0
eyr6	2681.	0
win6	2537.	0
mac6	2633.	0
all6	2537	0
coo6	2800	0
bull6	2210	0
cad6	2736.	0
mur6	2541.	0
mck6	2725	0
namu6	2742.	0
west6	2685	0
ador6	2770	0
bir6	2453	0
hut6	2770	0
pool6	2603	0
napp6	2529.	0
too6	2458.	0
dara6	2376.	0
rose6	2512.	0
epsi6	2401.	0
mutt6	2512.	0
pat6	2395.	0

Lithology Fluid Flow Table

Lithology Name	Initial Porosity A	Initial Porosity B	A	B (1/Pa)	Fraction A
Sandstone	0.0000	0.4500	0.0000	1.350000e-08	0.000
Siltstone	0.5500	0.0000	-0.800	0.000000e+00	1.000
Shale	0.6000	0.0000	-0.800	0.000000e+00	1.000
Limestone	0.6000	0.0000	-0.800	0.000000e+00	1.000
Dolomite	0.6000	0.0000	-0.800	0.000000e+00	1.000
Evaporite	0.0000	0.0000	-0.800	1.350000e-08	0.000
Coal	0.9000	0.0000	-0.800	0.000000e+00	1.000
Igneous	0.0000	0.0000	-0.800	1.350000e-08	0.000
nam1	0.5625	0.4500	-0.800	1.350000e-08	0.820

eyr1	0.5625	0.4500	-0.800	1.350000e-08	0.160
win1	0.5725	0.4500	-0.800	1.350000e-08	0.855
mac1	0.5625	0.4500	-0.800	1.350000e-08	0.840
all1	0.5625	0.4500	-0.800	1.350000e-08	0.920
coo1	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull1	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad1	0.5625	0.4500	-0.800	1.350000e-08	0.480
mur1	0.5625	0.4500	-0.800	1.350000e-08	0.920
mck1	0.5625	0.4500	-0.800	1.350000e-08	0.600
namu1	0.5625	0.4500	-0.800	1.350000e-08	0.120
bir1	0.5756	0.4500	-0.800	1.350000e-08	0.760
hut1	0.5500	0.4500	-0.800	1.350000e-08	0.180
pool1	0.6409	0.4500	-0.800	1.350000e-08	0.860
napp1	0.5625	0.4500	-0.800	1.350000e-08	0.740
too1	0.6560	0.4500	-0.800	1.350000e-08	0.830
dara1	0.6117	0.4500	-0.800	1.350000e-08	0.890
rose1	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi1	0.5850	0.4500	-0.800	1.350000e-08	0.900
mutt1	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat1	0.6026	0.4500	-0.800	1.350000e-08	0.840
nam6	0.5788	0.4500	-0.800	1.350000e-08	0.710
eyr6	0.5671	0.4500	-0.800	1.350000e-08	0.350
win6	0.5760	0.4500	-0.800	1.350000e-08	0.750
mac6	0.5625	0.4500	-0.800	1.350000e-08	0.580
all6	0.5626	0.4500	-0.800	1.350000e-08	0.910
coo6	0.0000	0.4500	0.0000	1.350000e-08	0.000
bull6	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad6	0.5625	0.4500	-0.800	1.350000e-08	0.220
mur6	0.5625	0.4500	-0.800	1.350000e-08	0.900
mck6	0.5500	0.4500	-0.800	1.350000e-08	0.500
namu6	0.5625	0.4500	-0.800	1.350000e-08	0.200
west6	0.5625	0.4500	-0.800	1.350000e-08	0.400
ador6	0.5500	0.4500	-0.800	1.350000e-08	0.200
bir6	0.5844	0.4500	-0.800	1.350000e-08	0.900
hut6	0.5500	0.4500	-0.800	1.350000e-08	0.200
pool6	0.5800	0.4500	-0.800	1.350000e-08	0.500
napp6	0.5625	0.4500	-0.800	1.350000e-08	0.940
too6	0.6254	0.4500	-0.800	1.350000e-08	0.590
dara6	0.6118	0.4500	-0.800	1.350000e-08	0.820
rose6	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi6	0.5935	0.4500	-0.800	1.350000e-08	0.925
mutt6	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat6	0.6083	0.4500	-0.800	1.350000e-08	0.810

Lithology Name	Initial Permeability (milliDarcys)	Permeability Power
Sandstone	2.786221e+04	5.500
Siltstone	1.013171e-01	5.500
Shale	1.013171e-01	5.500
Limestone	2.786221e+04	5.500
Dolomite	2.786221e+04	5.500
Evaporite	1.013171e-08	5.500
Coal	1.013171e-01	5.500
Igneous	1.013171e-08	5.500
nam1	9.655232e-01	5.500
eyr1	3.755972e+03	5.500
win1	6.228538e-01	5.500
mac1	7.515815e-01	5.500
all1	2.759494e-01	5.500
coo1	5.313115e+01	5.500
bull1	1.013171e-01	5.500
cad1	6.825522e+01	5.500

mur1	2.759494e-01	5.500
mck1	1.518504e+01	5.500
namu1	6.198629e+03	5.500
bir1	2.047023e+00	5.500
hut1	2.923719e+03	5.500
pool1	5.850452e-01	5.500
napp1	2.629719e+00	5.500
too1	8.518624e-01	5.500
dara1	4.017996e-01	5.500
rose1	1.013171e-01	5.500
epsi1	3.544999e-01	5.500
mutt1	1.013171e-01	5.500
pat1	7.515815e-01	5.500
nam6	4.135829e+01	5.500
eyr6	3.477356e+02	5.500
win6	2.320150e+00	5.500
mac6	1.950754e+01	5.500
all6	3.127683e-01	5.500
coo6	2.786221e+04	5.500
bull6	1.013171e-01	5.500
cad6	1.771586e+03	5.500
mur6	3.544999e-01	5.500
mck6	5.313115e+01	5.500
namu6	2.275878e+03	5.500
west6	1.859013e+02	5.500
ador6	2.275878e+03	5.500
bir6	3.544999e-01	5.500
hut6	2.275878e+03	5.500
pool6	5.313115e+01	5.500
napp6	2.148042e-01	5.500
too6	1.721112e+01	5.500
dara6	9.655232e-01	5.500
rose6	1.013171e-01	5.500
epsi6	2.591987e-01	5.500
mutt6	1.013171e-01	5.500
pat6	1.094350e+00	5.500

Geothermal Gradient Table

Time (Ma)	Depth 1 (m)
0	0

Maturity conversion method: Table
TTI = 4.191876 + 1.817512 * log10(Ro)
Data fit: Least Squares

Model Units

Depth =	(m)
Distance =	(m)
Thermal Conductivity =	(W/m*deg C)
Heat Capacity =	(kJ/m^3*deg C)
Heat Flow =	(mW/m^2)
Temperature =	(deg C)
Heat Generation =	(muW/m^3)
Gradient =	(deg C/100 m)
Activation Energy =	(kcal/mole)
Frequency Factor =	(1/my)
HC Density =	(g/cm^3)
Pressure =	(MPa)
Grain Size =	(mm)
Seismic Velocity =	(m/s)
Event Time =	(msec)
Maturity =	(%Ro)

HC Generation = (mg/g TOC)

Calculation Options

Compaction	= Sclater & Christie
Porosity Depth Method	= Linear
Permeability Calculation	= Modified Kozeny-Carman
Geothermal Calculation	= Gradient
Maturity Calculation	= LLNL
Expulsion Calculation	= None
Time Interval	= 1.00
Depth Interval	= 1000.00
Integrate Depth	= No

Advanced Options

TTI Reference Temp	= 105.00
TTI Doubling Temp	= 10.00
Rock-Eval Correction	= 35.00
Thermal Gain	= 1.000
Critical Fracturing Fraction	= 0.850
Fracture Closure Rate	= 0.050
Conductivity Calculation	= Deming/Chapman
Initial S1	= 3.00

Rifting HF Options

Use Rifting Heat Flow	= No
Start Rift Time	= 0.00
End Rift Time	= 0.00
Auto-Calc Beta	= No
Rifting Heat Flow Beta	= 2.00

Present Day Info

Model Name	= MOOMBA-57
Model Description	=
Current Surface Temp	= 20.00
Current Elevation	= 0.00
Current Heat Flow	= 63.00

Seismic Parameters

Shot Point	= 0
X	= 0.00000000
Y	= 0.00000000

BasinMod Data Report
Licensed to: Natn'l Centre for Petroleum Geology & Geophysics
Mr. Peter Tingate
Version: 4.20
Model Name: MOOMBA-57 EROSION
File Name: MOOMBA-57 EROSION.mod
Date: Feb 5, 1996
Time: 12:31 pm

Stratigraphy Table

Formation or Event Name	Type	Begin Age (Ma)	Well Top (m)	Present Thick (m)	Missing Thick (m)
QT/T	F	3.3	0	38	
EROSION-1	E	4.3			-25
MISSING SEC-1	D	5.3			25
NAMBA FM.	F	29.3	38	161	
EROSION-2	E	34			-32
MISSING SEC-2	D	38			32
EYRE FM.	F	60	199	118	
EROSION-3	E	75			-200
MISSING SEC-3	D	90			200
WINTON FM.	F	97.5	317	647	
MACKUNDA FM.	F	100	964	91	
ALLARU/OOD..	F	105.5	1055	299	
COORIKIANA Sst.	F	108	1354	7	
BULLDOG SHALE	F	117.5	1361	303	
CADNA-OWIE FM.	F	135.5	1664	73	
MURTA FM.	F	141.5	1737	45	
McKINLAY Mbr.	F	145	1782	7	
NAMUR Sst.	F	151	1789	51	
WESTBOURNE FM.	F	159	1840	69	
ADORI Sst.	F	165	1909	76	
BIRKHEAD FM.	F	175	1985	48	
HUTTON Sst.	F	188	2033	80	
POOLOWANNA FM.	F	193	2113	72	
EROSION-4	E	213			-64
MISSING SEC-4	D	236.5			64
NAPPAMERRI GP.	F	249	2185	169	
TOOLACHEE FM.	F	253.5	2354	117	
EROSION-5	E	254.5			-110
MISSING SEC-5	D	256			110
DARALINGIE FM.	F	258.5	2471	80	
ROSENEATH SHALE	F	261.5	2551	79	
EPSILON FM.	F	263.5	2630	96	
MURTEREE SHALe	F	264.5	2726	71	
PATCHAWARRA FM.	F	274	2797	264	

Formation or Event Name	Type	Lithology	Lith Pat
QT/T	F	Sandstone	
EROSION-1	E		
MISSING SEC-1	D	Sandstone	
NAMBA FM.	F	nam6	1
EROSION-2	E		
MISSING SEC-2	D	Sandstone	
EYRE FM.	F	eyr6	
EROSION-3	E		
MISSING SEC-3	D	Sandstone	

WINTON FM.	F	win6
MACKUNDA FM.	F	mac6
ALLARU/OOD..	F	all6
COORIKIANA Sst.	F	coo6
BULLDOG SHALE	F	bull6
CADNA-OWIE FM.	F	cad6
MURTA FM.	F	mur6
McKINLAY Mbr.	F	mck6
NAMUR Sst.	F	namu6
WESTBOURNE FM.	F	west6
ADORI Sst.	F	ador6
BIRKHEAD FM.	F	bir6
HUTTON Sst.	F	hut6
POOLOWANNA FM.	F	pool6
EROSION-4	E	
MISSING SEC-4	D	Sandstone
NAPPAMERRI GP.	F	napp6
TOOLACHEE FM.	F	too6
EROSION-5	E	
MISSING SEC-5	D	Sandstone
DARALINGIE FM.	F	dara6
ROSENEATH SHALE	F	rose6
EPSILON FM.	F	epsi6
MURTEREE SHAle	F	mutt6
PATCHAWARRA FM.	F	pat6

Lithology Mixes Table

Lithology Name	% Sandstone	% Siltstone	% Shale	% Limestone
Sandstone	100			
nam6	29	30	22	19
eyr6	65	23	12	
win6	25	54	18	
mac6	42	43.5	14.5	
all6	9	68	23	
coo6	100			
bull6		20	80	
cad6	78	16.5	5.5	
mur6	10	67.5	22.5	
mck6	50	50		
namu6	80	15	5	
west6	60	30	10	
ador6	80	20		
bir6	10	64	20	
hut6	80	20		
pool6	50	32	16	
napp6	6	70.5	23.5	
too6	41	36	12	
dara6	18	52.5	17.5	
rose6		75	25	
epsi6	7.5	63	21	
mutt6		75	25	
pat6	19	52.5	17.5	

Lithology Name	% Kerogen	Total %
Sandstone		100.0
nam6		100.0
eyr6		100.0
win6	3	100.0
mac6		100.0
all6		100.0

coo6		100.0
bull6		100.0
cad6		100.0
mur6		100.0
mck6		100.0
namu6		100.0
west6		100.0
ador6		100.0
bir6	6	100.0
hut6		100.0
pool6	2	100.0
napp6		100.0
too6	11	100.0
dara6	12	100.0
rose6		100.0
epsi6	8.5	100.0
mutt6		100.0
pat6	11	100.0

Lithology Values Table

Lithology Name	Initial Porosity	Compaction Factor (FM)	Exponential Factor (SC)	Density (g/cm^3)
Sandstone	0.45	1.75	0.27	2.64
Siltstone	0.55	2.2	0.41	2.64
Shale	0.6	2.4	0.51	2.6
Limestone	0.6	1.5	0.22	2.72
Dolomite	0.6	1.5	0.22	2.85
Evaporite	0	0	0	2.15
Coal	0.9	3.5	0.7	1.8
Igneous	0	0	0	2.65
nam1	0.54	2.16	0.40	2.631
eyr1	0.46	1.83	0.29	2.638
win1	0.55	2.20	0.41	2.610
mac1	0.54	2.17	0.40	2.631
all1	0.55	2.21	0.42	2.630
coo1	0.5	1.97	0.34	2.64
bull1	0.59	2.36	0.49	2.608
cad1	0.50	1.99	0.34	2.635
mur1	0.55	2.21	0.42	2.630
mck1	0.51	2.05	0.36	2.634
namu1	0.46	1.81	0.28	2.638
bir1	0.54	2.16	0.40	2.607
hut1	0.46	1.83	0.29	2.64
pool1	0.61	2.43	0.46	2.465
napp1	0.53	2.12	0.39	2.632
too1	0.62	2.45	0.46	2.440
dara1	0.59	2.35	0.45	2.523
rose1	0.56	2.25	0.43	2.63
epsi1	0.57	2.27	0.43	2.581
mutt1	0.56	2.25	0.43	2.63
pat1	0.57	2.29	0.43	2.548
nam6	0.54	1.98	0.35	2.646
eyr6	0.49	1.93	0.33	2.635
win6	0.54	2.16	0.40	2.607
mac6	0.51	2.04	0.36	2.634
all6	0.55	2.20	0.42	2.630
coo6	0.45	1.75	0.27	2.64
bull6	0.59	2.36	0.49	2.608
cad6	0.47	1.86	0.30	2.637
mur6	0.55	2.2	0.41	2.631
mck6	0.5	1.97	0.34	2.64
namu6	0.47	1.85	0.30	2.638
west6	0.49	1.95	0.33	2.636

ador6	0.47	1.84	0.29	2.64
bir6	0.57	2.27	0.43	2.581
hut6	0.47	1.84	0.29	2.64
pool6	0.51	2.03	0.36	2.616
napp6	0.55	2.22	0.42	2.630
too6	0.55	2.18	0.39	2.542
dara6	0.58	2.31	0.43	2.532
rose6	0.56	2.25	0.43	2.63
epsi6	0.58	2.31	0.44	2.560
mutt6	0.56	2.25	0.43	2.63
pat6	0.57	2.29	0.43	2.540

Lithology Name	Grain Size (mm)	Matrix Conductivity (W/m*deg C)	Matrix Cond. Correction
Sandstone	0.5	4.4	270
Siltstone	0.0156	2	170
Shale	0.0004	1.5	-180
Limestone	0.5	2.9	350
Dolomite	0.5	4.8	300
Evaporite	0.0004	5.4	470
Coal	0.0004	0.3	250
Igneous	0.0001	2.9	380
nam1	0.0137	2.329	116.2
eyr1	0.2479	3.996	240
win1	0.0109	2.200	113
mac1	0.0125	2.279	112.5
all1	0.0088	2.077	97.5
coo1	0.0883	3.2	220
bull1	0.0008	1.6	-110
cad1	0.0609	3.188	180
mur1	0.0088	2.077	97.5
mck1	0.0360	2.885	157.5
namu1	0.2954	4.097	247.5
bir1	0.0166	2.435	133.4
hut1	0.2678	3.968	252
pool1	0.0066	1.913	142.2
napp1	0.0195	2.531	131.2
too1	0.0069	1.942	152.9
dara1	0.0070	1.948	124.9
rose1	0.0062	1.875	82.5
epsi1	0.0082	2.033	111.3
mutt1	0.0062	1.875	82.5
pat1	0.0095	2.121	129.2
nam6	0.0368	2.757	156.2
eyr6	0.0957	3.5	193
win6	0.0171	2.459	134.4
mac6	0.0393	2.935	161.2
all6	0.0091	2.101	98.5
coo6	0.5	4.4	270
bull6	0.0008	1.6	-110
cad6	0.1906	3.844	228.7
mur6	0.0096	2.127	101.2
mck6	0.0883	3.2	220
namu6	0.2080	3.895	232.5
west6	0.0866	3.39	195
ador6	0.2499	3.92	250
bir6	0.0085	2.038	114.8
hut6	0.2499	3.92	250
pool6	0.0456	3.086	165.6
napp6	0.0081	2.026	93.75
too6	0.0278	2.737	177.8
dara6	0.0098	2.140	136.3
rose6	0.0062	1.875	82.5

epsi6	0.0068	1.930	110.8
mutt6	0.0062	1.875	82.5
pat6	0.0106	2.181	136.5

Lithology Name	Heat Capacity (kJ/m^3*deg C)	Heat Capacity Correction
Sandstone	2800	0
Siltstone	2650	0
Shale	2100	0
Limestone	2600	0
Dolomite	2600	0
Evaporite	1750	0
Coal	950	0
Igneous	2500	0
nam1	2564.	0
eyr1	2754	0
win1	2513.	0
mac1	2558.	0
all1	2535.	0
coo1	2725	0
bull1	2210	0
cad1	2662	0
mur1	2535.	0
mck1	2627.	0
namu1	2765.	0
bir1	2536	0
hut1	2773	0
pool1	2240.	0
napp1	2587.	0
too1	2202	0
dara1	2341	0
rose1	2512.	0
epsi1	2447.	0
mutt1	2512.	0
pat1	2402.	0
nam6	2563	0
eyr6	2681.	0
win6	2537.	0
mac6	2633.	0
all6	2537	0
coo6	2800	0
bull6	2210	0
cad6	2736.	0
mur6	2541.	0
mck6	2725	0
namu6	2742.	0
west6	2685	0
ador6	2770	0
bir6	2453	0
hut6	2770	0
pool6	2603	0
napp6	2529.	0
too6	2458.	0
dara6	2376.	0
rose6	2512.	0
epsi6	2401.	0
mutt6	2512.	0
pat6	2395.	0

Lithology Fluid Flow Table

Lithology Name	Initial Porosity A	Initial Porosity B	A	B (1/Pa)	Fraction A

Sandstone	0.0000	0.4500	0.0000	1.350000e-08	0.000
Siltstone	0.5500	0.0000	-0.800	0.000000e+00	1.000
Shale	0.6000	0.0000	-0.800	0.000000e+00	1.000
Limestone	0.6000	0.0000	-0.800	0.000000e+00	1.000
Dolomite	0.6000	0.0000	-0.800	0.000000e+00	1.000
Evaporite	0.0000	0.0000	-0.800	1.350000e-08	0.000
Coal	0.9000	0.0000	-0.800	0.000000e+00	1.000
Igneous	0.0000	0.0000	-0.800	1.350000e-08	0.000
nam1	0.5625	0.4500	-0.800	1.350000e-08	0.820
eyr1	0.5625	0.4500	-0.800	1.350000e-08	0.160
win1	0.5725	0.4500	-0.800	1.350000e-08	0.855
mac1	0.5625	0.4500	-0.800	1.350000e-08	0.840
all1	0.5625	0.4500	-0.800	1.350000e-08	0.920
coo1	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull1	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad1	0.5625	0.4500	-0.800	1.350000e-08	0.480
mur1	0.5625	0.4500	-0.800	1.350000e-08	0.920
mck1	0.5625	0.4500	-0.800	1.350000e-08	0.600
namu1	0.5625	0.4500	-0.800	1.350000e-08	0.120
bir1	0.5756	0.4500	-0.800	1.350000e-08	0.760
hut1	0.5500	0.4500	-0.800	1.350000e-08	0.180
pool1	0.6409	0.4500	-0.800	1.350000e-08	0.860
napp1	0.5625	0.4500	-0.800	1.350000e-08	0.740
too1	0.6560	0.4500	-0.800	1.350000e-08	0.830
dara1	0.6117	0.4500	-0.800	1.350000e-08	0.890
rose1	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi1	0.5850	0.4500	-0.800	1.350000e-08	0.900
mutt1	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat1	0.6026	0.4500	-0.800	1.350000e-08	0.840
nam6	0.5788	0.4500	-0.800	1.350000e-08	0.710
eyr6	0.5671	0.4500	-0.800	1.350000e-08	0.350
win6	0.5760	0.4500	-0.800	1.350000e-08	0.750
mac6	0.5625	0.4500	-0.800	1.350000e-08	0.580
all6	0.5626	0.4500	-0.800	1.350000e-08	0.910
coo6	0.0000	0.4500	0.0000	1.350000e-08	0.000
bull6	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad6	0.5625	0.4500	-0.800	1.350000e-08	0.220
mur6	0.5625	0.4500	-0.800	1.350000e-08	0.900
mck6	0.5500	0.4500	-0.800	1.350000e-08	0.500
namu6	0.5625	0.4500	-0.800	1.350000e-08	0.200
west6	0.5625	0.4500	-0.800	1.350000e-08	0.400
ador6	0.5500	0.4500	-0.800	1.350000e-08	0.200
bir6	0.5844	0.4500	-0.800	1.350000e-08	0.900
hut6	0.5500	0.4500	-0.800	1.350000e-08	0.200
pool6	0.5800	0.4500	-0.800	1.350000e-08	0.500
napp6	0.5625	0.4500	-0.800	1.350000e-08	0.940
too6	0.6254	0.4500	-0.800	1.350000e-08	0.590
dara6	0.6118	0.4500	-0.800	1.350000e-08	0.820
rose6	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi6	0.5935	0.4500	-0.800	1.350000e-08	0.925
mutt6	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat6	0.6083	0.4500	-0.800	1.350000e-08	0.810

Lithology Name	Initial Permeability (milliDarcys)	Permeability Power
Sandstone	2.786221e+04	5.500
Siltstone	1.013171e-01	5.500
Shale	1.013171e-01	5.500
Limestone	2.786221e+04	5.500
Dolomite	2.786221e+04	5.500
Evaporite	1.013171e-08	5.500

Coal	1.013171e-01	5.500
Igneous	1.013171e-08	5.500
nam1	9.655232e-01	5.500
eyr1	3.755972e+03	5.500
win1	6.228538e-01	5.500
mac1	7.515815e-01	5.500
all1	2.759494e-01	5.500
coo1	5.313115e+01	5.500
bull1	1.013171e-01	5.500
cad1	6.825522e+01	5.500
mur1	2.759494e-01	5.500
mck1	1.518504e+01	5.500
namu1	6.198629e+03	5.500
bir1	2.047023e+00	5.500
hut1	2.923719e+03	5.500
pool1	5.850452e-01	5.500
napp1	2.629719e+00	5.500
too1	8.518624e-01	5.500
dara1	4.017996e-01	5.500
rose1	1.013171e-01	5.500
epsi1	3.544999e-01	5.500
mutt1	1.013171e-01	5.500
pat1	7.515815e-01	5.500
nam6	4.135829e+01	5.500
eyr6	3.477356e+02	5.500
win6	2.320150e+00	5.500
mac6	1.950754e+01	5.500
all6	3.127683e-01	5.500
coo6	2.786221e+04	5.500
bull6	1.013171e-01	5.500
cad6	1.771586e+03	5.500
mur6	3.544999e-01	5.500
mck6	5.313115e+01	5.500
namu6	2.275878e+03	5.500
west6	1.859013e+02	5.500
ador6	2.275878e+03	5.500
bir6	3.544999e-01	5.500
hut6	2.275878e+03	5.500
pool6	5.313115e+01	5.500
napp6	2.148042e-01	5.500
too6	1.721112e+01	5.500
dara6	9.655232e-01	5.500
rose6	1.013171e-01	5.500
epsi6	2.591987e-01	5.500
mutt6	1.013171e-01	5.500
pat6	1.094350e+00	5.500

Geothermal Gradient Table

Time (Ma)	Depth 1 (m)
0	0

Maturity conversion method: Table
TTI = 4.191876 + 1.817512 * log10(Ro)
Data fit: Least Squares

Model Units

Depth =	(m)
Distance =	(m)
Thermal Conductivity =	(W/m*deg C)
Heat Capacity =	(kJ/m^3*deg C)
Heat Flow =	(mW/m^2)
Temperature =	(deg C)

Heat Generation = (muW/m^3)
Gradient = (deg C/100 m)
Activation Energy = (kcal/mole)
Frequency Factor = (1/my)
HC Density = (g/cm^3)
Pressure = (MPa)
Grain Size = (mm)
Seismic Velocity = (m/s)
Event Time = (msec)
Maturity = (%Ro)
HC Generation = (mg/g TOC)

Calculation Options
Compaction = Sclater & Christie
Porosity Depth Method = Linear
Permeability Calculation = Modified Kozeny-Carman
Geothermal Calculation = Gradient
Maturity Calculation = LLNL
Expulsion Calculation = None
Time Interval = 1.00
Depth Interval = 1000.00
Integrate Depth = No

Advanced Options
TTI Reference Temp = 105.00
TTI Doubling Temp = 10.00
Rock-Eval Correction = 35.00
Thermal Gain = 1.000
Critical Fracturing Fraction = 0.850
Fracture Closure Rate = 0.050
Conductivity Calculation = Deming/Chapman
Initial S1 = 3.00

Rifting HF Options
Use Rifting Heat Flow = No
Start Rift Time = 0.00
End Rift Time = 0.00
Auto-Calc Beta = No
Rifting Heat Flow Beta = 2.00

Present Day Info
Model Name = MOOMBA-57 EROSION
Model Description =
Current Surface Temp = 20.00
Current Elevation = 0.00
Current Heat Flow = 63.00

Seismic Parameters
Shot Point = 0
X = 0.00000000
Y = 0.00000000

BasinMod Data Report
Licensed to: Natn'l Centre for Petroleum Geology & Geophysics
Mr. Peter Tingate
Version: 4.20
Model Name: MULGA-2
File Name: MULGA-2.mod
Date: Feb 5, 1996
Time: 12:32 pm

Stratigraphy Table

Formation or Event Name	Type	Begin Age (Ma)	Well Top (m)	Present Thick (m)	Lithology
QT/T	F	3.3	0	31	Sandstone
HIATUS-1	H	5.3			
NAMBA FM.	F	29.3	31	40	nam5
HIATUS-2	H	38			
EYRE FM.	F	60	71	112	eyr5
HIATUS-3	H	90			
WINTON FM.	F	97.5	183	463	win5
MACKUNDA FM.	F	100	646	91	mac5
ALLARU/OOD..	F	105.5	737	238	all5
COORIKIANA Sst.	F	108	975	8	coo5
BULLDOG SHALE	F	117.5	983	206	bull5
CADNA-OWIE FM.	F	135.5	1189	64	cad5
MURTA FM.	F	141.5	1253	45	mur5
McKINLAY Mbr.	F	145	1298	10	mck5
NAMUR Sst.	F	165	1308	229	namu5
BIRKHEAD FM.	F	175	1537	18	bir5
HUTTON Sst.	F	188	1555	31	hut5
POOLOWANNA FM.	F	193	1586	29	pool5
HIATUS-4	H	249			
TOOLACHEE FM.	F	253.5	1615	53	too5
HIATUS-5	H	256			
DARALINGIE FM.	F	258.5	1668	12	dara5
ROSENEATH SHALE	F	261.5	1680	18	rose5
EPSILON FM.	F	263.5	1698	65	epsi5
MURTEREE SHAle	F	264.5	1763	46	mutt5
PATCHAWARRA FM.	F	274	1809	41	pat5

Formation or Event Name	Type	Lith Pat
QT/T	F	
HIATUS-1	H	
NAMBA FM.	F	1
HIATUS-2	H	
EYRE FM.	F	
HIATUS-3	H	
WINTON FM.	F	
MACKUNDA FM.	F	
ALLARU/OOD..	F	
COORIKIANA Sst.	F	
BULLDOG SHALE	F	
CADNA-OWIE FM.	F	
MURTA FM.	F	
McKINLAY Mbr.	F	
NAMUR Sst.	F	
BIRKHEAD FM.	F	
HUTTON Sst.	F	

POOLOWANNA FM.	F
HIATUS-4	H
TOOLACHEE FM.	F
HIATUS-5	H
DARALINGIE FM.	F
ROSENEATH SHALE	F
EPSILON FM.	F
RTEREE SHAle	F
PATCHAWARRA FM.	F

Lithology Mixes Table

Lithology Name	% Sandstone	% Siltstone	% Shale	% Kerogen	Total %
Sandstone	100				100.0
nam5	19	60	21		100.0
eyr5	64	24	12		100.0
win5	20	60	20		100.0
mac5	19	62	19		100.0
all5	17	62	21		100.0
coo5	50	50			100.0
bull5		25	75		100.0
cad5	45	44	11		100.0
mur5	14	64.5	21.5		100.0
mck5	50	50			100.0
namu5	90	7.5	2.5		100.0
bir5	42	43.5	14.5		100.0
hut5	90	10			100.0
pool5	48	37.5	12.5	2	100.0
too5	32	33	11	24	100.0
dara5	37.5	47	15.5		100.0
rose5		75	25		100.0
epsi5	13	55.5	18.5	13	100.0
mutt5		75	25		100.0
pat5	21	55.5	18.5	5	100.0

Lithology Values Table

Lithology Name	Initial Porosity	Compaction Factor (FM)	Exponential Factor (SC)	Density (g/cm^3)
Sandstone	0.45	1.75	0.27	2.64
Siltstone	0.55	2.2	0.41	2.64
Shale	0.6	2.4	0.51	2.6
Limestone	0.6	1.5	0.22	2.72
Dolomite	0.6	1.5	0.22	2.85
Evaporite	0	0	0	2.15
Coal	0.9	3.5	0.7	1.8
Igneous	0	0	0	2.65
nam1	0.54	2.16	0.40	2.631
eyr1	0.46	1.83	0.29	2.638
win1	0.55	2.20	0.41	2.610
mac1	0.54	2.17	0.40	2.631
all1	0.55	2.21	0.42	2.630
coo1	0.5	1.97	0.34	2.64
bull1	0.59	2.36	0.49	2.608
cad1	0.50	1.99	0.34	2.635
mur1	0.55	2.21	0.42	2.630
mck1	0.51	2.05	0.36	2.634
namu1	0.46	1.81	0.28	2.638
bir1	0.54	2.16	0.40	2.607
hut1	0.46	1.83	0.29	2.64
pool1	0.61	2.43	0.46	2.465
napp1	0.53	2.12	0.39	2.632
too1	0.62	2.45	0.46	2.440

dara1	0.59	2.35	0.45	2.523
rose1	0.56	2.25	0.43	2.63
epsi1	0.57	2.27	0.43	2.581
mutt1	0.56	2.25	0.43	2.63
pat1	0.57	2.29	0.43	2.548
nam5	0.54	2.15	0.40	2.631
eyr5	0.49	1.93	0.33	2.635
win5	0.54	2.15	0.40	2.632
mac5	0.54	2.15	0.40	2.632
all5	0.54	2.16	0.40	2.631
coo5	0.5	1.97	0.34	2.64
bull5	0.58	2.35	0.48	2.61
cad5	0.51	2.01	0.35	2.635
mu5	0.54	2.18	0.41	2.631
mck5	0.5	1.97	0.34	2.64
namu5	0.46	1.8	0.28	2.639
bir5	0.51	2.04	0.36	2.634
hut5	0.46	1.79	0.28	2.64
too5	0.60	2.39	0.44	2.434
dara5	0.52	2.06	0.37	2.633
rose5	0.56	2.25	0.43	2.63
epsi5	0.59	2.34	0.44	2.523
mutt5	0.56	2.25	0.43	2.63
pat5	0.55	2.20	0.41	2.590
mur5	0.54	2.18	0.41	2.631
pool5	0.51	2.03	0.36	2.618

Lithology Name	Grain Size (mm)	Matrix Conductivity (W/m*deg C)	Matrix Cond. Correction
Sandstone	0.5	4.4	270
Siltstone	0.0156	2	170
Shale	0.0004	1.5	-180
Limestone	0.5	2.9	350
Dolomite	0.5	4.8	300
Evaporite	0.0004	5.4	470
Coal	0.0004	0.3	250
Igneous	0.0001	2.9	380
nam1	0.0137	2.329	116.2
eyr1	0.2479	3.996	240
win1	0.0109	2.200	113
mac1	0.0125	2.279	112.5
all1	0.0088	2.077	97.5
coo1	0.0883	3.2	220
bull1	0.0008	1.6	-110
cad1	0.0609	3.188	180
mur1	0.0088	2.077	97.5
mck1	0.0360	2.885	157.5
namu1	0.2954	4.097	247.5
bir1	0.0166	2.435	133.4
hut1	0.2678	3.968	252
pool1	0.0066	1.913	142.2
napp1	0.0195	2.531	131.2
too1	0.0069	1.942	152.9
dara1	0.0070	1.948	124.9
rose1	0.0062	1.875	82.5
epsi1	0.0082	2.033	111.3
mutt1	0.0062	1.875	82.5
pat1	0.0095	2.121	129.2
nam5	0.0139	2.351	115.5
eyr5	0.0924	3.476	192
win5	0.0149	2.38	120
mac5	0.0150	2.361	122.5
all5	0.0130	2.303	113.5

coo5	0.0883	3.2	220
bull5	0.0009	1.625	-92.5
cad5	0.0496	3.025	176.5
mu5	0.0115	2.228	108.7
mck5	0.0883	3.2	220
namu5	0.3225	4.147	251.2
bir5	0.0393	2.935	161.2
hut5	0.3534	4.16	260
too5	0.0131	2.305	182.7
dara5	0.0324	2.822	153.2
rose5	0.0062	1.875	82.5
epsi5	0.0077	1.998	128.6
mutt5	0.0062	1.875	82.5
pat5	0.0136	2.326	130.2
mur5	0.0115	2.228	108.7
pool5	0.0484	3.055	175.8

Lithology Name	Heat Capacity (kJ/m^3*deg C)	Heat Capacity Correction
Sandstone	2800	0
Siltstone	2650	0
Shale	2100	0
Limestone	2600	0
Dolomite	2600	0
Evaporite	1750	0
Coal	950	0
Igneous	2500	0
nam1	2564.	0
eyr1	2754	0
win1	2513.	0
mac1	2558.	0
all1	2535.	0
coo1	2725	0
bull1	2210	0
cad1	2662	0
mur1	2535.	0
mck1	2627.	0
namu1	2765.	0
bir1	2536	0
hut1	2773	0
pool1	2240.	0
napp1	2587.	0
too1	2202	0
dara1	2341	0
rose1	2512.	0
epsi1	2447.	0
mutt1	2512.	0
pat1	2402.	0
nam5	2563	0
eyr5	2680	0
win5	2570	0
mac5	2574	0
all5	2560	0
coo5	2725	0
bull5	2237.	0
cad5	2657	0
mu5	2552.	0
mck5	2725	0
namu5	2771.	0
bir5	2633.	0
hut5	2785	0
too5	2229.	0
dara5	2621	0

rose5	2512.	0
epsi5	2346.	0
mutt5	2512.	0
pat5	2494.	0
mur5	2552.	0
pool5	2619.	0

Lithology Fluid Flow Table

Lithology Name	Initial Porosity A	Initial Porosity B	A	B (1/Pa)	Fraction A
Sandstone	0.0000	0.4500	0.0000	1.350000e-08	0.000
Siltstone	0.5500	0.0000	-0.800	0.000000e+00	1.000
Shale	0.6000	0.0000	-0.800	0.000000e+00	1.000
Limestone	0.6000	0.0000	-0.800	0.000000e+00	1.000
Dolomite	0.6000	0.0000	-0.800	0.000000e+00	1.000
Evaporite	0.0000	0.0000	-0.800	1.350000e-08	0.000
Coal	0.9000	0.0000	-0.800	0.000000e+00	1.000
Igneous	0.0000	0.0000	-0.800	1.350000e-08	0.000
nam1	0.5625	0.4500	-0.800	1.350000e-08	0.820
eyr1	0.5625	0.4500	-0.800	1.350000e-08	0.160
win1	0.5725	0.4500	-0.800	1.350000e-08	0.855
mac1	0.5625	0.4500	-0.800	1.350000e-08	0.840
all1	0.5625	0.4500	-0.800	1.350000e-08	0.920
coo1	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull1	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad1	0.5625	0.4500	-0.800	1.350000e-08	0.480
mur1	0.5625	0.4500	-0.800	1.350000e-08	0.920
mck1	0.5625	0.4500	-0.800	1.350000e-08	0.600
namu1	0.5625	0.4500	-0.800	1.350000e-08	0.120
bir1	0.5756	0.4500	-0.800	1.350000e-08	0.760
hut1	0.5500	0.4500	-0.800	1.350000e-08	0.180
pool1	0.6409	0.4500	-0.800	1.350000e-08	0.860
napp1	0.5625	0.4500	-0.800	1.350000e-08	0.740
too1	0.6560	0.4500	-0.800	1.350000e-08	0.830
dara1	0.6117	0.4500	-0.800	1.350000e-08	0.890
rose1	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi1	0.5850	0.4500	-0.800	1.350000e-08	0.900
mutt1	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat1	0.6026	0.4500	-0.800	1.350000e-08	0.840
nam5	0.5629	0.4500	-0.800	1.350000e-08	0.810
eyr5	0.5666	0.4500	-0.800	1.350000e-08	0.360
win5	0.5625	0.4500	-0.800	1.350000e-08	0.800
mac5	0.5617	0.4500	-0.800	1.350000e-08	0.810
all5	0.5626	0.4500	-0.800	1.350000e-08	0.830
coo5	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull5	0.5875	0.0000	-0.800	0.000000e+00	1.000
cad5	0.5600	0.4500	-0.800	1.350000e-08	0.550
mu5	0.5625	0.4500	-0.800	1.350000e-08	0.860
mck5	0.5500	0.4500	-0.800	1.350000e-08	0.500
namu5	0.5625	0.4500	-0.800	1.350000e-08	0.100
bir5	0.5625	0.4500	-0.800	1.350000e-08	0.580
hut5	0.5500	0.4500	-0.800	1.350000e-08	0.100
too5	0.6816	0.4500	-0.800	1.350000e-08	0.680
dara5	0.5624	0.4500	-0.800	1.350000e-08	0.625
rose5	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi5	0.6129	0.4500	-0.800	1.350000e-08	0.870
mutt5	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat5	0.5838	0.4500	-0.800	1.350000e-08	0.790
mur5	0.5625	0.4500	-0.800	1.350000e-08	0.860
pool5	0.5754	0.4500	-0.800	1.350000e-08	0.520

Lithology Initial Permeability

Name	Permeability (milliDarcys)	Power
Sandstone	2.786221e+04	5.500
Siltstone	1.013171e-01	5.500
Shale	1.013171e-01	5.500
Limestone	2.786221e+04	5.500
Dolomite	2.786221e+04	5.500
Evaporite	1.013171e-08	5.500
Coal	1.013171e-01	5.500
Igneous	1.013171e-08	5.500
nam1	9.655232e-01	5.500
eyr1	3.755972e+03	5.500
win1	6.228538e-01	5.500
mac1	7.515815e-01	5.500
all1	2.759494e-01	5.500
coo1	5.313115e+01	5.500
bull1	1.013171e-01	5.500
cad1	6.825522e+01	5.500
mur1	2.759494e-01	5.500
mck1	1.518504e+01	5.500
namu1	6.198629e+03	5.500
bir1	2.047023e+00	5.500
hut1	2.923719e+03	5.500
pool1	5.850452e-01	5.500
napp1	2.629719e+00	5.500
too1	8.518624e-01	5.500
dara1	4.017996e-01	5.500
rose1	1.013171e-01	5.500
epsi1	3.544999e-01	5.500
mutt1	1.013171e-01	5.500
pat1	7.515815e-01	5.500
nam5	1.094350e+00	5.500
eyr5	3.068003e+02	5.500
win5	1.240365e+00	5.500
mac5	1.094350e+00	5.500
all5	8.518624e-01	5.500
coo5	5.313115e+01	5.500
bull5	1.013171e-01	5.500
cad5	2.840420e+01	5.500
mu5	5.850452e-01	5.500
mck5	5.313115e+01	5.500
namu5	7.963102e+03	5.500
bir5	1.950754e+01	5.500
hut5	7.963102e+03	5.500
too5	5.575314e+00	5.500
dara5	1.110280e+01	5.500
rose5	1.013171e-01	5.500
epsi5	5.161740e-01	5.500
mutt5	1.013171e-01	5.500
pat5	1.405862e+00	5.500
mur5	5.850452e-01	5.500
pool5	4.135829e+01	5.500

Geothermal Gradient Table

Time (Ma)	Depth 1 (m)
0	0

Maturity conversion method: Table

TTI = 4.191876 + 1.817512 * log10(Ro)

Data fit: Least Squares

Model Units

```
                  Depth = (m)
               Distance = (m)
   Thermal Conductivity = (W/m*deg C)
          Heat Capacity = (kJ/m^3*deg C)
              Heat Flow = (mW/m^2)
            Temperature = (deg C)
        Heat Generation = (muW/m^3)
               Gradient = (deg C/100 m)
      Activation Energy = (kcal/mole)
       Frequency Factor = (1/my)
             HC Density = (g/cm^3)
               Pressure = (MPa)
             Grain Size = (mm)
       Seismic Velocity = (m/s)
             Event Time = (msec)
               Maturity = (%Ro)
          HC Generation = (mg/g TOC)
```

Calculation Options

```
                Compaction = Sclater & Christie
     Porosity Depth Method = Linear
  Permeability Calculation = Modified Kozeny-Carman
    Geothermal Calculation = Gradient
      Maturity Calculation = LLNL
     Expulsion Calculation = None
             Time Interval = 1.00
            Depth Interval = 1000.00
           Integrate Depth = No
```

Advanced Options

```
          TTI Reference Temp = 105.00
           TTI Doubling Temp = 10.00
         Rock-Eval Correction = 35.00
                 Thermal Gain = 1.000
Critical Fracturing Fraction = 0.850
       Fracture Closure Rate = 0.050
    Conductivity Calculation = Deming/Chapman
                   Initial S1 = 3.00
```

Rifting HF Options

```
     Use Rifting Heat Flow = No
           Start Rift Time = 0.00
             End Rift Time = 0.00
            Auto-Calc Beta = No
    Rifting Heat Flow Beta = 2.00
```

Present Day Info

```
               Model Name = MULGA-2
        Model Description =
     Current Surface Temp = 20.00
        Current Elevation = 0.00
        Current Heat Flow = 63.00
```

Seismic Parameters

```
               Shot Point = 0
                        X = 0.00000000
                        Y = 0.00000000
```

BasinMod Data Report
Licensed to: Natn'l Centre for Petroleum Geology & Geophysics
Mr. Peter Tingate
Version: 4.20
Model Name: MULGA-2 EROSION
File Name: MULGA-2 EROSION.mod
Date: Feb 5, 1996
Time: 12:33 pm

Stratigraphy Table

Formation or Event Name	Type	Begin Age (Ma)	Well Top (m)	Present Thick (m)	Missing Thick (m)
QT/T	F	3.3	0	31	
EROSION-1	E	4.3			-30
MISSING SEC-1	D	5.3			30
NAMBA FM.	F	29.3	31	40	
EROSION-2	E	34			-13
MISSING SEC-2	D	38			13
EYRE FM.	F	60	71	112	
EROSION-3	E	75			-270
MISSING SEC-3	D	90			270
WINTON FM.	F	97.5	183	463	
MACKUNDA FM.	F	100	646	91	
ALLARU/OOD..	F	105.5	737	238	
COORIKIANA Sst.	F	108	975	8	
BULLDOG SHALE	F	117.5	983	206	
CADNA-OWIE FM.	F	135.5	1189	64	
MURTA FM.	F	141.5	1253	45	
McKINLAY Mbr.	F	145	1298	10	
NAMUR Sst.	F	165	1308	229	
BIRKHEAD FM.	F	175	1537	18	
HUTTON Sst.	F	188	1555	31	
POOLOWANNA FM.	F	193	1586	29	
EROSION-4	E	236.5			-47
MISSING SEC-4	D	249			47
TOOLACHEE FM.	F	253.5	1615	53	
EROSION-5	E	254.5			-218
MISSING SEC-5	D	256			218
DARALINGIE FM.	F	258.5	1668	12	
ROSENEATH SHALE	F	261.5	1680	18	
EPSILON FM.	F	263.5	1698	65	
MURTEREE SHAle	F	264.5	1763	46	
PATCHAWARRA FM.	F	274	1809	41	

Formation or Event Name	Type	Lithology	Lith Pat
QT/T	F	Sandstone	
EROSION-1	E		
MISSING SEC-1	D	Sandstone	
NAMBA FM.	F	nam5	1
EROSION-2	E		
MISSING SEC-2	D	Sandstone	
EYRE FM.	F	eyr5	
EROSION-3	E		
MISSING SEC-3	D	Sandstone	
WINTON FM.	F	win5	
MACKUNDA FM.	F	mac5	
ALLARU/OOD..	F	all5	

COORIKIANA Sst.	F	coo5
BULLDOG SHALE	F	bull5
CADNA-OWIE FM.	F	cad5
MURTA FM.	F	mur5
McKINLAY Mbr.	F	mck5
NAMUR Sst.	F	namu5
BIRKHEAD FM.	F	bir5
HUTTON Sst.	F	hut5
POOLOWANNA FM.	F	pool5
EROSION-4	E	
MISSING SEC-4	D	Sandstone
TOOLACHEE FM.	F	too5
EROSION-5	E	
MISSING SEC-5	D	Sandstone
DARALINGIE FM.	F	dara5
ROSENEATH SHALE	F	rose5
EPSILON FM.	F	epsi5
MURTEREE SHAle	F	mutt5
PATCHAWARRA FM.	F	pat5

Lithology Mixes Table

Lithology Name	% Sandstone	% Siltstone	% Shale	% Kerogen	Total %
Sandstone	100				100.0
nam5	19	60	21		100.0
eyr5	64	24	12		100.0
win5	20	60	20		100.0
mac5	19	62	19		100.0
all5	17	62	21		100.0
coo5	50	50			100.0
bull5		25	75		100.0
cad5	45	44	11		100.0
mur5	14	64.5	21.5		100.0
mck5	50	50			100.0
namu5	90	7.5	2.5		100.0
bir5	42	43.5	14.5		100.0
hut5	90	10			100.0
pool5	48	37.5	12.5	2	100.0
too5	32	33	11	24	100.0
dara5	37.5	47	15.5		100.0
rose5		75	25		100.0
epsi5	13	55.5	18.5	13	100.0
mutt5		75	25		100.0
pat5	21	55.5	18.5	5	100.0

Lithology Values Table

Lithology Name	Initial Porosity	Compaction Factor (FM)	Exponential Factor (SC)	Density (g/cm^3)
Sandstone	0.45	1.75	0.27	2.64
Siltstone	0.55	2.2	0.41	2.64
Shale	0.6	2.4	0.51	2.6
Limestone	0.6	1.5	0.22	2.72
Dolomite	0.6	1.5	0.22	2.85
Evaporite	0	0	0	2.15
Coal	0.9	3.5	0.7	1.8
Igneous	0	0	0	2.65
nam1	0.54	2.16	0.40	2.631
eyr1	0.46	1.83	0.29	2.638
win1	0.55	2.20	0.41	2.610
mac1	0.54	2.17	0.40	2.631
all1	0.55	2.21	0.42	2.630
coo1	0.5	1.97	0.34	2.64

bull1	0.59	2.36	0.49	2.608
cad1	0.50	1.99	0.34	2.635
mur1	0.55	2.21	0.42	2.630
mck1	0.51	2.05	0.36	2.634
namu1	0.46	1.81	0.28	2.638
bir1	0.54	2.16	0.40	2.607
hut1	0.46	1.83	0.29	2.64
pool1	0.61	2.43	0.46	2.465
napp1	0.53	2.12	0.39	2.632
too1	0.62	2.45	0.46	2.440
dara1	0.59	2.35	0.45	2.523
rose1	0.56	2.25	0.43	2.63
epsi1	0.57	2.27	0.43	2.581
mutt1	0.56	2.25	0.43	2.63
pat1	0.57	2.29	0.43	2.548
nam5	0.54	2.15	0.40	2.631
eyr5	0.49	1.93	0.33	2.635
win5	0.54	2.15	0.40	2.632
mac5	0.54	2.15	0.40	2.632
all5	0.54	2.16	0.40	2.631
coo5	0.5	1.97	0.34	2.64
bull5	0.58	2.35	0.48	2.61
cad5	0.51	2.01	0.35	2.635
mu5	0.54	2.18	0.41	2.631
mck5	0.5	1.97	0.34	2.64
namu5	0.46	1.8	0.28	2.639
bir5	0.51	2.04	0.36	2.634
hut5	0.46	1.79	0.28	2.64
too5	0.60	2.39	0.44	2.434
dara5	0.52	2.06	0.37	2.633
rose5	0.56	2.25	0.43	2.63
epsi5	0.59	2.34	0.44	2.523
mutt5	0.56	2.25	0.43	2.63
pat5	0.55	2.20	0.41	2.590
mur5	0.54	2.18	0.41	2.631
pool5	0.51	2.03	0.36	2.618

Lithology Name	Grain Size (mm)	Matrix Conductivity (W/m*deg C)	Matrix Cond. Correction
Sandstone	0.5	4.4	270
Siltstone	0.0156	2	170
Shale	0.0004	1.5	-180
Limestone	0.5	2.9	350
Dolomite	0.5	4.8	300
Evaporite	0.0004	5.4	470
Coal	0.0004	0.3	250
Igneous	0.0001	2.9	380
nam1	0.0137	2.329	116.2
eyr1	0.2479	3.996	240
win1	0.0109	2.200	113
mac1	0.0125	2.279	112.5
all1	0.0088	2.077	97.5
coo1	0.0883	3.2	220
bull1	0.0008	1.6	-110
cad1	0.0609	3.188	180
mur1	0.0088	2.077	97.5
mck1	0.0360	2.885	157.5
namu1	0.2954	4.097	247.5
bir1	0.0166	2.435	133.4
hut1	0.2678	3.968	252
pool1	0.0066	1.913	142.2
napp1	0.0195	2.531	131.2
too1	0.0069	1.942	152.9

dara1	0.0070	1.948	124.9
rose1	0.0062	1.875	82.5
epsi1	0.0082	2.033	111.3
mutt1	0.0062	1.875	82.5
pat1	0.0095	2.121	129.2
nam5	0.0139	2.351	115.5
eyr5	0.0924	3.476	192
win5	0.0149	2.38	120
mac5	0.0150	2.361	122.5
all5	0.0130	2.303	113.5
coo5	0.0883	3.2	220
bull5	0.0009	1.625	-92.5
cad5	0.0496	3.025	176.5
mu5	0.0115	2.228	108.7
mck5	0.0883	3.2	220
namu5	0.3225	4.147	251.2
bir5	0.0393	2.935	161.2
hut5	0.3534	4.16	260
too5	0.0131	2.305	182.7
dara5	0.0324	2.822	153.2
rose5	0.0062	1.875	82.5
epsi5	0.0077	1.998	128.6
mutt5	0.0062	1.875	82.5
pat5	0.0136	2.326	130.2
mur5	0.0115	2.228	108.7
pool5	0.0484	3.055	175.8

Lithology Name	Heat Capacity (kJ/m^3*deg C)	Heat Capacity Correction
Sandstone	2800	0
Siltstone	2650	0
Shale	2100	0
Limestone	2600	0
Dolomite	2600	0
Evaporite	1750	0
Coal	950	0
Igneous	2500	0
nam1	2564.	0
eyr1	2754	0
win1	2513.	0
mac1	2558.	0
all1	2535.	0
coo1	2725	0
bull1	2210	0
cad1	2662	0
mur1	2535.	0
mck1	2627.	0
namu1	2765.	0
bir1	2536	0
hut1	2773	0
pool1	2240.	0
napp1	2587.	0
too1	2202	0
dara1	2341	0
rose1	2512.	0
epsi1	2447.	0
mutt1	2512.	0
pat1	2402.	0
nam5	2563	0
eyr5	2680	0
win5	2570	0
mac5	2574	0
all5	2560	0

coo5	2725	0
bull5	2237.	0
cad5	2657	0
mu5	2552.	0
mck5	2725	0
namu5	2771.	0
bir5	2633.	0
hut5	2785	0
too5	2229.	0
dara5	2621	0
rose5	2512.	0
epsi5	2346.	0
mutt5	2512.	0
pat5	2494.	0
mur5	2552.	0
pool5	2619.	0

Lithology Fluid Flow Table

Lithology Name	Initial Porosity A	Initial Porosity B	A	B (1/Pa)	Fraction A
Sandstone	0.0000	0.4500	0.0000	1.350000e-08	0.000
Siltstone	0.5500	0.0000	-0.800	0.000000e+00	1.000
Shale	0.6000	0.0000	-0.800	0.000000e+00	1.000
Limestone	0.6000	0.0000	-0.800	0.000000e+00	1.000
Dolomite	0.6000	0.0000	-0.800	0.000000e+00	1.000
Evaporite	0.0000	0.0000	-0.800	1.350000e-08	0.000
Coal	0.9000	0.0000	-0.800	0.000000e+00	1.000
Igneous	0.0000	0.0000	-0.800	1.350000e-08	0.000
nam1	0.5625	0.4500	-0.800	1.350000e-08	0.820
eyr1	0.5625	0.4500	-0.800	1.350000e-08	0.160
win1	0.5725	0.4500	-0.800	1.350000e-08	0.855
mac1	0.5625	0.4500	-0.800	1.350000e-08	0.840
all1	0.5625	0.4500	-0.800	1.350000e-08	0.920
coo1	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull1	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad1	0.5625	0.4500	-0.800	1.350000e-08	0.480
mur1	0.5625	0.4500	-0.800	1.350000e-08	0.920
mck1	0.5625	0.4500	-0.800	1.350000e-08	0.600
namu1	0.5625	0.4500	-0.800	1.350000e-08	0.120
bir1	0.5756	0.4500	-0.800	1.350000e-08	0.760
hut1	0.5500	0.4500	-0.800	1.350000e-08	0.180
pool1	0.6409	0.4500	-0.800	1.350000e-08	0.860
napp1	0.5625	0.4500	-0.800	1.350000e-08	0.740
too1	0.6560	0.4500	-0.800	1.350000e-08	0.830
dara1	0.6117	0.4500	-0.800	1.350000e-08	0.890
rose1	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi1	0.5850	0.4500	-0.800	1.350000e-08	0.900
mutt1	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat1	0.6026	0.4500	-0.800	1.350000e-08	0.840
nam5	0.5629	0.4500	-0.800	1.350000e-08	0.810
eyr5	0.5666	0.4500	-0.800	1.350000e-08	0.360
win5	0.5625	0.4500	-0.800	1.350000e-08	0.800
mac5	0.5617	0.4500	-0.800	1.350000e-08	0.810
all5	0.5626	0.4500	-0.800	1.350000e-08	0.830
coo5	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull5	0.5875	0.0000	-0.800	0.000000e+00	1.000
cad5	0.5600	0.4500	-0.800	1.350000e-08	0.550
mu5	0.5625	0.4500	-0.800	1.350000e-08	0.860
mck5	0.5500	0.4500	-0.800	1.350000e-08	0.500
namu5	0.5625	0.4500	-0.800	1.350000e-08	0.100
bir5	0.5625	0.4500	-0.800	1.350000e-08	0.580
hut5	0.5500	0.4500	-0.800	1.350000e-08	0.100

too5	0.6816	0.4500	-0.800	1.350000e-08	0.680
dara5	0.5624	0.4500	-0.800	1.350000e-08	0.625
rose5	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi5	0.6129	0.4500	-0.800	1.350000e-08	0.870
mutt5	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat5	0.5838	0.4500	-0.800	1.350000e-08	0.790
mur5	0.5625	0.4500	-0.800	1.350000e-08	0.860
pool5	0.5754	0.4500	-0.800	1.350000e-08	0.520

Lithology Name	Initial Permeability (milliDarcys)	Permeability Power
Sandstone	2.786221e+04	5.500
Siltstone	1.013171e-01	5.500
Shale	1.013171e-01	5.500
Limestone	2.786221e+04	5.500
Dolomite	2.786221e+04	5.500
Evaporite	1.013171e-08	5.500
Coal	1.013171e-01	5.500
Igneous	1.013171e-08	5.500
nam1	9.655232e-01	5.500
eyr1	3.755972e+03	5.500
win1	6.228538e-01	5.500
mac1	7.515815e-01	5.500
all1	2.759494e-01	5.500
coo1	5.313115e+01	5.500
bull1	1.013171e-01	5.500
cad1	6.825522e+01	5.500
mur1	2.759494e-01	5.500
mck1	1.518504e+01	5.500
namu1	6.198629e+03	5.500
bir1	2.047023e+00	5.500
hut1	2.923719e+03	5.500
pool1	5.850452e-01	5.500
napp1	2.629719e+00	5.500
too1	8.518624e-01	5.500
dara1	4.017996e-01	5.500
rose1	1.013171e-01	5.500
epsi1	3.544999e-01	5.500
mutt1	1.013171e-01	5.500
pat1	7.515815e-01	5.500
nam5	1.094350e+00	5.500
eyr5	3.068003e+02	5.500
win5	1.240365e+00	5.500
mac5	1.094350e+00	5.500
all5	8.518624e-01	5.500
coo5	5.313115e+01	5.500
bull5	1.013171e-01	5.500
cad5	2.840420e+01	5.500
mu5	5.850452e-01	5.500
mck5	5.313115e+01	5.500
namu5	7.963102e+03	5.500
bir5	1.950754e+01	5.500
hut5	7.963102e+03	5.500
too5	5.575314e+00	5.500
dara5	1.110280e+01	5.500
rose5	1.013171e-01	5.500
epsi5	5.161740e-01	5.500
mutt5	1.013171e-01	5.500
pat5	1.405862e+00	5.500
mur5	5.850452e-01	5.500
pool5	4.135829e+01	5.500

Geothermal Gradient Table

Time (Ma)	Depth 1 (m)
0	0

Maturity conversion method: Table
TTI = 4.191876 + 1.817512 * log10(Ro)
Data fit: Least Squares

Model Units
Depth = (m)
Distance = (m)
Thermal Conductivity = (W/m*deg C)
Heat Capacity = (kJ/m^3*deg C)
Heat Flow = (mW/m^2)
Temperature = (deg C)
Heat Generation = (muW/m^3)
Gradient = (deg C/100 m)
Activation Energy = (kcal/mole)
Frequency Factor = (1/my)
HC Density = (g/cm^3)
Pressure = (MPa)
Grain Size = (mm)
Seismic Velocity = (m/s)
Event Time = (msec)
Maturity = (%Ro)
HC Generation = (mg/g TOC)

Calculation Options
Compaction = Sclater & Christie
Porosity Depth Method = Linear
Permeability Calculation = Modified Kozeny-Carman
Geothermal Calculation = Gradient
Maturity Calculation = LLNL
Expulsion Calculation = None
Time Interval = 1.00
Depth Interval = 1000.00
Integrate Depth = No

Advanced Options
TTI Reference Temp = 105.00
TTI Doubling Temp = 10.00
Rock-Eval Correction = 35.00
Thermal Gain = 1.000
Critical Fracturing Fraction = 0.850
Fracture Closure Rate = 0.050
Conductivity Calculation = Deming/Chapman
Initial S1 = 3.00

Rifting HF Options
Use Rifting Heat Flow = No
Start Rift Time = 0.00
End Rift Time = 0.00
Auto-Calc Beta = No
Rifting Heat Flow Beta = 2.00

Present Day Info
Model Name = MULGA-2 EROSION
Model Description =
Current Surface Temp = 20.00
Current Elevation = 1.00
Current Heat Flow = 63.00

Seismic Parameters

Shot Point = 0
X = 0.00000000
Y = 0.00000000

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+-----------------------------------------+
| BasinMod Data Report                    |
| Licensed to: Natn'l Centre for Petroleum Geology & Geophysics |
|              Mr. Peter Tingate          |
|     Version: 4.20                       |
|  Model Name: PINNA-1                    |
|   File Name: PINNa-1.mod                |
|        Date: Feb  5, 1996               |
|        Time: 12:36 pm                   |
+-----------------------------------------+
```

Stratigraphy Table

Formation or Event Name	Type	Begin Age (Ma)	Well Top (m)	Present Thick (m)	Lithology
QT/T	F	3.3	0	15	Sandstone
HIATUS-1	H	5.3			
NAMBA FM.	F	29.3	15	98	nam4
HIATUS-2	H	38			
EYRE FM.	F	60	113	88	eyr4
HIATUS-3	H	90			
WINTON FM.	F	97.5	201	531	win4
MACKUNDA FM.	F	100	732	93	mac4
ALLARU/OOD..	F	105.5	825	258	all4
COORIKIANA Sst.	F	108	1083	7	coo4
BULLDOG SHALE	F	117.5	1090	240	bull4
CADNA-OWIE FM.	F	135.5	1330	58	cad4
MURTA FM.	F	141.5	1388	48	mur4
McKINLAY Mbr.	F	145	1436	13	mck4
NAMUR Sst.	F	151	1449	47	namu4
WESTBOURNE FM.	F	159	1496	82	west4
ADORI Sst.	F	165	1578	85	ador4
BIRKHEAD FM.	F	175	1663	32	bir4
HUTTON Sst.	F	188	1695	59	hut4
POOLOWANNA FM.	F	193	1754	21	pool4
HIATUS-4	H	236.5			
NAPPAMERRI GP.	F	249	1775	39	napp4
TOOLACHEE FM.	F	253.5	1814	36	too4
HIATUS-5	H	261.5			
EPSILON FM.	F	263.5	1850	26	epsi4
MURTEREE SHAle	F	264.5	1876	44	mutt4
PATCHAWARRA FM.	F	274	1920	221	pat4
TIRRAWARRA Sst.	F	280	2141	334	tir4
MERRIMELIA FM.	F	285.5	2475	77	merr4

Formation or Event Name	Type	Lith Pat
QT/T	F	
HIATUS-1	H	
NAMBA FM.	F	1
HIATUS-2	H	
EYRE FM.	F	
HIATUS-3	H	
WINTON FM.	F	
MACKUNDA FM.	F	
ALLARU/OOD..	F	
COORIKIANA Sst.	F	
BULLDOG SHALE	F	
CADNA-OWIE FM.	F	
MURTA FM.	F	
McKINLAY Mbr.	F	

NAMUR Sst.	F
WESTBOURNE FM.	F
ADORI Sst.	F
BIRKHEAD FM.	F
HUTTON Sst.	F
POOLOWANNA FM.	F
HIATUS-4	H
NAPPAMERRI GP.	F
TOOLACHEE FM.	F
HIATUS-5	H
EPSILON FM.	F
MURTEREE SHAle	F
PATCHAWARRA FM.	F
TIRRAWARRA Sst.	F
MERRIMELIA FM.	F

Lithology Mixes Table

Lithology Name	% Sandstone	% Siltstone	% Shale	% Kerogen	Total %
Sandstone	100				100.0
nam4	14	64.5	21.5		100.0
eyr4	65	25	10		100.0
win4	10	60	26.5	3.5	100.0
mac4	14	60	26		100.0
all4	10	60	30		100.0
coo4	50	50			100.0
bull4		25	75		100.0
cad4	48	39	13		100.0
mur4	14	64.5	21.5		100.0
mck4	50	50			100.0
namu4	90	10			100.0
west4	60	30	10		100.0
ador4	83	17			100.0
bir4	56	34	10		100.0
hut4	95	5			100.0
pool4	26	52.5	17.5	4	100.0
napp4	17	62	21		100.0
too4	24	37.5	12.5	26	100.0
epsi4	13	53.5	17.5	16	100.0
mutt4		73.5	24.5	2	100.0
pat4	32	45	15	8	100.0
tir4	84	15		1	100.0
merr4	12	66	22		100.0

Lithology Values Table

Lithology Name	Initial Porosity	Compaction Factor (FM)	Exponential Factor (SC)	Density (g/cm^3)
Sandstone	0.45	1.75	0.27	2.64
Siltstone	0.55	2.2	0.41	2.64
Shale	0.6	2.4	0.51	2.6
Limestone	0.6	1.5	0.22	2.72
Dolomite	0.6	1.5	0.22	2.85
Evaporite	0	0	0	2.15
Coal	0.9	3.5	0.7	1.8
Igneous	0	0	0	2.65
nam1	0.54	2.16	0.40	2.631
eyr1	0.46	1.83	0.29	2.638
win1	0.55	2.20	0.41	2.610
mac1	0.54	2.17	0.40	2.631
all1	0.55	2.21	0.42	2.630
coo1	0.5	1.97	0.34	2.64
bull1	0.59	2.36	0.49	2.608

cad1	0.50	1.99	0.34	2.635
mur1	0.55	2.21	0.42	2.630
mck1	0.51	2.05	0.36	2.634
namu1	0.46	1.81	0.28	2.638
bir1	0.54	2.16	0.40	2.607
hut1	0.46	1.83	0.29	2.64
pool1	0.61	2.43	0.46	2.465
napp1	0.53	2.12	0.39	2.632
too1	0.62	2.45	0.46	2.440
dara1	0.59	2.35	0.45	2.523
rose1	0.56	2.25	0.43	2.63
epsi1	0.57	2.27	0.43	2.581
mutt1	0.56	2.25	0.43	2.63
pat1	0.57	2.29	0.43	2.548
nam4	0.54	2.18	0.41	2.631
eyr4	0.49	1.92	0.32	2.636
win4	0.56	2.25	0.43	2.6
mac4	0.54	2.18	0.41	2.629
all4	0.55	2.21	0.42	2.628
coo4	0.5	1.97	0.34	2.64
bull4	0.58	2.35	0.48	2.61
cad4	0.50	2.01	0.35	2.634
mur4	0.54	2.18	0.41	2.631
mck4	0.5	1.97	0.34	2.64
namu4	0.46	1.79	0.28	2.64
west4	0.49	1.95	0.33	2.636
ador4	0.46	1.82	0.29	2.64
bir4	0.53	2.12	0.37	2.742
hut4	0.45	1.77	0.27	2.64
pool4	0.54	2.17	0.40	2.599
napp4	0.54	2.16	0.40	2.631
too4	0.62	2.45	0.46	2.416
epsi4	0.60	2.38	0.45	2.498
mutt4	0.56	2.27	0.44	2.613
pat4	0.55	2.19	0.40	2.566
tir4	0.46	1.83	0.29	2.631
merr4	0.54	2.19	0.41	2.631

Lithology Name	Grain Size (mm)	Matrix Conductivity (W/m*deg C)	Matrix Cond. Correction
Sandstone	0.5	4.4	270
Siltstone	0.0156	2	170
Shale	0.0004	1.5	-180
Limestone	0.5	2.9	350
Dolomite	0.5	4.8	300
Evaporite	0.0004	5.4	470
Coal	0.0004	0.3	250
Igneous	0.0001	2.9	380
nam1	0.0137	2.329	116.2
eyr1	0.2479	3.996	240
win1	0.0109	2.200	113
mac1	0.0125	2.279	112.5
all1	0.0088	2.077	97.5
coo1	0.0883	3.2	220
bull1	0.0008	1.6	-110
cad1	0.0609	3.188	180
mur1	0.0088	2.077	97.5
mck1	0.0360	2.885	157.5
namu1	0.2954	4.097	247.5
bir1	0.0166	2.435	133.4
hut1	0.2678	3.968	252
pool1	0.0066	1.913	142.2
napp1	0.0195	2.531	131.2

too1	0.0069	1.942	152.9
dara1	0.0070	1.948	124.9
rose1	0.0062	1.875	82.5
epsi1	0.0082	2.033	111.3
mutt1	0.0062	1.875	82.5
pat1	0.0095	2.121	129.2
nam4	0.0115	2.228	108.7
eyr4	0.1029	3.51	200
win4	0.0073	2.048	90.05
mac4	0.0097	2.206	93
all4	0.0073	2.09	75
coo4	0.0883	3.2	220
bull4	0.0009	1.625	-92.5
cad4	0.0511	3.087	172.5
mur4	0.0115	2.228	108.7
mck4	0.0883	3.2	220
namu4	0.3534	4.16	260
west4	0.0866	3.39	195
ador4	0.2773	3.992	253
bir4	0.0519	3.335	196.6
hut4	0.4204	4.28	265
pool4	0.0174	2.468	137.9
napp4	0.0130	2.303	113.5
too4	0.0087	2.071	171.0
epsi4	0.0071	1.952	134.5
mutt4	0.0059	1.843	85.85
pat4	0.0203	2.557	155.9
tir4	0.2767	3.999	254.8
merr4	0.0105	2.178	105

Lithology Name	Heat Capacity (kJ/m^3*deg C)	Heat Capacity Correction
Sandstone	2800	0
Siltstone	2650	0
Shale	2100	0
Limestone	2600	0
Dolomite	2600	0
Evaporite	1750	0
Coal	950	0
Igneous	2500	0
nam1	2564.	0
eyr1	2754	0
win1	2513.	0
mac1	2558.	0
all1	2535.	0
coo1	2725	0
bull1	2210	0
cad1	2662	0
mur1	2535.	0
mck1	2627.	0
namu1	2765.	0
bir1	2536	0
hut1	2773	0
pool1	2240.	0
napp1	2587.	0
too1	2202	0
dara1	2341	0
rose1	2512.	0
epsi1	2447.	0
mutt1	2512.	0
pat1	2402.	0
nam4	2552.	0
eyr4	2692.	0

win4	2459.	0
mac4	2528	0
all4	2500	0
coo4	2725	0
bull4	2237.	0
cad4	2650.	0
mur4	2552.	0
mck4	2725	0
namu4	2785	0
west4	2685	0
ador4	2774.	0
bir4	2752.	0
hut4	2792.	0
pool4	2524.	0
napp4	2560	0
too4	2175.	0
epsi4	2301.	0
mutt4	2481.	0
pat4	2479.	0
tir4	2759	0
merr4	2547	0

Lithology Fluid Flow Table

Lithology Name	Initial Porosity A	Initial Porosity B	A	B (1/Pa)	Fraction A
Sandstone	0.0000	0.4500	0.0000	1.350000e-08	0.000
Siltstone	0.5500	0.0000	-0.800	0.000000e+00	1.000
Shale	0.6000	0.0000	-0.800	0.000000e+00	1.000
Limestone	0.6000	0.0000	-0.800	0.000000e+00	1.000
Dolomite	0.6000	0.0000	-0.800	0.000000e+00	1.000
Evaporite	0.0000	0.0000	-0.800	1.350000e-08	0.000
Coal	0.9000	0.0000	-0.800	0.000000e+00	1.000
Igneous	0.0000	0.0000	-0.800	1.350000e-08	0.000
nam1	0.5625	0.4500	-0.800	1.350000e-08	0.820
eyr1	0.5625	0.4500	-0.800	1.350000e-08	0.160
win1	0.5725	0.4500	-0.800	1.350000e-08	0.855
mac1	0.5625	0.4500	-0.800	1.350000e-08	0.840
all1	0.5625	0.4500	-0.800	1.350000e-08	0.920
coo1	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull1	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad1	0.5625	0.4500	-0.800	1.350000e-08	0.480
mur1	0.5625	0.4500	-0.800	1.350000e-08	0.920
mck1	0.5625	0.4500	-0.800	1.350000e-08	0.600
namu1	0.5625	0.4500	-0.800	1.350000e-08	0.120
bir1	0.5756	0.4500	-0.800	1.350000e-08	0.760
hut1	0.5500	0.4500	-0.800	1.350000e-08	0.180
pool1	0.6409	0.4500	-0.800	1.350000e-08	0.860
napp1	0.5625	0.4500	-0.800	1.350000e-08	0.740
too1	0.6560	0.4500	-0.800	1.350000e-08	0.830
dara1	0.6117	0.4500	-0.800	1.350000e-08	0.890
rose1	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi1	0.5850	0.4500	-0.800	1.350000e-08	0.900
mutt1	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat1	0.6026	0.4500	-0.800	1.350000e-08	0.840
nam4	0.5625	0.4500	-0.800	1.350000e-08	0.860
eyr4	0.5642	0.4500	-0.800	1.350000e-08	0.350
win4	0.5783	0.4500	-0.800	1.350000e-08	0.900
mac4	0.5651	0.4500	-0.800	1.350000e-08	0.860
all4	0.5666	0.4500	-0.800	1.350000e-08	0.900
coo4	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull4	0.5875	0.0000	-0.800	0.000000e+00	1.000
cad4	0.5625	0.4500	-0.800	1.350000e-08	0.520

mur4	0.5625	0.4500	-0.800	1.350000e-08	0.860
mck4	0.5500	0.4500	-0.800	1.350000e-08	0.500
namu4	0.5500	0.4500	-0.800	1.350000e-08	0.100
west4	0.5625	0.4500	-0.800	1.350000e-08	0.400
ador4	0.5500	0.4500	-0.800	1.350000e-08	0.170
bir4	0.5831	0.4500	-0.800	1.350000e-08	0.490
hut4	0.5500	0.4500	-0.800	1.350000e-08	0.050
pool4	0.5807	0.4500	-0.800	1.350000e-08	0.740
napp4	0.5626	0.4500	-0.800	1.350000e-08	0.830
too4	0.6779	0.4500	-0.800	1.350000e-08	0.760
epsi4	0.6244	0.4500	-0.800	1.350000e-08	0.870
mutt4	0.5692	0.0000	-0.800	0.000000e+00	1.000
pat4	0.6022	0.4500	-0.800	1.350000e-08	0.680
tir4	0.5718	0.4500	-0.800	1.350000e-08	0.160
merr4	0.5625	0.4500	-0.800	1.350000e-08	0.880

Lithology Name	Initial Permeability (milliDarcys)	Permeability Power
Sandstone	2.786221e+04	5.500
Siltstone	1.013171e-01	5.500
Shale	1.013171e-01	5.500
Limestone	2.786221e+04	5.500
Dolomite	2.786221e+04	5.500
Evaporite	1.013171e-08	5.500
Coal	1.013171e-01	5.500
Igneous	1.013171e-08	5.500
nam1	9.655232e-01	5.500
eyr1	3.755972e+03	5.500
win1	6.228538e-01	5.500
mac1	7.515815e-01	5.500
all1	2.759494e-01	5.500
coo1	5.313115e+01	5.500
bull1	1.013171e-01	5.500
cad1	6.825522e+01	5.500
mur1	2.759494e-01	5.500
mck1	1.518504e+01	5.500
namu1	6.198629e+03	5.500
bir1	2.047023e+00	5.500
hut1	2.923719e+03	5.500
pool1	5.850452e-01	5.500
napp1	2.629719e+00	5.500
too1	8.518624e-01	5.500
dara1	4.017996e-01	5.500
rose1	1.013171e-01	5.500
epsi1	3.544999e-01	5.500
mutt1	1.013171e-01	5.500
pat1	7.515815e-01	5.500
nam4	5.850452e-01	5.500
eyr4	3.477356e+02	5.500
win4	3.544999e-01	5.500
mac4	5.850452e-01	5.500
all4	3.544999e-01	5.500
coo4	5.313115e+01	5.500
bull4	1.013171e-01	5.500
cad4	4.135829e+01	5.500
mur4	5.850452e-01	5.500
mck4	5.313115e+01	5.500
namu4	7.963102e+03	5.500
west4	1.859013e+02	5.500
ador4	3.313821e+03	5.500
bir4	1.785292e+01	5.500
hut4	1.489529e+04	5.500

pool4	2.629719e+00	5.500
napp4	8.518624e-01	5.500
too4	2.047023e+00	5.500
epsi4	5.161740e-01	5.500
mutt4	1.013171e-01	5.500
pat4	5.575314e+00	5.500
tir4	3.755972e+03	5.500
merr4	4.554102e-01	5.500

Geothermal Gradient Table

Time (Ma)	Depth 1 (m)
0	0

Maturity conversion method: Table
TTI = 4.191876 + 1.817512 * log10(Ro)
Data fit: Least Squares

Model Units

```
                   Depth = (m)
                Distance = (m)
    Thermal Conductivity = (W/m*deg C)
           Heat Capacity = (kJ/m^3*deg C)
               Heat Flow = (mW/m^2)
             Temperature = (deg C)
         Heat Generation = (muW/m^3)
                Gradient = (deg C/100 m)
       Activation Energy = (kcal/mole)
        Frequency Factor = (1/my)
              HC Density = (g/cm^3)
                Pressure = (MPa)
              Grain Size = (mm)
        Seismic Velocity = (m/s)
              Event Time = (msec)
                Maturity = (%Ro)
           HC Generation = (mg/g TOC)
```

Calculation Options

```
              Compaction = Sclater & Christie
   Porosity Depth Method = Linear
Permeability Calculation = Modified Kozeny-Carman
  Geothermal Calculation = Gradient
    Maturity Calculation = LLNL
   Expulsion Calculation = None
           Time Interval = 1.00
          Depth Interval = 1000.00
         Integrate Depth = No
```

Advanced Options

```
      TTI Reference Temp = 105.00
       TTI Doubling Temp = 10.00
    Rock-Eval Correction = 35.00
            Thermal Gain = 1.000
Critical Fracturing Fraction = 0.850
   Fracture Closure Rate = 0.050
Conductivity Calculation = Deming/Chapman
              Initial S1 = 3.00
```

Rifting HF Options

```
  Use Rifting Heat Flow = No
        Start Rift Time = 0.00
          End Rift Time = 0.00
         Auto-Calc Beta = No
```

```
      Rifting Heat Flow Beta = 2.00

Present Day Info
                  Model Name = PINNA-1
           Model Description =
        Current Surface Temp = 20.00
           Current Elevation = 0.00
           Current Heat Flow = 63.00

Seismic Parameters
                  Shot Point = 0
                           X = 0.00000000
                           Y = 0.00000000
```

```
+-------------------------------------------+
| BasinMod Data Report                       |
| Licensed to: Natn'l Centre for Petroleum Geology & Geophysics |
|              Mr. Peter Tingate             |
|     Version: 4.20                          |
|  Model Name: PINNA-1 EROSION               |
|   File Name: PINNA-1 EROSION.mod           |
|        Date: Feb  5, 1996                  |
|        Time: 12:36 pm                      |
+-------------------------------------------+
```

Stratigraphy Table

Formation or Event Name	Type	Begin Age (Ma)	Well Top (m)	Present Thick (m)	Missing Thick (m)
QT/T	F	3.3	0	15	
EROSION-1	E	4.3			-37
MISSING SEC-1	D	5.3			37
NAMBA FM.	F	29.3	15	98	
EROSION-2	E	34			-18
MISSING SEC-2	D	38			18
EYRE FM.	F	60	113	88	
EROSION-3	E	75			-225
MISSING SEC-3	D	90			225
WINTON FM.	F	97.5	201	531	
MACKUNDA FM.	F	100	732	93	
ALLARU/OOD..	F	105.5	825	258	
COORIKIANA Sst.	F	108	1083	7	
BULLDOG SHALE	F	117.5	1090	240	
CADNA-OWIE FM.	F	135.5	1330	58	
MURTA FM.	F	141.5	1388	48	
McKINLAY Mbr.	F	145	1436	13	
NAMUR Sst.	F	151	1449	47	
WESTBOURNE FM.	F	159	1496	82	
ADORI Sst.	F	165	1578	85	
BIRKHEAD FM.	F	175	1663	32	
HUTTON Sst.	F	188	1695	59	
POOLOWANNA FM.	F	193	1754	21	
EROSION-4	E	213			-71
MISSING SEC-4	D	236.5			71
NAPPAMERRI GP.	F	249	1775	39	
TOOLACHEE FM.	F	253.5	1814	36	
EROSION-5	E	256			-148
MISSING SEC-5	D	261.5			148
EPSILON FM.	F	263.5	1850	26	
MURTEREE SHAle	F	264.5	1876	44	
PATCHAWARRA FM.	F	274	1920	221	
TIRRAWARRA Sst.	F	280	2141	334	
MERRIMELIA FM.	F	285.5	2475	77	

Formation or Event Name	Type	Lithology	Lith Pat
QT/T	F	Sandstone	
EROSION-1	E		
MISSING SEC-1	D	Sandstone	
NAMBA FM.	F	nam4	1
EROSION-2	E		
MISSING SEC-2	D	Sandstone	
EYRE FM.	F	eyr4	
EROSION-3	E		
MISSING SEC-3	D	Sandstone	

WINTON FM.	F	win4
MACKUNDA FM.	F	mac4
ALLARU/OOD..	F	all4
COORIKIANA Sst.	F	coo4
BULLDOG SHALE	F	bull4
CADNA-OWIE FM.	F	cad4
MURTA FM.	F	mur4
McKINLAY Mbr.	F	mck4
NAMUR Sst.	F	namu4
WESTBOURNE FM.	F	west4
ADORI Sst.	F	ador4
BIRKHEAD FM.	F	bir4
HUTTON Sst.	F	hut4
POOLOWANNA FM.	F	pool4
EROSION-4	E	
MISSING SEC-4	D	Sandstone
NAPPAMERRI GP.	F	napp4
TOOLACHEE FM.	F	too4
EROSION-5	E	
MISSING SEC-5	D	Sandstone
EPSILON FM.	F	epsi4
MURTEREE SHAle	F	mutt4
PATCHAWARRA FM.	F	pat4
TIRRAWARRA Sst.	F	tir4
MERRIMELIA FM.	F	merr4

Lithology Mixes Table

Lithology Name	% Sandstone	% Siltstone	% Shale	% Kerogen	Total %
Sandstone	100				100.0
nam4	14	64.5	21.5		100.0
eyr4	65	25	10		100.0
win4	10	60	26.5	3.5	100.0
mac4	14	60	26		100.0
all4	10	60	30		100.0
coo4	50	50			100.0
bull4		25	75		100.0
cad4	48	39	13		100.0
mur4	14	64.5	21.5		100.0
mck4	50	50			100.0
namu4	90	10			100.0
west4	60	30	10		100.0
ador4	83	17			100.0
bir4	56	34	10		100.0
hut4	95	5			100.0
pool4	26	52.5	17.5	4	100.0
napp4	17	62	21		100.0
too4	24	37.5	12.5	26	100.0
epsi4	13	53.5	17.5	16	100.0
mutt4		73.5	24.5	2	100.0
pat4	32	45	15	8	100.0
tir4	84	15		1	100.0
merr4	12	66	22		100.0

Lithology Values Table

Lithology Name	Initial Porosity	Compaction Factor (FM)	Exponential Factor (SC)	Density (g/cm^3)
Sandstone	0.45	1.75	0.27	2.64
Siltstone	0.55	2.2	0.41	2.64
Shale	0.6	2.4	0.51	2.6
Limestone	0.6	1.5	0.22	2.72
Dolomite	0.6	1.5	0.22	2.85

Evaporite	0	0	0	2.15
Coal	0.9	3.5	0.7	1.8
Igneous	0	0	0	2.65
nam1	0.54	2.16	0.40	2.631
eyr1	0.46	1.83	0.29	2.638
win1	0.55	2.20	0.41	2.610
mac1	0.54	2.17	0.40	2.631
all1	0.55	2.21	0.42	2.630
coo1	0.5	1.97	0.34	2.64
bull1	0.59	2.36	0.49	2.608
cad1	0.50	1.99	0.34	2.635
mur1	0.55	2.21	0.42	2.630
mck1	0.51	2.05	0.36	2.634
namu1	0.46	1.81	0.28	2.638
bir1	0.54	2.16	0.40	2.607
hut1	0.46	1.83	0.29	2.64
pool1	0.61	2.43	0.46	2.465
napp1	0.53	2.12	0.39	2.632
too1	0.62	2.45	0.46	2.440
dara1	0.59	2.35	0.45	2.523
rose1	0.56	2.25	0.43	2.63
epsi1	0.57	2.27	0.43	2.581
mutt1	0.56	2.25	0.43	2.63
pat1	0.57	2.29	0.43	2.548
nam4	0.54	2.18	0.41	2.631
eyr4	0.49	1.92	0.32	2.636
win4	0.56	2.25	0.43	2.6
mac4	0.54	2.18	0.41	2.629
all4	0.55	2.21	0.42	2.628
coo4	0.5	1.97	0.34	2.64
bull4	0.58	2.35	0.48	2.61
cad4	0.50	2.01	0.35	2.634
mur4	0.54	2.18	0.41	2.631
mck4	0.5	1.97	0.34	2.64
namu4	0.46	1.79	0.28	2.64
west4	0.49	1.95	0.33	2.636
ador4	0.46	1.82	0.29	2.64
bir4	0.53	2.12	0.37	2.742
hut4	0.45	1.77	0.27	2.64
pool4	0.54	2.17	0.40	2.599
napp4	0.54	2.16	0.40	2.631
too4	0.62	2.45	0.46	2.416
epsi4	0.60	2.38	0.45	2.498
mutt4	0.56	2.27	0.44	2.613
pat4	0.55	2.19	0.40	2.566
tir4	0.46	1.83	0.29	2.631
merr4	0.54	2.19	0.41	2.631

Lithology Name	Grain Size (mm)	Matrix Conductivity (W/m*deg C)	Matrix Cond. Correction
Sandstone	0.5	4.4	270
Siltstone	0.0156	2	170
Shale	0.0004	1.5	-180
Limestone	0.5	2.9	350
Dolomite	0.5	4.8	300
Evaporite	0.0004	5.4	470
Coal	0.0004	0.3	250
Igneous	0.0001	2.9	380
nam1	0.0137	2.329	116.2
eyr1	0.2479	3.996	240
win1	0.0109	2.200	113
mac1	0.0125	2.279	112.5
all1	0.0088	2.077	97.5

coo1	0.0883	3.2	220
bull1	0.0008	1.6	-110
cad1	0.0609	3.188	180
mur1	0.0088	2.077	97.5
mck1	0.0360	2.885	157.5
namu1	0.2954	4.097	247.5
bir1	0.0166	2.435	133.4
hut1	0.2678	3.968	252
pool1	0.0066	1.913	142.2
napp1	0.0195	2.531	131.2
too1	0.0069	1.942	152.9
dara1	0.0070	1.948	124.9
rose1	0.0062	1.875	82.5
epsi1	0.0082	2.033	111.3
mutt1	0.0062	1.875	82.5
pat1	0.0095	2.121	129.2
nam4	0.0115	2.228	108.7
eyr4	0.1029	3.51	200
win4	0.0073	2.048	90.05
mac4	0.0097	2.206	93
all4	0.0073	2.09	75
coo4	0.0883	3.2	220
bull4	0.0009	1.625	-92.5
cad4	0.0511	3.087	172.5
mur4	0.0115	2.228	108.7
mck4	0.0883	3.2	220
namu4	0.3534	4.16	260
west4	0.0866	3.39	195
ador4	0.2773	3.992	253
bir4	0.0519	3.335	196.6
hut4	0.4204	4.28	265
pool4	0.0174	2.468	137.9
napp4	0.0130	2.303	113.5
too4	0.0087	2.071	171.0
epsi4	0.0071	1.952	134.5
mutt4	0.0059	1.843	85.85
pat4	0.0203	2.557	155.9
tir4	0.2767	3.999	254.8
merr4	0.0105	2.178	105

Lithology Name	Heat Capacity (kJ/m^3*deg C)	Heat Capacity Correction
Sandstone	2800	0
Siltstone	2650	0
Shale	2100	0
Limestone	2600	0
Dolomite	2600	0
Evaporite	1750	0
Coal	950	0
Igneous	2500	0
nam1	2564.	0
eyr1	2754	0
win1	2513.	0
mac1	2558.	0
all1	2535.	0
coo1	2725	0
bull1	2210	0
cad1	2662	0
mur1	2535.	0
mck1	2627.	0
namu1	2765.	0
bir1	2536	0
hut1	2773	0

pool1	2240.	0
napp1	2587.	0
too1	2202	0
dara1	2341	0
rose1	2512.	0
epsi1	2447.	0
mutt1	2512.	0
pat1	2402.	0
nam4	2552.	0
eyr4	2692.	0
win4	2459.	0
mac4	2528	0
all4	2500	0
coo4	2725	0
bull4	2237.	0
cad4	2650.	0
mur4	2552.	0
mck4	2725	0
namu4	2785	0
west4	2685	0
ador4	2774.	0
bir4	2752.	0
hut4	2792.	0
pool4	2524.	0
napp4	2560	0
too4	2175.	0
epsi4	2301.	0
mutt4	2481.	0
pat4	2479.	0
tir4	2759	0
merr4	2547	0

Lithology Fluid Flow Table

Lithology Name	Initial Porosity A	Initial Porosity B	A	B (1/Pa)	Fraction A
Sandstone	0.0000	0.4500	0.0000	1.350000e-08	0.000
Siltstone	0.5500	0.0000	-0.800	0.000000e+00	1.000
Shale	0.6000	0.0000	-0.800	0.000000e+00	1.000
Limestone	0.6000	0.0000	-0.800	0.000000e+00	1.000
Dolomite	0.6000	0.0000	-0.800	0.000000e+00	1.000
Evaporite	0.0000	0.0000	-0.800	1.350000e-08	0.000
Coal	0.9000	0.0000	-0.800	0.000000e+00	1.000
Igneous	0.0000	0.0000	-0.800	1.350000e-08	0.000
nam1	0.5625	0.4500	-0.800	1.350000e-08	0.820
eyr1	0.5625	0.4500	-0.800	1.350000e-08	0.160
win1	0.5725	0.4500	-0.800	1.350000e-08	0.855
mac1	0.5625	0.4500	-0.800	1.350000e-08	0.840
all1	0.5625	0.4500	-0.800	1.350000e-08	0.920
coo1	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull1	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad1	0.5625	0.4500	-0.800	1.350000e-08	0.480
mur1	0.5625	0.4500	-0.800	1.350000e-08	0.920
mck1	0.5625	0.4500	-0.800	1.350000e-08	0.600
namu1	0.5625	0.4500	-0.800	1.350000e-08	0.120
bir1	0.5756	0.4500	-0.800	1.350000e-08	0.760
hut1	0.5500	0.4500	-0.800	1.350000e-08	0.180
pool1	0.6409	0.4500	-0.800	1.350000e-08	0.860
napp1	0.5625	0.4500	-0.800	1.350000e-08	0.740
too1	0.6560	0.4500	-0.800	1.350000e-08	0.830
dara1	0.6117	0.4500	-0.800	1.350000e-08	0.890
rose1	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi1	0.5850	0.4500	-0.800	1.350000e-08	0.900

mutt1	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat1	0.6026	0.4500	-0.800	1.350000e-08	0.840
nam4	0.5625	0.4500	-0.800	1.350000e-08	0.860
eyr4	0.5642	0.4500	-0.800	1.350000e-08	0.350
win4	0.5783	0.4500	-0.800	1.350000e-08	0.900
mac4	0.5651	0.4500	-0.800	1.350000e-08	0.860
all4	0.5666	0.4500	-0.800	1.350000e-08	0.900
coo4	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull4	0.5875	0.0000	-0.800	0.000000e+00	1.000
cad4	0.5625	0.4500	-0.800	1.350000e-08	0.520
mur4	0.5625	0.4500	-0.800	1.350000e-08	0.860
mck4	0.5500	0.4500	-0.800	1.350000e-08	0.500
namu4	0.5500	0.4500	-0.800	1.350000e-08	0.100
west4	0.5625	0.4500	-0.800	1.350000e-08	0.400
ador4	0.5500	0.4500	-0.800	1.350000e-08	0.170
bir4	0.5831	0.4500	-0.800	1.350000e-08	0.490
hut4	0.5500	0.4500	-0.800	1.350000e-08	0.050
pool4	0.5807	0.4500	-0.800	1.350000e-08	0.740
napp4	0.5626	0.4500	-0.800	1.350000e-08	0.830
too4	0.6779	0.4500	-0.800	1.350000e-08	0.760
epsi4	0.6244	0.4500	-0.800	1.350000e-08	0.870
mutt4	0.5692	0.0000	-0.800	0.000000e+00	1.000
pat4	0.6022	0.4500	-0.800	1.350000e-08	0.680
tir4	0.5718	0.4500	-0.800	1.350000e-08	0.160
merr4	0.5625	0.4500	-0.800	1.350000e-08	0.880

Lithology Name	Initial Permeability (milliDarcys)	Permeability Power
Sandstone	2.786221e+04	5.500
Siltstone	1.013171e-01	5.500
Shale	1.013171e-01	5.500
Limestone	2.786221e+04	5.500
Dolomite	2.786221e+04	5.500
Evaporite	1.013171e-08	5.500
Coal	1.013171e-01	5.500
Igneous	1.013171e-08	5.500
nam1	9.655232e-01	5.500
eyr1	3.755972e+03	5.500
win1	6.228538e-01	5.500
mac1	7.515815e-01	5.500
all1	2.759494e-01	5.500
coo1	5.313115e+01	5.500
bull1	1.013171e-01	5.500
cad1	6.825522e+01	5.500
mur1	2.759494e-01	5.500
mck1	1.518504e+01	5.500
namu1	6.198629e+03	5.500
bir1	2.047023e+00	5.500
hut1	2.923719e+03	5.500
pool1	5.850452e-01	5.500
napp1	2.629719e+00	5.500
too1	8.518624e-01	5.500
dara1	4.017996e-01	5.500
rose1	1.013171e-01	5.500
epsi1	3.544999e-01	5.500
mutt1	1.013171e-01	5.500
pat1	7.515815e-01	5.500
nam4	5.850452e-01	5.500
eyr4	3.477356e+02	5.500
win4	3.544999e-01	5.500
mac4	5.850452e-01	5.500
all4	3.544999e-01	5.500

coo4	5.313115e+01	5.500
bull4	1.013171e-01	5.500
cad4	4.135829e+01	5.500
mur4	5.850452e-01	5.500
mck4	5.313115e+01	5.500
namu4	7.963102e+03	5.500
west4	1.859013e+02	5.500
ador4	3.313821e+03	5.500
bir4	1.785292e+01	5.500
hut4	1.489529e+04	5.500
pool4	2.629719e+00	5.500
napp4	8.518624e-01	5.500
too4	2.047023e+00	5.500
epsi4	5.161740e-01	5.500
mutt4	1.013171e-01	5.500
pat4	5.575314e+00	5.500
tir4	3.755972e+03	5.500
merr4	4.554102e-01	5.500

Geothermal Gradient Table

Time (Ma)	Depth 1 (m)
0	0

Maturity conversion method: Table
TTI = 4.191876 + 1.817512 * log10(Ro)
Data fit: Least Squares

Model Units

Depth	= (m)
Distance	= (m)
Thermal Conductivity	= (W/m*deg C)
Heat Capacity	= (kJ/m^3*deg C)
Heat Flow	= (mW/m^2)
Temperature	= (deg C)
Heat Generation	= (muW/m^3)
Gradient	= (deg C/100 m)
Activation Energy	= (kcal/mole)
Frequency Factor	= (1/my)
HC Density	= (g/cm^3)
Pressure	= (MPa)
Grain Size	= (mm)
Seismic Velocity	= (m/s)
Event Time	= (msec)
Maturity	= (%Ro)
HC Generation	= (mg/g TOC)

Calculation Options

Compaction	= Sclater & Christie
Porosity Depth Method	= Linear
Permeability Calculation	= Modified Kozeny-Carman
Geothermal Calculation	= Gradient
Maturity Calculation	= LLNL
Expulsion Calculation	= None
Time Interval	= 1.00
Depth Interval	= 1000.00
Integrate Depth	= No

Advanced Options

TTI Reference Temp	= 105.00
TTI Doubling Temp	= 10.00
Rock-Eval Correction	= 35.00
Thermal Gain	= 1.000

```
Critical Fracturing Fraction = 0.850
       Fracture Closure Rate = 0.050
    Conductivity Calculation = Deming/Chapman
                  Initial S1 = 3.00

Rifting HF Options
       Use Rifting Heat Flow = No
             Start Rift Time = 0.00
               End Rift Time = 0.00
              Auto-Calc Beta = No
      Rifting Heat Flow Beta = 2.00

Present Day Info
                  Model Name = PINNA-1 EROSION
           Model Description =
        Current Surface Temp = 20.00
           Current Elevation = 0.00
           Current Heat Flow = 63.00

Seismic Parameters
                  Shot Point = 0
                           X = 0.00000000
                           Y = 0.00000000
```

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+-------------------------------------------+
| BasinMod Data Report                      |
| Licensed to: Natn'l Centre for Petroleum Geology & Geophysics |
|              Mr. Peter Tingate            |
|     Version: 4.20                         |
|  Model Name: STRZELECKI-5                 |
|   File Name: Strzelecki-5.mod             |
|        Date: Feb  5, 1996                 |
|        Time: 12:37 pm                     |
+-------------------------------------------+
```

Stratigraphy Table

Formation or Event Name	Type	Begin Age (Ma)	Well Top (m)	Present Thick (m)	Lithology
QT/T	F	3.3	0	9	Sandstone
HIATUS-1	H	5.3			
NAMBA FM.	F	29.3	9	61	nam3
HIATUS-2	H	38			
EYRE FM.	F	60	70	46	eyr3
HIATUS-3	H	90			
WINTON FM.	F	97.5	116	533	win3
MACKUNDA FM.	F	100	649	138	mac3
OODNADATTA FM.	F	105.5	787	215	ood3
COORIKIANA Sst.	F	108	1002	13	coo3
BULLDOG SHALE	F	117.5	1015	275	bull3
CADNA-OWIE FM.	F	135.5	1290	72	cad3
MURTA FM.	F	141.5	1362	53	mur3
McKINLAY Mbr.	F	145	1415	8	mck3
NAMUR Sst.	F	151	1423	61	namu3
WESTBOURNE FM.	F	159	1484	77	west3
ADORI Sst.	F	165	1561	60	ador3
BIRKHEAD FM.	F	175	1621	66	bir3
HUTTON Sst.	F	188	1687	91	hut3
HIATUS-4	H	236.5			
NAPPAMERRI GP.	F	249	1778	47	napp3
TOOLACHEE FM.	F	253.5	1825	66	too3

Formation or Event Name	Type
QT/T	F
HIATUS-1	H
NAMBA FM.	F
HIATUS-2	H
EYRE FM.	F
HIATUS-3	H
WINTON FM.	F
MACKUNDA FM.	F
OODNADATTA FM.	F
COORIKIANA Sst.	F
BULLDOG SHALE	F
CADNA-OWIE FM.	F
MURTA FM.	F
McKINLAY Mbr.	F
NAMUR Sst.	F
STBOURNE FM.	F
ADORI Sst.	F
BIRKHEAD FM.	F
HUTTON Sst.	F
HIATUS-4	H
NAPPAMERRI GP.	F

TOOLACHEE FM. F

Lithology Mixes Table

Lithology Name	% Sandstone	% Siltstone	% Shale	% Kerogen	Total %
Sandstone	100				100.0
nam3	30	52.5	17.5		100.0
eyr3	75	14	11		100.0
win3	10	64.5	22	3.5	100.0
mac3	14	58	28		100.0
ood3	8	68	23	1	100.0
coo3	50	50			100.0
bull3		25	75		100.0
cad3	48	39	13		100.0
mur3	21	59	20		100.0
mck3	50	50			100.0
namu3	82	18			100.0
west3	70	22.5	7.5		100.0
ador3	90	10			100.0
bir3	34	48	16	2	100.0
hut3	90	10			100.0
napp3	6	70.5	23.5		100.0
too3	22	45	15	18	100.0

Lithology Values Table

Lithology Name	Initial Porosity	Compaction Factor (FM)	Exponential Factor (SC)	Density (g/cm^3)
Sandstone	0.45	1.75	0.27	2.64
Siltstone	0.55	2.2	0.41	2.64
Shale	0.6	2.4	0.51	2.6
Limestone	0.6	1.5	0.22	2.72
Dolomite	0.6	1.5	0.22	2.85
Evaporite	0	0	0	2.15
Coal	0.9	3.5	0.7	1.8
Igneous	0	0	0	2.65
nam3	0.52	2.1	0.38	2.633
eyr3	0.48	1.88	0.31	2.635
win3	0.56	2.24	0.42	2.601
mac3	0.55	2.19	0.41	2.628
ood3	0.55	2.22	0.42	2.622
coo3	0.5	1.97	0.34	2.64
bull3	0.58	2.35	0.48	2.61
cad3	0.50	2.01	0.35	2.634
mur3	0.53	2.14	0.40	2.632
mck3	0.5	1.97	0.34	2.64
namu3	0.46	1.83	0.29	2.64
west3	0.48	1.9	0.31	2.637
ador3	0.46	1.79	0.28	2.64
bir3	0.53	2.10	0.38	2.616
hut3	0.46	1.79	0.28	2.64
napp3	0.55	2.22	0.42	2.630
too3	0.59	2.36	0.44	2.482

Lithology Name	Grain Size (mm)	Matrix Conductivity (W/m*deg C)	Matrix Cond. Correction
Sandstone	0.5	4.4	270
Siltstone	0.0156	2	170
Shale	0.0004	1.5	-180
Limestone	0.5	2.9	350
Dolomite	0.5	4.8	300
Evaporite	0.0004	5.4	470

Coal	0.0004	0.3	250
Igneous	0.0001	2.9	380
nam3	0.0232	2.632	138.7
eyr3	0.1404	3.745	206.5
win3	0.0086	2.070	105.8
mac3	0.0090	2.196	86
ood3	0.0085	2.06	98.3
coo3	0.0883	3.2	220
bull3	0.0009	1.625	-92.5
cad3	0.0511	3.087	172.5
mur3	0.0155	2.404	121
mck3	0.0883	3.2	220
namu3	0.2678	3.968	252
west3	0.1342	3.642	213.7
ador3	0.3534	4.16	260
bir3	0.0262	2.702	149.6
hut3	0.3534	4.16	260
napp3	0.0081	2.026	93.75
too3	0.0099	2.147	153.9

Lithology Name	Heat Capacity (kJ/m^3*deg C)	Heat Capacity Correction
Sandstone	2800	0
Siltstone	2650	0
Shale	2100	0
Limestone	2600	0
Dolomite	2600	0
Evaporite	1750	0
Coal	950	0
Igneous	2500	0
nam3	2598.	0
eyr3	2702	0
win3	2484.	0
mac3	2517	0
ood3	2518.	0
coo3	2725	0
bull3	2237.	0
cad3	2650.	0
mur3	2571.	0
mck3	2725	0
namu3	2773	0
west3	2713.	0
ador3	2785	0
bir3	2579	0
hut3	2785	0
napp3	2529.	0
too3	2294.	0

Lithology Fluid Flow Table

Lithology Name	Initial Porosity A	Initial Porosity B	A	B (1/Pa)	Fraction A
Sandstone	0.0000	0.4500	0.0000	1.350000e-08	0.000
Siltstone	0.5500	0.0000	-0.800	0.000000e+00	1.000
Shale	0.6000	0.0000	-0.800	0.000000e+00	1.000
Limestone	0.6000	0.0000	-0.800	0.000000e+00	1.000
Dolomite	0.6000	0.0000	-0.800	0.000000e+00	1.000
Evaporite	0.0000	0.0000	-0.800	1.350000e-08	0.000
Coal	0.9000	0.0000	-0.800	0.000000e+00	1.000
Igneous	0.0000	0.0000	-0.800	1.350000e-08	0.000
nam3	0.5625	0.4500	-0.800	1.350000e-08	0.700
eyr3	0.5720	0.4500	-0.800	1.350000e-08	0.250

win3	0.5758	0.4500	-0.800	1.350000e-08	0.900
mac3	0.5662	0.4500	-0.800	1.350000e-08	0.860
ood3	0.5663	0.4500	-0.800	1.350000e-08	0.920
coo3	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull3	0.5875	0.0000	-0.800	0.000000e+00	1.000
cad3	0.5625	0.4500	-0.800	1.350000e-08	0.520
mur3	0.5626	0.4500	-0.800	1.350000e-08	0.790
mck3	0.5500	0.4500	-0.800	1.350000e-08	0.500
namu3	0.5500	0.4500	-0.800	1.350000e-08	0.180
west3	0.5625	0.4500	-0.800	1.350000e-08	0.300
ador3	0.5500	0.4500	-0.800	1.350000e-08	0.100
bir3	0.5727	0.4500	-0.800	1.350000e-08	0.660
hut3	0.5500	0.4500	-0.800	1.350000e-08	0.100
napp3	0.5625	0.4500	-0.800	1.350000e-08	0.940
too3	0.6403	0.4500	-0.800	1.350000e-08	0.780

Lithology Name	Initial Permeability (milliDarcys)	Permeability Power
Sandstone	2.786221e+04	5.500
Siltstone	1.013171e-01	5.500
Shale	1.013171e-01	5.500
Limestone	2.786221e+04	5.500
Dolomite	2.786221e+04	5.500
Evaporite	1.013171e-08	5.500
Coal	1.013171e-01	5.500
Igneous	1.013171e-08	5.500
nam3	4.339930e+00	5.500
eyr3	1.216697e+03	5.500
win3	3.544999e-01	5.500
mac3	5.850452e-01	5.500
ood3	2.759494e-01	5.500
coo3	5.313115e+01	5.500
bull3	1.013171e-01	5.500
cad3	4.135829e+01	5.500
mur3	1.405862e+00	5.500
mck3	5.313115e+01	5.500
namu3	2.923719e+03	5.500
west3	6.504527e+02	5.500
ador3	7.963102e+03	5.500
bir3	7.162357e+00	5.500
hut3	7.963102e+03	5.500
napp3	2.148042e-01	5.500
too3	1.593441e+00	5.500

Geothermal Gradient Table

Time (Ma)	Depth 1 (m)
0	0

Maturity conversion method: Table
TTI = 4.191876 + 1.817512 * log10(Ro)
Data fit: Least Squares

Model Units

Depth = (m)
Distance = (m)
Thermal Conductivity = (W/m*deg C)
Heat Capacity = (kJ/m^3*deg C)
Heat Flow = (mW/m^2)
Temperature = (deg C)
Heat Generation = (muW/m^3)

Gradient = (deg C/100 m)
Activation Energy = (kcal/mole)
Frequency Factor = (1/my)
HC Density = (g/cm^3)
Pressure = (MPa)
Grain Size = (mm)
Seismic Velocity = (m/s)
Event Time = (msec)
Maturity = (%Ro)
HC Generation = (mg/g TOC)

Calculation Options
Compaction = Sclater & Christie
Porosity Depth Method = Linear
Permeability Calculation = Modified Kozeny-Carman
Geothermal Calculation = Gradient
Maturity Calculation = LLNL
Expulsion Calculation = None
Time Interval = 1.00
Depth Interval = 1000.00
Integrate Depth = No

Advanced Options
TTI Reference Temp = 105.00
TTI Doubling Temp = 10.00
Rock-Eval Correction = 35.00
Thermal Gain = 1.000
Critical Fracturing Fraction = 0.850
Fracture Closure Rate = 0.050
Conductivity Calculation = Deming/Chapman
Initial S1 = 3.00

Rifting HF Options
Use Rifting Heat Flow = No
Start Rift Time = 0.00
End Rift Time = 0.00
Auto-Calc Beta = No
Rifting Heat Flow Beta = 2.00

Present Day Info
Model Name = STRZELECKI-5
Model Description =
Current Surface Temp = 20.00
Current Elevation = 0.00
Current Heat Flow = 63.00

Seismic Parameters
Shot Point = 0
X = 0.00000000
Y = 0.00000000

BasinMod Data Report
Licensed to: Natn'l Centre for Petroleum Geology & Geophysics
Mr. Peter Tingate
Version: 4.20
Model Name: STRZELECKI-5 EROSION
File Name: STRZELECKI-5 EROSION.mod
Date: Feb 5, 1996
Time: 12:37 pm

Stratigraphy Table

Formation or Event Name	Type	Begin Age (Ma)	Well Top (m)	Present Thick (m)	Missing Thick (m)
QT/T	F	3.3	0	9	
EROSION-1	E	4.3			-40
MISSING SEC-1	D	5.3			40
NAMBA FM.	F	29.3	9	61	
EROSION-2	E	34			-24
MISSING SEC-2	D	38			24
EYRE FM.	F	60	70	46	
EROSION-3	E	75			-250
MISSING SEC-3	D	90			250
WINTON FM.	F	97.5	116	533	
MACKUNDA FM.	F	100	649	138	
OODNADATTA FM.	F	105.5	787	215	
COORIKIANA Sst.	F	108	1002	13	
BULLDOG SHALE	F	117.5	1015	275	
CADNA-OWIE FM.	F	135.5	1290	72	
MURTA FM.	F	141.5	1362	53	
McKINLAY Mbr.	F	145	1415	8	
NAMUR Sst.	F	151	1423	61	
WESTBOURNE FM.	F	159	1484	77	
ADORI Sst.	F	165	1561	60	
BIRKHEAD FM.	F	175	1621	66	
HUTTON Sst.	F	188	1687	91	
EROSION-4	E	211.5			-172
MISSING SEC-4	D	236.5			172
NAPPAMERRI GP.	F	249	1778	47	
TOOLACHEE FM.	F	253.5	1825	66	

Formation or Event Name	Type	Lithology
QT/T	F	Sandstone
EROSION-1	E	
MISSING SEC-1	D	Sandstone
NAMBA FM.	F	nam3
EROSION-2	E	
MISSING SEC-2	D	Sandstone
EYRE FM.	F	eyr3
EROSION-3	E	
MISSING SEC-3	D	Sandstone
WINTON FM.	F	win3
MACKUNDA FM.	F	mac3
OODNADATTA FM.	F	ood3
COORIKIANA Sst.	F	coo3
BULLDOG SHALE	F	bull3
CADNA-OWIE FM.	F	cad3
MURTA FM.	F	mur3
McKINLAY Mbr.	F	mck3

NAMUR Sst.	F	namu3
WESTBOURNE FM.	F	west3
ADORI Sst.	F	ador3
BIRKHEAD FM.	F	bir3
HUTTON Sst.	F	hut3
EROSION-4	E	
MISSING SEC-4	D	Sandstone
NAPPAMERRI GP.	F	napp3
TOOLACHEE FM.	F	too3

Lithology Mixes Table

Lithology Name	% Sandstone	% Siltstone	% Shale	% Kerogen	Total %
Sandstone	100				100.0
nam3	30	52.5	17.5		100.0
eyr3	75	14	11		100.0
win3	10	64.5	22	3.5	100.0
mac3	14	58	28		100.0
ood3	8	68	23	1	100.0
coo3	50	50			100.0
bull3		25	75		100.0
cad3	48	39	13		100.0
mur3	21	59	20		100.0
mck3	50	50			100.0
namu3	82	18			100.0
west3	70	22.5	7.5		100.0
ador3	90	10			100.0
bir3	34	48	16	2	100.0
hut3	90	10			100.0
napp3	6	70.5	23.5		100.0
too3	22	45	15	18	100.0

Lithology Values Table

Lithology Name	Initial Porosity	Compaction Factor (FM)	Exponential Factor (SC)	Density (g/cm^3)
Sandstone	0.45	1.75	0.27	2.64
Siltstone	0.55	2.2	0.41	2.64
Shale	0.6	2.4	0.51	2.6
Limestone	0.6	1.5	0.22	2.72
Dolomite	0.6	1.5	0.22	2.85
Evaporite	0	0	0	2.15
Coal	0.9	3.5	0.7	1.8
Igneous	0	0	0	2.65
nam3	0.52	2.1	0.38	2.633
eyr3	0.48	1.88	0.31	2.635
win3	0.56	2.24	0.42	2.601
mac3	0.55	2.19	0.41	2.628
ood3	0.55	2.22	0.42	2.622
coo3	0.5	1.97	0.34	2.64
bull3	0.58	2.35	0.48	2.61
cad3	0.50	2.01	0.35	2.634
mur3	0.53	2.14	0.40	2.632
mck3	0.5	1.97	0.34	2.64
namu3	0.46	1.83	0.29	2.64
west3	0.48	1.9	0.31	2.637
ador3	0.46	1.79	0.28	2.64
bir3	0.53	2.10	0.38	2.616
hut3	0.46	1.79	0.28	2.64
napp3	0.55	2.22	0.42	2.630
too3	0.59	2.36	0.44	2.482

Lithology Grain Size Matrix Conductivity Matrix Cond.

Name	(mm)	(W/m*deg C)	Correction
Sandstone	0.5	4.4	270
Siltstone	0.0156	2	170
Shale	0.0004	1.5	-180
Limestone	0.5	2.9	350
Dolomite	0.5	4.8	300
Evaporite	0.0004	5.4	470
Coal	0.0004	0.3	250
Igneous	0.0001	2.9	380
nam3	0.0232	2.632	138.7
eyr3	0.1404	3.745	206.5
win3	0.0086	2.070	105.8
mac3	0.0090	2.196	86
ood3	0.0085	2.06	98.3
coo3	0.0883	3.2	220
bull3	0.0009	1.625	-92.5
cad3	0.0511	3.087	172.5
mur3	0.0155	2.404	121
mck3	0.0883	3.2	220
namu3	0.2678	3.968	252
west3	0.1342	3.642	213.7
ador3	0.3534	4.16	260
bir3	0.0262	2.702	149.6
hut3	0.3534	4.16	260
napp3	0.0081	2.026	93.75
too3	0.0099	2.147	153.9

Lithology Name	Heat Capacity (kJ/m^3*deg C)	Heat Capacity Correction
Sandstone	2800	0
Siltstone	2650	0
Shale	2100	0
Limestone	2600	0
Dolomite	2600	0
Evaporite	1750	0
Coal	950	0
Igneous	2500	0
nam3	2598.	0
eyr3	2702	0
win3	2484.	0
mac3	2517	0
ood3	2518.	0
coo3	2725	0
bull3	2237.	0
cad3	2650.	0
mur3	2571.	0
mck3	2725	0
namu3	2773	0
west3	2713.	0
ador3	2785	0
bir3	2579	0
hut3	2785	0
napp3	2529.	0
too3	2294.	0

Lithology Fluid Flow Table

Lithology Name	Initial Porosity A	Initial Porosity B	A	B (1/Pa)	Fraction A
Sandstone	0.0000	0.4500	0.0000	1.350000e-08	0.000
Siltstone	0.5500	0.0000	-0.800	0.000000e+00	1.000

Shale	0.6000	0.0000	-0.800	0.000000e+00	1.000
Limestone	0.6000	0.0000	-0.800	0.000000e+00	1.000
Dolomite	0.6000	0.0000	-0.800	0.000000e+00	1.000
Evaporite	0.0000	0.0000	-0.800	1.350000e-08	0.000
Coal	0.9000	0.0000	-0.800	0.000000e+00	1.000
Igneous	0.0000	0.0000	-0.800	1.350000e-08	0.000
nam3	0.5625	0.4500	-0.800	1.350000e-08	0.700
eyr3	0.5720	0.4500	-0.800	1.350000e-08	0.250
win3	0.5758	0.4500	-0.800	1.350000e-08	0.900
mac3	0.5662	0.4500	-0.800	1.350000e-08	0.860
ood3	0.5663	0.4500	-0.800	1.350000e-08	0.920
coo3	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull3	0.5875	0.0000	-0.800	0.000000e+00	1.000
cad3	0.5625	0.4500	-0.800	1.350000e-08	0.520
mur3	0.5626	0.4500	-0.800	1.350000e-08	0.790
mck3	0.5500	0.4500	-0.800	1.350000e-08	0.500
namu3	0.5500	0.4500	-0.800	1.350000e-08	0.180
west3	0.5625	0.4500	-0.800	1.350000e-08	0.300
ador3	0.5500	0.4500	-0.800	1.350000e-08	0.100
bir3	0.5727	0.4500	-0.800	1.350000e-08	0.660
hut3	0.5500	0.4500	-0.800	1.350000e-08	0.100
napp3	0.5625	0.4500	-0.800	1.350000e-08	0.940
too3	0.6403	0.4500	-0.800	1.350000e-08	0.780

Lithology Name	Initial Permeability (milliDarcys)	Permeability Power
Sandstone	2.786221e+04	5.500
Siltstone	1.013171e-01	5.500
Shale	1.013171e-01	5.500
Limestone	2.786221e+04	5.500
Dolomite	2.786221e+04	5.500
Evaporite	1.013171e-08	5.500
Coal	1.013171e-01	5.500
Igneous	1.013171e-08	5.500
nam3	4.339930e+00	5.500
eyr3	1.216697e+03	5.500
win3	3.544999e-01	5.500
mac3	5.850452e-01	5.500
ood3	2.759494e-01	5.500
coo3	5.313115e+01	5.500
bull3	1.013171e-01	5.500
cad3	4.135829e+01	5.500
mur3	1.405862e+00	5.500
mck3	5.313115e+01	5.500
namu3	2.923719e+03	5.500
west3	6.504527e+02	5.500
ador3	7.963102e+03	5.500
bir3	7.162357e+00	5.500
hut3	7.963102e+03	5.500
napp3	2.148042e-01	5.500
too3	1.593441e+00	5.500

Geothermal Gradient Table

Time (Ma)	Depth 1 (m)
0	0

Maturity conversion method: Table
TTI = 4.191876 + 1.817512 * log10(Ro)
Data fit: Least Squares

Model Units

Depth =	(m)
Distance =	(m)
Thermal Conductivity =	(W/m*deg C)
Heat Capacity =	(kJ/m^3*deg C)
Heat Flow =	(mW/m^2)
Temperature =	(deg C)
Heat Generation =	(muW/m^3)
Gradient =	(deg C/100 m)
Activation Energy =	(kcal/mole)
Frequency Factor =	(1/my)
HC Density =	(g/cm^3)
Pressure =	(MPa)
Grain Size =	(mm)
Seismic Velocity =	(m/s)
Event Time =	(msec)
Maturity =	(%Ro)
HC Generation =	(mg/g TOC)

Calculation Options

Compaction =	Sclater & Christie
Porosity Depth Method =	Linear
Permeability Calculation =	Modified Kozeny-Carman
Geothermal Calculation =	Gradient
Maturity Calculation =	LLNL
Expulsion Calculation =	None
Time Interval =	1.00
Depth Interval =	1000.00
Integrate Depth =	No

Advanced Options

TTI Reference Temp =	105.00
TTI Doubling Temp =	10.00
Rock-Eval Correction =	35.00
Thermal Gain =	1.000
Critical Fracturing Fraction =	0.850
Fracture Closure Rate =	0.050
Conductivity Calculation =	Deming/Chapman
Initial S1 =	3.00

Rifting HF Options

Use Rifting Heat Flow =	No
Start Rift Time =	0.00
End Rift Time =	0.00
Auto-Calc Beta =	No
Rifting Heat Flow Beta =	2.00

Present Day Info

Model Name =	STRZELECKI-5 EROSION
Model Description =	
Current Surface Temp =	20.00
Current Elevation =	0.00
Current Heat Flow =	63.00

Seismic Parameters

Shot Point =	0
X =	0.00000000
Y =	0.00000000

BasinMod Data Report
Licensed to: Natn'l Centre for Petroleum Geology & Geophysics
Mr. Peter Tingate
Version: 4.20
Model Name: TINGA-TINGANA-1
File Name: TINGA-TINGANA-1.mod
Date: Feb 5, 1996
Time: 12:40 pm

Stratigraphy Table

Formation or Event Name	Type	Begin Age (Ma)	Well Top (m)	Present Thick (m)	Lithology
QT/T	F	3.3	0	26	Sandstone
HIATUS-1	H	5.3			
NAMBA FM.	F	29.3	26	135	nam2
HIATUS-2	H	38			
EYRE FM.	F	60	161	57	eyr2
HIATUS-3	H	90			
WINTON FM.	F	97.5	218	609	win2
MACKUNDA FM.	F	100	827	65	mac2
MARREE SBGP.	F	117.5	892	172	marr2
CADNA-OWIE FM.	F	135.5	1064	56	cad2
MURTA FM.	F	141.5	1120	54	mur2
McKINLAY Mbr.	F	145	1174	18	mck2
NAMUR Sst.	F	165	1192	178	namu2
BIRKHEAD FM.	F	175	1370	19	bir2
HUTTON Sst.	F	188	1389	9	Sandstone
HIATUS-4	H	264.5			
PATCHAWARRA FM.	F	274	1398	285	pat2
TIRRAWARRA Sst.	F	280	1683	70	tir2
MERRIMELIA FM.	F	285.5	1753	509	merr2

Formation or Event Name	Type	Lith Pat
QT/T	F	
HIATUS-1	H	
NAMBA FM.	F	1
HIATUS-2	H	
EYRE FM.	F	
HIATUS-3	H	
WINTON FM.	F	
MACKUNDA FM.	F	
MARREE SBGP.	F	
CADNA-OWIE FM.	F	
MURTA FM.	F	
McKINLAY Mbr.	F	
NAMUR Sst.	F	
BIRKHEAD FM.	F	
HUTTON Sst.	F	
HIATUS-4	H	
PATCHAWARRA FM.	F	
TIRRAWARRA Sst.	F	
MERRIMELIA FM.	F	

Lithology Mixes Table

Lithology Name	% Sandstone	% Siltstone	% Shale	% Kerogen	Total %

Sandstone	100				100.0
nam2	38	46.5	15.5		100.0
eyr2	77.5	22.5			100.0
win2	18	61.5	20.5		100.0
mac2	22	58.5	19.5		100.0
marr2	4	30	66		100.0
cad2	54	34.5	11.5		100.0
mur2	18	61.5	20.5		100.0
mck2	50	50			100.0
namu2	87	13			100.0
bir2	31	51.5	17.5		100.0
pat2	25	48	16	11	100.0
tir2	83	17			100.0
merr2	42	43.5	14.5		100.0

Lithology Values Table

Lithology Name	Initial Porosity	Compaction Factor (FM)	Exponential Factor (SC)	Density (g/cm^3)
Sandstone	0.45	1.75	0.27	2.64
Siltstone	0.55	2.2	0.41	2.64
Shale	0.6	2.4	0.51	2.6
Limestone	0.6	1.5	0.22	2.72
Dolomite	0.6	1.5	0.22	2.85
Evaporite	0	0	0	2.15
Coal	0.9	3.5	0.7	1.8
Igneous	0	0	0	2.65
nam2	0.51	2.06	0.37	2.633
eyr2	0.47	1.85	0.30	2.64
win2	0.54	2.16	0.40	2.631
mac2	0.53	2.14	0.39	2.632
marr2	0.57	2.31	0.47	2.613
cad2	0.50	1.98	0.34	2.635
mur2	0.54	2.16	0.40	2.631
mck2	0.5	1.97	0.34	2.64
namu2	0.46	1.80	0.28	2.64
bir2	0.52	2.09	0.38	2.633
pat2	0.57	2.26	0.42	2.541
tir2	0.46	1.82	0.29	2.64
merr2	0.51	2.04	0.36	2.634

Lithology Name	Grain Size (mm)	Matrix Conductivity (W/m*deg C)	Matrix Cond. Correction
Sandstone	0.5	4.4	270
Siltstone	0.0156	2	170
Shale	0.0004	1.5	-180
Limestone	0.5	2.9	350
Dolomite	0.5	4.8	300
Evaporite	0.0004	5.4	470
Coal	0.0004	0.3	250
Igneous	0.0001	2.9	380
nam2	0.0330	2.834	153.7
eyr2	0.2291	3.86	247.5
win2	0.0137	2.329	116.2
mac2	0.0163	2.430	123.7
marr2	0.0015	1.766	-57
cad2	0.0665	3.238	183.7
mur2	0.0137	2.329	116.2
mck2	0.0883	3.2	220
namu2	0.3185	4.088	257
bir2	0.0240	2.656	139.7
pat2	0.0138	2.333	147.8
tir2	0.2773	3.992	253

merr2	0.0393	2.935	161.2

Lithology Name	Heat Capacity (kJ/m^3*deg C)	Heat Capacity Correction
Sandstone	2800	0
Siltstone	2650	0
Shale	2100	0
Limestone	2600	0
Dolomite	2600	0
Evaporite	1750	0
Coal	950	0
Igneous	2500	0
nam2	2621.	0
eyr2	2766.	0
win2	2564.	0
mac2	2575.	0
marr2	2293	0
cad2	2667.	0
mur2	2564.	0
mck2	2725	0
namu2	2780.	0
bir2	2600.	0
pat2	2412.	0
tir2	2774.	0
merr2	2633.	0

Lithology Fluid Flow Table

Lithology Name	Initial Porosity A	Initial Porosity B	A	B (1/Pa)	Fraction A
Sandstone	0.0000	0.4500	0.0000	1.350000e-08	0.000
Siltstone	0.5500	0.0000	-0.800	0.000000e+00	1.000
Shale	0.6000	0.0000	-0.800	0.000000e+00	1.000
Limestone	0.6000	0.0000	-0.800	0.000000e+00	1.000
Dolomite	0.6000	0.0000	-0.800	0.000000e+00	1.000
Evaporite	0.0000	0.0000	-0.800	1.350000e-08	0.000
Coal	0.9000	0.0000	-0.800	0.000000e+00	1.000
Igneous	0.0000	0.0000	-0.800	1.350000e-08	0.000
nam2	0.5625	0.4500	-0.800	1.350000e-08	0.620
eyr2	0.5500	0.4500	-0.800	1.350000e-08	0.225
win2	0.5625	0.4500	-0.800	1.350000e-08	0.820
mac2	0.5625	0.4500	-0.800	1.350000e-08	0.780
marr2	0.5843	0.4500	-0.800	1.350000e-08	0.960
cad2	0.5625	0.4500	-0.800	1.350000e-08	0.460
mur2	0.5625	0.4500	-0.800	1.350000e-08	0.820
mck2	0.5500	0.4500	-0.800	1.350000e-08	0.500
namu2	0.5500	0.4500	-0.800	1.350000e-08	0.130
bir2	0.5626	0.4500	-0.800	1.350000e-08	0.690
pat2	0.6120	0.4500	-0.800	1.350000e-08	0.750
tir2	0.5500	0.4500	-0.800	1.350000e-08	0.170
merr2	0.5625	0.4500	-0.800	1.350000e-08	0.580

Lithology Name	Initial Permeability (milliDarcys)	Permeability Power
Sandstone	2.786221e+04	5.500
Siltstone	1.013171e-01	5.500
Shale	1.013171e-01	5.500
Limestone	2.786221e+04	5.500
Dolomite	2.786221e+04	5.500
Evaporite	1.013171e-08	5.500

Coal	1.013171e-01	5.500
Igneous	1.013171e-08	5.500
nam2	1.182032e+01	5.500
eyr2	1.664047e+03	5.500
win2	9.655232e-01	5.500
mac2	1.593441e+00	5.500
marr2	1.672077e-01	5.500
cad2	8.768444e+01	5.500
mur2	9.655232e-01	5.500
mck2	5.313115e+01	5.500
namu2	5.468929e+03	5.500
bir2	4.918991e+00	5.500
pat2	2.320150e+00	5.500
tir2	3.313821e+03	5.500
merr2	1.950754e+01	5.500

Geothermal Gradient Table

Time (Ma)	Depth 1 (m)
0	0

Maturity conversion method: Table
TTI = 4.191876 + 1.817512 * log10(Ro)
Data fit: Least Squares

Model Units

Depth = (m)
Distance = (m)
Thermal Conductivity = (W/m*deg C)
Heat Capacity = (kJ/m^3*deg C)
Heat Flow = (mW/m^2)
Temperature = (deg C)
Heat Generation = (muW/m^3)
Gradient = (deg C/100 m)
Activation Energy = (kcal/mole)
Frequency Factor = (1/my)
HC Density = (g/cm^3)
Pressure = (MPa)
Grain Size = (mm)
Seismic Velocity = (m/s)
Event Time = (msec)
Maturity = (%Ro)
HC Generation = (mg/g TOC)

Calculation Options

Compaction = Sclater & Christie
Porosity Depth Method = Linear
Permeability Calculation = Modified Kozeny-Carman
Geothermal Calculation = Gradient
Maturity Calculation = LLNL
Expulsion Calculation = None
Time Interval = 1.00
Depth Interval = 1000.00
Integrate Depth = No

Advanced Options

TTI Reference Temp = 105.00
TTI Doubling Temp = 10.00
Rock-Eval Correction = 35.00
Thermal Gain = 1.000
Critical Fracturing Fraction = 0.850
Fracture Closure Rate = 0.050
Conductivity Calculation = Deming/Chapman

Initial S1 = 3.00

Rifting HF Options
Use Rifting Heat Flow = No
Start Rift Time = 0.00
End Rift Time = 0.00
Auto-Calc Beta = No
Rifting Heat Flow Beta = 2.00

Present Day Info
Model Name = TINGA-TINGANA-1
Model Description =
Current Surface Temp = 20.00
Current Elevation = 0.00
Current Heat Flow = 63.00

Seismic Parameters
Shot Point = 0
X = 0.00000000
Y = 0.00000000

```
+---------------------------------------------+
| BasinMod Data Report                        |
| Licensed to: Natn'l Centre for Petroleum Geology & Geophysics |
|              Mr. Peter Tingate              |
|     Version: 4.20                           |
|  Model Name: TINGA-TINGANA-1                |
|   File Name: TINGA-TINGANA-1 EROSION.mod    |
|        Date: Feb  5, 1996                   |
|        Time: 12:40 pm                       |
+---------------------------------------------+
```

Stratigraphy Table

Formation or Event Name	Type	Begin Age (Ma)	Well Top (m)	Present Thick (m)	Missing Thick (m)
QT/T	F	3.3	0	26	
EROSION-1	E	4.3			-26
MISSING SEC-1	D	5.3			26
NAMBA FM.	F	29.3	26	135	
EROSION-2	E	34			-29
MISSING SEC-2	D	38			29
EYRE FM.	F	60	161	57	
EROSION-3	E	75			-320
MISSING SEC-3	D	90			320
WINTON FM.	F	97.5	218	609	
MACKUNDA FM.	F	100	827	65	
MARREE SBGP.	F	117.5	892	172	
CADNA-OWIE FM.	F	135.5	1064	56	
MURTA FM.	F	141.5	1120	54	
McKINLAY Mbr.	F	145	1174	18	
NAMUR Sst.	F	165	1192	178	
BIRKHEAD FM.	F	175	1370	19	
HUTTON Sst.	F	188	1389	9	
EROSION-4	E	214.5			-286
MISSING SEC-4	D	264.5			286
PATCHAWARRA FM.	F	274	1398	285	
TIRRAWARRA Sst.	F	280	1683	70	
MERRIMELIA FM.	F	285.5	1753	509	

Formation or Event Name	Type	Lithology	Lith Pat
QT/T	F	Sandstone	
EROSION-1	E		
MISSING SEC-1	D	Sandstone	
NAMBA FM.	F	nam2	1
EROSION-2	E		
MISSING SEC-2	D	Sandstone	
EYRE FM.	F	eyr2	
EROSION-3	E		
MISSING SEC-3	D	Sandstone	
WINTON FM.	F	win2	
MACKUNDA FM.	F	mac2	
MARREE SBGP.	F	marr2	
CADNA-OWIE FM.	F	cad2	
MURTA FM.	F	mur2	
McKINLAY Mbr.	F	mck2	
NAMUR Sst.	F	namu2	
BIRKHEAD FM.	F	bir2	
HUTTON Sst.	F	Sandstone	
EROSION-4	E		
MISSING SEC-4	D	Sandstone	

PATCHAWARRA FM.	F	pat2
TIRRAWARRA Sst.	F	tir2
MERRIMELIA FM.	F	merr2

Lithology Mixes Table

Lithology Name	% Sandstone	% Siltstone	% Shale	% Kerogen	Total %
Sandstone	100				100.0
nam2	38	46.5	15.5		100.0
eyr2	77.5	22.5			100.0
win2	18	61.5	20.5		100.0
mac2	22	58.5	19.5		100.0
marr2	4	30	66		100.0
cad2	54	34.5	11.5		100.0
mur2	18	61.5	20.5		100.0
mck2	50	50			100.0
namu2	87	13			100.0
bir2	31	51.5	17.5		100.0
pat2	25	48	16	11	100.0
tir2	83	17			100.0
merr2	42	43.5	14.5		100.0

Lithology Values Table

Lithology Name	Initial Porosity	Compaction Factor (FM)	Exponential Factor (SC)	Density (g/cm^3)
Sandstone	0.45	1.75	0.27	2.64
Siltstone	0.55	2.2	0.41	2.64
Shale	0.6	2.4	0.51	2.6
Limestone	0.6	1.5	0.22	2.72
Dolomite	0.6	1.5	0.22	2.85
Evaporite	0	0	0	2.15
Coal	0.9	3.5	0.7	1.8
Igneous	0	0	0	2.65
nam2	0.51	2.06	0.37	2.633
eyr2	0.47	1.85	0.30	2.64
win2	0.54	2.16	0.40	2.631
mac2	0.53	2.14	0.39	2.632
marr2	0.57	2.31	0.47	2.613
cad2	0.50	1.98	0.34	2.635
mur2	0.54	2.16	0.40	2.631
mck2	0.5	1.97	0.34	2.64
namu2	0.46	1.80	0.28	2.64
bir2	0.52	2.09	0.38	2.633
pat2	0.57	2.26	0.42	2.541
tir2	0.46	1.82	0.29	2.64
merr2	0.51	2.04	0.36	2.634

Lithology Name	Grain Size (mm)	Matrix Conductivity (W/m*deg C)	Matrix Cond. Correction
Sandstone	0.5	4.4	270
Siltstone	0.0156	2	170
Shale	0.0004	1.5	-180
Limestone	0.5	2.9	350
Dolomite	0.5	4.8	300
Evaporite	0.0004	5.4	470
Coal	0.0004	0.3	250
Igneous	0.0001	2.9	380
nam2	0.0330	2.834	153.7
eyr2	0.2291	3.86	247.5
win2	0.0137	2.329	116.2
mac2	0.0163	2.430	123.7

marr2	0.0015	1.766	-57
cad2	0.0665	3.238	183.7
mur2	0.0137	2.329	116.2
mck2	0.0883	3.2	220
namu2	0.3185	4.088	257
bir2	0.0240	2.656	139.7
pat2	0.0138	2.333	147.8
tir2	0.2773	3.992	253
merr2	0.0393	2.935	161.2

Lithology Name	Heat Capacity (kJ/m^3*deg C)	Heat Capacity Correction
Sandstone	2800	0
Siltstone	2650	0
Shale	2100	0
Limestone	2600	0
Dolomite	2600	0
Evaporite	1750	0
Coal	950	0
Igneous	2500	0
nam2	2621.	0
eyr2	2766.	0
win2	2564.	0
mac2	2575.	0
marr2	2293	0
cad2	2667.	0
mur2	2564.	0
mck2	2725	0
namu2	2780.	0
bir2	2600.	0
pat2	2412.	0
tir2	2774.	0
merr2	2633.	0

Lithology Fluid Flow Table

Lithology Name	Initial Porosity A	Initial Porosity B	A	B (1/Pa)	Fraction A
Sandstone	0.0000	0.4500	0.0000	1.350000e-08	0.000
Siltstone	0.5500	0.0000	-0.800	0.000000e+00	1.000
Shale	0.6000	0.0000	-0.800	0.000000e+00	1.000
Limestone	0.6000	0.0000	-0.800	0.000000e+00	1.000
Dolomite	0.6000	0.0000	-0.800	0.000000e+00	1.000
Evaporite	0.0000	0.0000	-0.800	1.350000e-08	0.000
Coal	0.9000	0.0000	-0.800	0.000000e+00	1.000
Igneous	0.0000	0.0000	-0.800	1.350000e-08	0.000
nam2	0.5625	0.4500	-0.800	1.350000e-08	0.620
eyr2	0.5500	0.4500	-0.800	1.350000e-08	0.225
win2	0.5625	0.4500	-0.800	1.350000e-08	0.820
mac2	0.5625	0.4500	-0.800	1.350000e-08	0.780
marr2	0.5843	0.4500	-0.800	1.350000e-08	0.960
cad2	0.5625	0.4500	-0.800	1.350000e-08	0.460
mur2	0.5625	0.4500	-0.800	1.350000e-08	0.820
mck2	0.5500	0.4500	-0.800	1.350000e-08	0.500
namu2	0.5500	0.4500	-0.800	1.350000e-08	0.130
bir2	0.5626	0.4500	-0.800	1.350000e-08	0.690
pat2	0.6120	0.4500	-0.800	1.350000e-08	0.750
tir2	0.5500	0.4500	-0.800	1.350000e-08	0.170
merr2	0.5625	0.4500	-0.800	1.350000e-08	0.580

Lithology Name	Initial Permeability	Permeability Power

	(milliDarcys)	
Sandstone	2.786221e+04	5.500
Siltstone	1.013171e-01	5.500
Shale	1.013171e-01	5.500
Limestone	2.786221e+04	5.500
Dolomite	2.786221e+04	5.500
Evaporite	1.013171e-08	5.500
Coal	1.013171e-01	5.500
Igneous	1.013171e-08	5.500
nam2	1.182032e+01	5.500
eyr2	1.664047e+03	5.500
win2	9.655232e-01	5.500
mac2	1.593441e+00	5.500
marr2	1.672077e-01	5.500
cad2	8.768444e+01	5.500
mur2	9.655232e-01	5.500
mck2	5.313115e+01	5.500
namu2	5.468929e+03	5.500
bir2	4.918991e+00	5.500
pat2	2.320150e+00	5.500
tir2	3.313821e+03	5.500
merr2	1.950754e+01	5.500

Geothermal Gradient Table

Time (Ma)	Depth 1 (m)
0	0

Maturity conversion method: Table
TTI = 4.191876 + 1.817512 * log10(Ro)
Data fit: Least Squares

Model Units

Depth =	(m)
Distance =	(m)
Thermal Conductivity =	(W/m*deg C)
Heat Capacity =	(kJ/m^3*deg C)
Heat Flow =	(mW/m^2)
Temperature =	(deg C)
Heat Generation =	(muW/m^3)
Gradient =	(deg C/100 m)
Activation Energy =	(kcal/mole)
Frequency Factor =	(1/my)
HC Density =	(g/cm^3)
Pressure =	(MPa)
Grain Size =	(mm)
Seismic Velocity =	(m/s)
Event Time =	(msec)
Maturity =	(%Ro)
HC Generation =	(mg/g TOC)

Calculation Options

Compaction =	Sclater & Christie
Porosity Depth Method =	Linear
Permeability Calculation =	Modified Kozeny-Carman
Geothermal Calculation =	Gradient
Maturity Calculation =	LLNL
Expulsion Calculation =	None
Time Interval =	1.00
Depth Interval =	1000.00
Integrate Depth =	No

```
Advanced Options
           TTI Reference Temp = 105.00
            TTI Doubling Temp = 10.00
        Rock-Eval Correction = 35.00
                Thermal Gain = 1.000
Critical Fracturing Fraction = 0.850
       Fracture Closure Rate = 0.050
    Conductivity Calculation = Deming/Chapman
                  Initial S1 = 3.00

Rifting HF Options
       Use Rifting Heat Flow = No
             Start Rift Time = 0.00
               End Rift Time = 0.00
              Auto-Calc Beta = No
      Rifting Heat Flow Beta = 2.00

Present Day Info
                  Model Name = TINGA-TINGANA-1
           Model Description =
        Current Surface Temp = 20.00
           Current Elevation = 0.00
           Current Heat Flow = 63.00

Seismic Parameters
                  Shot Point = 0
                           X = 0.00000000
                           Y = 0.00000000
```

BasinMod Data Report
Licensed to: Natn'l Centre for Petroleum Geology & Geophysics
Mr. Peter Tingate
Version: 4.20
Model Name: TOOLACHEE-36
File Name: TOOLACHEE-36.mod
Date: Feb 5, 1996
Time: 12:41 pm

Stratigraphy Table

Formation or Event Name	Type	Begin Age (Ma)	Well Top (m)	Present Thick (m)	Lithology
QT/T	F	3.3	0	10	Sandstone
HIATUS-1	H	5.3			
NAMBA FM.	F	29.3	10	42	nam1
HIATUS-2	H	38			
EYRE FM.	F	60	52	77	eyr1
HIATUS-3	H	90			
WINTON FM.	F	97.5	129	552	win1
MACKUNDA FM.	F	100	681	100	mac1
ALLARU/OOD..	F	105.5	781	271	all1
COORIKIANA Sst.	F	108	1052	10	coo1
BULLDOG SHALE	F	117.5	1062	230	bull1
CADNA-OWIE FM.	F	135.5	1292	72	cad1
MURTA FM.	F	141.5	1364	52	mur1
McKINLAY Mbr.	F	145	1416	8	mck1
NAMUR Sst.	F	165	1424	225	namu1
BIRKHEAD FM.	F	175	1649	33	bir1
HUTTON Sst.	F	188	1682	69	hut1
POOLOWANNA FM.	F	193	1751	11	pool1
HIATUS-4	H	236.5			
NAPPAMERRI GP.	F	249	1762	35	napp1
TOOLACHEE FM.	F	253.5	1797	118	too1
HIATUS-5	H	256			
DARALINGIE FM.	F	258.5	1915	35	dara1
ROSENEATH SHALE	F	261.5	1950	33	rose1
EPSILON FM.	F	263.5	1983	65	epsi1
MURTEREE SHAle	F	264.5	2048	52	mutt1
PATCHAWARRA FM.	F	274	2100	43	pat1

Formation or Event Name	Type	Lith Pat
QT/T	F	
HIATUS-1	H	
NAMBA FM.	F	1
HIATUS-2	H	
EYRE FM.	F	
HIATUS-3	H	
WINTON FM.	F	
MACKUNDA FM.	F	
ALLARU/OOD..	F	
COORIKIANA Sst.	F	
BULLDOG SHALE	F	
CADNA-OWIE FM.	F	
MURTA FM.	F	
McKINLAY Mbr.	F	
NAMUR Sst.	F	
BIRKHEAD FM.	F	

HUTTON Sst.	F
POOLOWANNA FM.	F
HIATUS-4	H
NAPPAMERRI GP.	F
TOOLACHEE FM.	F
HIATUS-5	H
DARALINGIE FM.	F
ROSENEATH SHALE	F
EPSILON FM.	F
MURTEREE SHAle	F
PATCHAWARRA FM.	F

Lithology Mixes Table

Lithology Name	% Sandstone	% Siltstone	% Shale	% Kerogen	Total %
Sandstone	100				100.0
nam1	18	61.5	20.5		100.0
eyr1	84	12	4		100.0
win1	14.5	62	21	2.5	100.0
mac1	16	63	21		100.0
all1	8	69	23		100.0
coo1	50	50			100.0
bull1		20	80		100.0
cad1	52	36	12		100.0
mur1	8	69	23		100.0
mck1	40	45	15		100.0
namu1	88	9	3		100.0
bir1	24	55	18	3	100.0
hut1	82	18			100.0
pool1	14	49.5	16.5	20	100.0
napp1	26	55.5	18.5		100.0
too1	17	45	15	23	100.0
dara1	11	57	19	13	100.0
rose1		75	25		100.0
epsi1	10	63	21	6	100.0
mutt1		75	25		100.0
pat1	16	55.5	18.5	10	100.0

Lithology Values Table

Lithology Name	Initial Porosity	Compaction Factor (FM)	Exponential Factor (SC)	Density (g/cm^3)
Sandstone	0.45	1.75	0.27	2.64
Siltstone	0.55	2.2	0.41	2.64
Shale	0.6	2.4	0.51	2.6
Limestone	0.6	1.5	0.22	2.72
Dolomite	0.6	1.5	0.22	2.85
Evaporite	0	0	0	2.15
Coal	0.9	3.5	0.7	1.8
Igneous	0	0	0	2.65
nam1	0.54	2.16	0.40	2.631
eyr1	0.46	1.83	0.29	2.638
win1	0.55	2.20	0.41	2.610
mac1	0.54	2.17	0.40	2.631
all1	0.55	2.21	0.42	2.630
coo1	0.5	1.97	0.34	2.64
bull1	0.59	2.36	0.49	2.608
cad1	0.50	1.99	0.34	2.635
mur1	0.55	2.21	0.42	2.630
mck1	0.51	2.05	0.36	2.634
namu1	0.46	1.81	0.28	2.638
bir1	0.54	2.16	0.40	2.607
hut1	0.46	1.83	0.29	2.64

pool1	0.61	2.43	0.46	2.465
napp1	0.53	2.12	0.39	2.632
too1	0.62	2.45	0.46	2.440
dara1	0.59	2.35	0.45	2.523
rose1	0.56	2.25	0.43	2.63
epsi1	0.57	2.27	0.43	2.581
mutt1	0.56	2.25	0.43	2.63
pat1	0.57	2.29	0.43	2.548

Lithology Name	Grain Size (mm)	Matrix Conductivity (W/m*deg C)	Matrix Cond. Correction
Sandstone	0.5	4.4	270
Siltstone	0.0156	2	170
Shale	0.0004	1.5	-180
Limestone	0.5	2.9	350
Dolomite	0.5	4.8	300
Evaporite	0.0004	5.4	470
Coal	0.0004	0.3	250
Igneous	0.0001	2.9	380
nam1	0.0137	2.329	116.2
eyr1	0.2479	3.996	240
win1	0.0109	2.200	113
mac1	0.0125	2.279	112.5
all1	0.0088	2.077	97.5
coo1	0.0883	3.2	220
bull1	0.0008	1.6	-110
cad1	0.0609	3.188	180
mur1	0.0088	2.077	97.5
mck1	0.0360	2.885	157.5
namu1	0.2954	4.097	247.5
bir1	0.0166	2.435	133.4
hut1	0.2678	3.968	252
pool1	0.0066	1.913	142.2
napp1	0.0195	2.531	131.2
too1	0.0069	1.942	152.9
dara1	0.0070	1.948	124.9
rose1	0.0062	1.875	82.5
epsi1	0.0082	2.033	111.3
mutt1	0.0062	1.875	82.5
pat1	0.0095	2.121	129.2

Lithology Name	Heat Capacity (kJ/m^3*deg C)	Heat Capacity Correction
Sandstone	2800	0
Siltstone	2650	0
Shale	2100	0
Limestone	2600	0
Dolomite	2600	0
Evaporite	1750	0
Coal	950	0
Igneous	2500	0
nam1	2564.	0
eyr1	2754	0
win1	2513.	0
mac1	2558.	0
all1	2535.	0
coo1	2725	0
bull1	2210	0
cad1	2662	0
mur1	2535.	0
mck1	2627.	0
namu1	2765.	0

bir1	2536	0
hut1	2773	0
pool1	2240.	0
napp1	2587.	0
too1	2202	0
dara1	2341	0
rose1	2512.	0
epsi1	2447.	0
mutt1	2512.	0
pat1	2402.	0

Lithology Fluid Flow Table

Lithology Name	Initial Porosity A	Initial Porosity B	A	B (1/Pa)	Fraction A
Sandstone	0.0000	0.4500	0.0000	1.350000e-08	0.000
Siltstone	0.5500	0.0000	-0.800	0.000000e+00	1.000
Shale	0.6000	0.0000	-0.800	0.000000e+00	1.000
Limestone	0.6000	0.0000	-0.800	0.000000e+00	1.000
Dolomite	0.6000	0.0000	-0.800	0.000000e+00	1.000
Evaporite	0.0000	0.0000	-0.800	1.350000e-08	0.000
Coal	0.9000	0.0000	-0.800	0.000000e+00	1.000
Igneous	0.0000	0.0000	-0.800	1.350000e-08	0.000
nam1	0.5625	0.4500	-0.800	1.350000e-08	0.820
eyr1	0.5625	0.4500	-0.800	1.350000e-08	0.160
win1	0.5725	0.4500	-0.800	1.350000e-08	0.855
mac1	0.5625	0.4500	-0.800	1.350000e-08	0.840
all1	0.5625	0.4500	-0.800	1.350000e-08	0.920
coo1	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull1	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad1	0.5625	0.4500	-0.800	1.350000e-08	0.480
mur1	0.5625	0.4500	-0.800	1.350000e-08	0.920
mck1	0.5625	0.4500	-0.800	1.350000e-08	0.600
namu1	0.5625	0.4500	-0.800	1.350000e-08	0.120
bir1	0.5756	0.4500	-0.800	1.350000e-08	0.760
hut1	0.5500	0.4500	-0.800	1.350000e-08	0.180
pool1	0.6409	0.4500	-0.800	1.350000e-08	0.860
napp1	0.5625	0.4500	-0.800	1.350000e-08	0.740
too1	0.6560	0.4500	-0.800	1.350000e-08	0.830
dara1	0.6117	0.4500	-0.800	1.350000e-08	0.890
rose1	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi1	0.5850	0.4500	-0.800	1.350000e-08	0.900
mutt1	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat1	0.6026	0.4500	-0.800	1.350000e-08	0.840

Lithology Name	Initial Permeability (milliDarcys)	Permeability Power
Sandstone	2.786221e+04	5.500
Siltstone	1.013171e-01	5.500
Shale	1.013171e-01	5.500
Limestone	2.786221e+04	5.500
Dolomite	2.786221e+04	5.500
Evaporite	1.013171e-08	5.500
Coal	1.013171e-01	5.500
Igneous	1.013171e-08	5.500
nam1	9.655232e-01	5.500
eyr1	3.755972e+03	5.500
win1	6.228538e-01	5.500
mac1	7.515815e-01	5.500
all1	2.759494e-01	5.500
coo1	5.313115e+01	5.500

bull1	1.013171e-01	5.500
cad1	6.825522e+01	5.500
mur1	2.759494e-01	5.500
mck1	1.518504e+01	5.500
namu1	6.198629e+03	5.500
bir1	2.047023e+00	5.500
hut1	2.923719e+03	5.500
pool1	5.850452e-01	5.500
napp1	2.629719e+00	5.500
too1	8.518624e-01	5.500
dara1	4.017996e-01	5.500
rose1	1.013171e-01	5.500
epsi1	3.544999e-01	5.500
mutt1	1.013171e-01	5.500
pat1	7.515815e-01	5.500

Geothermal Gradient Table

Time (Ma)	Depth 1 (m)
0	0

Maturity conversion method: Table
TTI = 4.191876 + 1.817512 * log10(Ro)
Data fit: Least Squares

Model Units

Depth =	(m)
Distance =	(m)
Thermal Conductivity =	(W/m*deg C)
Heat Capacity =	(kJ/m^3*deg C)
Heat Flow =	(mW/m^2)
Temperature =	(deg C)
Heat Generation =	(muW/m^3)
Gradient =	(deg C/100 m)
Activation Energy =	(kcal/mole)
Frequency Factor =	(1/my)
HC Density =	(g/cm^3)
Pressure =	(MPa)
Grain Size =	(mm)
Seismic Velocity =	(m/s)
Event Time =	(msec)
Maturity =	(%Ro)
HC Generation =	(mg/g TOC)

Calculation Options

Compaction =	Sclater & Christie
Porosity Depth Method =	Linear
Permeability Calculation =	Modified Kozeny-Carman
Geothermal Calculation =	Gradient
Maturity Calculation =	LLNL
Expulsion Calculation =	None
Time Interval =	1.00
Depth Interval =	1000.00
Integrate Depth =	No

Advanced Options

TTI Reference Temp =	105.00
TTI Doubling Temp =	10.00
Rock-Eval Correction =	35.00
Thermal Gain =	1.000
Critical Fracturing Fraction =	0.850
Fracture Closure Rate =	0.050
Conductivity Calculation =	Deming/Chapman

```
                Initial S1 = 3.00

Rifting HF Options
       Use Rifting Heat Flow = No
             Start Rift Time = 0.00
               End Rift Time = 0.00
              Auto-Calc Beta = No
      Rifting Heat Flow Beta = 2.00

Present Day Info
                  Model Name = TOOLACHEE-36
           Model Description =
        Current Surface Temp = 20.00
           Current Elevation = 0.00
           Current Heat Flow = 63.00

Seismic Parameters
                  Shot Point = 0
                           X = 0.00000000
                           Y = 0.00000000
```

BasinMod Data Report
Licensed to: Natn'l Centre for Petroleum Geology & Geophysics
Mr. Peter Tingate
Version: 4.20
Model Name: TOOLACHEE-36 ERo.
File Name: TOOLACHEE-36 EROSION.mod
Date: Feb 5, 1996
Time: 12:42 pm

Stratigraphy Table

Formation or Event Name	Type	Begin Age (Ma)	Well Top (m)	Present Thick (m)	Missing Thick (m)
QT/T	F	3.3	0	10	
EROSION-1	E	4.3			-15
MISSING SEC-1	D	5.3			15
NAMBA FM.	F	29.3	10	42	
EROSION-2	E	34			-25
MISSING SEC-2	D	38			25
EYRE FM.	F	60	52	77	
EROSION-3	E	75			-260
MISSING SEC-3	D	90			260
WINTON FM.	F	97.5	129	552	
MACKUNDA FM.	F	100	681	100	
ALLARU/OOD..	F	105.5	781	271	
COORIKIANA Sst.	F	108	1052	10	
BULLDOG SHALE	F	117.5	1062	230	
CADNA-OWIE FM.	F	135.5	1292	72	
MURTA FM.	F	141.5	1364	52	
McKINLAY Mbr.	F	145	1416	8	
NAMUR Sst.	F	165	1424	225	
BIRKHEAD FM.	F	175	1649	33	
HUTTON Sst.	F	188	1682	69	
POOLOWANNA FM.	F	193	1751	11	
EROSION-4	E	213			-107
MISSING SEC-4	D	236.5			107
NAPPAMERRI GP.	F	249	1762	35	
TOOLACHEE FM.	F	253.5	1797	118	
EROSION-5	E	254.5			-147
MISSING SEC-5	D	256			147
DARALINGIE FM.	F	258.5	1915	35	
ROSENEATH SHALE	F	261.5	1950	33	
EPSILON FM.	F	263.5	1983	65	
MURTEREE SHAle	F	264.5	2048	52	
PATCHAWARRA FM.	F	274	2100	43	

Formation or Event Name	Type	Lithology	Lith Pat
QT/T	F	Sandstone	
EROSION-1	E		
MISSING SEC-1	D	Sandstone	
NAMBA FM.	F	nam1	1
EROSION-2	E		
MISSING SEC-2	D	Sandstone	
EYRE FM.	F	eyr1	
EROSION-3	E		
MISSING SEC-3	D	Sandstone	
WINTON FM.	F	win1	
MACKUNDA FM.	F	mac1	

ALLARU/OOD..	F	all1
COORIKIANA Sst.	F	coo1
BULLDOG SHALE	F	bull1
CADNA-OWIE FM.	F	cad1
MURTA FM.	F	mur1
McKINLAY Mbr.	F	mck1
NAMUR Sst.	F	namu1
BIRKHEAD FM.	F	bir1
HUTTON Sst.	F	hut1
POOLOWANNA FM.	F	pool1
EROSION-4	E	
MISSING SEC-4	D	Sandstone
NAPPAMERRI GP.	F	napp1
TOOLACHEE FM.	F	too1
EROSION-5	E	
MISSING SEC-5	D	Sandstone
DARALINGIE FM.	F	dara1
ROSENEATH SHALE	F	rose1
EPSILON FM.	F	epsi1
MURTEREE SHAle	F	mutt1
PATCHAWARRA FM.	F	pat1

Lithology Mixes Table

Lithology Name	% Sandstone	% Siltstone	% Shale	% Kerogen	Total %
Sandstone	100				100.0
nam1	18	61.5	20.5		100.0
eyr1	84	12	4		100.0
win1	14.5	62	21	2.5	100.0
mac1	16	63	21		100.0
all1	8	69	23		100.0
coo1	50	50			100.0
bull1		20	80		100.0
cad1	52	36	12		100.0
mur1	8	69	23		100.0
mck1	40	45	15		100.0
namu1	88	9	3		100.0
bir1	24	55	18	3	100.0
hut1	82	18			100.0
pool1	14	49.5	16.5	20	100.0
napp1	26	55.5	18.5		100.0
too1	17	45	15	23	100.0
dara1	11	57	19	13	100.0
rose1		75	25		100.0
epsi1	10	63	21	6	100.0
mutt1		75	25		100.0
pat1	16	55.5	18.5	10	100.0

Lithology Values Table

Lithology Name	Initial Porosity	Compaction Factor (FM)	Exponential Factor (SC)	Density (g/cm^3)
Sandstone	0.45	1.75	0.27	2.64
Siltstone	0.55	2.2	0.41	2.64
Shale	0.6	2.4	0.51	2.6
Limestone	0.6	1.5	0.22	2.72
Dolomite	0.6	1.5	0.22	2.85
Evaporite	0	0	0	2.15
Coal	0.9	3.5	0.7	1.8
Igneous	0	0	0	2.65
nam1	0.54	2.16	0.40	2.631
eyr1	0.46	1.83	0.29	2.638
win1	0.55	2.20	0.41	2.610

mac1	0.54	2.17	0.40	2.631
all1	0.55	2.21	0.42	2.630
coo1	0.5	1.97	0.34	2.64
bull1	0.59	2.36	0.49	2.608
cad1	0.50	1.99	0.34	2.635
mur1	0.55	2.21	0.42	2.630
mck1	0.51	2.05	0.36	2.634
namu1	0.46	1.81	0.28	2.638
bir1	0.54	2.16	0.40	2.607
hut1	0.46	1.83	0.29	2.64
pool1	0.61	2.43	0.46	2.465
napp1	0.53	2.12	0.39	2.632
too1	0.62	2.45	0.46	2.440
dara1	0.59	2.35	0.45	2.523
rose1	0.56	2.25	0.43	2.63
epsi1	0.57	2.27	0.43	2.581
mutt1	0.56	2.25	0.43	2.63
pat1	0.57	2.29	0.43	2.548

Lithology Name	Grain Size (mm)	Matrix Conductivity (W/m*deg C)	Matrix Cond. Correction
Sandstone	0.5	4.4	270
Siltstone	0.0156	2	170
Shale	0.0004	1.5	-180
Limestone	0.5	2.9	350
Dolomite	0.5	4.8	300
Evaporite	0.0004	5.4	470
Coal	0.0004	0.3	250
Igneous	0.0001	2.9	380
nam1	0.0137	2.329	116.2
eyr1	0.2479	3.996	240
win1	0.0109	2.200	113
mac1	0.0125	2.279	112.5
all1	0.0088	2.077	97.5
coo1	0.0883	3.2	220
bull1	0.0008	1.6	-110
cad1	0.0609	3.188	180
mur1	0.0088	2.077	97.5
mck1	0.0360	2.885	157.5
namu1	0.2954	4.097	247.5
bir1	0.0166	2.435	133.4
hut1	0.2678	3.968	252
pool1	0.0066	1.913	142.2
napp1	0.0195	2.531	131.2
too1	0.0069	1.942	152.9
dara1	0.0070	1.948	124.9
rose1	0.0062	1.875	82.5
epsi1	0.0082	2.033	111.3
mutt1	0.0062	1.875	82.5
pat1	0.0095	2.121	129.2

Lithology Name	Heat Capacity (kJ/m^3*deg C)	Heat Capacity Correction
Sandstone	2800	0
Siltstone	2650	0
Shale	2100	0
Limestone	2600	0
Dolomite	2600	0
Evaporite	1750	0
Coal	950	0
Igneous	2500	0
nam1	2564.	0

eyr1	2754	0
win1	2513.	0
mac1	2558.	0
all1	2535.	0
coo1	2725	0
bull1	2210	0
cad1	2662	0
mur1	2535.	0
mck1	2627.	0
namu1	2765.	0
bir1	2536	0
hut1	2773	0
pool1	2240.	0
napp1	2587.	0
too1	2202	0
dara1	2341	0
rose1	2512.	0
epsi1	2447.	0
mutt1	2512.	0
pat1	2402.	0

Lithology Fluid Flow Table

Lithology Name	Initial Porosity A	Initial Porosity B	A	B (1/Pa)	Fraction A
Sandstone	0.0000	0.4500	0.0000	1.350000e-08	0.000
Siltstone	0.5500	0.0000	-0.800	0.000000e+00	1.000
Shale	0.6000	0.0000	-0.800	0.000000e+00	1.000
Limestone	0.6000	0.0000	-0.800	0.000000e+00	1.000
Dolomite	0.6000	0.0000	-0.800	0.000000e+00	1.000
Evaporite	0.0000	0.0000	-0.800	1.350000e-08	0.000
Coal	0.9000	0.0000	-0.800	0.000000e+00	1.000
Igneous	0.0000	0.0000	-0.800	1.350000e-08	0.000
nam1	0.5625	0.4500	-0.800	1.350000e-08	0.820
eyr1	0.5625	0.4500	-0.800	1.350000e-08	0.160
win1	0.5725	0.4500	-0.800	1.350000e-08	0.855
mac1	0.5625	0.4500	-0.800	1.350000e-08	0.840
all1	0.5625	0.4500	-0.800	1.350000e-08	0.920
coo1	0.5500	0.4500	-0.800	1.350000e-08	0.500
bull1	0.5900	0.0000	-0.800	0.000000e+00	1.000
cad1	0.5625	0.4500	-0.800	1.350000e-08	0.480
mur1	0.5625	0.4500	-0.800	1.350000e-08	0.920
mck1	0.5625	0.4500	-0.800	1.350000e-08	0.600
namu1	0.5625	0.4500	-0.800	1.350000e-08	0.120
bir1	0.5756	0.4500	-0.800	1.350000e-08	0.760
hut1	0.5500	0.4500	-0.800	1.350000e-08	0.180
pool1	0.6409	0.4500	-0.800	1.350000e-08	0.860
napp1	0.5625	0.4500	-0.800	1.350000e-08	0.740
too1	0.6560	0.4500	-0.800	1.350000e-08	0.830
dara1	0.6117	0.4500	-0.800	1.350000e-08	0.890
rose1	0.5625	0.0000	-0.800	0.000000e+00	1.000
epsi1	0.5850	0.4500	-0.800	1.350000e-08	0.900
mutt1	0.5625	0.0000	-0.800	0.000000e+00	1.000
pat1	0.6026	0.4500	-0.800	1.350000e-08	0.840

Lithology Name	Initial Permeability (milliDarcys)	Permeability Power
Sandstone	2.786221e+04	5.500
Siltstone	1.013171e-01	5.500
Shale	1.013171e-01	5.500
Limestone	2.786221e+04	5.500

Dolomite	2.786221e+04	5.500
Evaporite	1.013171e-08	5.500
Coal	1.013171e-01	5.500
Igneous	1.013171e-08	5.500
nam1	9.655232e-01	5.500
eyr1	3.755972e+03	5.500
win1	6.228538e-01	5.500
mac1	7.515815e-01	5.500
all1	2.759494e-01	5.500
coo1	5.313115e+01	5.500
bull1	1.013171e-01	5.500
cad1	6.825522e+01	5.500
mur1	2.759494e-01	5.500
mck1	1.518504e+01	5.500
namu1	6.198629e+03	5.500
bir1	2.047023e+00	5.500
hut1	2.923719e+03	5.500
pool1	5.850452e-01	5.500
napp1	2.629719e+00	5.500
too1	8.518624e-01	5.500
dara1	4.017996e-01	5.500
rose1	1.013171e-01	5.500
epsi1	3.544999e-01	5.500
mutt1	1.013171e-01	5.500
pat1	7.515815e-01	5.500

Geothermal Gradient Table

Time (Ma)	Depth 1 (m)
0	0

Maturity conversion method: Table
TTI = 4.191876 + 1.817512 * log10(Ro)
Data fit: Least Squares

Model Units

Depth =	(m)
Distance =	(m)
Thermal Conductivity =	(W/m*deg C)
Heat Capacity =	(kJ/m^3*deg C)
Heat Flow =	(mW/m^2)
Temperature =	(deg C)
Heat Generation =	(muW/m^3)
Gradient =	(deg C/100 m)
Activation Energy =	(kcal/mole)
Frequency Factor =	(1/my)
HC Density =	(g/cm^3)
Pressure =	(MPa)
Grain Size =	(mm)
Seismic Velocity =	(m/s)
Event Time =	(msec)
Maturity =	(%Ro)
HC Generation =	(mg/g TOC)

Calculation Options

Compaction =	Sclater & Christie
Porosity Depth Method =	Linear
Permeability Calculation =	Modified Kozeny-Carman
Geothermal Calculation =	Gradient
Maturity Calculation =	LLNL
Expulsion Calculation =	None
Time Interval =	1.00
Depth Interval =	1000.00

Integrate Depth = No

Advanced Options

TTI Reference Temp = 105.00
TTI Doubling Temp = 10.00
Rock-Eval Correction = 35.00
Thermal Gain = 1.000
Critical Fracturing Fraction = 0.850
Fracture Closure Rate = 0.050
Conductivity Calculation = Deming/Chapman
Initial S1 = 3.00

Rifting HF Options

Use Rifting Heat Flow = No
Start Rift Time = 0.00
End Rift Time = 0.00
Auto-Calc Beta = No
Rifting Heat Flow Beta = 2.00

Present Day Info

Model Name = TOOLACHEE-36 ERo.
Model Description =
Current Surface Temp = 20.00
Current Elevation = 0.00
Current Heat Flow = 63.00

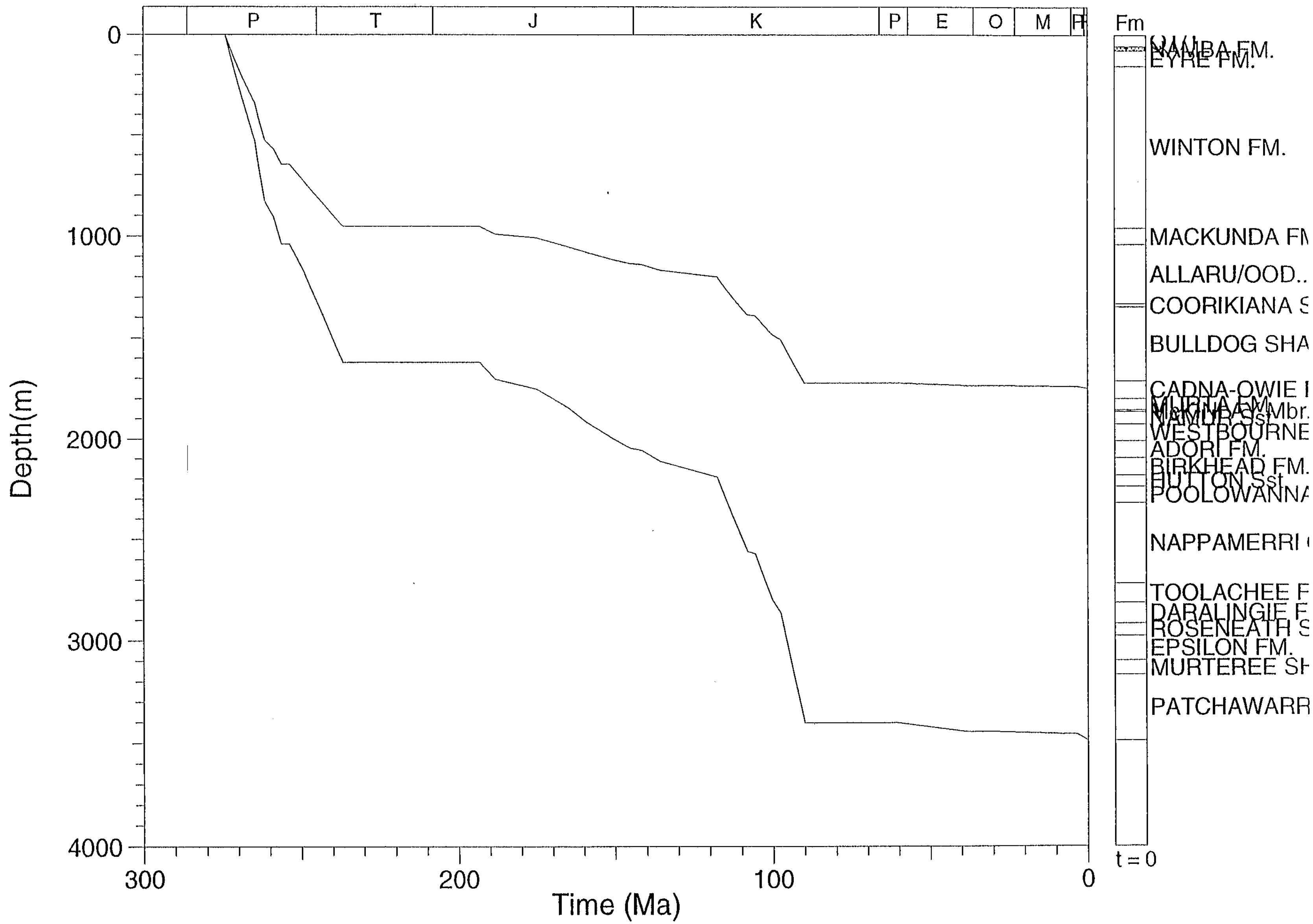
Seismic Parameters

Shot Point = 0
X = 0.00000000
Y = 0.00000000

APPENDIX II

BURIAL HISTORY AND INTERPRETIVE BURIAL HISTORY DIAGRAMS

BULYEROO-1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TG=1;TI=1;EXP=None
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T
J
K
P
E
O
M
R
Fm
0
1000
2000
3000
4000
Depth(m)
300
200
100
0
Time (Ma)
t = 0
NAMBA FM.
EYRE FM.
WINTON FM.
MACKUNDA FM
ALLARU/OOD..
COORIKIANA S
BULLDOG SHA
CADNA-OWIE F
WESTBOURNE
ADORI FM.
BIRKHEAD FM.
HUTTON Sst.
POOLOWANNA
NAPPAMERRI
TOOLACHEE F
DARALINGIE F
ROSENEATH S
EPSILON FM.
MURTEREE SH
PATCHAWARR

BULYEROO-1

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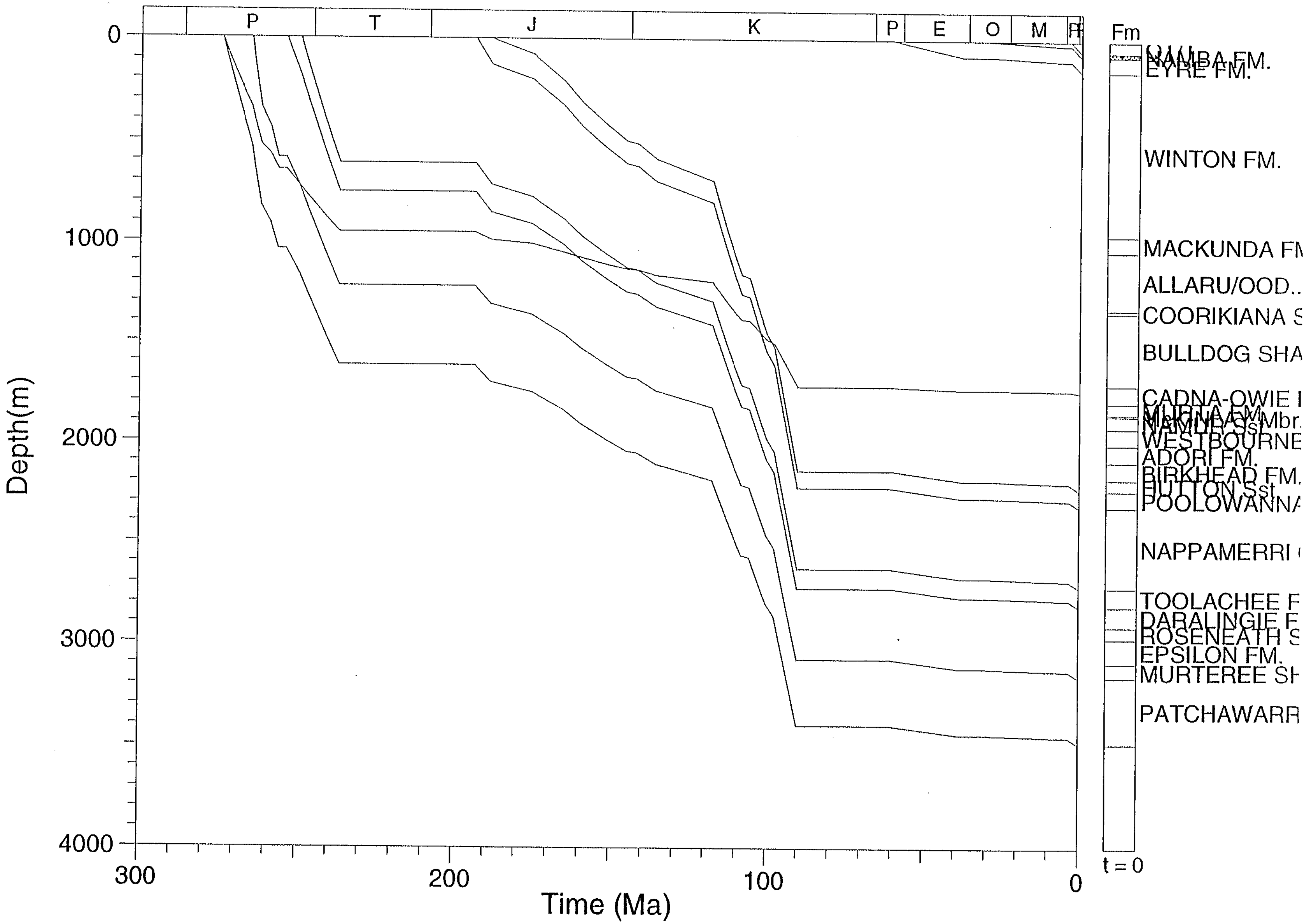

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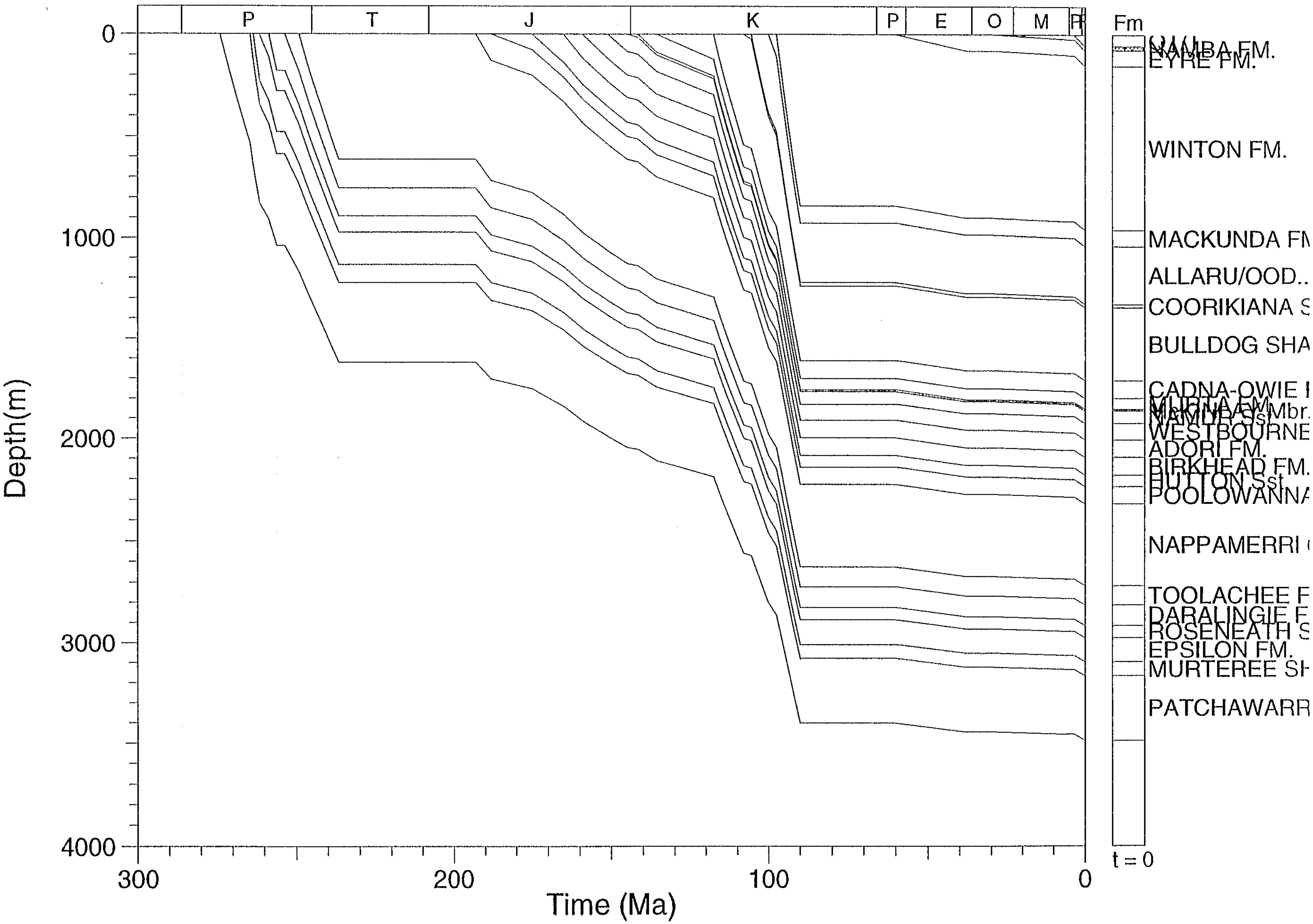

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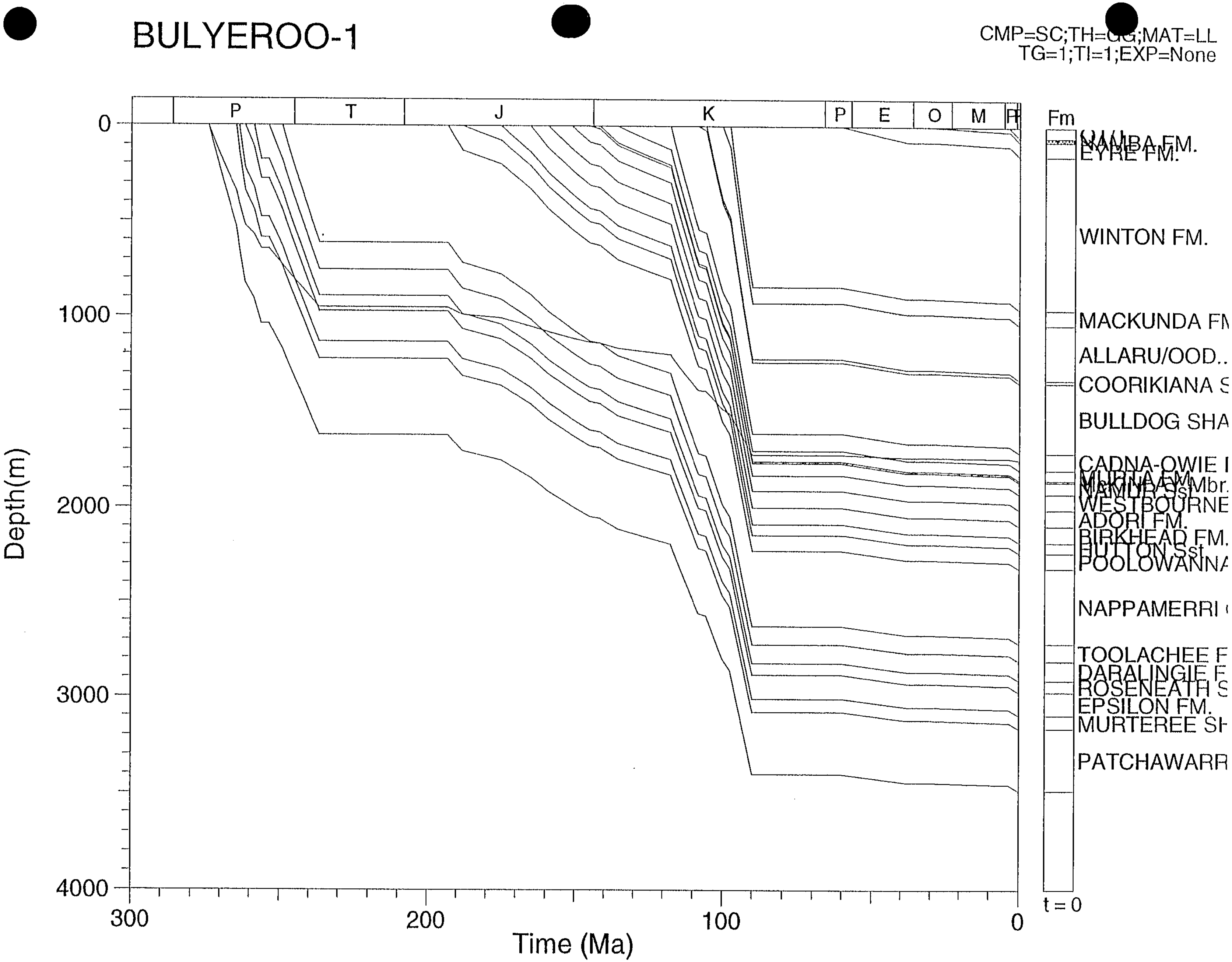

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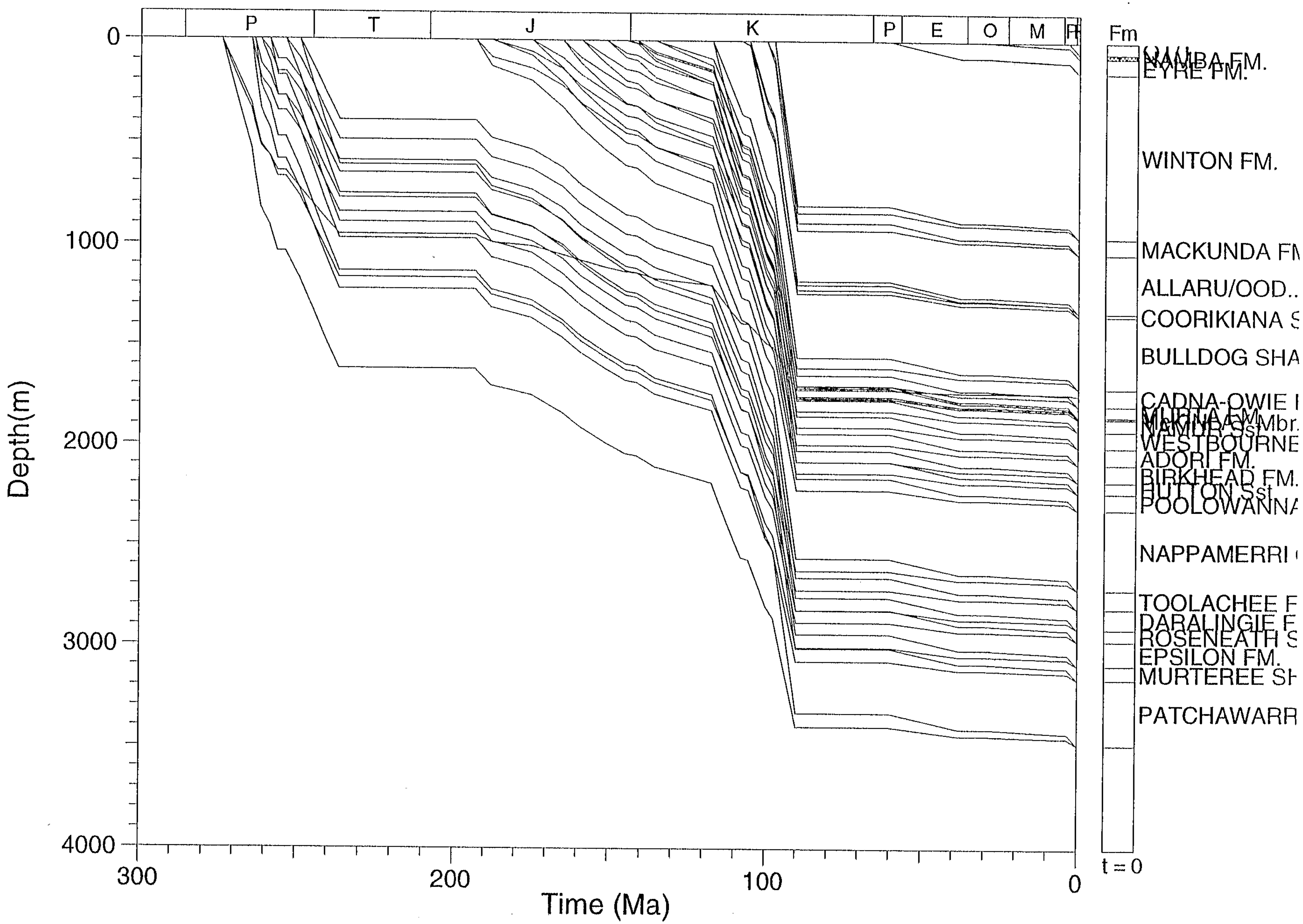
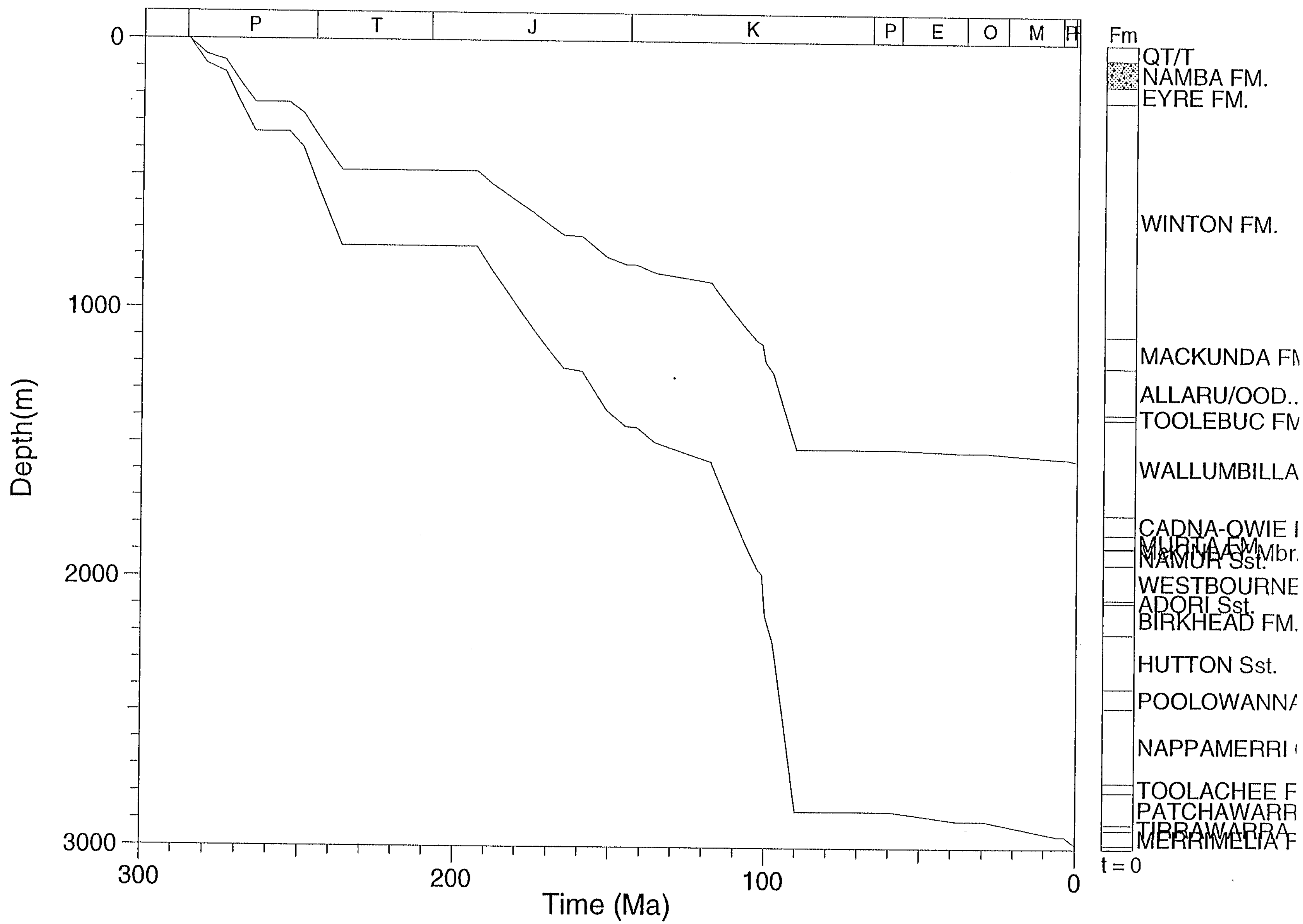
TG=1;TI=1;EXP=None
P
T
J
K
P
E
O
M
Fm
NAMBA FM.
EYRE FM.
WINTON FM.
MACKUNDA FM
ALLARU/OOD..
COORIKIANA S
BULLDOG SHA
CADNA-OWIE
WESTBOURNE
ADORI FM.
BIRKHEAD FM.
HUTTON Sst.
POOLOWANNA
NAPPAMERRI
TOOLACHEE F
DARALINGIE F
ROSENEATH S
EPSILON FM.
MURTEREE SH
PATCHAWARR
t = 0
Depth(m)
0
1000
2000
3000
4000
300
200
100
0
Time (Ma)

BULYEROO-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None

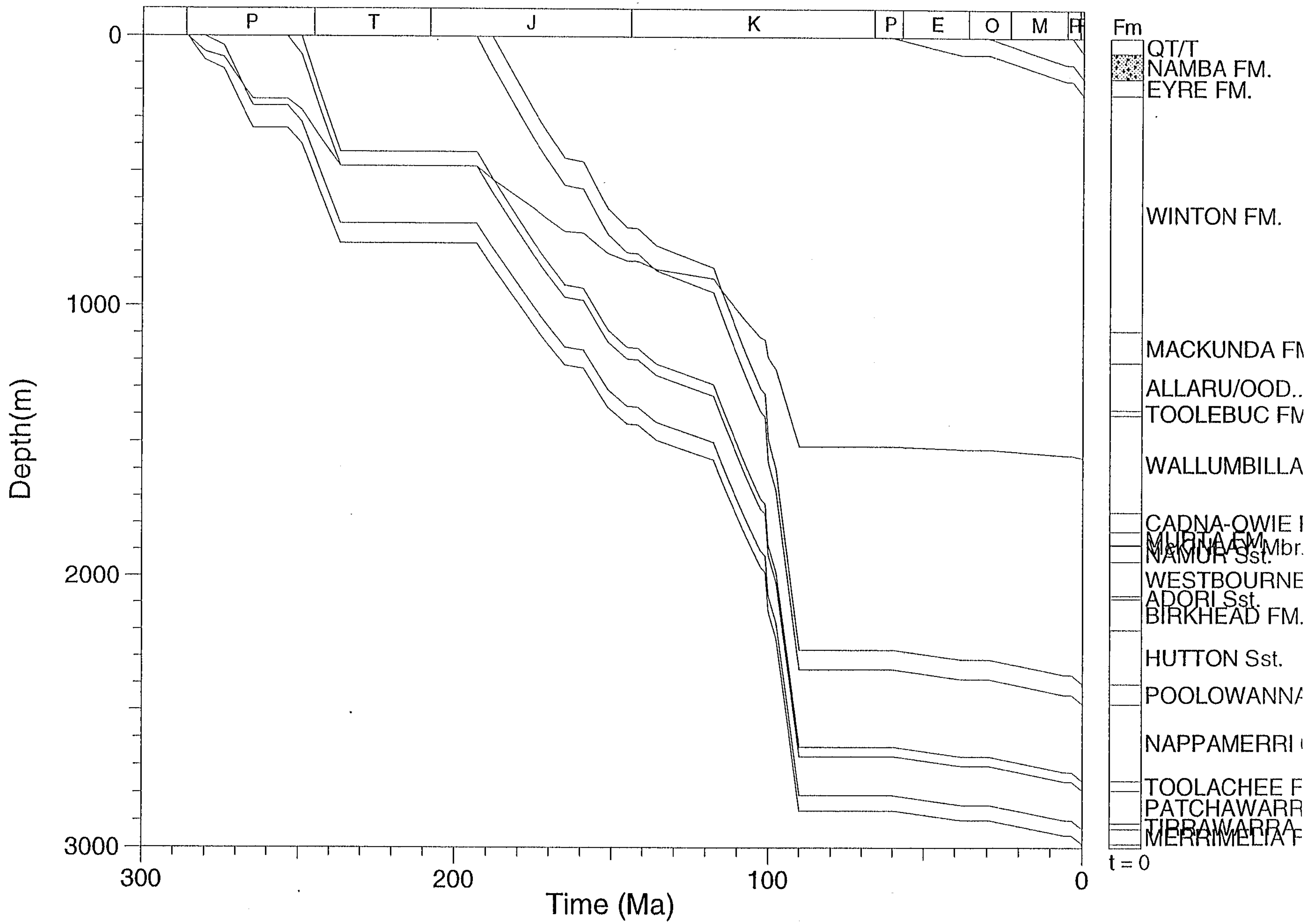


CUTTAPIRRIE-1

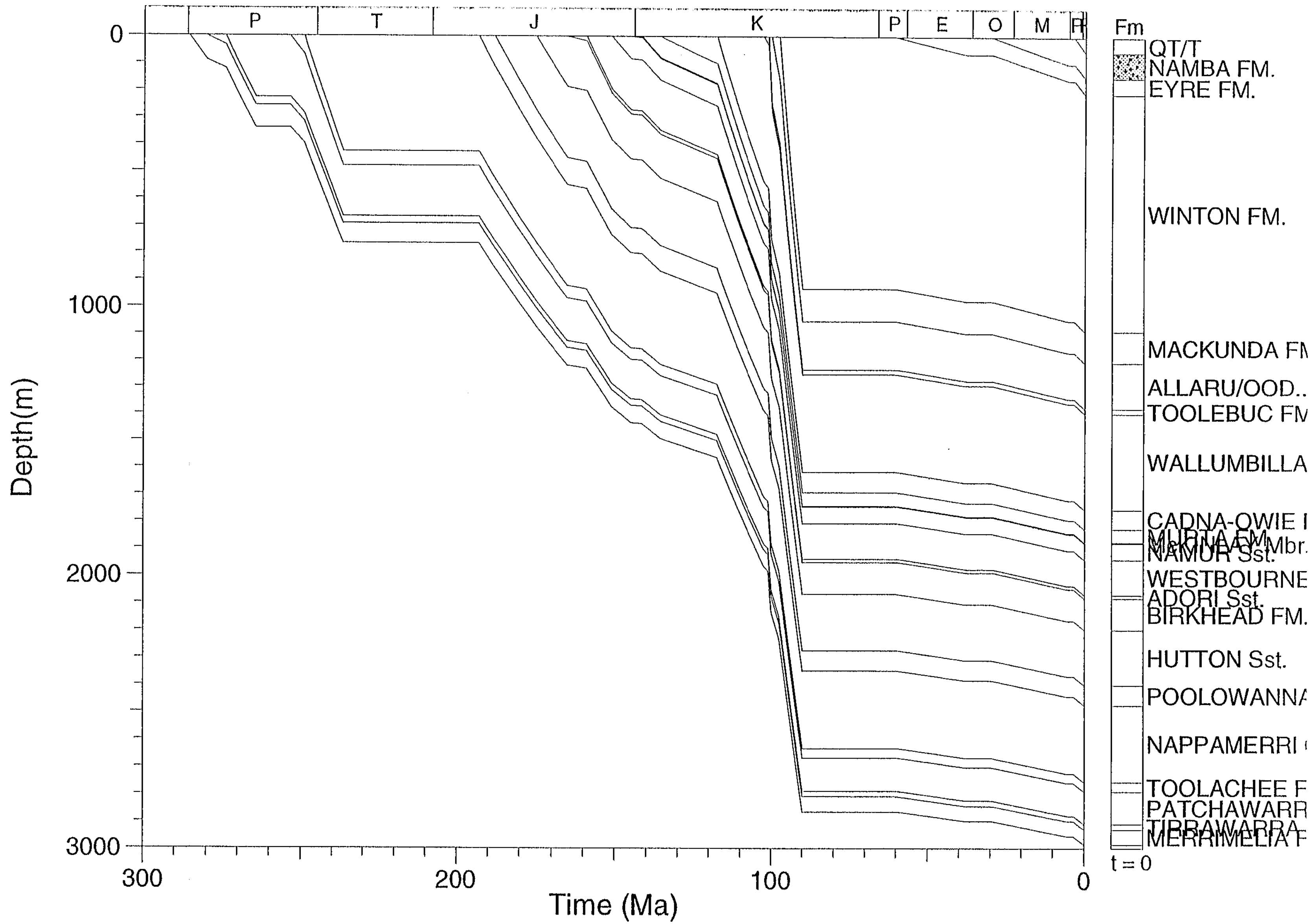


CUTTAPIRRIE-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



CUTTAPIRRIE-1



CUTTAPIRRIE-1

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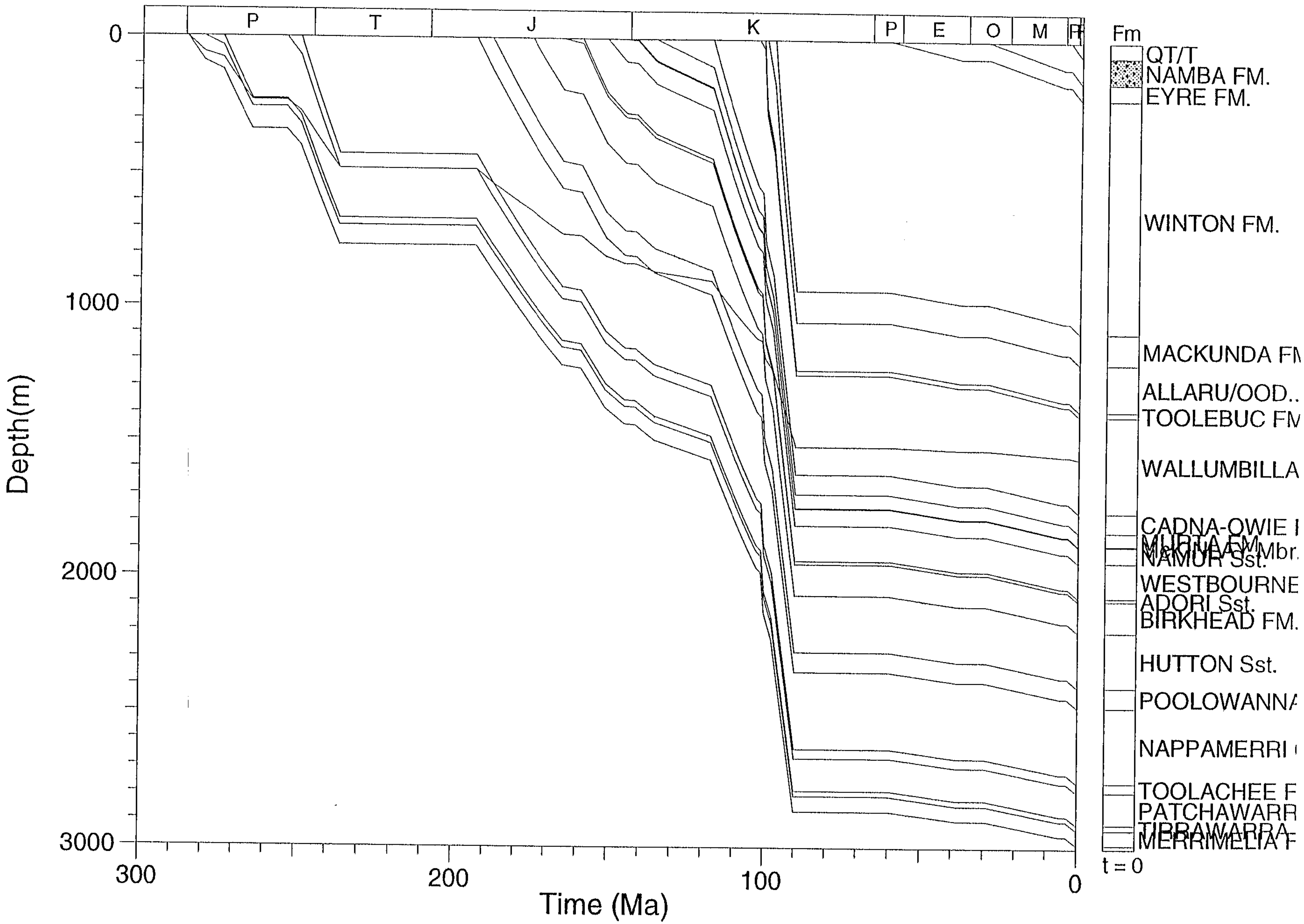
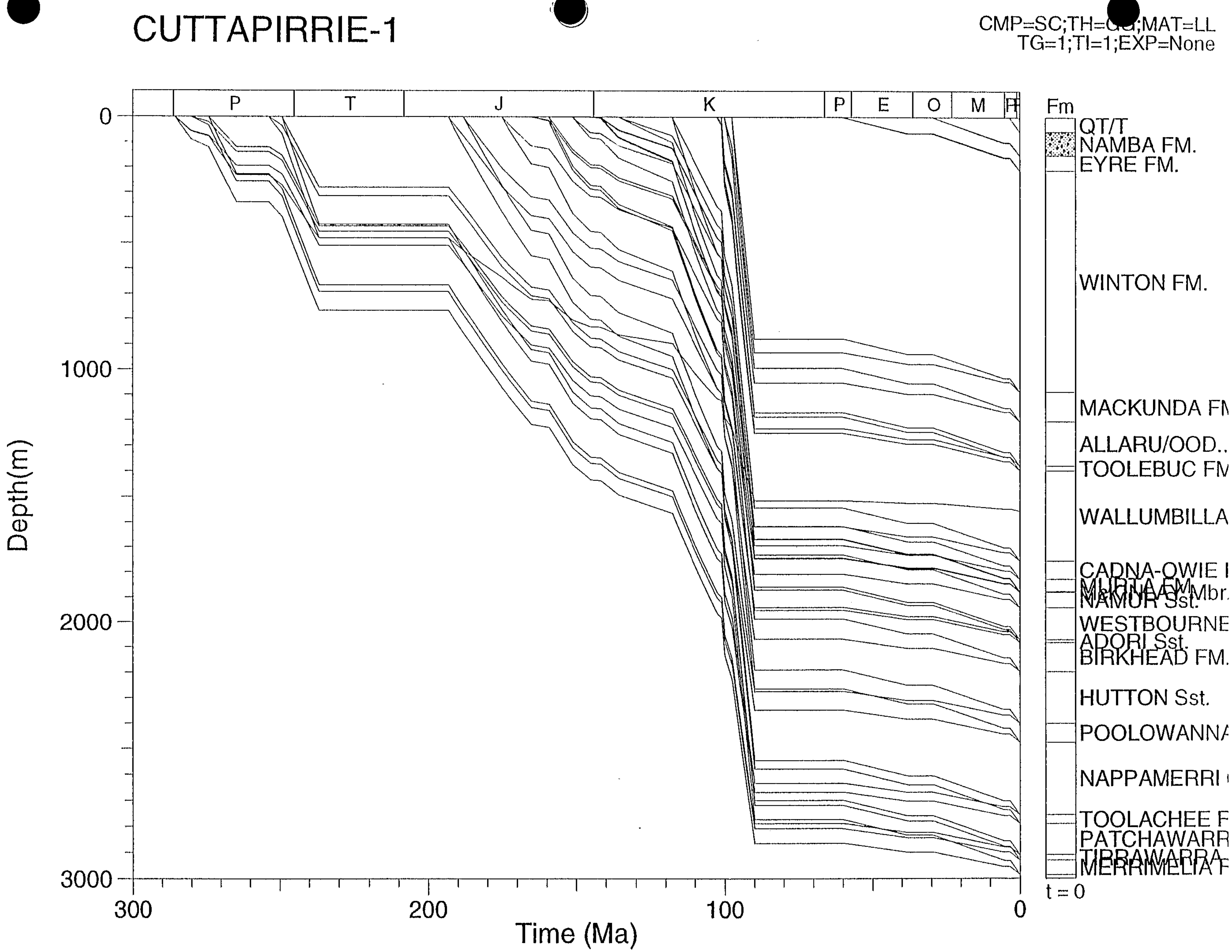
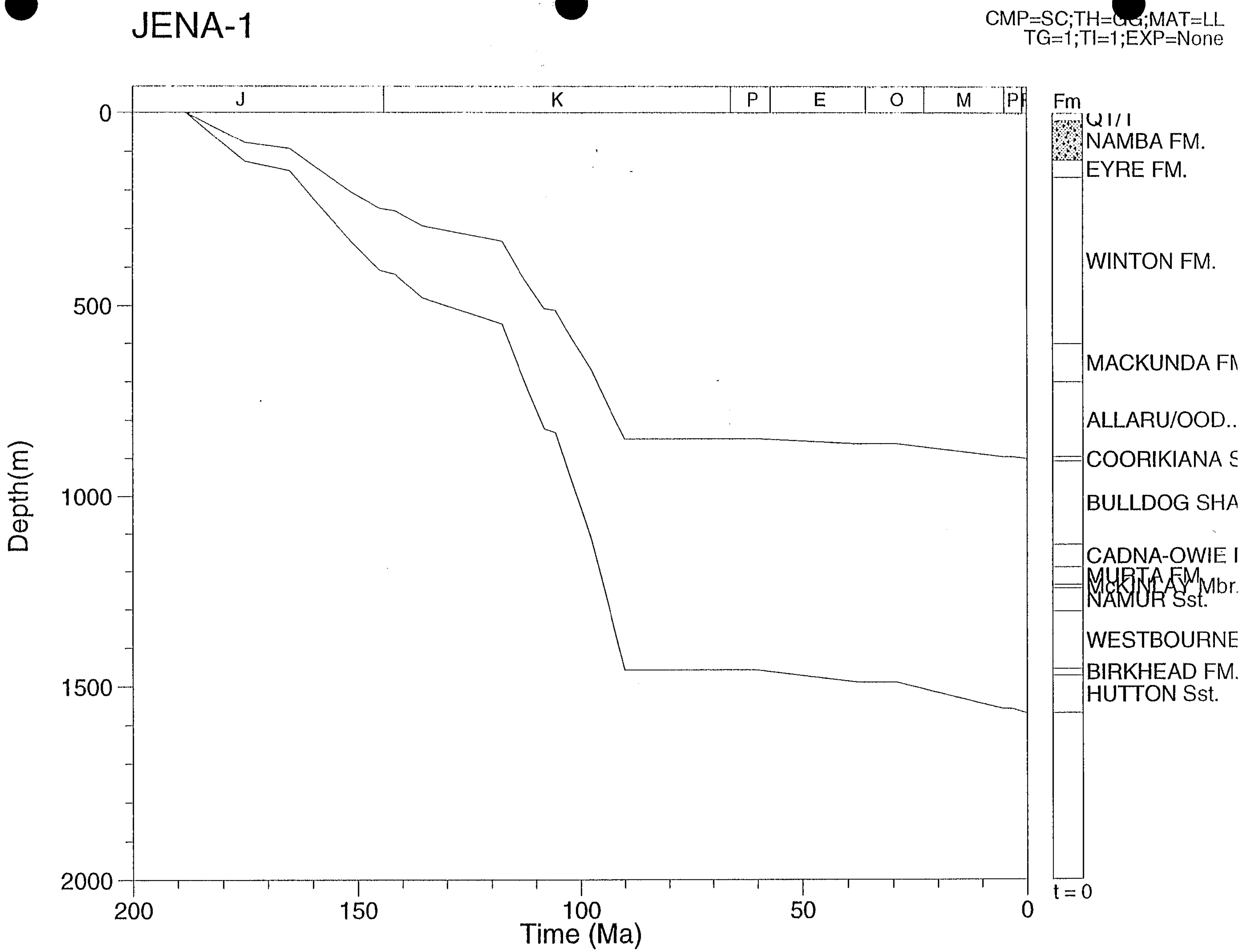
TG=1;TI=1;EXP=None



CUTTAPIRRIE-1

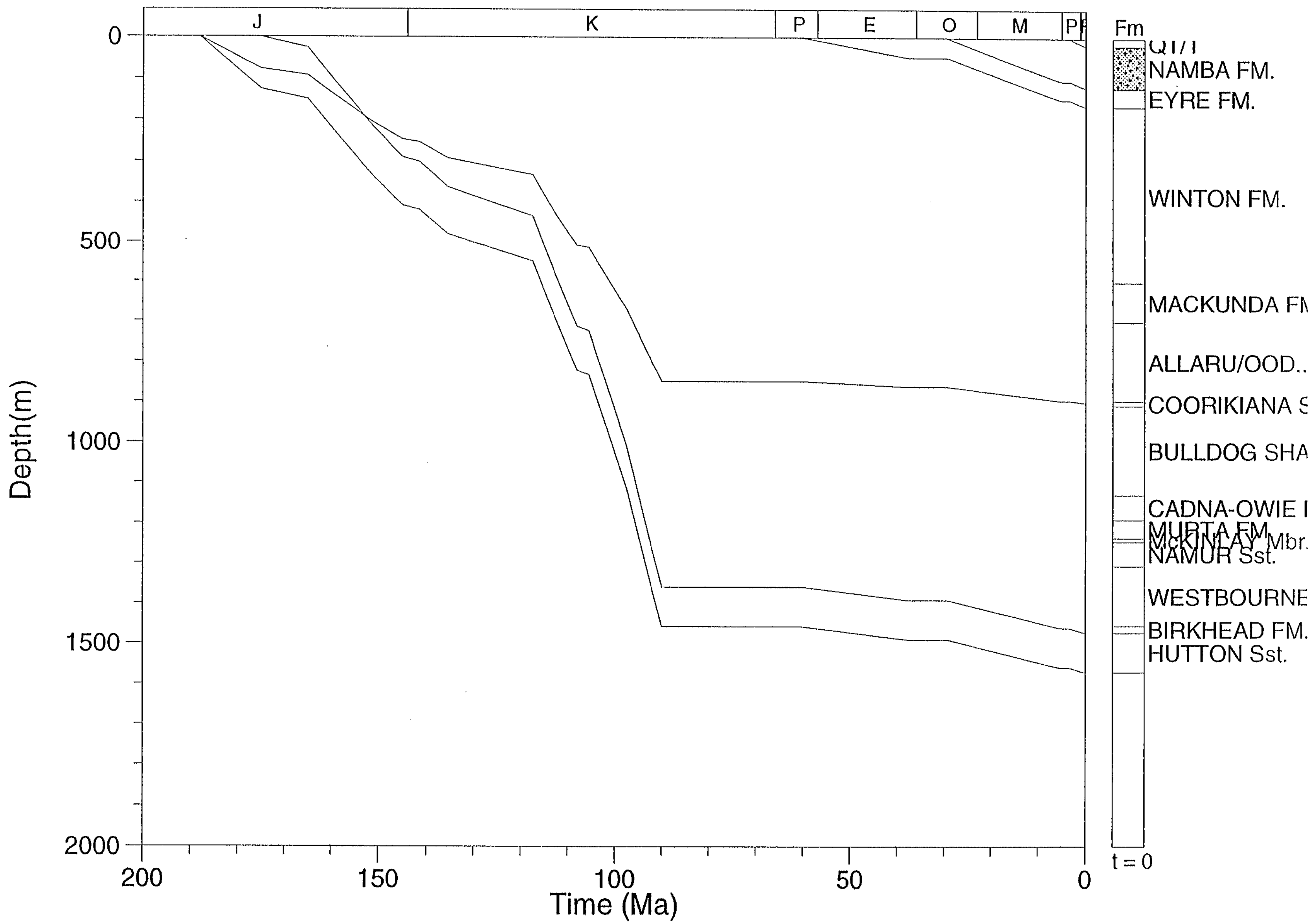




JENA-1
CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None
J
K
P
E
O
M
Fm
NAMBA FM.
EYRE FM.
WINTON FM.
MACKUNDA FM
ALLARU/OOD..
COORIKIANA S
BULLDOG SHA
CADNA-OWIE
MURTA FM.
McKINLAY Mbr.
NAMUR Sst.
WESTBOURNE
BIRKHEAD FM.
HUTTON Sst.
t = 0
Depth(m)
0
500
1000
1500
2000
200
150
100
50
0
Time (Ma)

JENA-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



JENA-1

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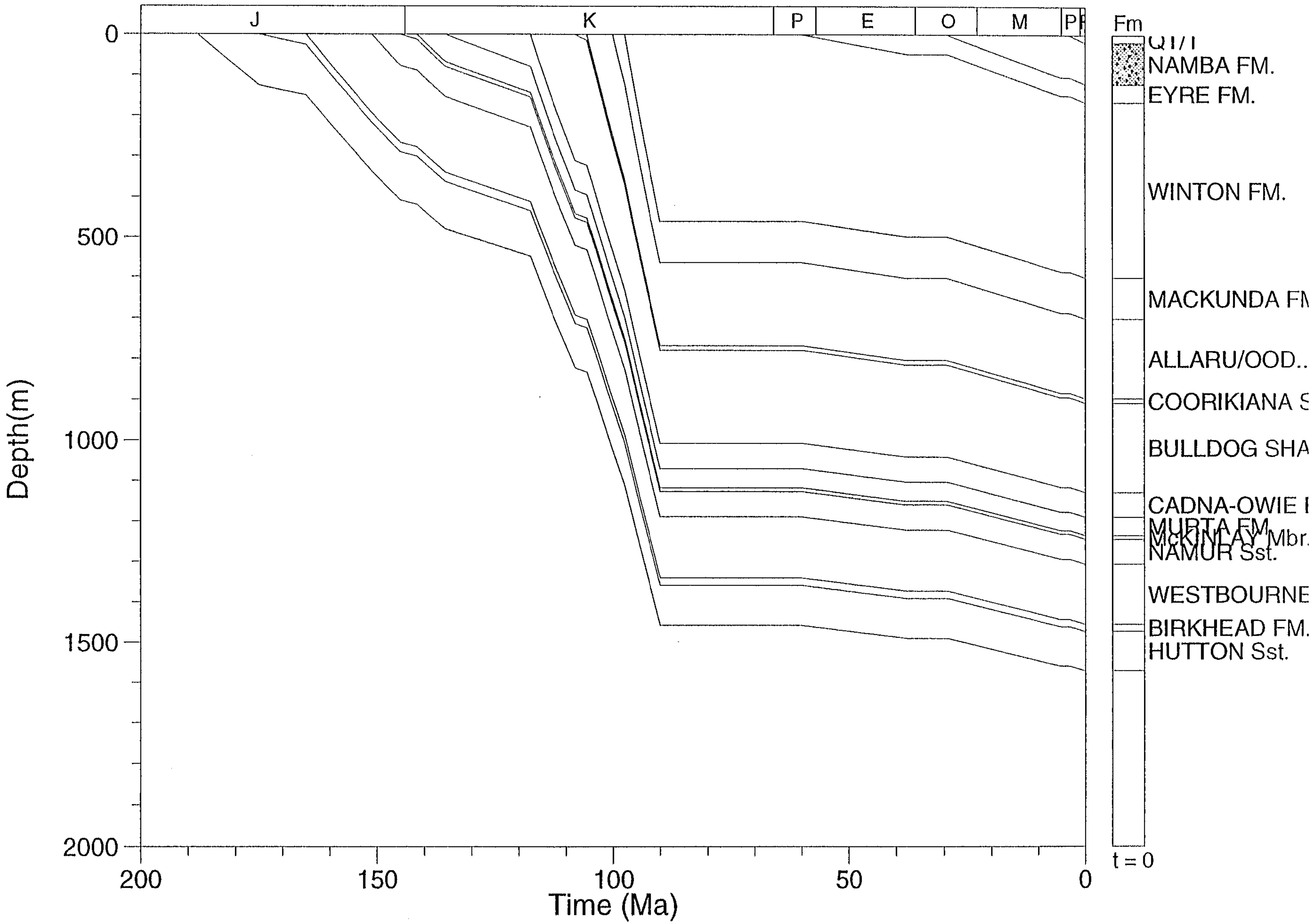
TG=1;TI=1;EXP=None



JENA-1

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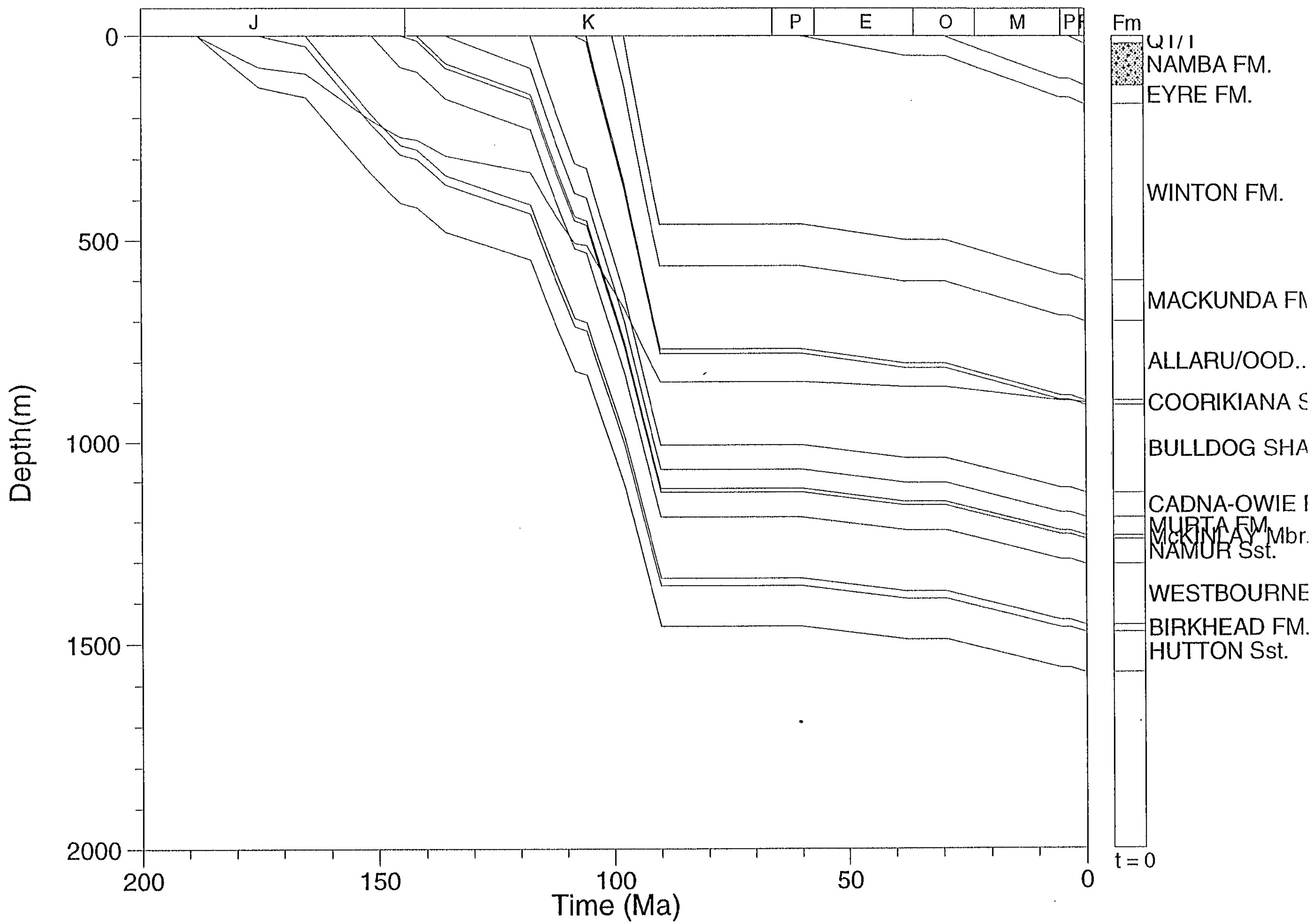
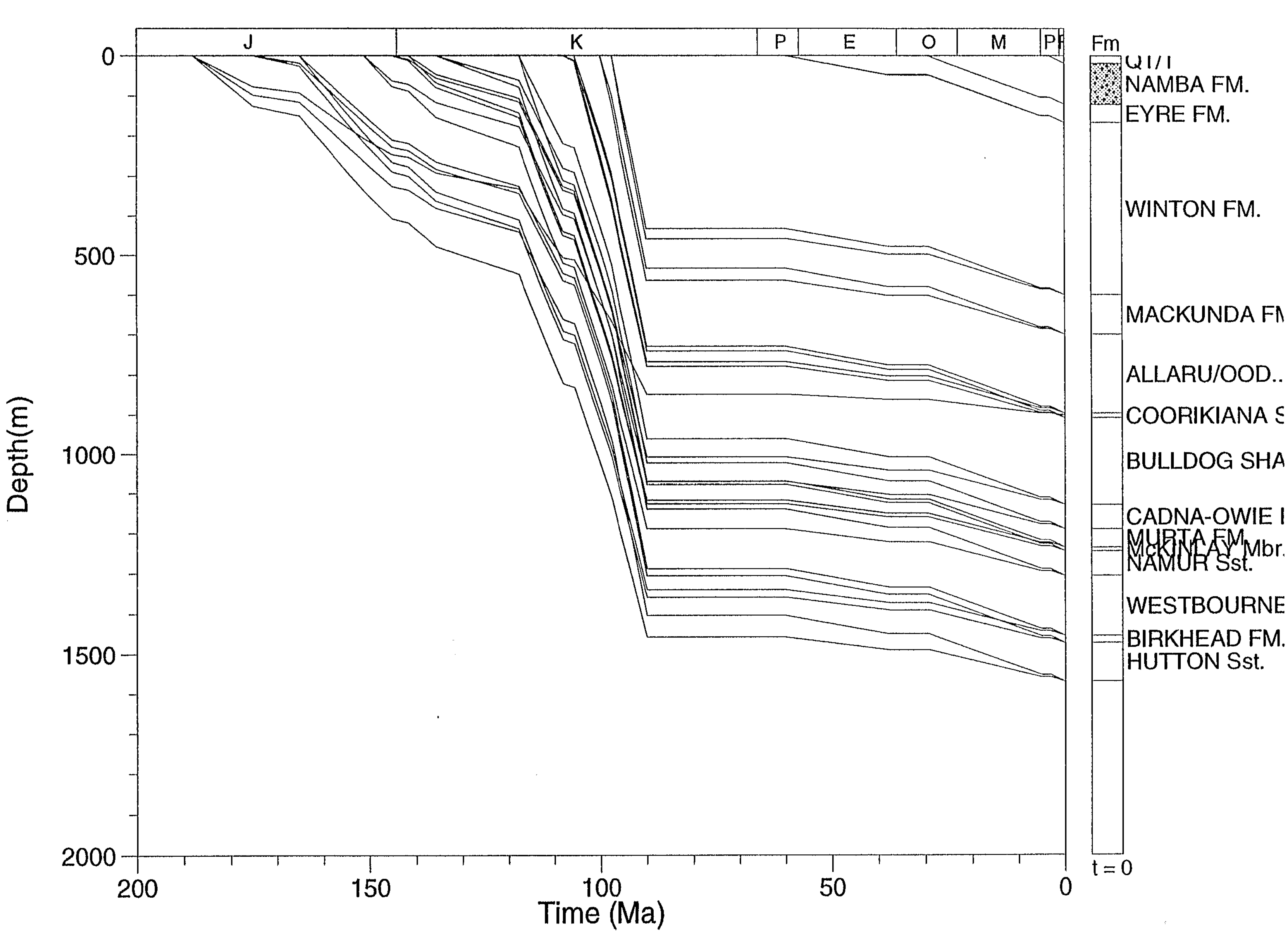
TG=1;TI=1;EXP=None



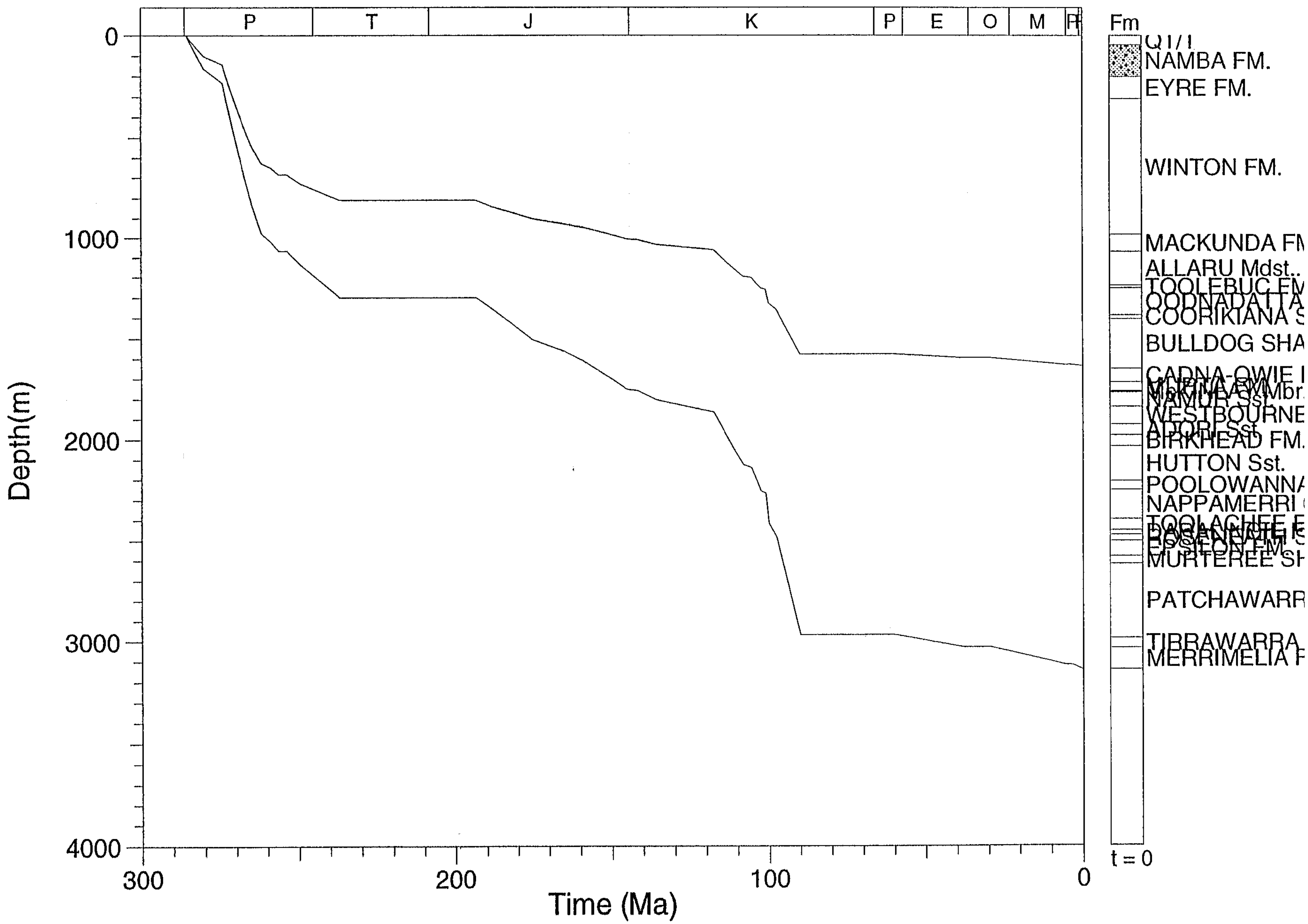
JENA-1



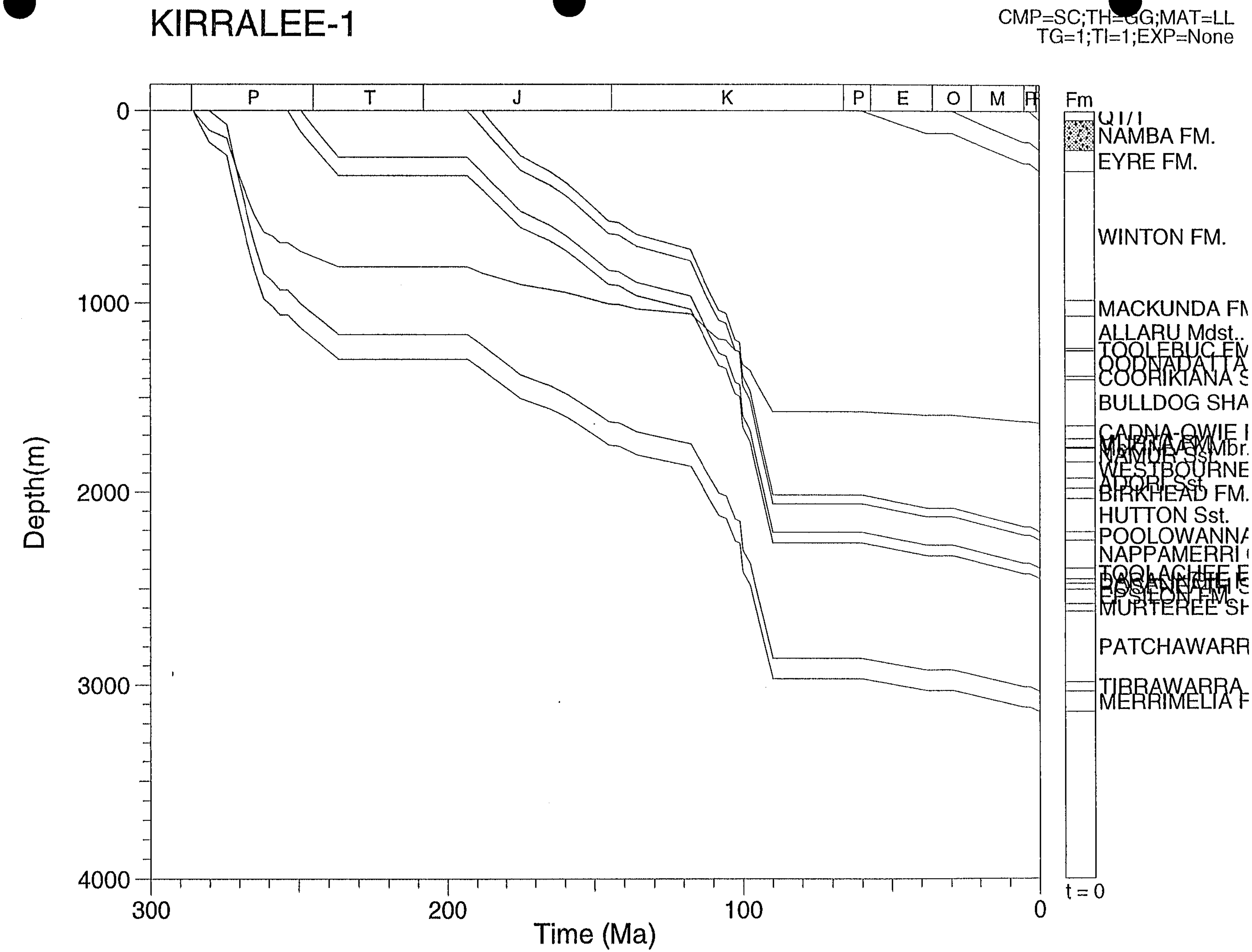
CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None
J
K
P
E
O
M
Fm
NAMBA FM.
EYRE FM.
WINTON FM.
MACKUNDA FM
ALLARU/OOD..
COORIKIANA S
BULLDOG SHA
CADNA-OWIE
MURTA FM.
McKINLAY Mbr.
NAMUR Sst.
WESTBOURNE
BIRKHEAD FM.
HUTTON Sst.
t = 0
Depth(m)
0
500
1000
1500
2000
200
150
100
50
0
Time (Ma)

KIRRALEE-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None

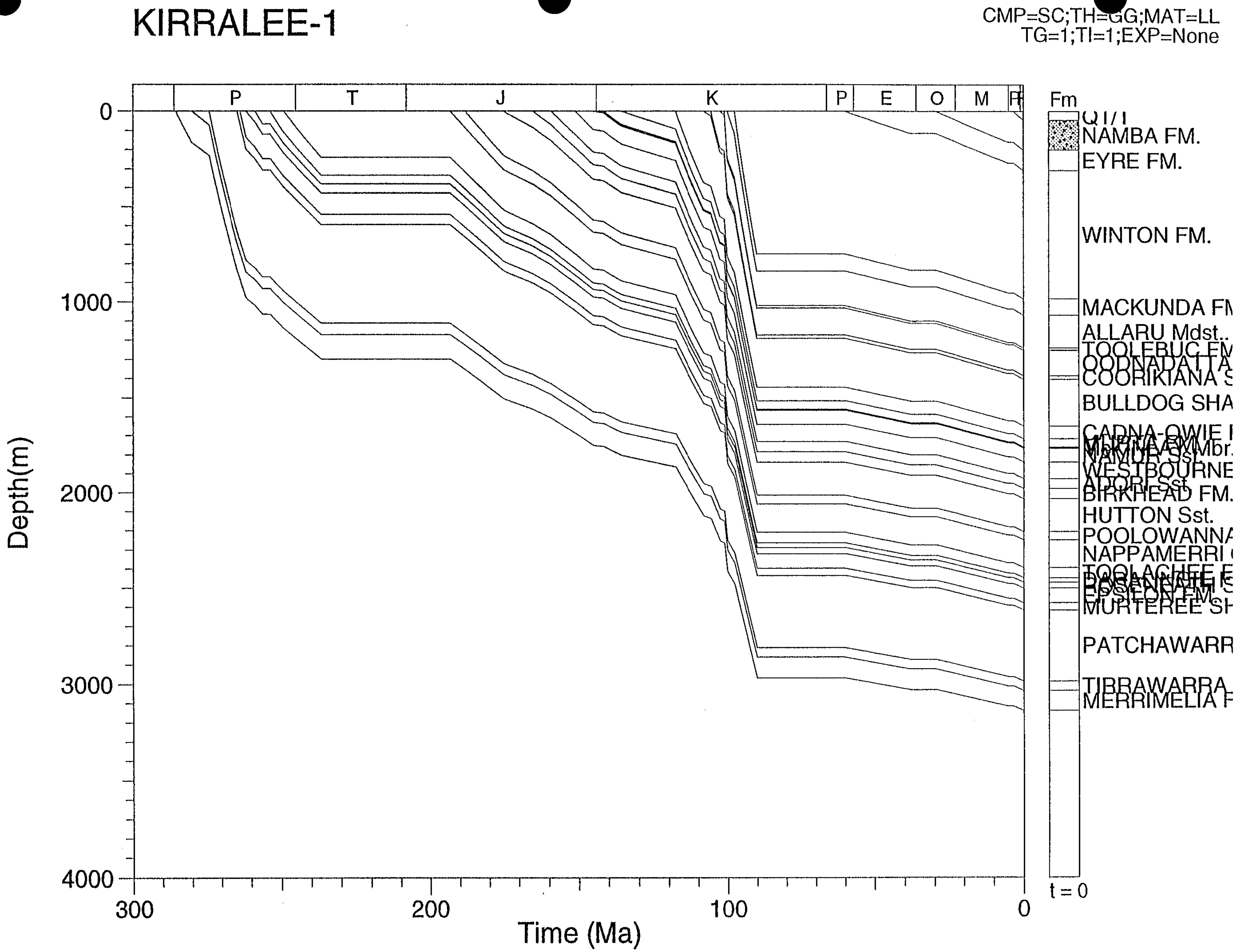


KIRRALEE-1

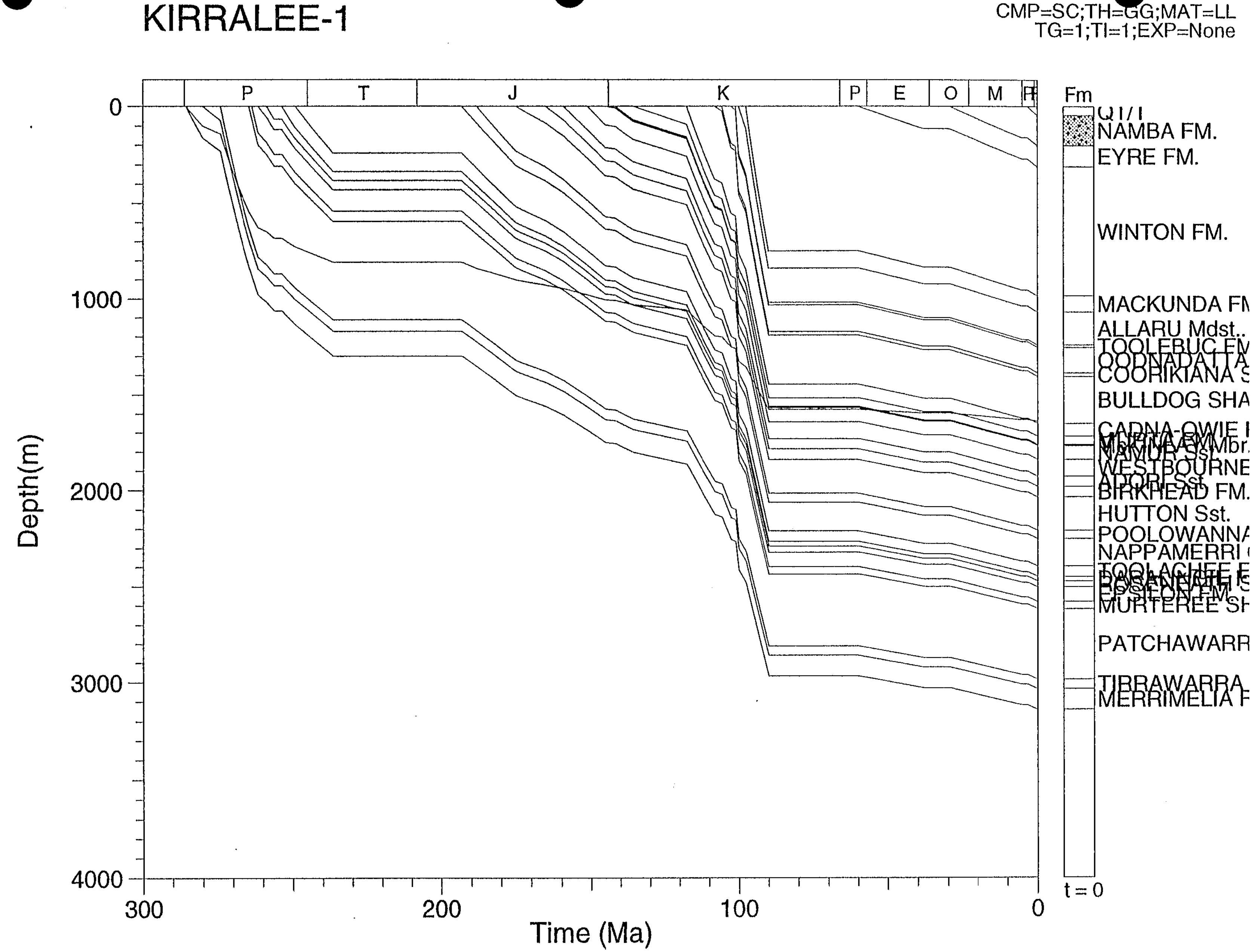


CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None
P
T
J
K
P
E
O
M
Fm
QT/T
NAMBA FM.
EYRE FM.
WINTON FM.
MACKUNDA FM
ALLARU Mdst..
TOOLEBUC FM
OODNADATTA
COORIKIANA S
BULLDOG SHA
CADNA-OWIE
NAMUR Sst.
WESTBOURNE
ADORI Sst.
BIRKHEAD FM.
HUTTON Sst.
POOLOWANNA
NAPPAMERRI
EPSILON FM.
MURTEREE SH
PATCHAWARR
TIBRAWARRA
MERRIMELIA
t = 0
0
1000
2000
3000
4000
Depth(m)
300
200
100
0
Time (Ma)

KIRRALEE-1


CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None
P
T
J
K
P
E
O
M
Fm
0
1000
2000
3000
4000
Depth(m)
300
200
100
0
Time (Ma)
NAMBA FM.
EYRE FM.
WINTON FM.
ALLARU Mdst..
HUTTON Sst.
t = 0

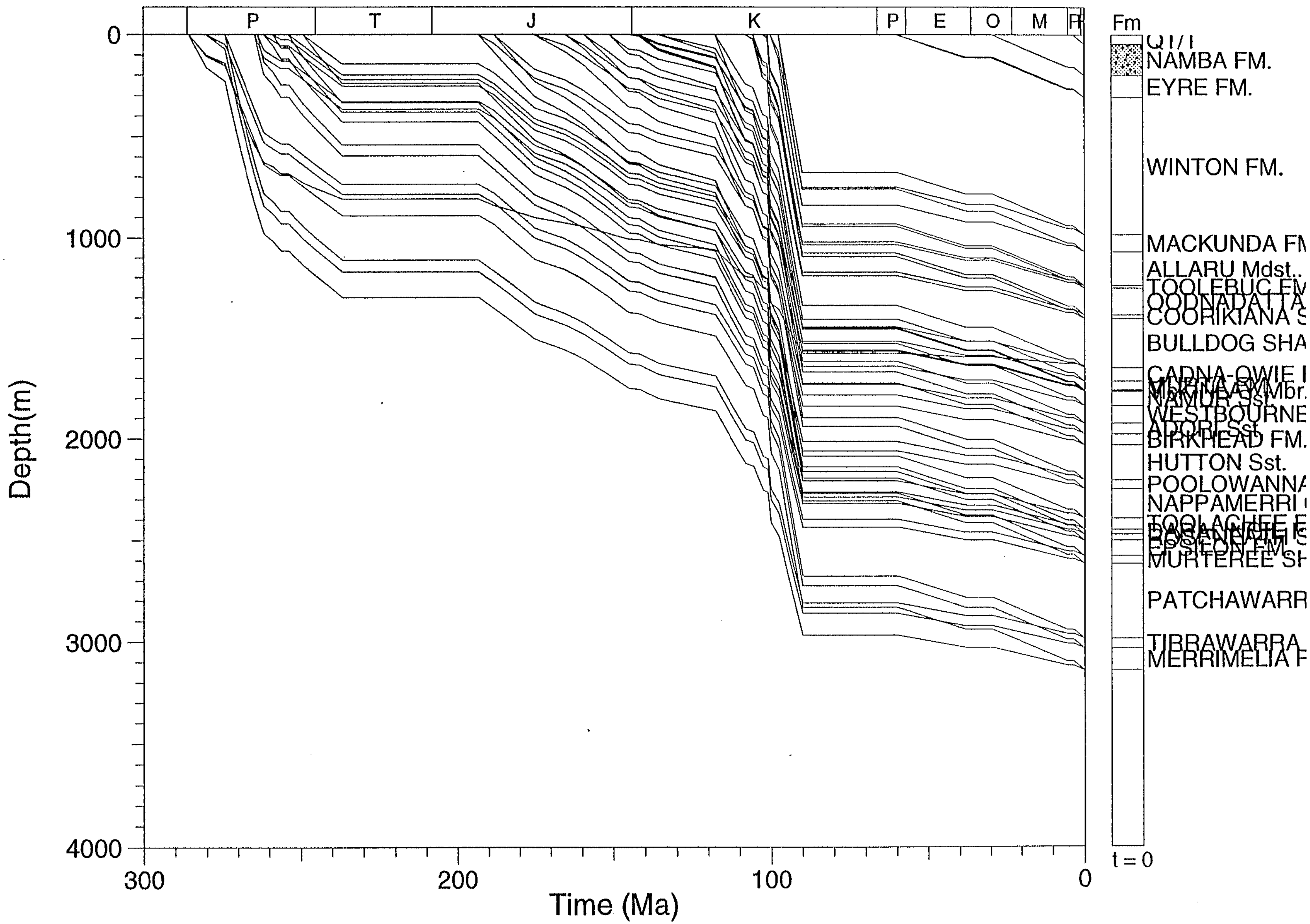
KIRRALEE-1



CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None
P
T
J
K
P
E
O
M
Fm
QT/T
NAMBA FM.
EYRE FM.
WINTON FM.
MACKUNDA FM
ALLARU Mdst..
TOOLEBUC FM
OODNADATTA
COORIKIANA S
BULLDOG SHA
CADNA-OWIE F
WESTBOURNE
ADORI Sst.
BIRKHEAD FM.
HUTTON Sst.
POOLOWANNA
NAPPAMERRI
EPSILON FM.
MURTEREE SH
PATCHAWARR
TIRRAWARRA
MERRIMELIA F
t = 0
Depth(m)
0
1000
2000
3000
4000
300
200
100
0
Time (Ma)

KIRRALEE-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



KOBARI-1

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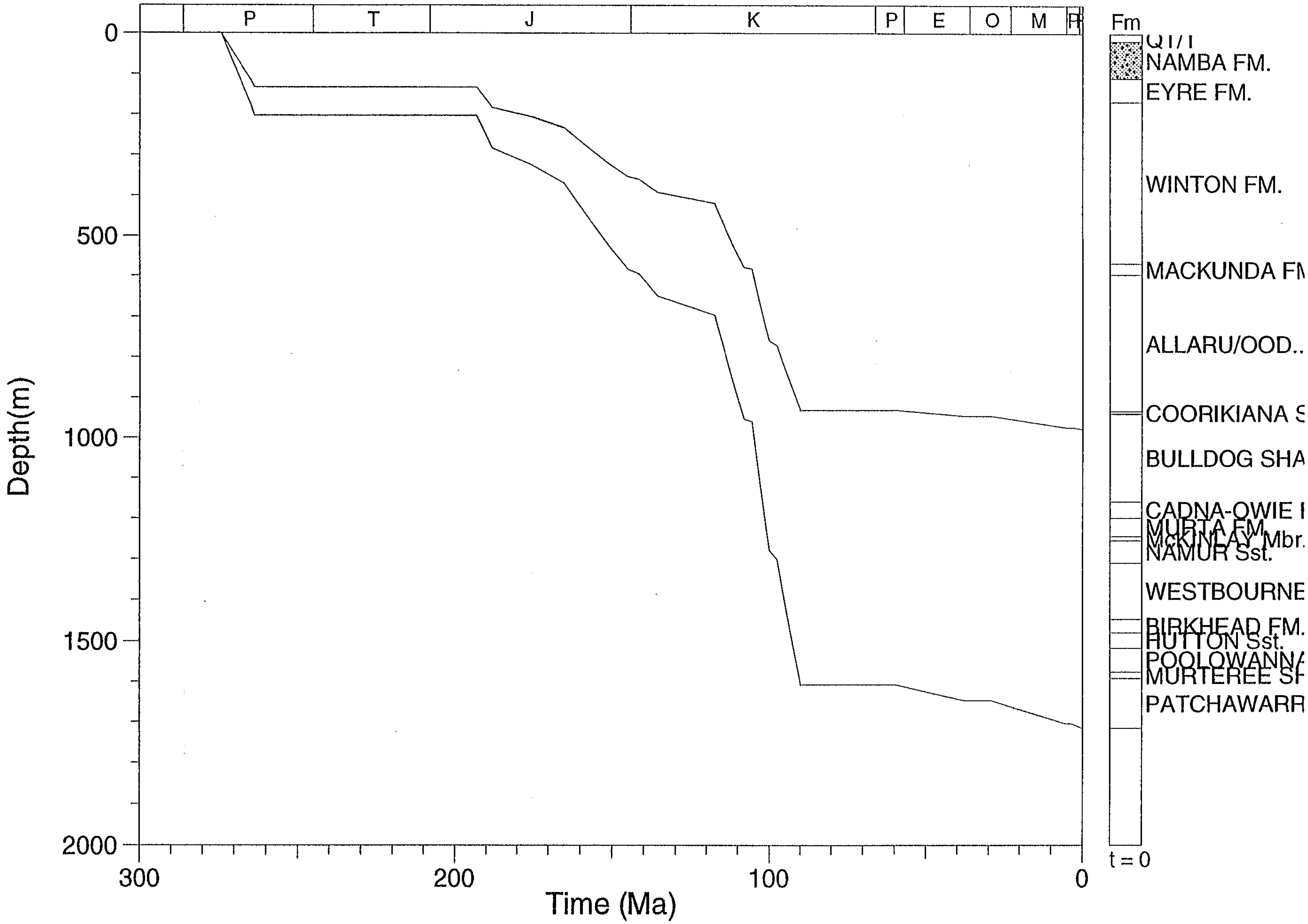
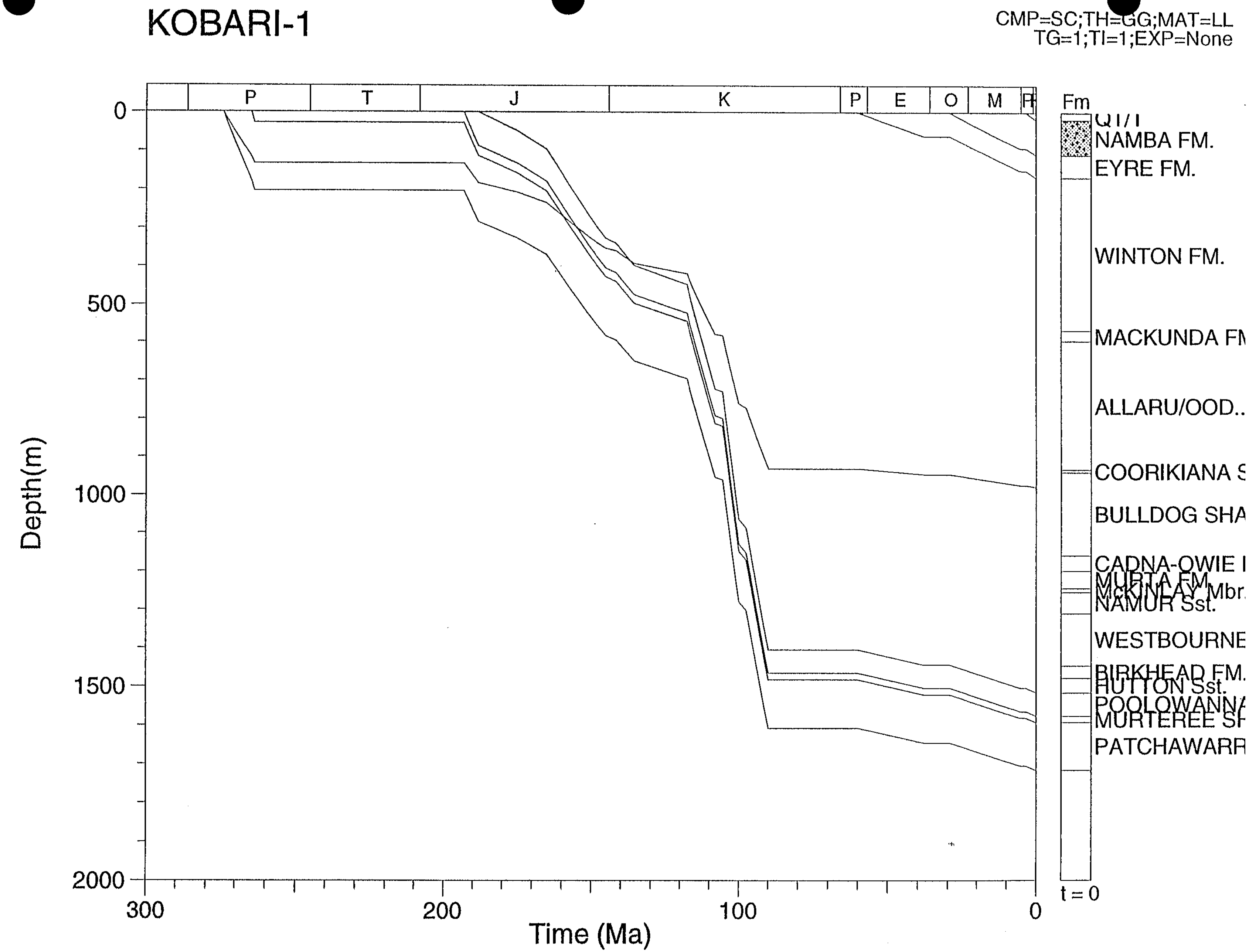
TG=1;TI=1;EXP=None

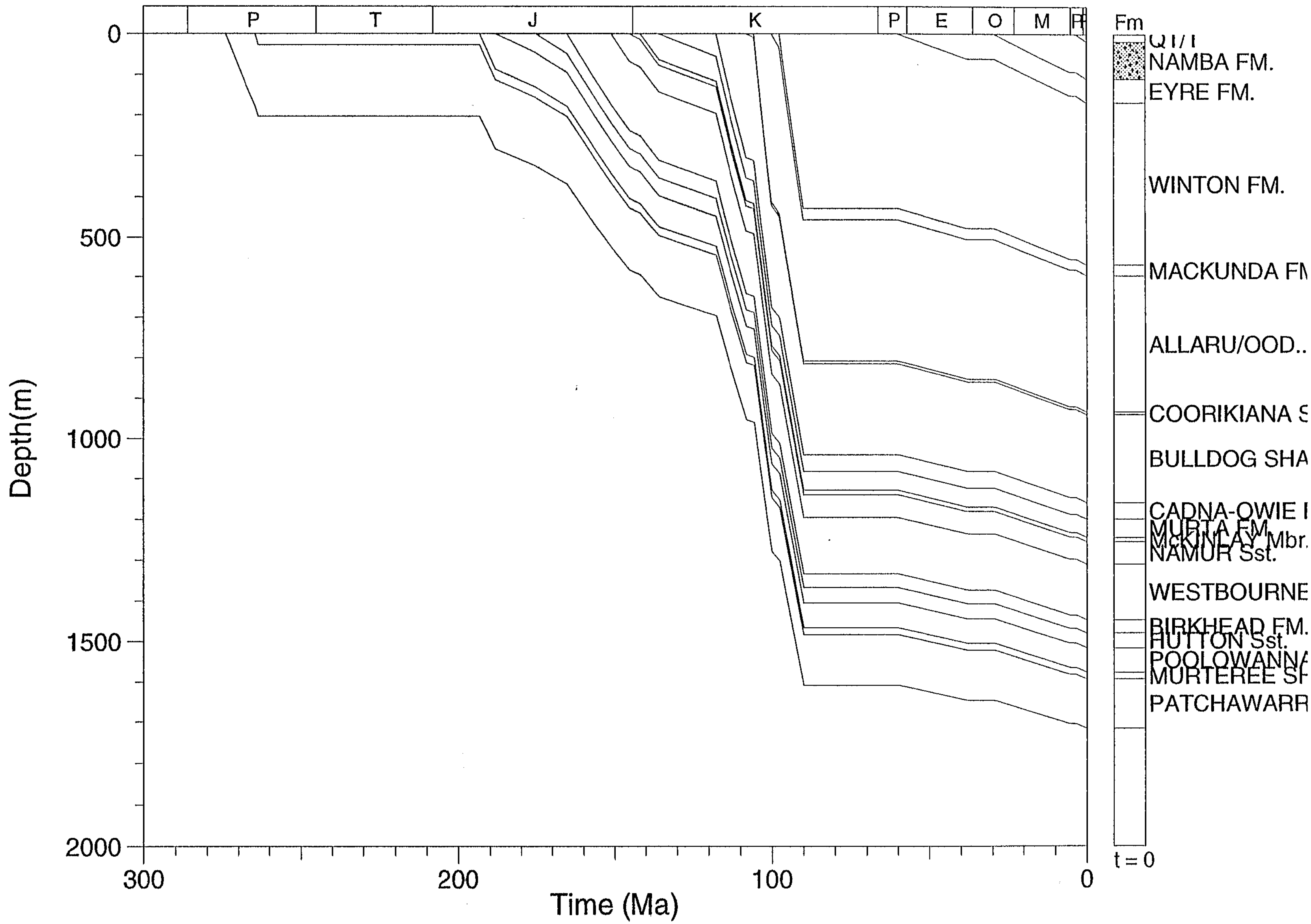


KOBARI-1

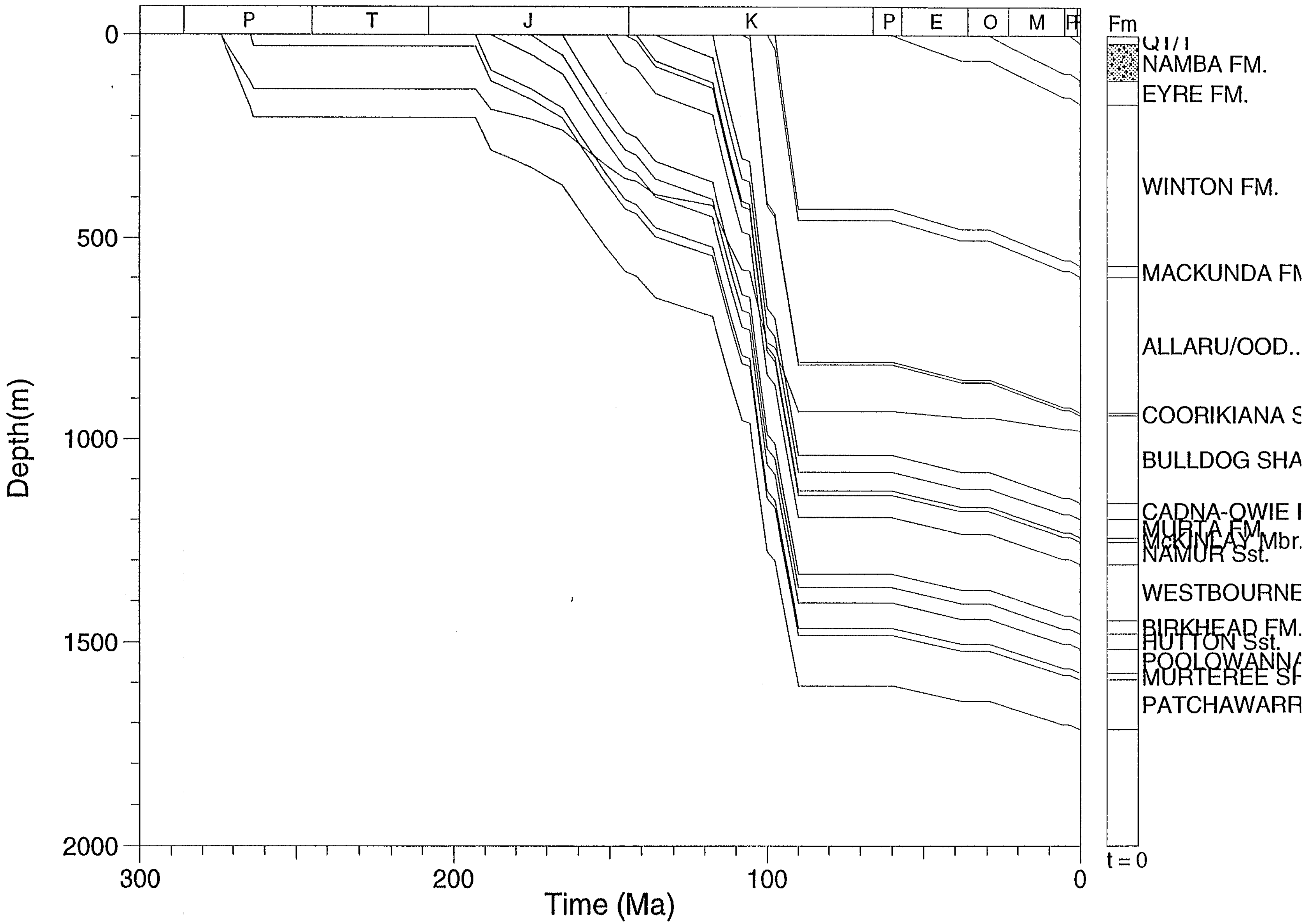

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None
P
T
J
K
P
E
O
M
R
Fm
0
500
1000
1500
2000
Depth(m)
300
200
100
0
Time (Ma)
QT/T
NAMBA FM.
EYRE FM.
WINTON FM.
MACKUNDA FM
ALLARU/OOD..
COORIKIANA S
BULLDOG SHA
CADNA-OWIE I
MURTA FM.
McKINLAY Mbr.
NAMUR Sst.
WESTBOURNE
BIRKHEAD FM.
HUTTON Sst.
POOLOWANNA
MURTEREE SH
PATCHAWARR
t = 0

KOBARI-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



KOBARI-1



CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None
P
T
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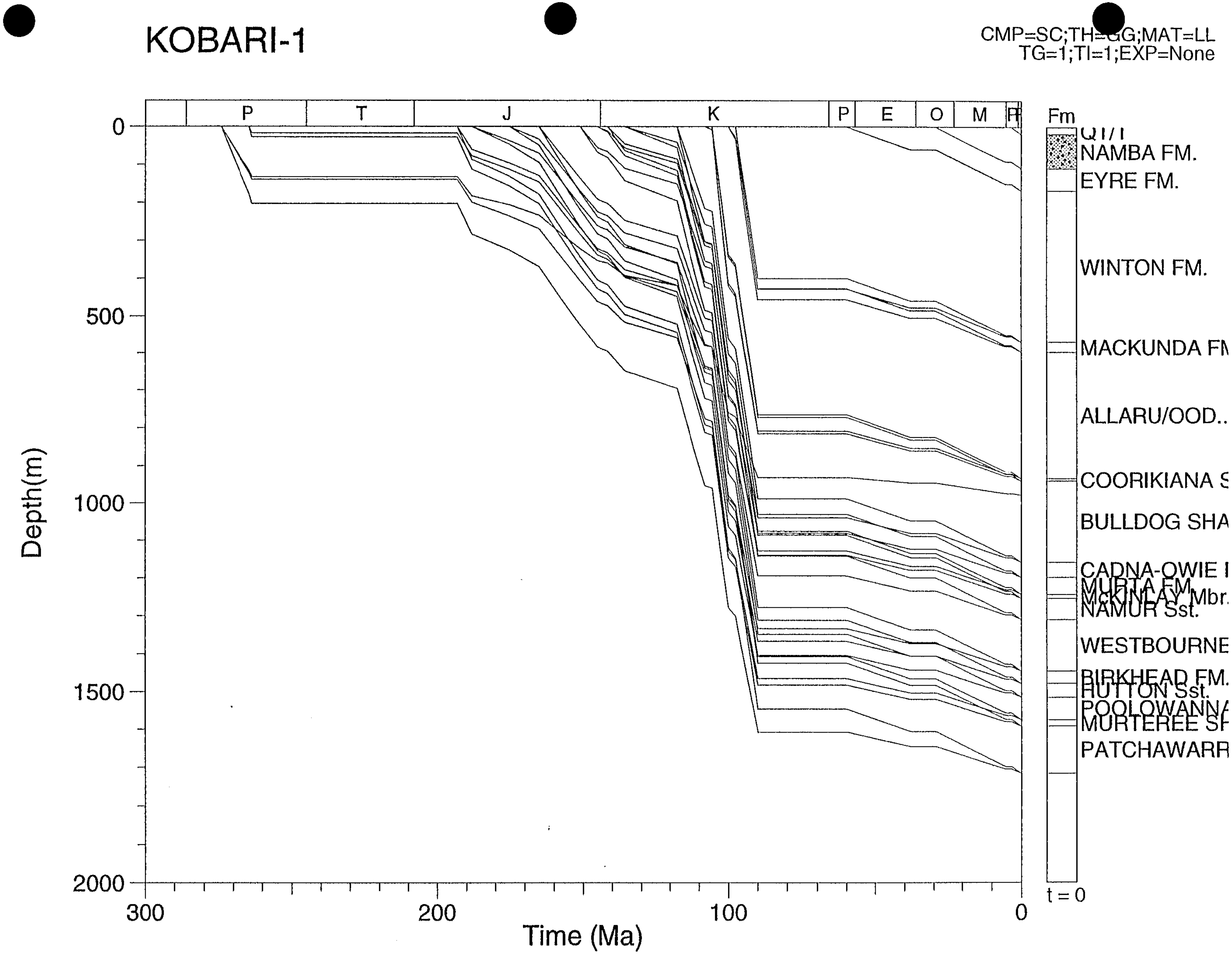
P
E
O
M
Fm
QT/T
NAMBA FM.
EYRE FM.
WINTON FM.
MACKUNDA FM
ALLARU/OOD..
COORIKIANA S
BULLDOG SHA
CADNA-OWIE F
MURTA FM.
McKINLAY Mbr.
NAMUR Sst.
WESTBOURNE
BIRKHEAD FM.
HUTTON Sst.
POOLOWANNA
MURTEREE SH
PATCHAWARR
t = 0
Depth(m)
0
500
1000
1500
2000
300
200
100
0
Time (Ma)

KOBARI-1



CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None
P
T
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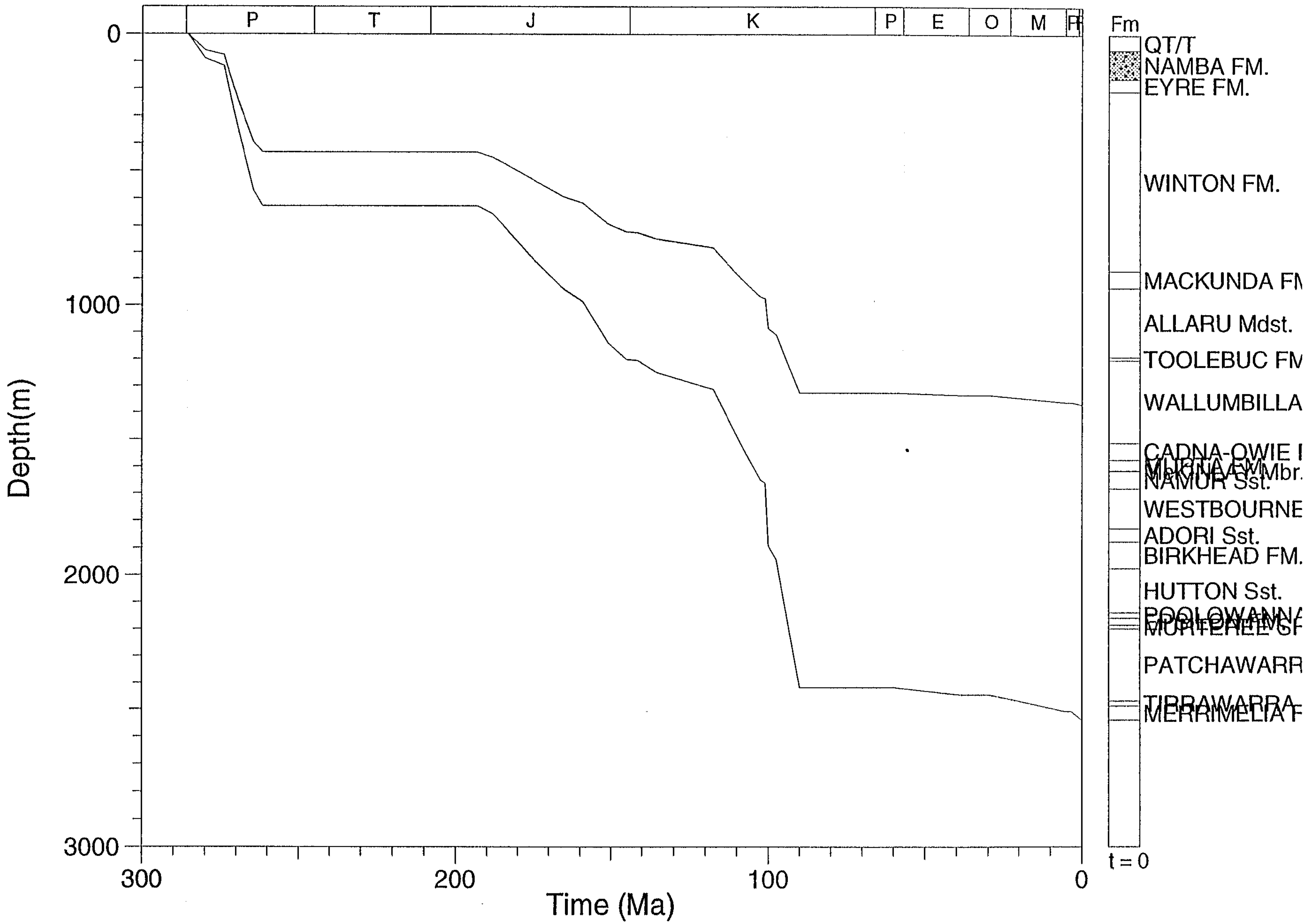
K
P
E
O
M
Fm
QT/T
NAMBA FM.
EYRE FM.
WINTON FM.
MACKUNDA FM
ALLARU/OOD..
COORIKIANA S
BULLDOG SHA
CADNA-OWIE I
MURTA FM.
McKINLAY Mbr.
NAMUR Sst.
WESTBOURNE
BIRKHEAD FM.
HUTTON Sst.
POOLOWANNA
MURTEREE SH
PATCHAWARR
t = 0
Depth(m)
0
500
1000
1500
2000
300
200
100
0
Time (Ma)

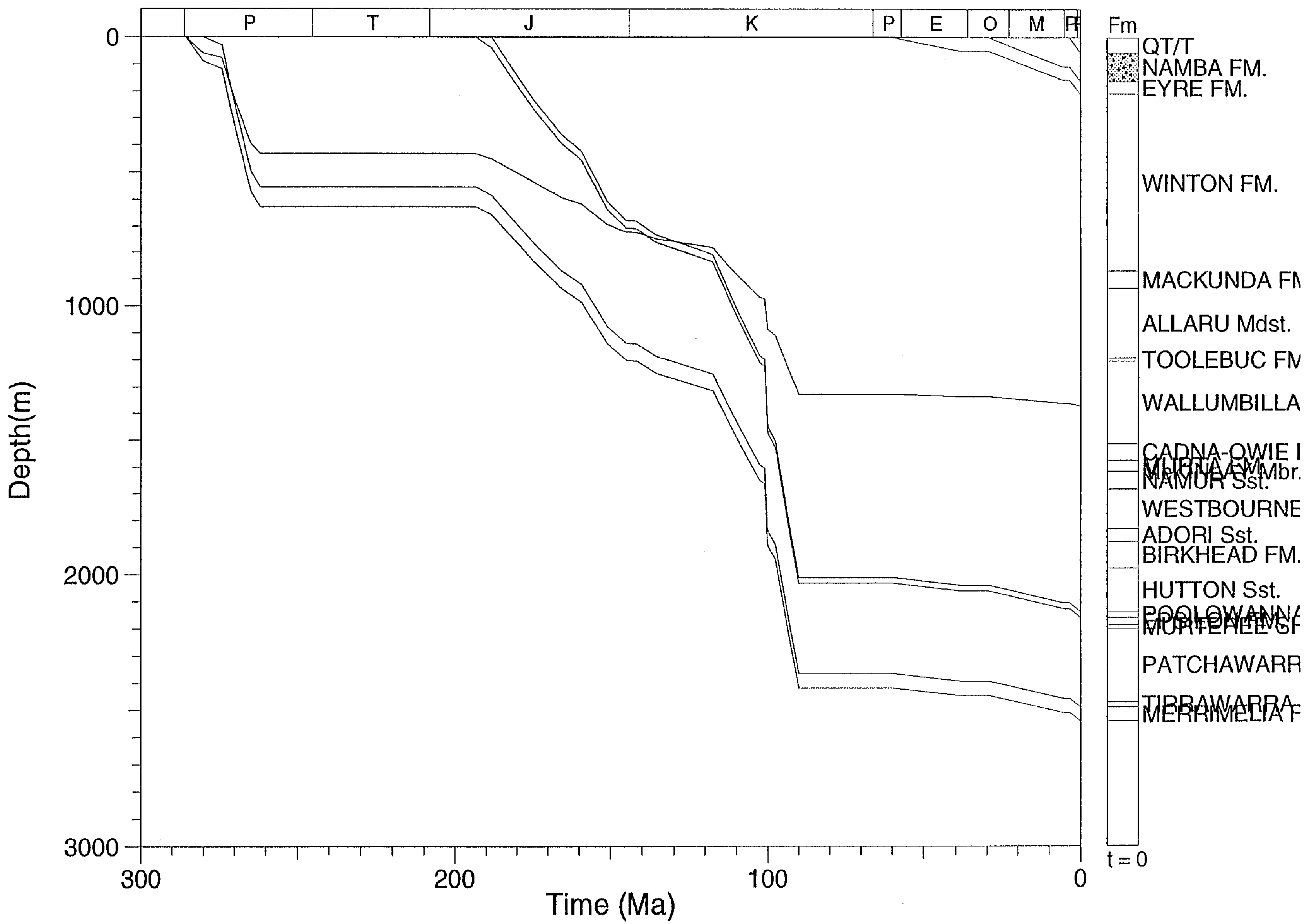
KUENPINNIE-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



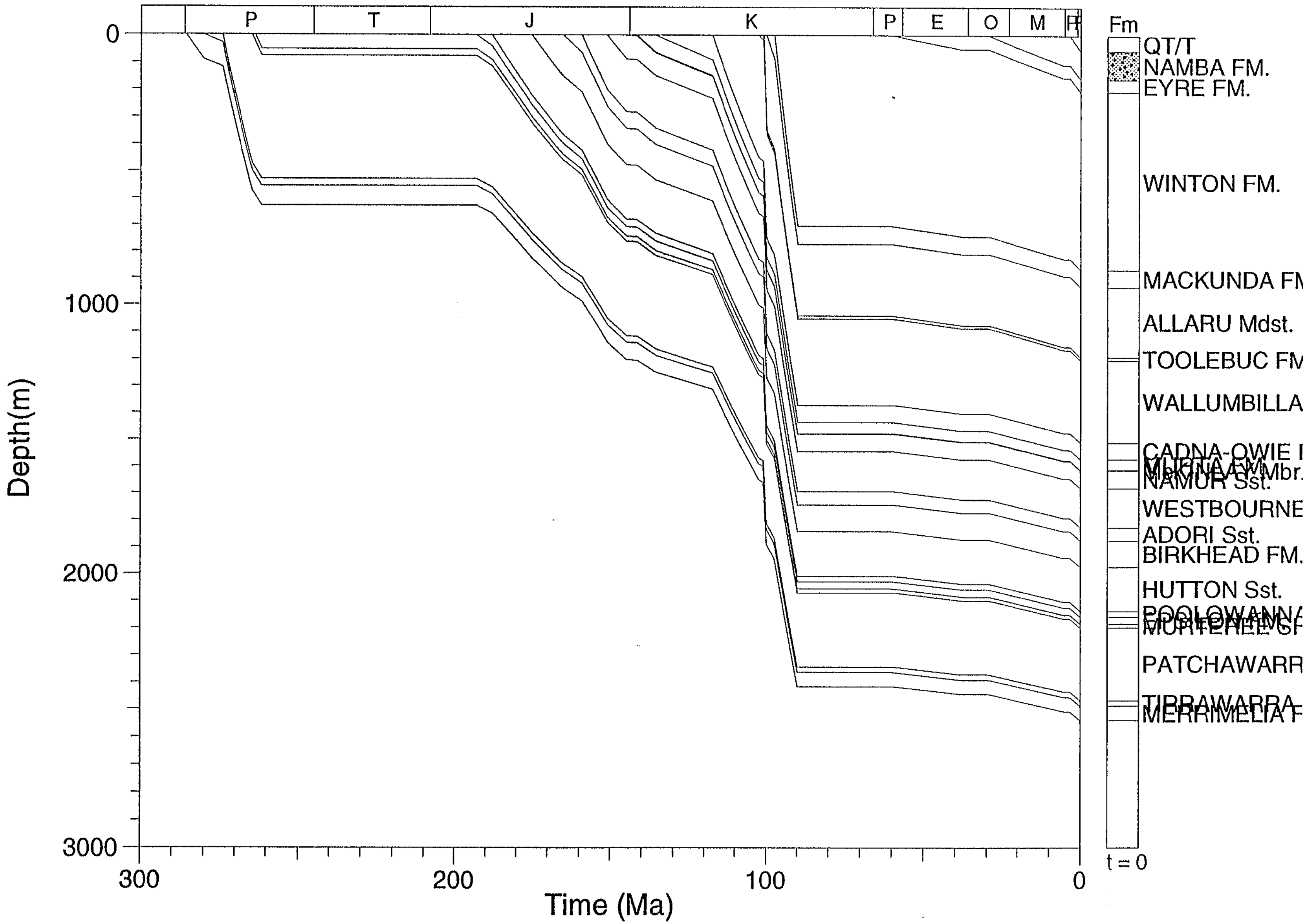
KUENPINNIE-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



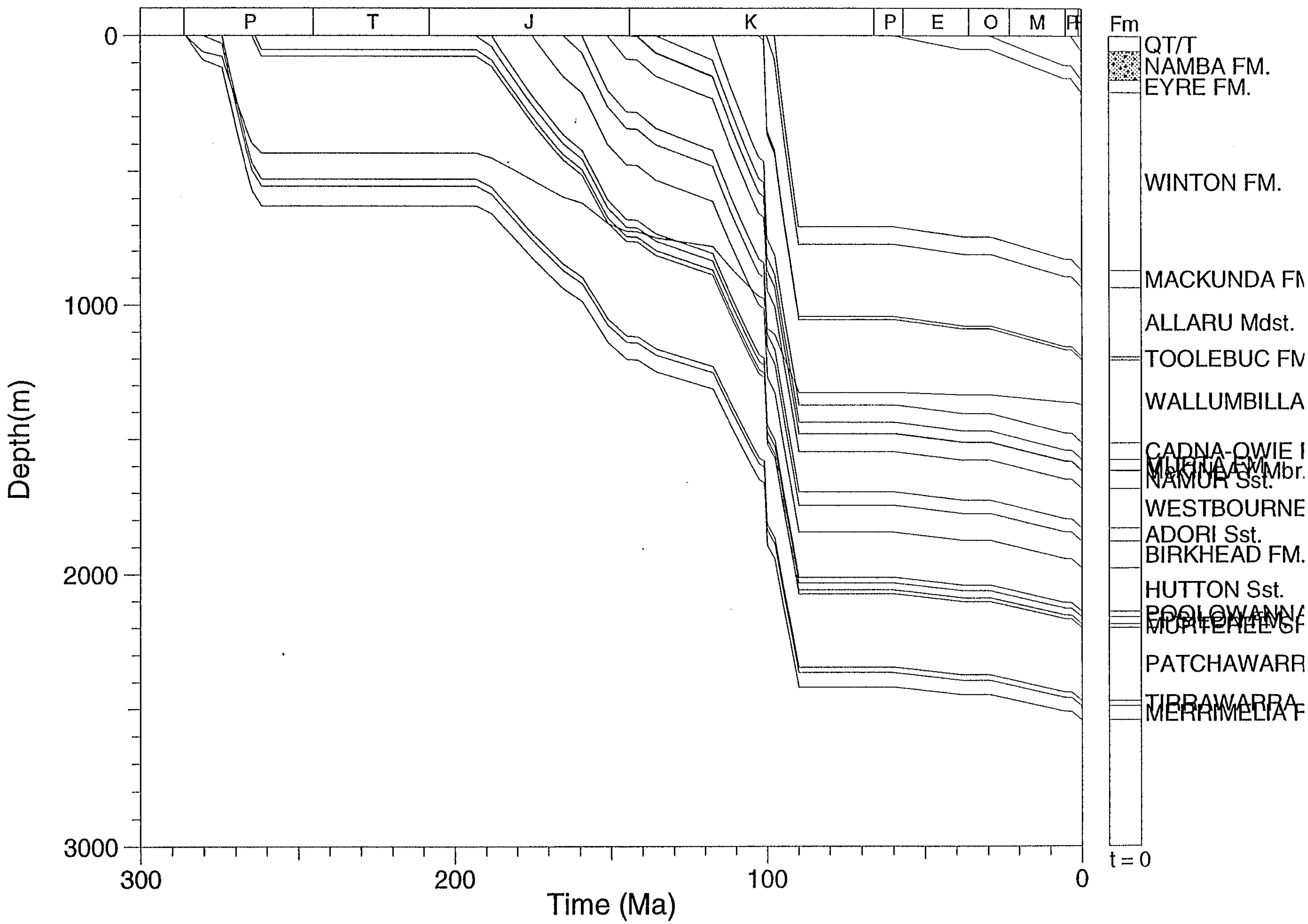
KUENPINNIE-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None

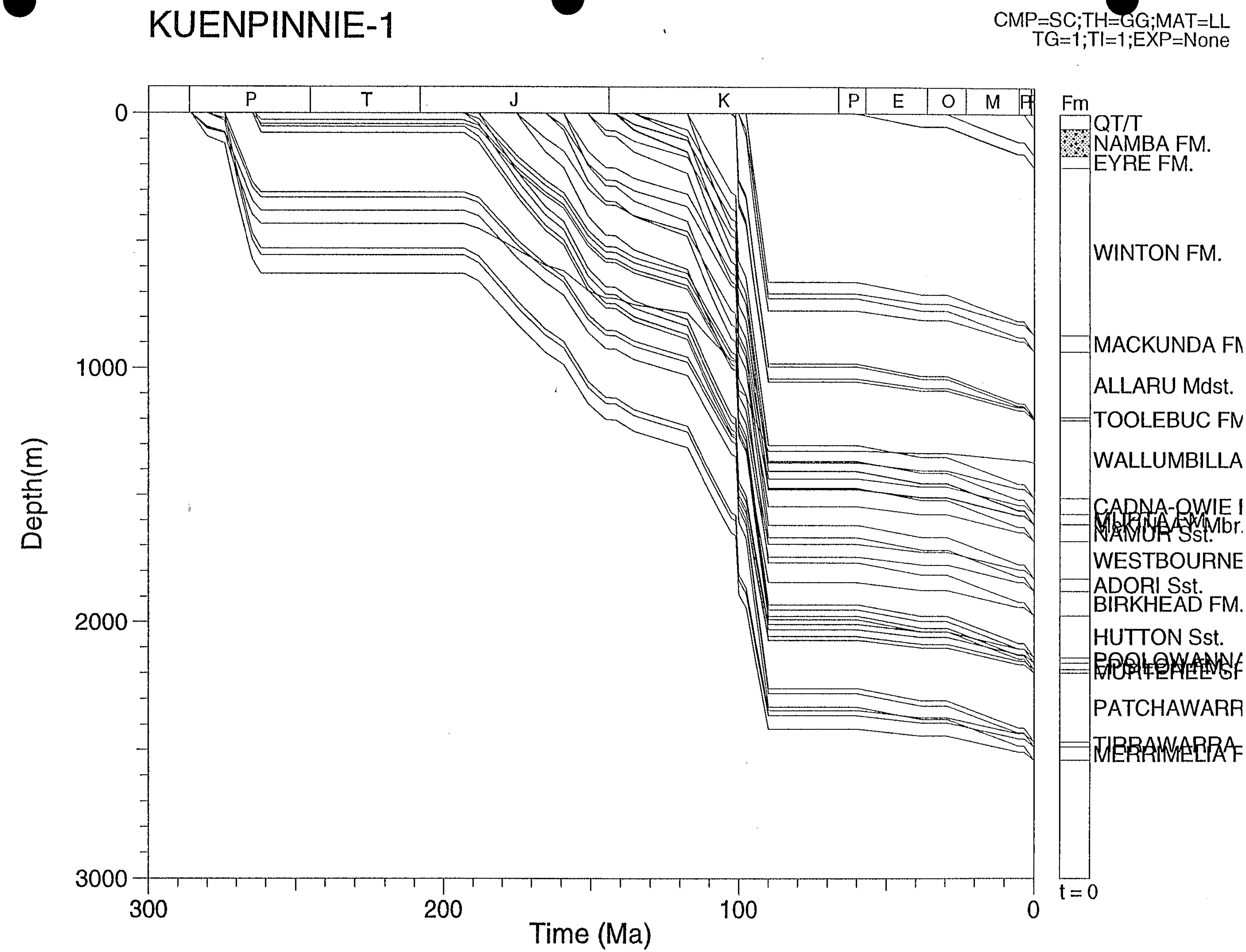


KUENPINNIE-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



KUENPINNIE-1



LYCIUM-1

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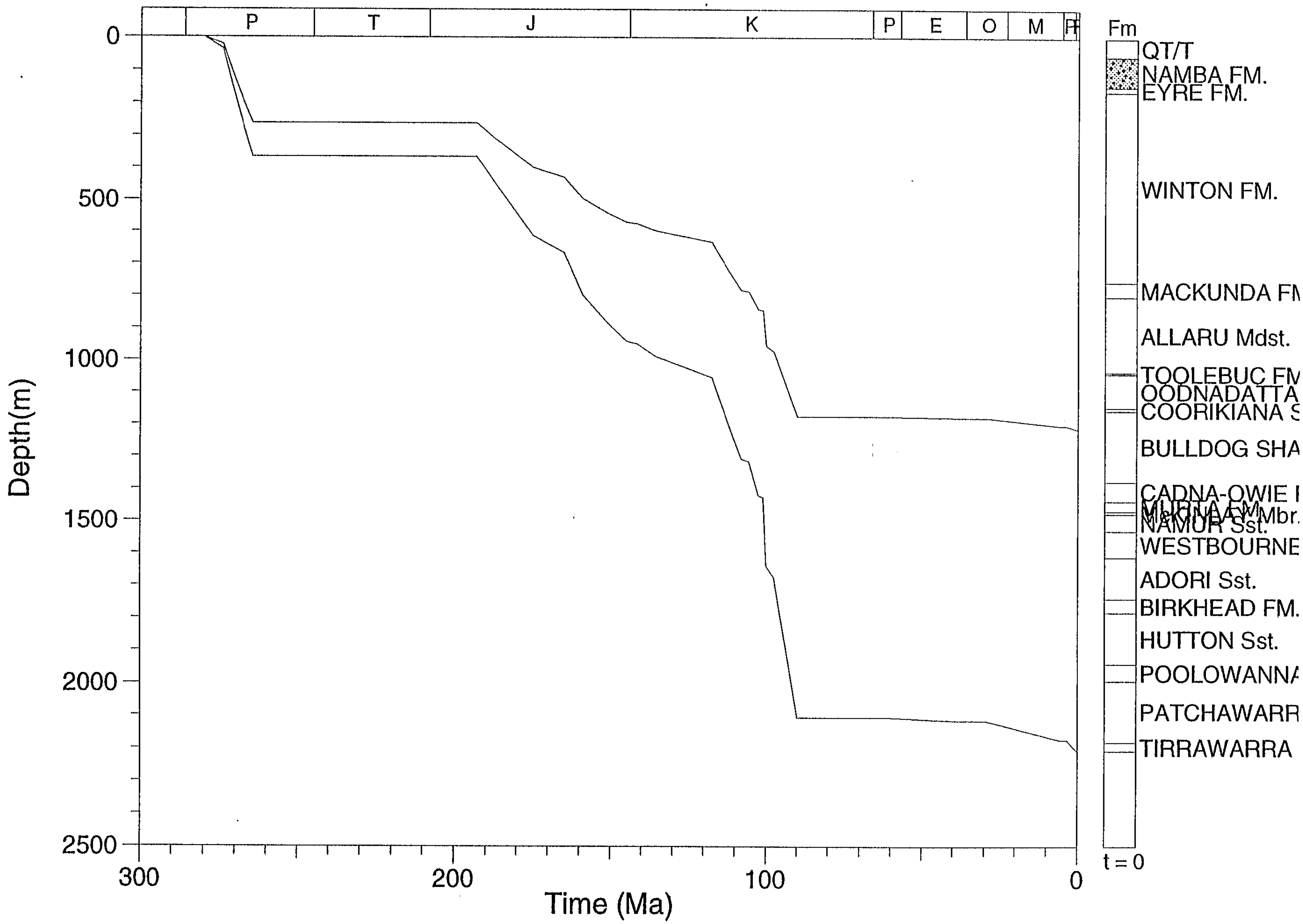
TG=1;TI=1;EXP=None



LYCIUM-1

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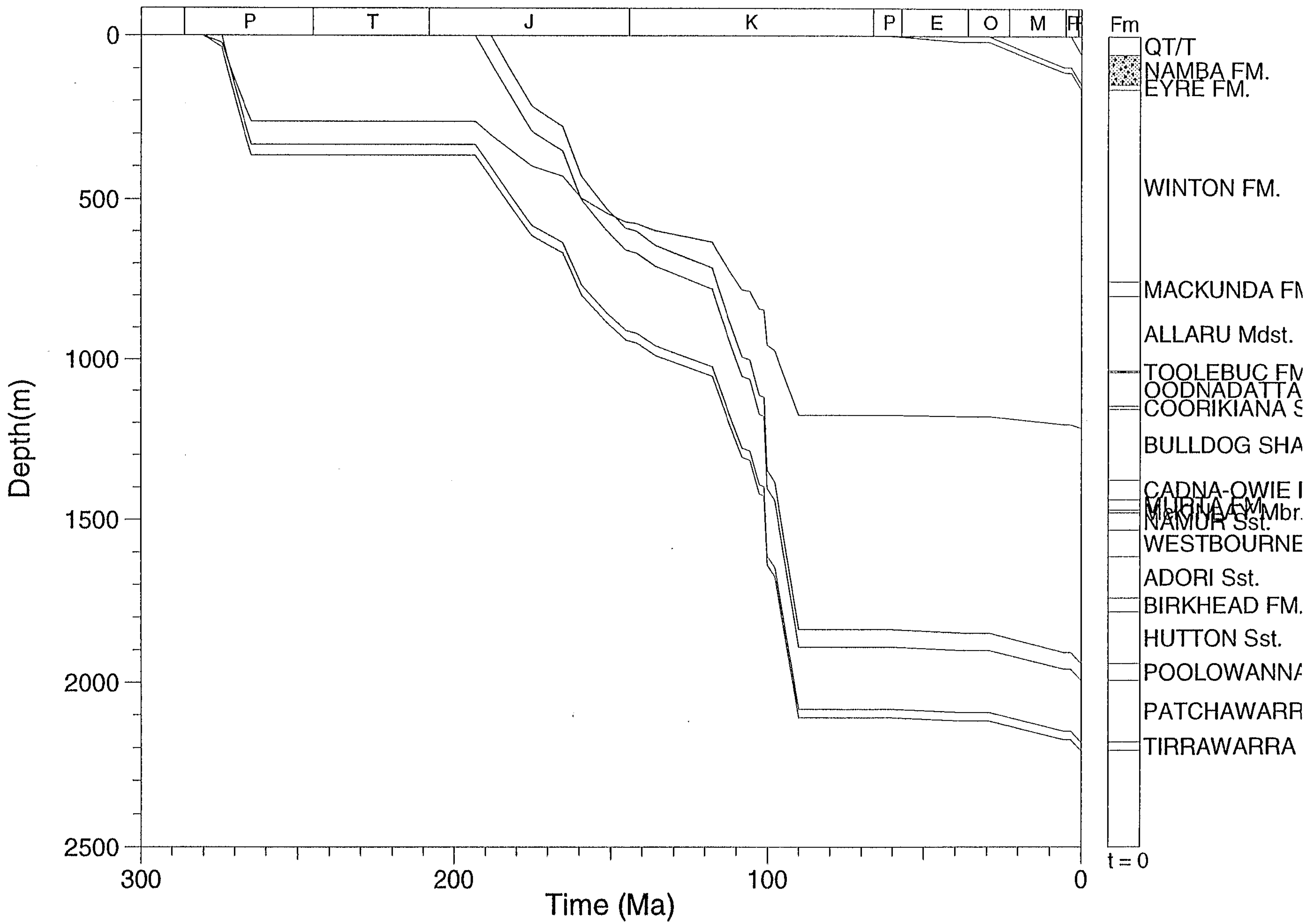
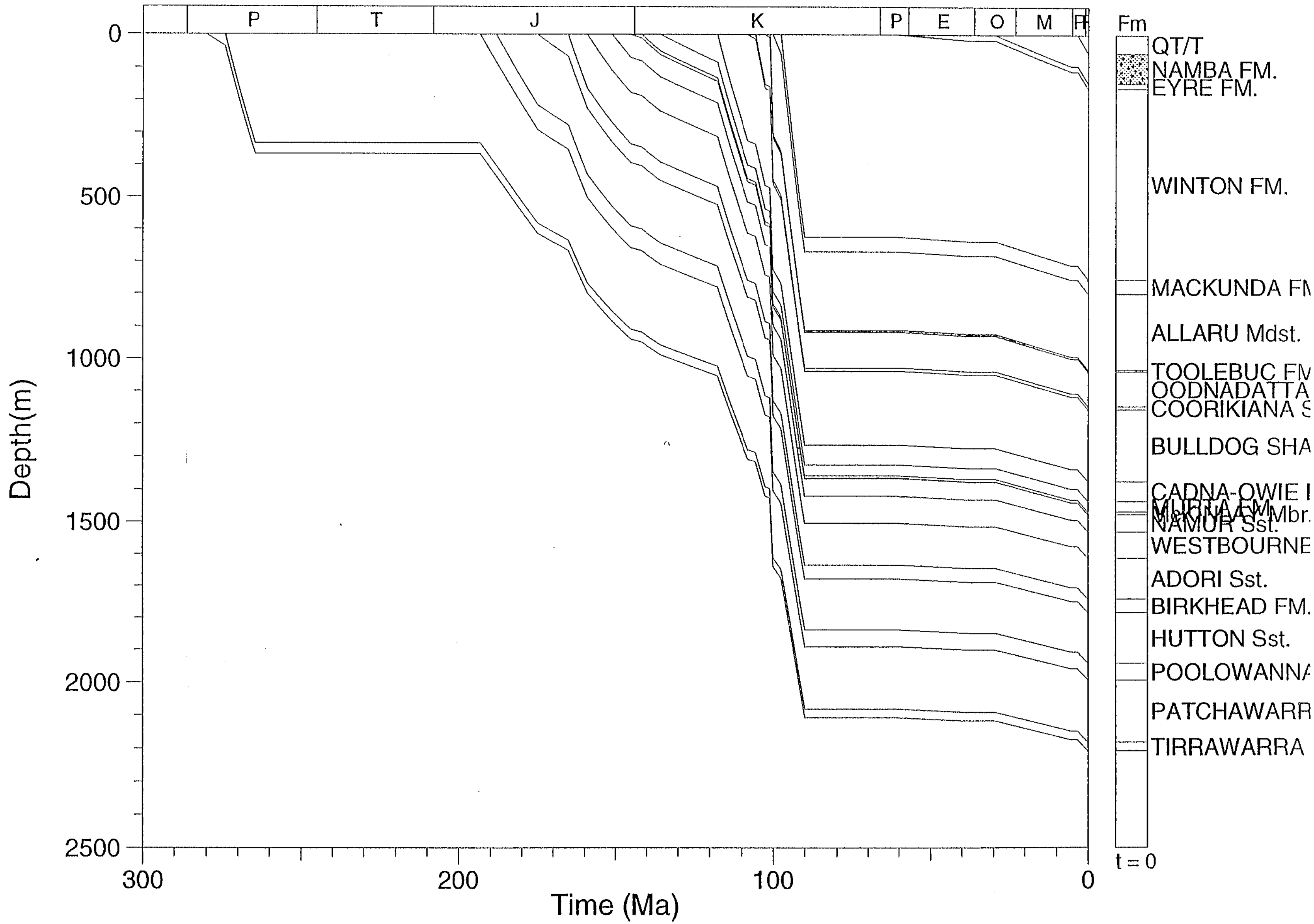
TG=1;TI=1;EXP=None



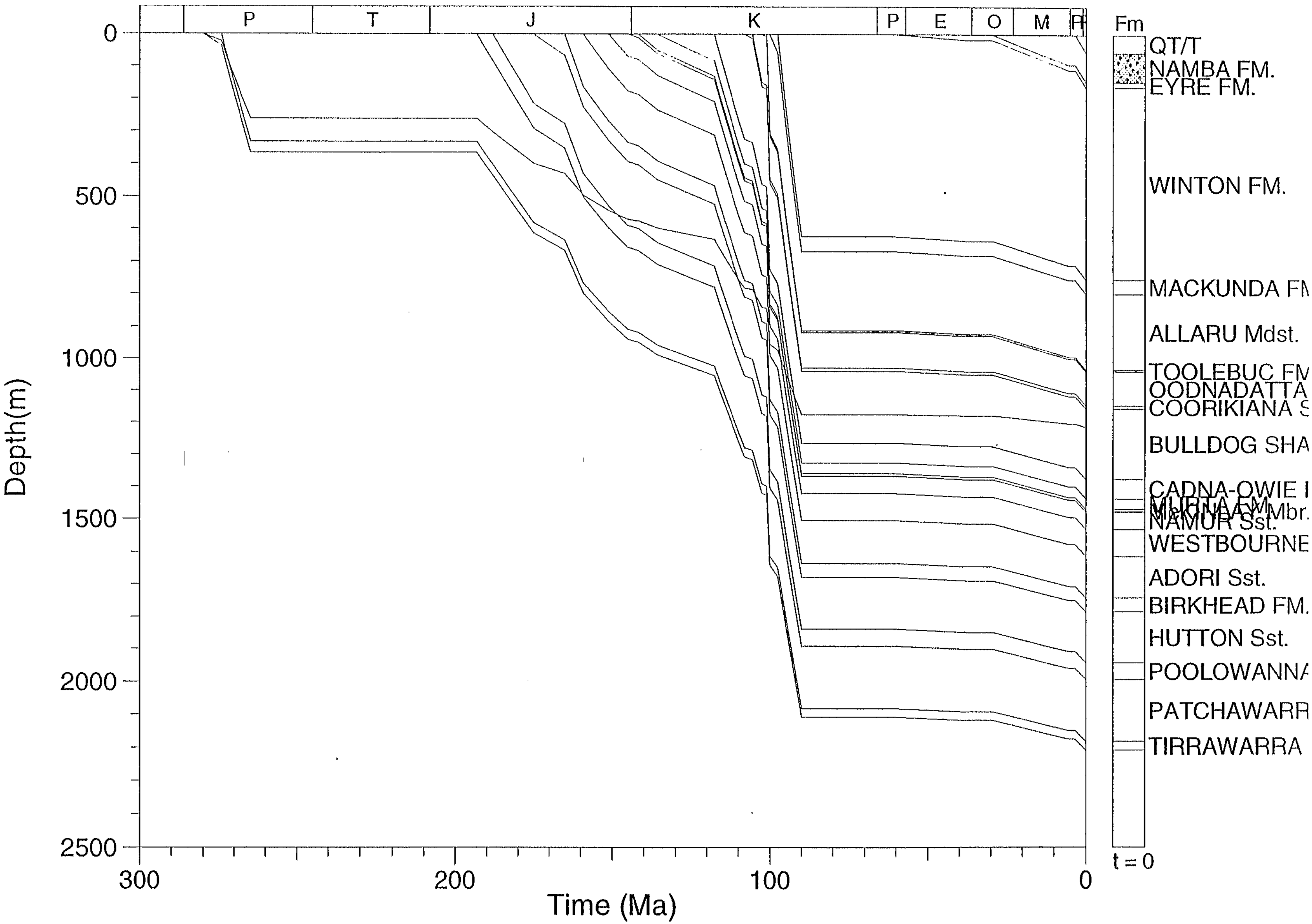
LYCIUM-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None

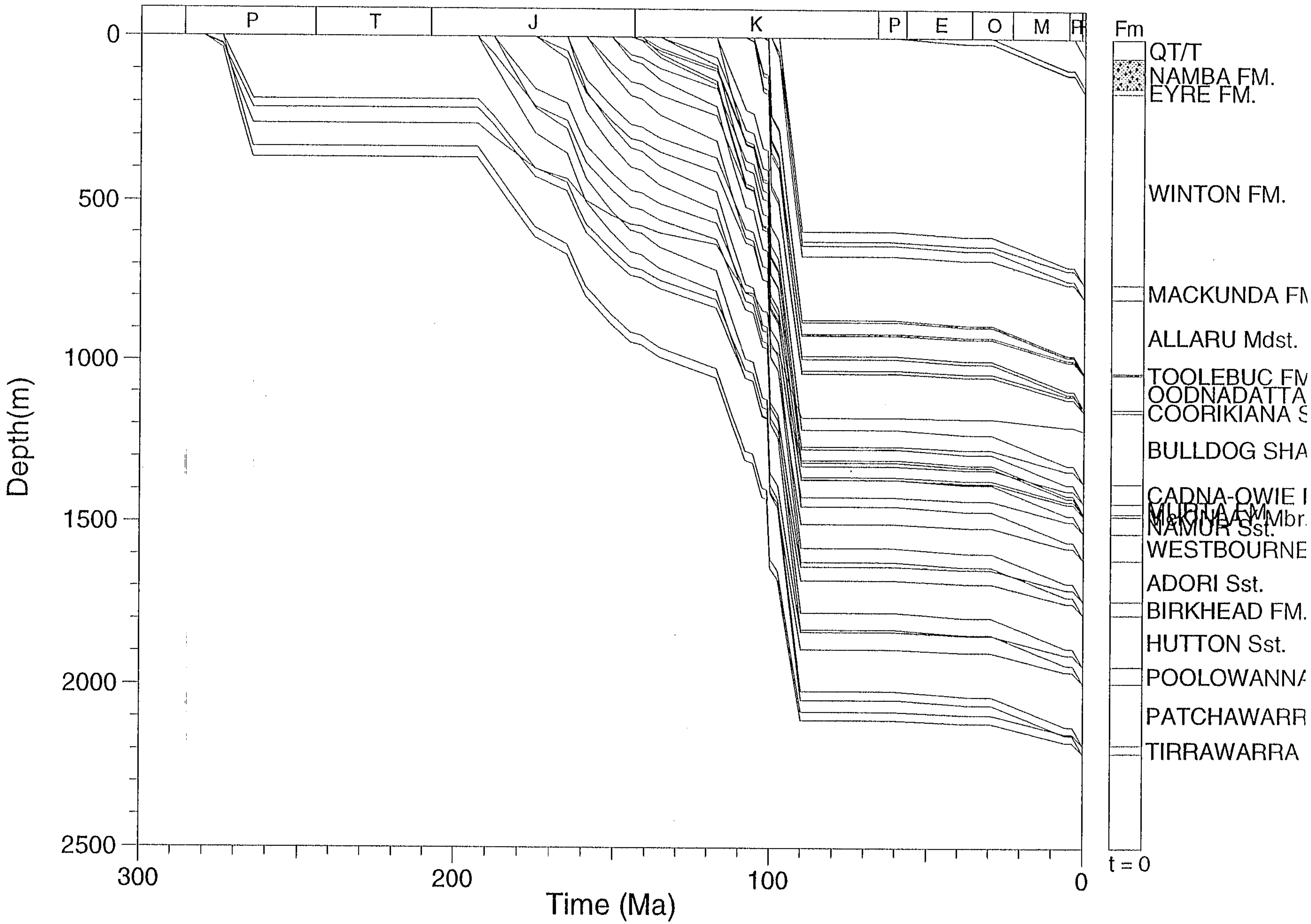


LYCIUM-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



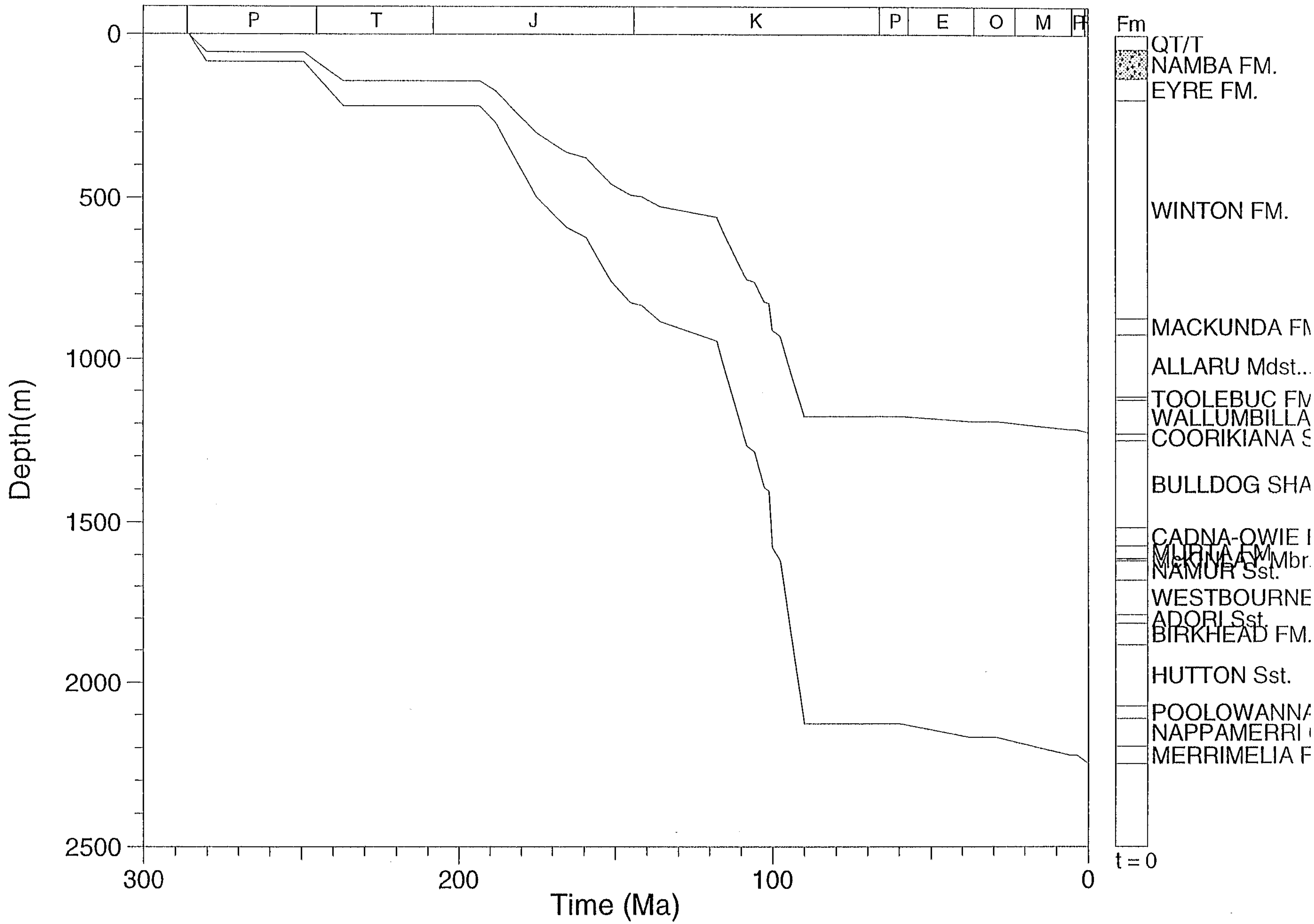
LYCIUM-1



CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None
P
T
J
K
P
E
O
M
P
Fm
QT/T
NAMBA FM.
EYRE FM.
WINTON FM.
MACKUNDA FM
ALLARU Mdst.
TOOLEBUC FM
OODNADATTA
COORIKIANA S
BULLDOG SHA
CADNA-OWIE
MURTA FM.
McKINLAY Mbr.
NAMUR Sst.
WESTBOURNE
ADORI Sst.
BIRKHEAD FM.
HUTTON Sst.
POOLOWANNA
PATCHAWARR
TIRRAWARRA
t = 0
Depth(m)
0
500
1000
1500
2000
2500
300
200
100
0
Time (Ma)

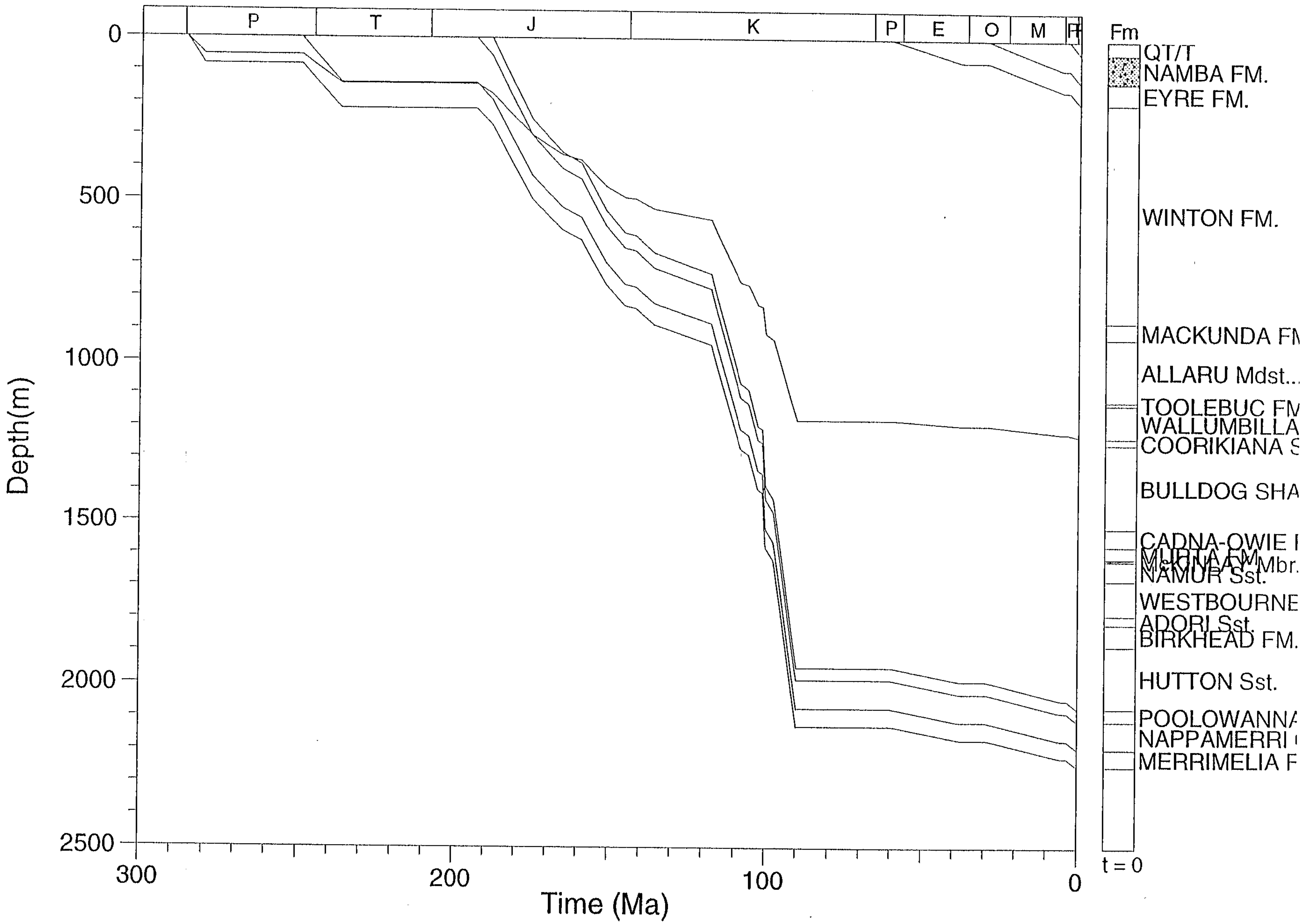
MERRIMELIA-30

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



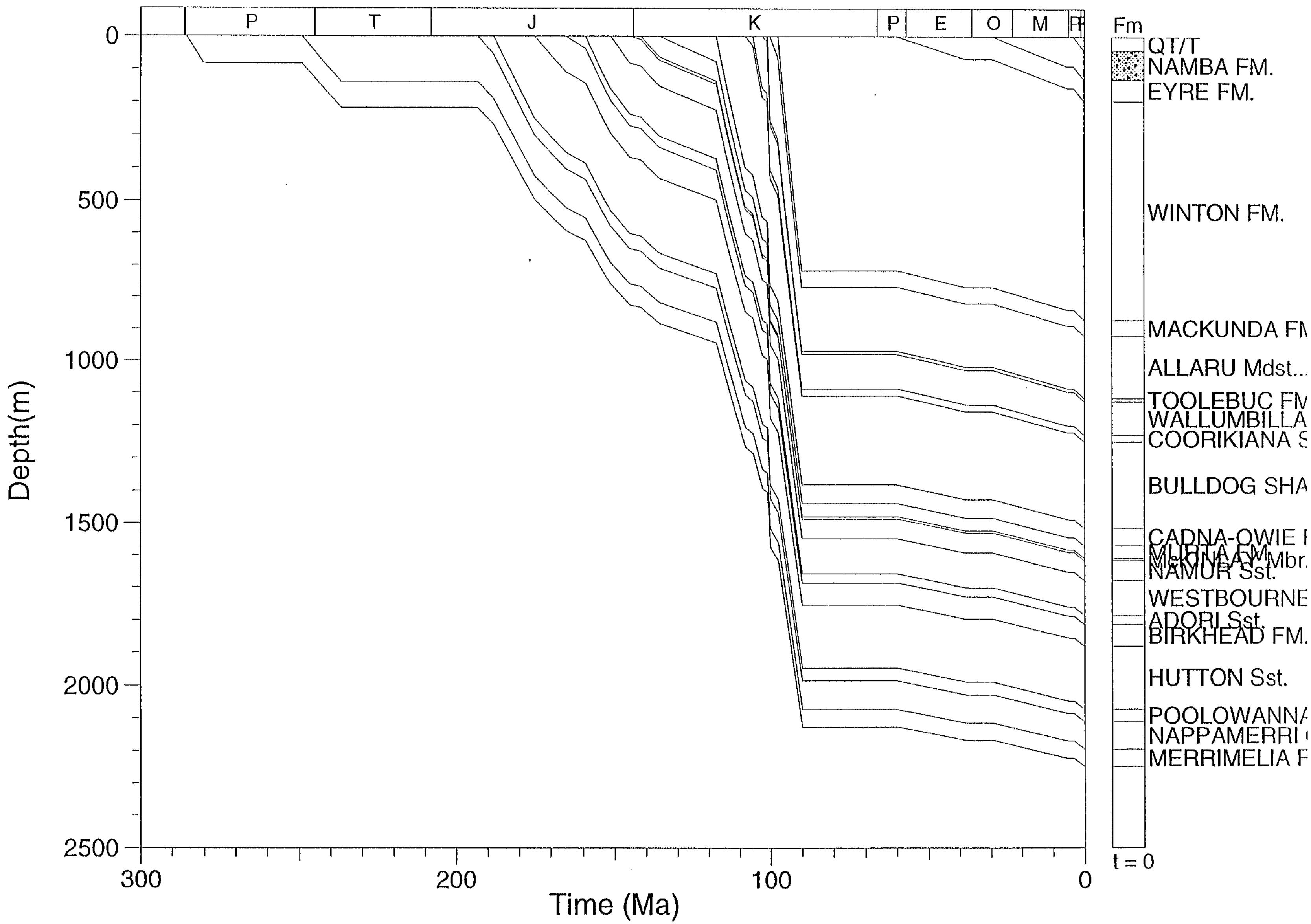
MERRIMELIA-30

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



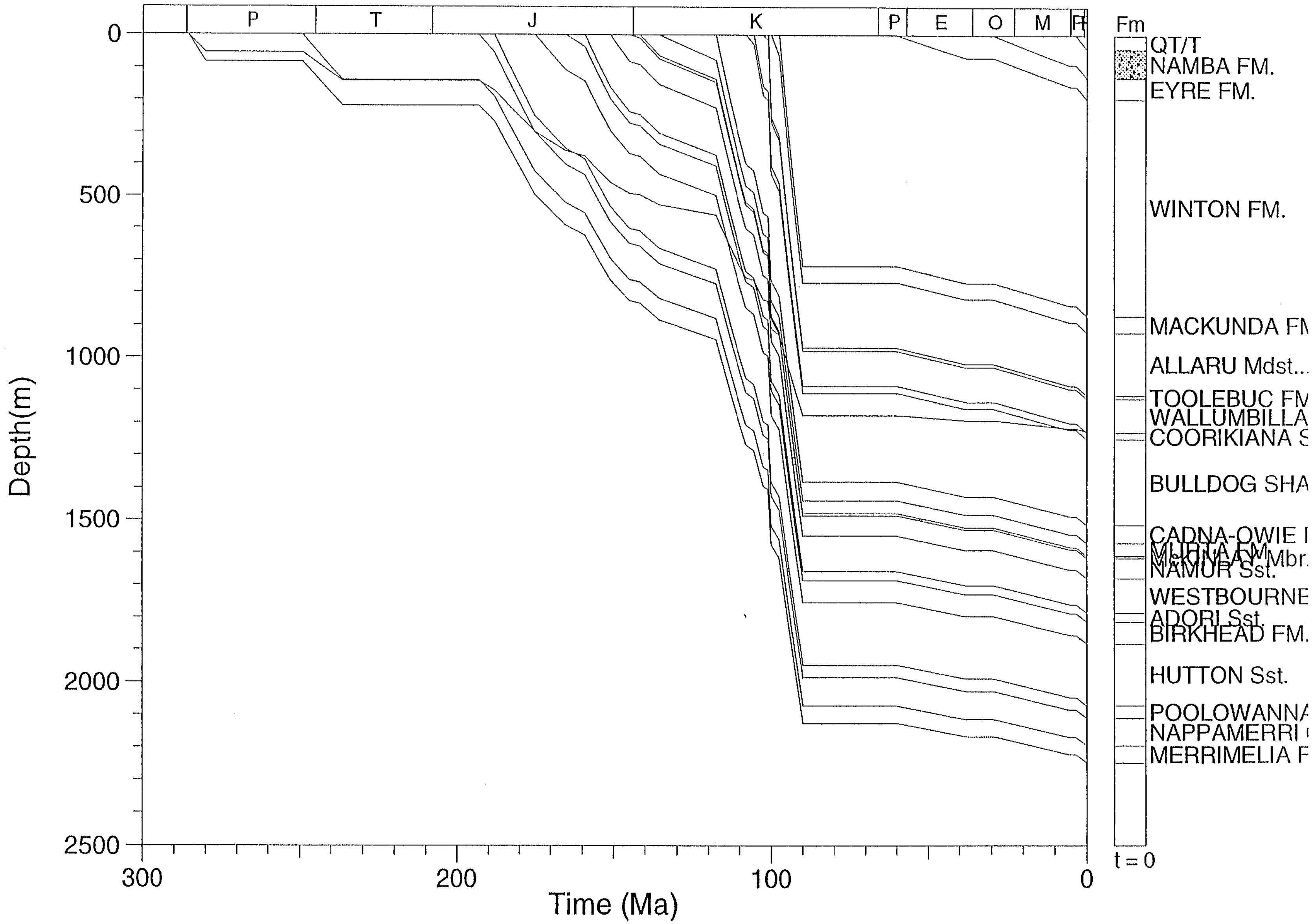
MERRIMELIA-30

CMP=SC;TH=[illegible]G;MAT=LL
TG=1;TI=1;EXP=None



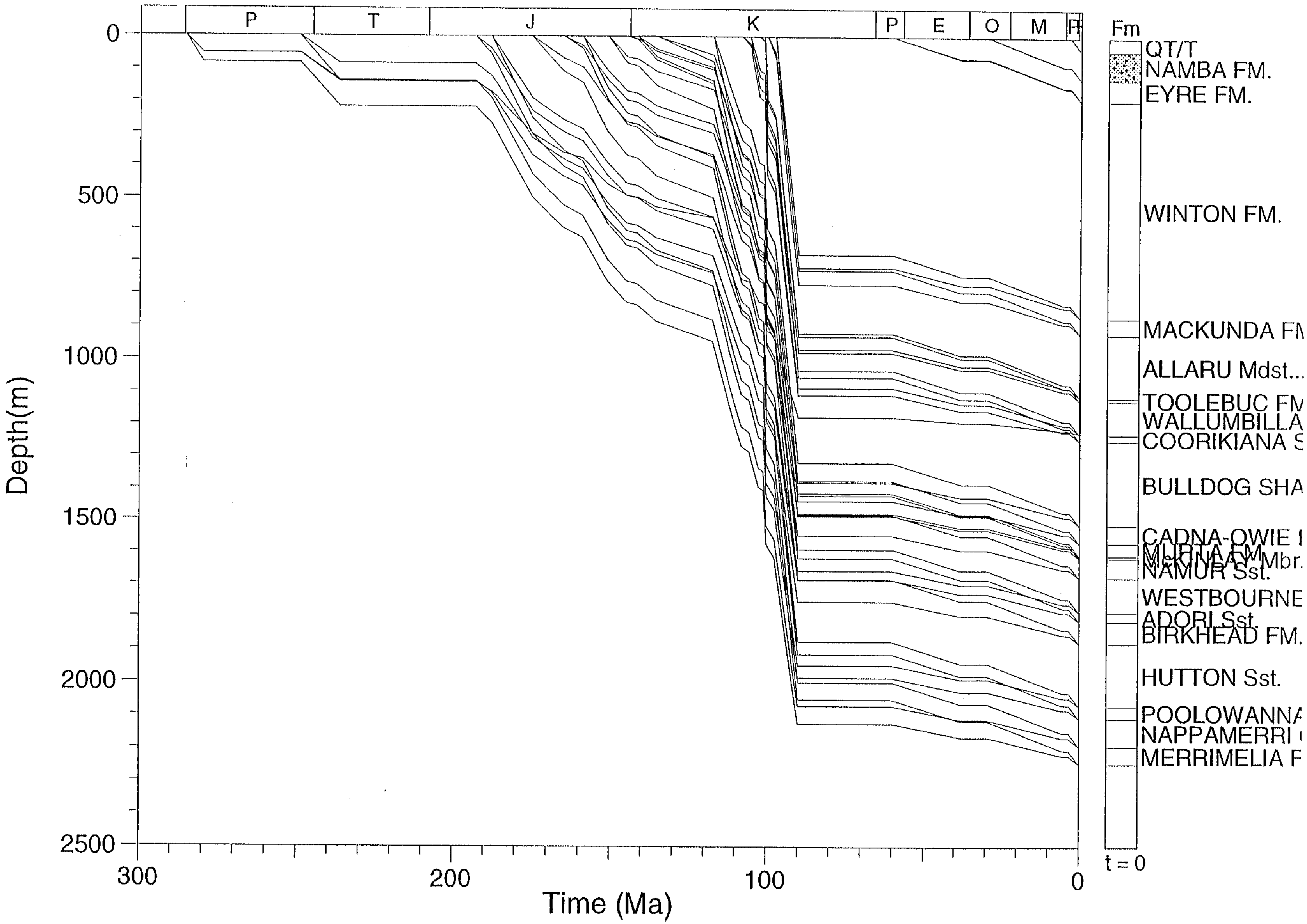
MERRIMELIA-30

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



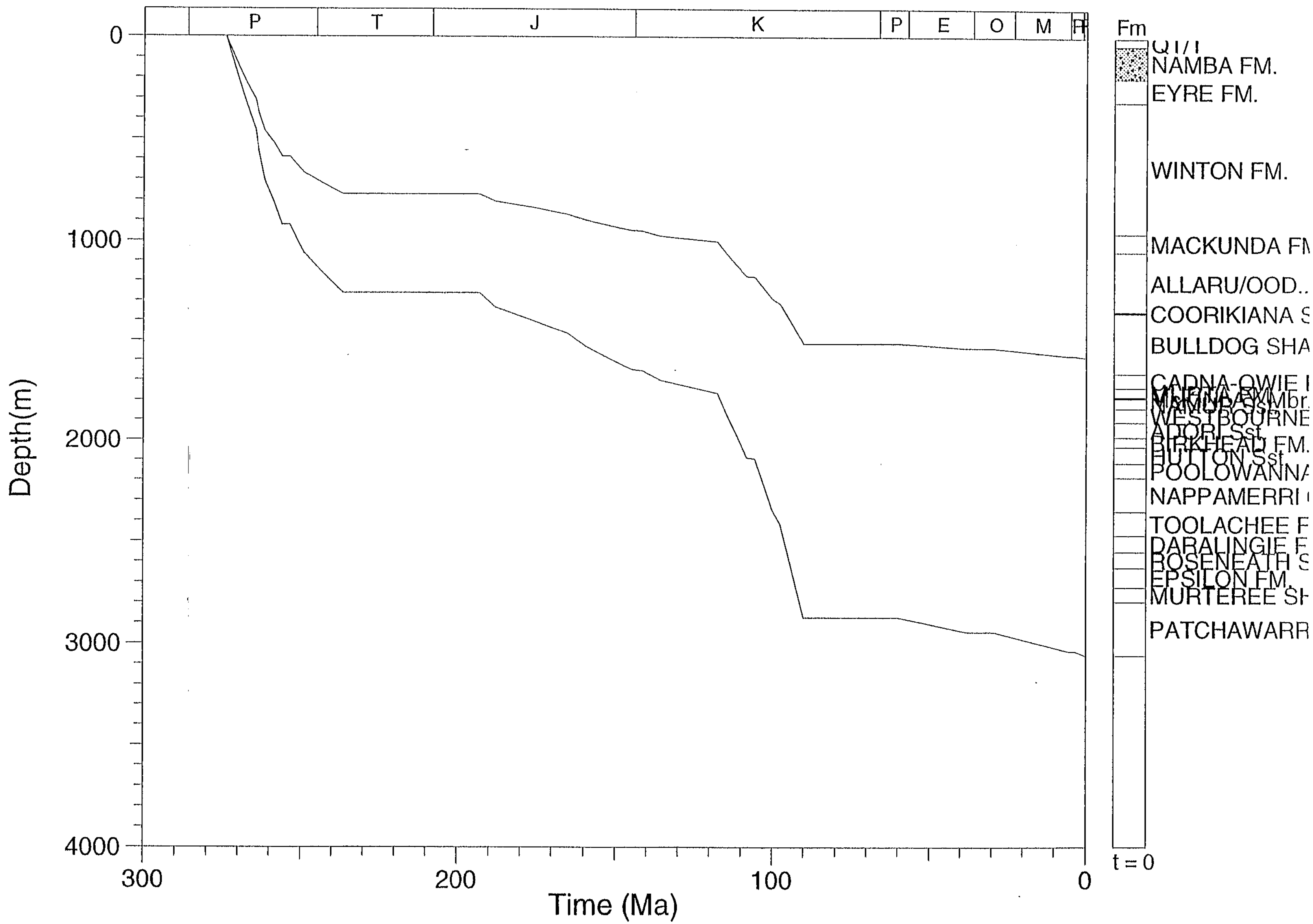
MERRIMELIA-30

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



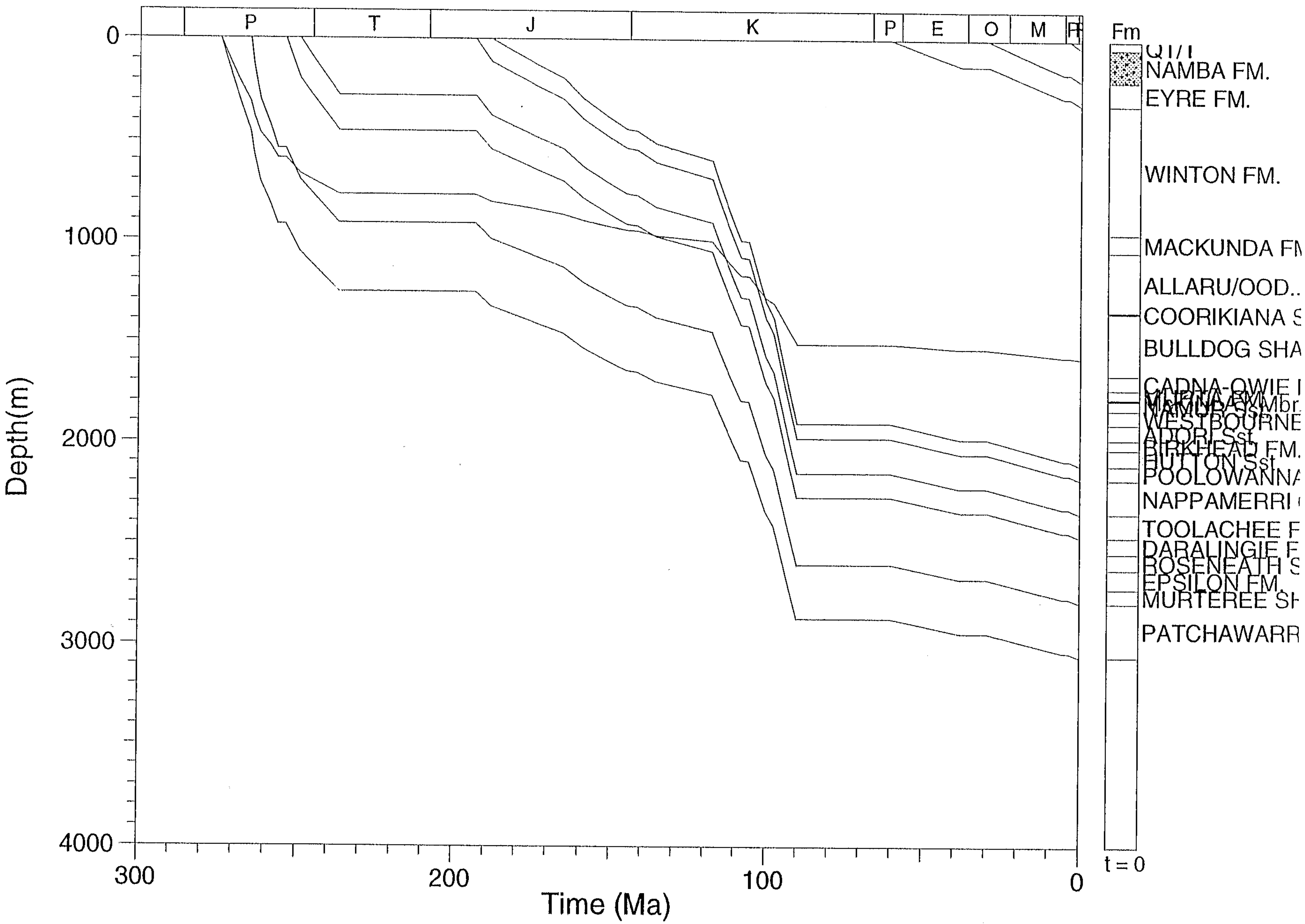
MOOMBA-57

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



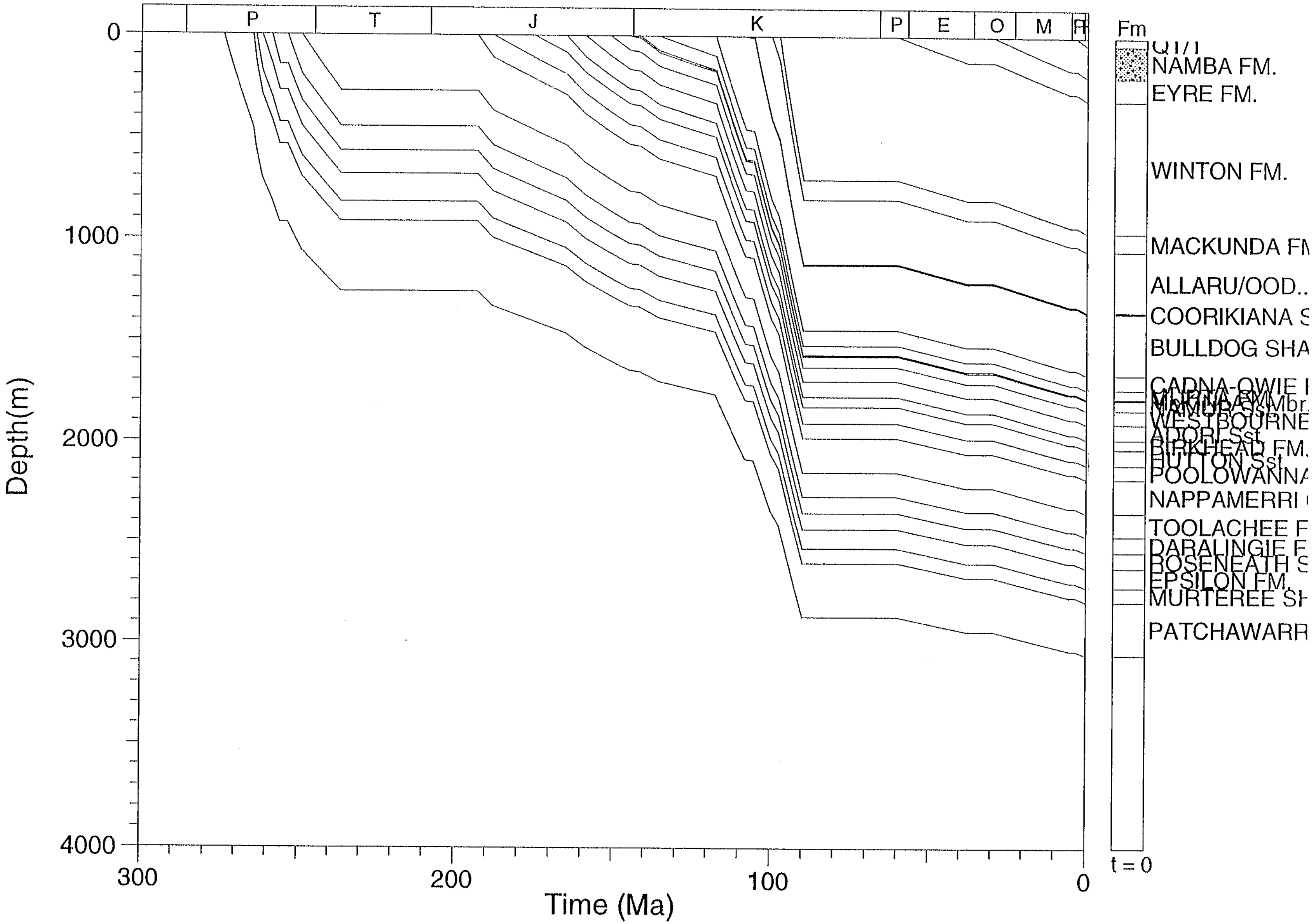
MOOMBA-57

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



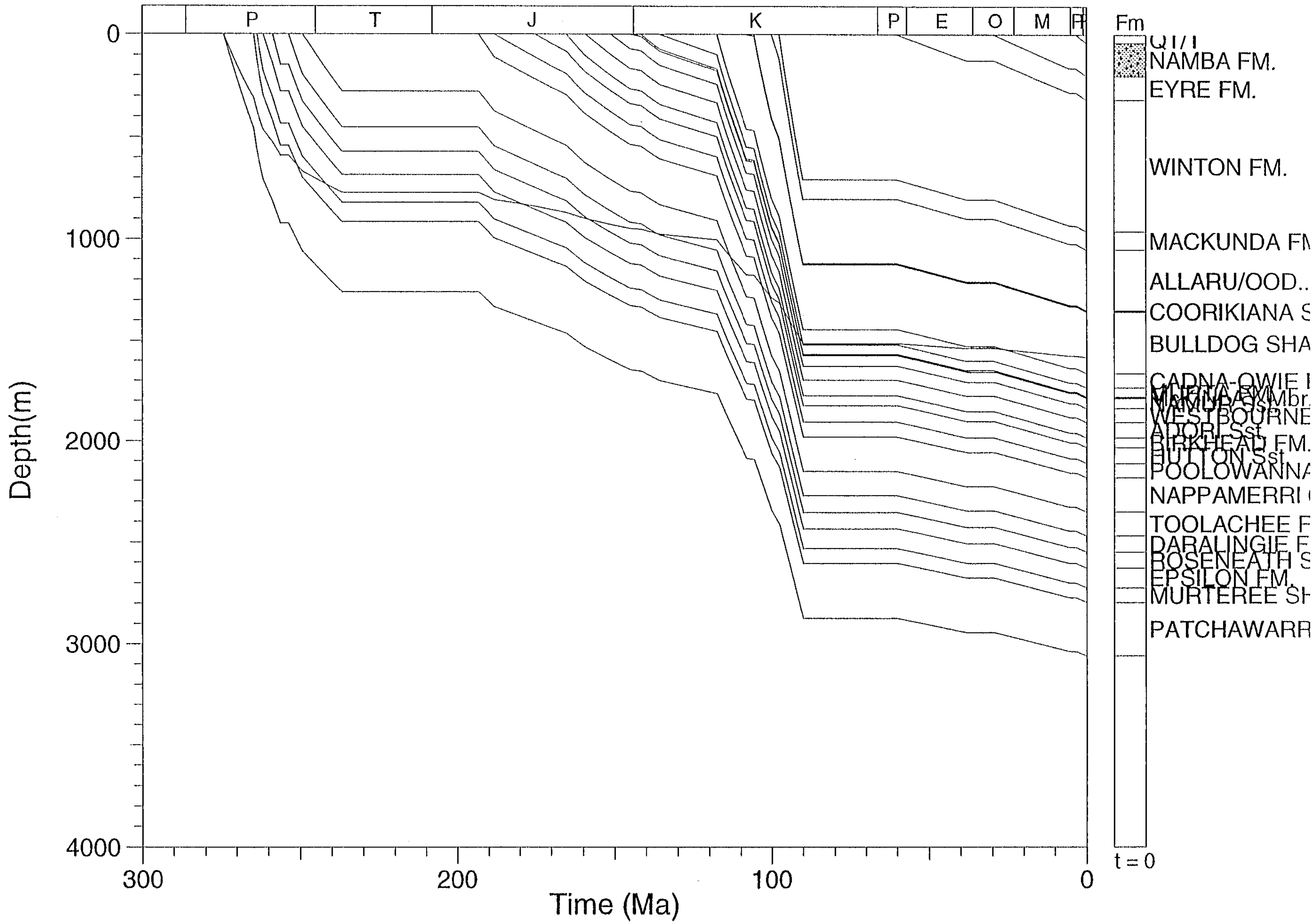
MOOMBA-57

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



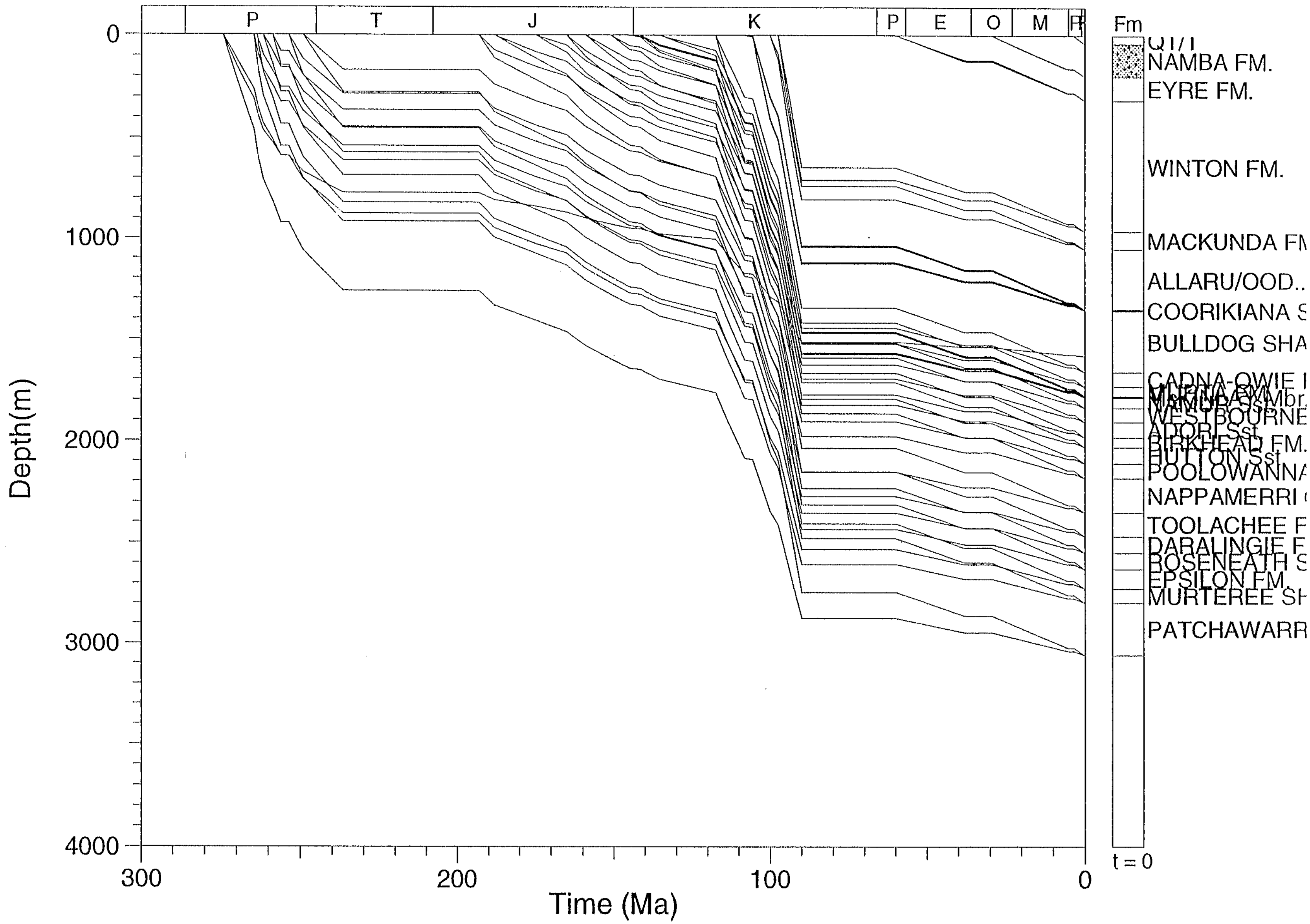
MOOMBA-57

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



MOOMBA-57

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



MULGA-2

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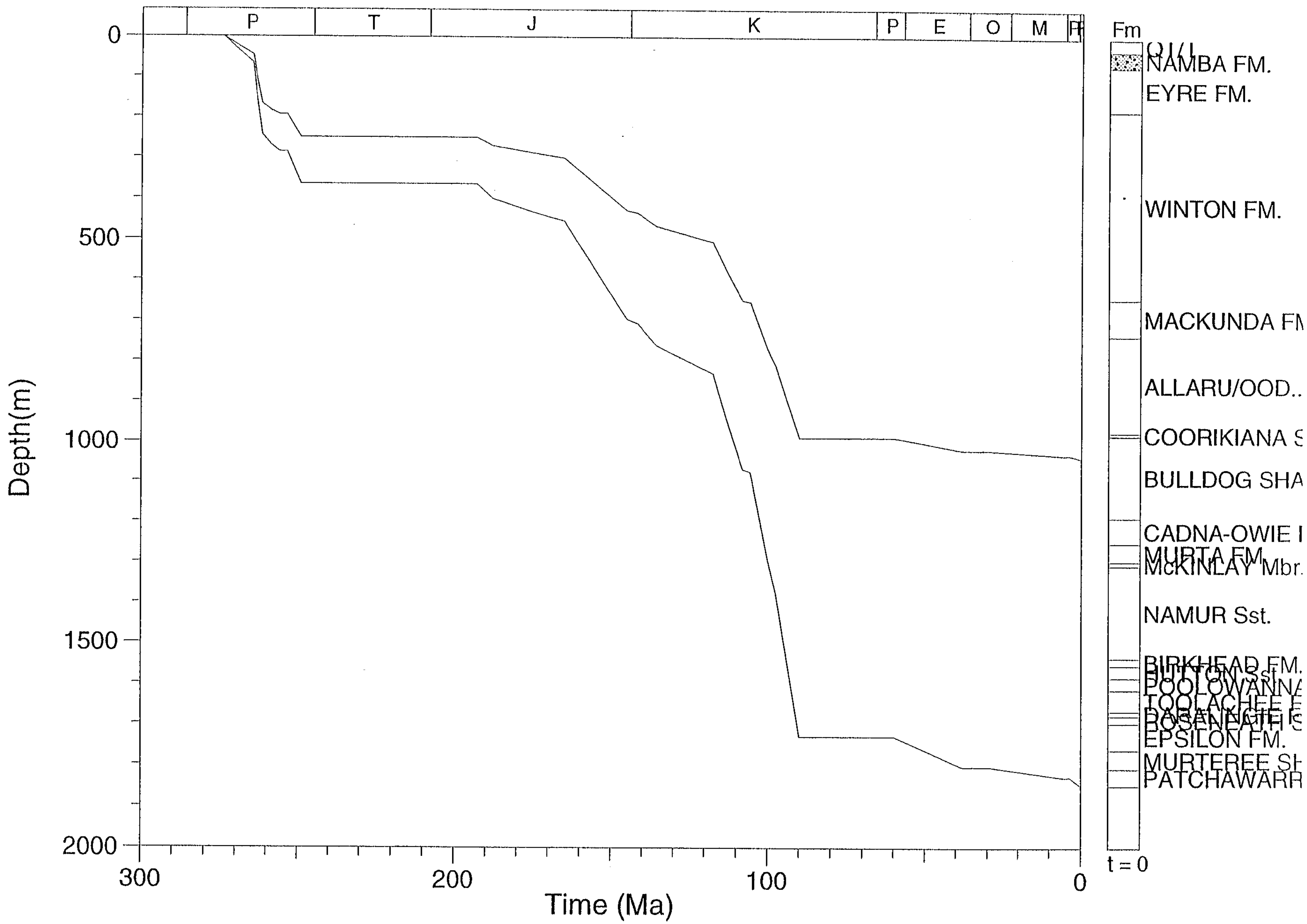
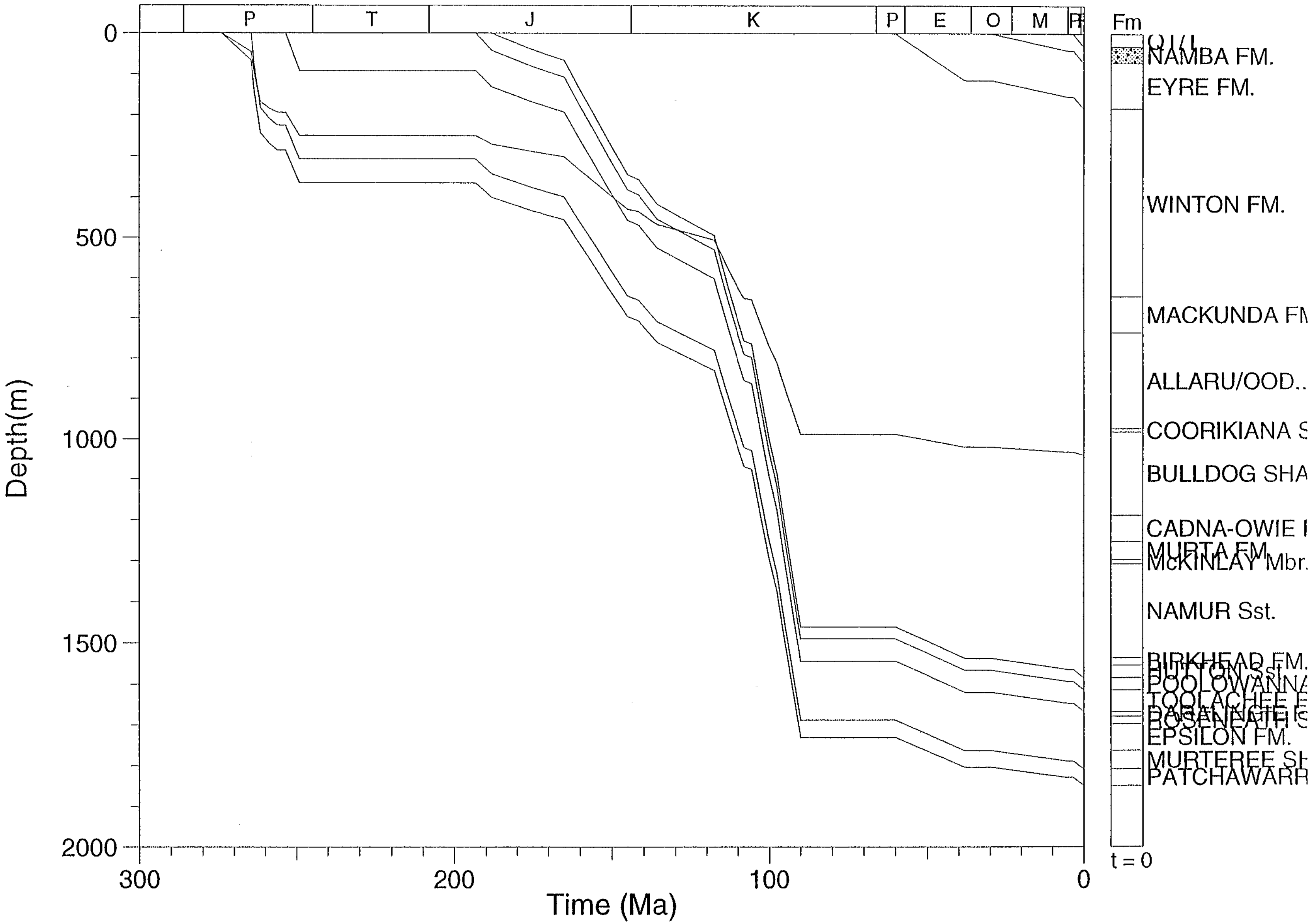
TG=1;TI=1;EXP=None



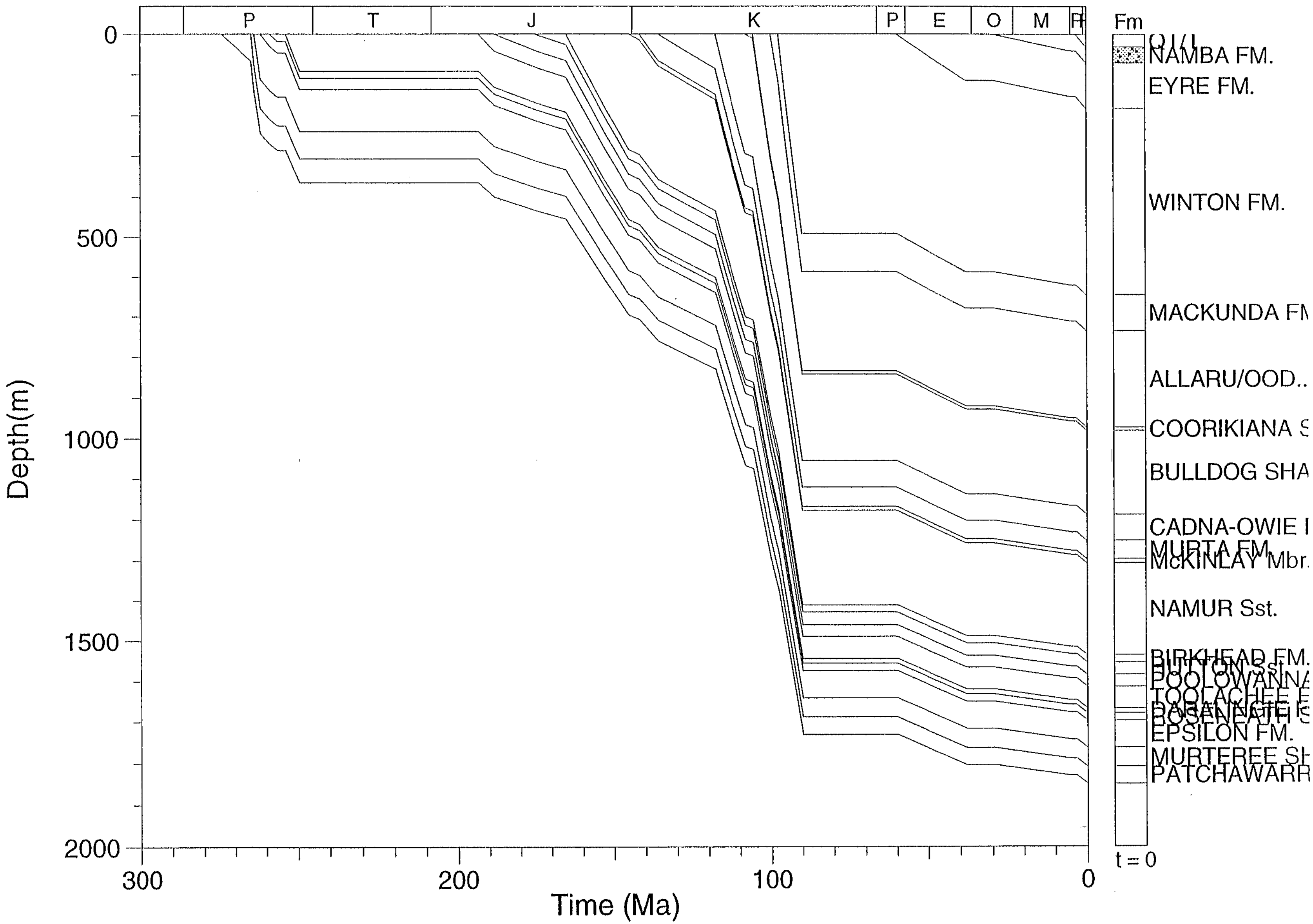
MULGA-2

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



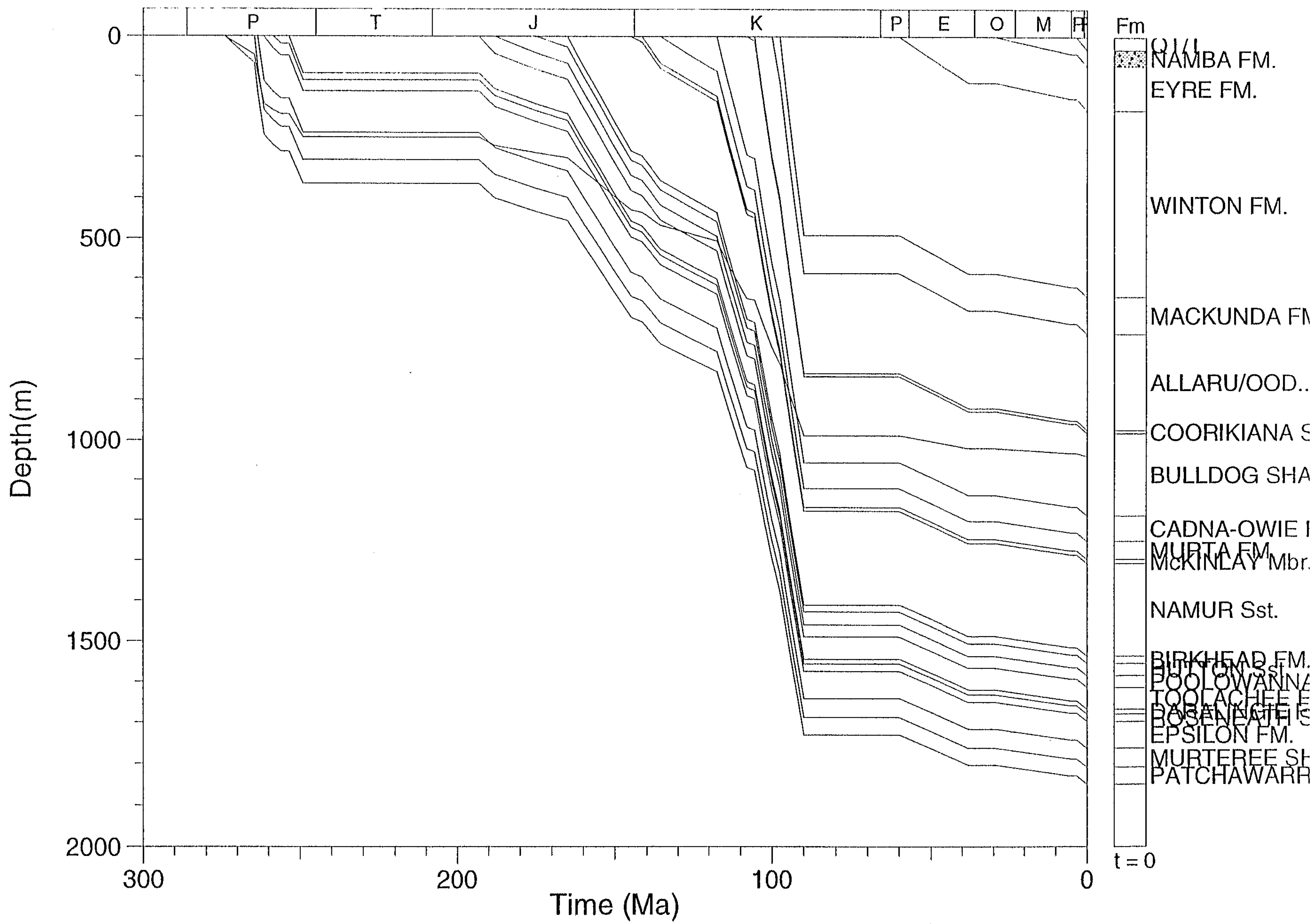
MULGA-2

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None

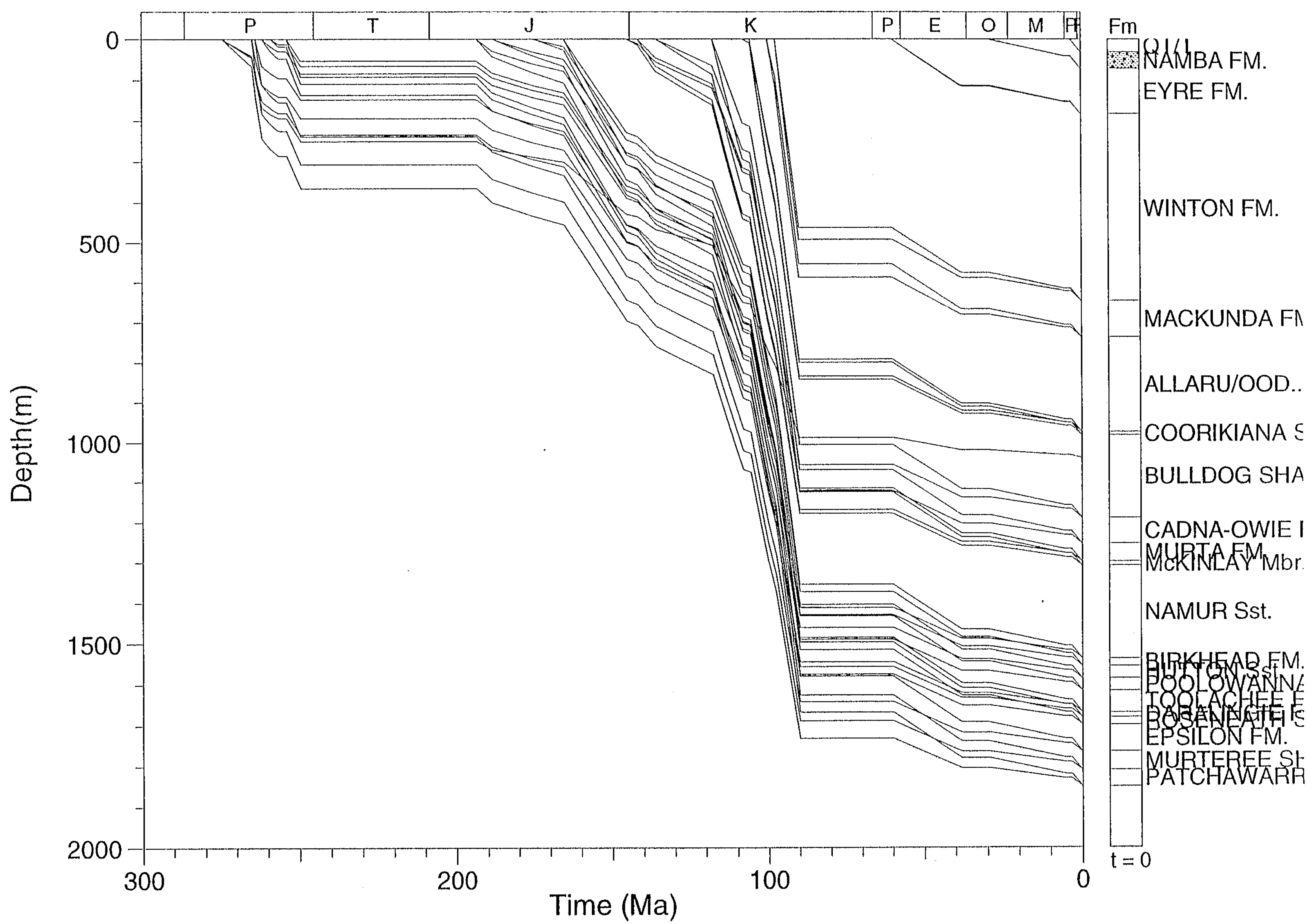


MULGA-2

CMP=SC;TH=C?;MAT=LL
TG=1;TI=1;EXP=None

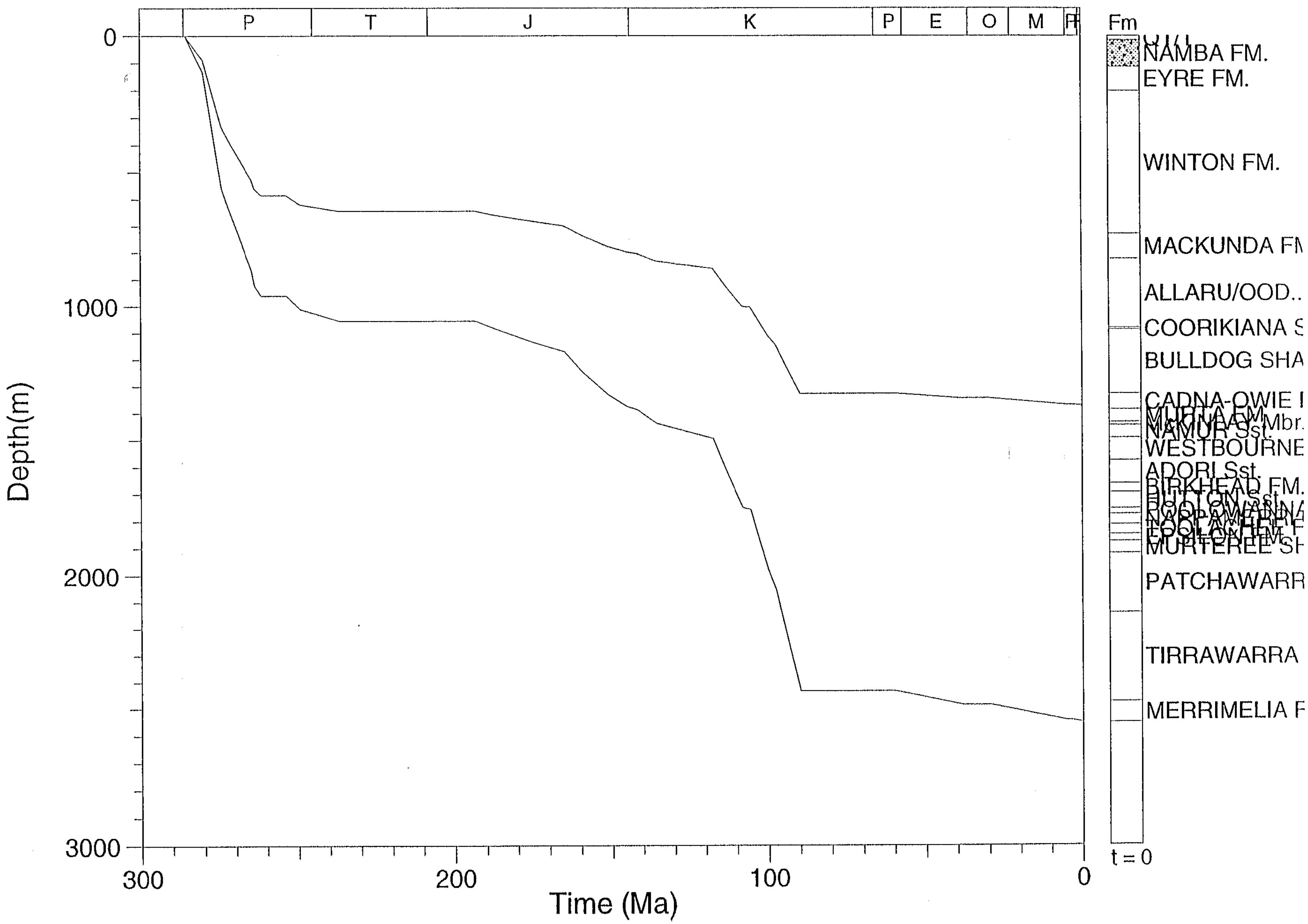


MULGA-2


CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None
P
T
J
K
P
E
O
M
Fm
Depth(m)
0
500
1000
1500
2000
300
200
100
0
Time (Ma)
t = 0
NAMBA FM.
EYRE FM.
WINTON FM.
MACKUNDA FM
ALLARU/OOD..
COORIKIANA S
BULLDOG SHA
CADNA-OWIE I
MURTA FM.
McKINLAY Mbr.
NAMUR Sst.
BIRKHEAD FM.
POOLOWANNA
EPSILON FM.
MURTEREE SH
PATCHAWARR

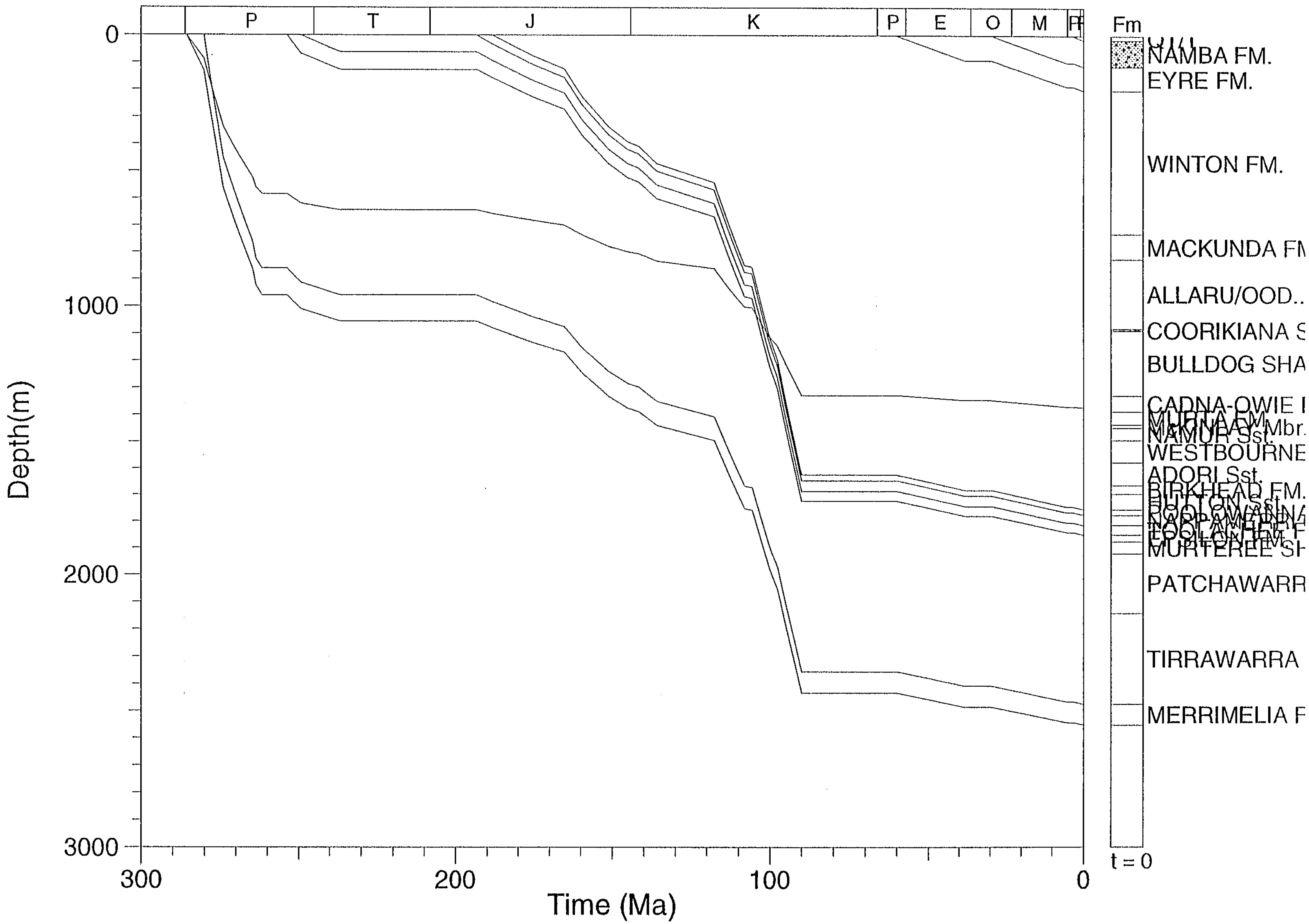
PINNA-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



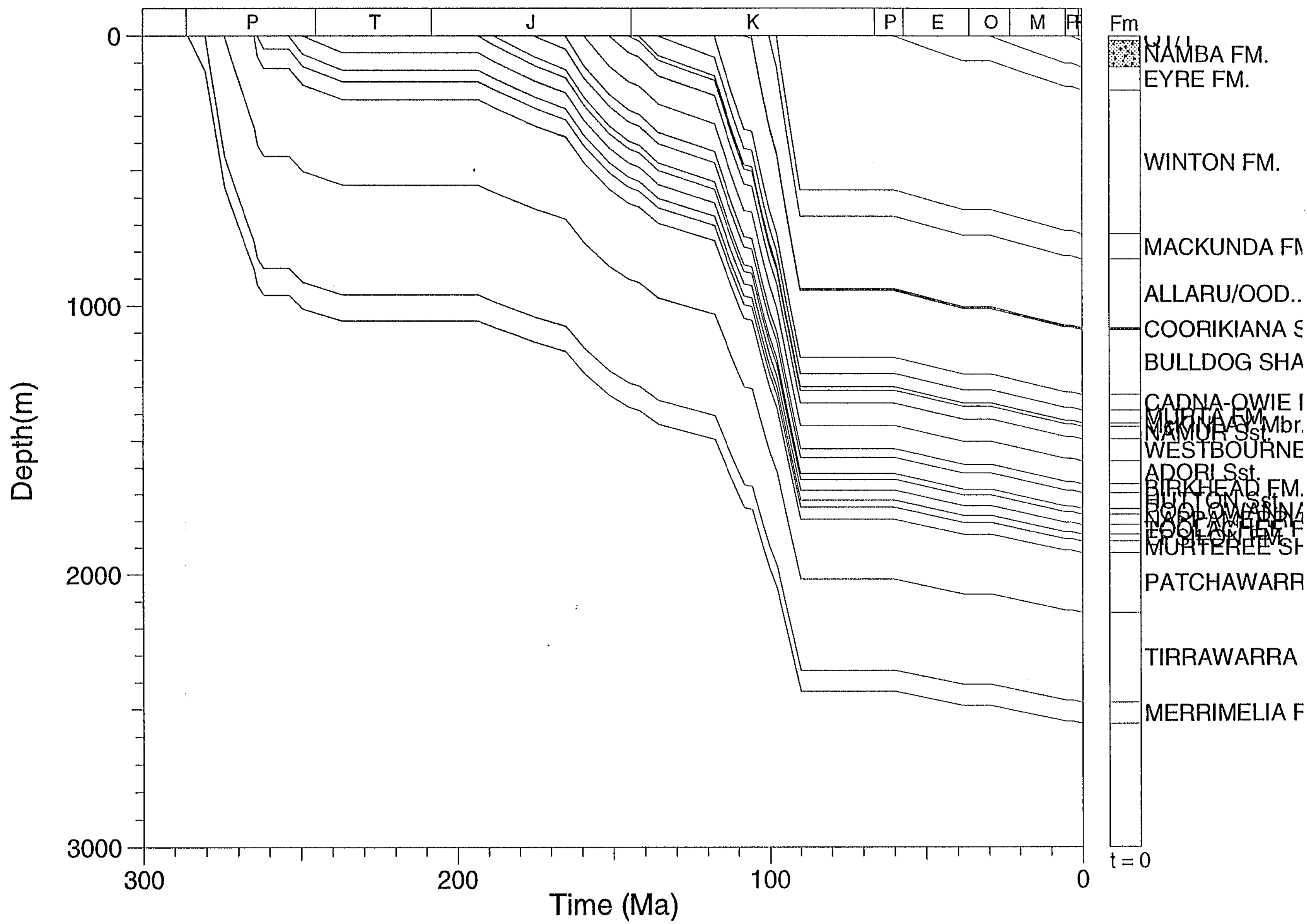
PINNA-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



PINNA-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



PINNA-1

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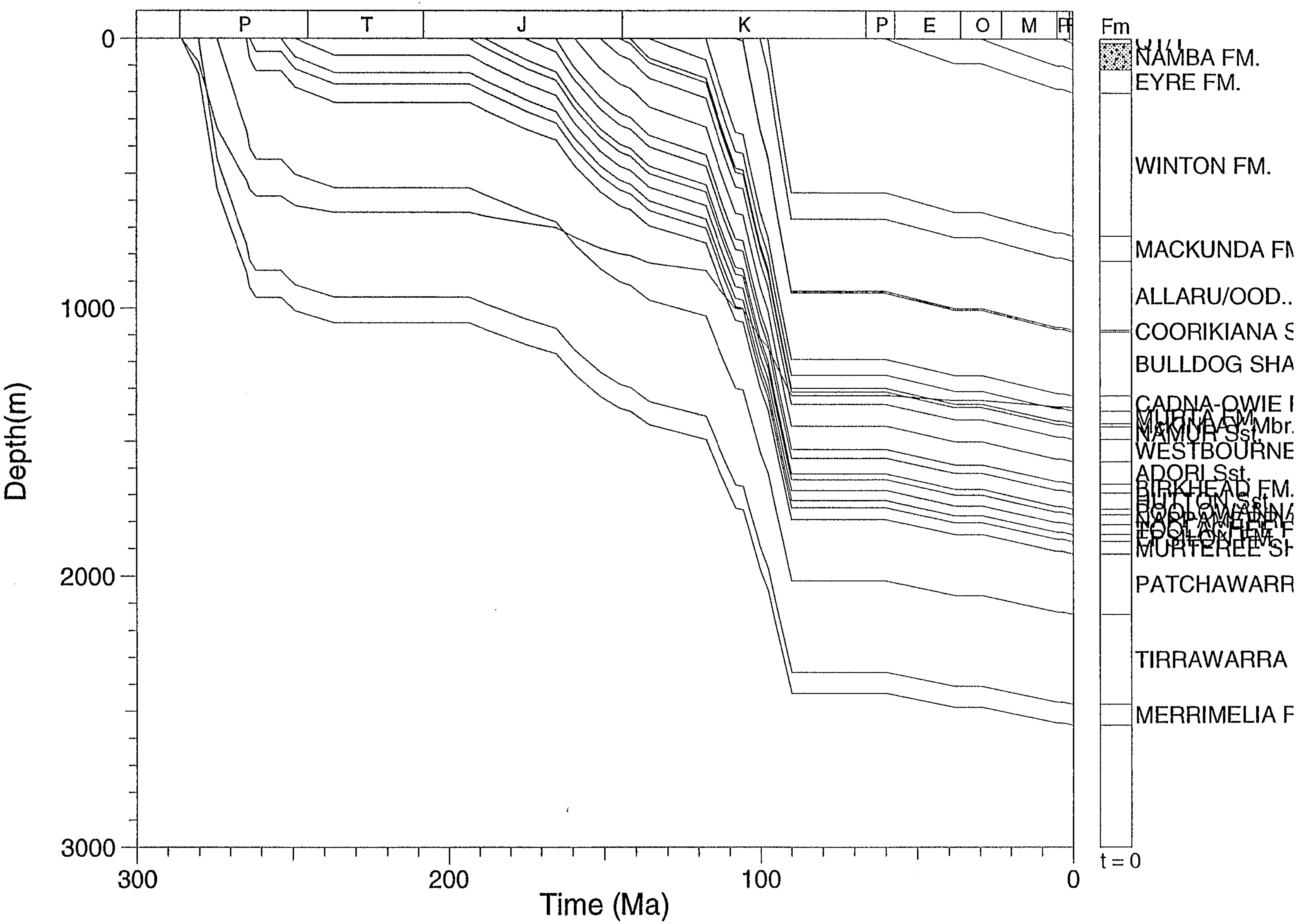
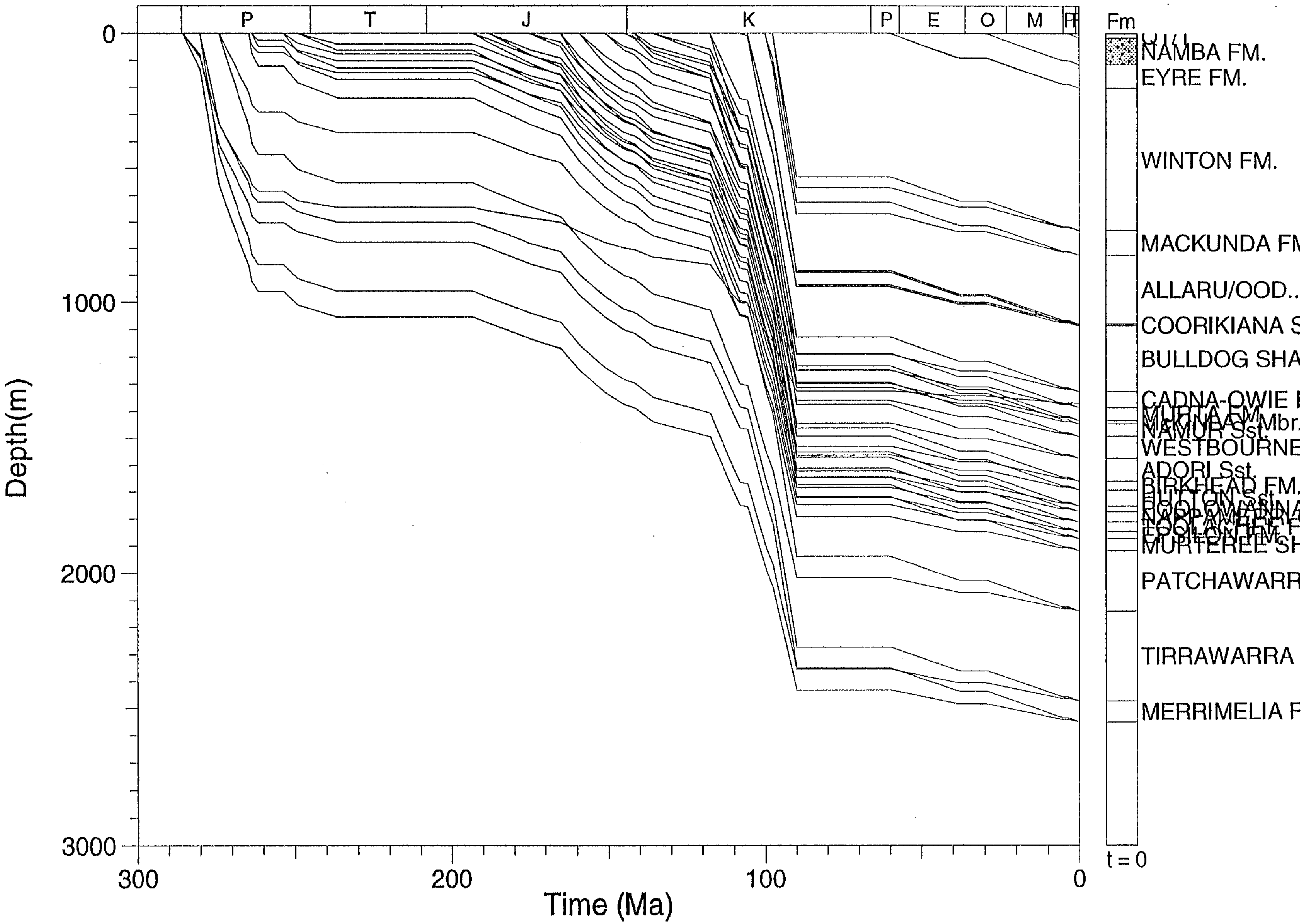
TG=1;TI=1;EXP=None

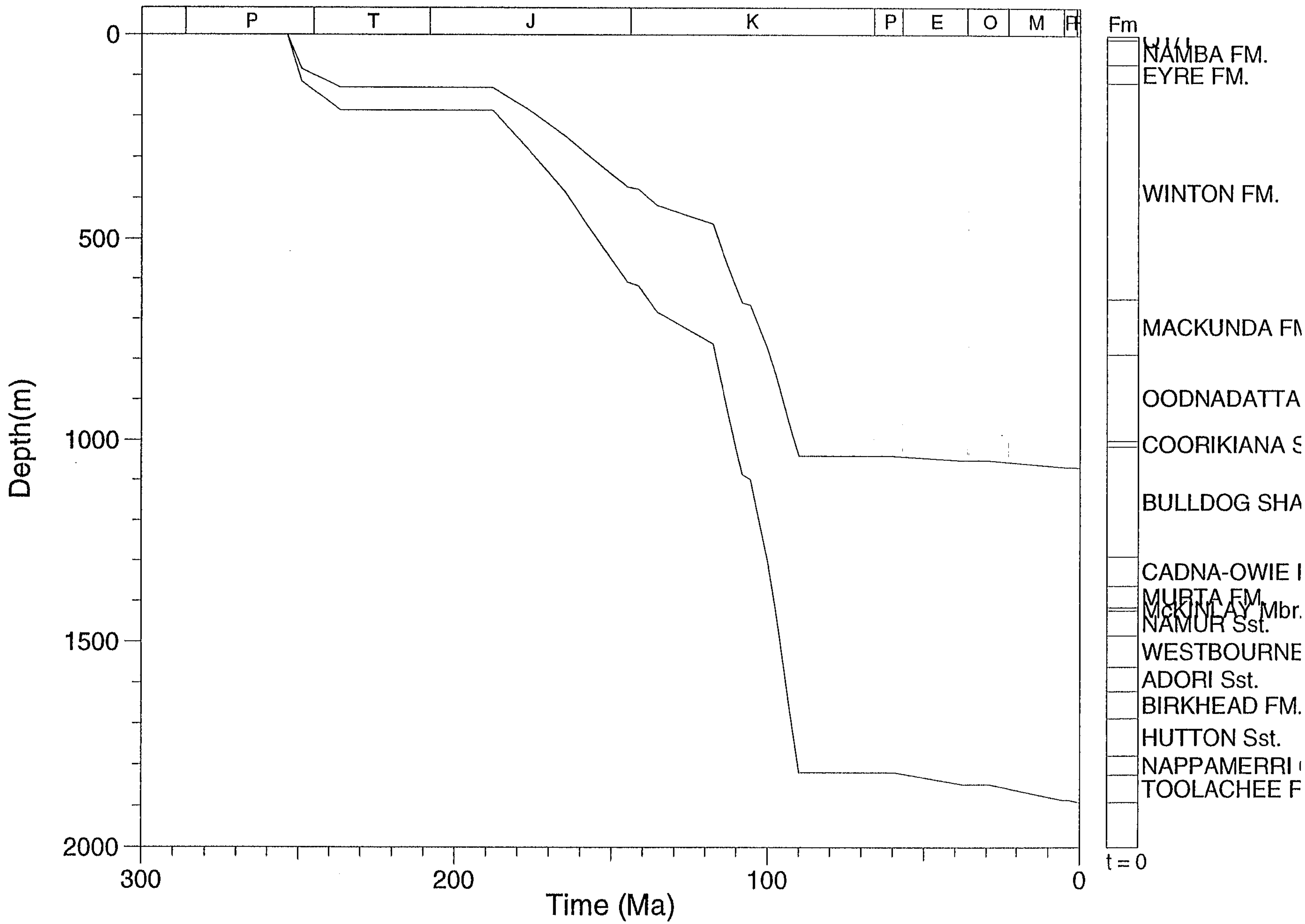


PINNA-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



STRZELECKI-5



STRZELECKI-5

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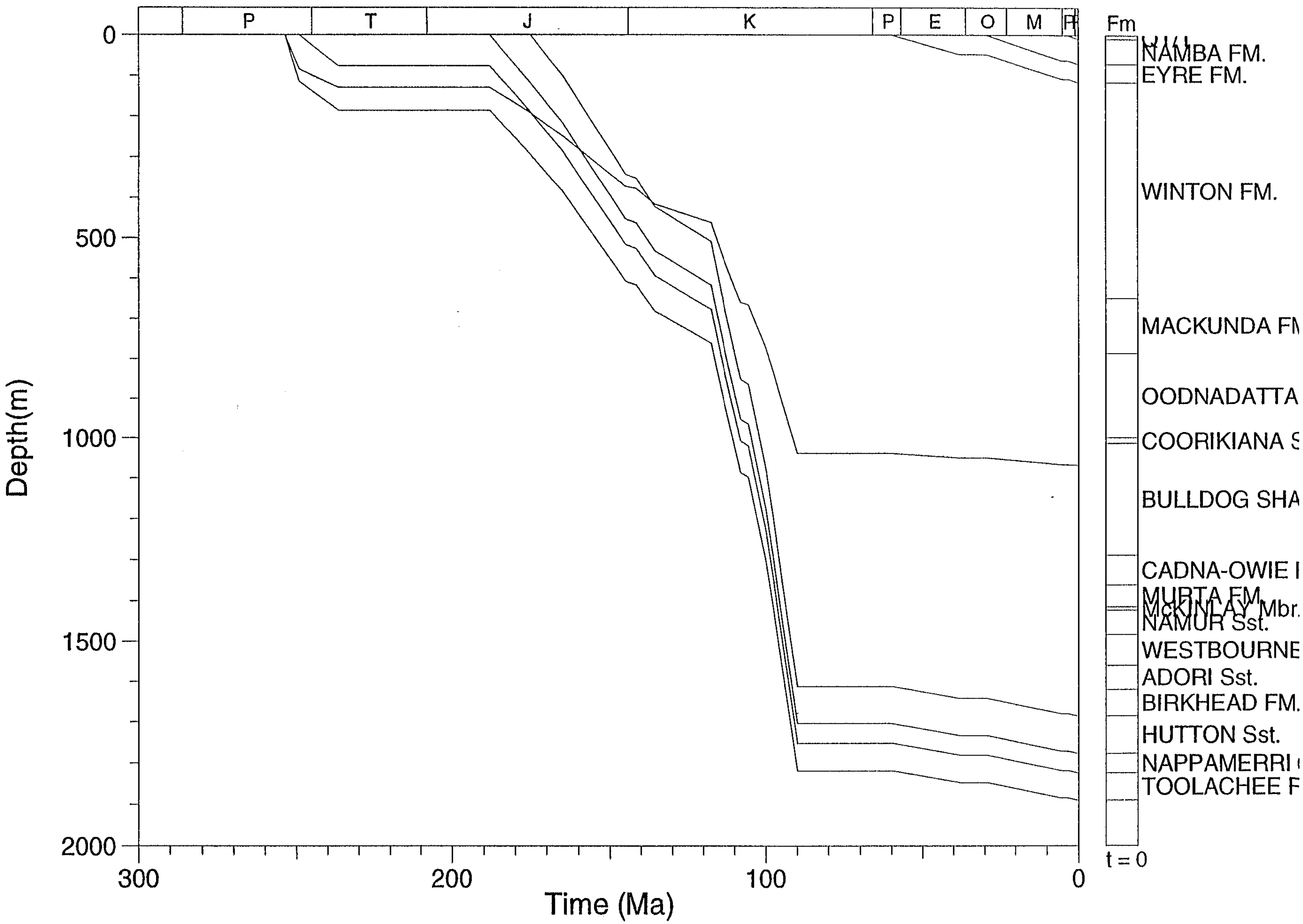
TG=1;TI=1;EXP=None



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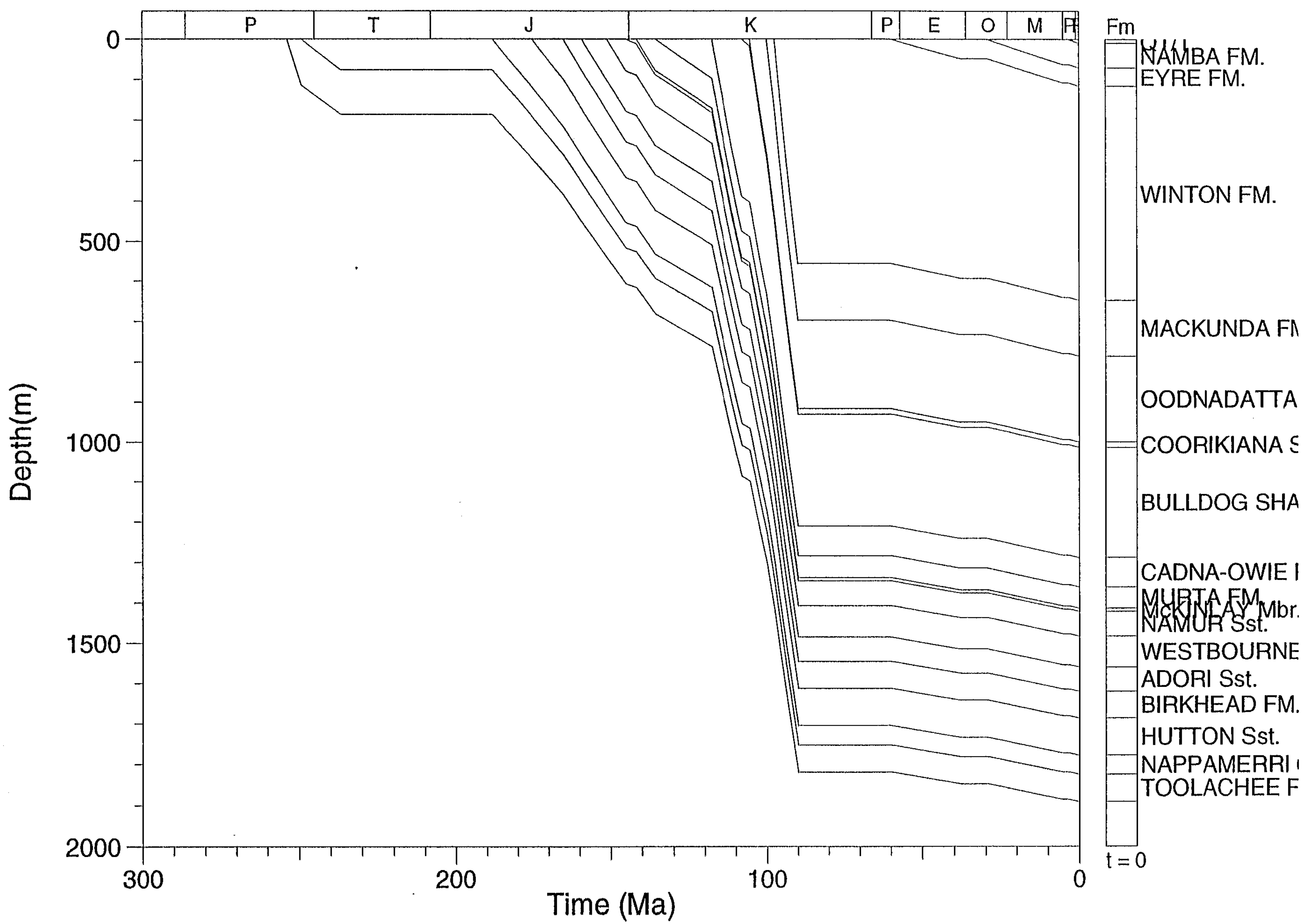

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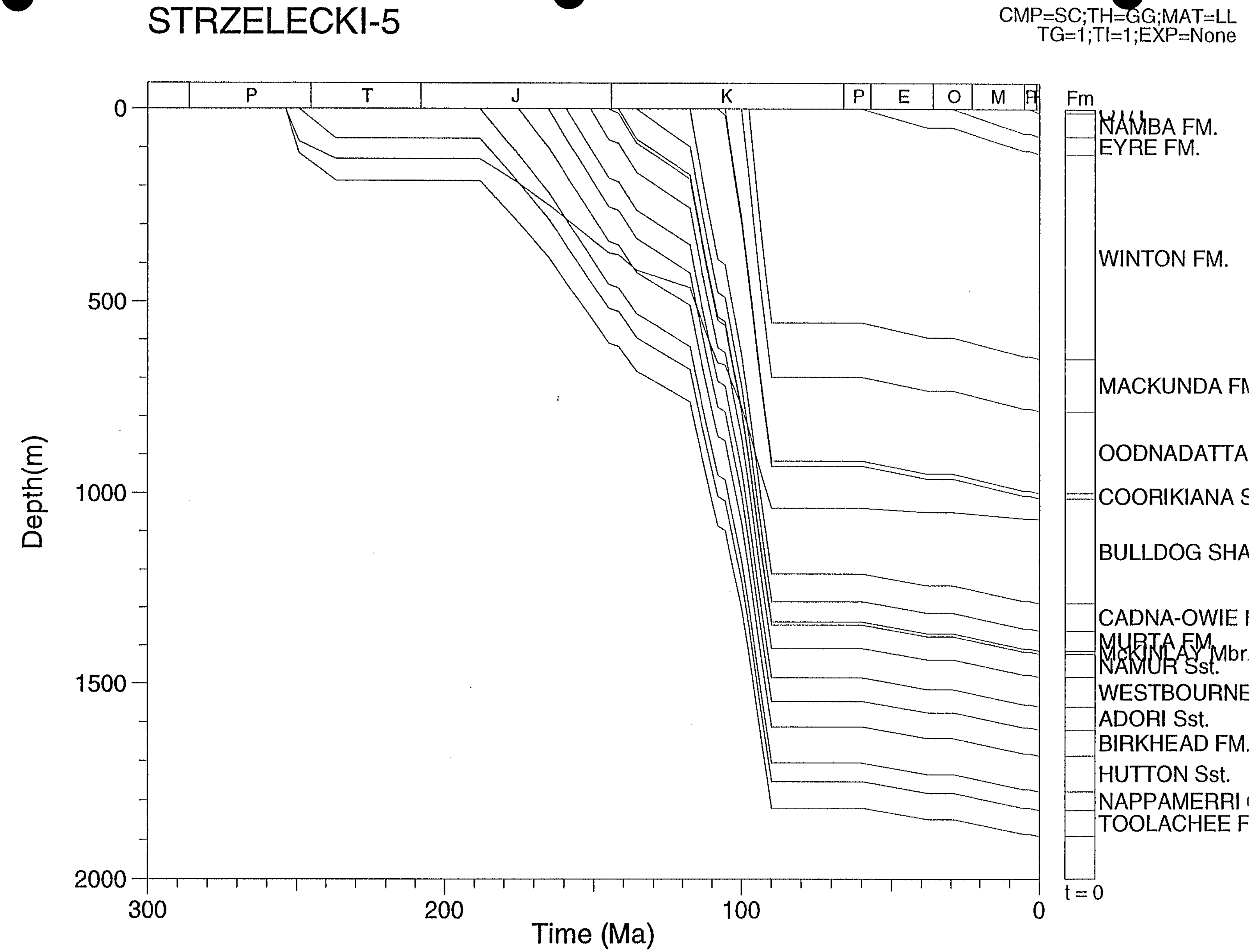
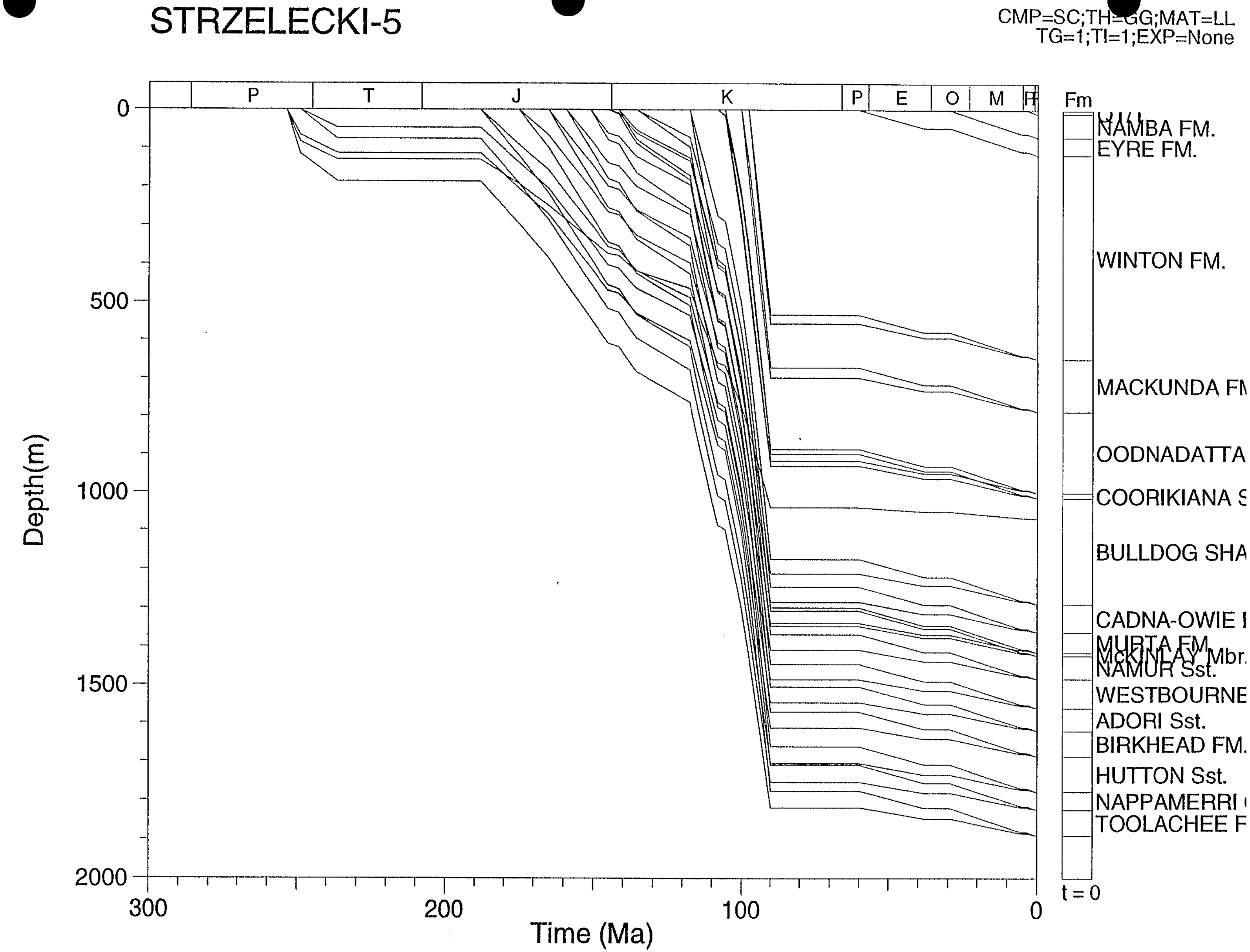
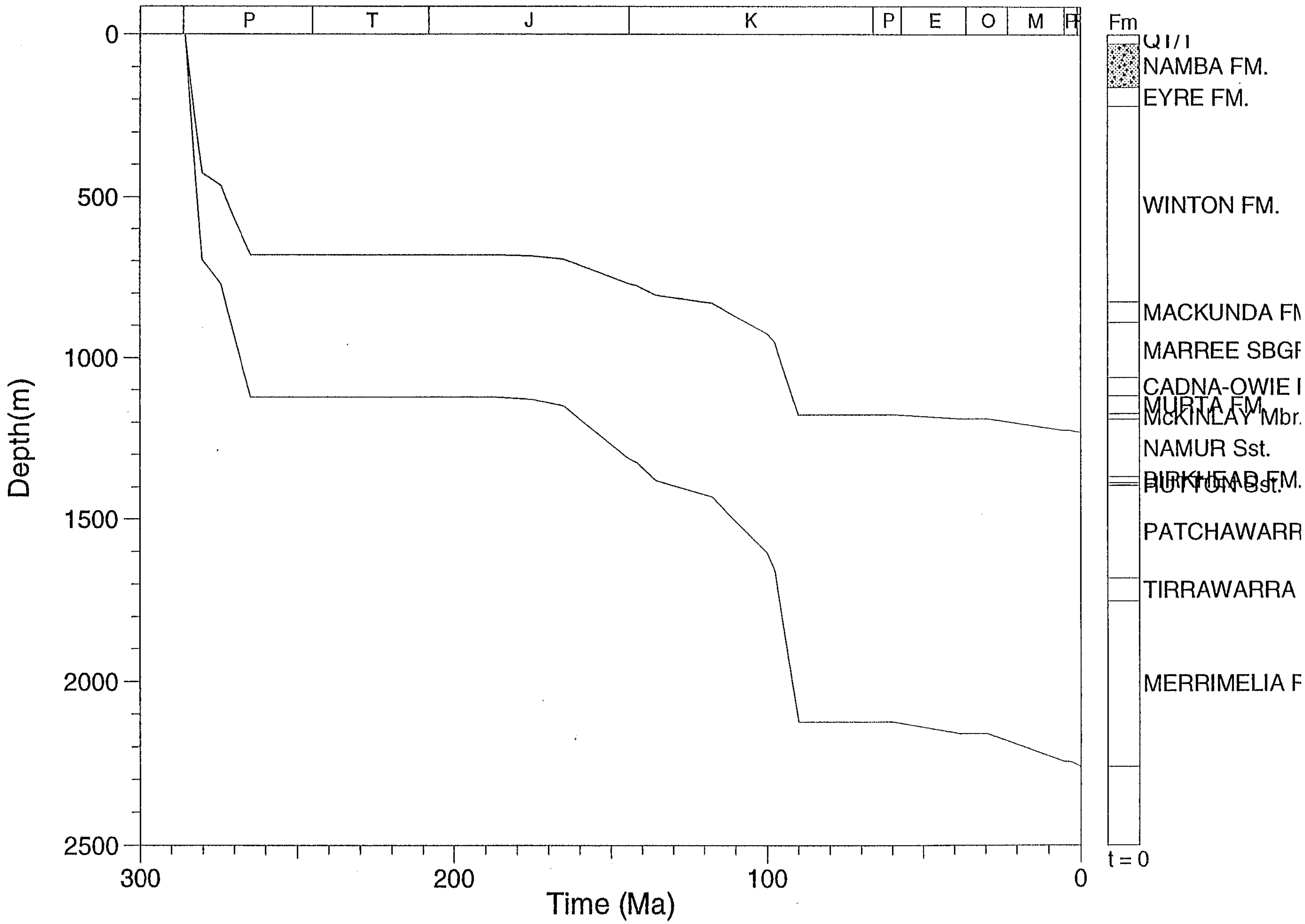


STRZELECKI-5



TINGA-TINGANA-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



TINGA-TINGANA-1

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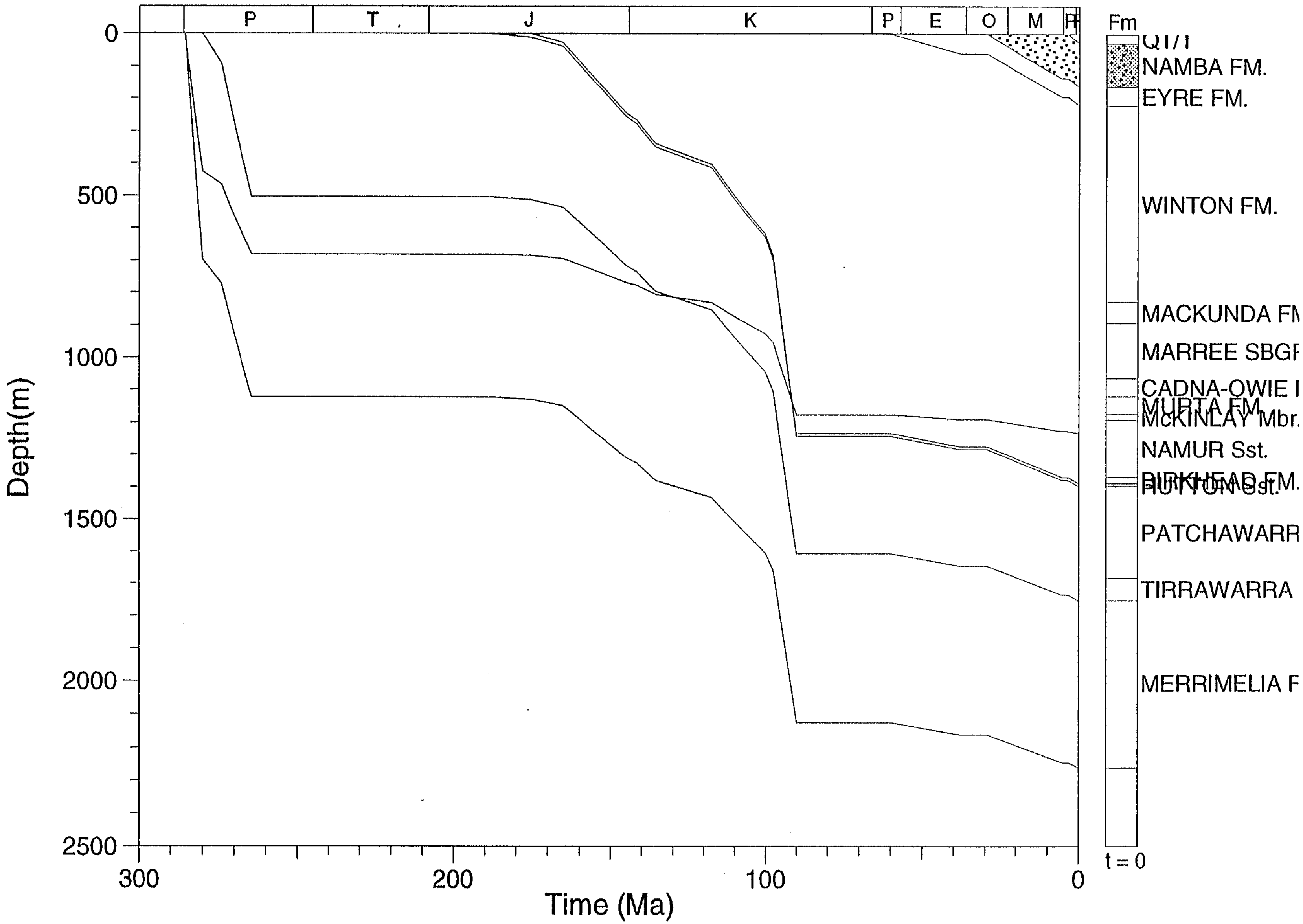
TG=1;TI=1;EXP=None



TINGA-TINGANA-1

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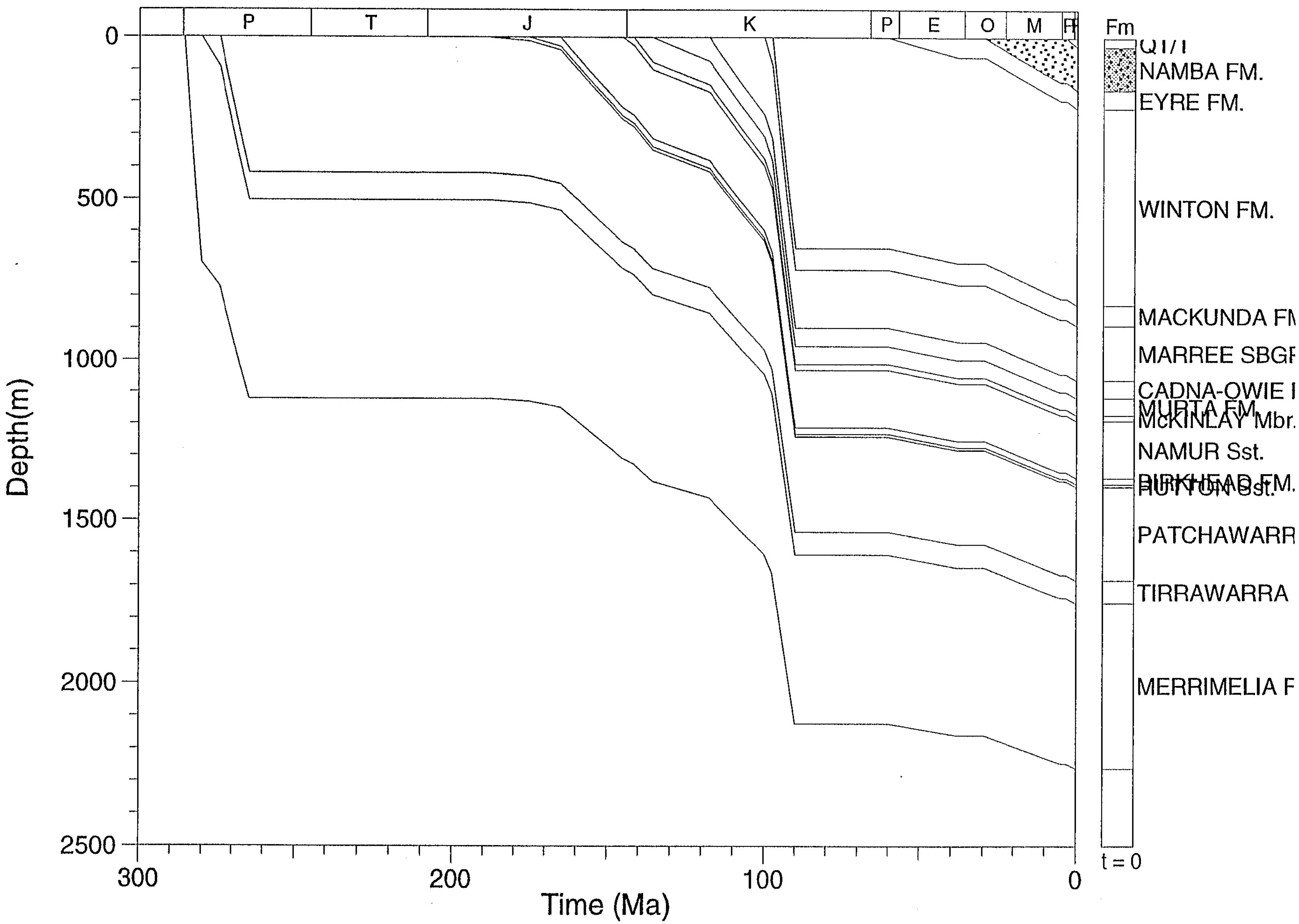
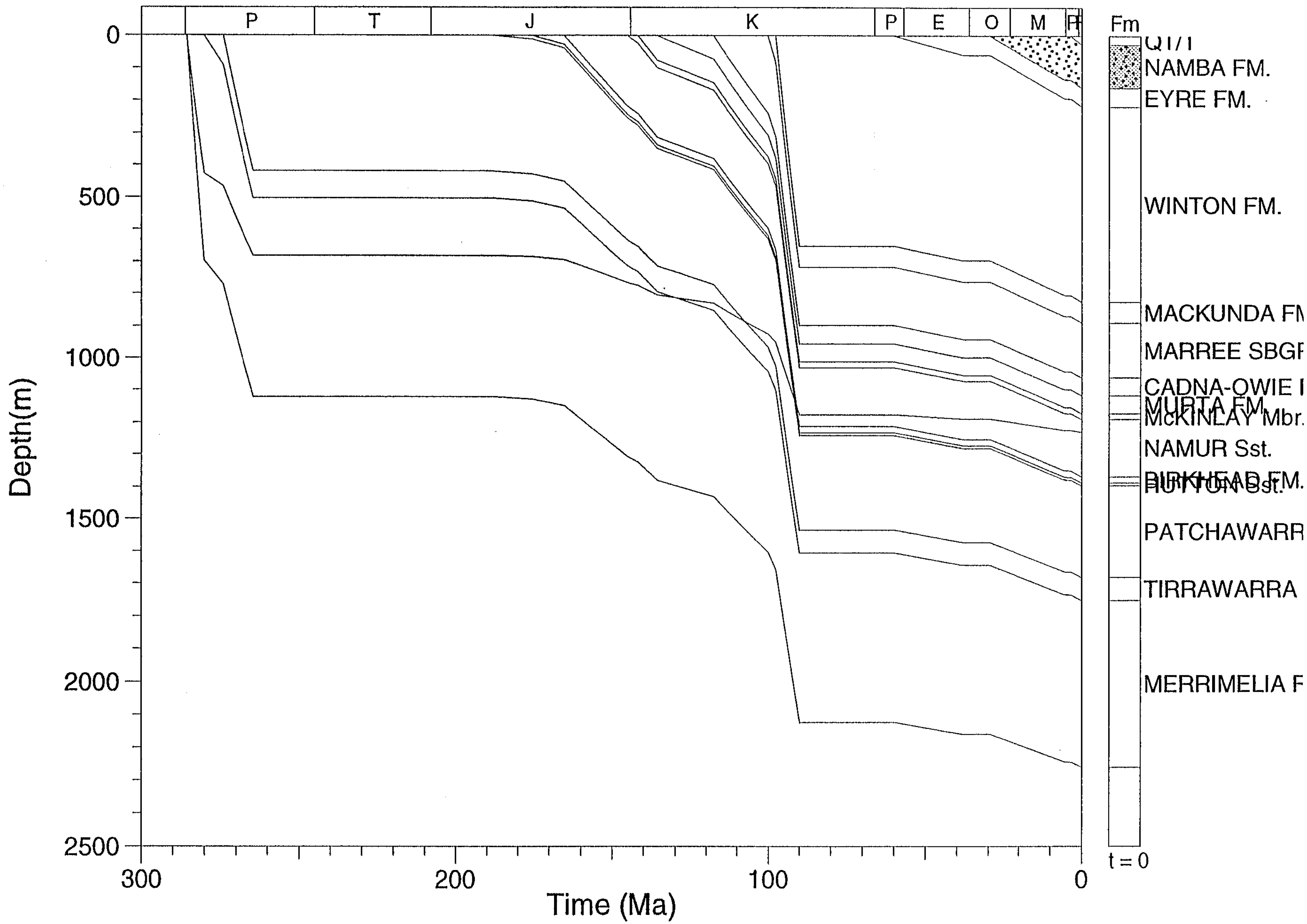
TG=1;TI=1;EXP=None



TINGA-TINGANA-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



TINGA-TINGANA-1

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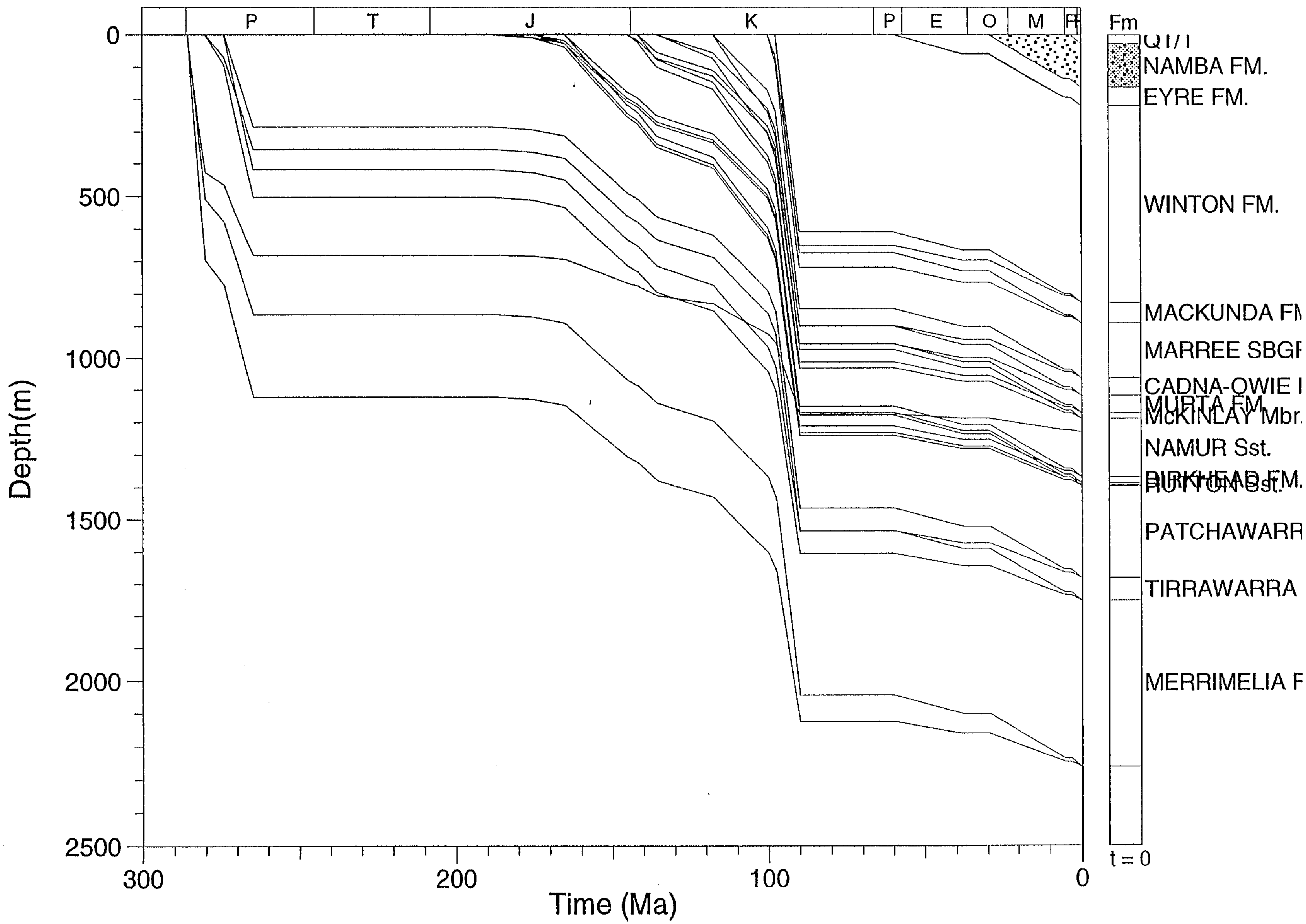
TG=1;TI=1;EXP=None



TOOLACHEE-36

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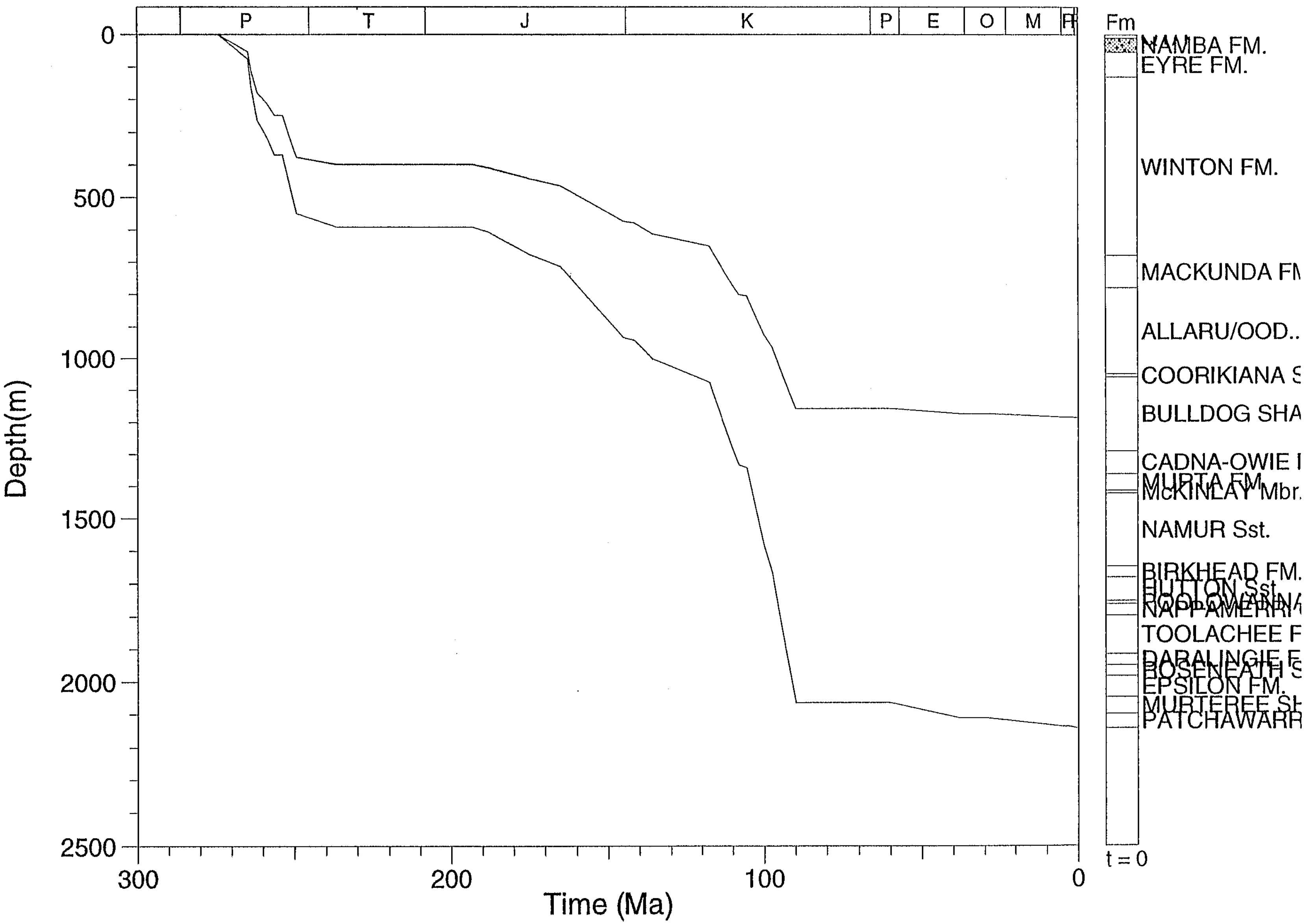
TG=1;TI=1;EXP=None



TOOLACHEE-36

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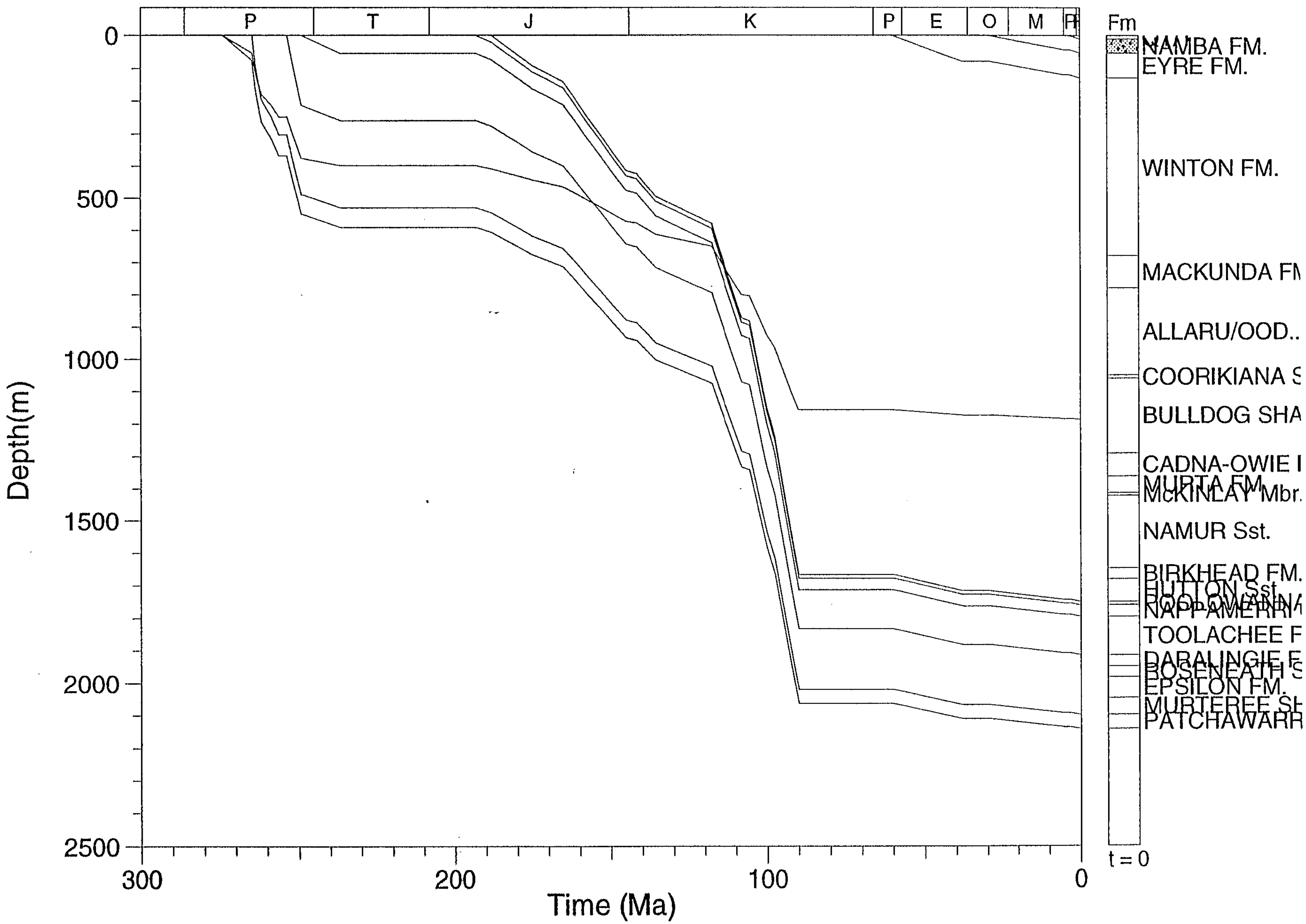
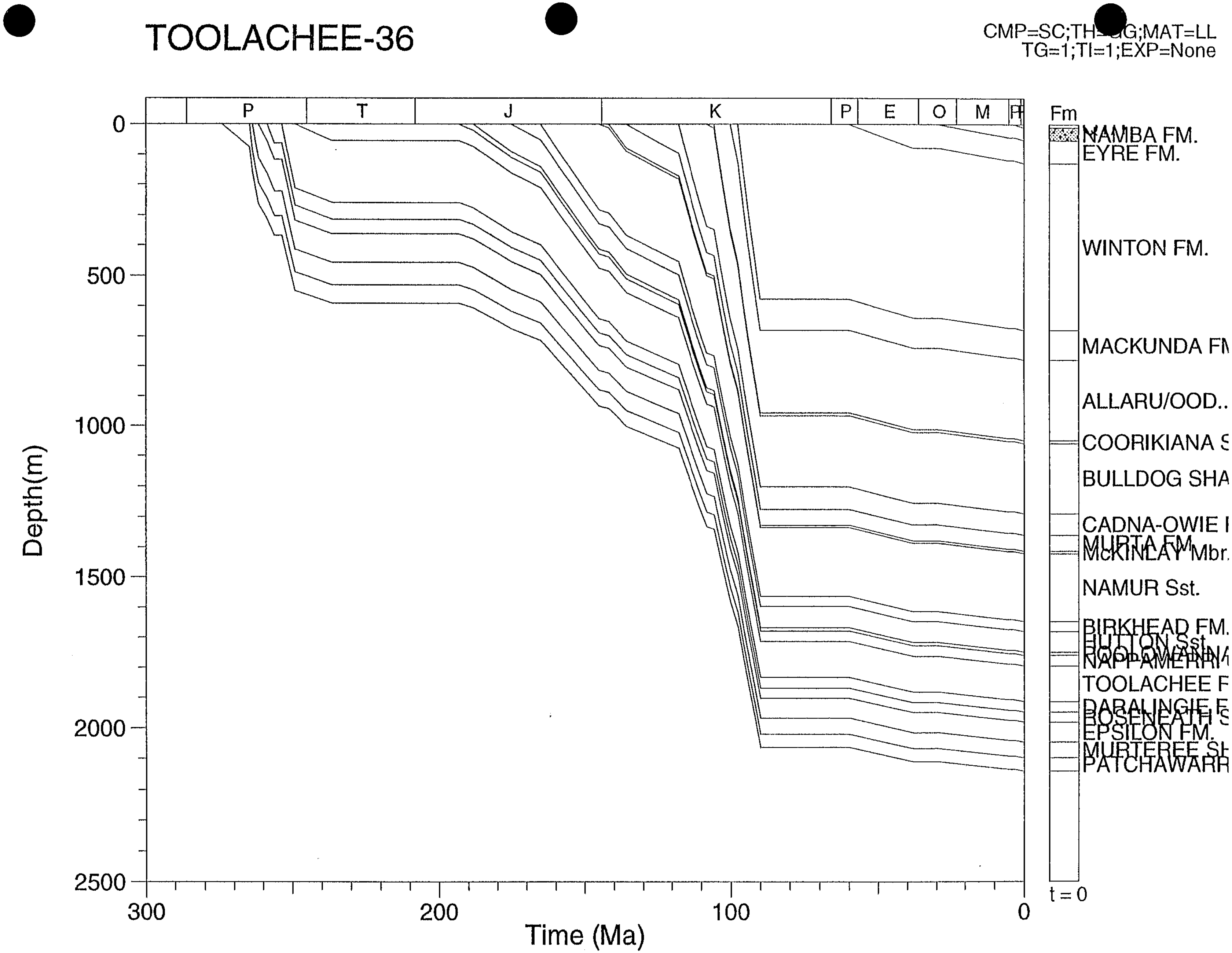
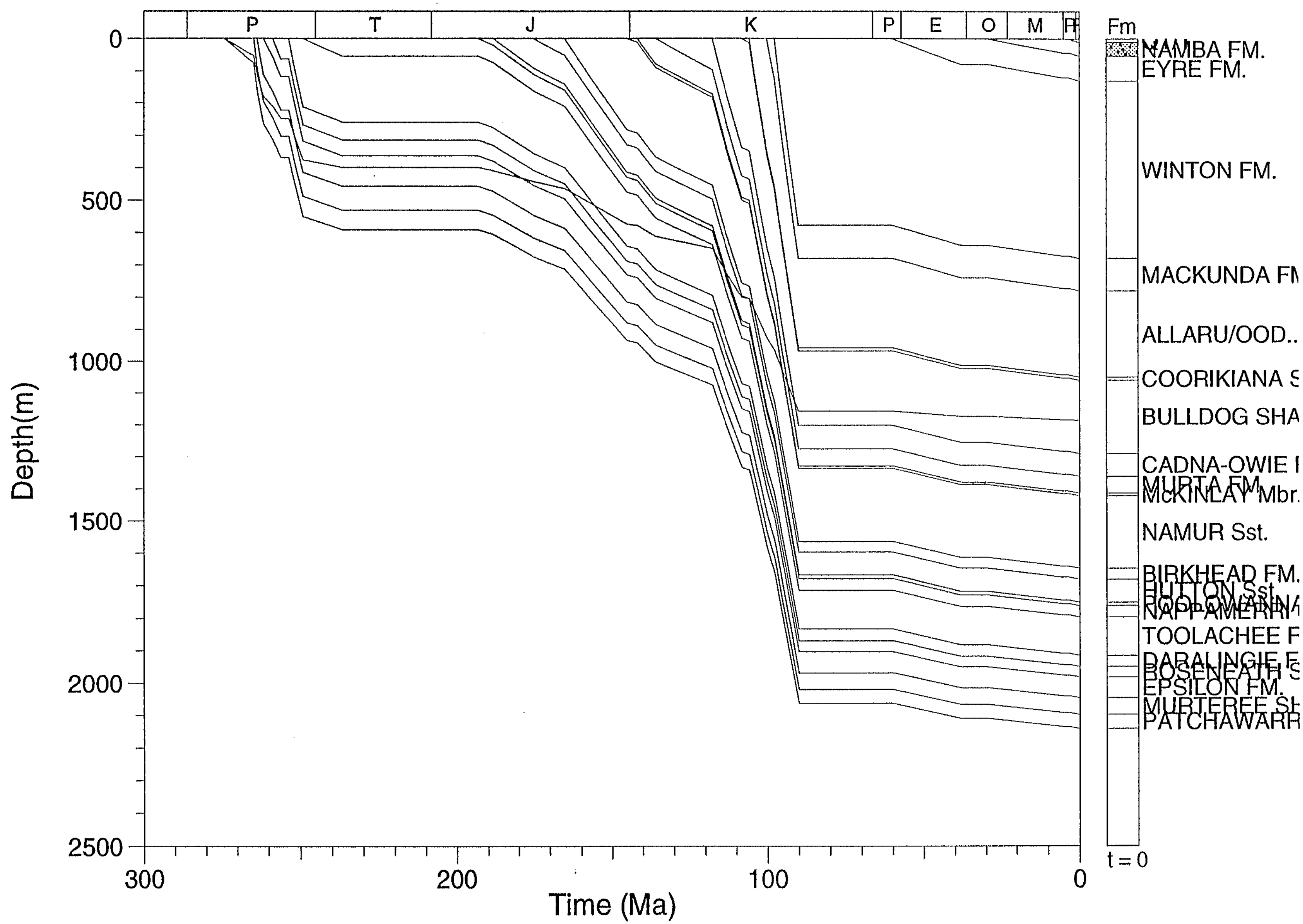
TG=1;TI=1;EXP=None



TOOLACHEE-36



TOOLACHEE-36



TOOLACHEE-36

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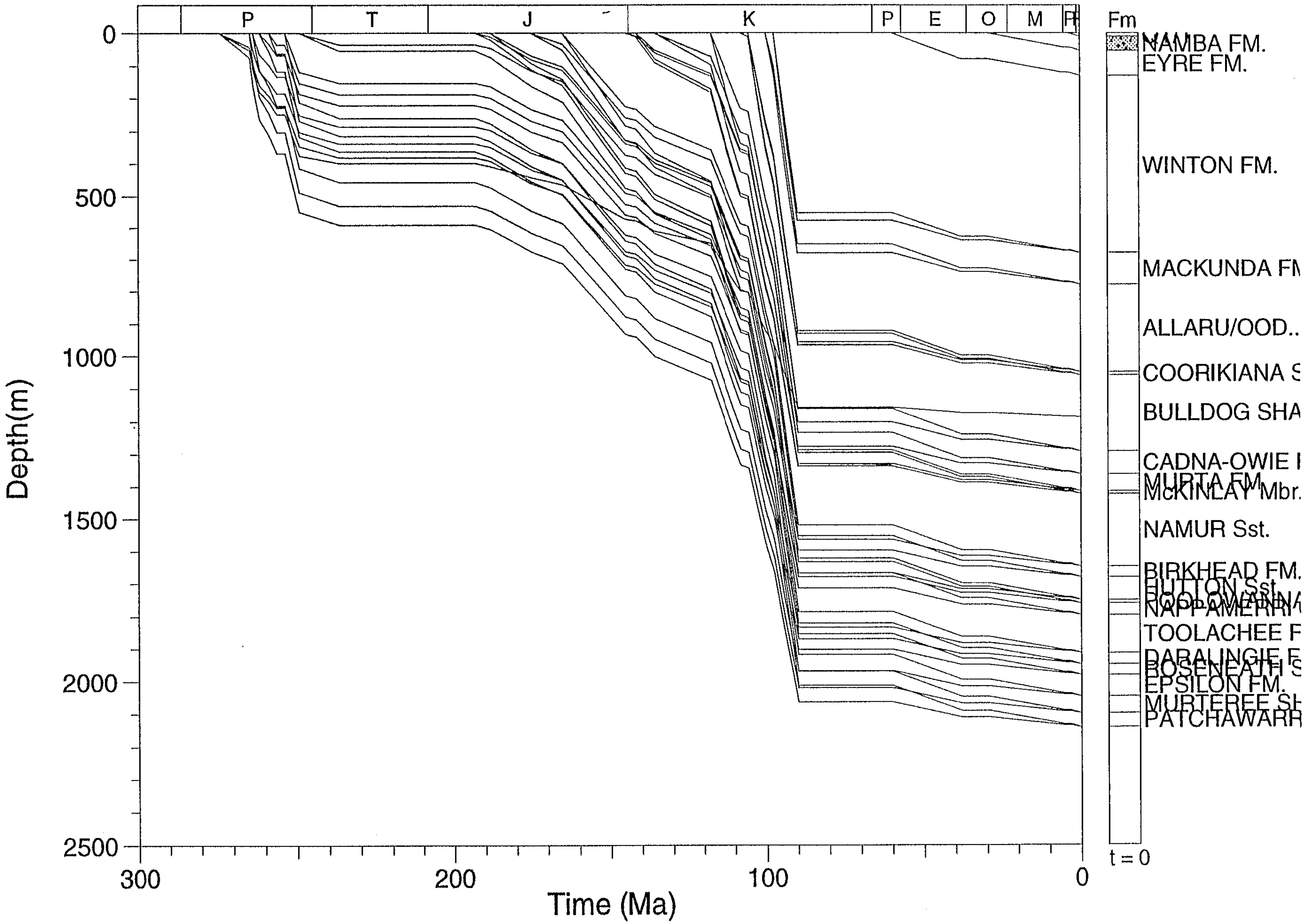
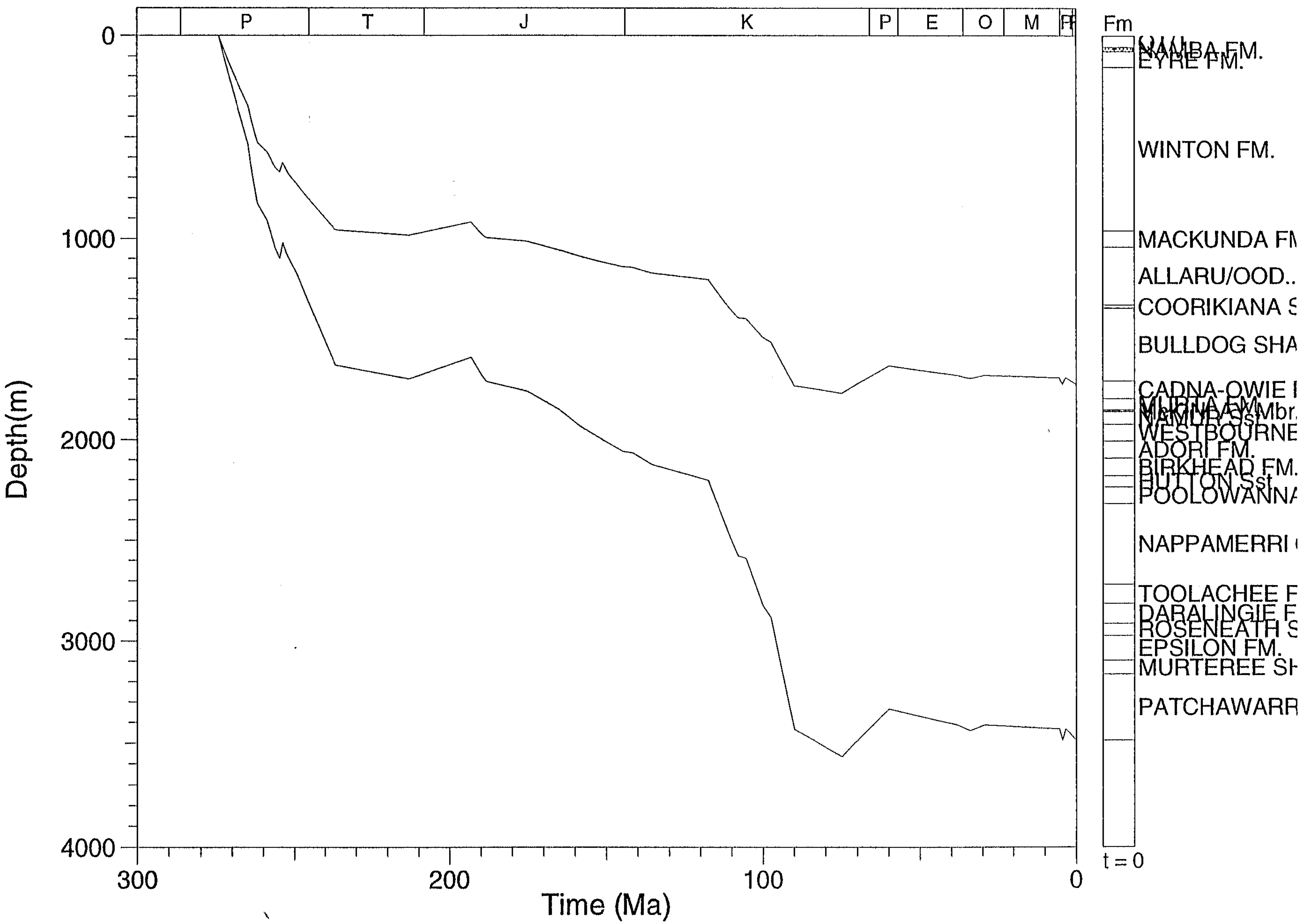
TG=1;TI=1;EXP=None



BULYEROO-1 EROSION

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



BULYEROO-1 EROSION

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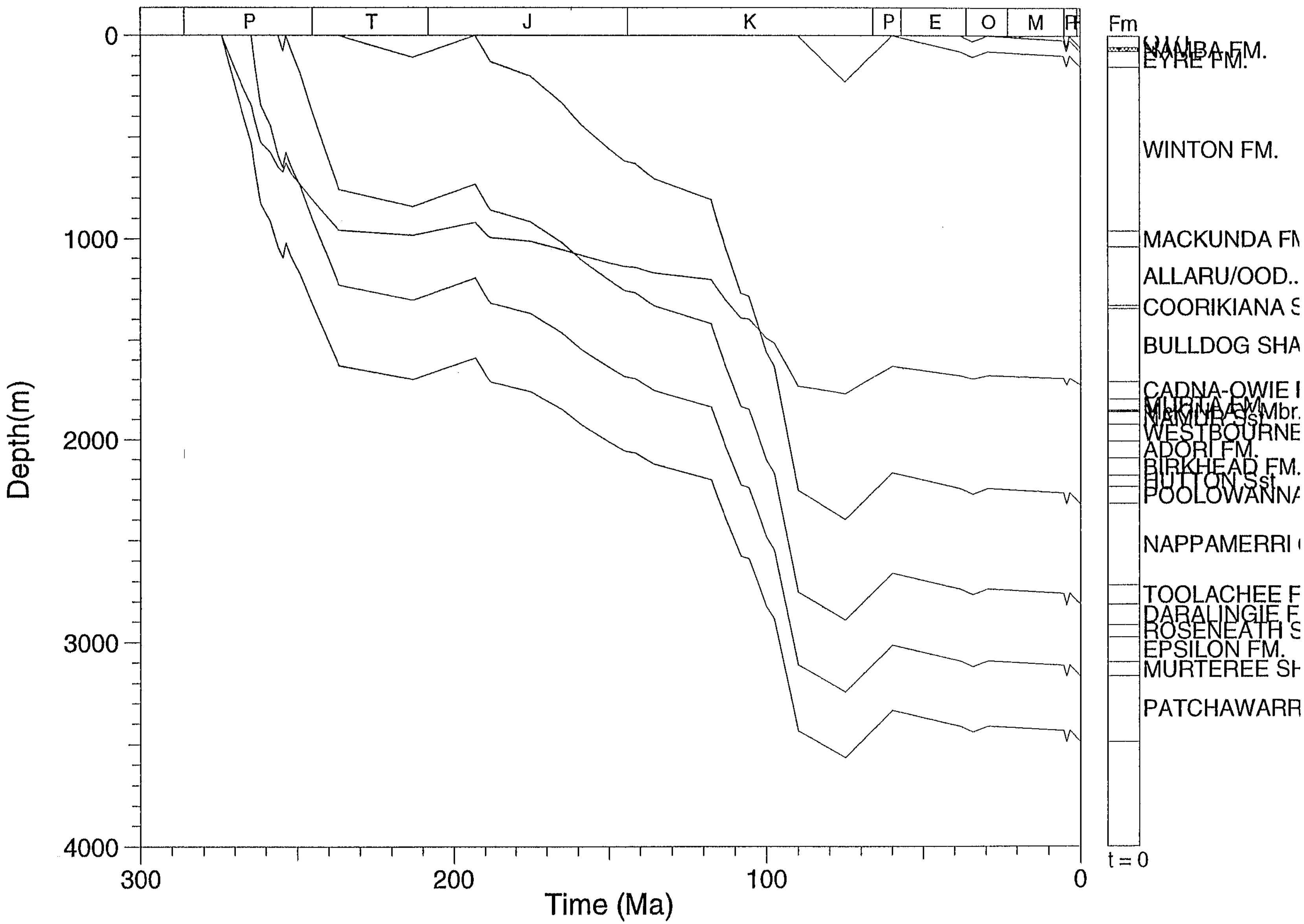
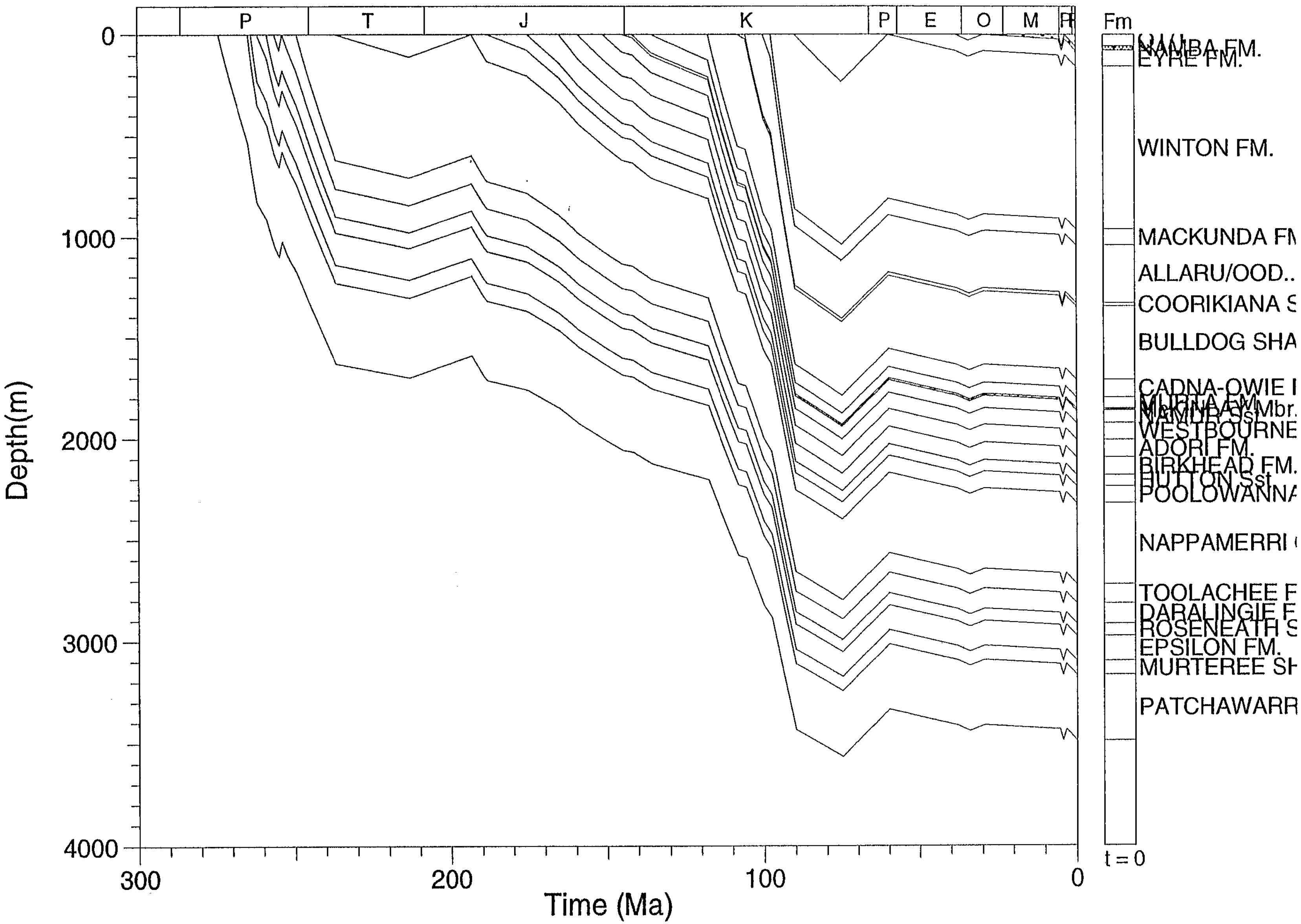
TG=1;TI=1;EXP=None



BULYEROO-1 EROSION

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



BULYEROO-1 EROSION

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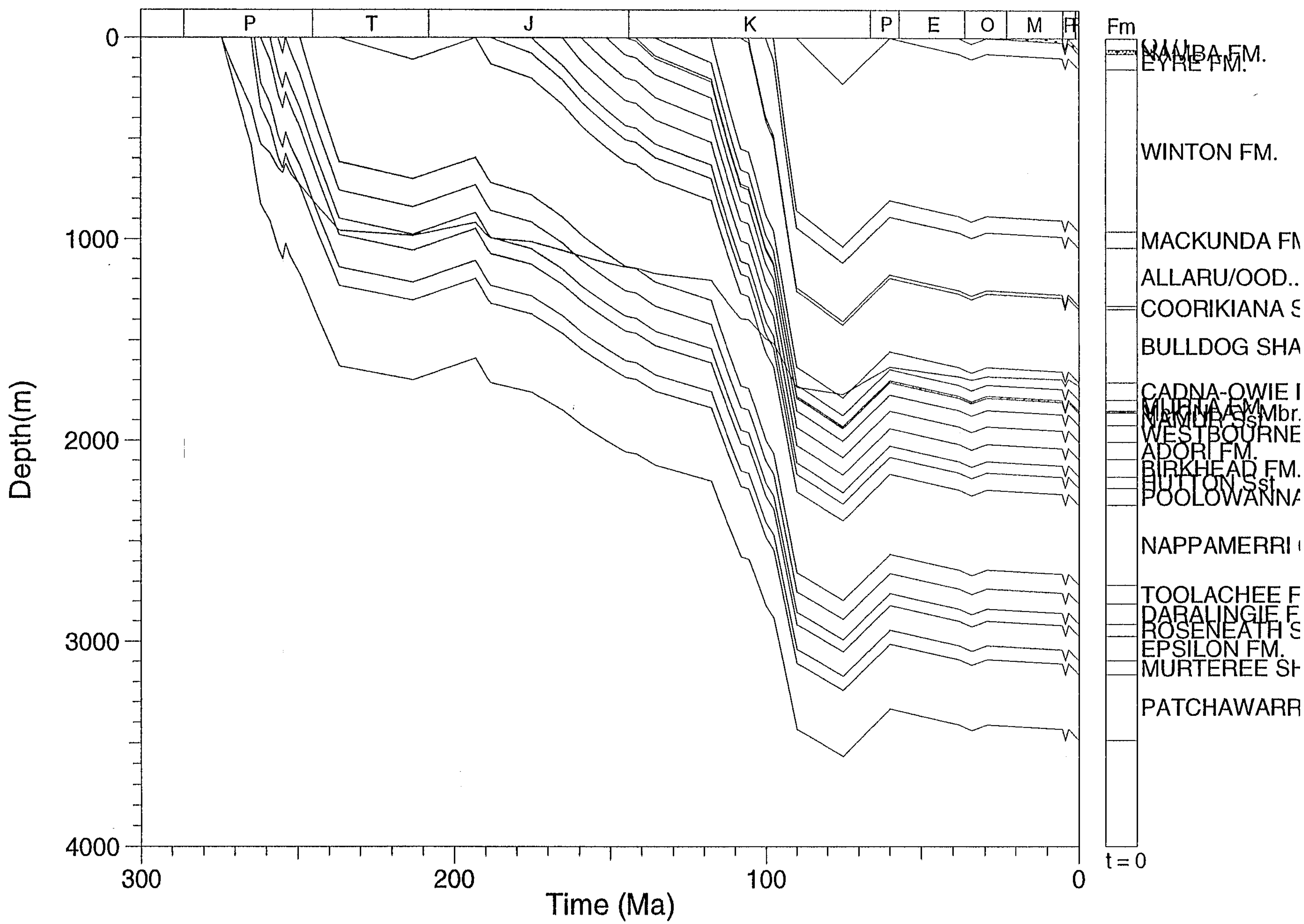
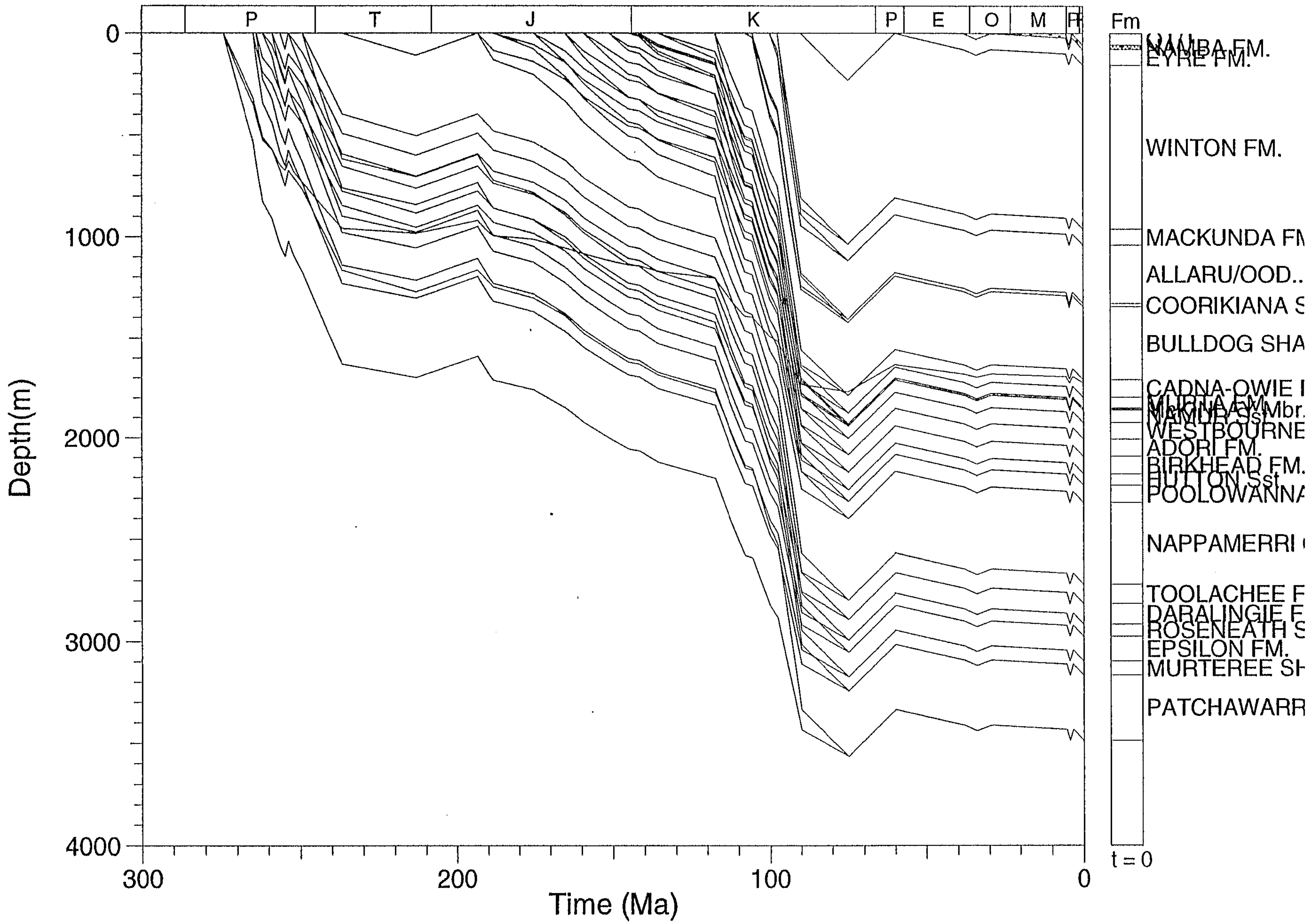
TG=1;TI=1;EXP=None



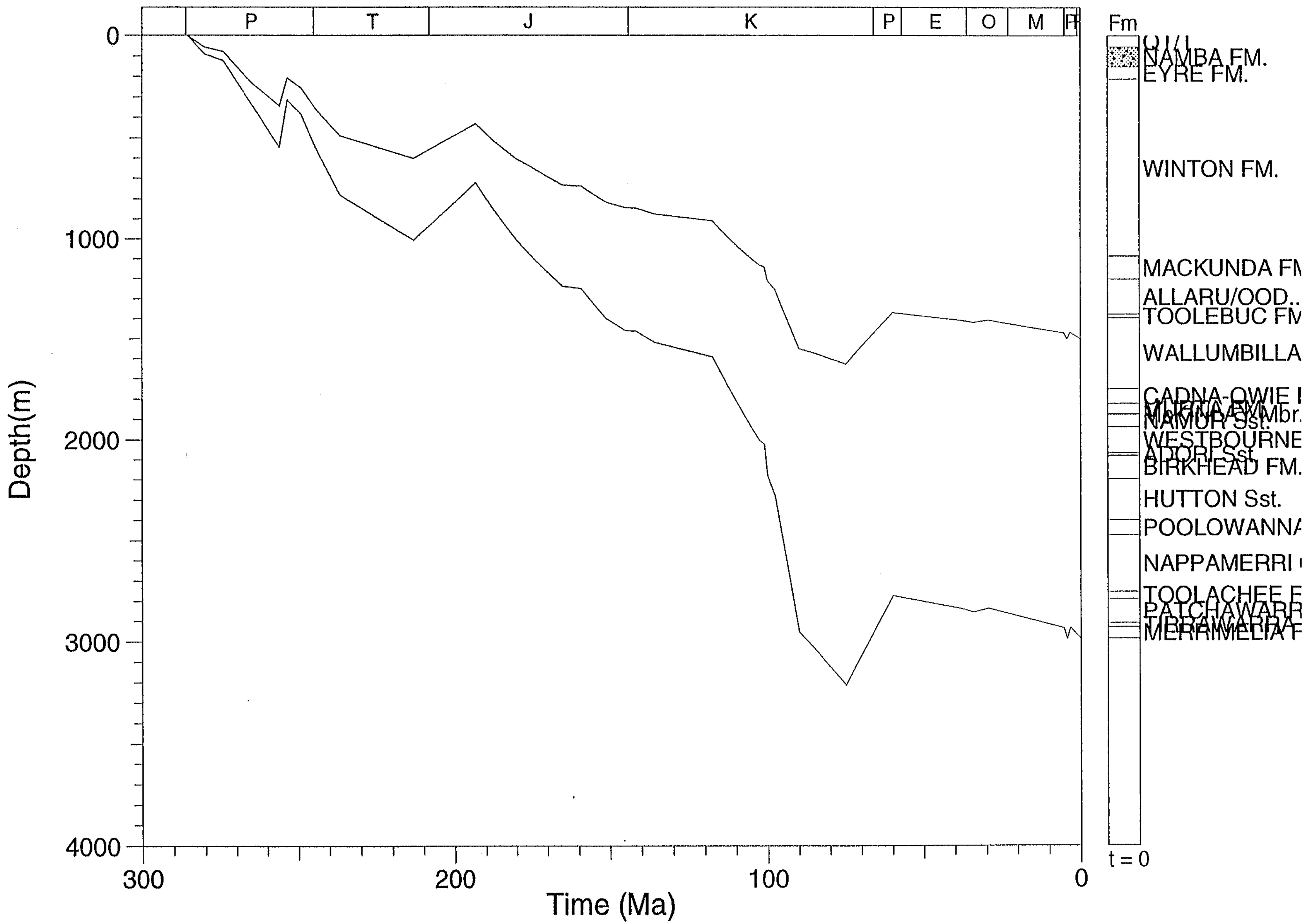
BULYEROO-1 EROSION

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



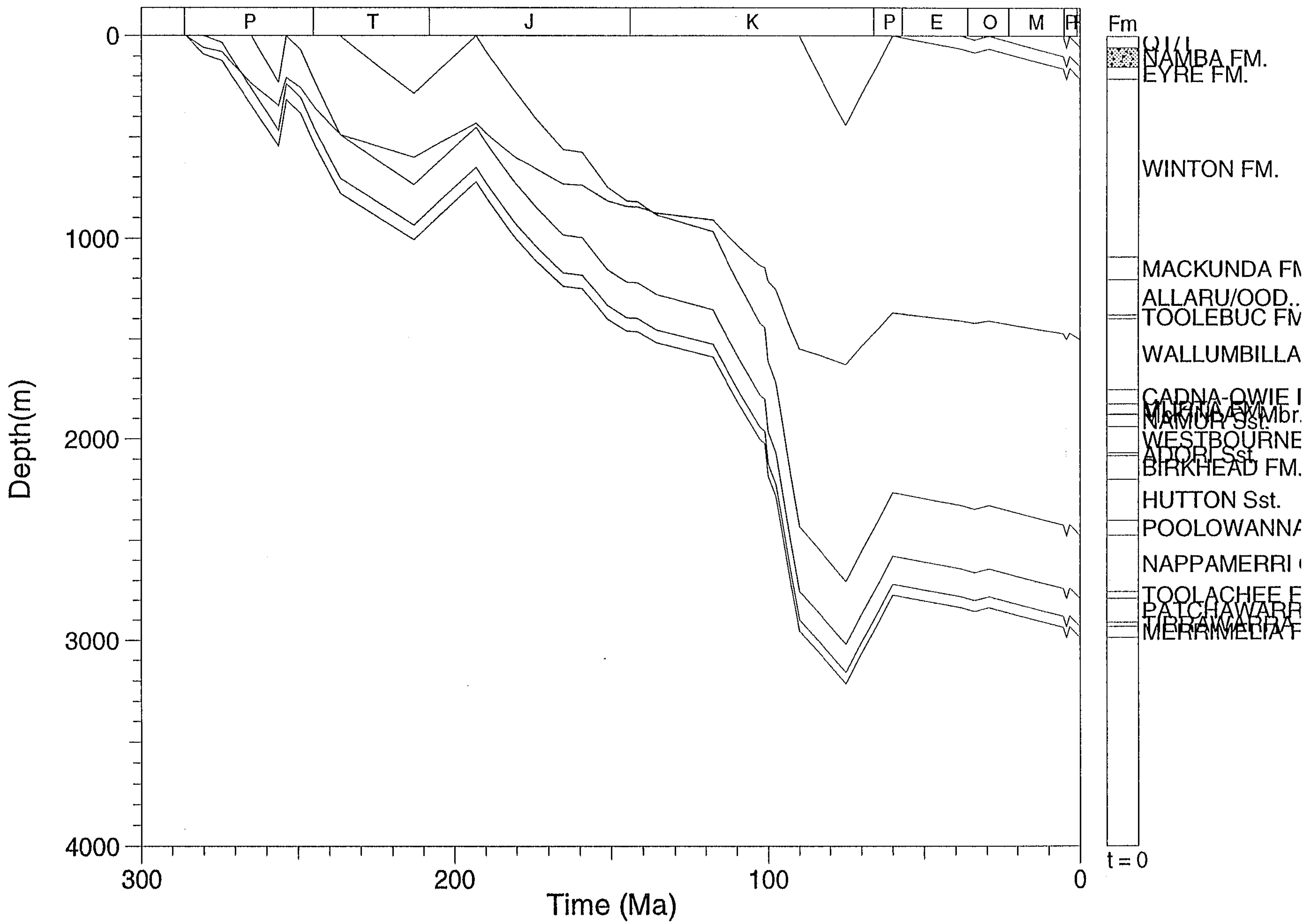
CUTTAPIRRIE-1 ERO.

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



CUTTAPIRRIE-1 ERO.

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



CUTTAPIRRIE-1 ERO.

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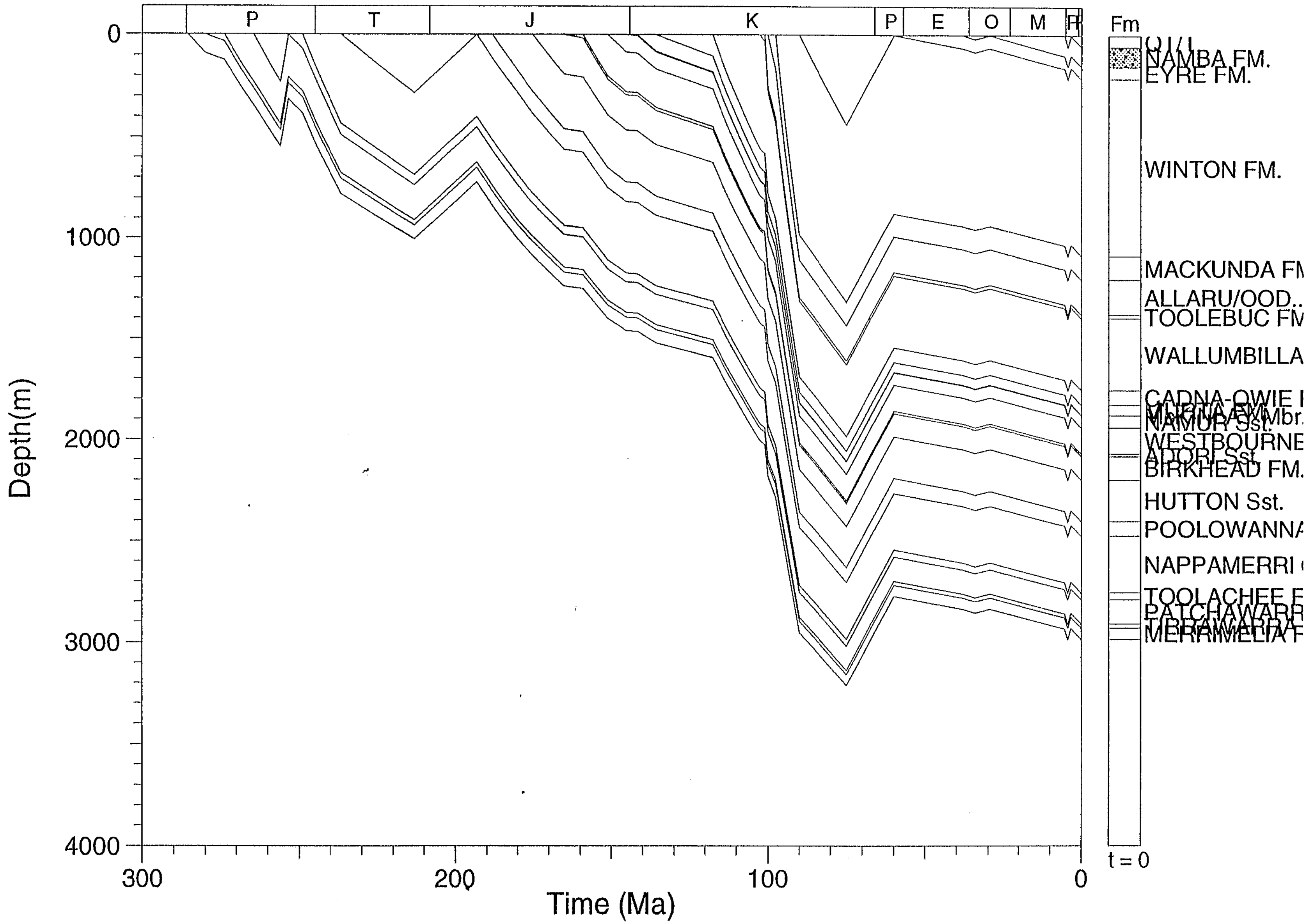
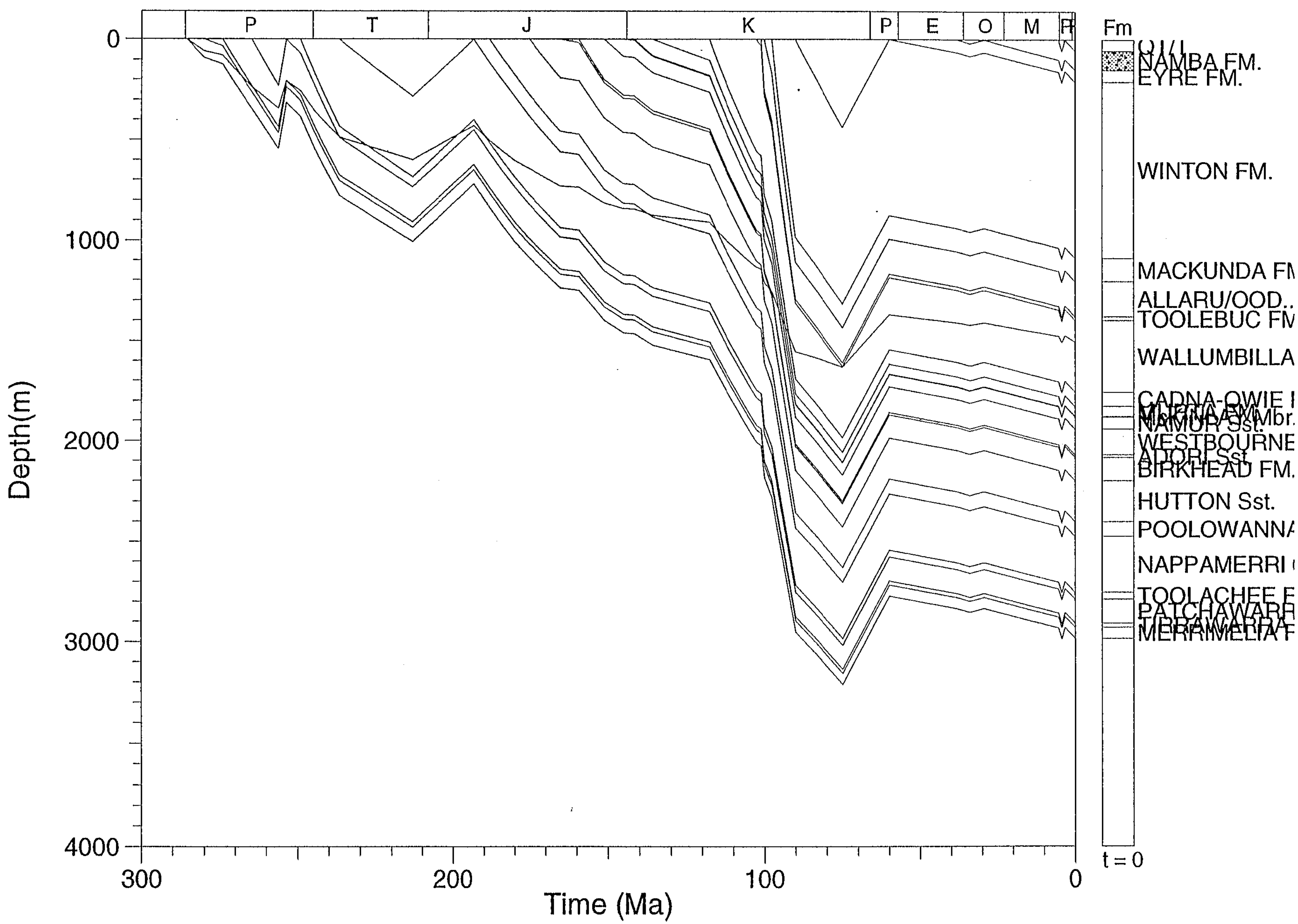
TG=1;TI=1;EXP=None

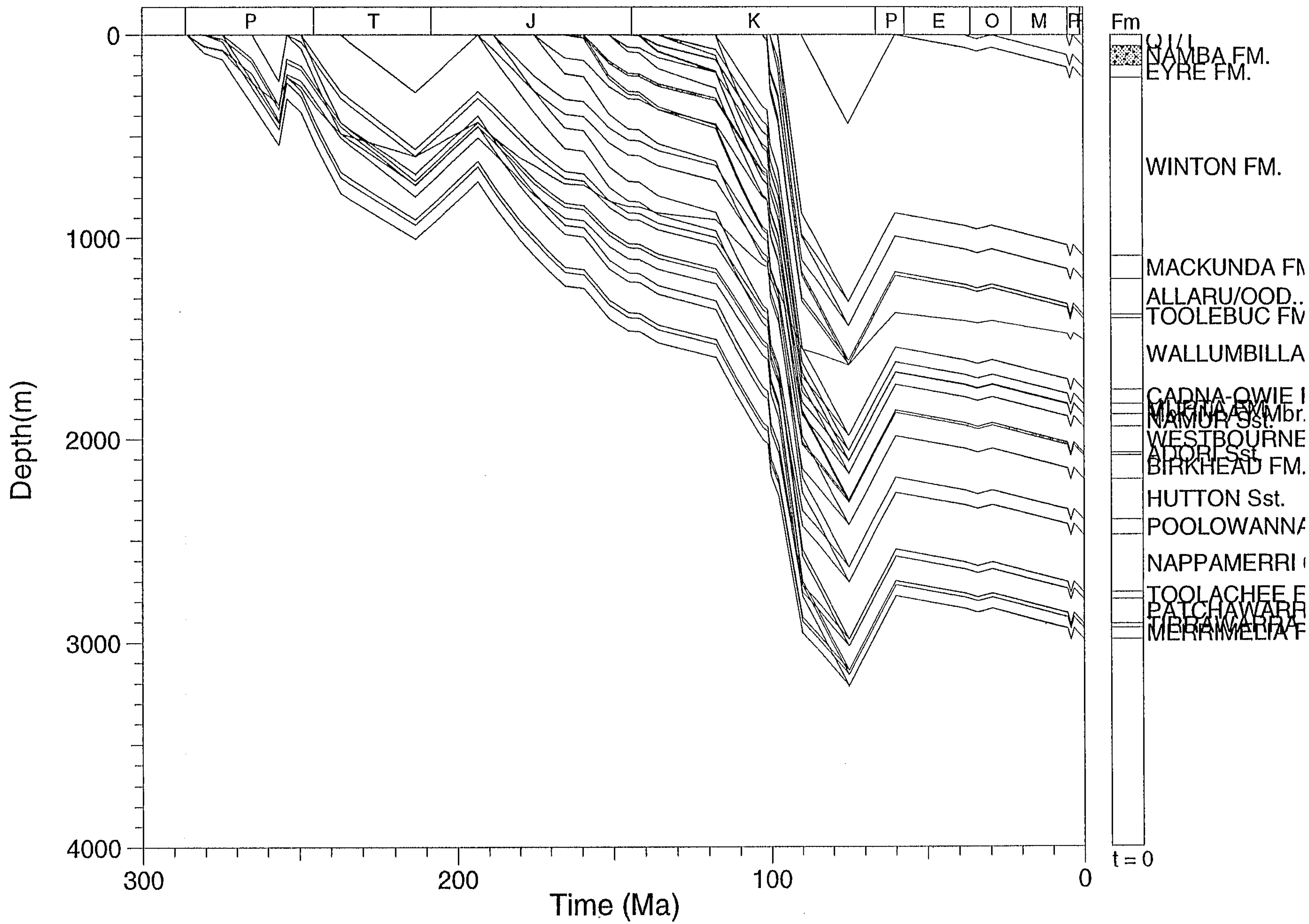


CUTTAPIRRIE-1 ERO.



CUTTAPIRRIE-1 ERO.

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



JENA-1 EROSION

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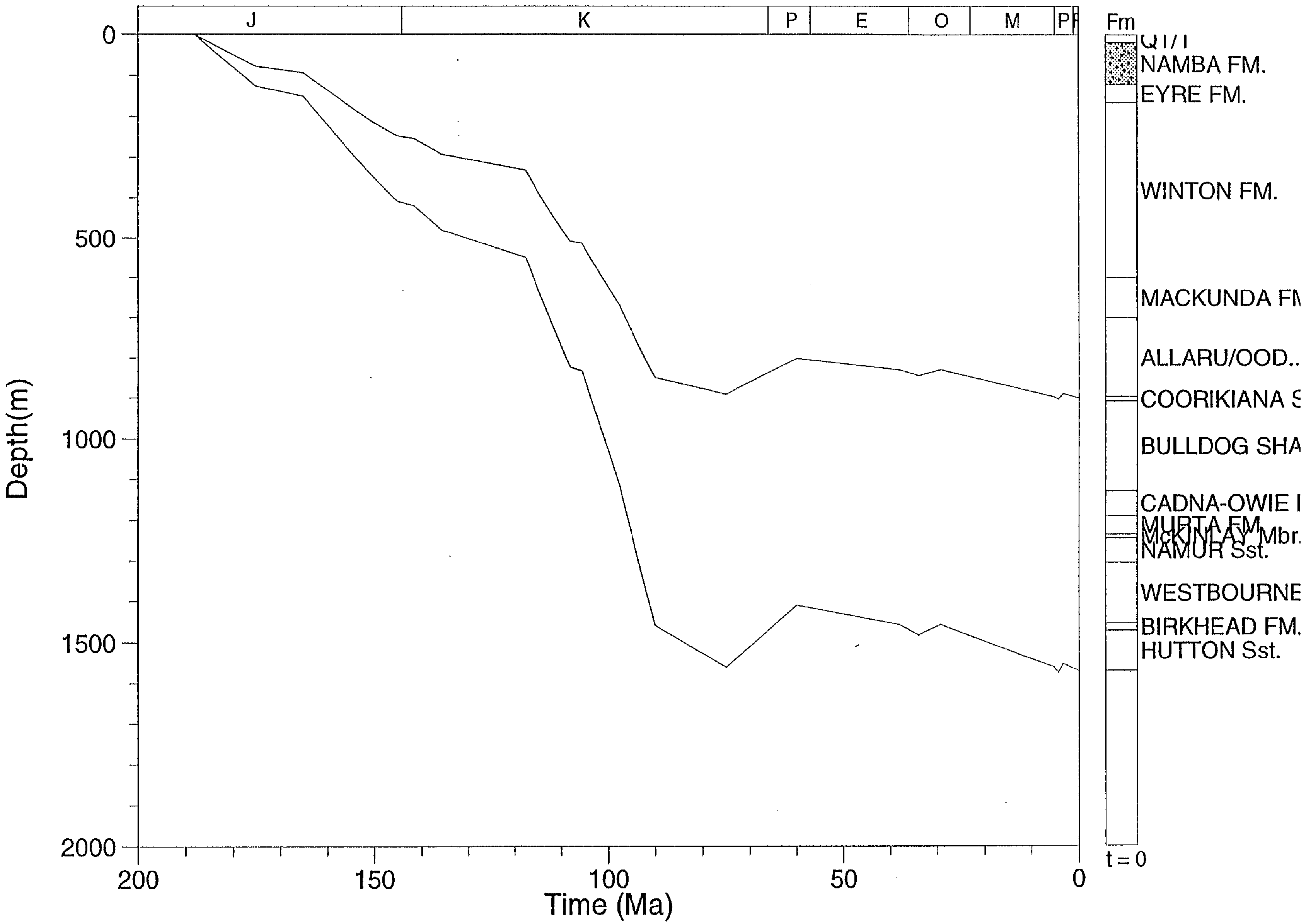
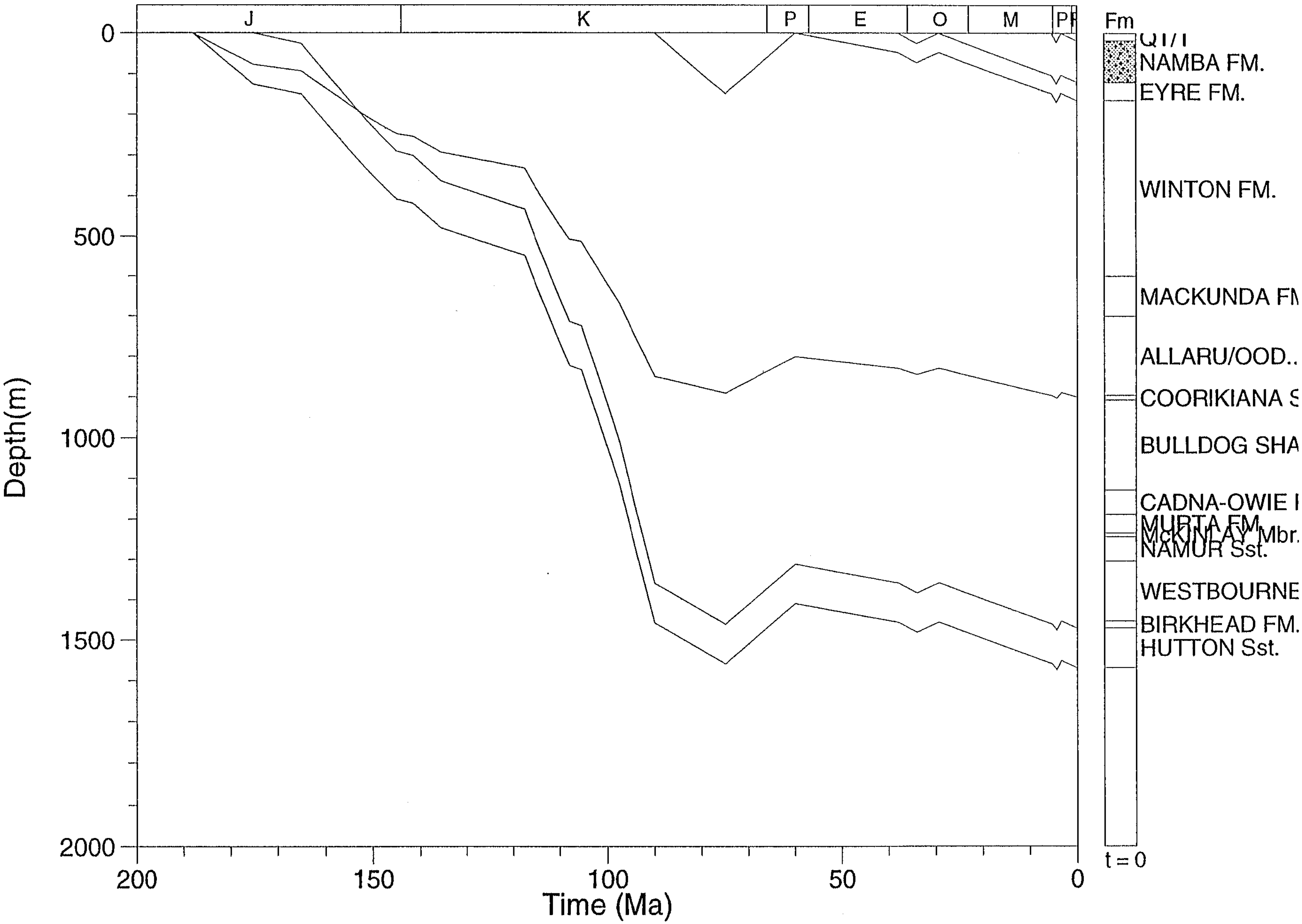
TG=1;TI=1;EXP=None



JENA-1 EROSION

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



JENA-1 EROSION

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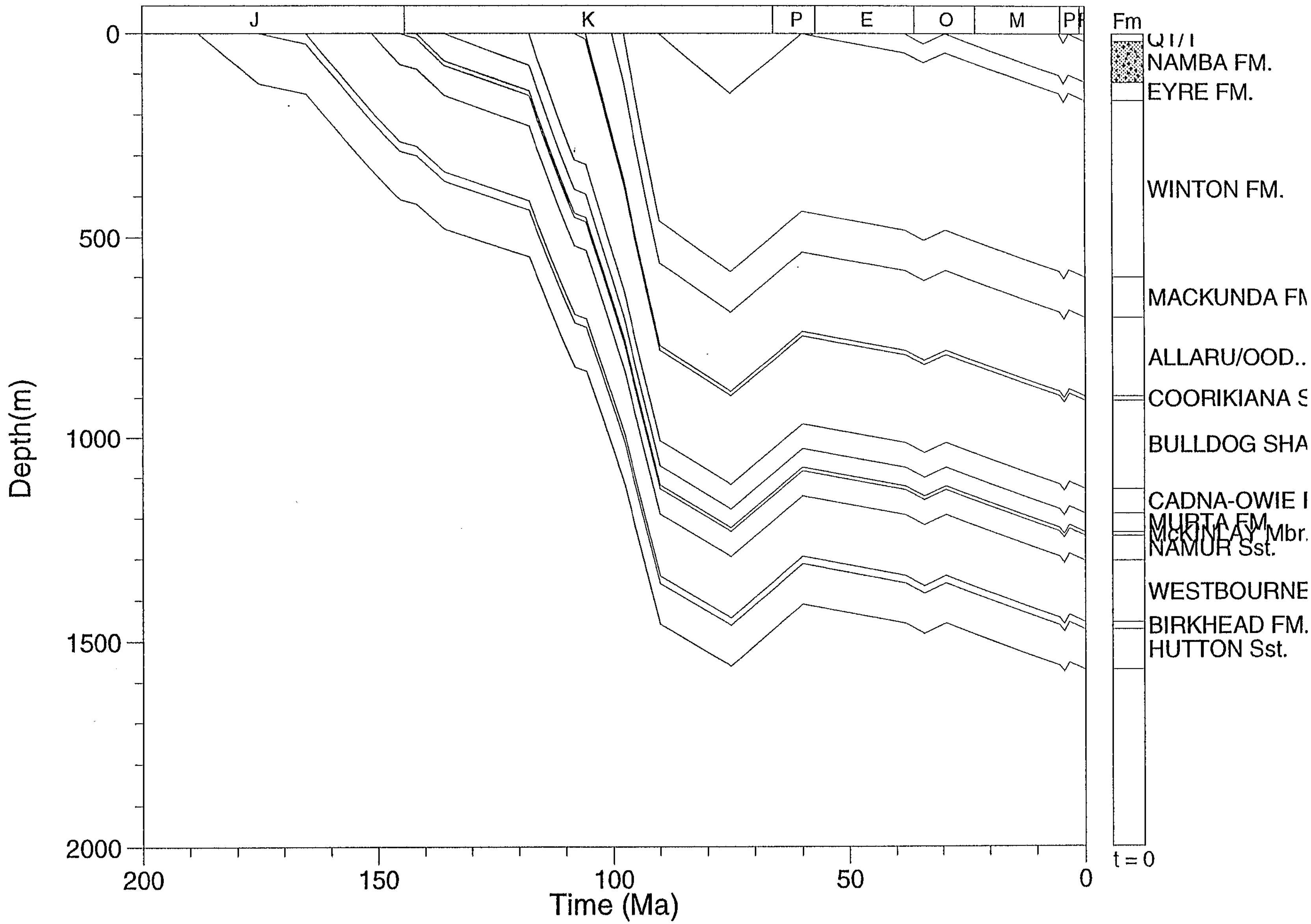
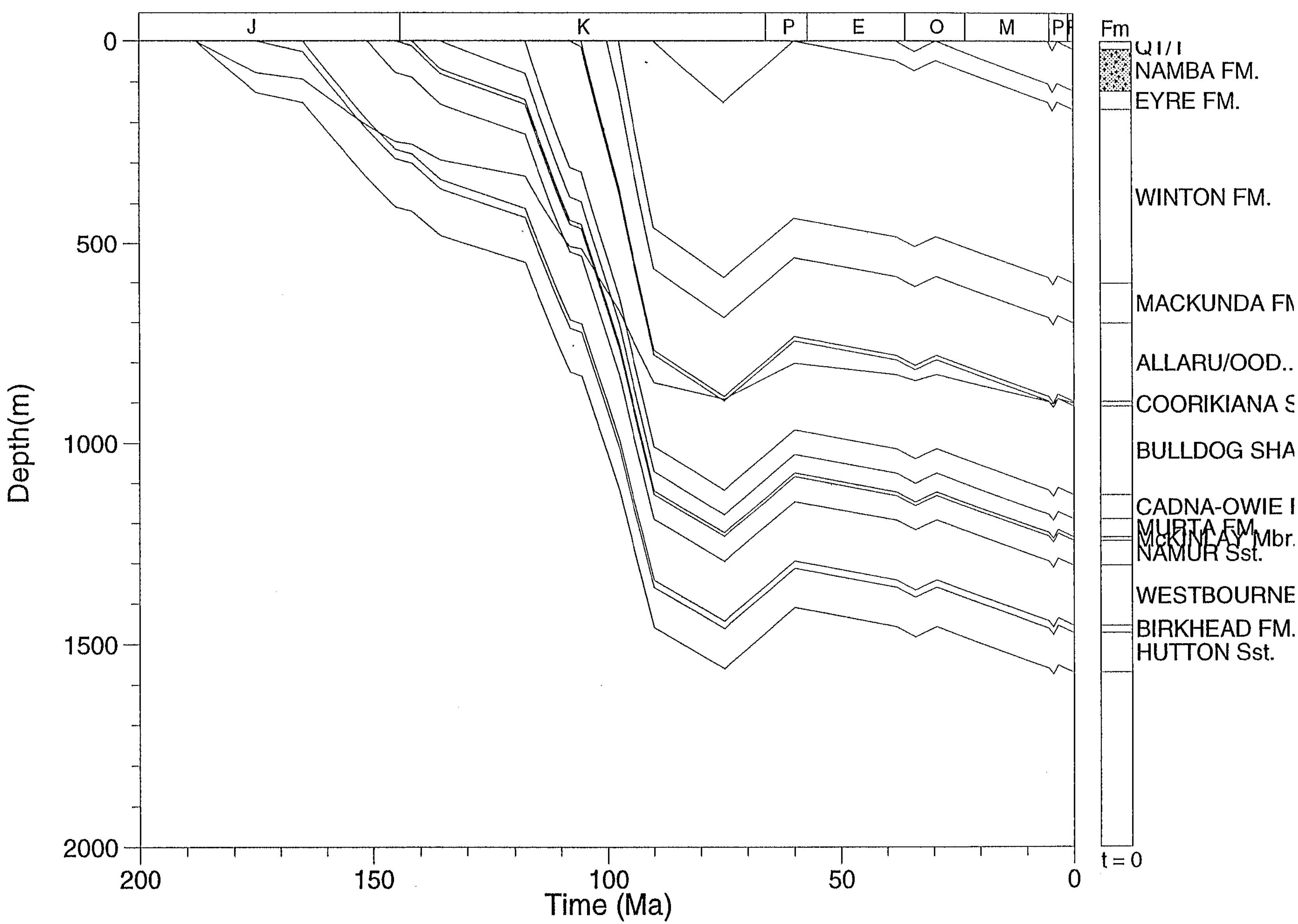
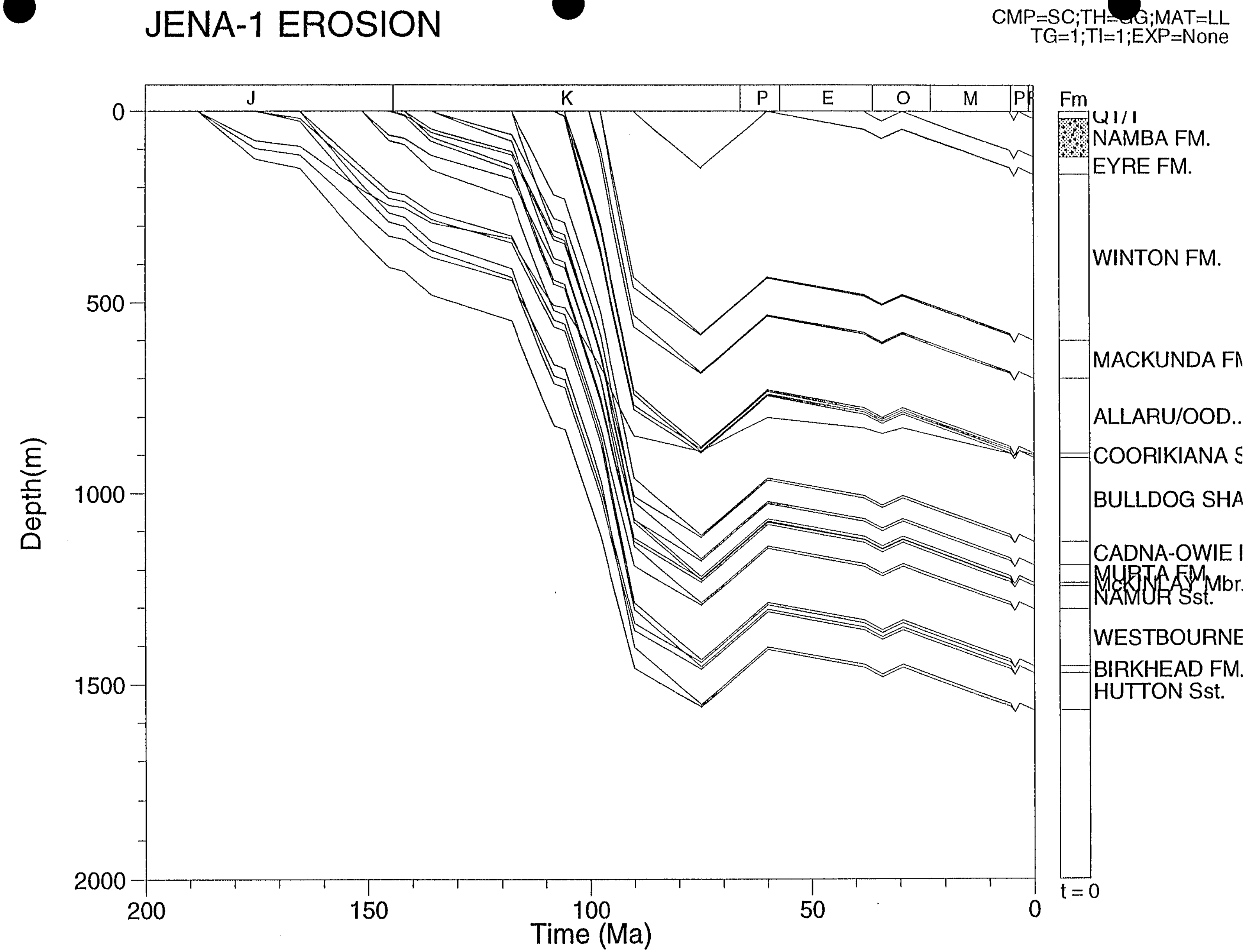
TG=1;TI=1;EXP=None



JENA-1 EROSION



JENA-1 EROSION



KIRRALEE-1 EROSION

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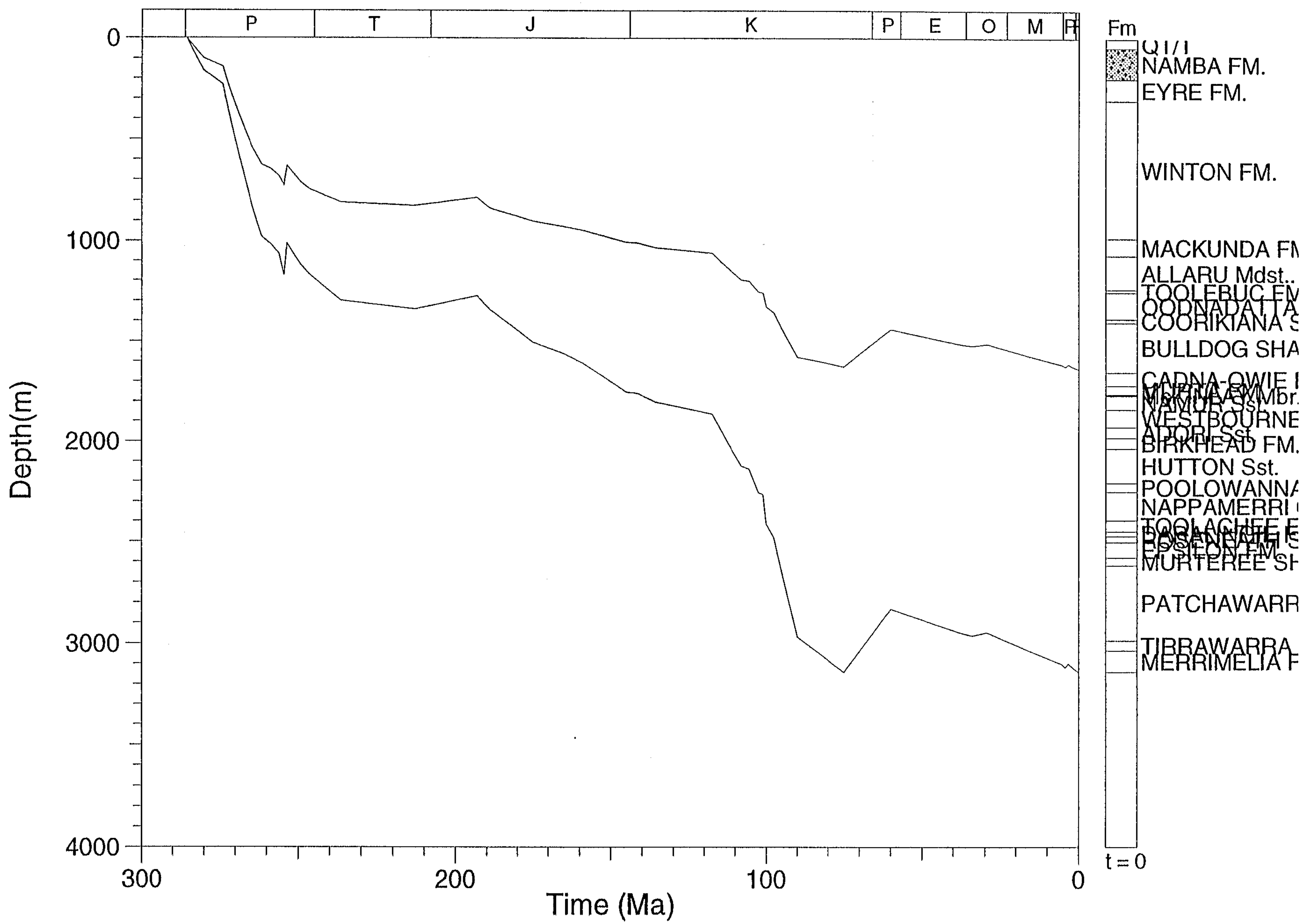
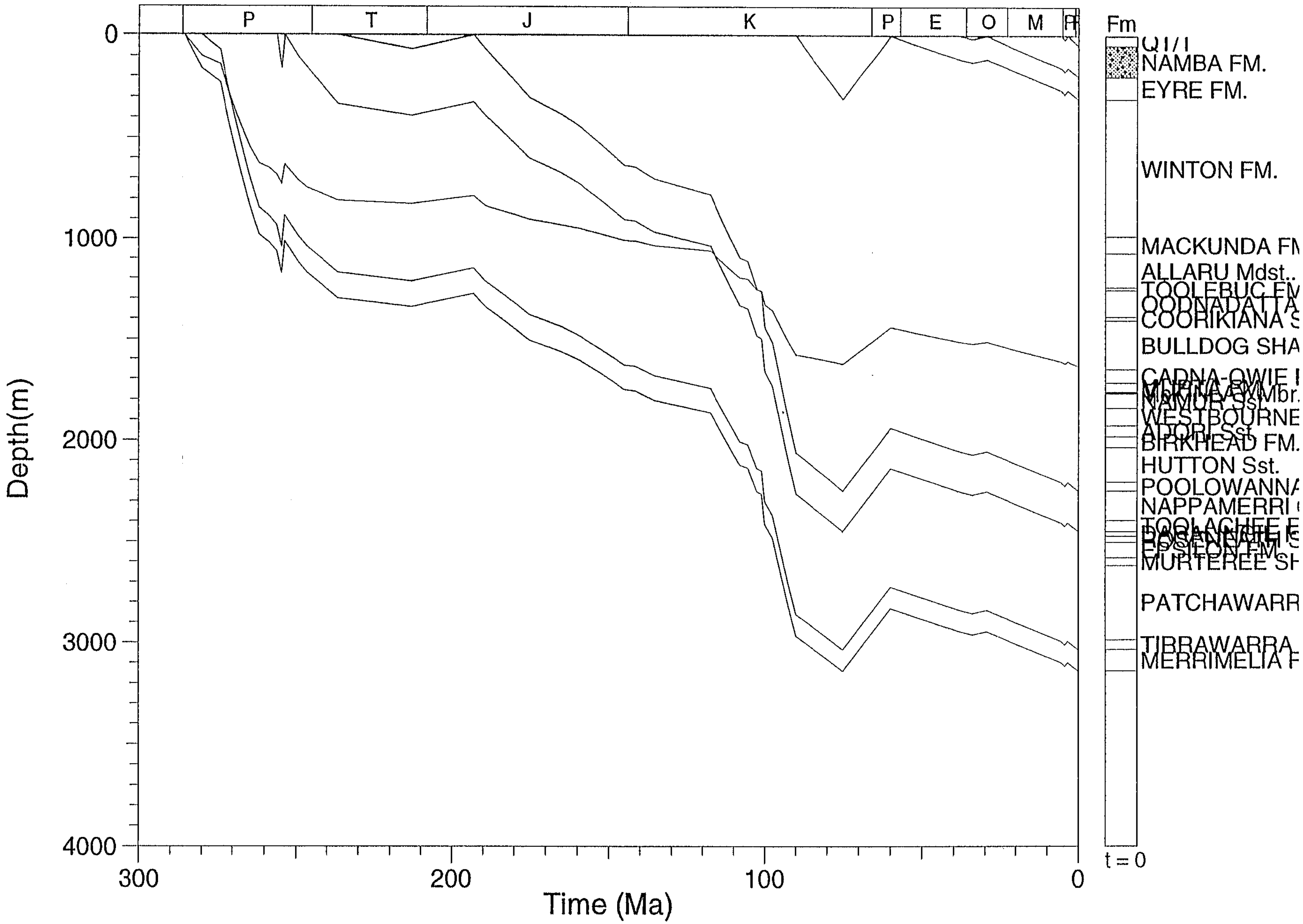
TG=1;TI=1;EXP=None



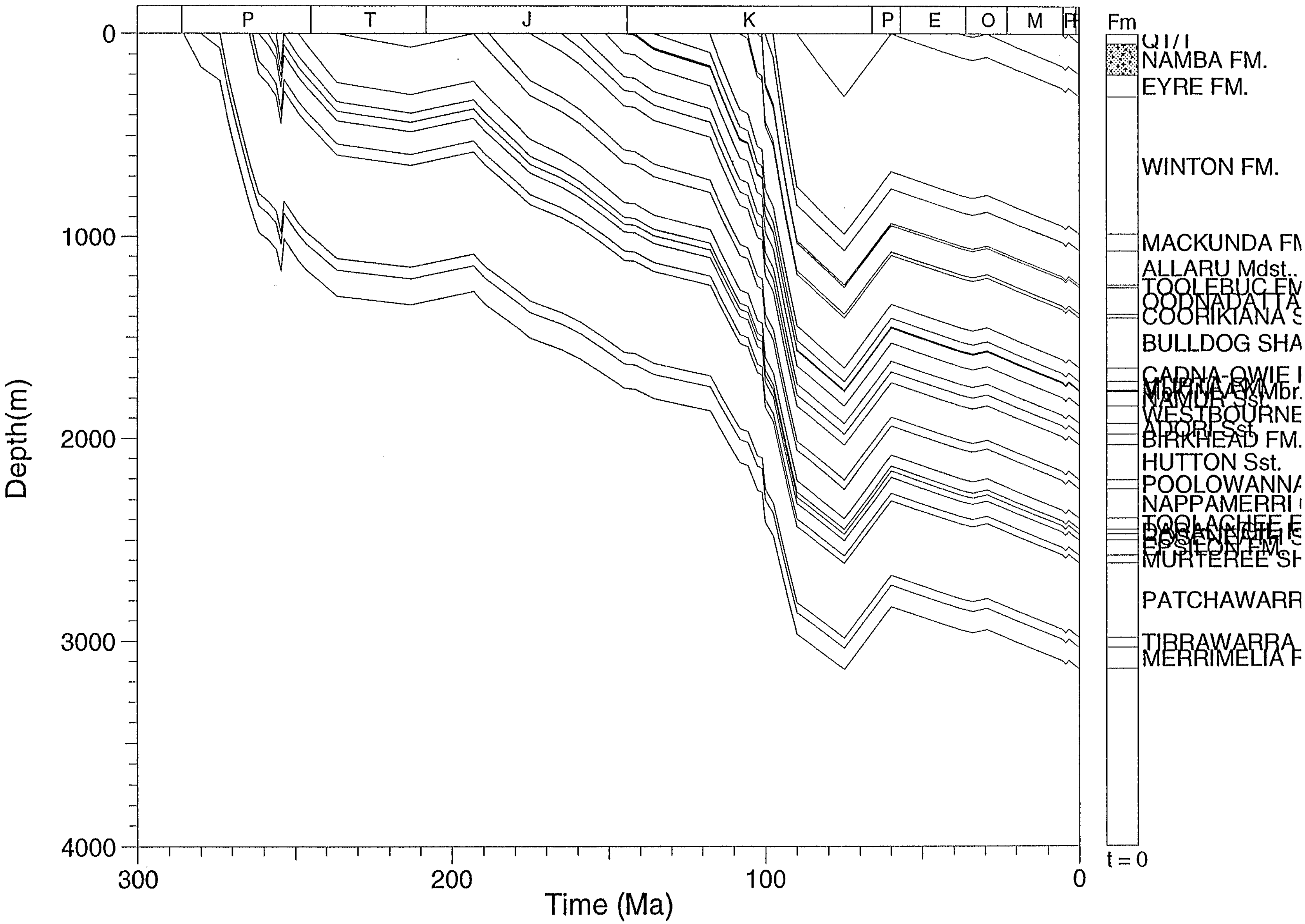
KIRRALEE-1 EROSION

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



KIRRALEE-1 EROSION

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



KIRRALEE-1 EROSION

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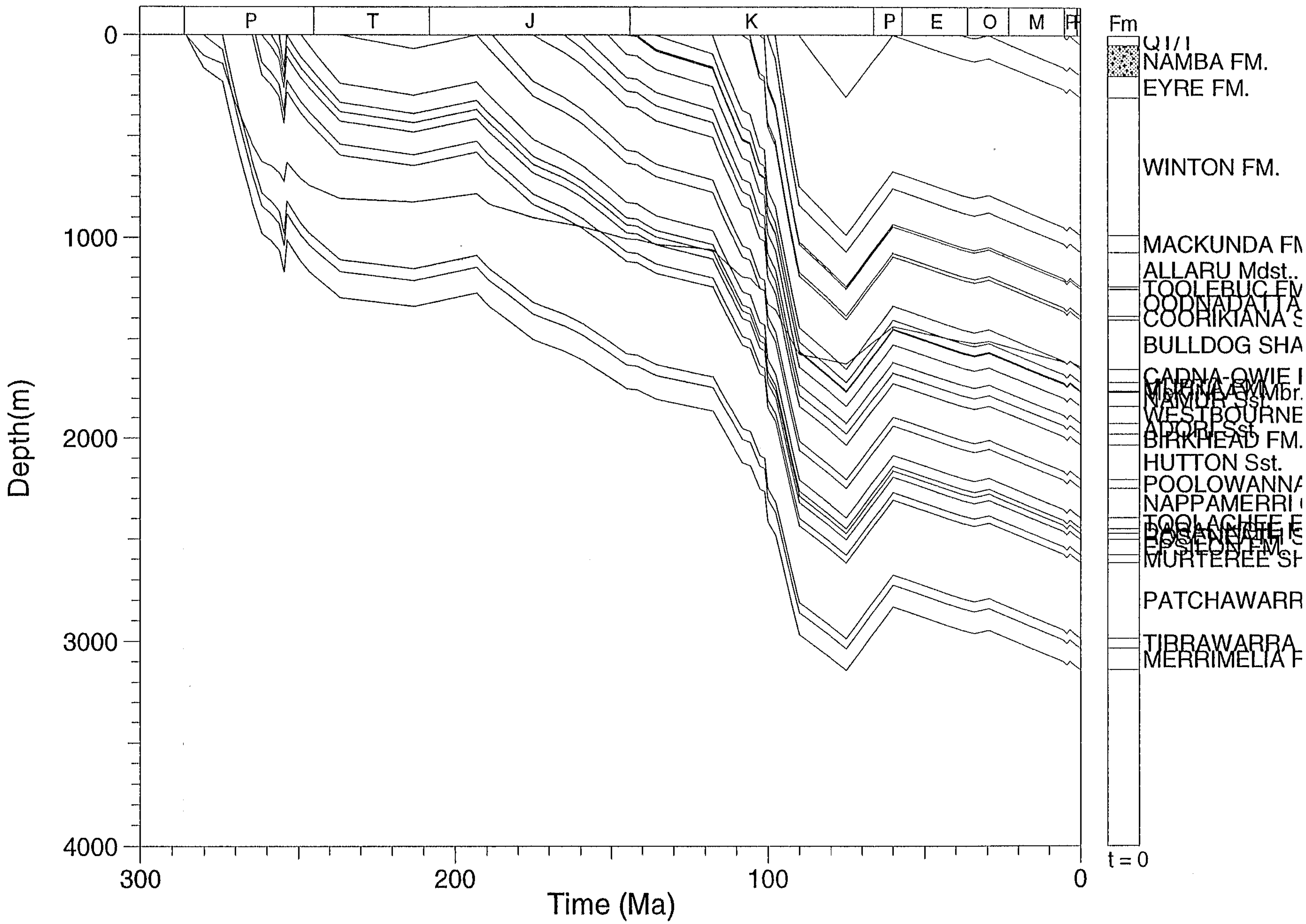
TG=1;TI=1;EXP=None



KIRRALEE-1 EROSION

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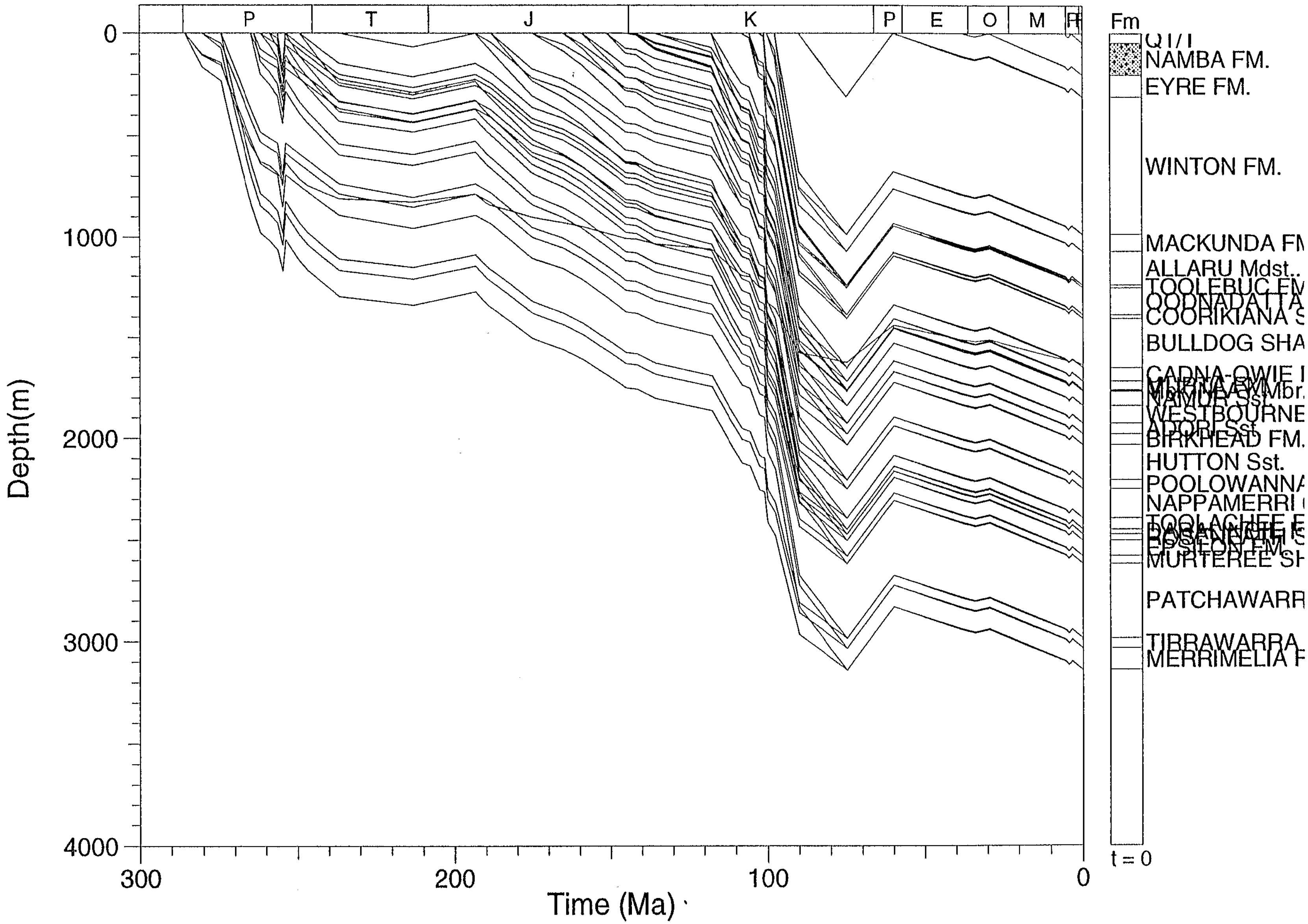

KOBARI-1 EROSION

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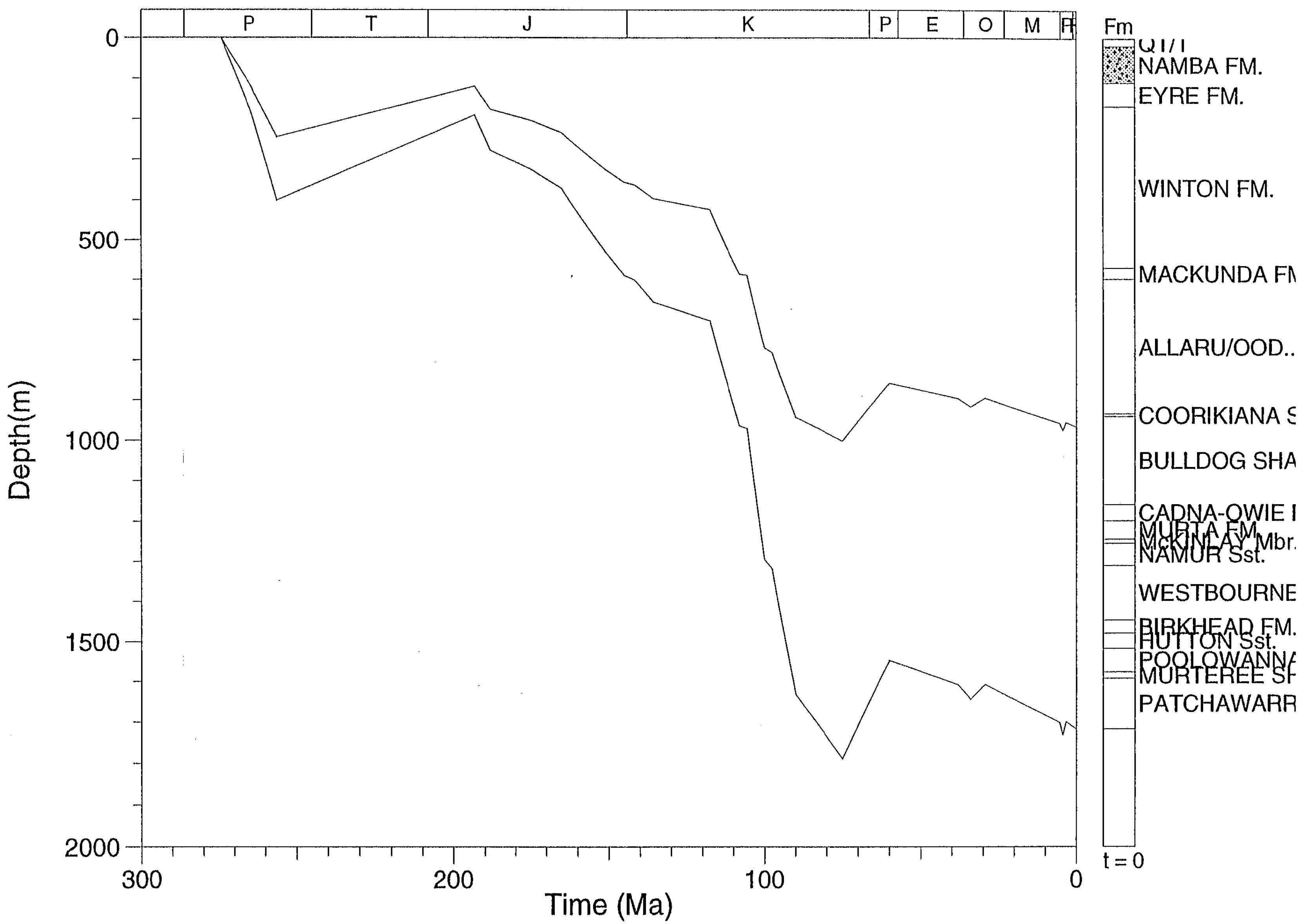
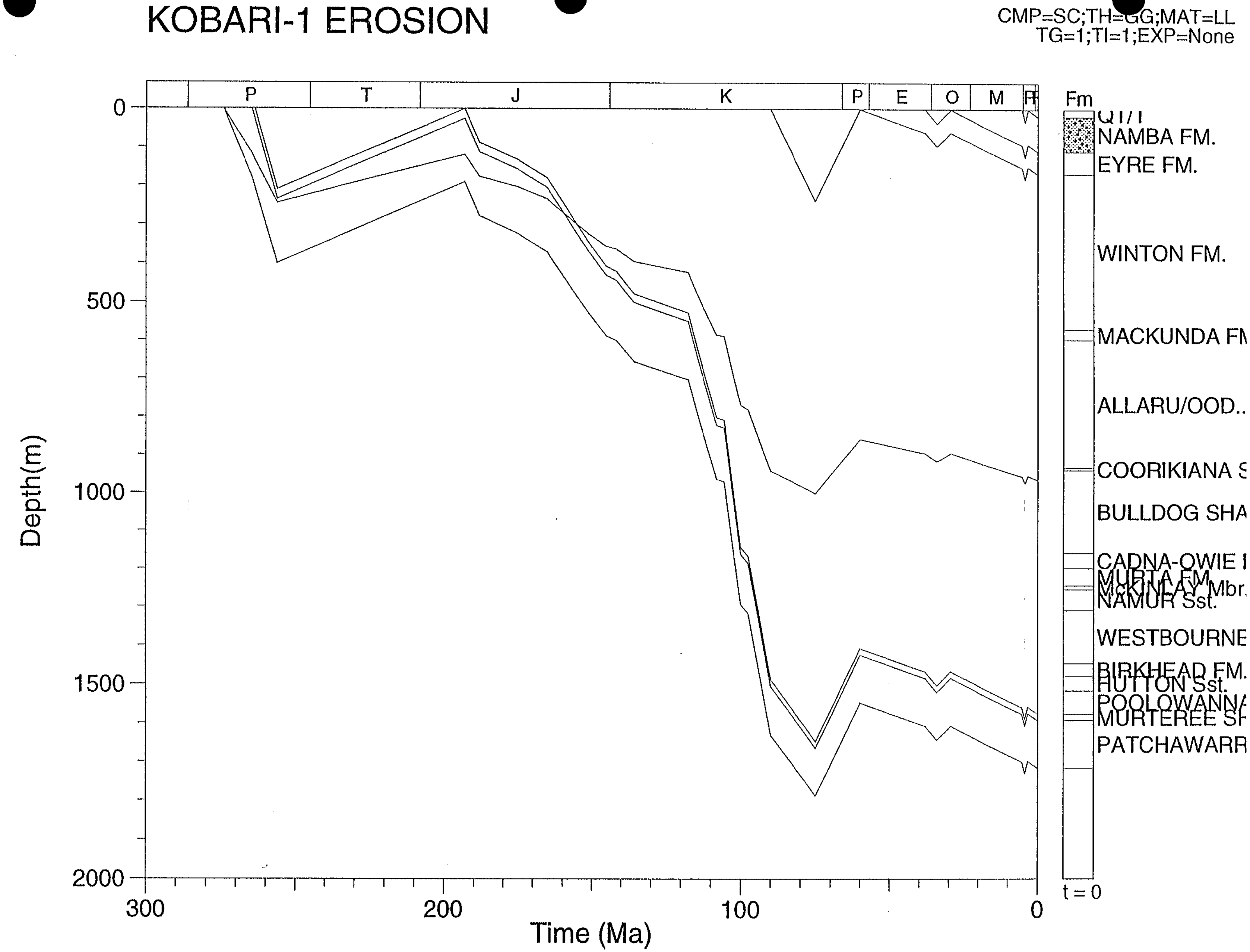
TG=1;TI=1;EXP=None

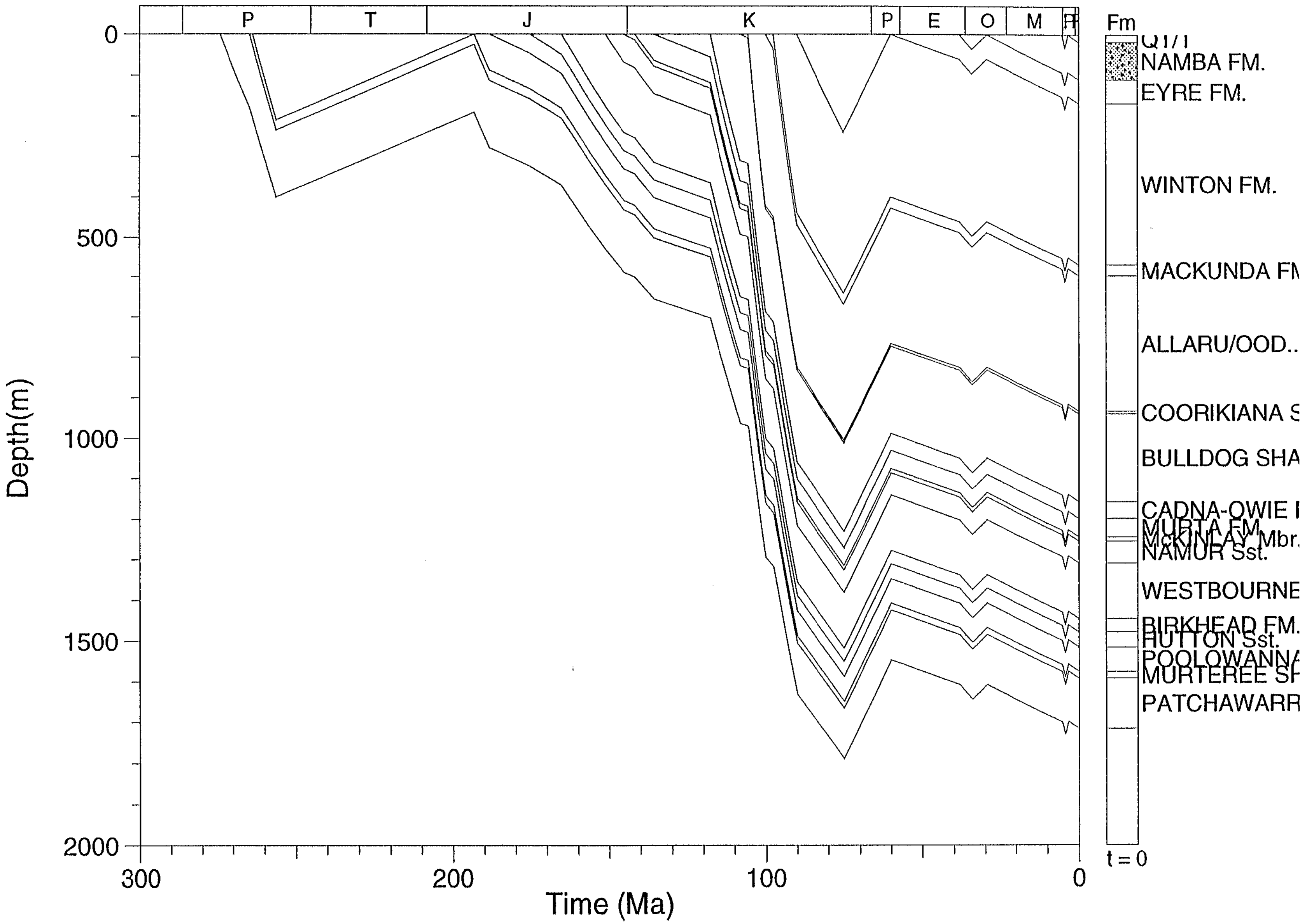


KOBARI-1 EROSION



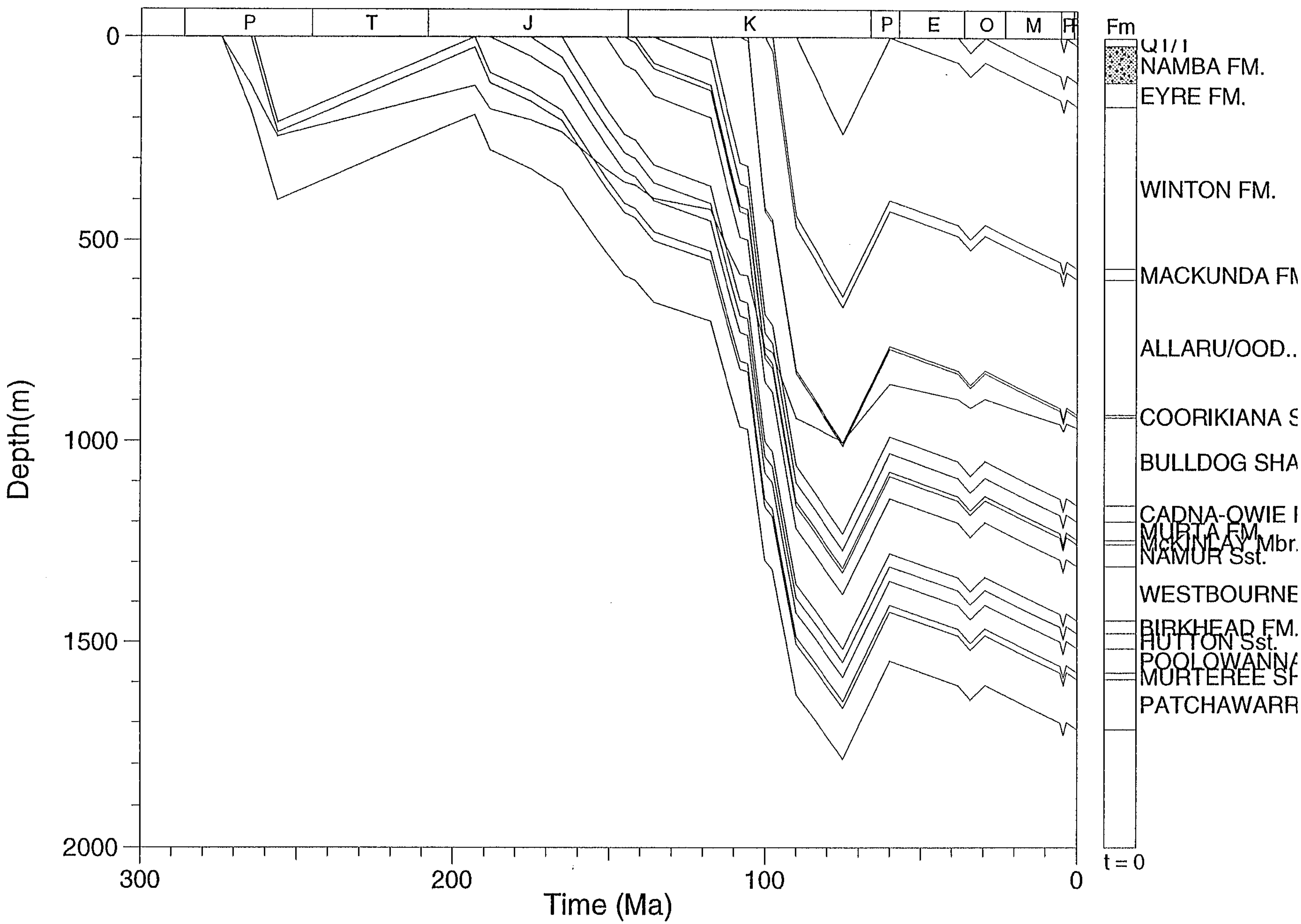
KOBARI-1 EROSION

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



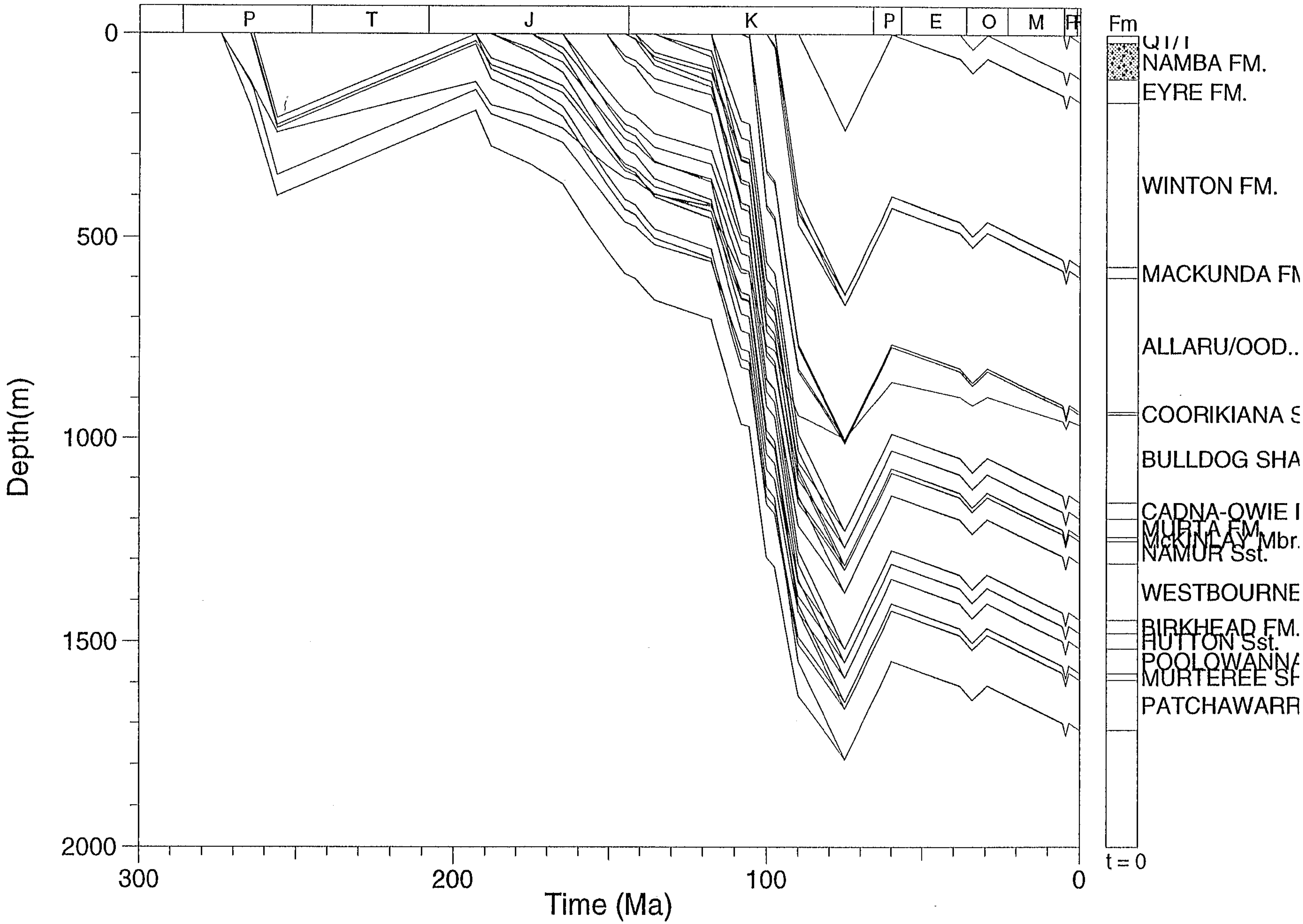
KOBARI-1 EROSION

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



KOBARI-1 EROSION

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



KUENPINNIE-1 EROSION

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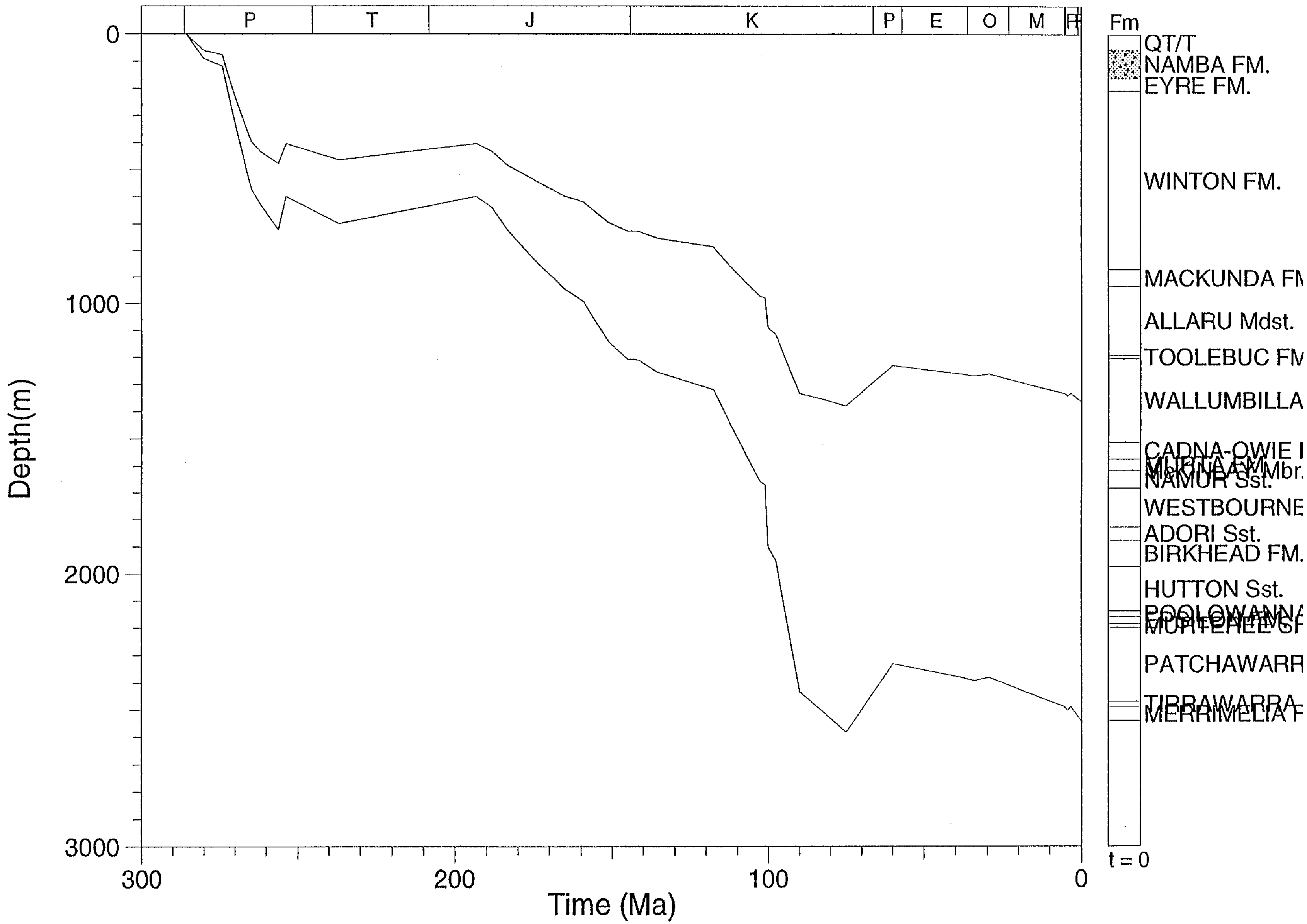
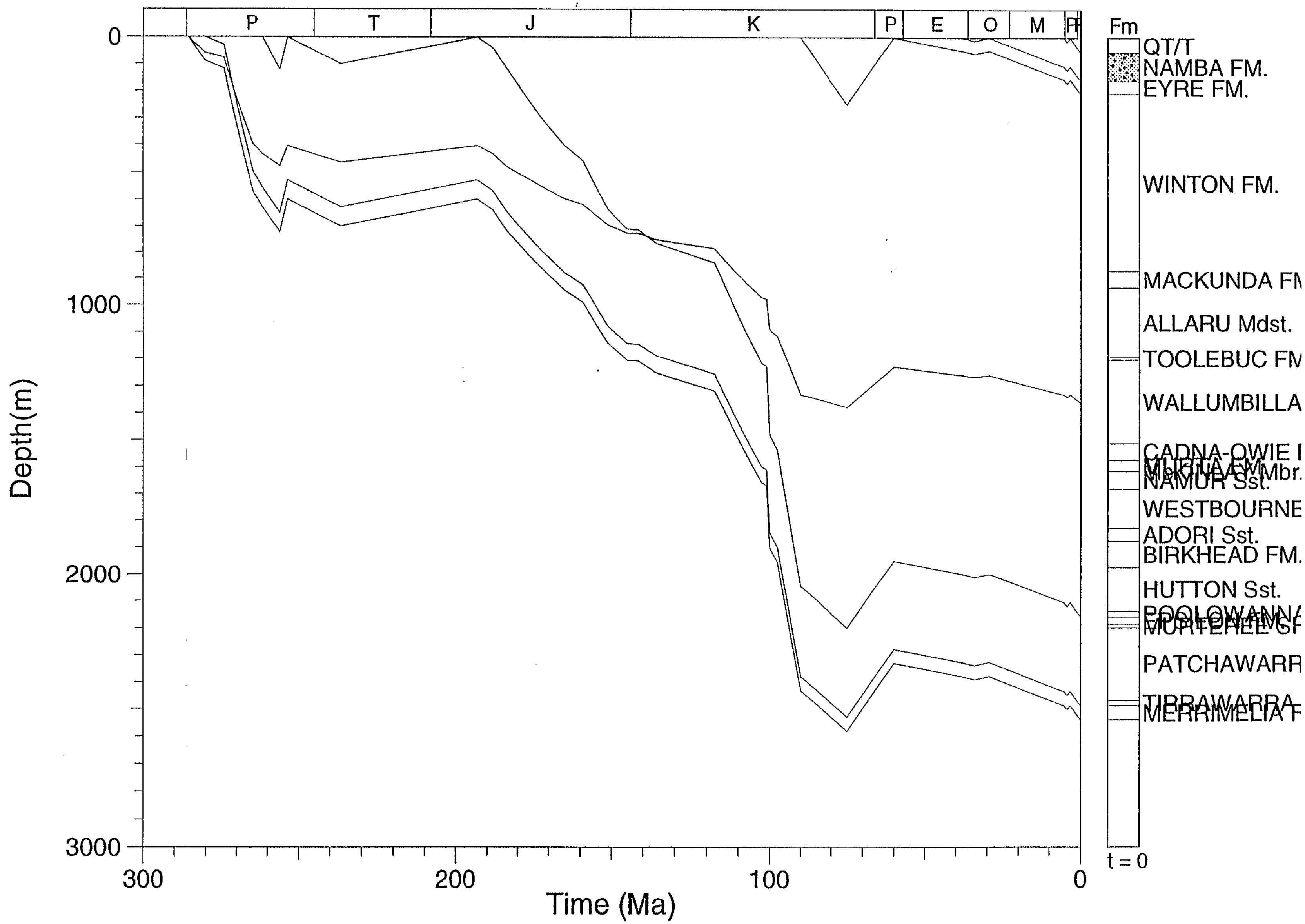
TG=1;TI=1;EXP=None



KUENPINNIE-1 EROSION

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



KUENPINNIE-1 EROSION

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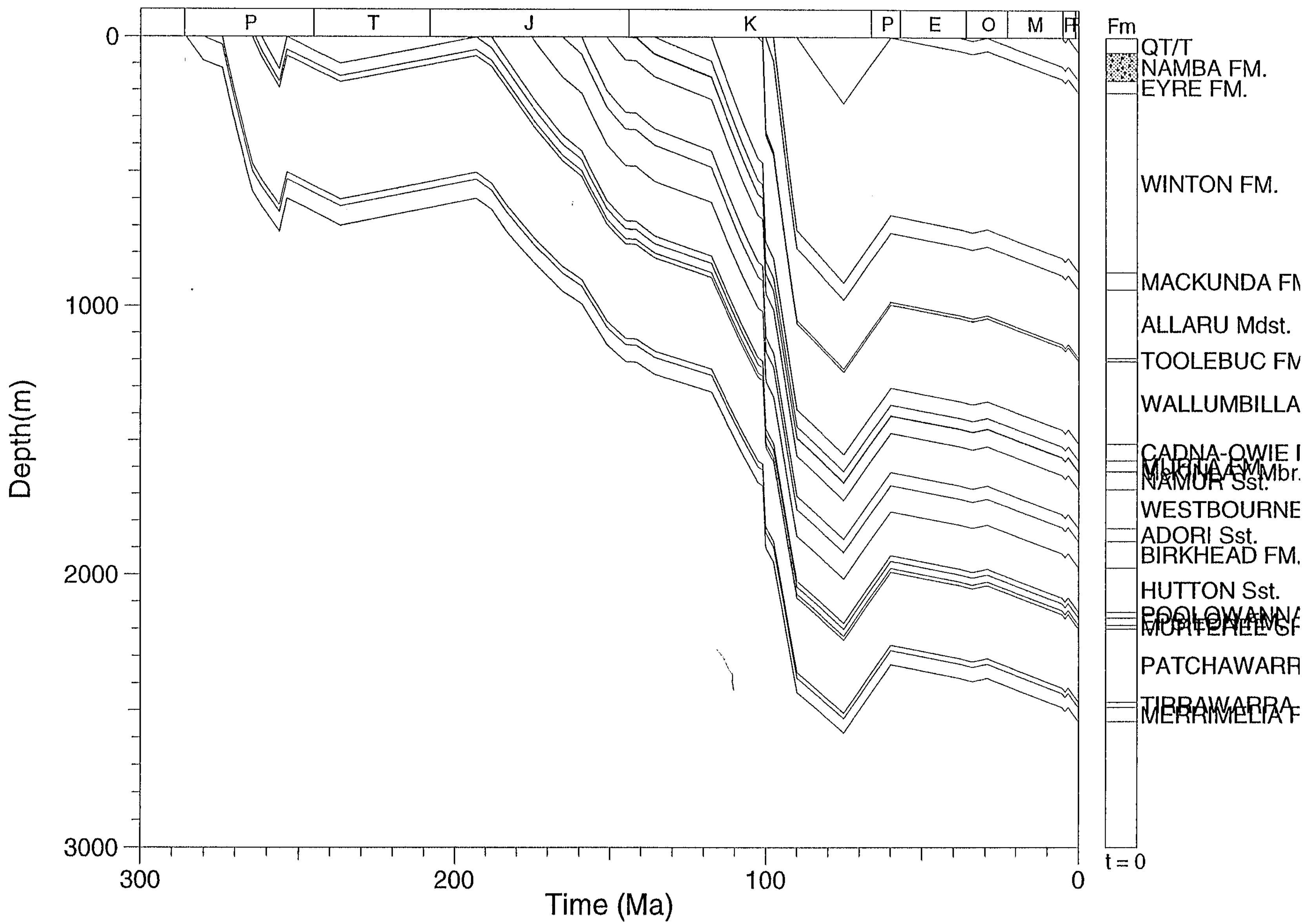
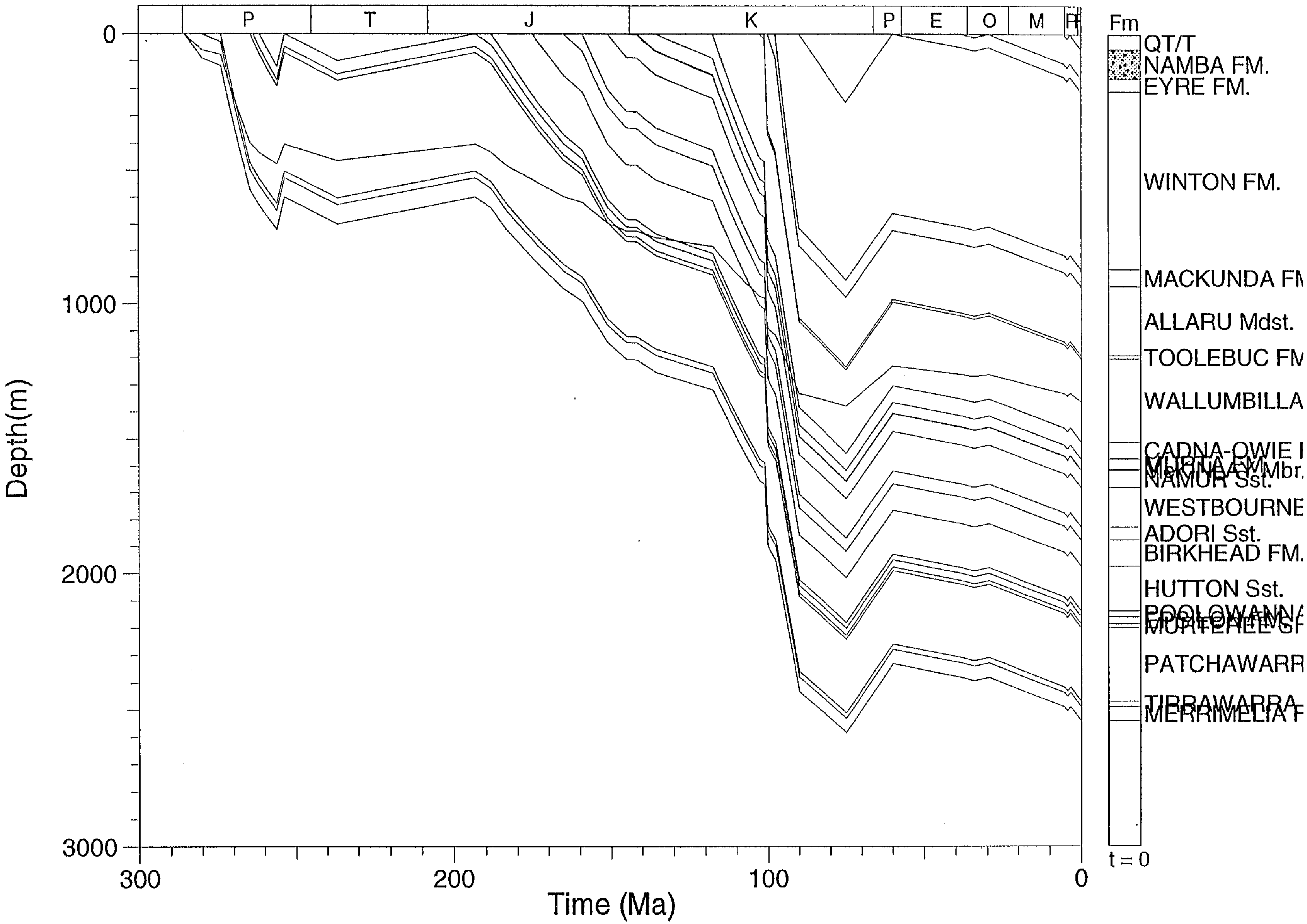
TG=1;TI=1;EXP=None



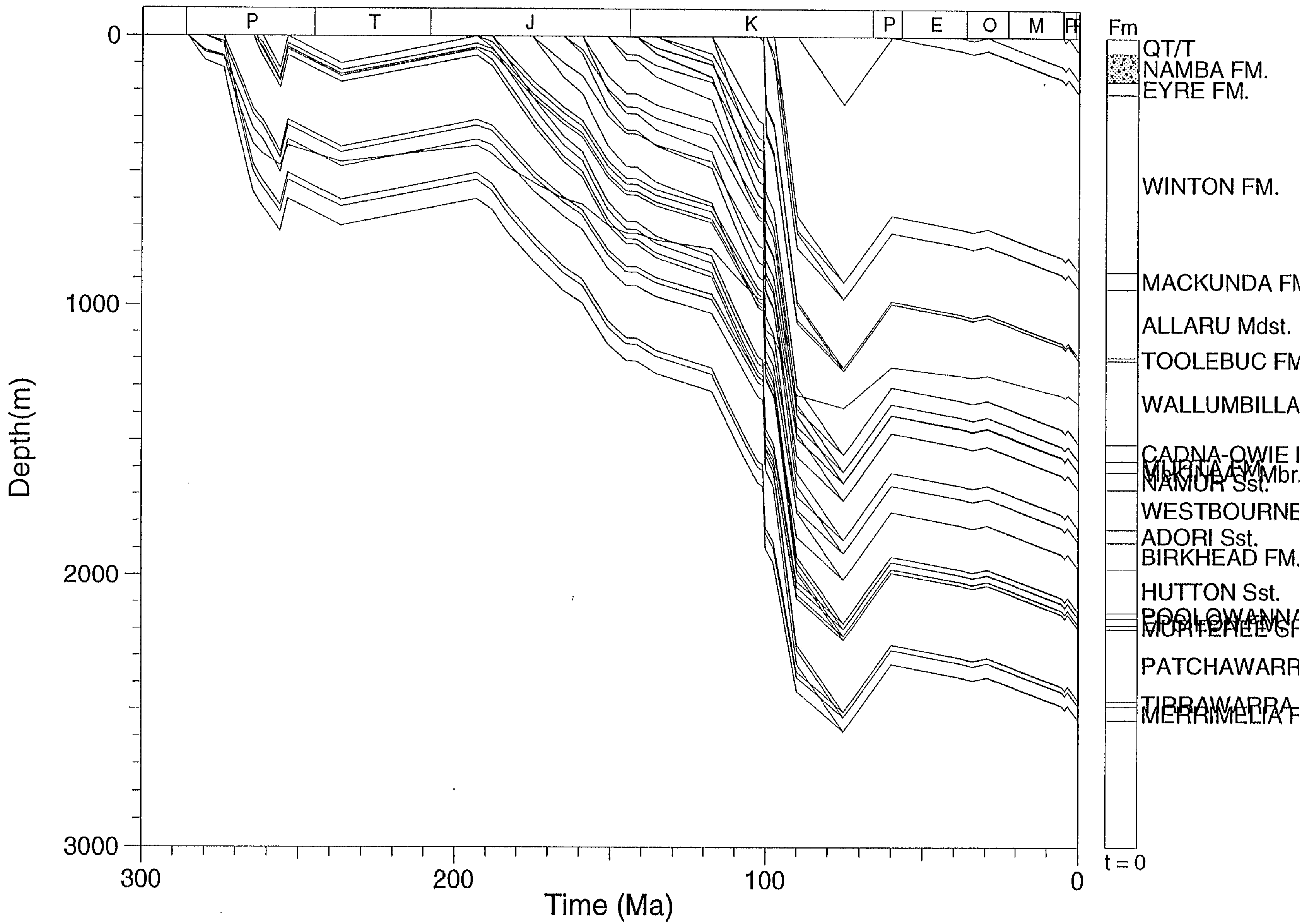
KUENPINNIE-1 EROSION

CMP=SC;TH=UG;MAT=LL
TG=1;TI=1;EXP=None

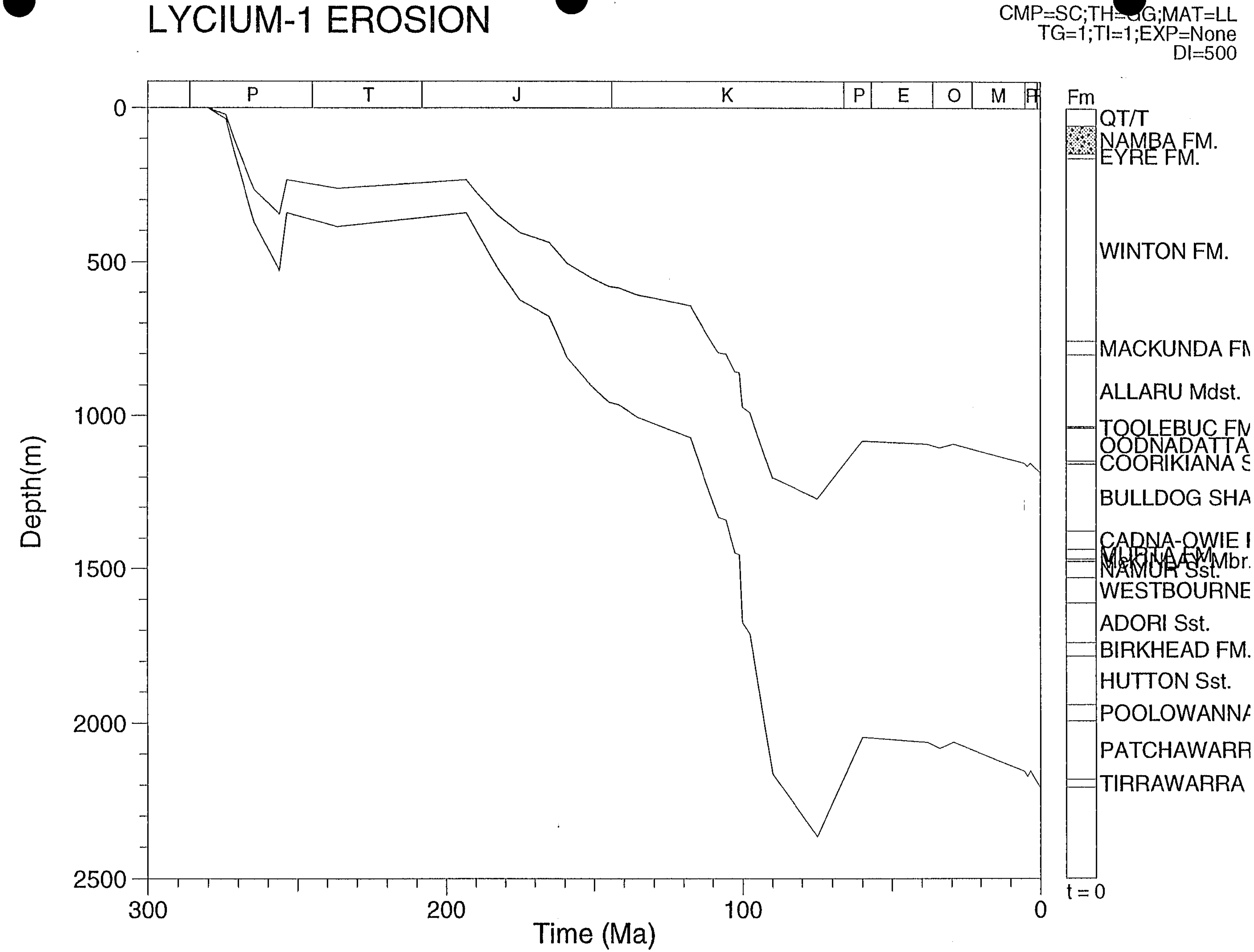


KUENPINNIE-1 EROSION

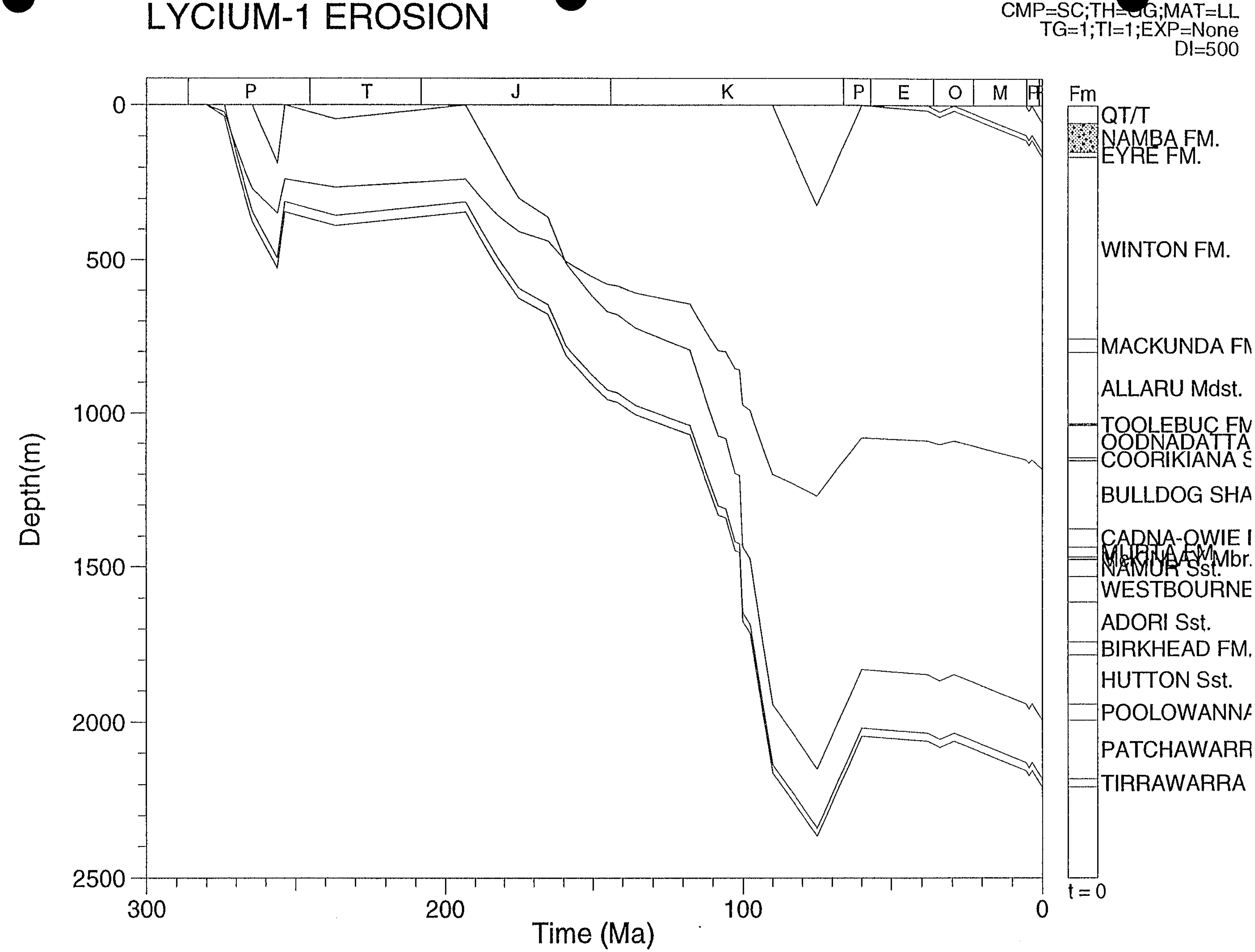
CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



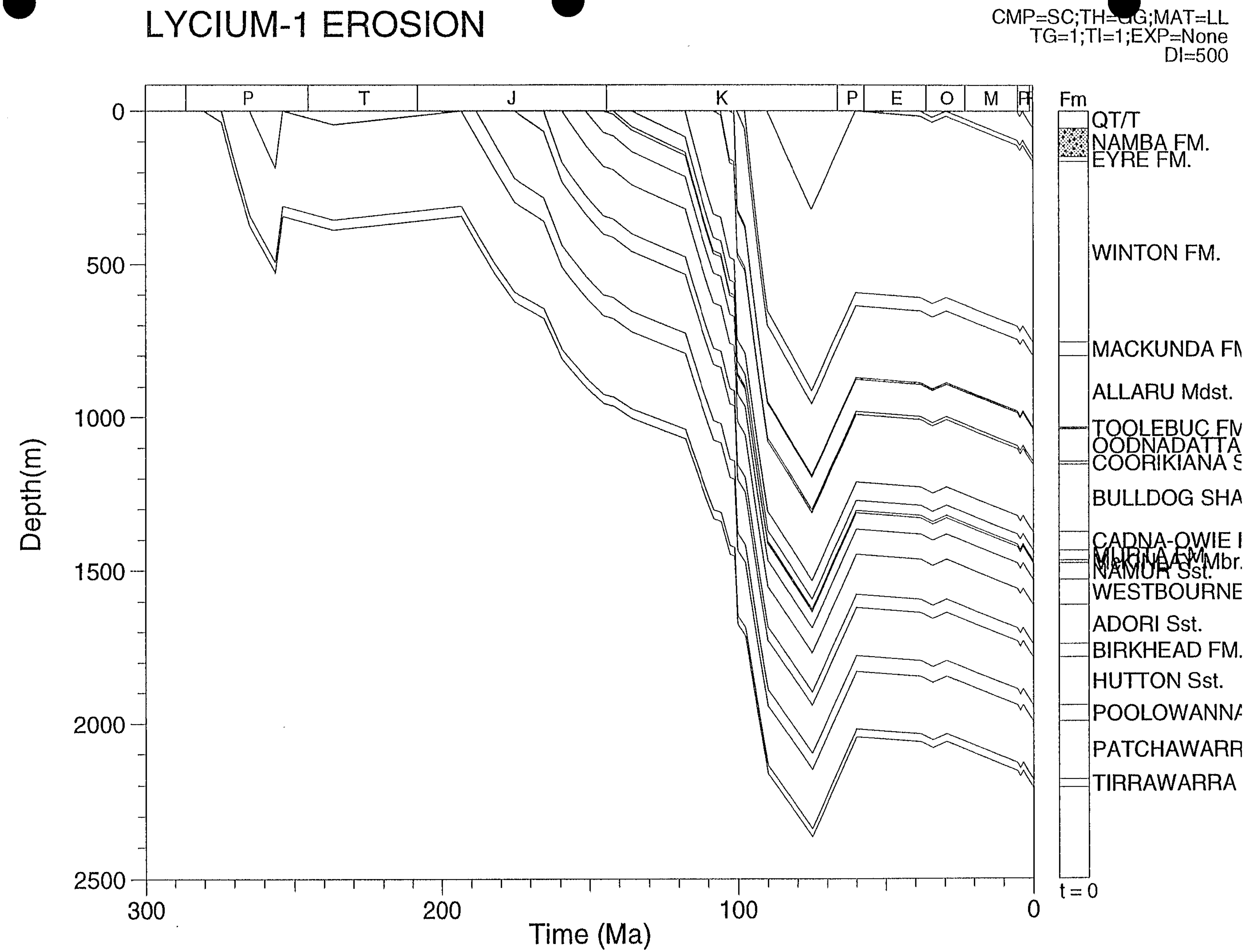
LYCIUM-1 EROSION



LYCIUM-1 EROSION



LYCIUM-1 EROSION



LYCIUM-1 EROSION

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TG=1;TI=1;EXP=None
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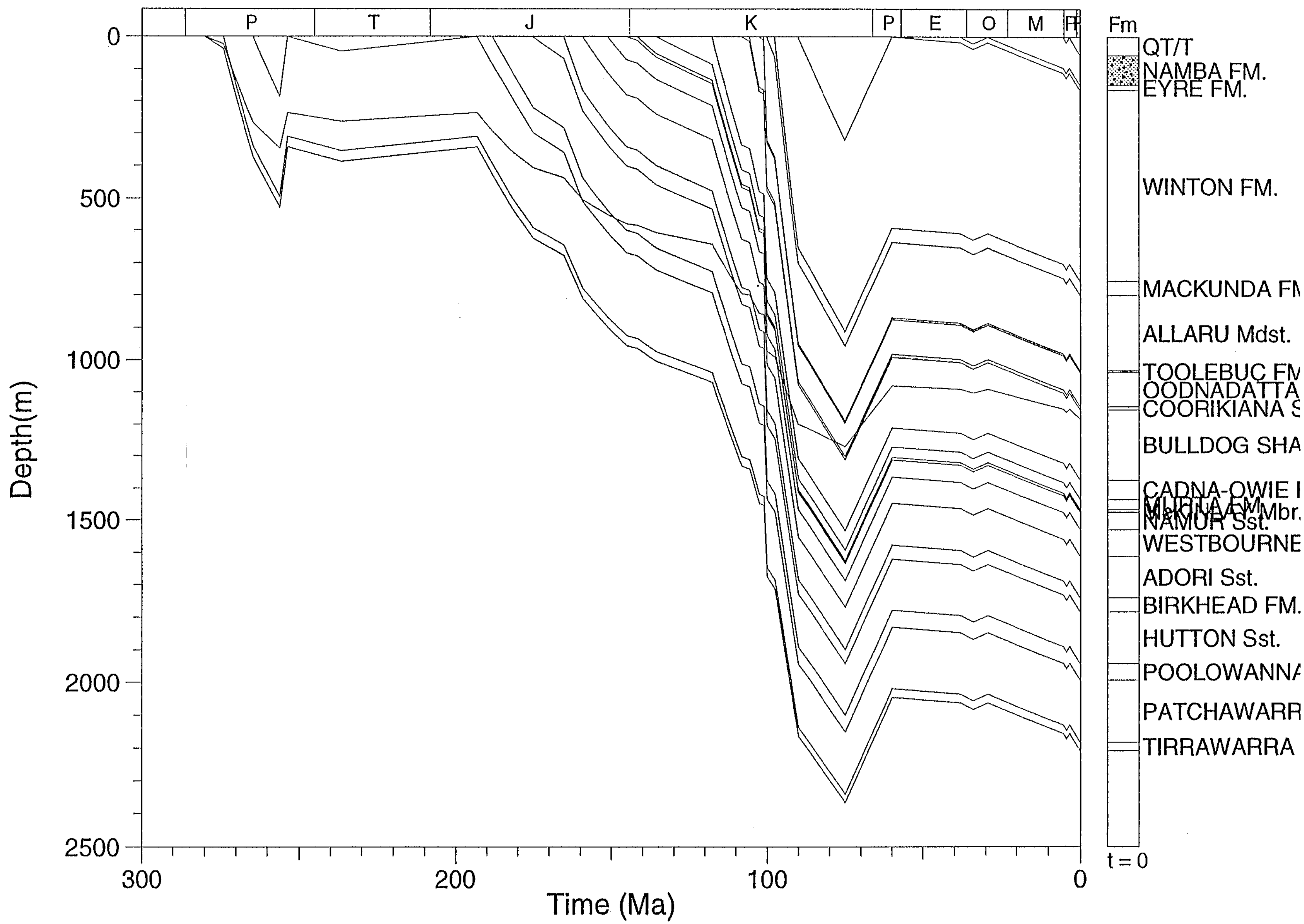
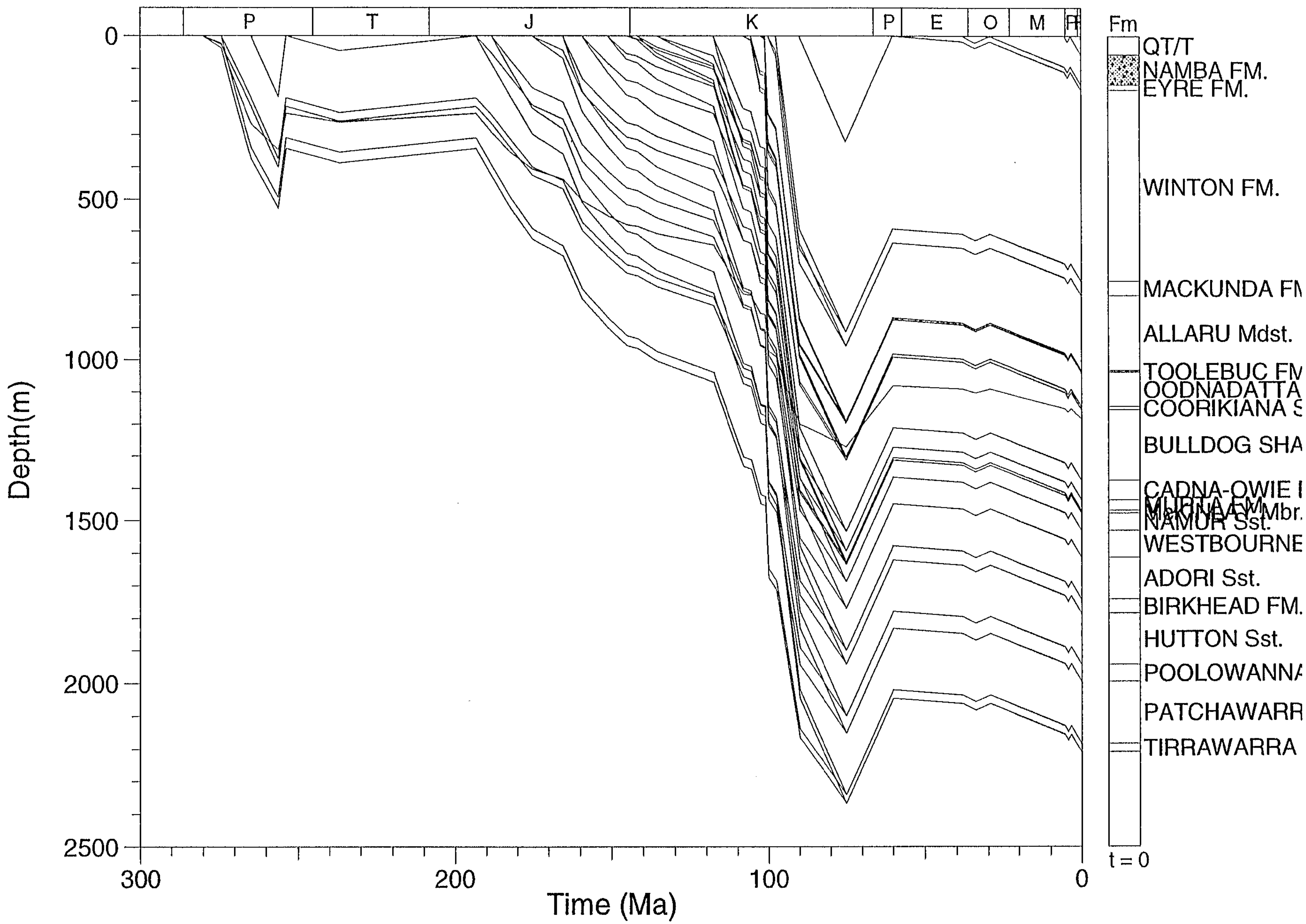
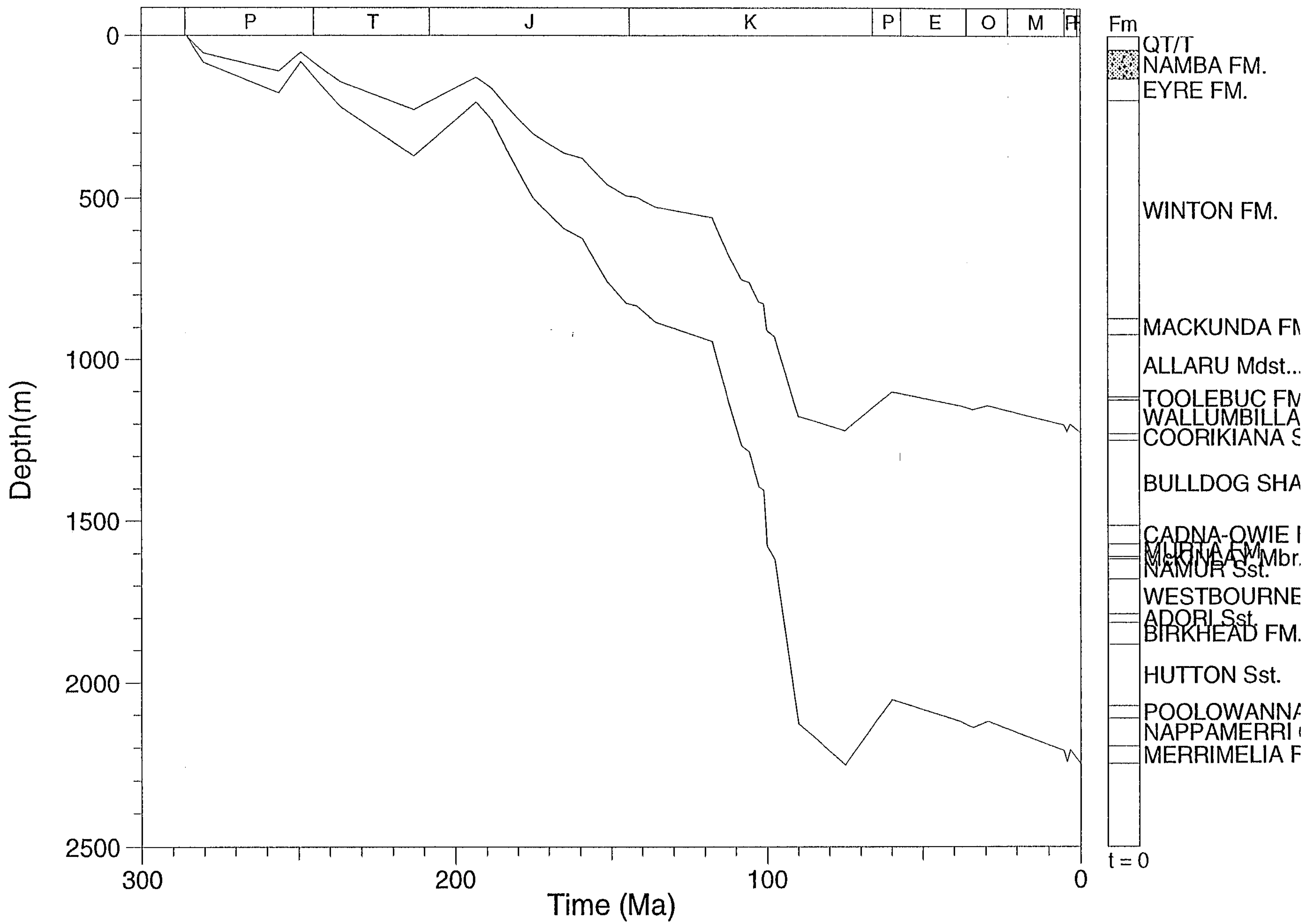


LYCIUM-1 EROSION



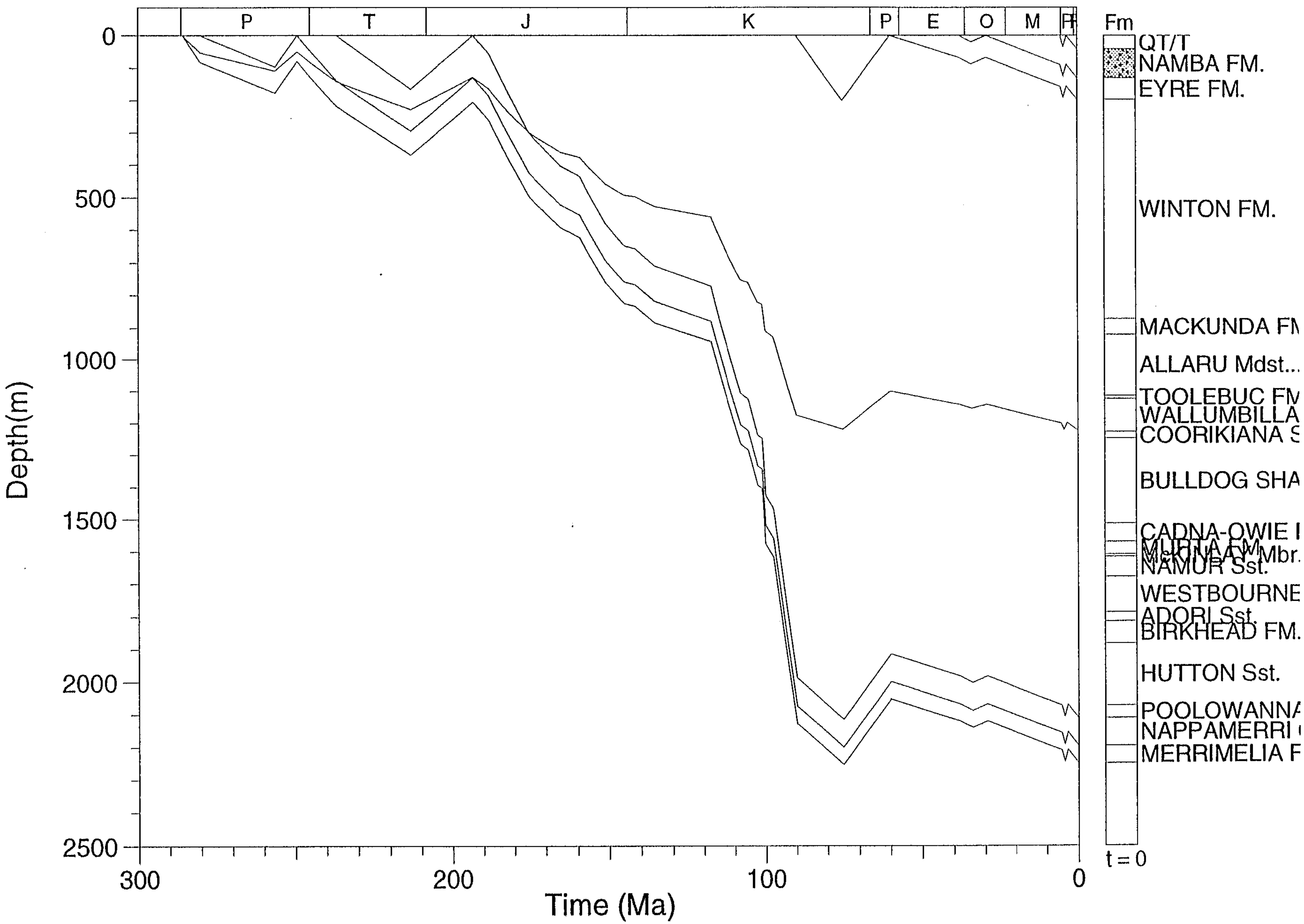
MERRIMELIA-30 ERO.

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



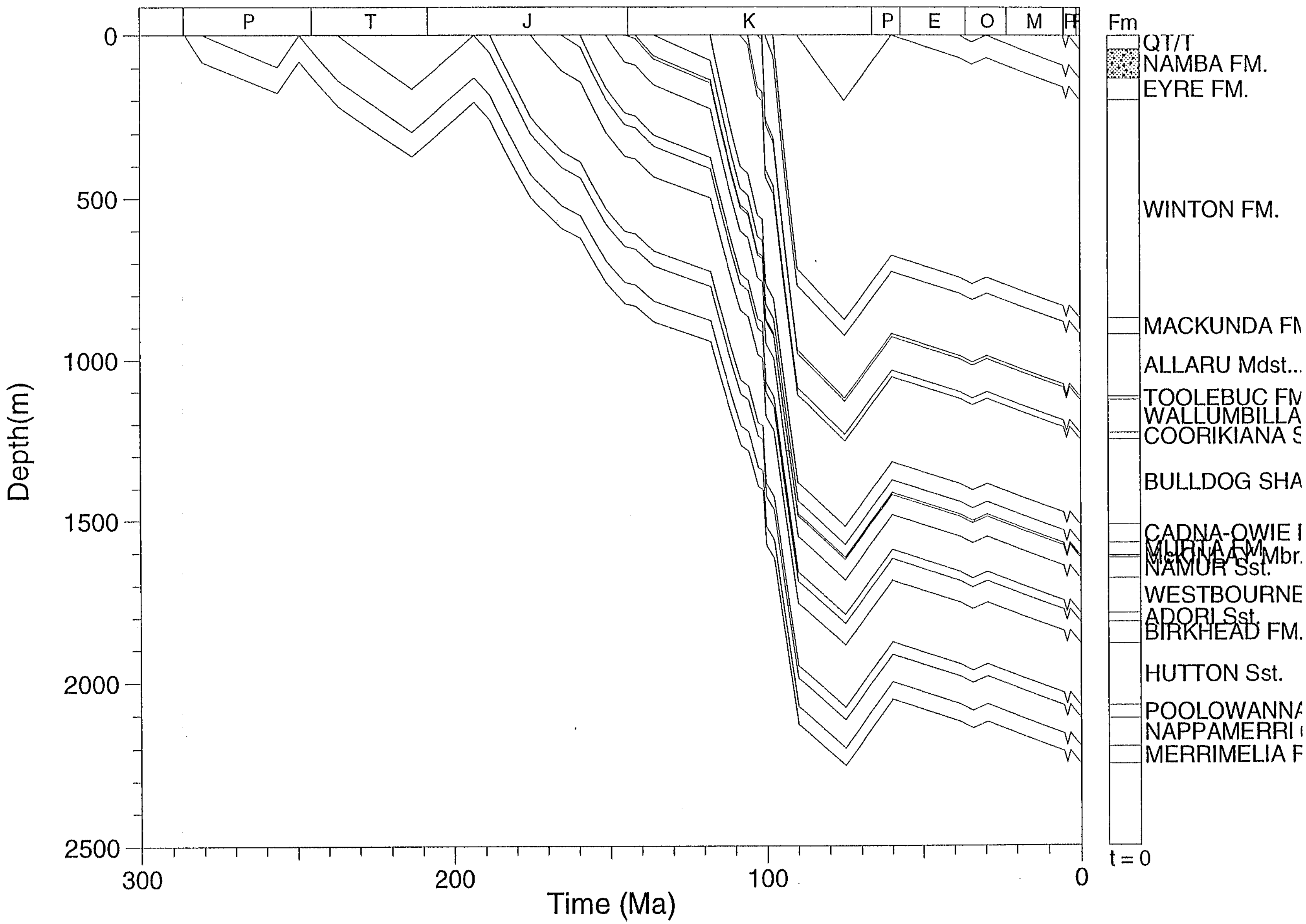
MERRIMELIA-30 ERO.

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



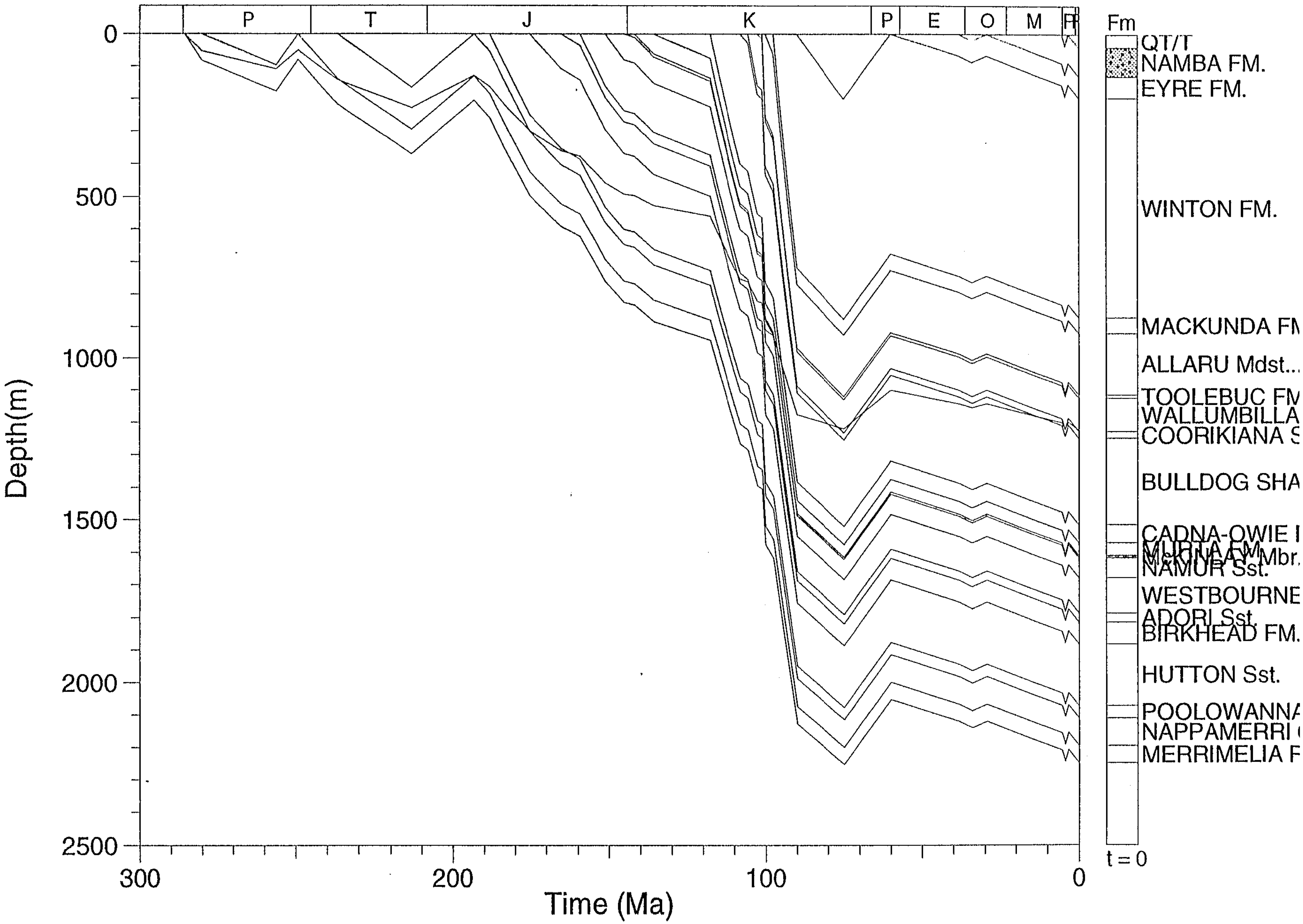
MERRIMELIA-30 ERO.

CMP=SC;TH=SG;MAT=LL
TG=1;TI=1;EXP=None



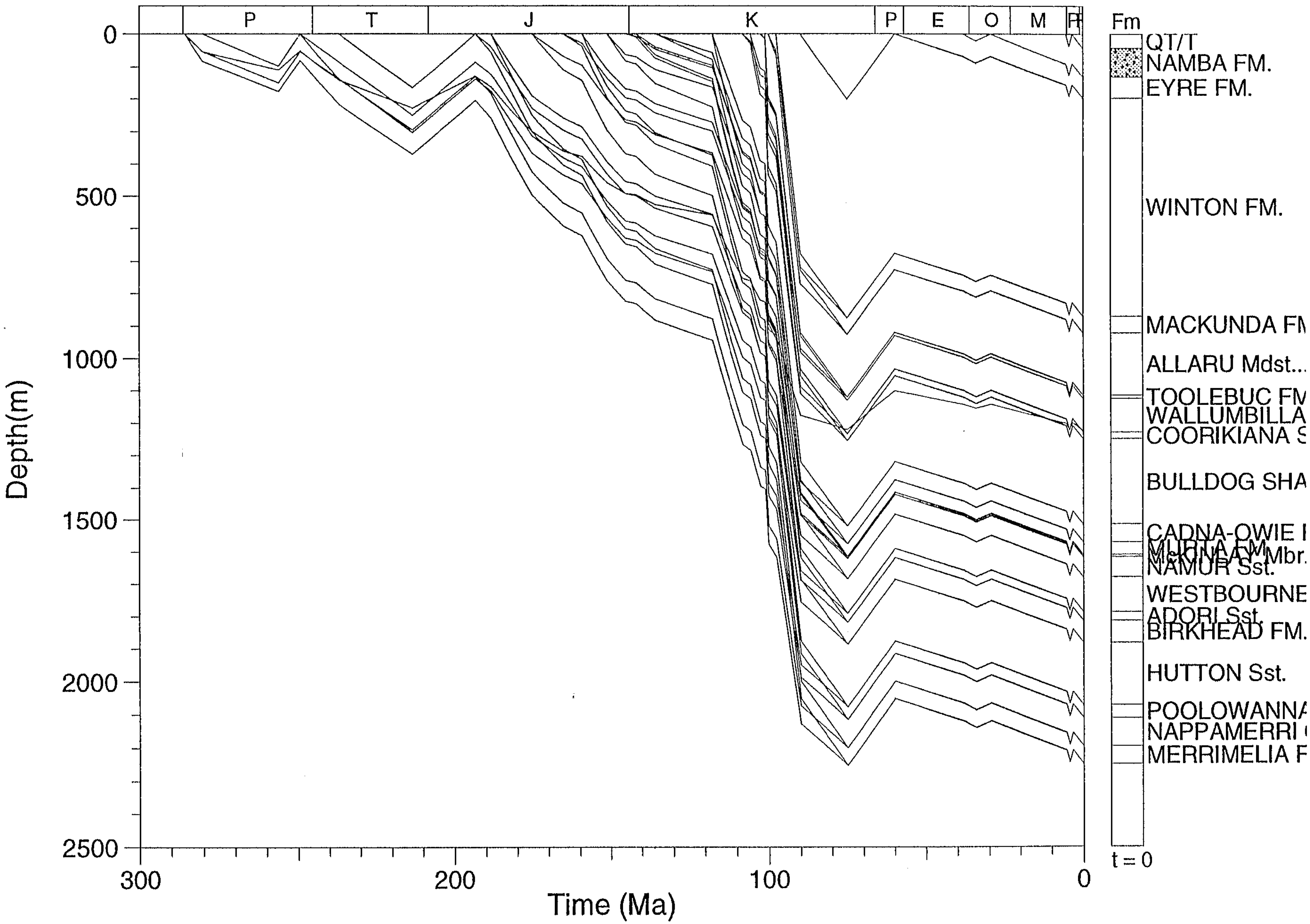
MERRIMELIA-30 ERO.

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



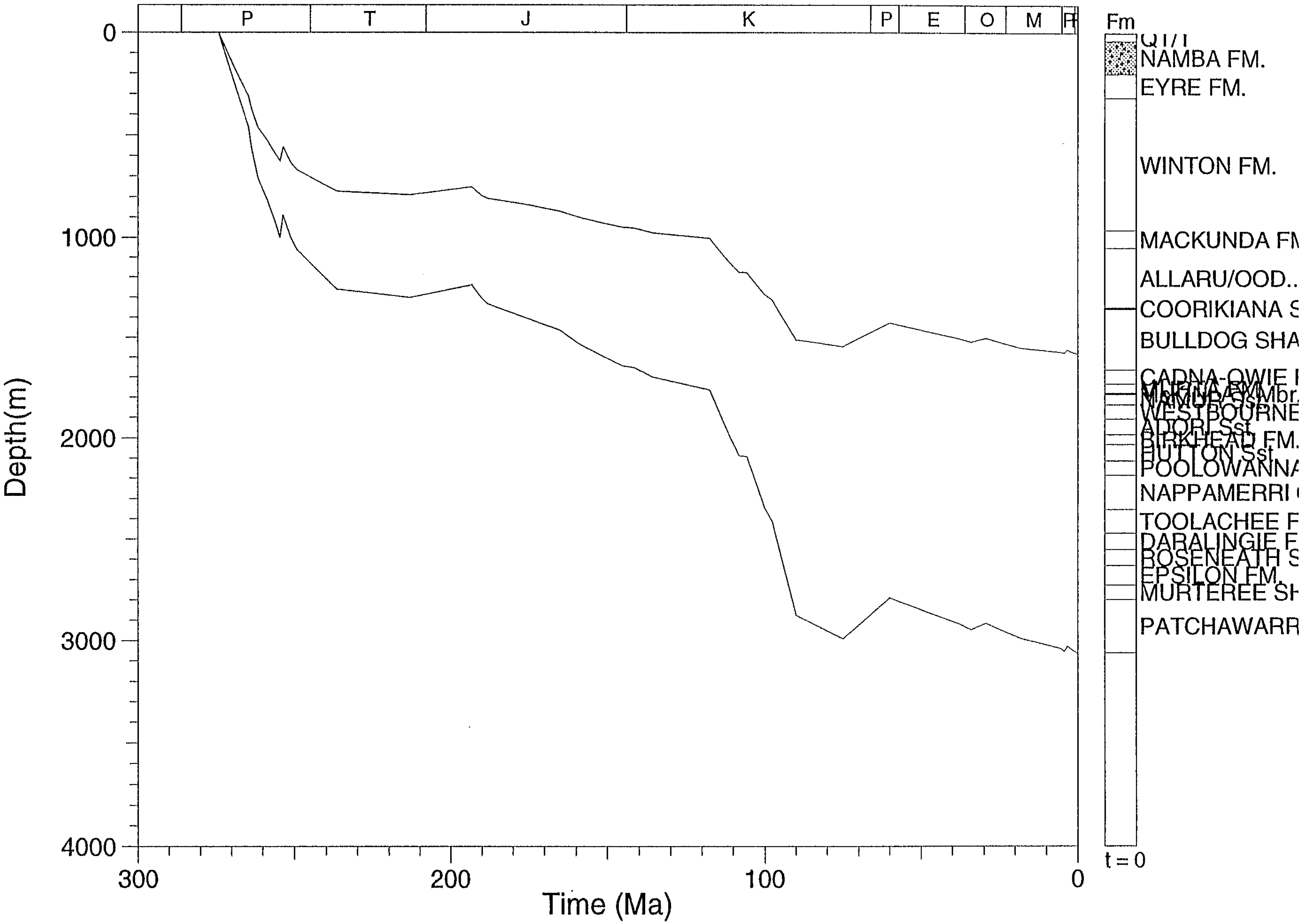
MERRIMELIA-30 ERO.

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



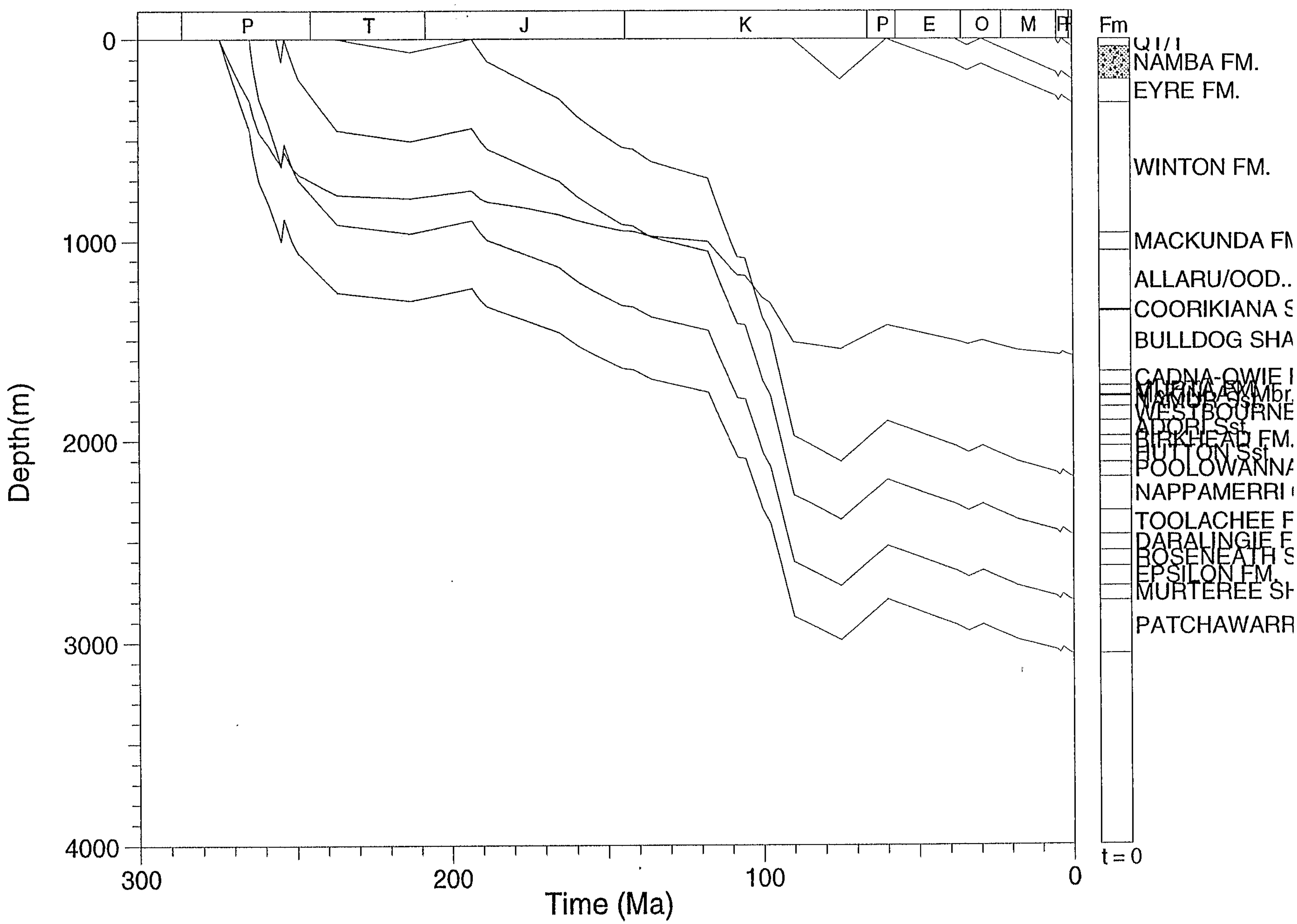
MOOMBA-57 EROSION

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



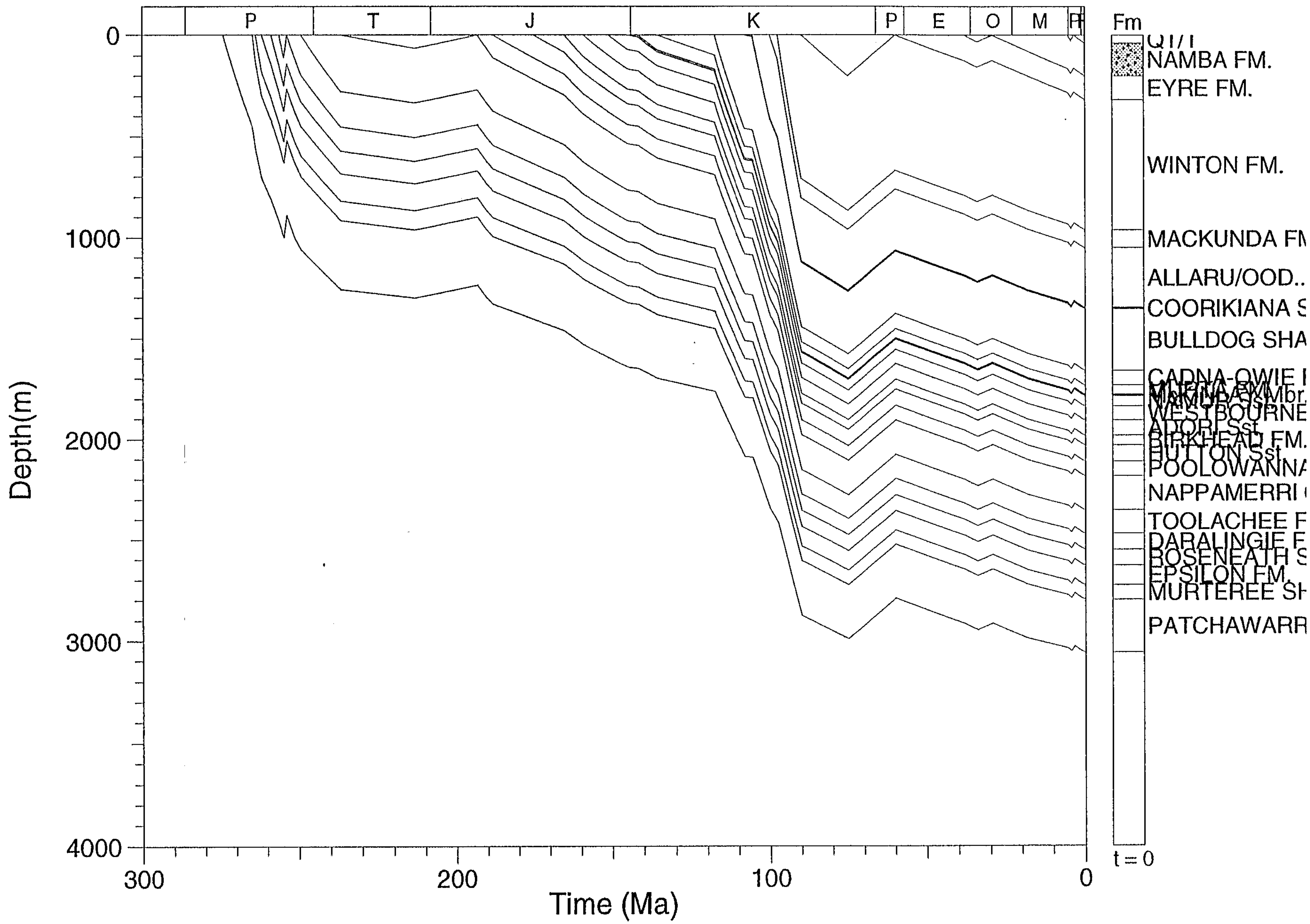
MOOMBA-57 EROSION

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



MOOMBA-57 EROSION

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



MOOMBA-57 EROSION

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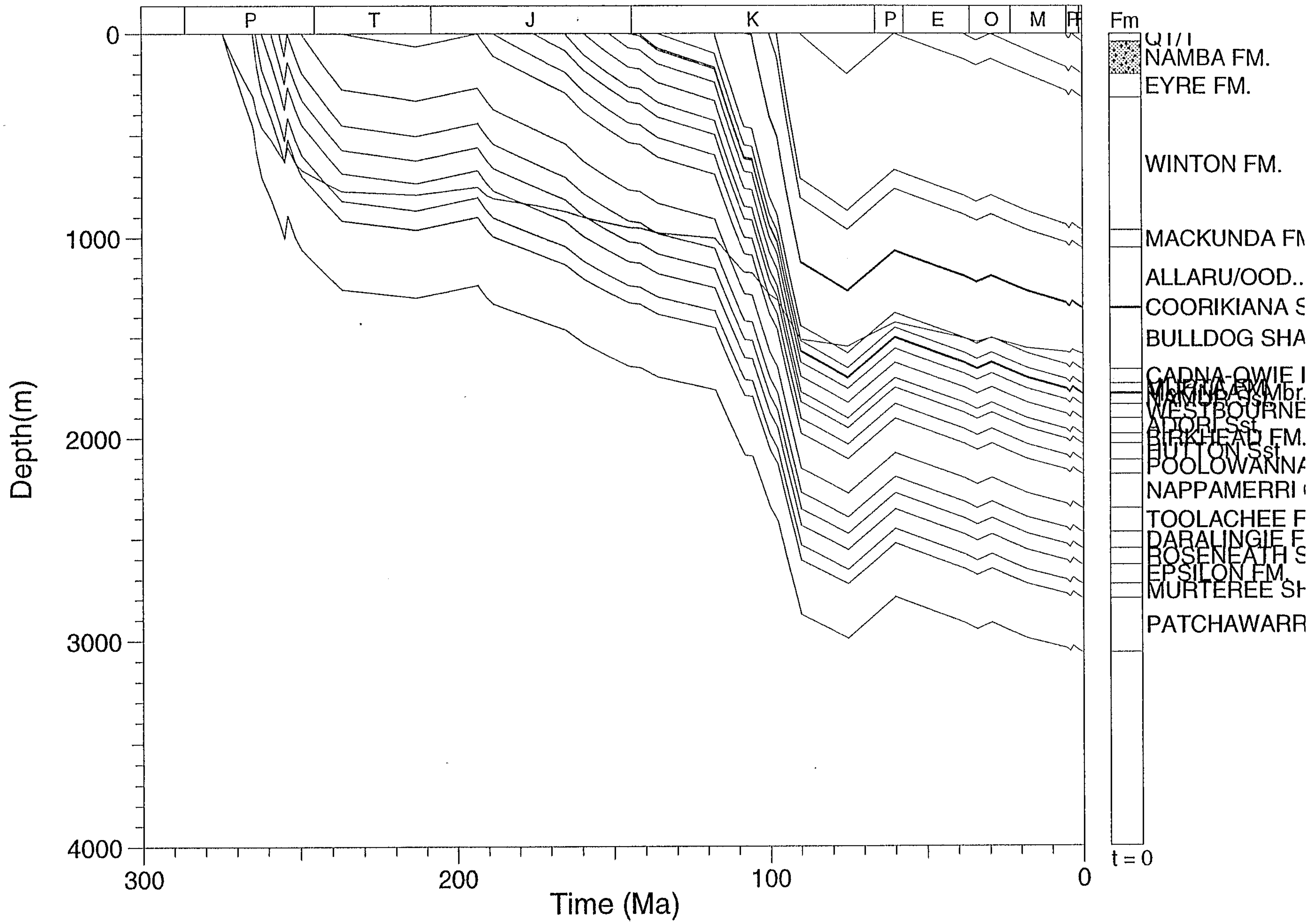
TG=1;TI=1;EXP=None



MOOMBA-57 EROSION

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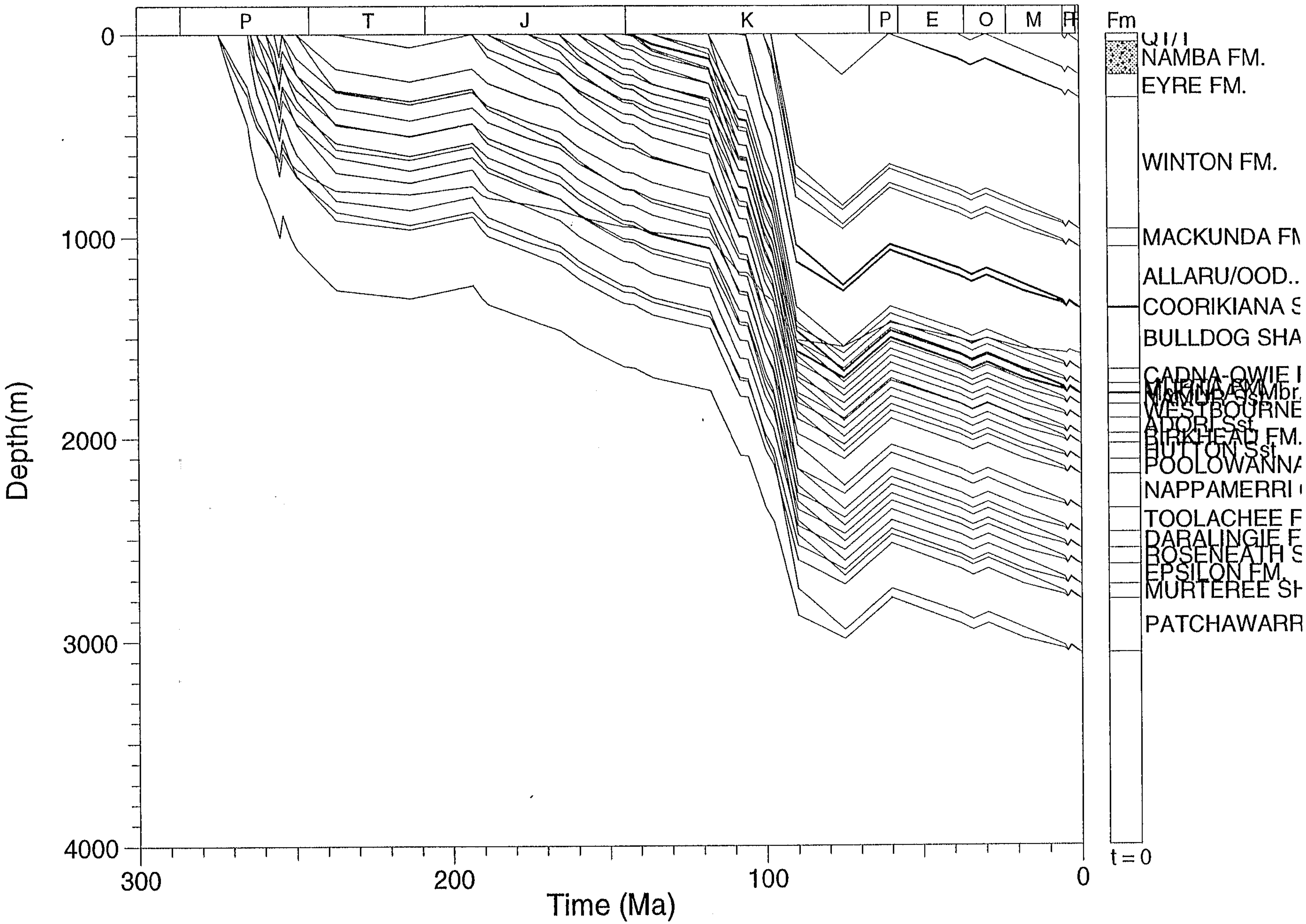
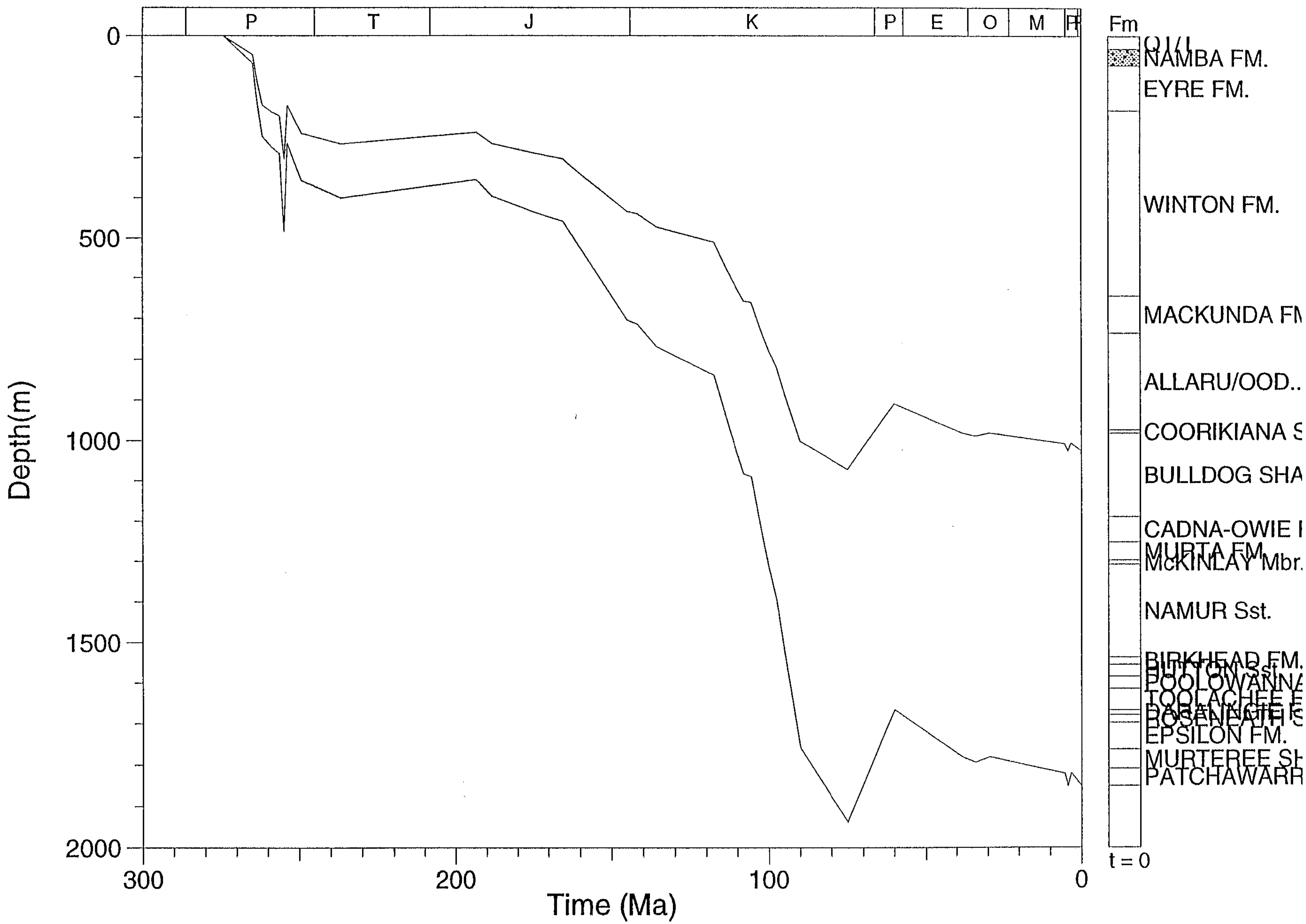
TG=1;TI=1;EXP=None



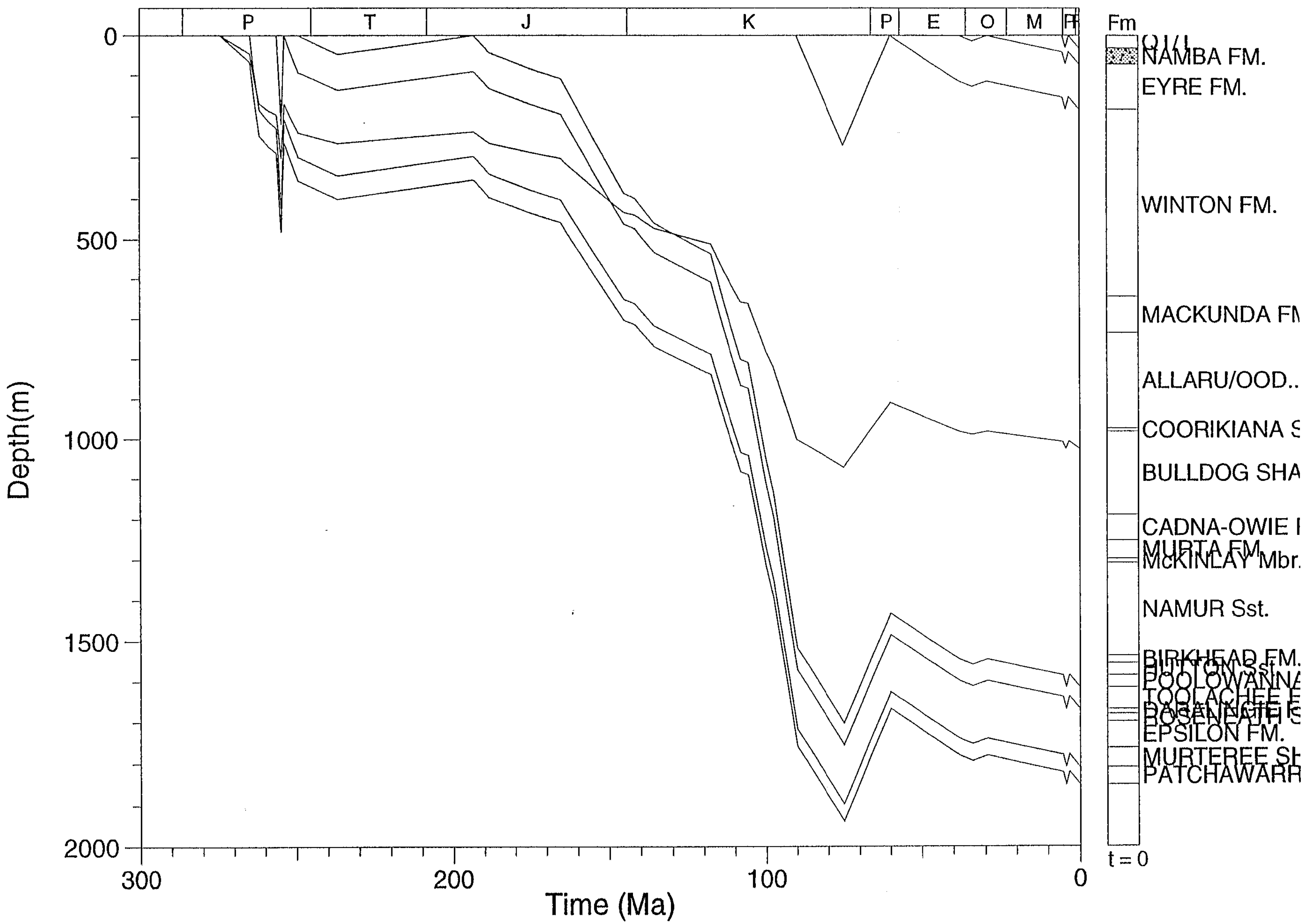
MULGA-2 EROSION

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



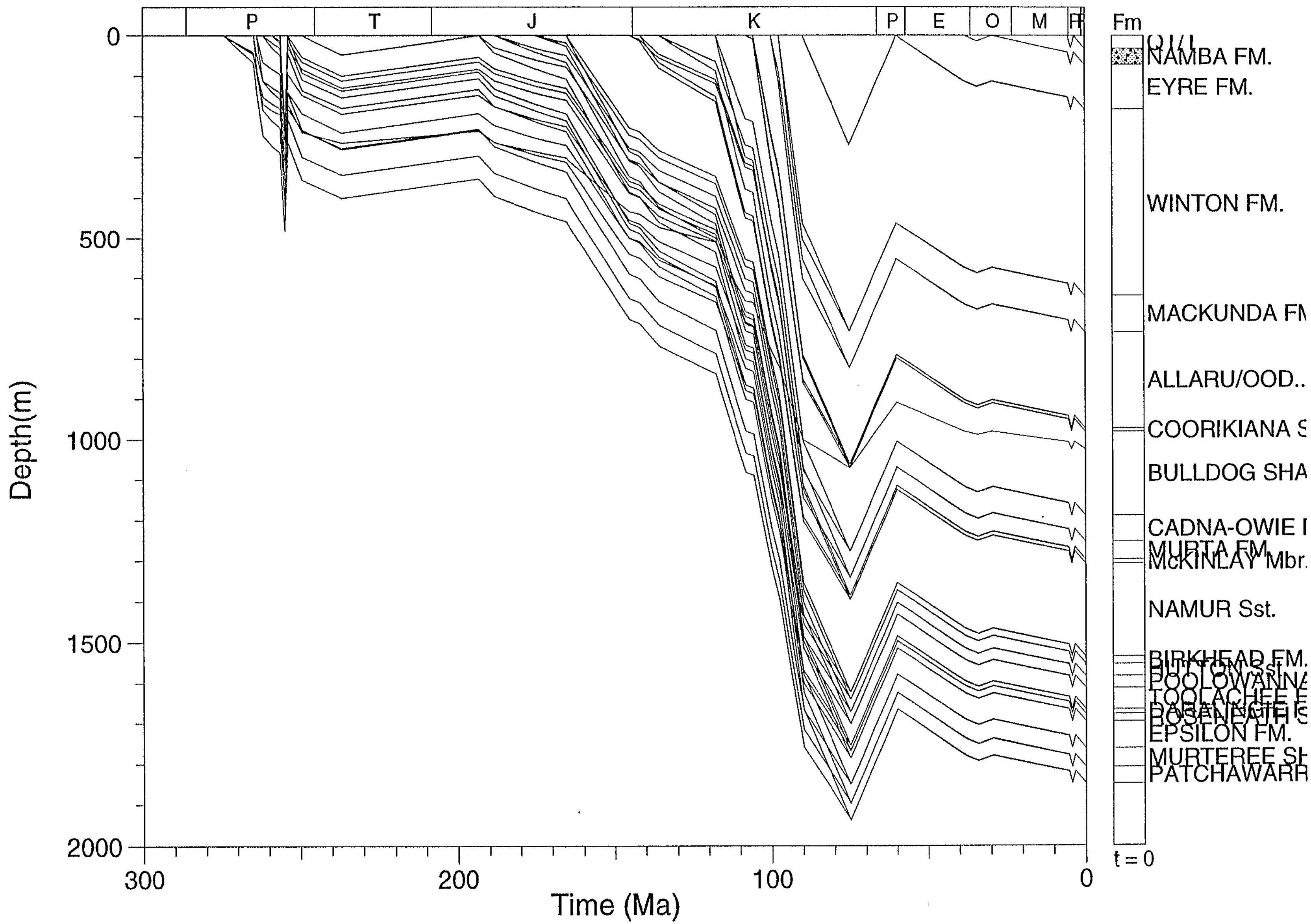
MULGA-2 EROSION

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



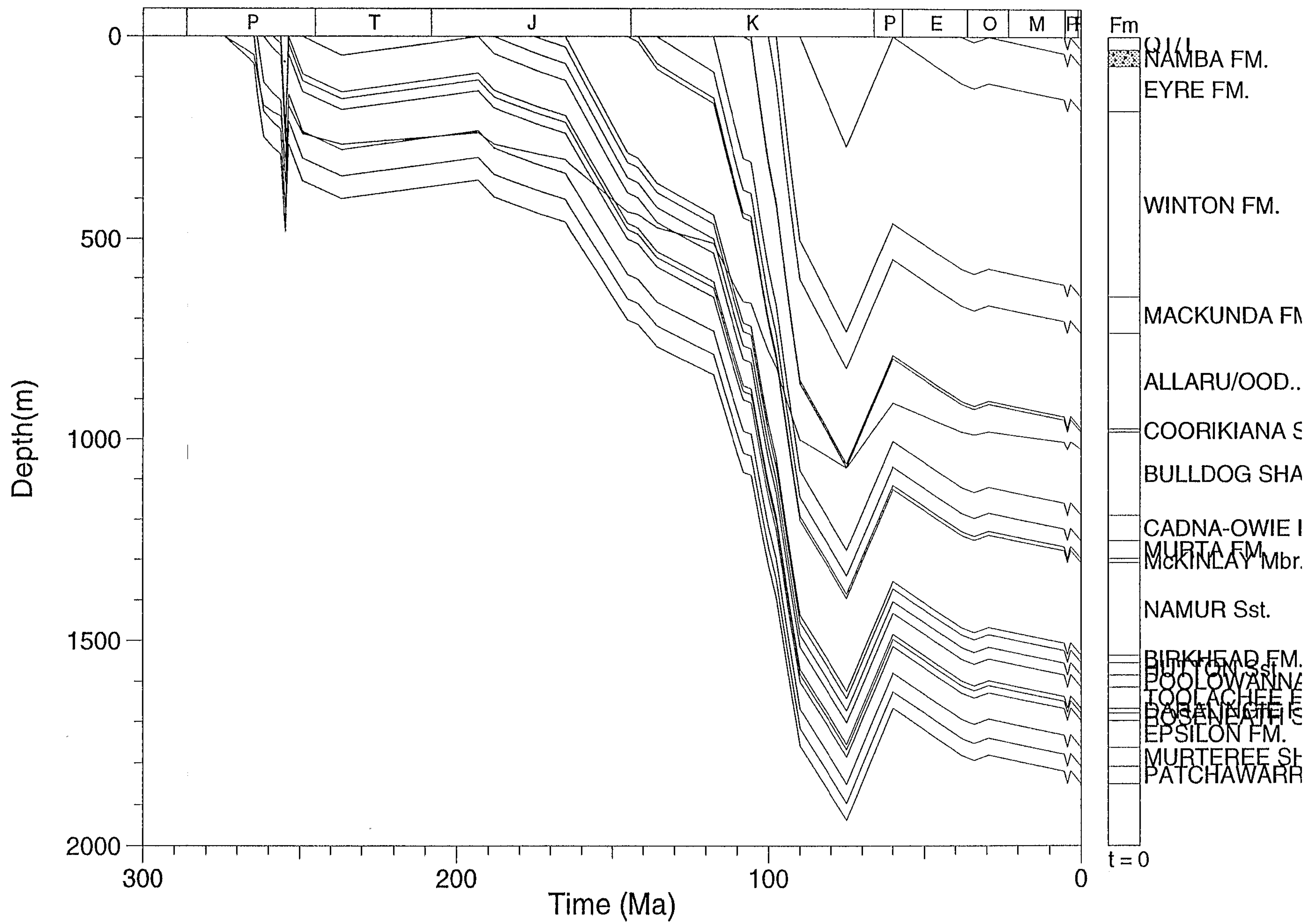
MULGA-2 EROSION

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



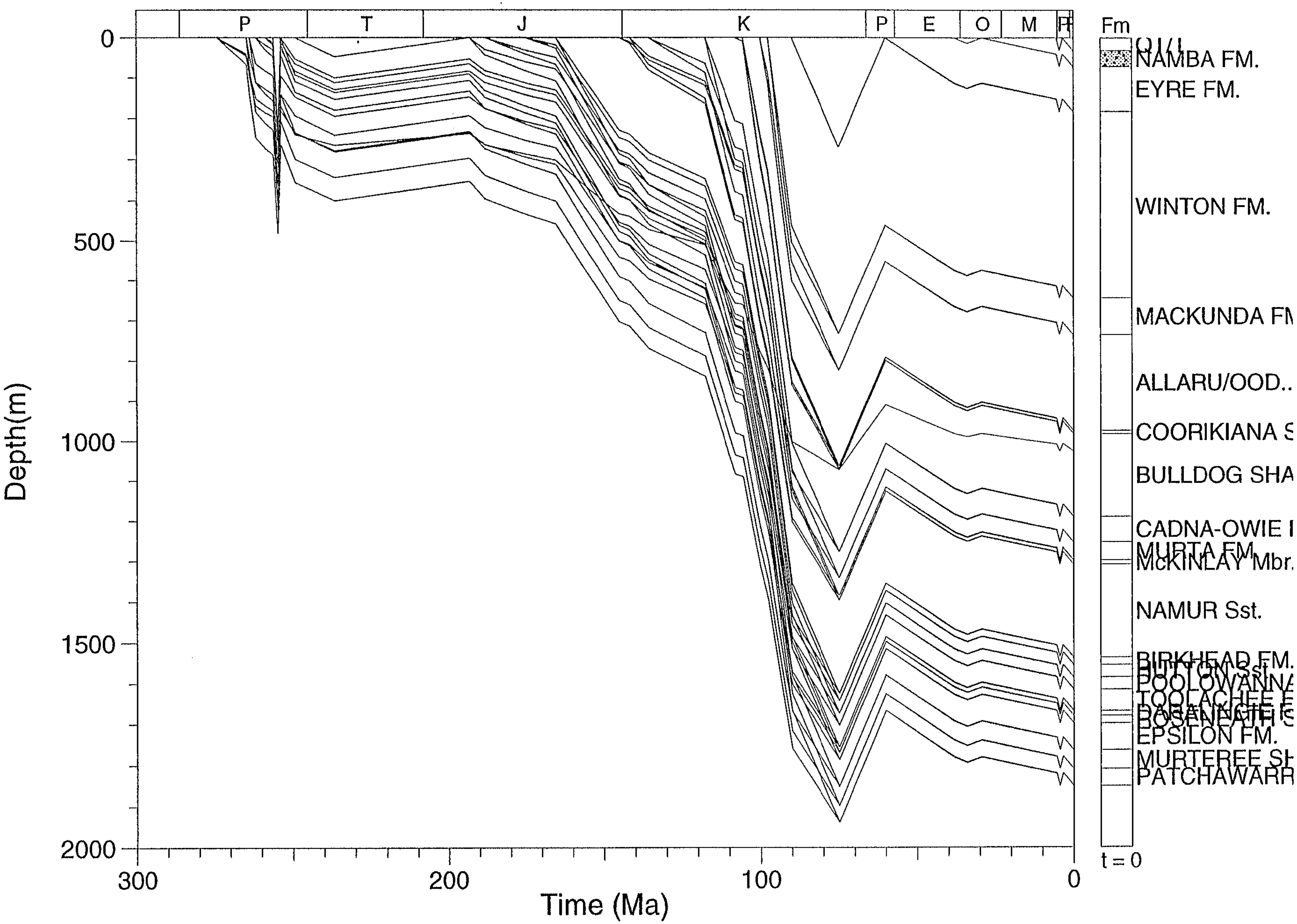
MULGA-2 EROSION

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



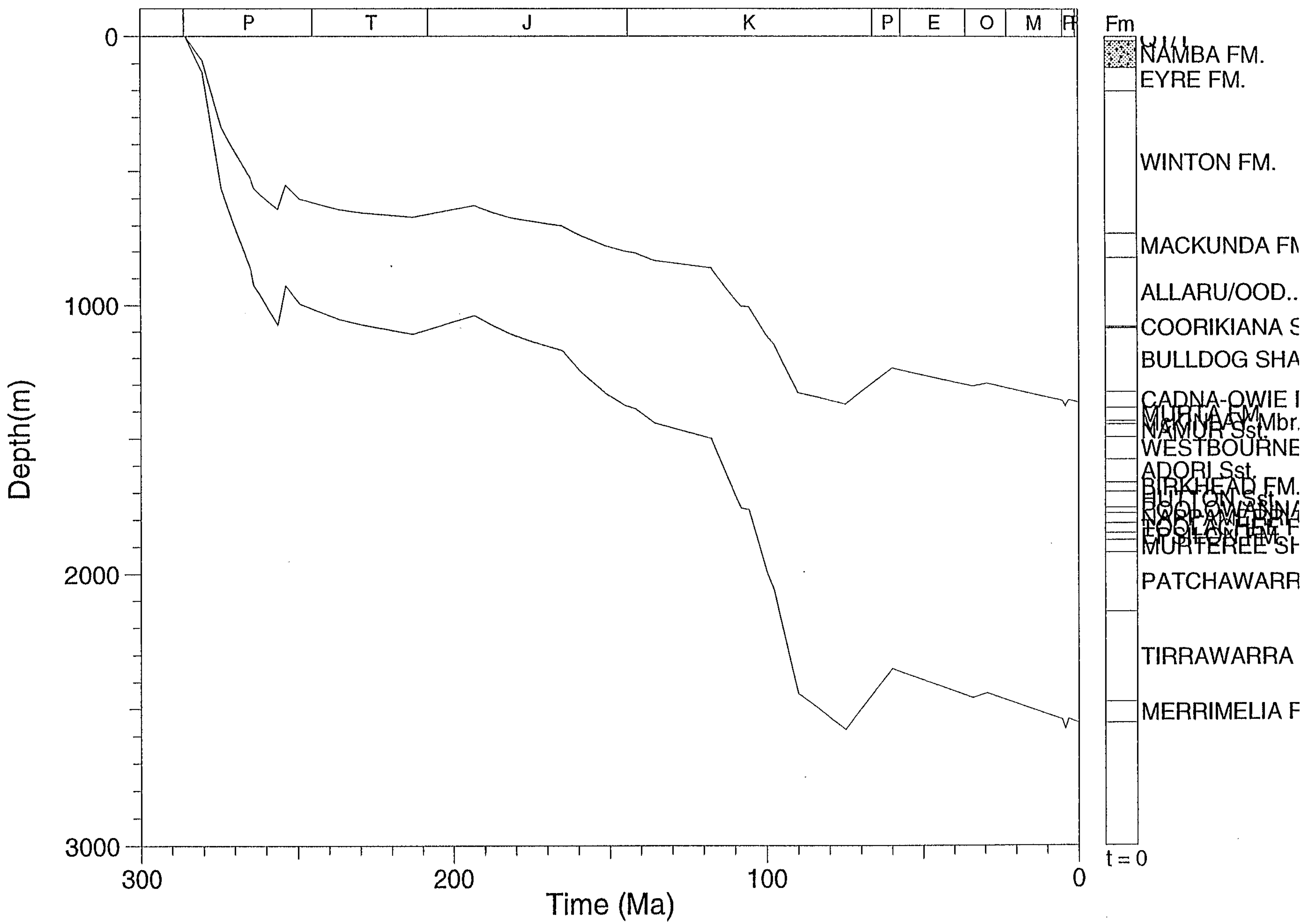
MULGA-2 EROSION

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



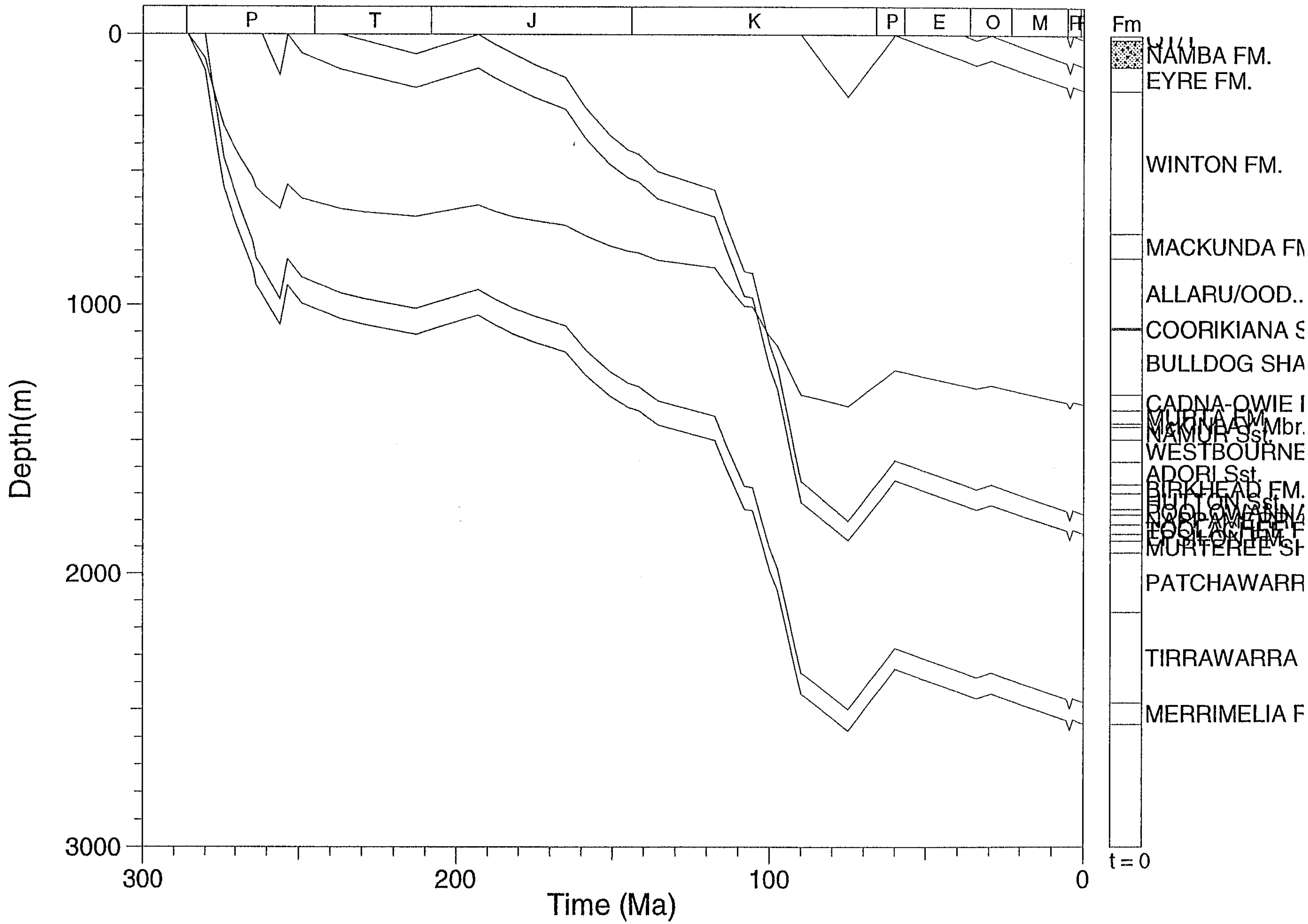
PINNA-1 EROSION

CMP=SC;TH=CG;MAT=LL
TG=1;TI=1;EXP=None



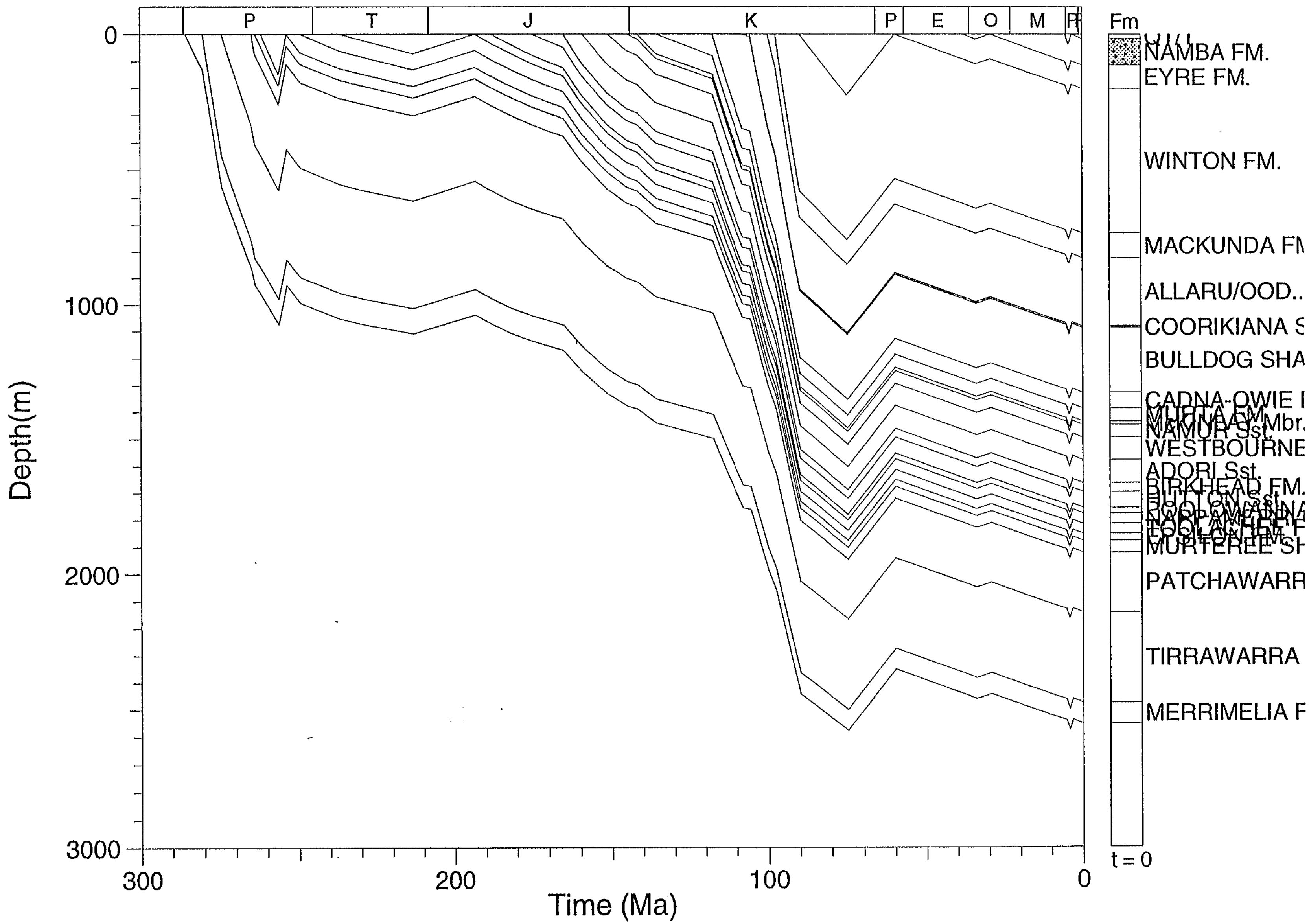
PINNA-1 EROSION

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



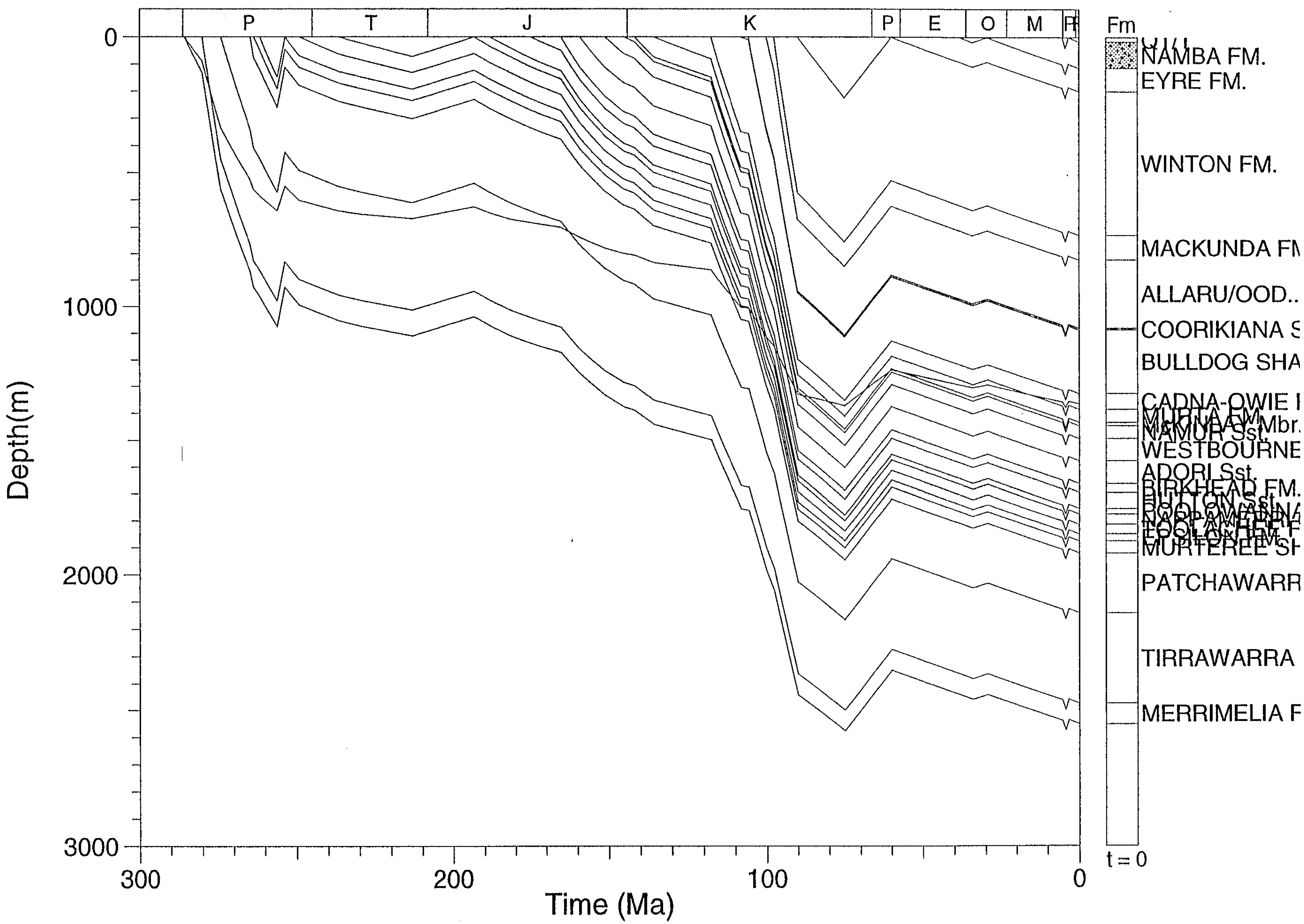
PINNA-1 EROSION

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



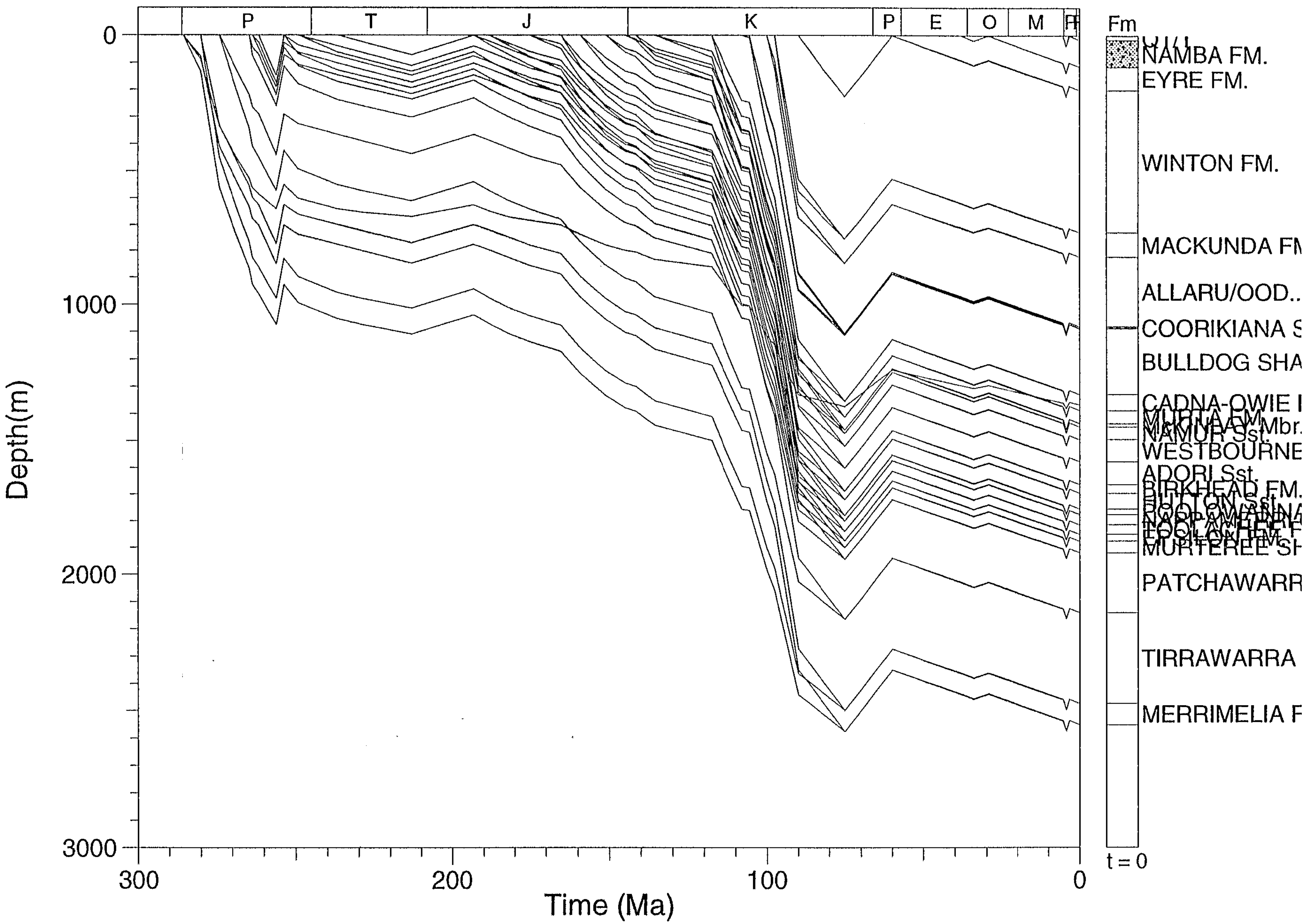
PINNA-1 EROSION

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None

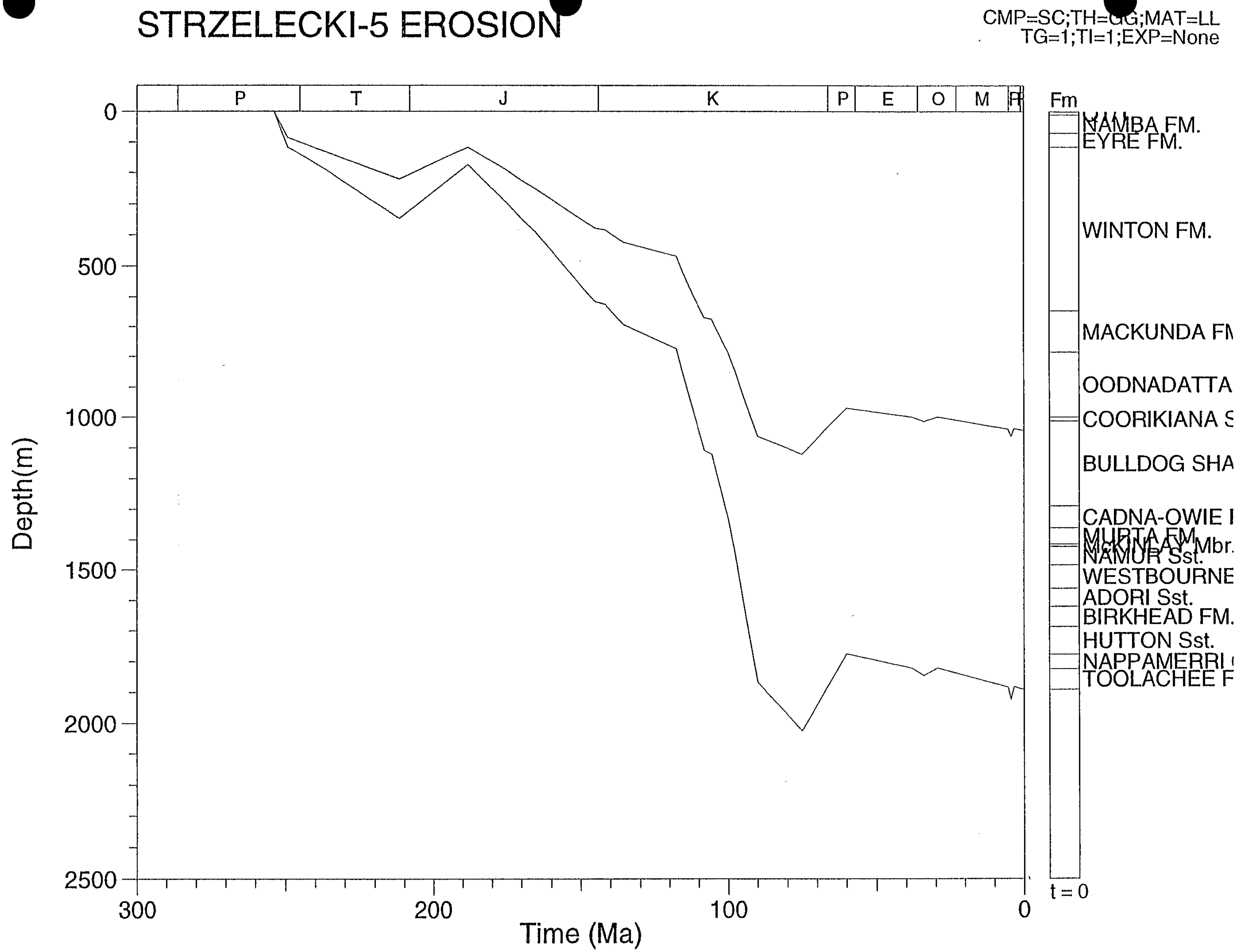


PINNA-1 EROSION

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None

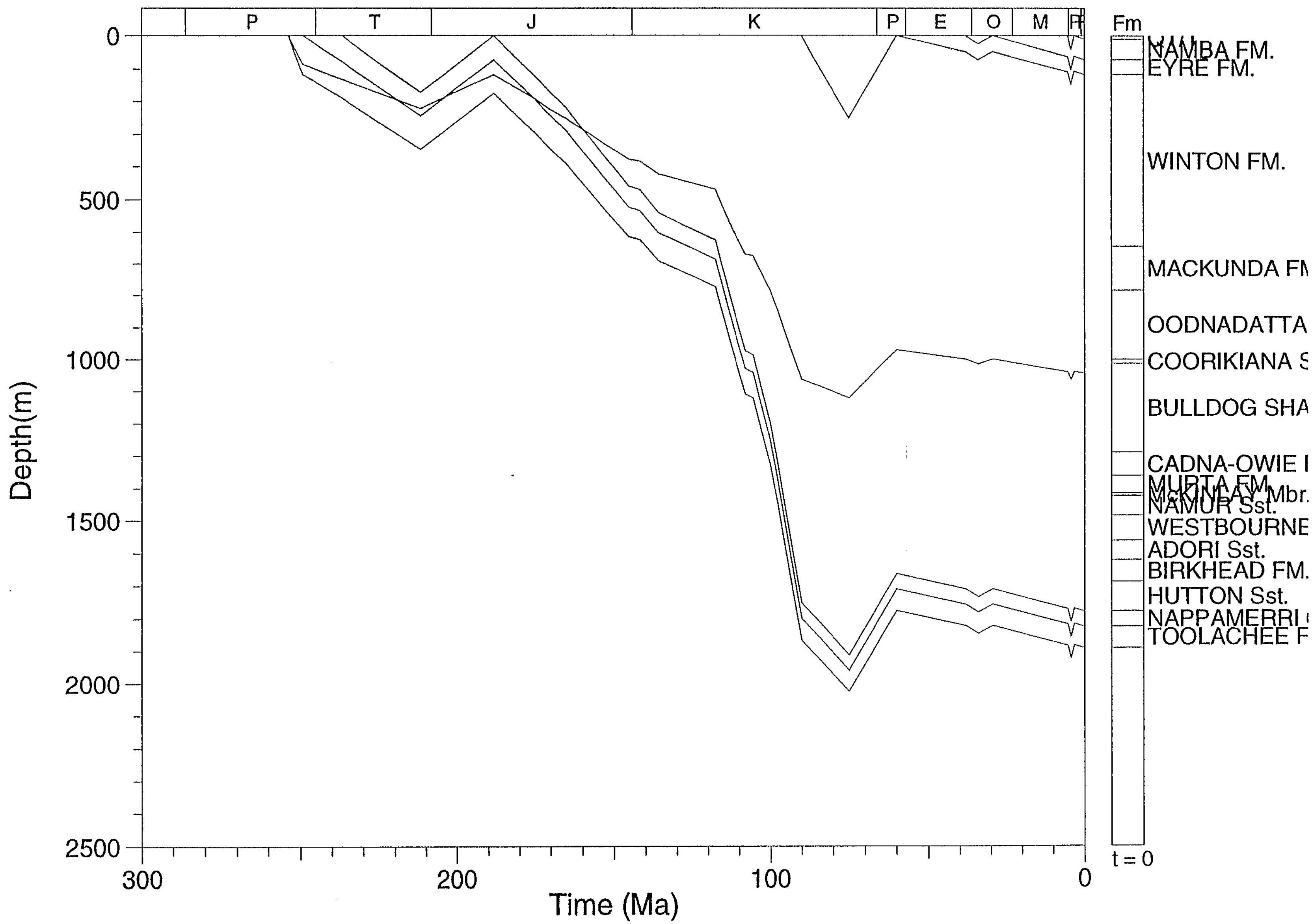


STRZELECKI-5 EROSION



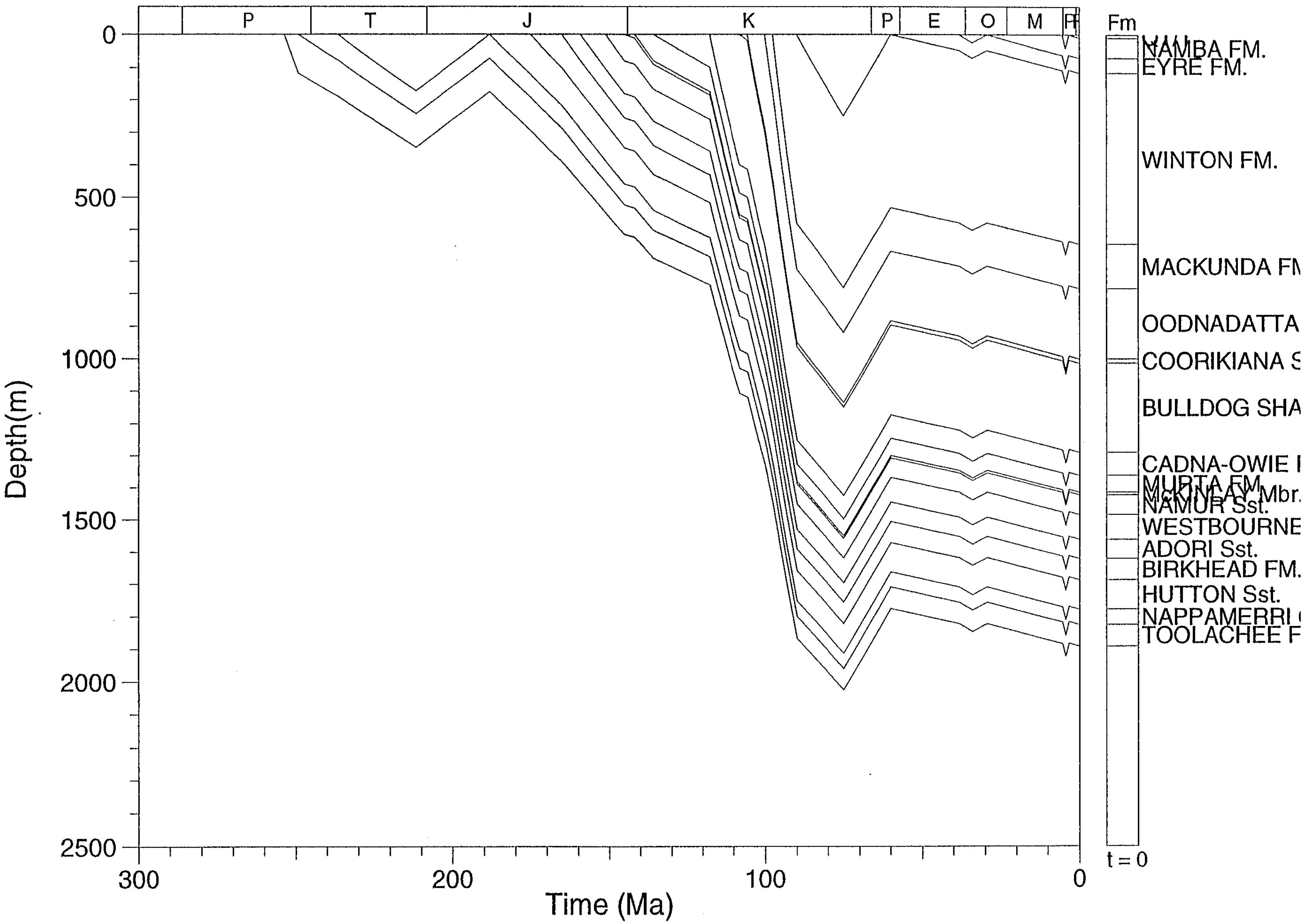
STRZELECKI-5 EROSION

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None

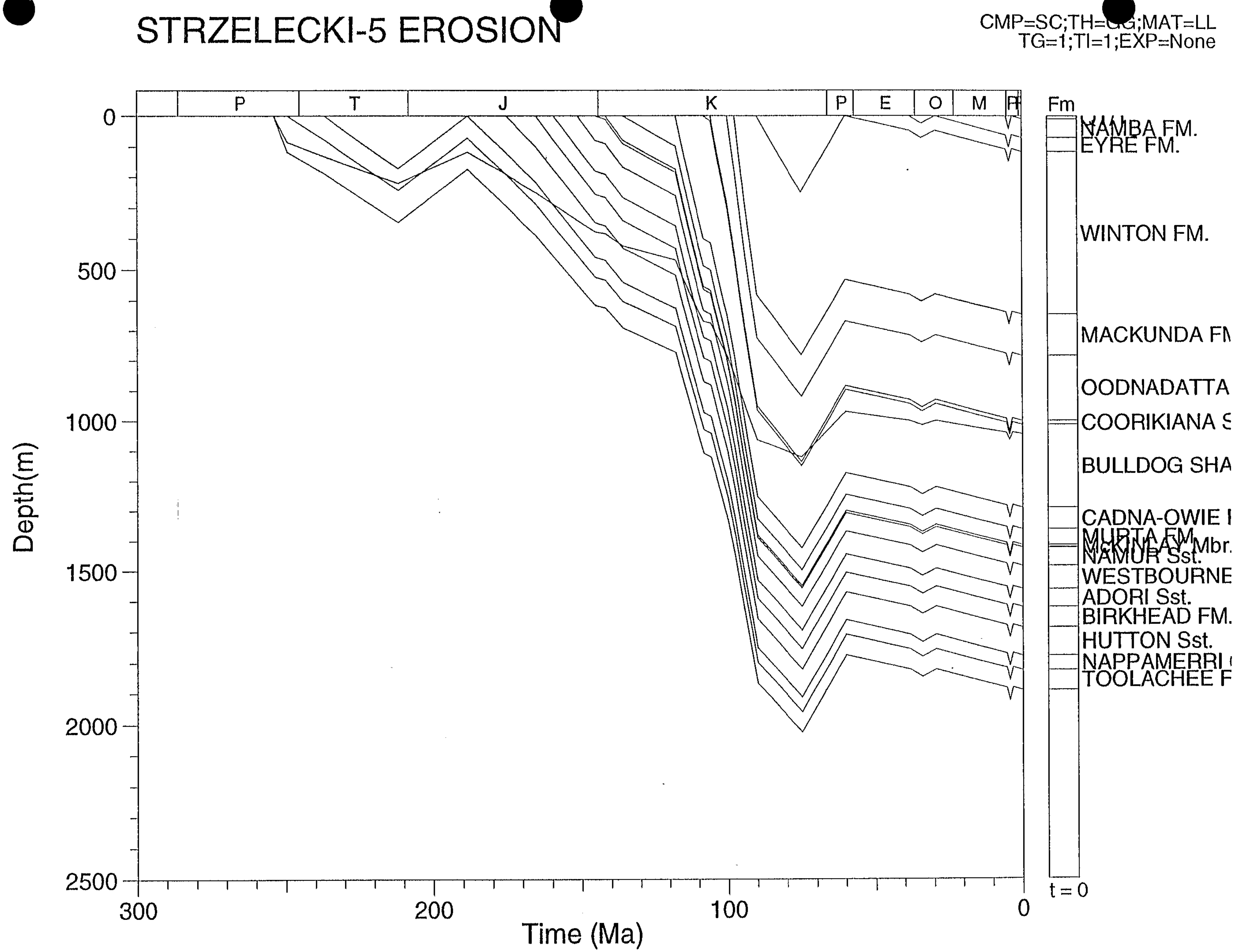


STRZELECKI-5 EROSION

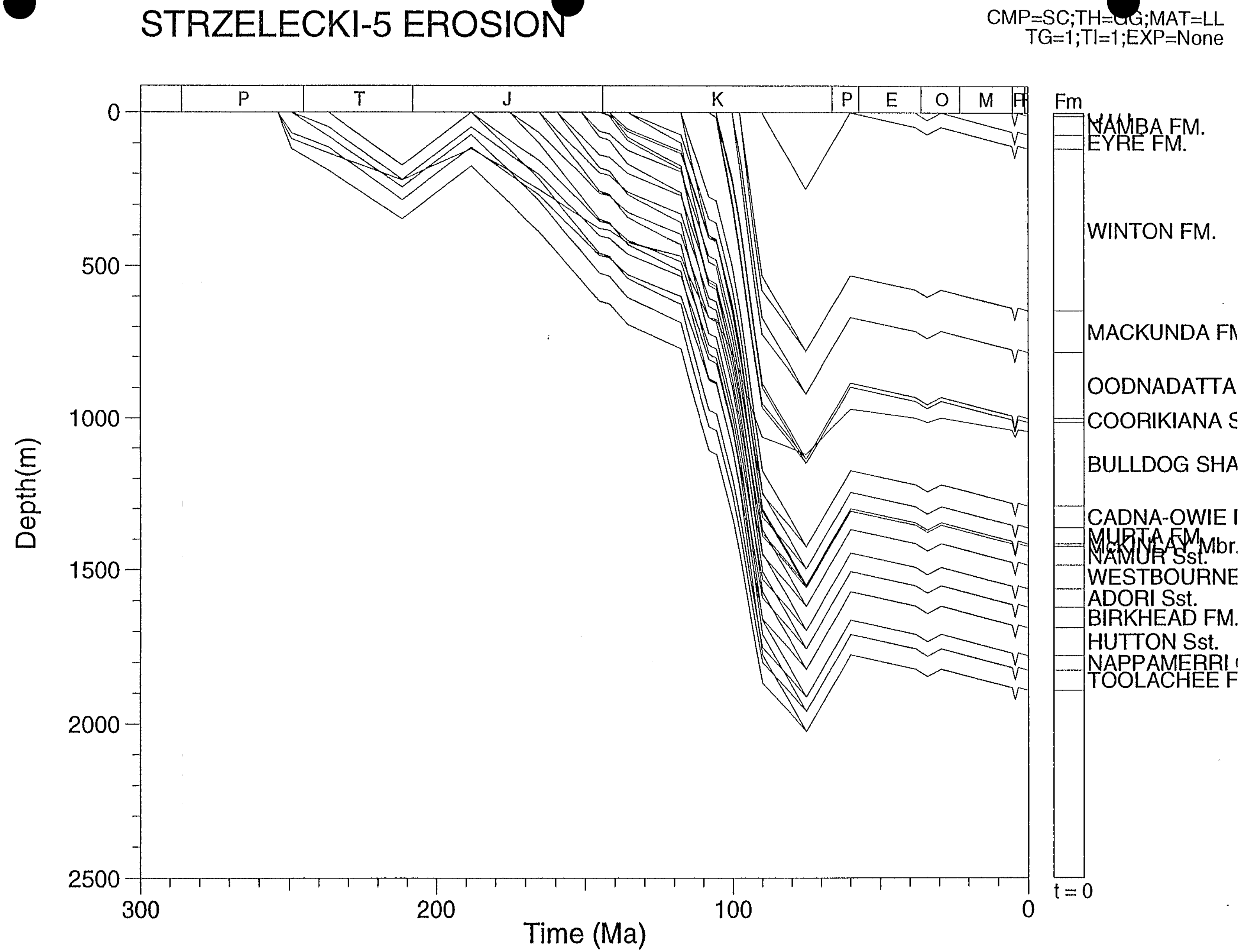
CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



STRZELECKI-5 EROSION

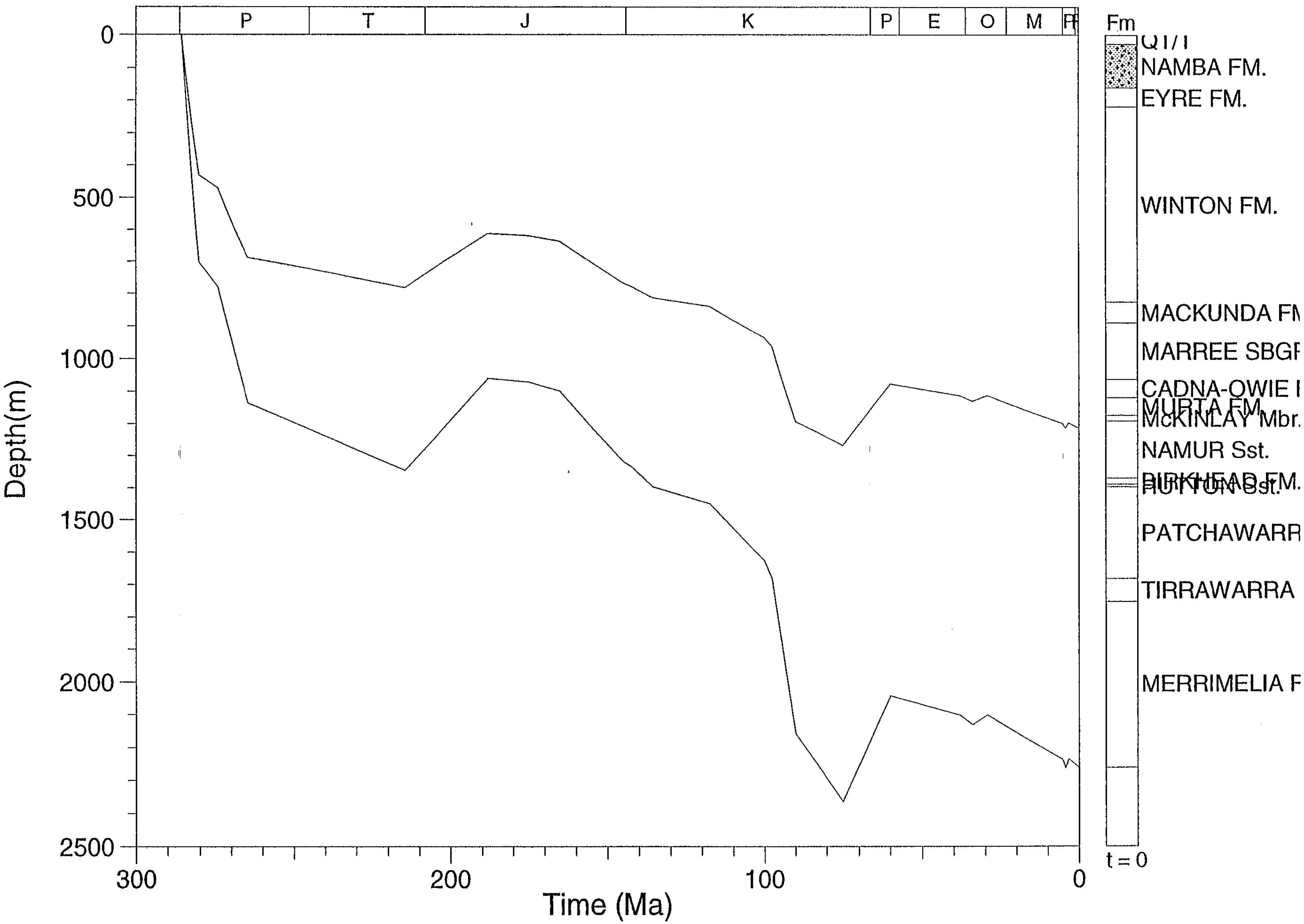


STRZELECKI-5 EROSION

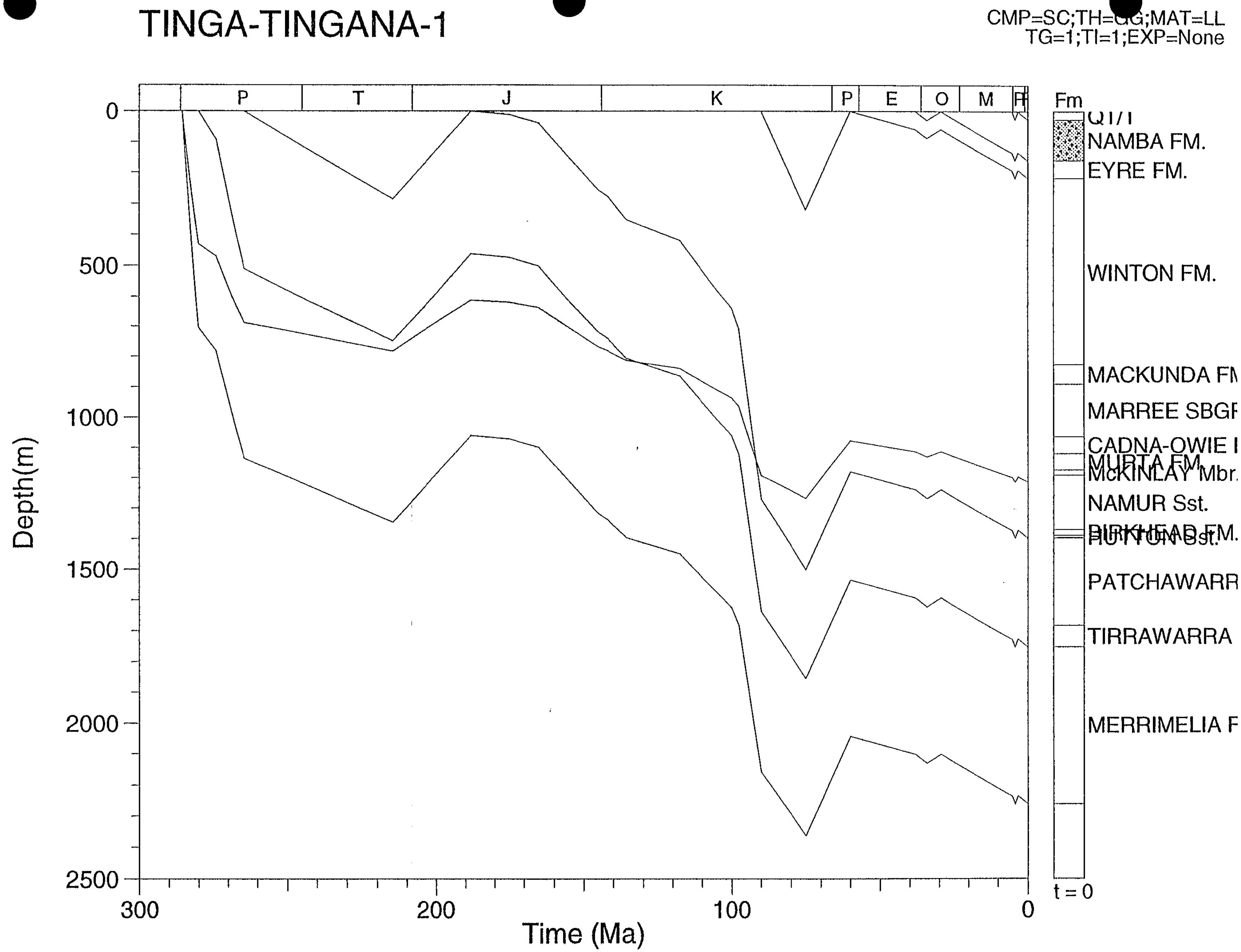


TINGA-TINGANA-1

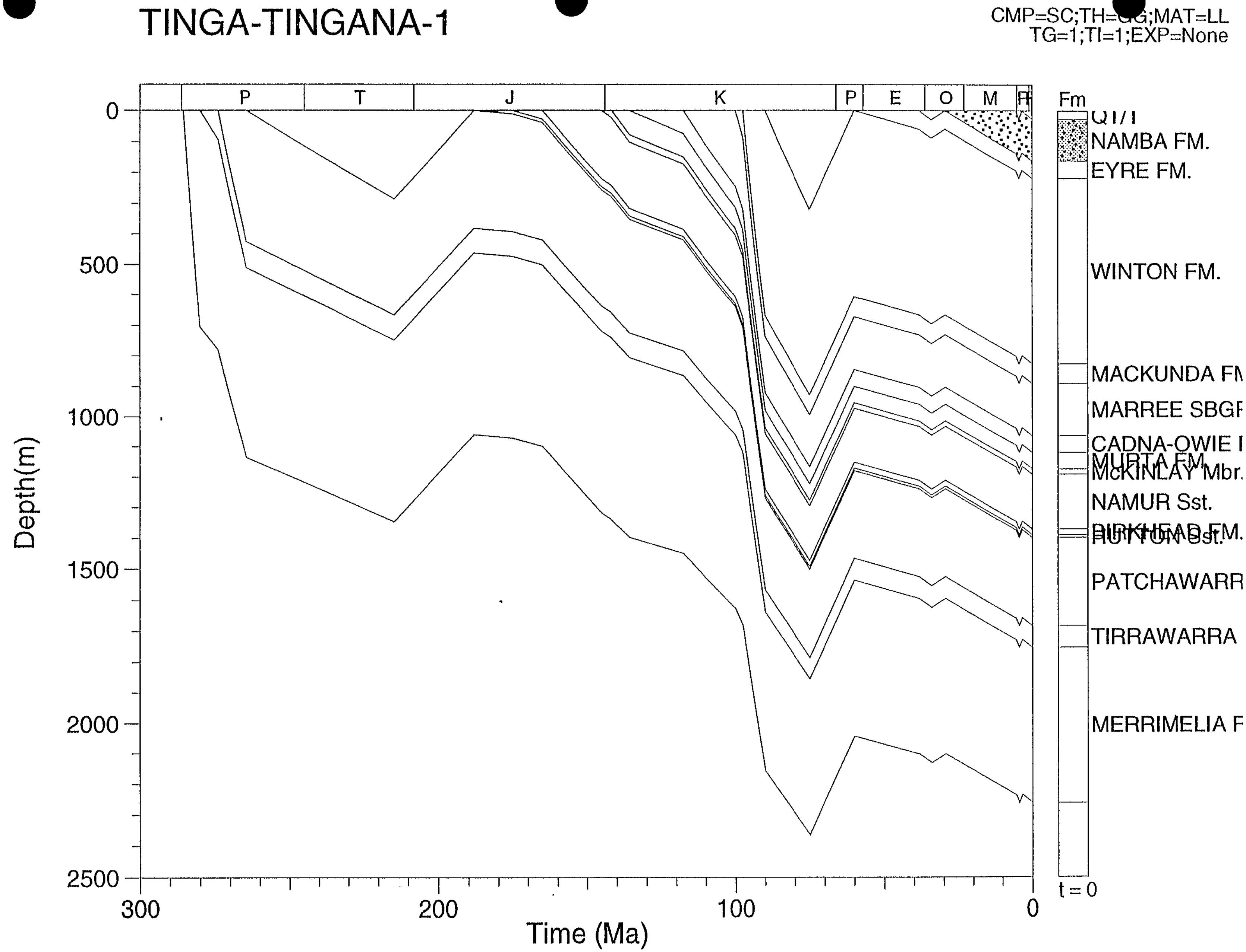
CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



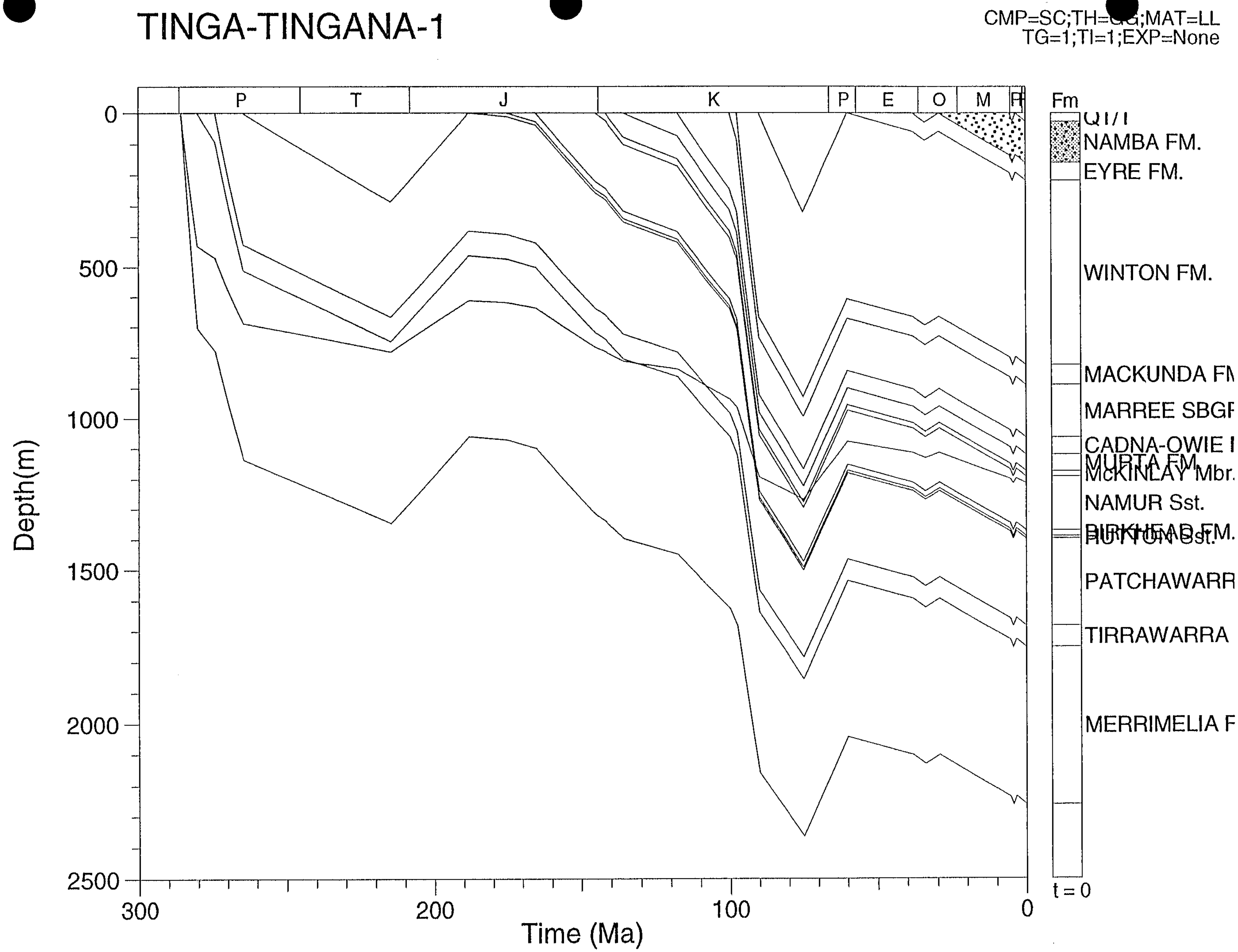
TINGA-TINGANA-1



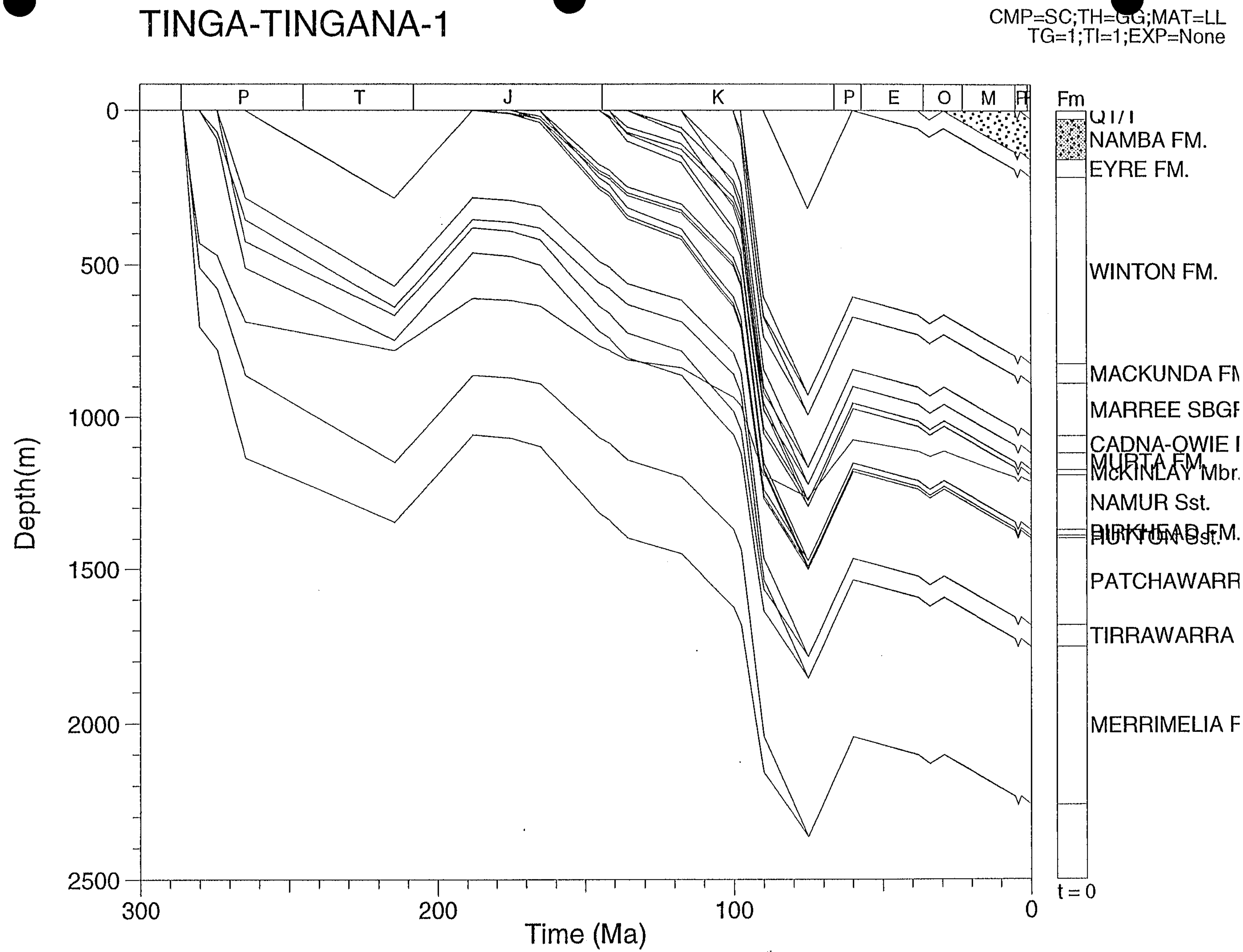
TINGA-TINGANA-1



TINGA-TINGANA-1



TINGA-TINGANA-1



TOOLACHEE-36 ERo.

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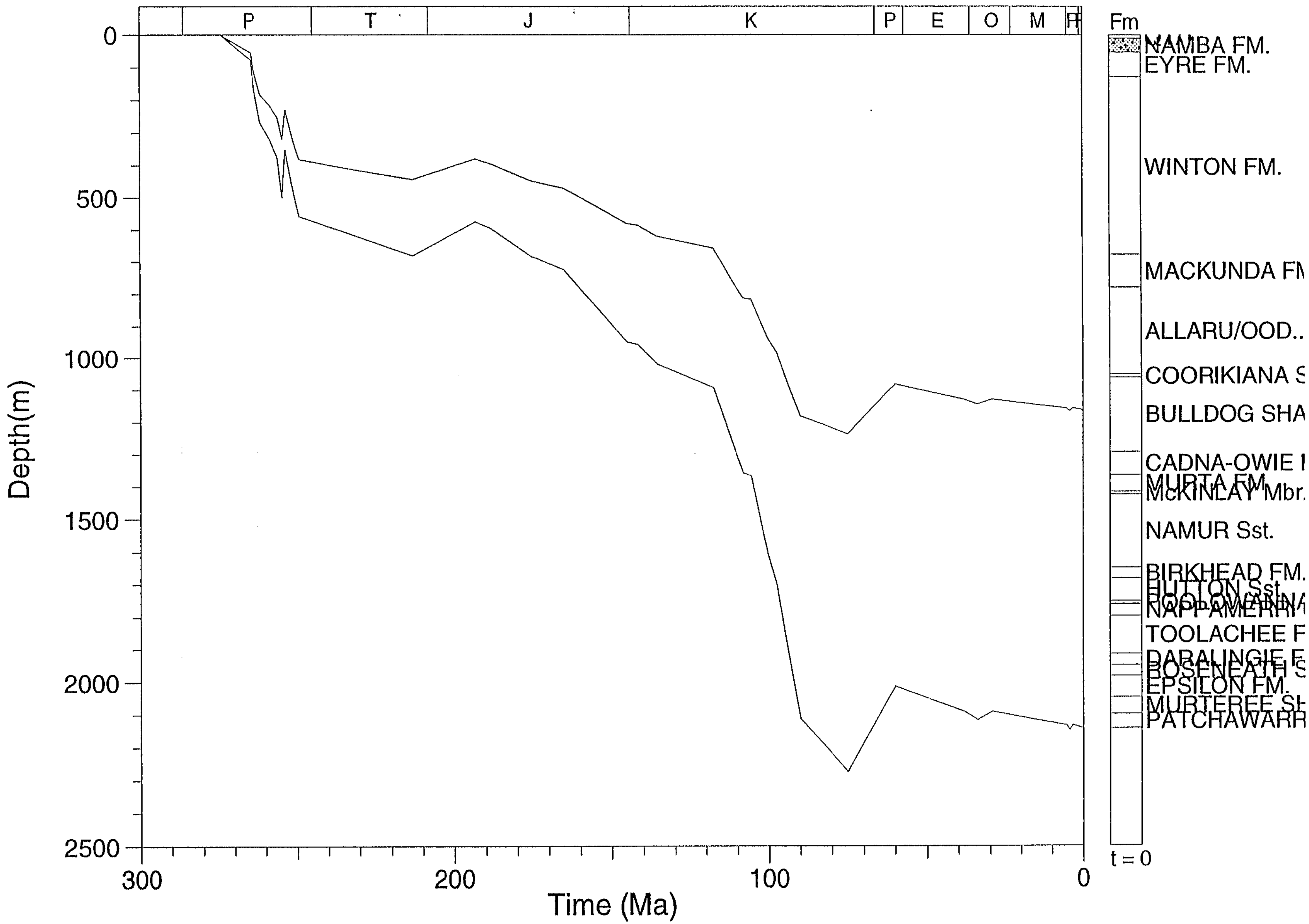
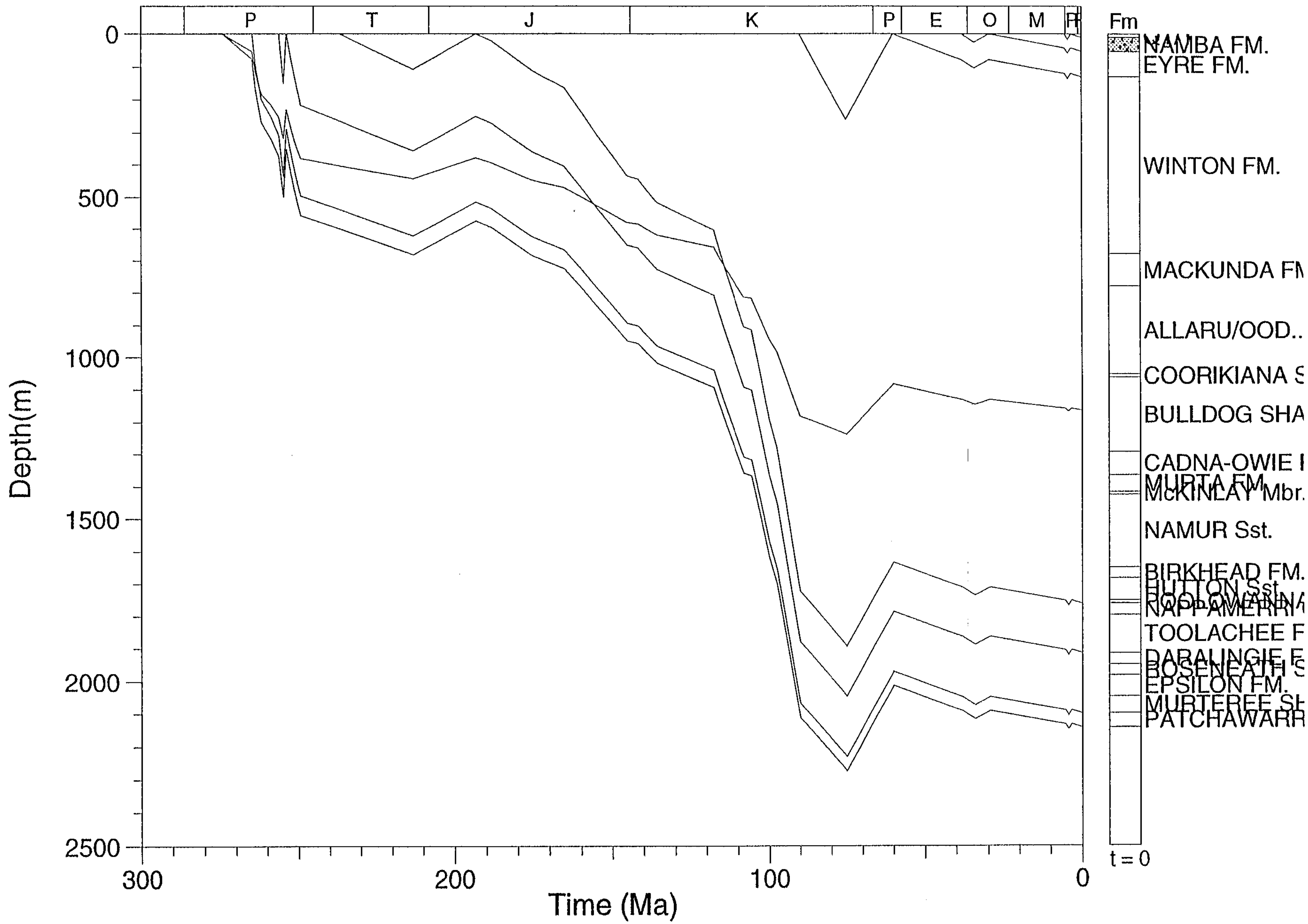
TG=1;TI=1;EXP=None

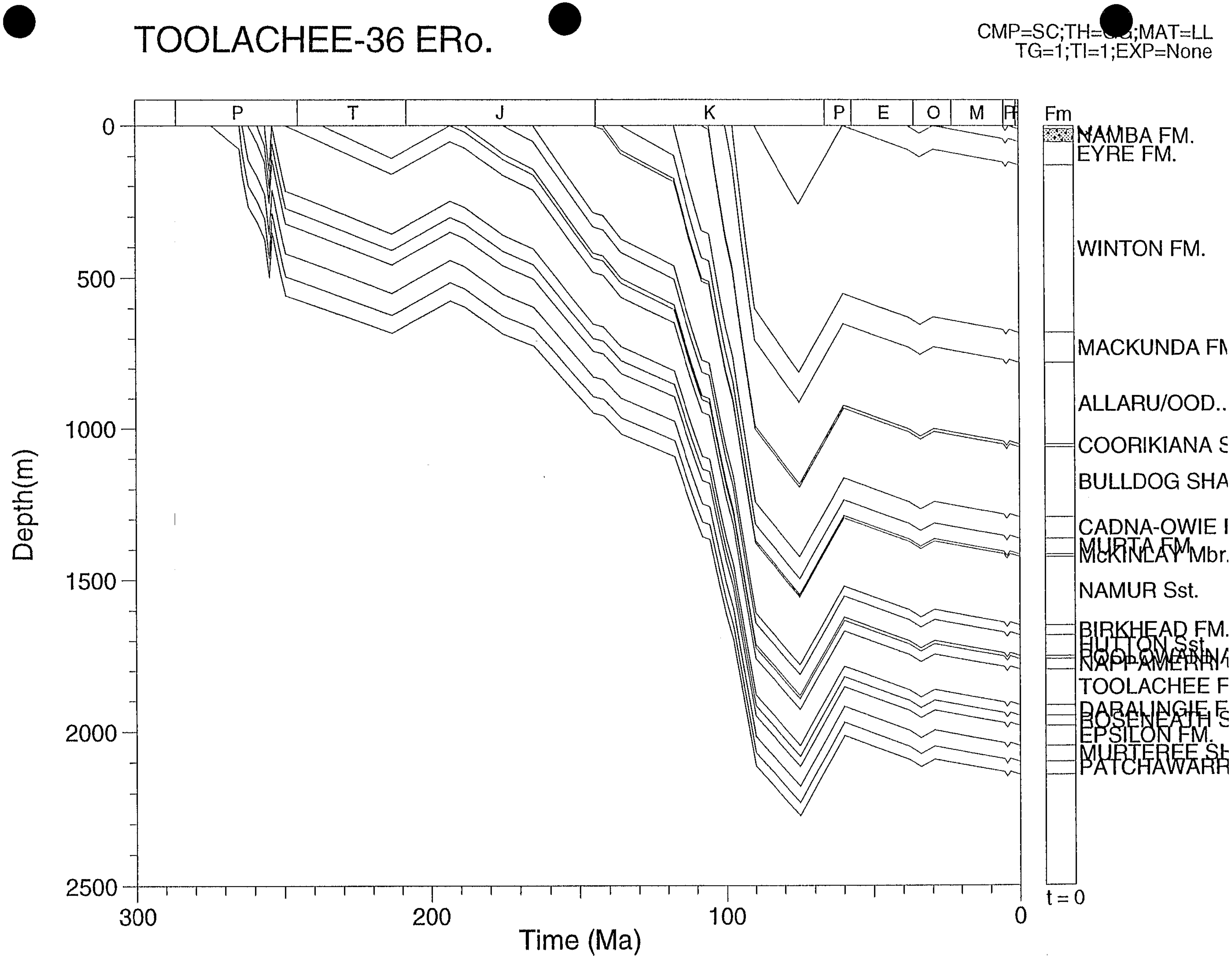


TOOLACHEE-36 ERo.

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None

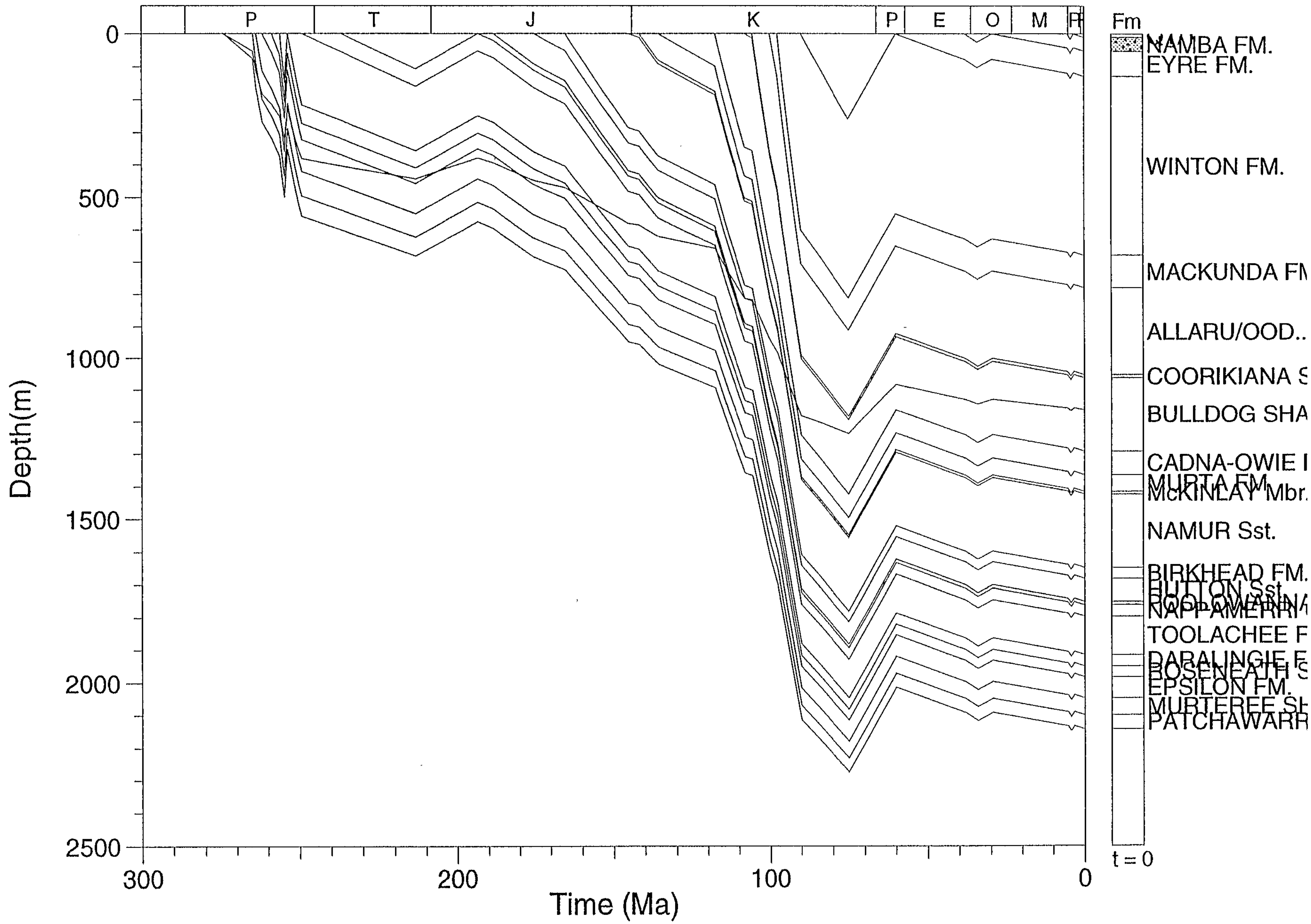


TOOLACHEE-36 ERo.



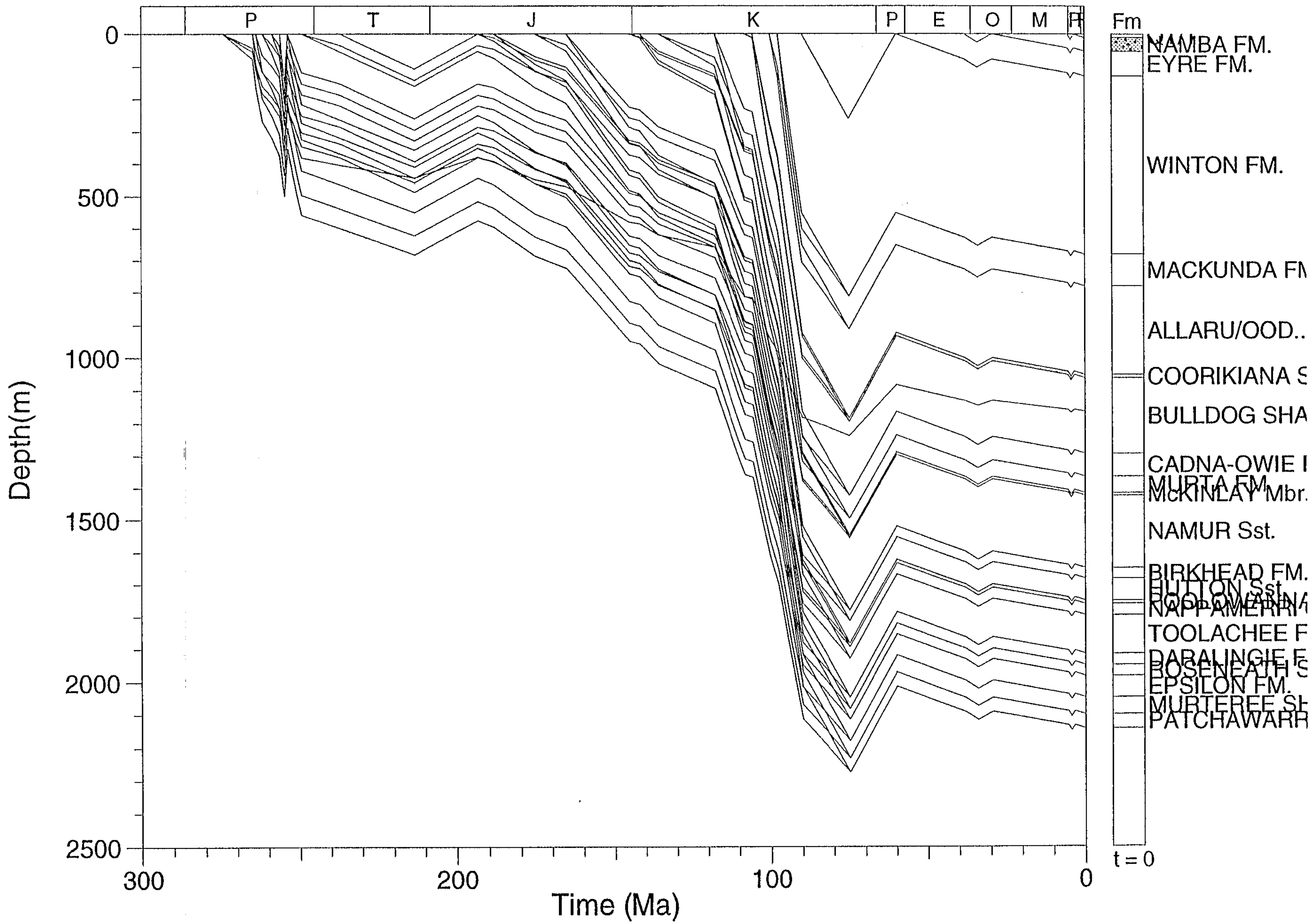
TOOLACHEE-36 ERo.

CMP=SC;TH=[illegible];MAT=LL
TG=1;TI=1;EXP=None



TOOLACHEE-36 ERo.

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



APPENDIX III

SEDIMENTATION RATE Vs TIME

BULYEROO-1

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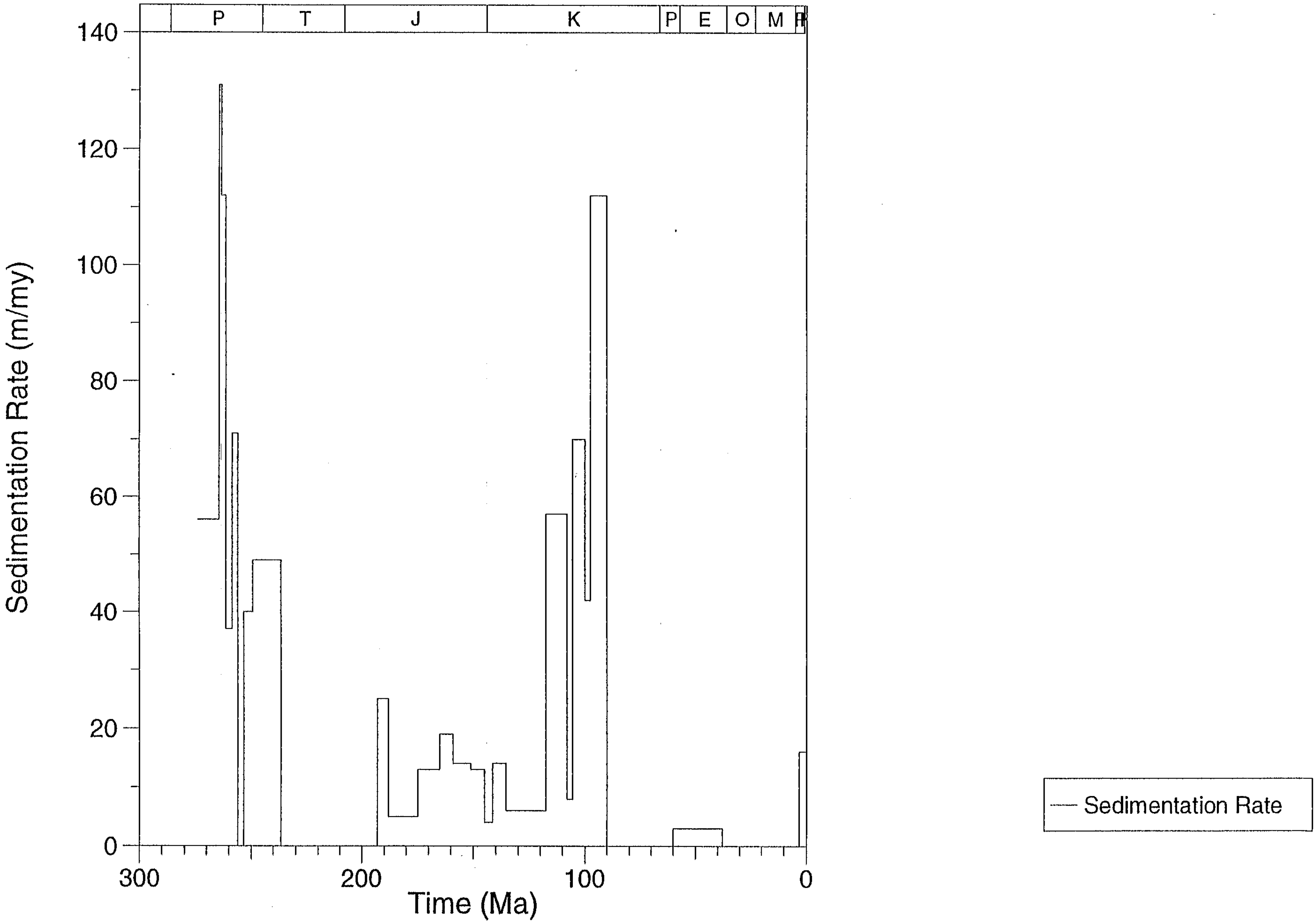
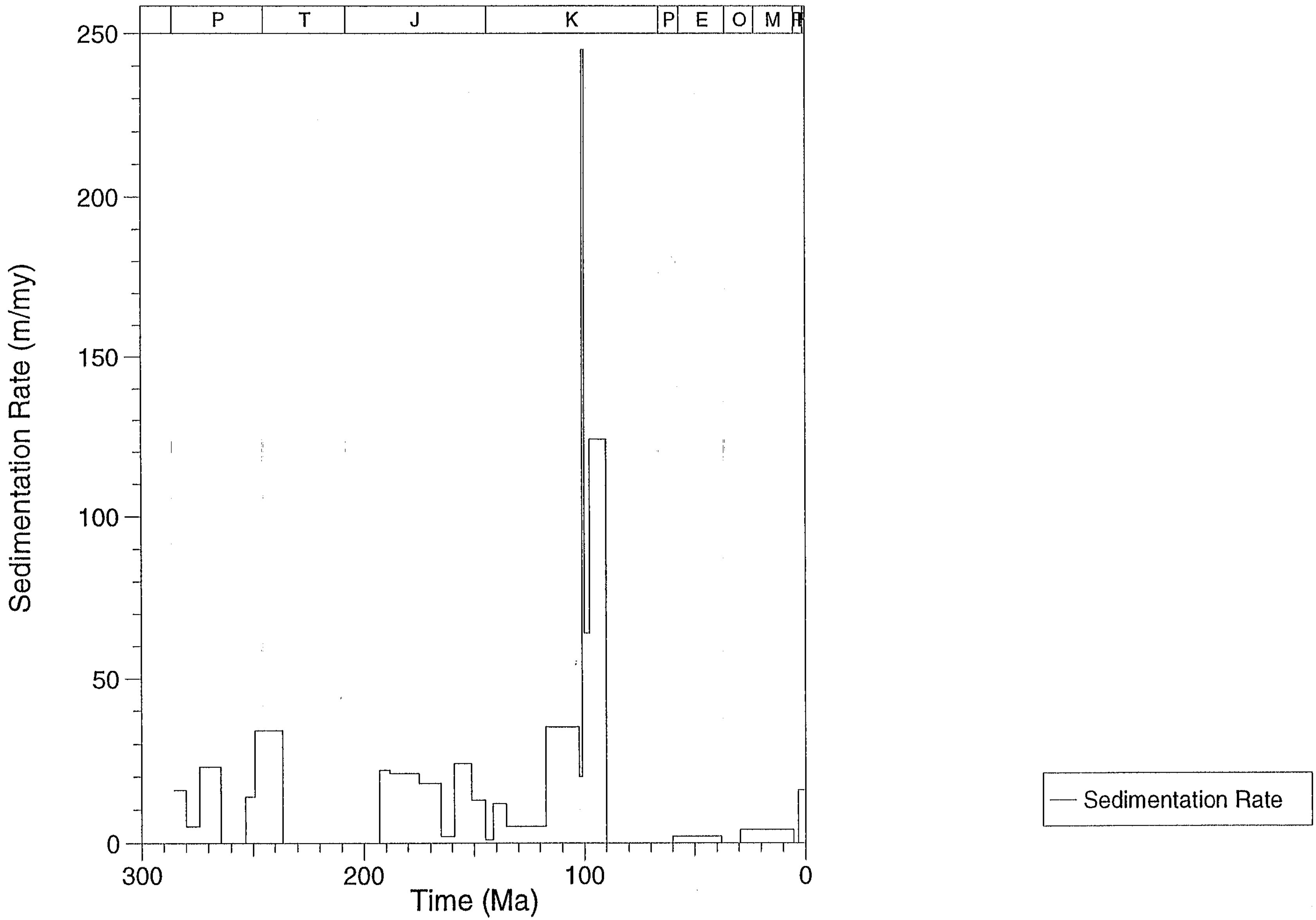
TG=1;TI=1;EXP=None



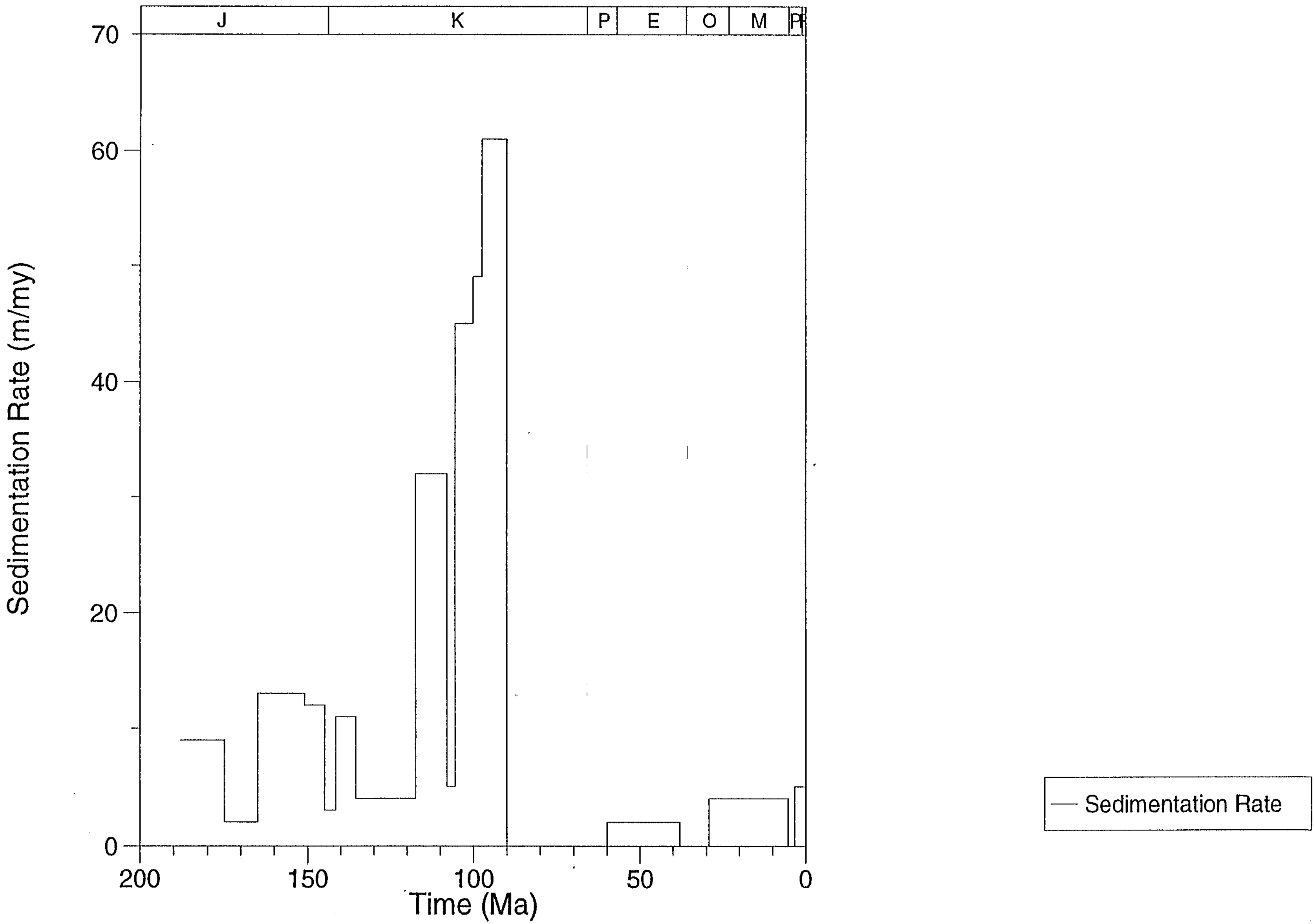
CUTTAPIRRIE-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



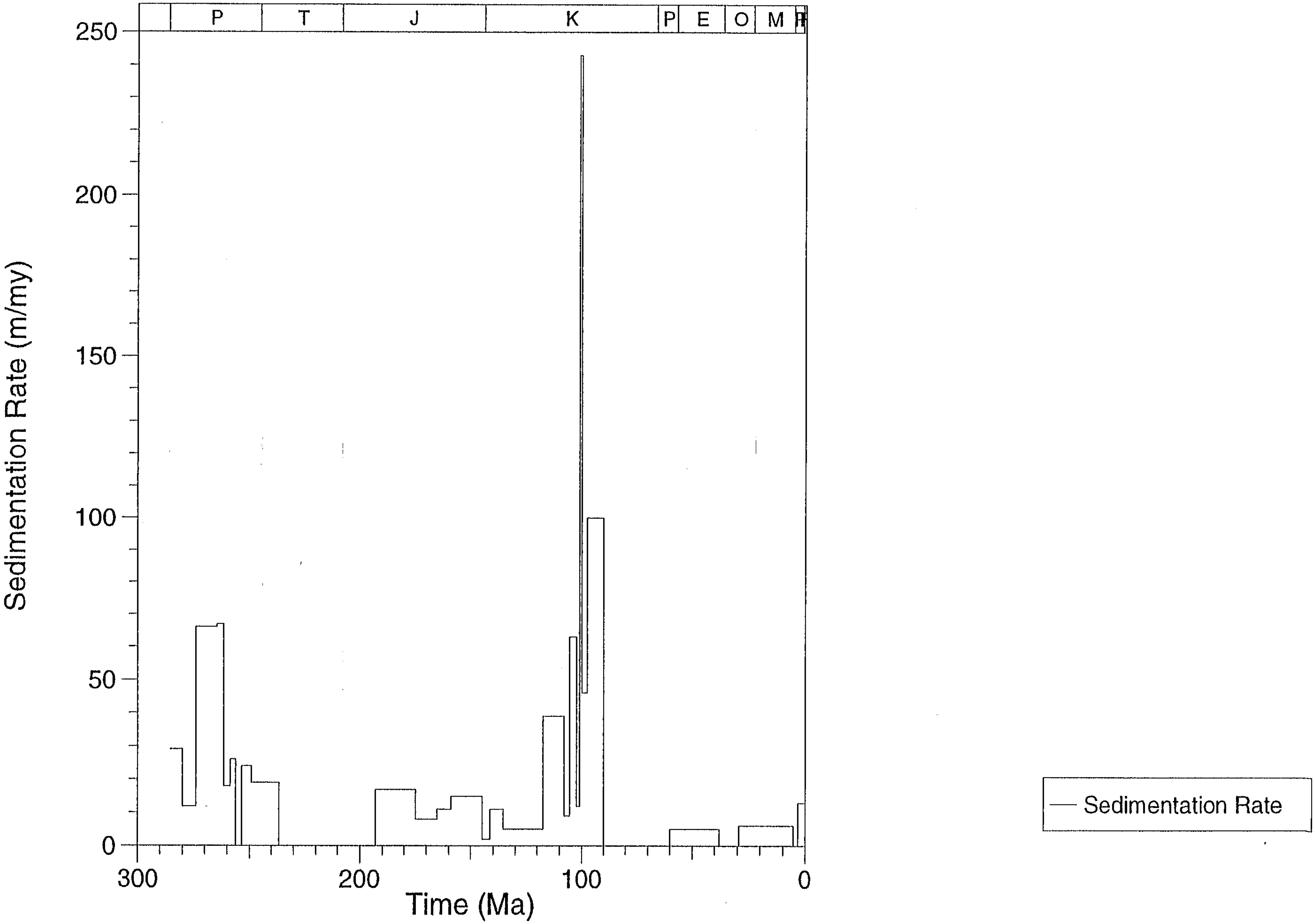
JENA-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



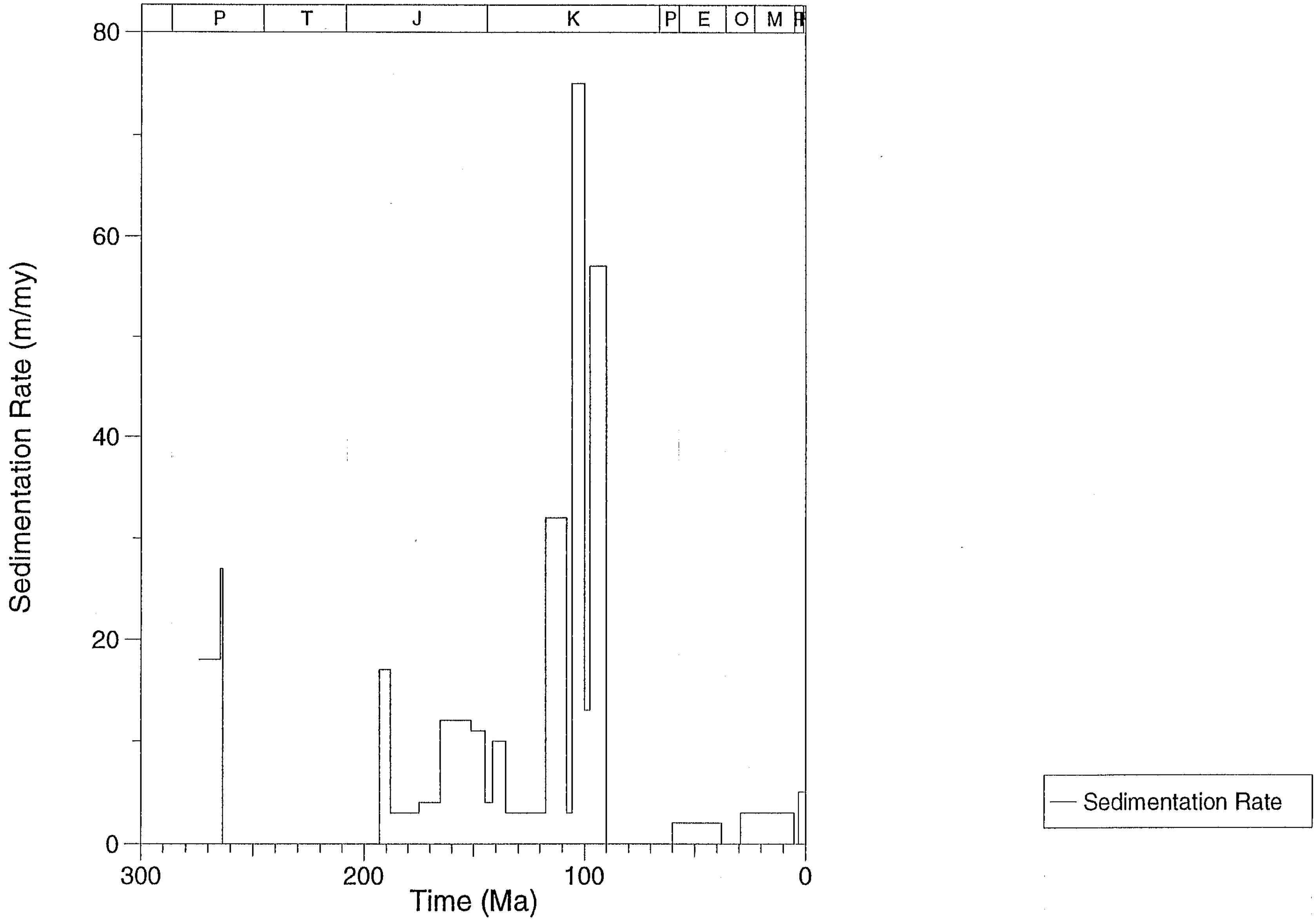
KIRRALEE-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



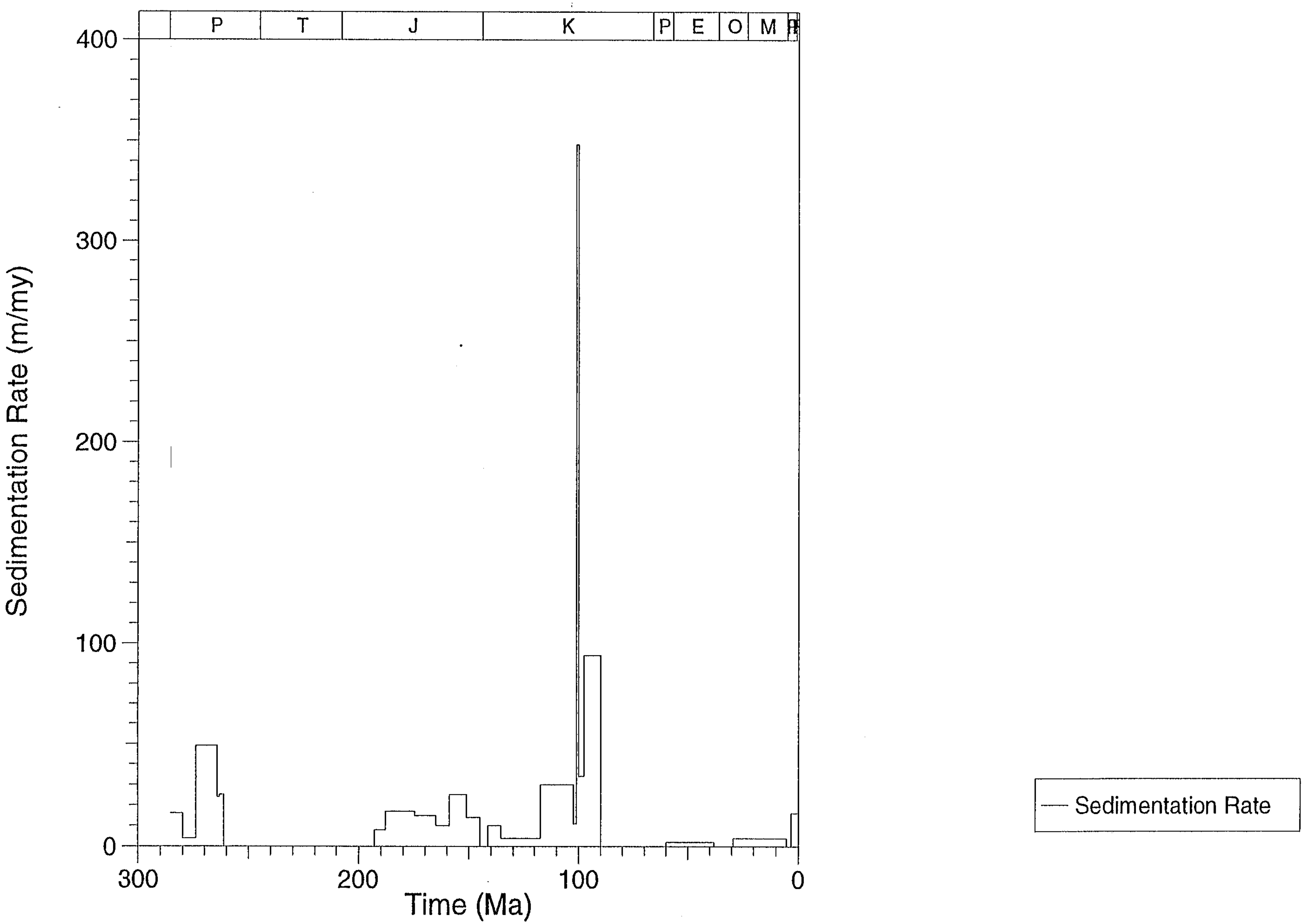
KOBARI-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



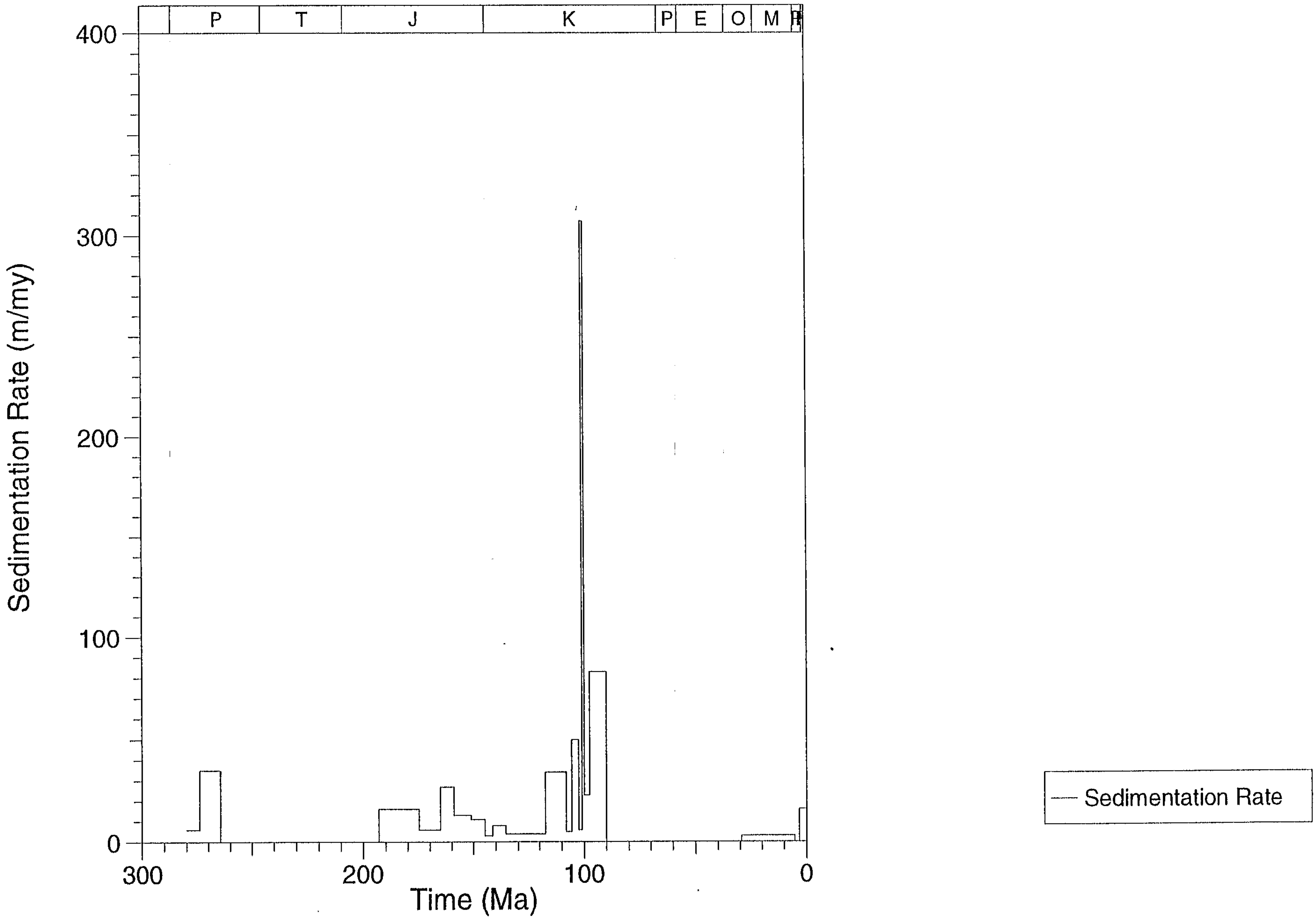
KUENPINNIE-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



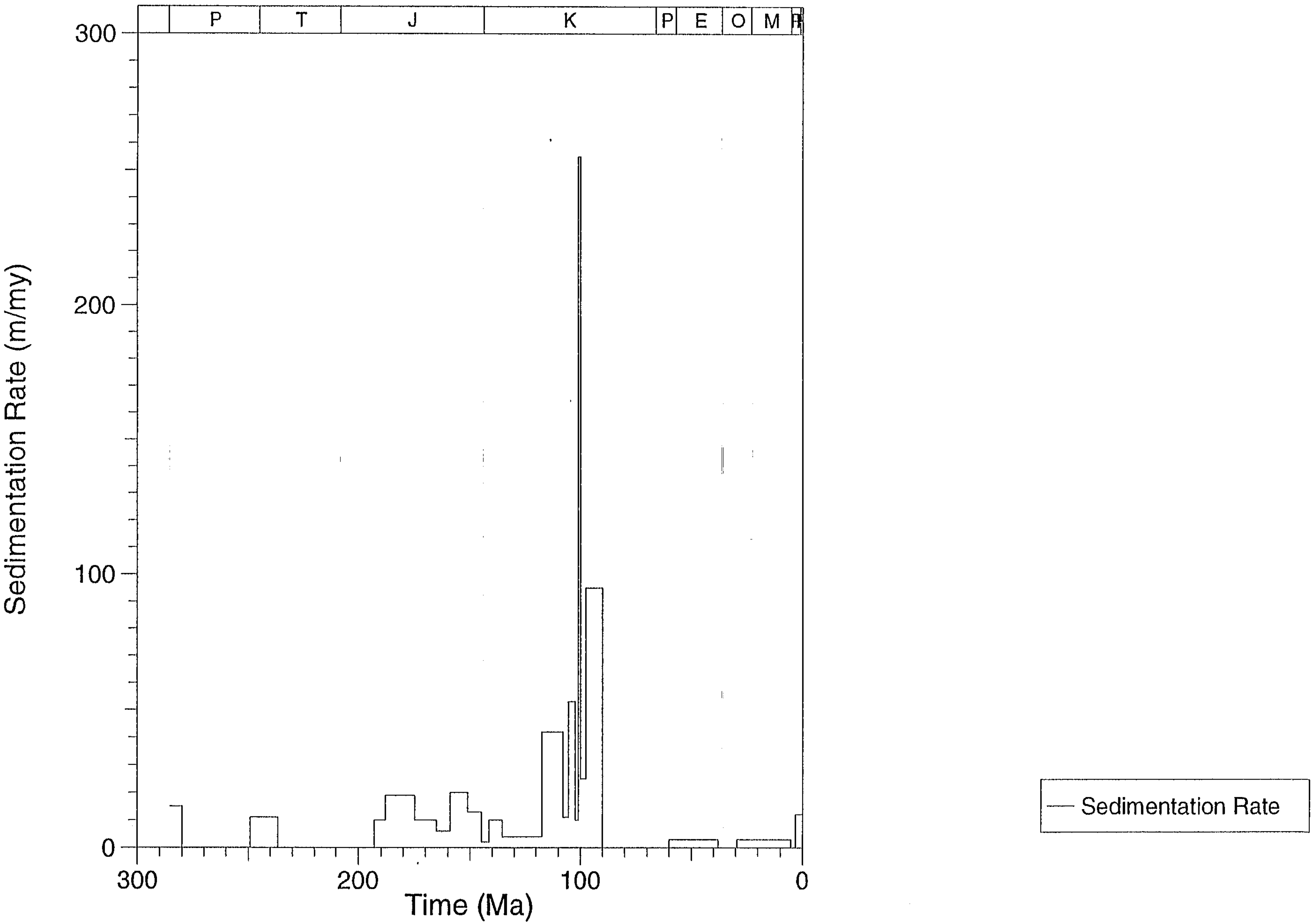
LYCIUM-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



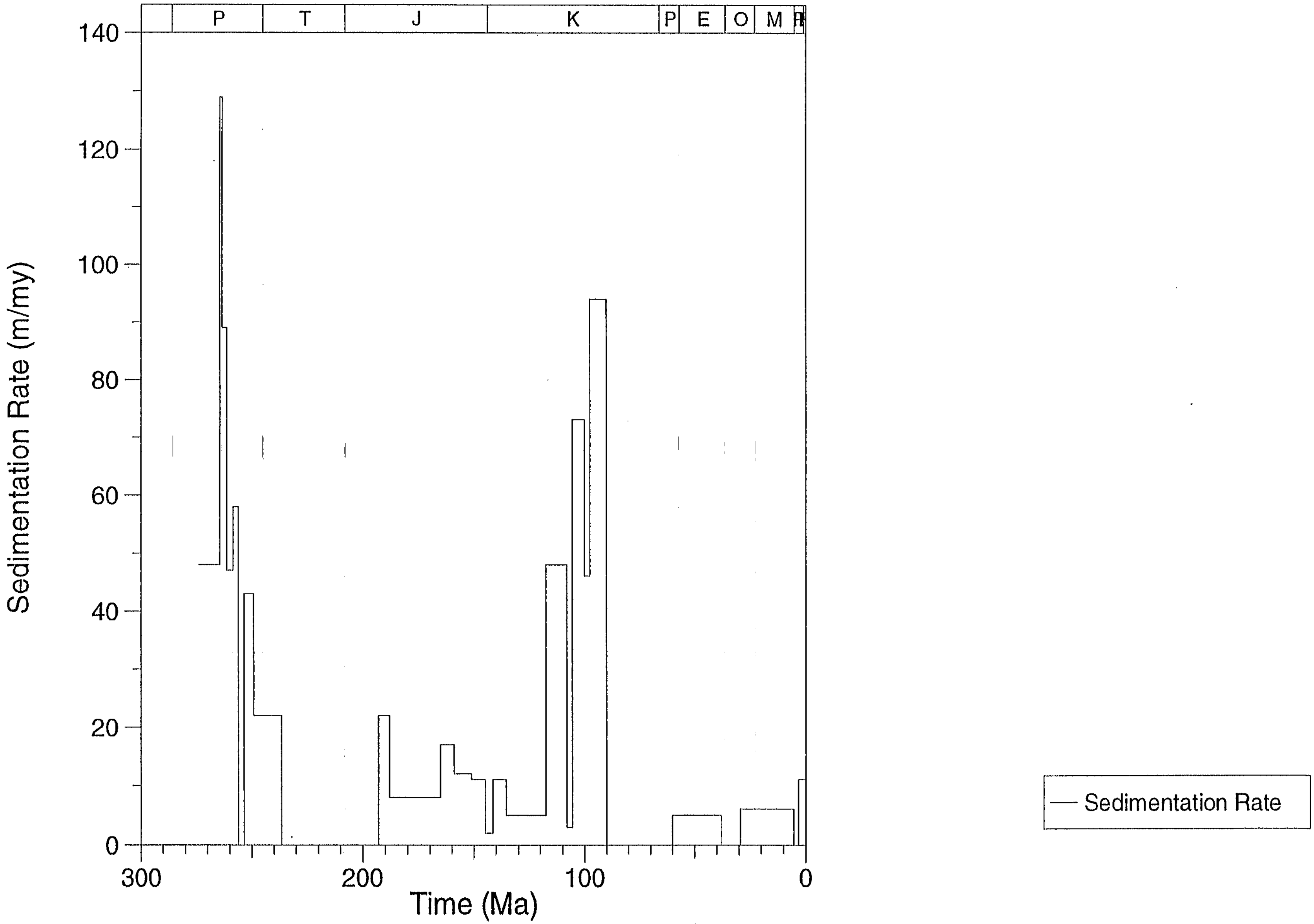
MERRIMELIA-30

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



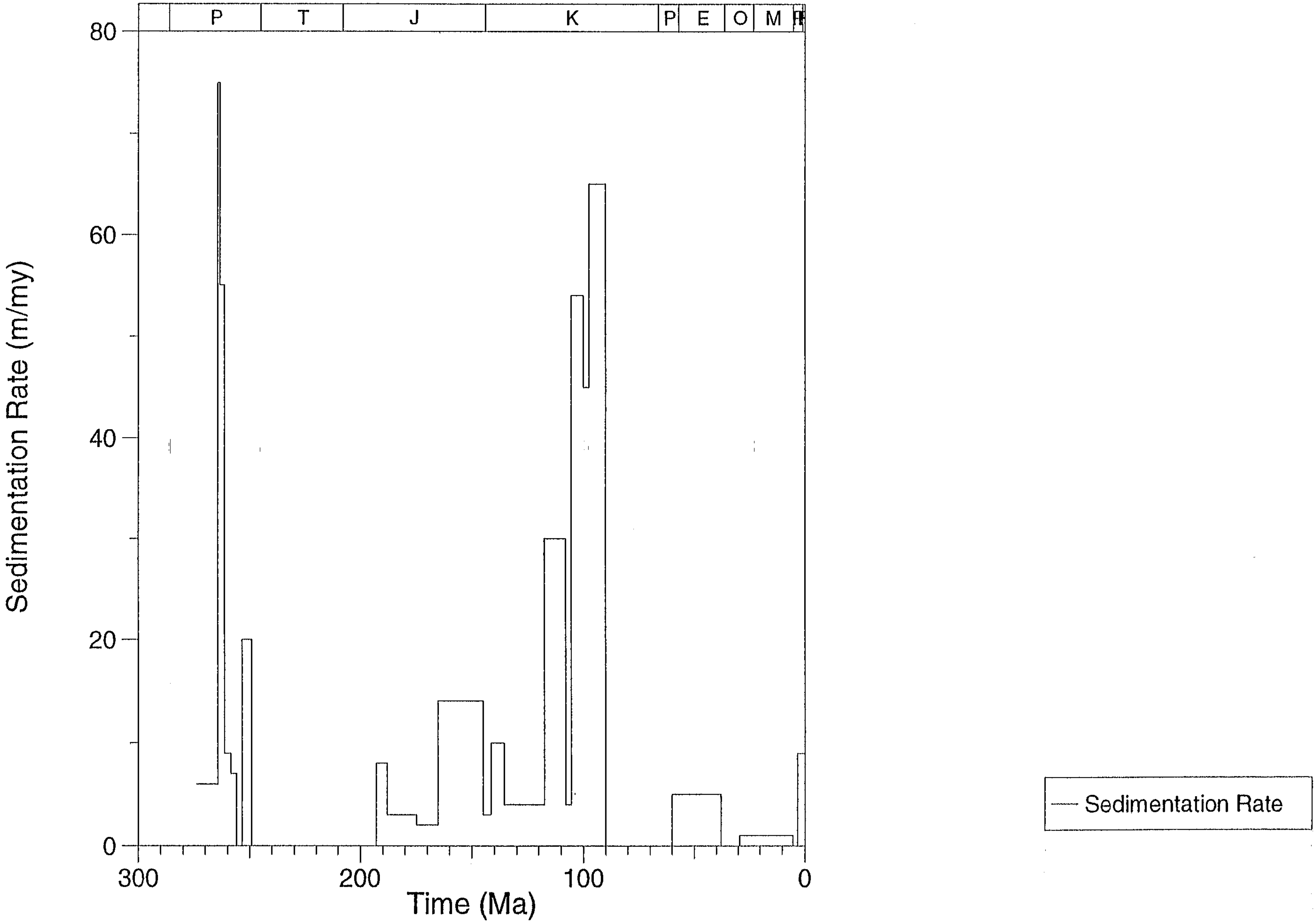
MOOMBA-57

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



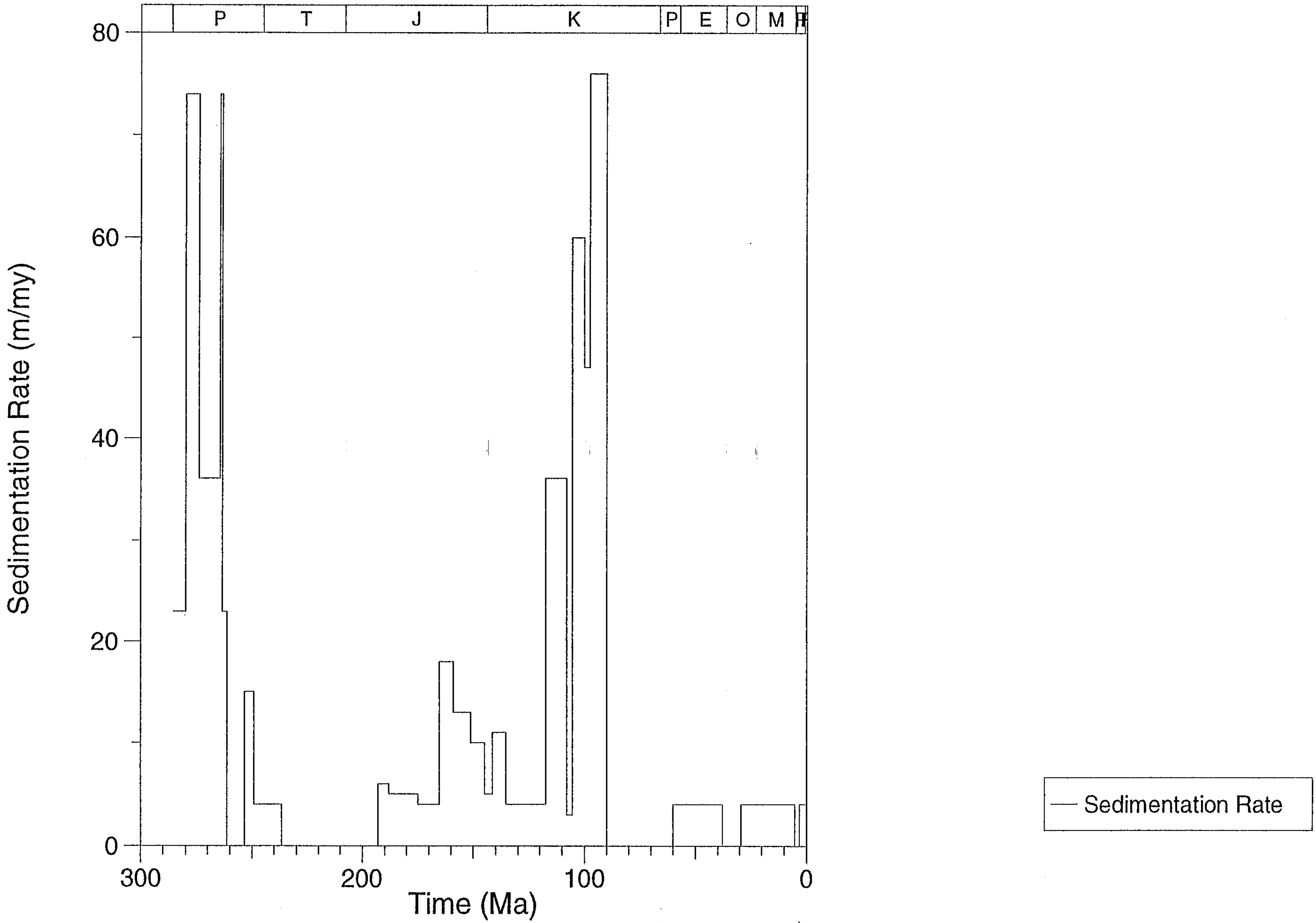
MULGA-2

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



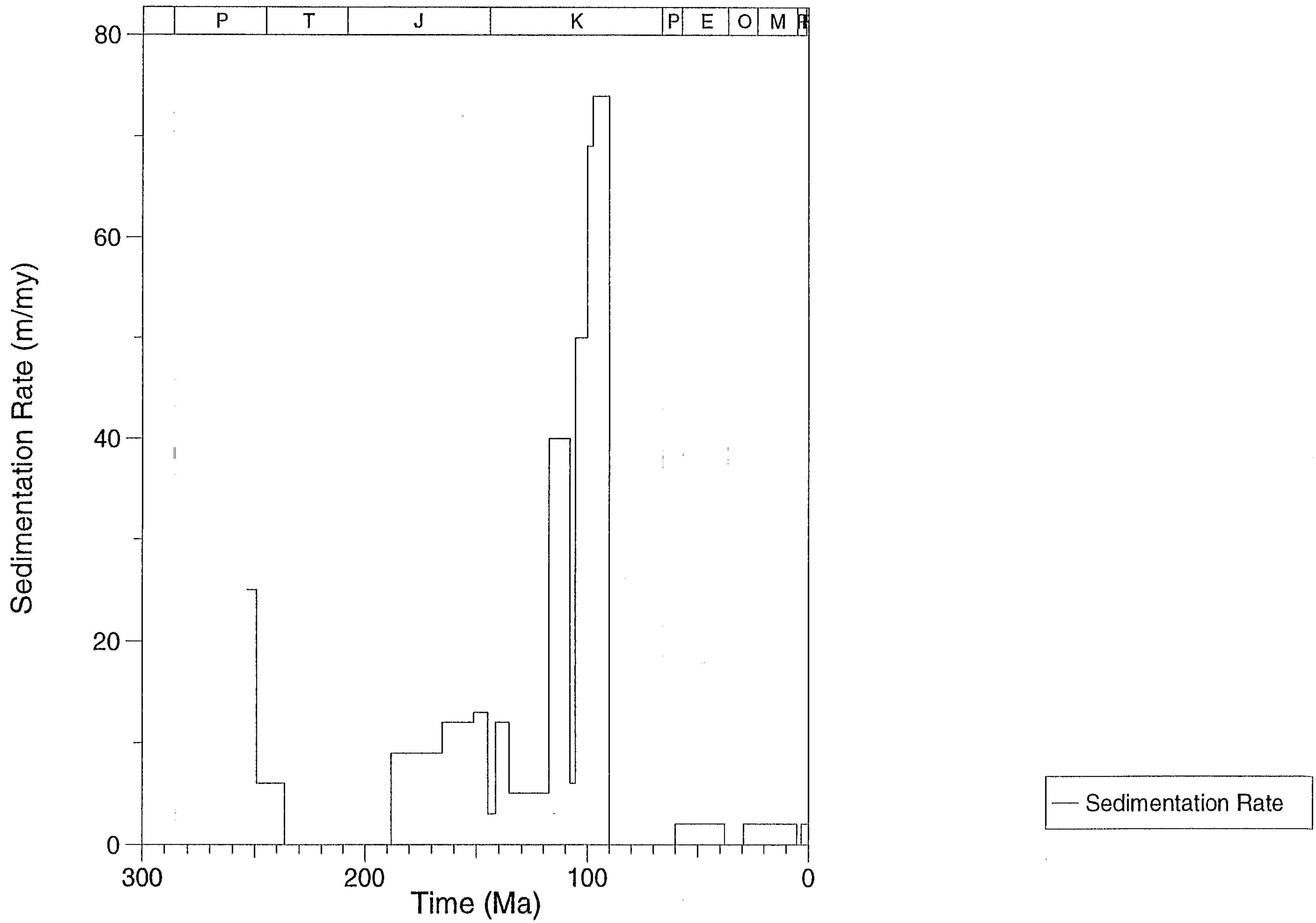
PINNA-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



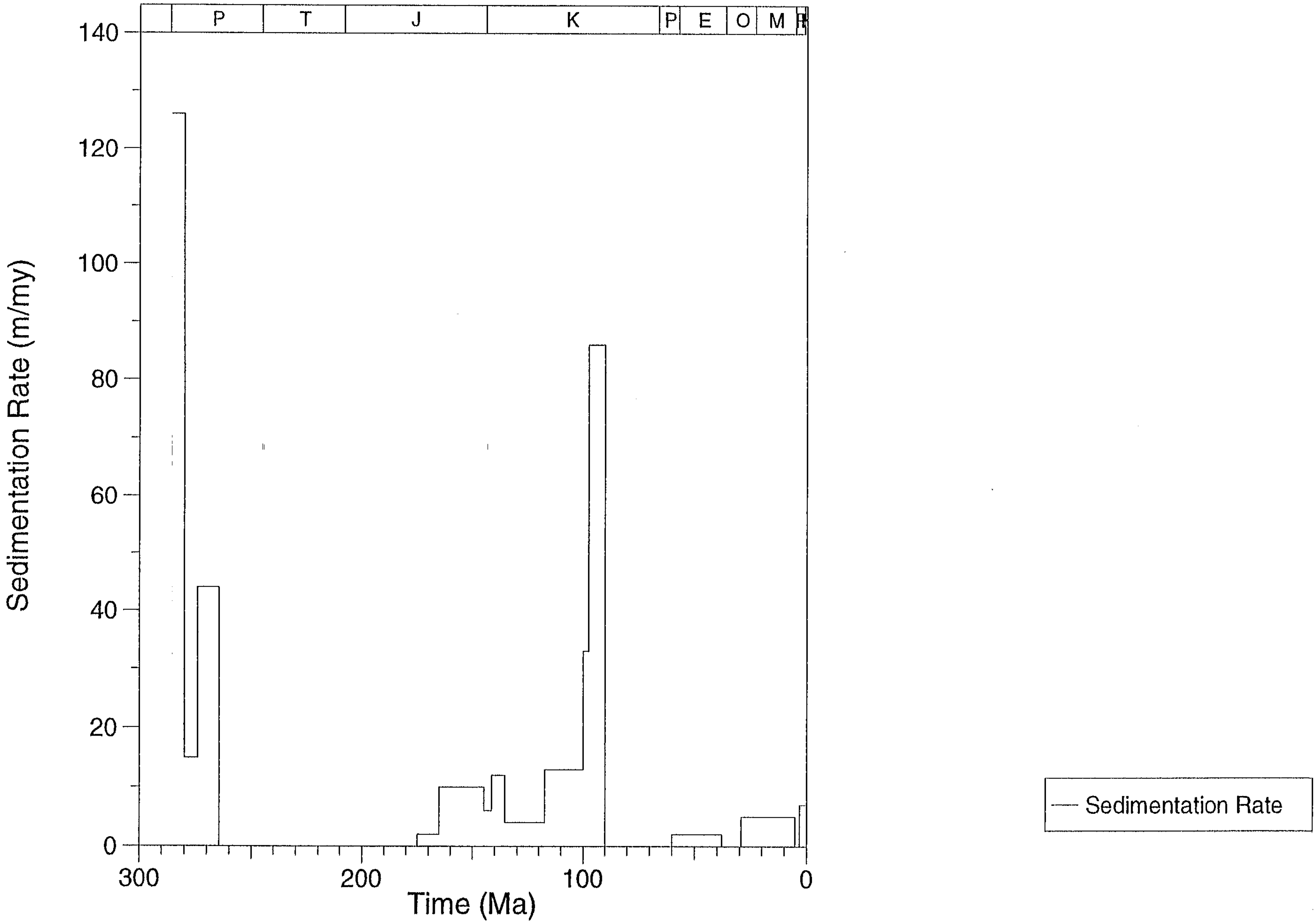
STRZELECKI-5

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



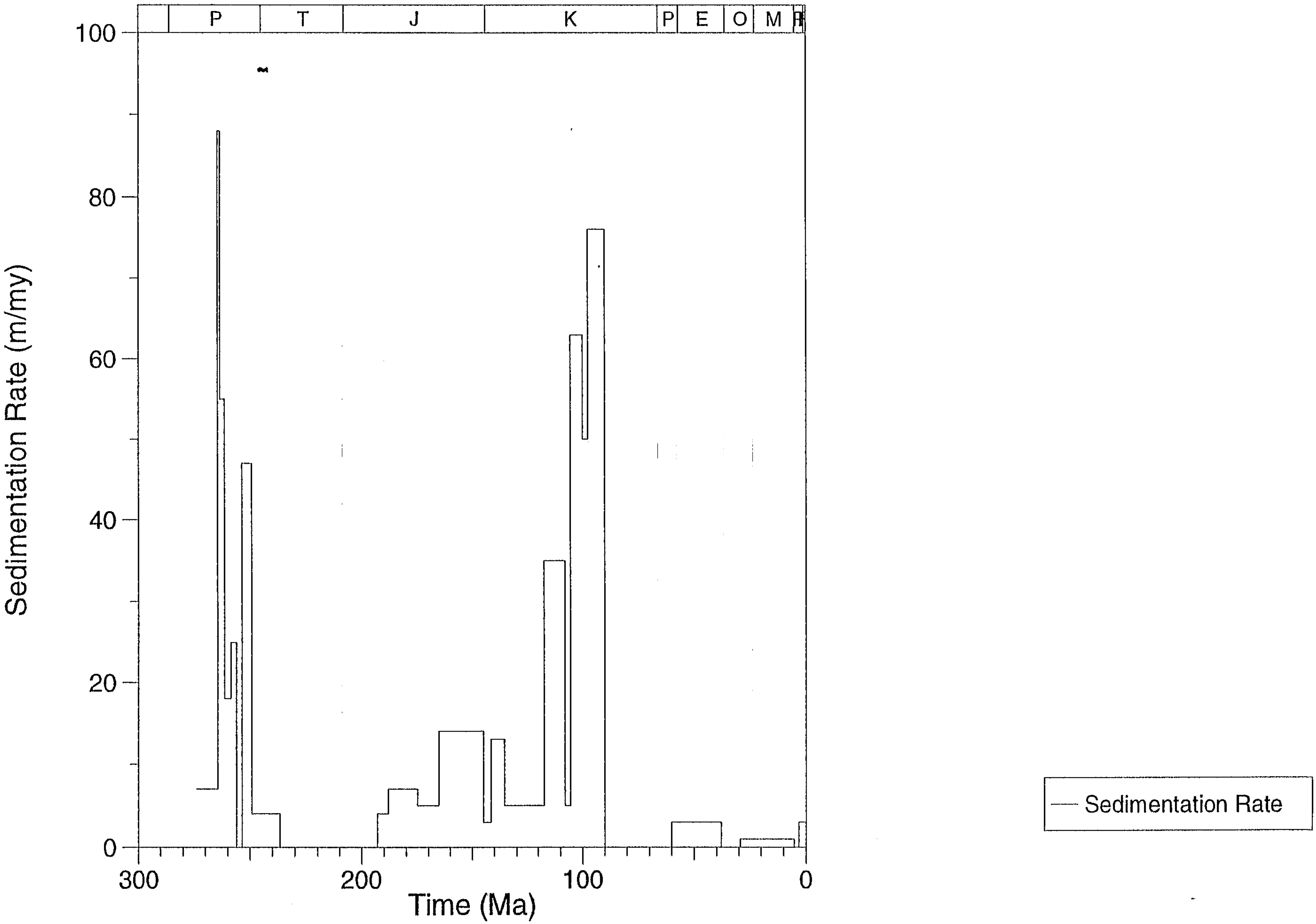
TINGA-TINGANA-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



TOOLACHEE-36

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None

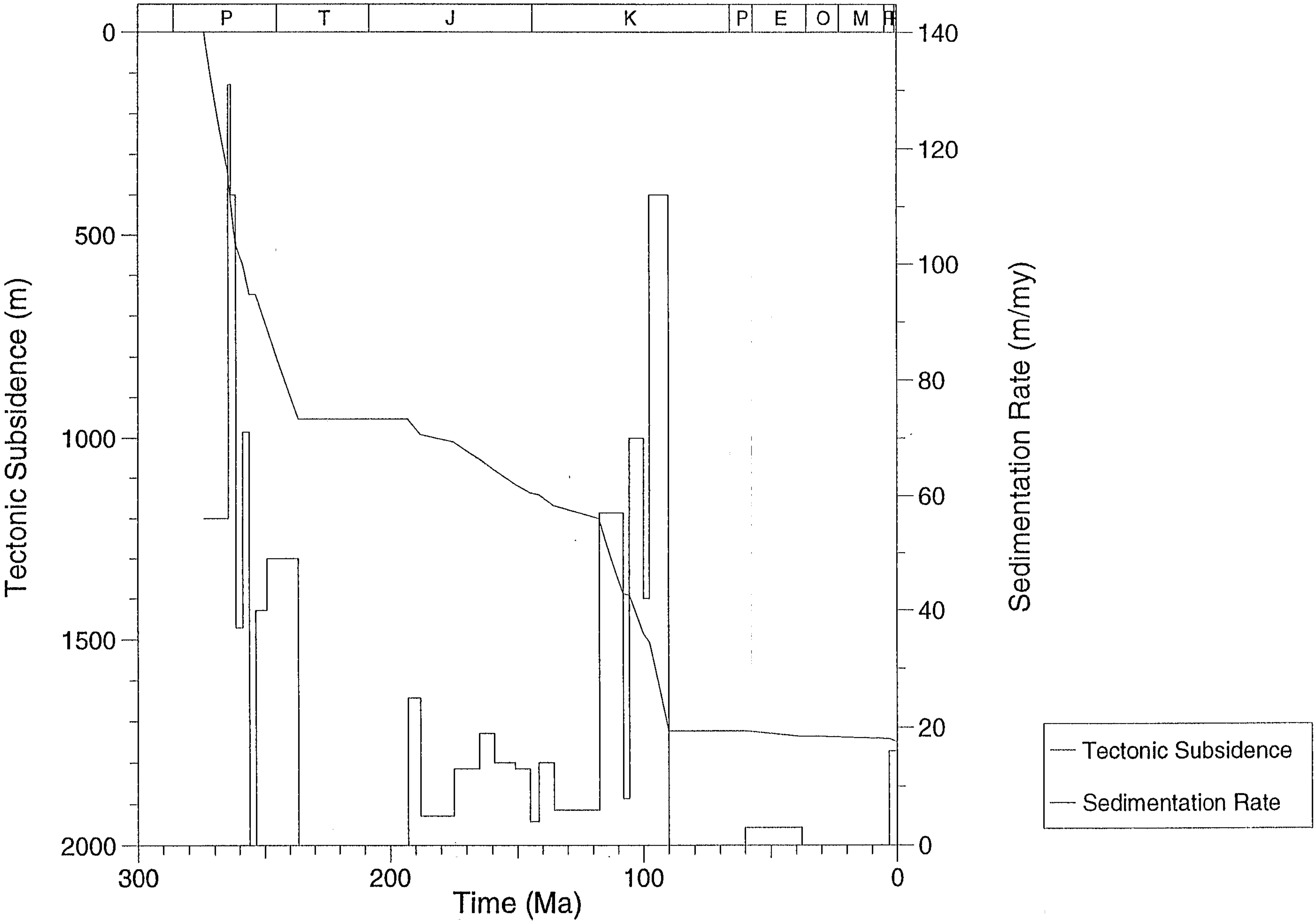


APPENDIX IV

SEDIMENTATION RATE AND TECTONIC SUBSIDENCE Vs TIME

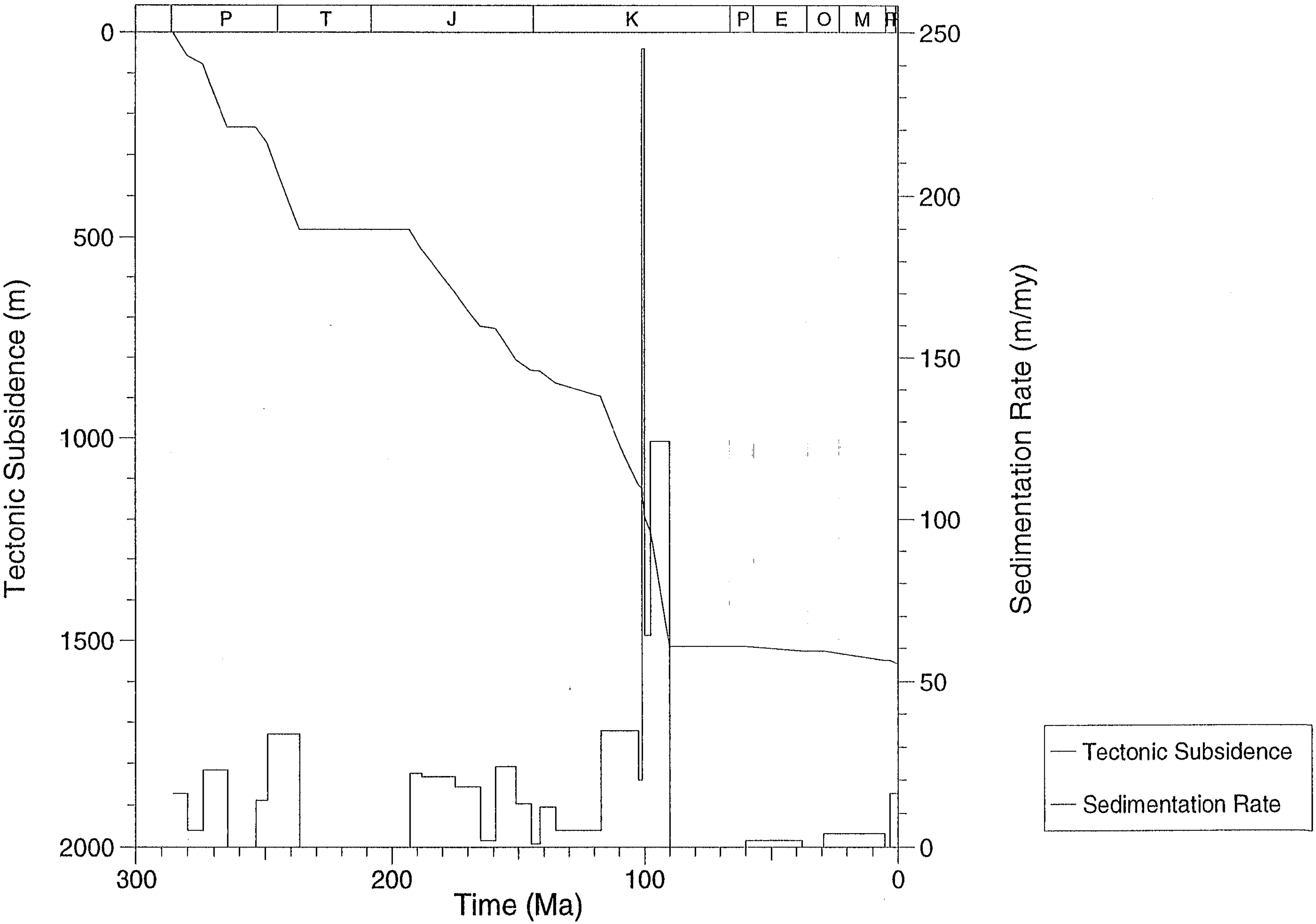
BULYEROO-1

CMP=SC;TH=[illegible];MAT=LL
TG=1;TI=1;EXP=None



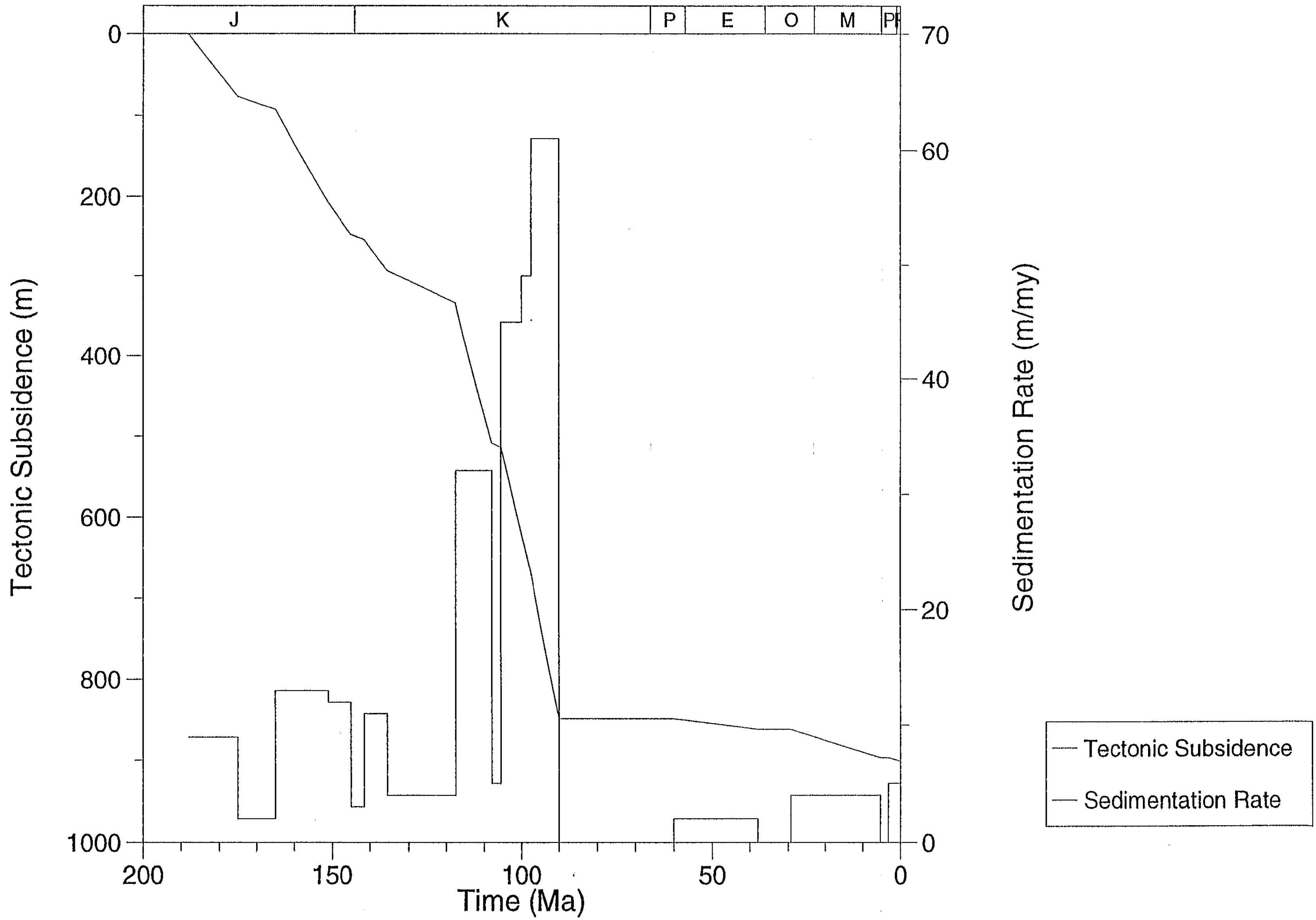
CUTTAPIRRIE-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



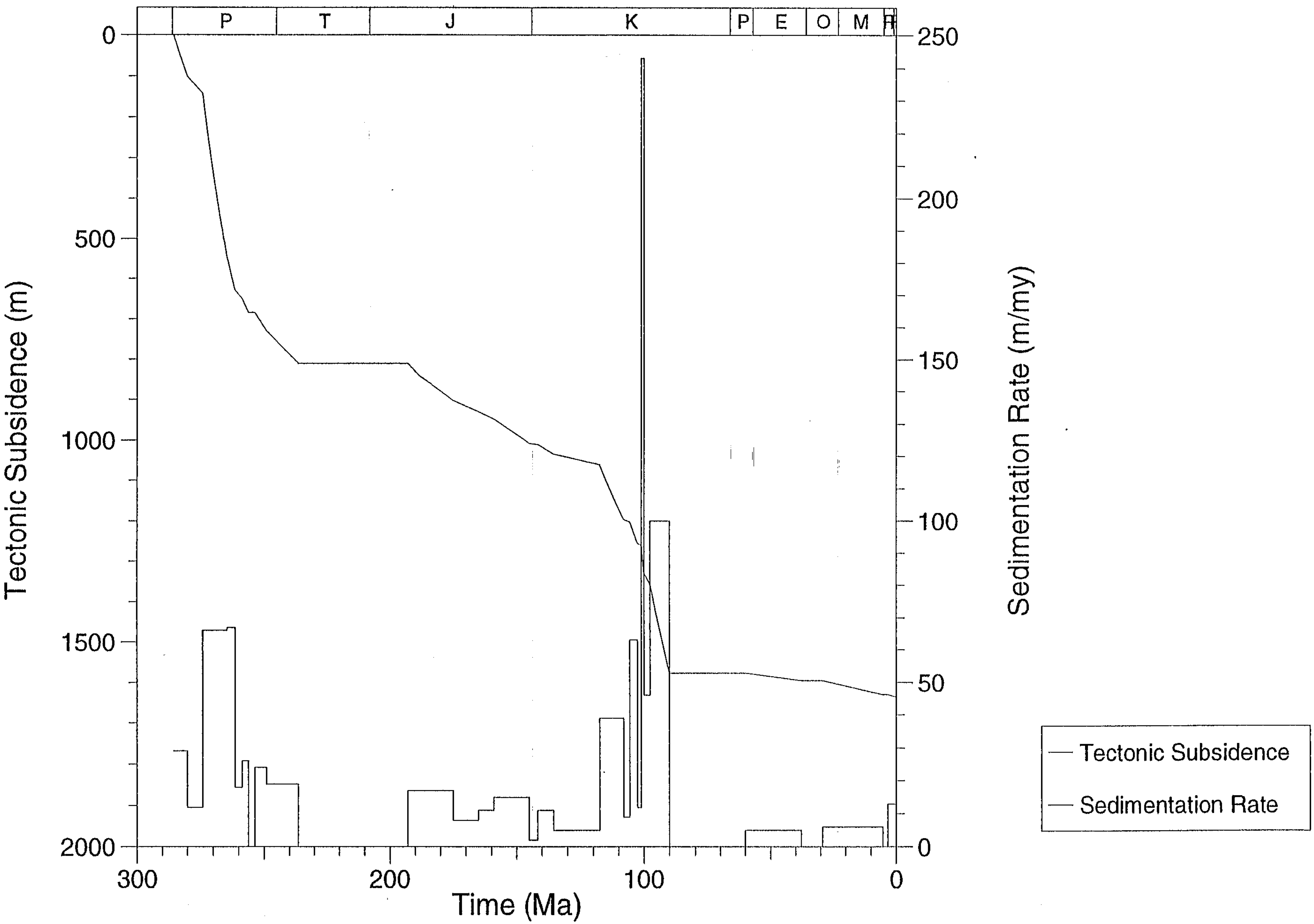
JENA-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None

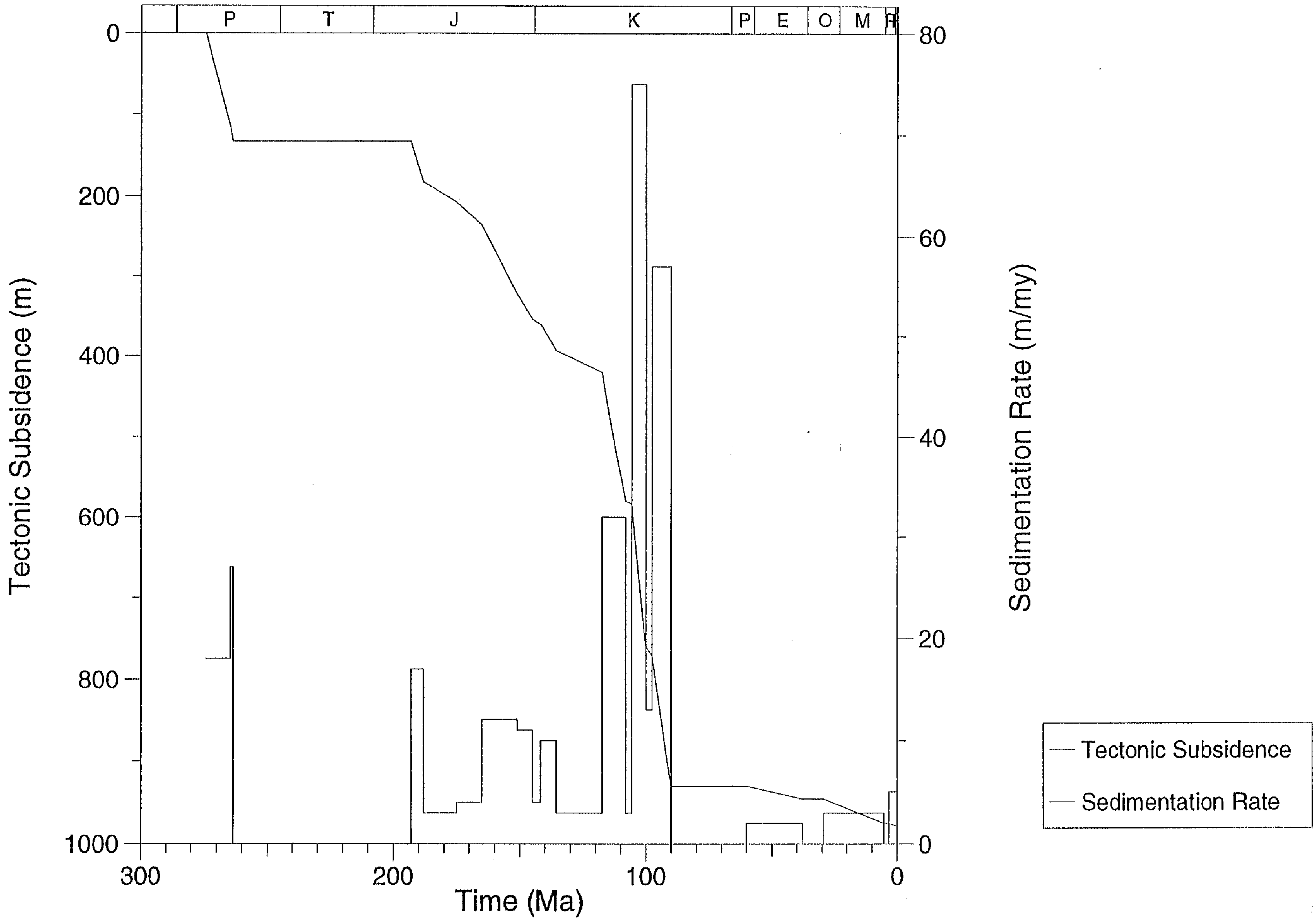


KIRRALEE-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



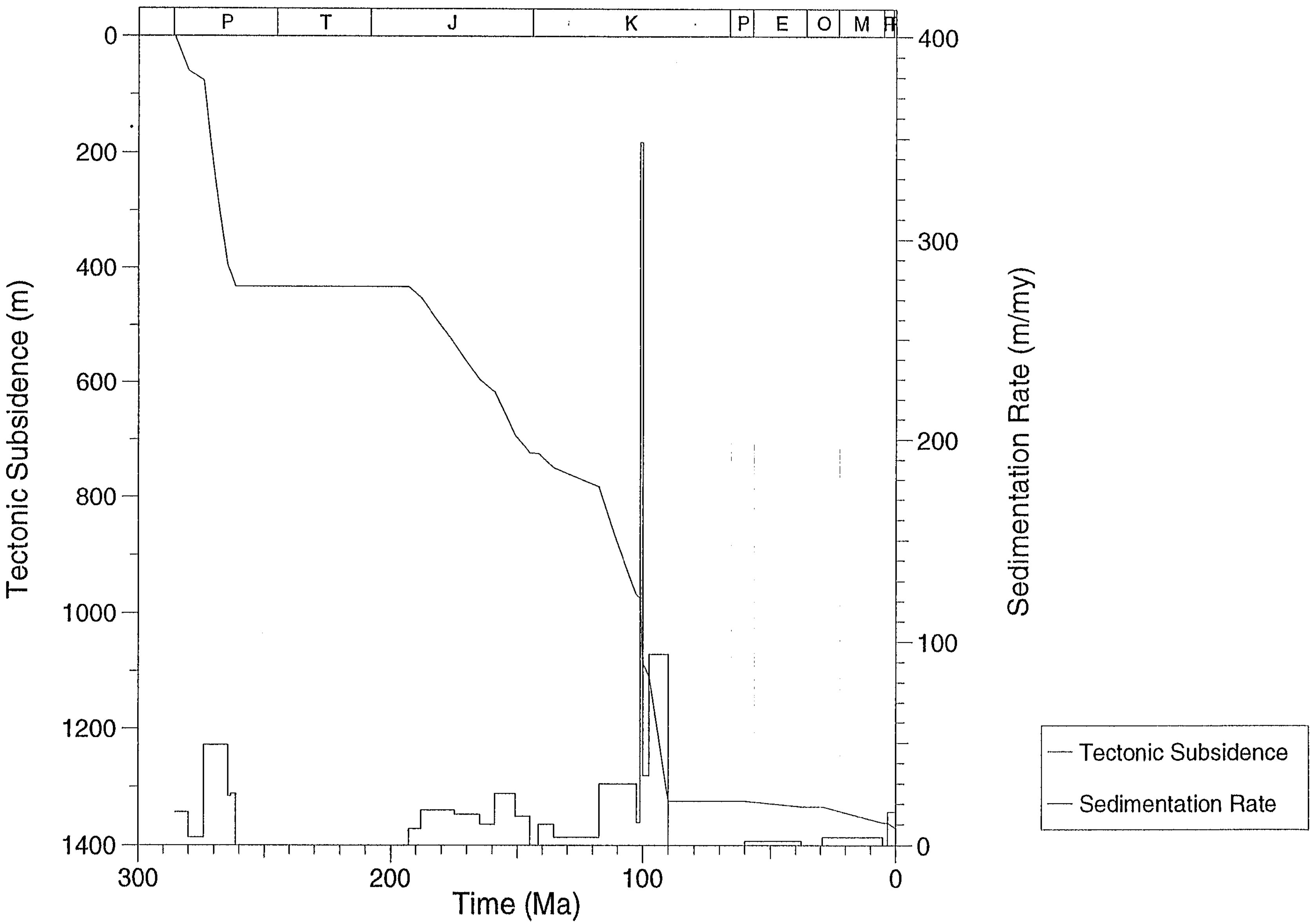
KOBARI-1



CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None
P
T
J
K
P
E
O
M
R
Tectonic Subsidence (m)
0
200
400
600
800
1000
Sedimentation Rate (m/my)
80
60
40
20
0
300
200
100
0
Time (Ma)
Tectonic Subsidence
Sedimentation Rate

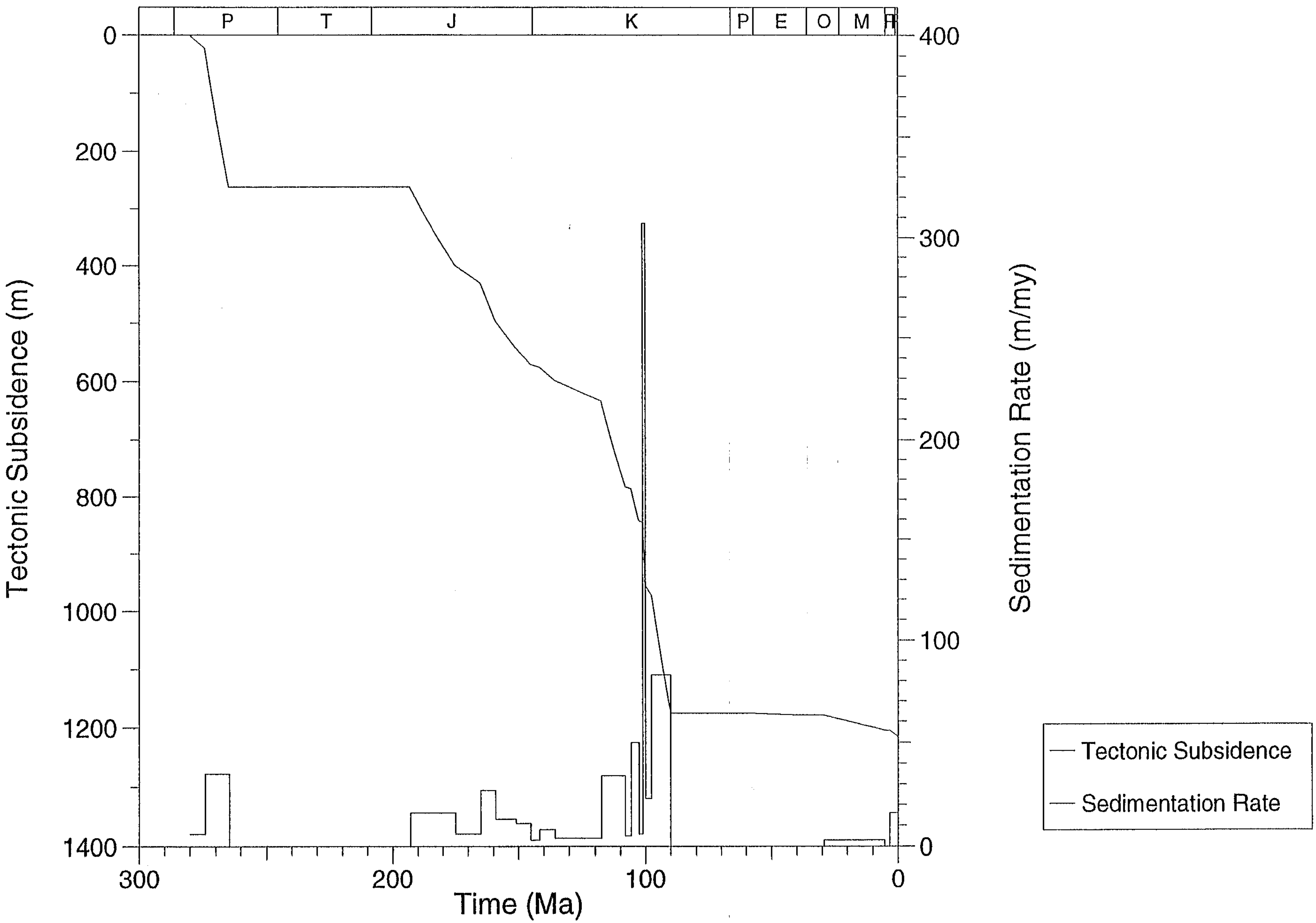
KUENPINNIE-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



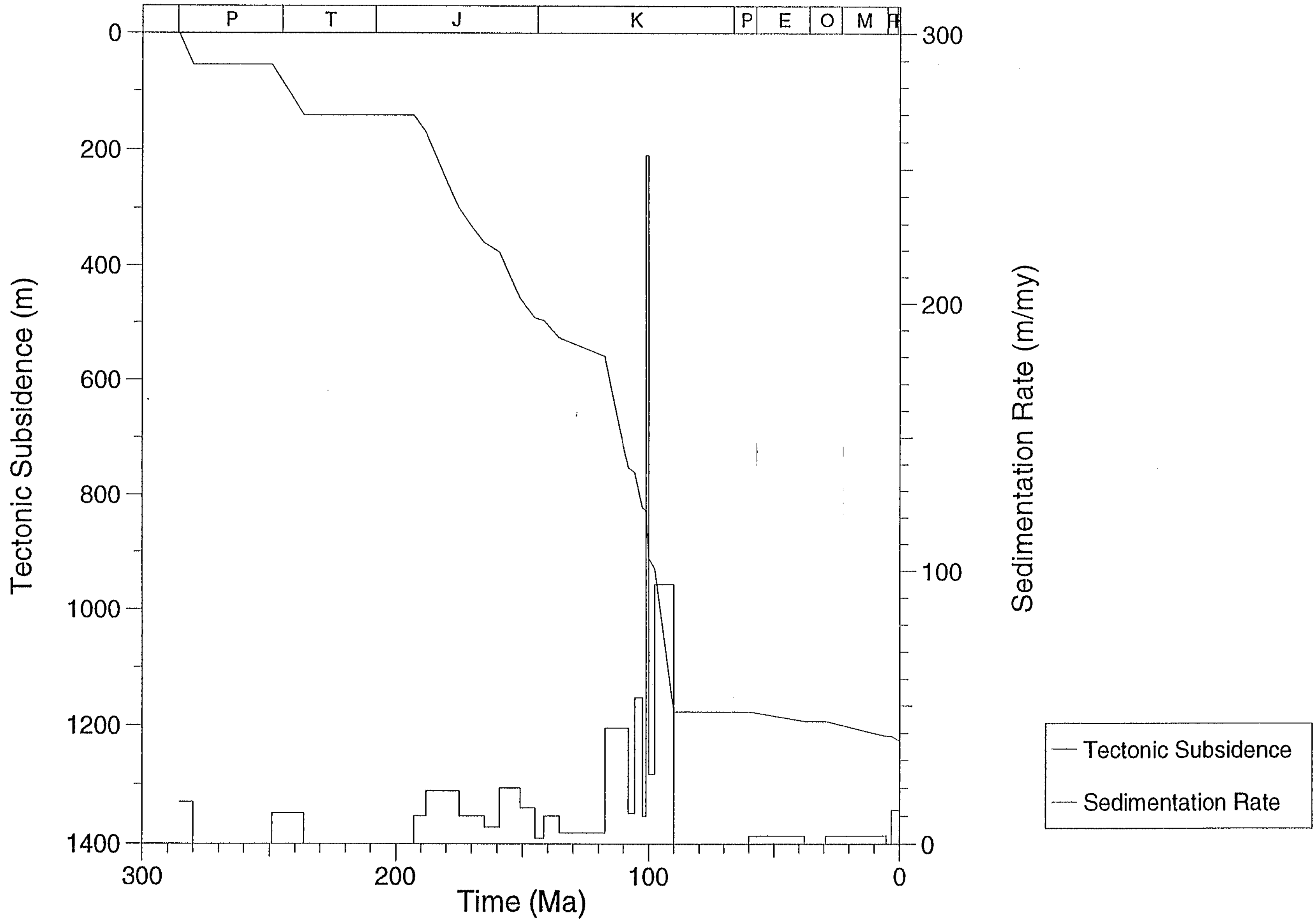
LYCIUM-1

CMP=SC;TH=[illegible]G;MAT=LL
TG=1;TI=1;EXP=None



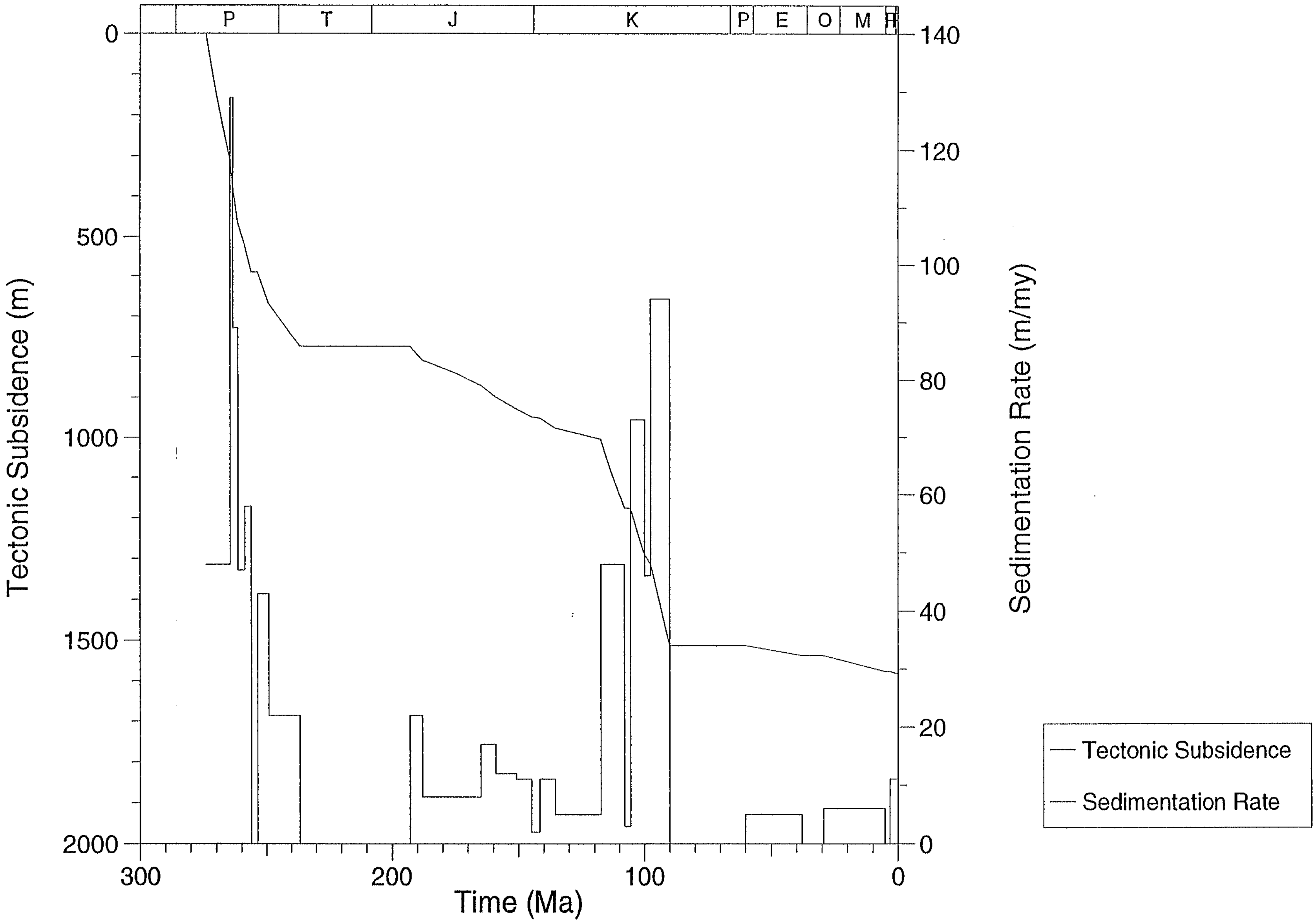
MERRIMELIA-30

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



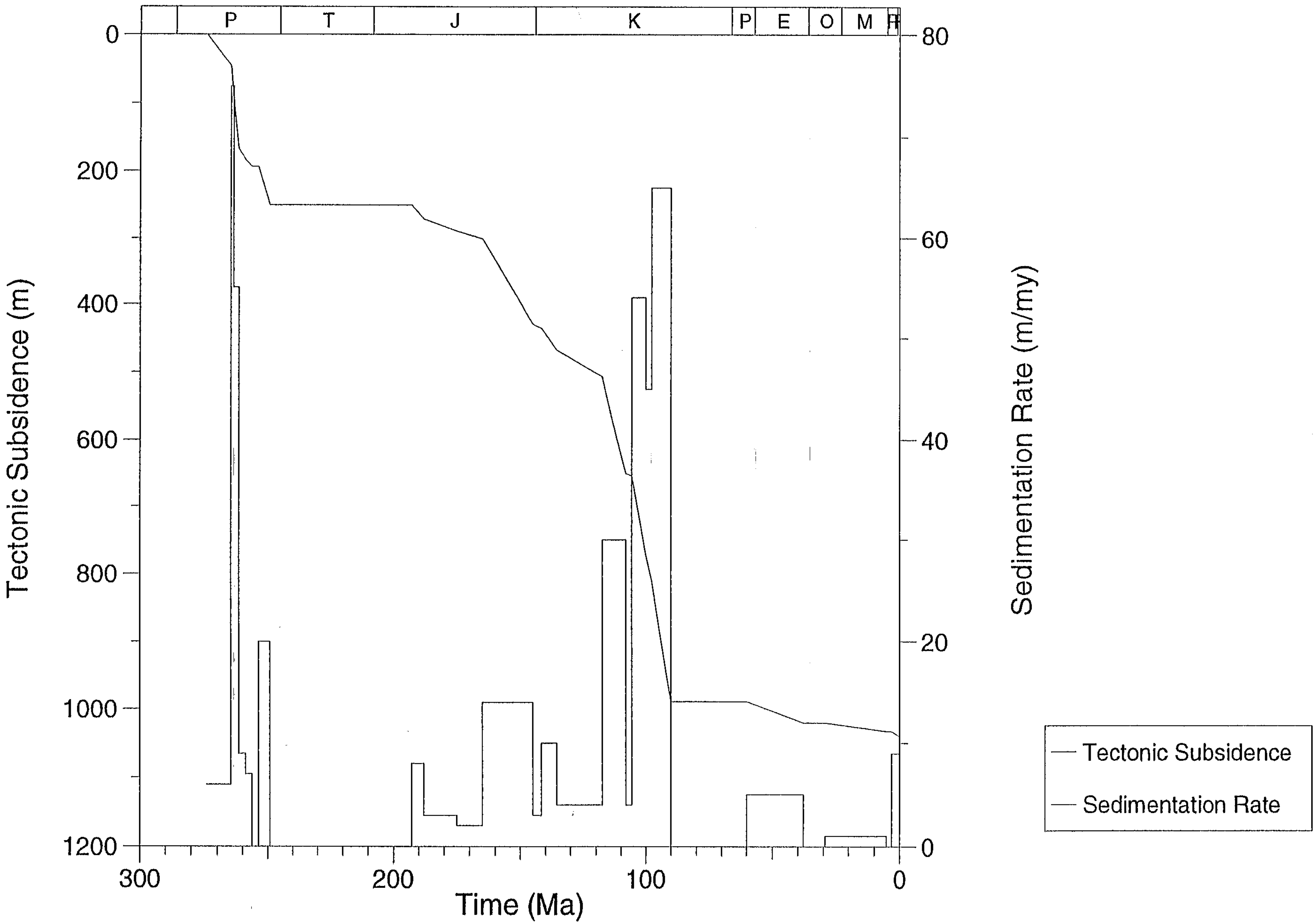
MOOMBA-57

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



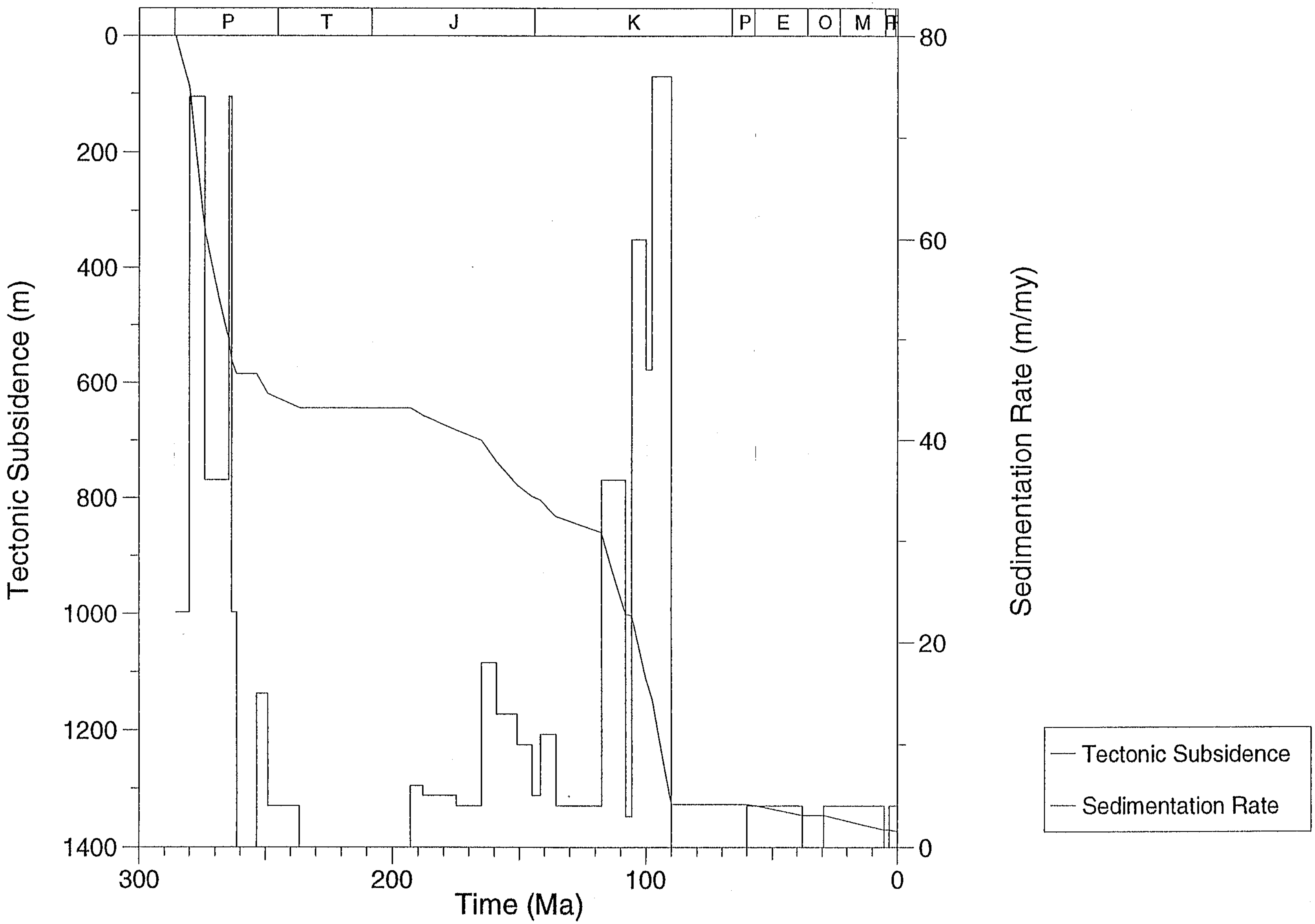
MULGA-2

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



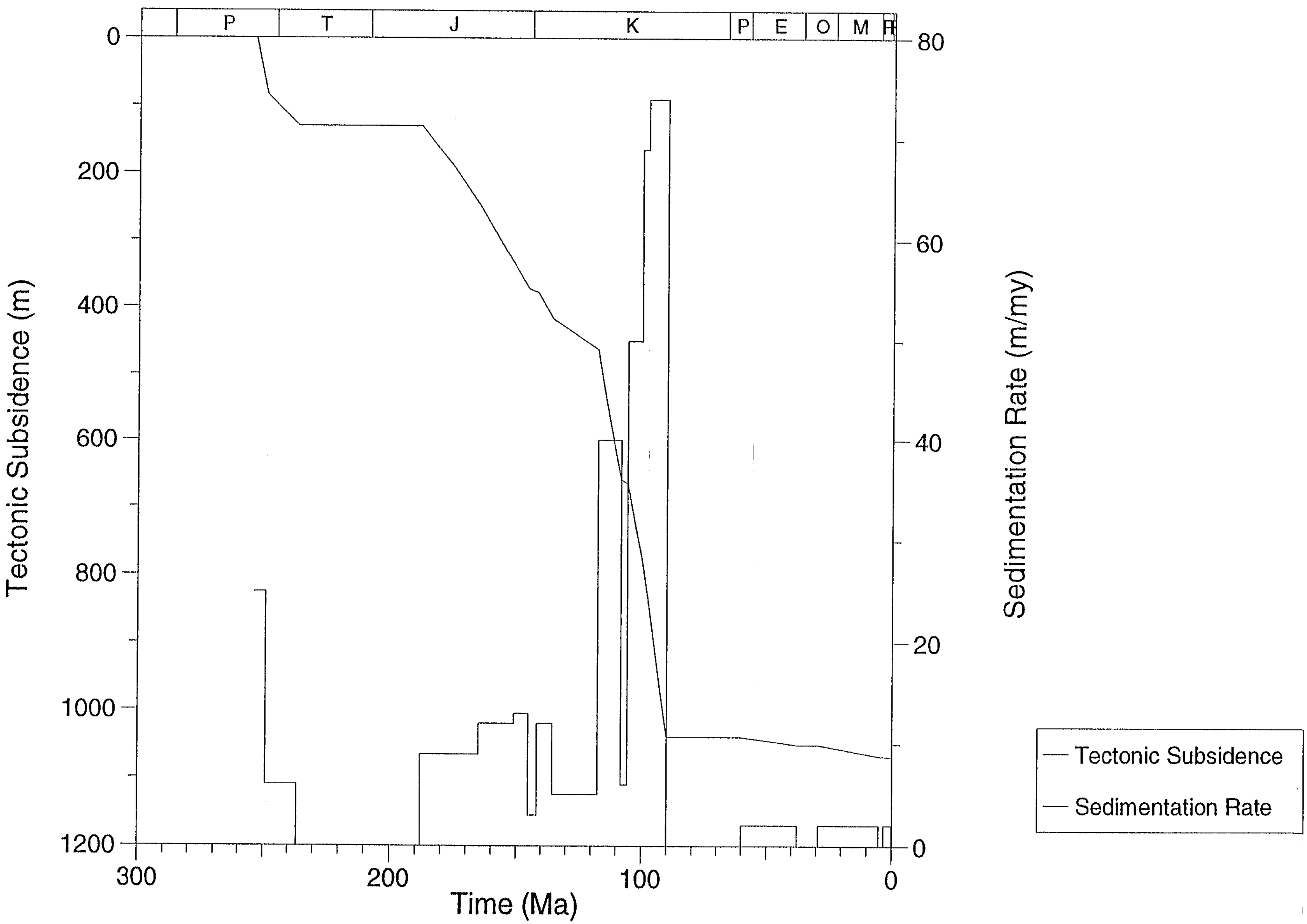
PINNA-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



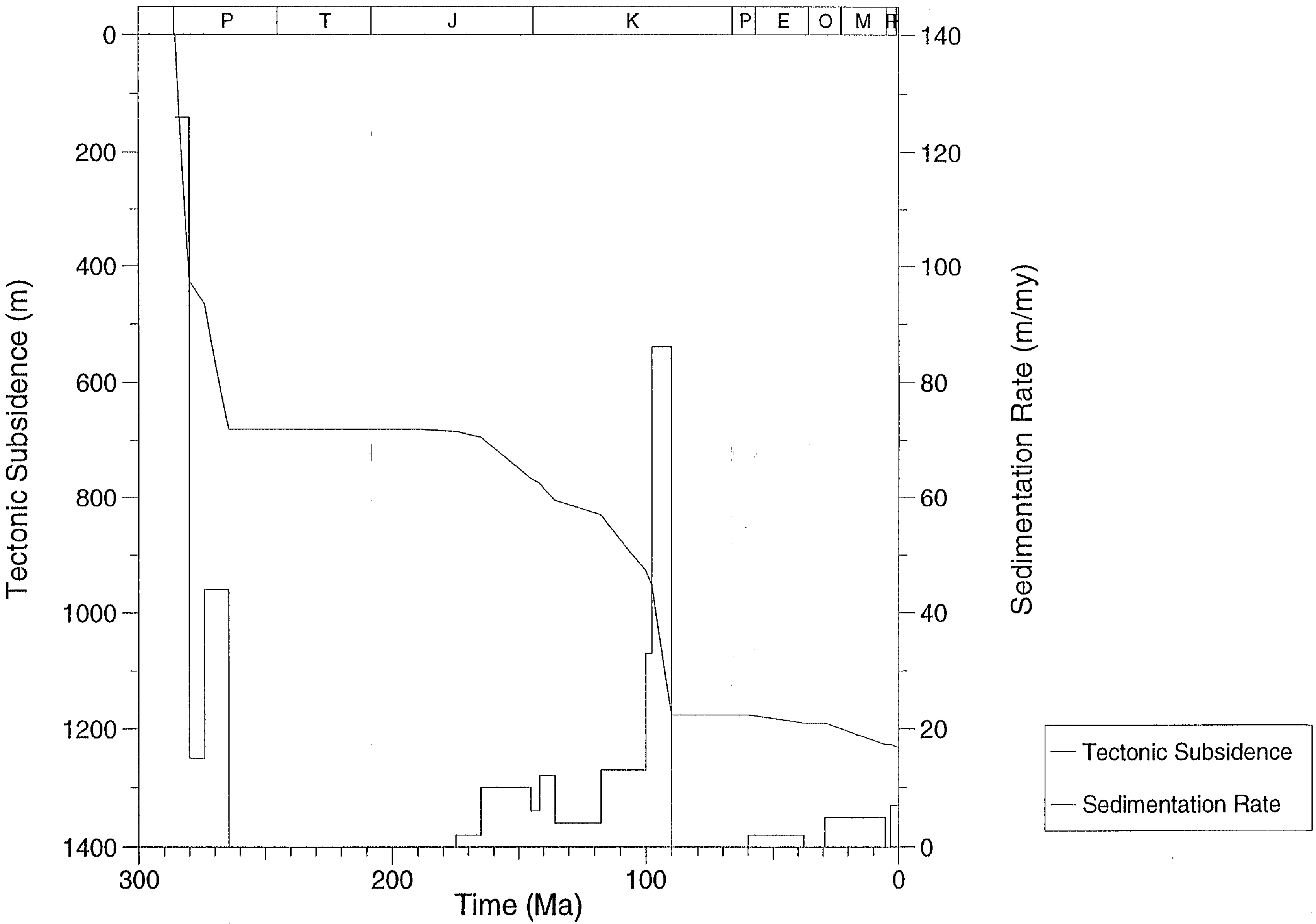
STRZELECKI-5

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



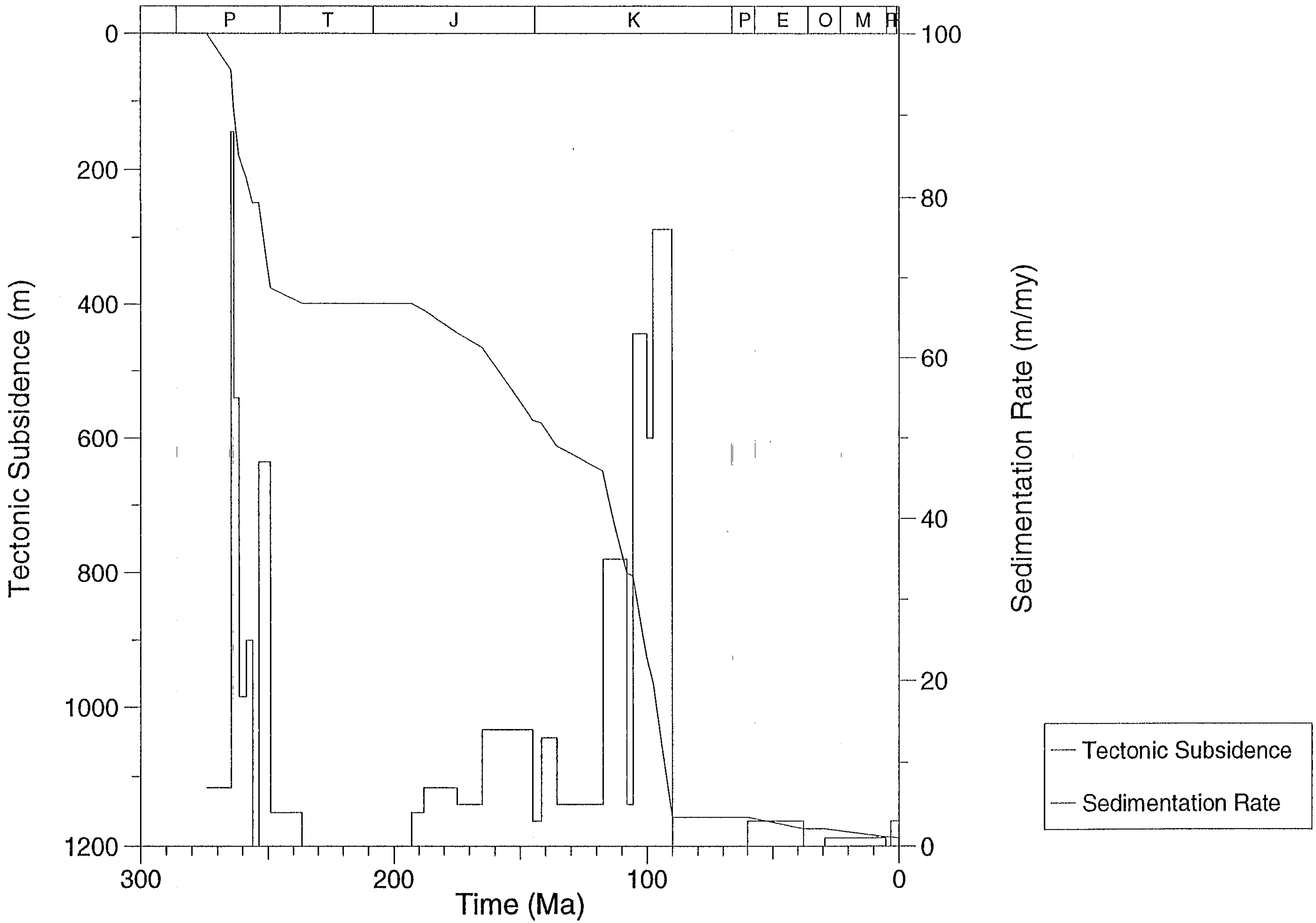
TINGA-TINGANA-1

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



TOOLACHEE-36

CMP=SC;TH=GG;MAT=LL
TG=1;TI=1;EXP=None



APPENDIX V

Moussavi-Harami (1966), Petroleum Geology of South Australia Volume II, MESA (in press) and Moussavi-Harami, Alexander and Frears (1996), abstract submitted for 'The Mesozoic of The Eastern Australian Plate Conference'.

BURIAL HISTORY OF THE EROMANGA BASIN IN NORTHEAST SOUTH AUSTRALIA

by

REZA MOUSSAVI-HARAMI

INTRODUCTION

The Eromanga Basin was formed by crustal downwarping of central Australia during the Early Jurassic (Veevers, 1984; Veevers and Li, 1991; Veevers et al., 1991). Sediments of the Eromanga Basin are Early Jurassic to early Late Cretaceous in age; they unconformably lie over the Cooper Basin or older strata and are themselves unconformably overlain by Tertiary sediments of the Lake Eyre Basin. Thickness of Jurassic to Cretaceous sediments in the Cooper Basin region ranges from less than 1200 metres in the Tinga Tingana area in the south to more than 2200 metres in the Patchawarra and Nappamerri Troughs in the north.

Deposition ceased by the end of early Late Cretaceous and the Eromanga Basin became a site of erosion and non-deposition until the Late Paleocene. The Tertiary Lake Eyre Basin unconformably covers the Eromanga succession and consists of three unconformity-bounded sequences.

Knowledge gained from burial history analysis of the Eromanga Basin in northeast South Australia includes: variation in sedimentation and subsidence rates which may be related to tectonic reactivation; timing of structural episodes and erosion patterns, and; constraints on timing of hydrocarbon generation and migration, which will aid future petroleum discoveries.

METHODS AND MATERIAL

The subsurface information comprises stratigraphic data from 1020 petroleum and stratigraphic wells, as well as the Eromanga Basin 'Z' , 'P' and 'C' horizons depth structure contour maps. Detailed information used in this study is given in Moussavi-Harami (1996). Burial history diagrams were constructed for 14 wells, whose locations were selected to represent the principal tectonic and stratigraphic elements of the Cooper Basin Region (Figure 1). These diagrams started from the basal unit in the Eromanga Basin. Ages used for the construction of these diagrams were determined by calibrating the palynological work of Price et al. (1985) for the Mesozoic of the Eromanga Basin and other published stratigraphic information (Wopfner, 1974; Wopfner and Cornish, 1967; Wopfner et al., 1970 and 1974; Callen, 1981 and 1990; Moore and Pitt, 1984 and 1985; Moore et al., 1986; Burger, 1986;

Wiltshire, 1989; Krieg et al., 1990, 1991 and 1995; Alexander and Frears, 1995; Gravestock et al., 1995) to the geological time scale (Haq et al., 1987 and 1988; Harland et al., 1990; Paine, 1992; Drexel et al., 1993). For calculations, the 4.2 Unix version of Basin Mod software (1994) of the National Centre for Petroleum Geology and Geophysics (NCPGG) at the University of Adelaide was used. The model of Sclater and Chrisite (1980) was used for the computation of decompacted sediment thickness, because it has been assumed that the rate of sedimentation was relatively high in the Eromanga Basin and this model is more accurate for areas with rapid deposition that result in exponential porosity decrease with depth. Rock types and thickness of each stratigraphic interval were determined from well logs and published regional stratigraphic studies (e.g. Gravestock et al., 1995; Krieg et al., 1995). The only marine sediments are in the middle part of the Eromanga sequence set (or supersequence) and were deposited in a shallow-marine epicontinental sea with the maximum water depth of probably no more than 100 to 150 metres (Moore et al., 1986; Ozimic, 1986; Sherwood and Cook, 1986). Palaeobathymetry variations on a small portion of the studied interval are not likely to affect the burial history diagrams. Consequently no palaeobothymetry correction has been used for construction of these diagrams.

Missing and erosional intervals during each uplift event, are interpreted from the restored isopach maps of each sedimentary package, and published (e.g. Morton, 1987; Eadington et al., 1989; Gravestock et al., 1995; Krieg et al., 1995) and unpublished data (e.g. well completion reports). These maps were constructed by using the interpretation of depositional environment of each unit, the present-day stratigraphic thickness and local and regional structural configuration of basins. Moussavi-Harami (1996) constructed the first regional isopachs of the study area.

STRATIGRAPHIC SEQUENCES

Based on examination of data from 1020 wells, structural contour maps of seismic horizons, published data (Wopfner et al., 1974; Moore and Pitt, 1984 and 1985; Burger, 1986; Morton, 1987; Wiltshire, 1989; Krieg et al., 1990 and 1995; Gravestock et al., 1995; Callen et al., 1995) and unpublished data (Price et al., 1985; Channon and Wood, 1989), four different unconformity-bounded sequences and sequence sets (or supersequences) are identified for the Eromanga and Lake Eyre Basins in northeast South Australia (Figure 2). These sequences range from Early Jurassic to Recent and will be summarised here in ascending order from sequence set J-K to T_3-Q. Details of stratigraphic variations and depositional environments of each unit are given by Alexander and Sansome (this volume).

Sequence Set J-K (Early Jurassic to Late Cretaceous)

This sequence set consists of a stack of three higher order sequences bounded by two major unconformities, one Late Cretaceous and the other Early Jurassic (Figure 2). The lower sequence is non-marine and is overlain by marginal marine to marine rocks of the middle sequence. This part of the interval underlies the upper non-marine sequence at the top (Krieg et al., 1995; Gravestock et al., 1995).

The lower sequence starts with the Early to Middle Jurassic Poolowanna Formation and Hutton Sandstone which unconformably overlie the Permo-Triassic rocks of the Cooper Basin (Figure 2). These siliciclastic sediments were deposited in fluvial environment (Moore, 1986) with parts redistributed across the basin by aeolian and lacustrine processes (Wiltshire, 1989). A restored isopach map of these units indicates that the estimated thickness ranges from 40 metres in the south (Tinga Tingana Trough) to more than 360 metres in the north, where the major depocenter was in the Patchawarra Trough (Figure 3). Toward the south, east and west, these units thin and are replaced (or intertongue) with the Middle to Late Jurassic Algebuckina Sandstone (Figures 2 and 3). In general, the restored isopach map shows that the source points were in the south and southeast and sediments were carried by streams that were flowing from the south toward the north and northwest and redistributed across the study area.

The Birkhead Formation (Middle to Late Jurassic) is composed of interbedded siltstone, mudstone and sandstone with minor coal seams that were deposited in flood-basin lacustrine and meandering fluvial environments (Paton, 1986). The estimated thickness of the unit on the restored isopach map ranges from zero in the south to more than 150 metes in the Patchawarra Trough and increases toward the northeast in Queensland (Figure 4), as shown by Paton (1986). This trend shows that during deposition of the Birkhead Formation, the major depocenter was probably in the northeast, outside the study area (Cooper Region). It thins toward the northwest to less than 70 metres, west of well Charo-1, and intertongues with the Algebuckina Sandstone in the Poolowanna Trough region. Southward, it also thins and reached zero thickness and possibly intertongues with the Algebuckina Sandstone.

The Late Jurassic Adori Sandstone, Westbourne Formation and Namur Sandstone are mainly composed of sandstone, siltstone and minor shale that were deposited in fluvial and lacustrine environments (Wiltshire, 1989; Gravestock et al., 1995) (Figure 2). A restored isopach map of these combined units indicates that the major depocenters were in the Nappamerri and Patchawarra Troughs and the estimated thickness in the study area ranges from 110 to 290 metres (Figure 5). Thickness of these units decreases to less than 140 metres toward the north (Cordillo Dome) and northwest (over the Birdsville Track Ridge), beyond the Cooper region. Generally, the differences in thickness between ridges and troughs are mainly related to differential compaction, rather than tectonic sinking. Northwest-southeast thinning of this interval in the northwestern part of the study area is probably related to the beginning of structural growth of the Late Jurassic to Early Cretaceous in the west (Figure 5).

The youngest unit in the lower non-marine sequence is the Early Cretaceous (Neocomian) Murta Formation which is composed of interbedded siltstone, shale and very fine-grained sandstone that were deposited in lacustrine environment (Ambrose et al., 1986). A restored isopach map of the Murta Formation shows that this interval has a relatively uniform thickness in the Cooper Region and the difference between troughs and structural ridges are mainly related to differential compaction (Figure 6). Thickening of this unit toward northeast indicates that the depocenter was further to the northeast in Queensland. Thinning of this interval toward the northwest to 20 metres, replacing or intertonguing with the Namur or Algebuckina Sandstones over the Birdsville Track Ridge, shows the structural growth during the Late Jurassic to Early Cretaceous to the west (Ambrose et al., 1986) (Figure 6).

The middle marine sequence of the Eromanga Basin starts with the Lower Cretaceous (Neocomian to Aptian) siliciclastic sediments of the Cadna-owie Formation (sequence K_1; Figure 2) deposited during early transgressive and high stand systems tracts in marginal marine and high energy shoreline environments (Wopfner et al., 1970; Moore and Pitt, 1985). A restored isopach map of this unit shows that the estimated thickness ranges from 40 to more than 114 metres and the major depocenters were mainly in the Nappamerri and northern Patchawarra Troughs (Figure 7). The estimated thickness of this unit decreases to less than 50 metres toward the northwest over the Birdsville Track Ridge. Another depocenter was present in the Allunga Trough and Dunoon Embayment, where more than 90 metres of sediments were deposited in contrast to less than 60 metres over the Murteree Ridge (Figure 7). It is interpreted that the thickness of the Cadna-owie Formation in the Milpera Embayment and Tinga Tingana Trough is 65 and 70 metres respectively, with the unit correspondingly thin (45 metres) over the Milpera Ridge (Figure 7).

The mid to late Early Cretaceous Marree Subgroup (sequences K_2 and K_3; Figure 2) is mainly composed of marine shale, siltstone and sandstone. The upper part of the Bulldog Shale and Wallumbilla Formation (sequence K_2) were deposited during the first major transgression (transgressive systems tracts, TST) in a shallow marine environment, while the

Coorikiana Sandstone was deposited during eustatic fall of sea-level in a shoreline environment (Morgan, 1980). The maximum transgression (maximum marine flooding surface, MFS; sequence K_3) took place during deposition of the Toolebuc Formation which is composed of black calcareous siltstone and mudstone with marine fauna, and is represented by a condensed section that can be traced for hundreds of kilometres in South Australia and southwest Queensland (Moore et al., 1986; Ozimic, 1986). A second condensed section (possibly MFS; sequence K2) has also been identified as a separate entity from the Toolebuc Formatio (Alexander and Sansome, this volume). The fine-grained sediments of the Allaru Mudstone and Oodnadatta Formation were deposited during regression in low energy shallow marine environment (Morgan, 1980; Moore and Pitt, 1985).

The youngest unit in the middle marine sequence is the Mackunda Formation which consists of interbedded glauconitic sandstone, siltstone and shale deposited in a marginal marine environment. The estimated thickness of the Marree Subgroup and Mackunda Formation on the restored isopach map ranges from 250 to 900 metres (Figure 8), where the major depocenters were in the Nappamerri and northern Patchawarra Troughs. The unit also thickens toward the northeast in Queensland. The estimated thickness over the structural ridges was probably less than 600 to 700 metres and the differences are probably related to compaction rather than tectonic sinking. These units thin toward the northwest (less than 300 metres) over the Birdsville Track Ridge and thicken again toward the Poolowanna Trough in the western Eromanga Basin (Alexander and Jensen-Schmidt, 1995). This is possibly related to structural activity of the Birdsville Track Ridge that allowed more sediments to be deposited on both of its flanks.

The upper non-marine sequence of the Eromanga Basin is the Winton Formation (Late Cretaceous) which is composed of interbedded siltstone, shale and sandstone with numerous thin coal seams deposited in fluvial to lacustrine environments (Krieg et al., 1995). The estimated thickness of the Winton Formation on the restored isopach map in the study area ranges from 275, in the south, to more than 1125 metres, in the northeast in the northern Patchawarra Trough, at the South Australian-Queensland border (Figure 9). This unit thins toward the north and east (Innamincka Dome), where it is exposed at surface and the top is eroded. It is interpreted that the maximum thickness over the Innamincka Dome was about 800 metres and more than 300 metres of sediments have been eroded during the Late Cretaceous to Early Tertiary from this area (Figure 9). Another depocenter was probably present in the southern Nappamerri Trough, were more than 950 metres of sediments may have been deposited before thinning toward the south and southeast. The maximum estimated thickness in Mettika and Kidman Embayments was probably 700 to 725 metres, respectively, and the Winton Formation gradually thins over the Toolachee ridge (Figure 9). It is well worth noting that the maximum thickness over the Gidgealpa-Merrimelia-Innamincka and Murteree-Nappacoongee Ridges is less than in the troughs and this is also probably related to differential compaction between these areas. Southward, this unit thickens to 600 metres in the Milepera Embayment and Tinga Tingana Trough and thins again toward the south and east.

A restored isopach map of the entire supersequence (J-K) indicates that the thickness ranges from 1100 to 3000 metres in the study area (Figure 10). During deposition, two major depocenters were present in the southern Nappamerri and northern Patchawarra Troughs, where it is interpreted up to 3000 metres of sediments were deposited (Figure 10). Over the ridges (such as GMI) and structural highs (such as Moomba and Bulyeroo), the thickness varies from 1500 to 2300 metres, while in the troughs, the thickness increases. These differences are mainly related to differential compaction rather than regional tectonic activity. In general, this supersequence thins towards the northwest over the Birdsville Track Ridge to less than 1600 metres, but thickens again in the Poolowanna Trough (Alexander and Jensen-Schmidt, 1995). It should be noted that the isopach map reflects the pre-Jurassic structural elements (ridges and highs) that were reactivated during Late Triassic diastrophism in the Cooper Basin and formed the basement of the Eromanga Basin.

Sequence T_1 (Late Paleocene to Mid Eocene)

This sequence consists of the Eyre Formation that disconformably overlies the Winton (Late Cretaceous) and underlies the Namba (Middle to Late Tertiary) Formations respectively (Figure 2). It is mainly composed of sandstone with minor interbeds of lignite deposited in broad shallow braided stream systems (Wopfner et al., 1974; Gravestock et al., 1995; Callen et al., 1995). Thickness of this unit on the restored isopach map ranges from 30 to 140 metres in the Callabonna Sub-Basin (Figure 11). It is interpreted that two major depocenters in the Cooper Basin region were present in the southern Nappamerri and Allunga-Wooloo Troughs, separated by the Moomba high, and more than 140 metres of sediments have been deposited in these regions (Figure 11). This unit thins over the Nappacoongee and Strzelecki highs, but thickens over Toolachee Field and the maximum estimated thickness was probably more than 120 metres. In the southernmost part of the study area, the maximum interpreted thickness of the Eyre Formation is about 100 metres within the Tinga Tingana Trough and thins toward the margins of the basin in the south and east.

In the Patchawarra Trough, the maximum estimated thickness was about 130 metres in the central part, north of the Tirrawarra and Moorari Fields (Figure 11). Variation in thickness in the central Patchawarra Trough reflects the structural movement after deposition of this unit in this area (Figure 11). Over the Innamincka Dome, this unit is probably eroded and the upper Eromanga sequence crops out at the surface. Over the Gidgealpa-Merrimelia Ridges, the thickness ranges from 60 to 80 metres and the differences with troughs is mainly attributed to differential compaction.

Sequence T_2 (Late Oligocene to Late Miocene)

This sequence is represented by the Namba Formation,composed of interbedded sandstone, siltstone, shale and dolomite locally, deposited in alkaline lake to fluvial environments (Gravestock et al., 1995; Callen et al., 1995). It disconformably overlies the Early Tertiary and is disconformably overlain by the latest Tertiary and Qauternary sequence (Figure 2). A restored isopach map of the Namba Formation shows that the estimated thickness ranges from 30 to 210 metres and the major depocenter was in the western Allunga Trough (Figure 12), where the thick basal dolomite of the Namba was deposited in a broad shallow lake. In the Patchawarra Trough, it is interpreted that three separate or possibly connected lakes (depocenters) may have been present in the Late Oligocene to Late Miocene. It should be noted that the central part of the Patchawarra Trough (Tirrawarra Field) received less sediment during deposition of the Namba Formation (Figure 12). This is mainly related to structural activity (uplift) in this area, after deposition of the Eyre Formation, during the Late Eocene to Early Oligocene. Based on the structural contour map at the top of the Winton Formation (Late Cretaceous) (Morton, 1987), another depocenter may have existed south of the Merrimelia Ridge, in the southern Nappamerri Trough and more than 140 metres of sediments were deposited in this area (Figure 12). This unit thins towards the northwest (over the Birdsville Track Ridge) and reached to less than 90 metres.

Another depocenter was probably present west of the Pando Field, where the estimated maximum thickness of the Namba Formation was more than 180 metres in this area. This unit thins towards the south, over the Dunoon Ridge, but thickens again to 170 metres. This indicates that a series of depressions or lakes existed in the study area, as described for other parts of South Australia (Callen, 1981, 1990). Thinning of the Namba Formation in the eastern Strzelecki is probably related to uplift during the Mid Tertiary that prevented deposition of the thick basal dolomite.

Sequence T_3-Q (Late Pliocene to Quaternary)

This sequence unconformably overlies the Namba Formation and comprises sand, silt and clay units with some dense evaporite horizons in soils, deposited in fluvial channel, saline lake and aeolian environments (Callen, 1992; Callen et al., 1995; Gravestock et al., 1995). An isopach map of surficial, post-Namba Formation units, indicates that their thickness ranges from zero to more than 60 metres (Figure 13). Northeast-southwest thinning of these units, to less than 20 metres over ridges (GMI and M-N) shows that structural activity of the basement (rising) caused these ridges to be sites of erosion and sediment bypass rather than deposition (Figure 13).

BURIAL HISTORY

Burial history analysis is very important in order to place constraints on the timing of thermal maturation of organic matter, and generation and migration of hydrocarbons in a sedimentary basin. Thermal maturity of organic matter progressively increased as sediments subsided through time. The rate of total subsidence varies and depends on geological setting. For example, the subsidence rate in a tectonically active area, such as a rift basin, is much more than that in an intracratonic basin, which is mostly stable through time. For simplicity, the terms used in this paper for comparison of the relative subsidence rate are given in Table 1.

Burial history diagrams were constructed for 14 wells in northeast South Australia (Figure 1). For simplicity, the burial history diagrams of 6 wells (Cuttapirrie-1, Merrimelia-30, Moomba-57, Jena-1, Strzelecki-5 and Tinga Tingana-1), representing the key tectonic and stratigraphic elements of the Cooper Basin region, are presented in this paper (Figures 14 to 18). Detailed discussion of the burial history of the Cooper, Eromanga and Lake Eyre Basins in northeast South Australia are given by Moussavi-Harami (1996). Interpretation is presented here in ascending order from sequence set J-K to T-Q and mostly from the northern to southern part of the study area.

Sequence Set J-K

After a long period of uplift and erosion from Late Triassic to Early Jurassic, continental downwarping within the Australian landmass created the Eromanga Basin and sedimentation continued from the Early Jurassic to Late Cretaceous (approximately from 193 to 90 Ma), without any major break. As stated earlier, the Eromanga Basin succession can be divided into three parts and the burial history of each part is discussed in ascending order.

Lower non-marine succession

In the Patchawarra Trough and on the Merrimelia Ridge, the subsidence rate above the basal unconformity was initially moderate (average 10.3, 14.2 and 10.9 metres per m.y. in Lycium-1, Cuttapirrie-1 and Merrimelia-30, respectively), during deposition of the Poolowanna Formation and Hutton Sandstone, and decreased to an average of 5.5 to 9.5 metres per m.y. during deposition of the Birkhead Formation (about 175 Ma) (Figure 14). The higher subsidence rate was mostly related to rapid deposition of coarse-grained siliciclastic sediments in fluvial environments, and to tectonic subsidence. The lower rate can be attributed to less sedimentation and compaction rates in the Patchawarra Trough (Figure 19). As seen on the restored isopach map of the Birkhead Formation (Figure 4), two major depocenters were present in the southern Patchawarra Trough and north of Cuttapirrie-1. As a result, the rate of subsidence in these areas was higher (average 8.25 and 9.1 metres per m.y. in Kuenpinnie-1 and Cuttapirrie-1, respectively) than other parts of the basin.

Due to a high rate of coarse-grained siliciclastic sedimentation (Adori Sandstone, Westbourne Formation and Namur Sandstone) in the Late Jurassic (approximately 165 to 145 Ma) (Figure 19), the subsidence rate increased again in the northern part of the study area (average 10 and 11 metres per m.y. in Merrimelia-30 and Cuttapirrie-1, respectively; Figure 14). However, during deposition of the Murta Formation (Neocomian), the subsidence rate was low to moderate (approximately 6.5 metres per m.y.) in the Patchawarra Trough which resulted from a low rate of fine-grained siliciclastic sedimentation in the lacustrine environment (Figure 19).

During Early to Middle Jurassic, the rate of subsidence in the Wooloo Trough (average 11 metres per m.y. in Kirralee-1)and the Moomba high (average 10.46 metres per m.y. in Moomba-57; Figure 15) was relatively moderate and higher than the Nappamerri and Allunga Troughs (average 7.1 metres per m.y. in Buyleroo-1 and 3.46 metres per m.y. in Pinna-1). This can be related to higher rate of coarse-grained siliciclastic sedimentation in this area. It should be noted that during the Later Jurassic (approximately 175 to 165 Ma), differential compaction in the Nappamerri Trough created more accommodation for deposition of fine-grained sediments of the Birkhead Formation in a lacustrine environment. Subsequently, the rate of subsidence during this period was higher in the Nappamerri Trough (average 13.5 metres per m.y.) than over the Moomba high (about 8 metres per m.y.). During the Tithonian (165-145), the subsidence rate in the central part of the study area was moderate, ranging from 13.5 metres per m.y. in Moomba-57 to 20 metres per m.y. in

Buyleroo-1. This again resulted from rapid deposition of very coarse-grained siliciclastic sediments (Figure 19), differential compaction between trough and high, as seen on restored isopach map (Figure 5), as well as tectonic sinking (Figure 15). At the beginning of the Early Cretaceous, the subsidence rate decreased again, resulting from a low rate of fine-grained siliciclastic sedimentation of the Murta Formation.

During deposition of the Early to Middle Jurassic sediments in the southern and southeastern portions of the study area, the subsidence rate was low, ranging from 3.08 metres per m.y. in Mulga-2 to 4.88 metres in Jena-1 (Figure 16) and Kobari-1. This low rate was due to onlap of sediments over the Murteree Ridge and on the margin of the Cooper Basin region. Note that during deposition of the Birkhead Formation (175 Ma), the subsidence rate decreased to an average of 3 to 5 metres per m.y., which resulted from a low fine-grained siliciclastic sedimentation rate. Due to rapid deposition of coarse-grained terrigenous sediments of the Adori Sandstone, Westbourne Formation and Namur Sandstone in the Late Jurassic (approximately 165 to 145 Ma), the subsidence rate in the south and southeast increased to an average of 14 metres per m.y. (Figure 17). This was less (about 12 metres per m.y.) in Kobari-1 and Tinga Tingana-1 (Figure 18).

In general, from the Early Jurassic to Early Cretaceous, the rates of subsidence decreased from the north (average 15 metres per m.y. in Cuttapirrie-1) toward the south (about 6.22 metres per m.y. in Tinga Tingana-1). This can also be seen on the restored isopach map of the J-K sequence set, where the major depocenter was in the northern Patchawarra Trough and the thickness of sequence increases toward the northeast into the Queensland, while it gradually thins toward the northwest and southeast (Figure 10).

Marine succession

Due to comparatively greater downwarping of the northern part of the Australian continent in the Early Cretaceous (approximately 135.5 Ma), the epicontinental sea transgressed from northeast toward the south and southwest into the South Australian portion of the Eromanga Basin. The oldest marine unit is the Cadna-owie Formation (sequence K_1; Figure 2) that was deposited as a hightstand systems tract in high-energy shoreline to shallow marine environments. The rate of subsidence was relatively low during deposition of the Cadna-owie Formation(Figures 14-18), averaging 4 to 5 metres per m.y. in the Patchawarra Trough and the Nappamerri Trough. This rate decreased toward the south to an average of 3 metres per m.y. in the Kobari Embayment and Tinga Tingana Trough.. The low subsidence rate at this time is mainly due to deposition of fine to medium-grained siliciclastic sediments rather than tectonic sinking (figure 19).

The first major transgression started in the Aptian (about 117.5 Ma) and lasted through Early Albian time (108 Ma). This transgression created sufficient accommodation space for very rapid deposition of a thick fine-grained siliciclastic sequence of the Bulldog Shale and the Wallumbilla Formation (sequence K_2; Figure 2). It should be noted that maximum marine transgression was reached during deposition of the upper Bulldog Shale and equivalents, which is also consistent with global sea-level curves of Haq et al. (1987, 1988). During this period, the rate of subsidence was high in the northern Patchawarra and central Nappamerri Troughs, averaging 43.20 and 42.11 metres per m.y. in Cuttapirrie-1 (Figure 14) and Buyleroo-1, respectively, as a result of higher rate of fine-grained siliciclastic sedimentation in a marine environment (Figure 19), as well as basement subsidence. This higher sedimentation rate was possibly related either to slumping and mass flow processes on a mildly unstable shelf, or to rapid deposition along reactivated major faults in these areas. However, it decreased to an average 32.63 and 26.32 metres per m.y. over ridges (Merrimelia-30 and Jena-1; Figures 14 and 16). The difference between troughs and ridges can be attributed to sediment loading and compaction and possibly to minor tectonic subsidence, as suggested by Zhou (1989). A restored isopach map of the Marree Subgroup also shows that the maximum thickness of these units was more than 900 metres in the northern Patchawarra and Nappamerri Troughs, increasing toward the northeast into the central Eromanga Basin in Queensland (Figure 8). Note that this very high subsidence rate decreases gradually toward the west and northwest to about 28.95 metres per m.y. in Lycium-1 in the southern Patchawarra Trough. By comparison, approximately 1000 km further west, close to the southwestern margin of the basin, the subsidence rate is 4.3 metres per m.y. in Manya-5 (Officer Basin ;Moussavi-Harami and Gravestock, 1995), and is probably related to sediment loading rather than tectonic activity. During this period, the subsidence rate in Kirralee-1 (about 33.5 metres per m.y.) was less than in Moomba-57 (41.05 metres per m.y.; Figure 15), because the former is located at the margin of the Wooloo Trough. Due to a lower rate of fine-grained siliciclastic sedimentation, the subsidence rate also decreased to 31.58, 27.37 and 28.11 metres per m.y. in Strzelecki-5 (Figure 17), Toolachee-36 and Mulga-2, respectively. Further south, the subsidence rate decreased in Kobari Embayment (about 25.89 metres per m.y. in Kobari-1) and reduced to 12.57 metres per m.y. for the total Marree Subgroup in the Tinga Tingana Trough (Figure 18), where the sedimentation rate was relatively low (Figure 19).

In middle Albian Time, the sea regressed toward the east and the Coorikiana Sandstone was deposited, during a lowstand phase of sedimentation in a shoreline environment (Figure 2). During the late Albian, sea-level rose again rapidly worldwide, and maximum transgression took place during this period, depositing mainly marine shales and mudstones of sequence K_3 (upper Marree Subgroup) (Figure 2). During this period, the basin subsided at a relatively higher rate in troughs (e.g. 46.8 metres per m.y. in Bulyeroo-1) than on ridges (e.g. 27.5 metres per m.y. in Jena-1). This is interpreted to be caused in part by very high rates of fine-grained siliciclastic sediment loading and compaction rather than tectonic activity (Figure 19). A restored isopach map of the Marree Subgroup and Mackunda Formation shows that a major depocenter may have been present in the southern Nappamerri Trough and the maximum rate of subsidence may have taken place in this area, but the paucity of data does not allow a better understanding in support of this interpretation (Figure 8). During deposition of these units, the subsidence rate was lower in the south (average 25 and 16 metres per m.y. in Kobari-1 and Tinga Tingana-1, respectively), which resulted from a lower rate of sedimentation in this area (Figures 18 and 19). Overall, the subsidence rate during late Albian to early Cenomanian, Mackunda Formation deposition (Figure 2), was higher in the northern Patchawarra Trough (approximately 52 metres per m.y. in Cuttapirrie-1; Figure 14) than other parts of the study area. This high subsidence rate can be related to sediment loading and compaction, as well as probably tectonic sinking. The subsidence rate decreased toward the northwest in the southern Patchawarra Trough (average 23.2 metres per m.y. in Lycium-1). This is interpreted to be related to a lower rate of sedimentation (as shown on restored isopach map; Figure 8) and compaction, as Lycium-1 approaches the crest of one of the structures which comprises the Birdsville Track Ridge. Southward, subsidence also decreased to an average of 14 and 30 metres per m.y. in Kobari-1 and Tinga Tingana-1 which is mainly related to lower sedimentation rate over relatively shallow proterozoic basement, but with continued subsidence of the Tinga Tingana Trough.

Upper non-marine succession

This period of subsidence, which created more accommodation space for deposition of marine sequences (K_1, K_2 and K_3) was followed by a fall of sea level and the study area became a site of continental sedimentation. During the Late Cretaceous (Cenomanian), the rate of subsidence was much higher in the northern Patchawarra Trough (average 122.67 metres per m.y. in Cuttapirrie-1) and the Nappamerri Trough (113.33 metres per m.y. in Bulyeroo-1) than over the intervening GMI Ridge (average 93.33 metres per m.y. in Merrimelia-30) (Figure 14). This was mainly due to differential compaction and very rapid deposition of medium to fine-grained siliciclastic sediments of the Winton Formation in fluvial and lacustrine environments, as well as tectonic sinking along the old zones of weakness, as suggested by Moore and Pitt (1984). A restored isopach map of the Winton Formation (Figure 9) also shows that the major depocenter was in the northern Patchawarra Trough. More than 1125 metres of sediments were deposited in this area, thickening toward the northeast into Queensland. Southward, the subsidence rate decreased to an average of 60 metres per m.y. in Kobori-1, but increased to 85.33 metres per m.y. in Tinga Tingana Trough (Figure 18), which resulted from more sediment loading and basement subsidence in trough. It is worth noting that the subsidence rate in Toolachee-36 and Strzelecki-5 was about 77 metres per m.y. which somewhat much lower than in troughs to the north (Figure 17). This difference again is probably related to a lower rate of sedimentation and compaction between ridges and troughs (Figure 19). Thinning of the Winton Formation toward the margin of the basin in mainly related to severe erosion during Late Cretaceous to Early Tertiary time (e.g. Alexander et al., 1996).

In relation to a very high subsidence rate in Early to Late Cretaceous, Gallagher and Lambeck (1989) suggested that subsidence of the Eromanga Basin in the Jurassic can follow a simple thermally-based mechanism, by which subsidence rate decreases exponentially to nearly linear with time. However, from the mid-Cretaceous (about 110 Ma), the rates of subsidence increased suddenly by about 5 to 10 times that of the earlier Jurassic and lasted for about 20 m.y. through the Late Cretaceous. These authors concluded that this rapid subsidence rate during deposition of marine and upper non-marine portions of the Eromanga Basin resulted from variation in sediment influx, with sediment sourced from an active volcanic arc located off the east coast of the Australian continent, rather than from a primarily tectonic mechanism beneath the lithosphere of the Eromanga Basin. Zohu (1989) also suggested that the abnormal subsidence during deposition of marine and upper non-marine portions of the Eromanga may be related to 1) regional tectonic compression that was generated by rifting processes on the southern and eastern margin, 2) by active volcanoes along the northeast margin of the continent, and 3) by metamorphic phase transition in the deepest parts of the crust from eclogite to granulite. Based on this study, the high subsidence rate, during the Early to Late Cretaceous, is mainly related to rapid deposition of fine-grained siliciclastic sediments in marine and non-marine environments, as well as possibly tectonic subsidence along reactivated major faults.

Winton Unconformity

The Winton epoch of sedimentation and subsidence was followed by a period of uplift and erosion from Turonian to Late Palaeocene (approximately from 90 to 60 Ma; Figure 2). This is attributed to east-west directed basement compression on regional scale, starting from the eastern margin of the continent (Veevers, 1984; Shaw, 1991). This period of non-deposition is shown as a horizontal segment on the tectonic and total subsidence curves (Figures 14a to 18a). A restored isopach map of the Eromanga sequence set shows that more than 3000 metres of sediments may have been deposited in the Cooper Basin region, within the Patchawarra and Nappamerri Troughs, increasing into southwestern Queensland (Figure 10). Moore and Pitt (1984) estimated that up to 800 metres of the Winton Formation were eroded from the crests of major structures in southwest Queensland where erosion was severe, while this erosion was less in South Australia. It is calculated that more than 350 metres of sediments were eroded over the Innamincka Dome where the Winton Formation crops out at the surface; this is similar to estimates suggested by Moore and Pitt (1984). Based on a restored isopach map of the J-K sequence set, it is calculated that the amount of section lost at the top Winton unconformity ranges from 150 to 440 metres (Table 2). The maximum estimate of section lost was in Cuttapirrie-1 close to the margin of the Cooper Basin which is possibly related to the initiation of movement of the Cordillo Dome in the north, prior to deposition of the Eyre Formation. The amount of section lost during the Late Cretaceous to Early Tertiary, for 6 modelled wells is presented in Table 2. Lost section is also shown by upward movement of the curves on the interpretive burial history diagrams (Figures 14b to 18b).

Sequence Set T-Q

During the Late Paleocene to Middle Eocene (approximately from 60 to 38 Ma), sedimentation resumed in northeast South Australia and coarse-grained siliciclastic sediments of the Eyre Formation were deposited as sheet sands in braided stream systems. This sequence (T_1) subsided at a very low rate, ranging from 0.91 to 6.45 metres per m.y. A restored isopach map of the Eyre Formation shows that the major depocenters were in the southern Nappamerri Trough, Moomba high, Wooloo Trough and Allunga Trough (Figure 11), where the subsidence rate was higher than other parts of the study area (6.45, 5.45 and 4.55 metres per m.y. in Moomba-57, Kirralee-1 and Pinna-1, respectively). In general, the distribution of sediments, during the Late Paleocene to Middle Eocene, is mainly related to the structural highs that were formed during the Permian and Triassic time, as also noted by Callen in Gravestock et al. (1995). The subsidence rate over the GMI Ridge and M-N Ridge was very low about (3.41 and 2.27 metres per m.y. in Merrimelia-30 and Jena-1, respectively). The differences in subsidence rate between troughs and ridges is mainly related to higher sediment loading and compaction rather than basement subsidence.

This period of sedimentation was followed by a prolonged period of uplift and erosion, from Late Eocene to Early Oligocene (approximately 38 to 29.3 Ma), related to an epeirogenic movement. During this period, portions of the Early Tertiary (T_1) and Late Cretaceous (Winton Formation) sedimentary section were eroded from the crests of anticlines, such as the Innamincka Dome and domes comprising the Birdsville Track Ridge (Wopfner et al, 1974; Moore and Pitt, 1984). Shaw (1991), in his study of the Tertiary structures in southwest Queensland, suggested that in addition to regional Tertiary uplift, deformation during this period may have also involved reactivation of pre-existing basement faults. Based on a restored isopach map of the Eyre Formation, it is calculated that the amount of section lost during the Late Eocene to Early Oligocene in the study area, ranges from 12 to 36 metres (Table 2). However, the sparseness of Tertiary data does not allow confirmation of the amount of erosion, which may have been greater than that assumed here. It should be noted that maximum erosion was over the Innamincka Dome (approximately 50 to 60 metres).

After this period of uplift and erosion, downwarping (approximately 29.3 Ma) caused the Moomba high and the Wooloo Trough areas to subside at a relatively higher rate than other parts of the study area during the Late Oligocene to Miocene. The subsidence rate was about 7.13 and 7.08 metres per m.y. in Moomba-57 and Kirralee-1, respectively. This moderate rate can be attributed to deposition of carbonate (dolomite) in a large shallow alkaline lake that formed during the Late Eocene and Early Oligocene. As seen on the restored isopach map for the Namba Formation (Figure 12), there may have been a number of deopocenters (lakes) present during the Late Oligocene to Miocene in the northern and western parts of the study area, where dolomite formed. Lower rates of subsidence occur in the east and southeast of the Cooper Basin region (average 2.70, 2.0 and 1.88 metres per m.y. in Strzelecki-5, Toolachee-36 and Mulga-2, respectively). This is related to both the gradual uplift of the area, which prevented the formation of dolomite, and to the lower rate of sedimentation (Figure 19), as shown by thinning of the Namba Formation on the restored isopach map (Figure 12). A very low rate of subsidence in Buyleroo-1 (average 1.17 metres per m.y.) in the central Nappamerri Trough is also related to slow uplift from the east.

During the Early Pliocene (approximately 5.3 Ma), an epeirogeny caused the study area to be a site of erosion and non-deposition. Based on a restored isopach map, it is calculated that the amount of section lost ranges between 15 metres (in Toolachee-36) and 54 metres (in Buyleroo-1) (Table 2). It should be noted that the amount of section lost may have been more, but the paucity of data does not allow confirmation of this much erosion. It is also interpreted that the maximum estimated thickness of sediments eroded during this period was more than 100 metres on the western flank of the Innamincka Dome (Figure 12), related to gradual uplift of the dome. The amount of uplift and erosion was probably more severe in the western Eromanga Basin where up to 500 metres of sediment were eroded on the crest of the Dalhousie/McDills Ridge (Alexander and Jensen-Schmidt, 1995). On the southern margin of the basin 350 metres of uplift and erosion of the northern Flinders Ranges occurred during Miocene time (Foster et al., 1994).

In the Late Pliocene to Quaternary, the basin subsided and sedimentation resumed as fine to coarse-grained siliciclastics were deposited in fluvial and aeolian environments. The rate of subsidence was relatively higher in the Nappamerri Trough and Patchawarra Trough (average 16 metres per m.y.) than Merrimelia Ridge and Murteree-Nappacoongee Ridge (average 12.42 and 5.45 metres per m.y. in Merrimelia-30 and Jena-1, respectively; Figures 14 and 16). An isopach map of the surface to top Namba Formation (sequence T_3-Q; Figure 13) indicates that the thickness of this sequence is less than 10 metres over the M-N Ridge and the Strzelecki and Toolachee fields. Thinning over ridges and highs is related to Late Tertiary and Quaternary structural activity and basement movement along pre-existing structural trends, which are still active today.

IMPLICATIONS FOR PETROLEUM EXPLORATION

Important implications derived from this burial history analysis include: understanding of timing of hydrocarbon source maturity and, the effects of burial history on petroleum reservoir properties. In addition subsidence and sedimentation rates for all 14 modelled wells enabled adjustments to age interpretations based on limited palynological data for the Late Jurassic Birkhead Formation, Adori Sandstone and Westbourne Formation.

Hydrocarbon Source Maturity

During Early Jurassic to Early Cretaceous deposition of the lower non-marine sequence set, sediments subsided at higher rate in the Patchawarra Trough than other parts of the basin..

Some Late Jurassic and Early Cretaceous source rocks reached maturity during the Late Cretaceous, when thick siliciclastic sediments of the Winton Formation were deposited. This can also be supported by evidence of high to very high subsidence and sedimentation rates during this period, as shown by this analysis. However, oil generation commenced according to the depth of burial and the local palaeogeothermal gradient. Moore and Pitt (1984) stated that in the Nappamerri Trough, where palaeotemperature was high, the Late Jurassic source rocks reached the initial stage of maturation in the early Late Cretaceous (about 90-100 Ma), while in other parts of the basin, these rocks reached maturity in Late Cretaceous to Early Tertiary. Kantsler et al. (1986) also believed that the Lower and Middle Jurassic source rocks reached maturity after deposition of Winton Formation, in the Late Cretaceous to Tertiary. Based on data from oil and source maturity, Tupper and Burckhardt (1990) concluded that generation of hydrocarbon in the Eromanga Basin commenced prior to maximum burial depth and the peak expulsion of oil occurred during the Late Cretaceous. Consequently, structures that formed before the Early Tertiary uplift are the best exploration targets. Based on above discussion, generation and migration of petroleum in the Eromanga Basin may be continuing at the present time.

Reservoir Quality

Porosity in the Eromanga Basin reservoir rocks, such as Hutton and Namur Sandstones, is mainly intergranular primary (E. Alexander MESA personal comm., 1996). Moreover, minor secondary porosity is also present in the Hutton Sandstone in southwest Queensland and formed from dissolution of feldspar and lithic fragments (Green et al. 1989). These porosities may have been generated at maximum depth of burial, sometimes during the Early to Late Cretaceous.

Late Jurassic Chronostratigraphy

Using the palynological framework of Price et al. (1985), more than 200 to 250 metres of fine to coarse-grained siliciclastic sediments of the Adori Sandstone, Westbourne Formation and Namur Sandstone were deposited in a very short period of time (about 5 Ma) in the Late Jurassic (Tithonian). However, the subsidence and sedimentation rates, using standard chronostratigraphy, were anomalously high during this period. Taking into account that the central part of Australian continent was not tectonically active during the Early to Middle Jurassic (Veevers, 1984; Veevers and Li, 1991; Veevers et al., 1991). Thus this high sedimentation and subsidence rate is not likely. The spore-pollen biozonation of the Eromanga succession is of low resolution and is difficult to correlate with other regions where radiometric age control is provided. Thus, a revision of absolute age date was necessary to produce a more realistic and consistent lower rate of subsidence and sedimentation. This revision (Table 3), used for reconstruction of the burial history and sedimentation rate charts, illustrates clearly that prior to very rapid deposition in marine environments and high subsidence in the Early to Late Cretaceous, this region was subsiding at a very slow to moderate rate.

CONCLUSIONS

Burial history analysis of the Eromanga Basin in northeast South Australia, using data from 14 key wells in principal structural elements of the basin, leads to the following conclusions:

1. During the Early Jurassic to beginning of the Early Cretaceous, the subsidence rate in the north (Patchawarra Trough) was higher than other parts of the Cooper Basin region.

2. The subsidence rate during the Early to Late Cretaceous was high due to rapid deposition of fine-grained siliciclastic sediments of the marine and upper non-marine successions of the Eromanga sequence set.

3. The Jurassic source rocks of the Eromanga Basin are likely to have reached initial stages of hydrocarbon generation in the late Early to Late Cretaceous, when the subsidence rate was relatively high, and became fully mature in Late Cretaceous to Early Tertiary.

4. Based on reconstruction of the restored isopach maps, the amount of section lost at the Late Cretaceous unconformity ranges from 150 to 440 metres in the Cooper Basin region.

5. The combination of burial history curves and sedimentation rate diagrams can be used to improve the absolute stratigraphic age and correlation in thick, non-marine siliciclastic sequences where biostratigraphic resolution is low.

Table 1. Simplified glossary of subsidence rate descriptors used in this study

Descriptor	Total subsidence rate (metre per m.y.)	Example
low	<5	intracratonic basins (e.g. Cooper, Eromanga and Lake Eyre)
moderate	5-25	intracratonic basins
rapid	26-200	foreland basins (e.g. Officer Basin; Moussavi-Harami and Gravestock, 1995)
very rapid	201-500	rift basins (e.g. Otway basin; Hill, 1995)
Pulsed rapid (transient, short-lived movements)	>500	rift basins (e.g. Otway basin; Hill, 1995)

+

Table 2. Interpretive amount of section lost by erosion at each unconformity.

	Section lost (metre)		
Well Name	Top Eromanga Unconformity	Top Eyre Formation Unconformity	Top Namba Formation Unconformity
Cuttapirrie-1	440	19	54
Jena-1	150	25	22
Merrimelia-30	200	20	35
Moomba-57	200	32	25
Strzelecki-5	250	24	40
Tinga Tingana-1	320	29	26

Table 3. former and revised absolute ages of the lower boundaries of some Late Jurassic formations. The revised ages were used for construction of burial history diagrams

Formation Name	Age (Ma)	Revised age (Ma)
Murta Formation	145	135.5-145
Namur Sandstone	147	145-151
Westbourne Formation	148	151-159
Adori Sandstone	150	159-165
Birkhead Formation	167	165-175

Figure 1. Location of the study area and 14 wells used in burial history analysis.

Figure 2. Generalised stratigraphic column and sequences of the Cooper, Eromanga and Lake Eyre Basins in northeast South Australia.

Figure 3. Restored isopach map of Hutton Sandstone and Poolowanna Formation (Early to Middle Jurassic).

Figure 4. Restored isopach map of Birkhead Formation (Middle to Late Jurassic).

Figure 5. Restored isopach map of Adori Sandstone, Westbourne Formation and Namur Sandstone (Late Jurassic).

Figure 6. Restored isopach map of Murta Formation (Early Cretaceous).

Figure 7. Restored isopach map of Cadna-owie Formation (sequence K_1; Early Cretaceous).

Figure 8. Restored isopach map of Marree Subgroup and Mackenda Formation (sequences K_2 and K_3; Early to Late Cretaceous).

Figure 9. Restored isopach map of Winton Formation (Late Cretaceous).

Figure 10. Restored isopach map of J-K sequence (Jurassic to Cretaceous sequence set).

Figure 11. Restored isopach map of Eyre Formation (Late Paleocene to Middle Ecene).

Figure 12. Restored isopach map of Namba formation (Late Oligocene to Miocene).

Figure 13. Isopach map of Late Pliocene-Quaternary

Figure 14. (a) Burial history of wells Cuttapirrie-1 (Trough) and Merrimelia-30 (Ridge). Solid lines show total subsidence and dashed lines tectonic subsidence. (b) interpretive burial history of wells Cuttapirrie-1 and Merrimelia-30. Parameters in Table 2 have been used for constructions of interpretive diagrams.

Figure 15. (a) Burial history and (b) interpretive burial history of well Moomba-57. Parameters in Table 2 have been used for constructions of interpretive diagram.

Figure 16. (a) Burial history and (b) interpretive burial history of well Jena-1 . Parameters in Table 2 have been used for construction of interpretive diagram.

Figure 17. (a) Burial history and (b) interpretive burial history of well Strzelecki-5. Parameters in Table 2 have been used for construction of interpretive diagram.

Figure 18. (a) Burial history and (b) interpretive burial history of well Tinga Tingan-1. Parameters in Table 2 have been used for construction of interpretive diagram.

Figure 19. Sedimentation rate vs time for six wells, representing different structural elements in the Cooper Basin region. Note, the rate of sedimentation is very high during Early to Late Cretaceous.

REFERENCES

Alexander, E. and Drexel, J.E., 1996. Petroleum Geology of South Australia, Volume II: Eromanga Basin: Petroleum Division, Mines and Energy South Australia.

Alexander, E. and Frears, B., 1995, Petroleum Exploration and Development in South Australia (10th Edition): *Petroleum Division, Mines and Energy South Australia,* 147p.

Alexander, E. and Jensen-Schmidt, B., 1995, Eringa Trough Exploration Opportunity: *Department of Mines and Energy South Australia. Report Book,* 95/36 99p.

Ambrose, G., Suttill, R. and Lavering, I., 1986, The geology and hydrocarbon potential of the Murta Member (Mooga Formation) in the southern Eromanga Basin: in D.I. Gravestock, P.S. Moore and G.M. Pitt (eds.), Contribution to the Geology and Hydrocarbon Potential of the Eromanga Basin. *Geological Society of Australia, Special Publication,* 12:71-84.

Burger, D., 1986, Palynology, cyclic sedimentation, and palaeoenvironments in the Late Mesozoic of the Eromanga Basin: in D.I. Gravestock, P.S. Moore and G.M. Pitt (eds.), Contributions to the Geology and Hydrocarbon Potential of the Eromanga Basin. *Geological Society of Australia, special publication,* 12:53-70.

Callen, R.A., 1981, FROME, South Australia, sheet SH 54-10, *Geological Survey of South Australia,* 1:250,000 Geological Series, Explanatory Notes.

Callen, R.A., 1990, CURNAMONA, South Australia, *Geological Survey of South Australia, 1:250,000 Geological Series, Explanatory Notes,* sheet SH54-14,

Callen, R.A., 1992, Late Cainozoic fluvial sands of the northern Strzelecki Desert-Yandruwantha Sand. *Geological Survey of South Australia, Quarterly Geological Notes,* 121: 2-7.

Callen, R.A., Alley, N.F. and Greenwood, D.R., 1995, Lake Eyre Basin: in, J.F. Drexel and W.V. Preiss (eds.), The Geology of South Australia, Volume 2 - The Phanerozoic. *Geological Survey of South Australia, Mines and Energy South Australia Bulletin,* 54:199-194.

Channon, G.J. and Wood, G.R., 1989, Stratigraphy and hydrocarbon prospectivity of Triassic sediments in the Northern Cooper Basin, South Australia. *Department of Mines and Energy, Confidential Envelope,* 8126 (Unpublished).

Drexel, J.F., Preiss, W.V. and Parker, A.J., 1993, The Geology of South Australia, Volume 1 - The Precambrian. *Geological Survey of South Australia, South Australian Department of Mines and Energy Bulletin* 54.

Eadington, P.J., Hamilton, P.J. and Green, P.M., 1989, Hydrocarbon fluid history in relation to diagenesis in the Hutton Sandstone, southwest Queensland: in B.J. O'Neil (editor), The Cooper and Eromanga Basins, Australia. *Proceedings of the Cooper and Eromanga Basins Conference, Adelaide, 1989, Petroleum Exploration Society of Australia' Society of Petroleum Engineers, Society of Exploration Geophysicists (SA Branches),* pp.601-618.

Foster, D.A., Murphy, J.M. and Gleadow, A.J.W., 1994, Middle Tertiary hydrothermal activity and uplift of the northern Flinders Ranges, South Australia. Insights from apatite fission-track thermochronology. *Australian Journal of Earth Science,* 41:11-17.

Gallagher, K. and Lambeck, K., 1989, Subsidence, sedimentation and sea-level changes in the Eromanga Basin, Australia. *Basin Research,* 2:15-131.

Gatehouse, C.G., 1972, Formation of the Gidgealpa Group in the Cooper Basin. *Australian Oil and Gas Review,* 18:(12)10-15.

Gravestock, D.I., Callen, R.A., Alexander, E.M. and Hill, A.J., 1995, STRZELECKI, *South Australia, Mines and Energy South Australia, 1:250,000 Geological Series - Explanatory Notes.* sheet SH 54-2,

Green, P.M., Eadington, P.J., Hamilton, P.J. and Carmichael, D.C., 1989, Regional diagenesis - an important influence in porosity development and hydrocarbon accumulations within the Hutton Sandstone, Eromanga Basin: in B.J. O'Neil (editor), The Cooper and Eromanga Basins, Australia. *Proceedings of the Cooper and Eromanga Basins Conference, Adelaide, 1989, Petroleum Exploration Society of Australia, Society of Petroleum Engineers, Society of Exploration Geophysicists (SA Branches),* pp. 619-628.

Haq, B.U., Hardenbol, J. and Vail, P.R., 1987, Chronology of fluctuating sea levels since the Triassic. *Science,* 235:1156-1167.

Haq, B.U., Hardenbol, J. and Vail, P.R., 1988, Mesozoic and Cenozoic chronostratigraphy and cycles of sea level change: in C.K. Wilgus, B.S. Hastings, C.G.St.C. Kendall, H.W. Posamentier, C.A. Ross and J.C. Van Wagoner (eds.), Sea-Level Changes: An Integrated Approach. *Society of Economic Palaeontologists and Mineralogists (SEPM), Special Publication.* 42:71-108.

Harland, W.B., Armstrong, R.L., Cox, A.V., Craig, L.E., Smith, A.G. and Smith, D.G., 1990, A Geologic Time Scale - 1989. *Cambridge University Press, Cambridge,* 263p.

Krieg, G.W., Alexander, E.M. and Rogers, P.A., 1995, Jurassic-Cretaceous epicratonic Basins, Eromanga Basin: in J.F. Drexel and W.V. Preiss (eds.), The Geology of South Australia, Volume 2 - The Phanerozoic. *Geological Survey of South Australia, Mines and Energy South Australia, Bulletin,* 54:101-127.

Krieg, G.W., Callen, R.A., Gravestock, D.I. and Gatehouse, C.G., 1990, Geology: in M.J. Tyler, C.R. Twidale, M. Davies and C.B. Wells (eds.), Natural History of the North East Deserts. *Royal Society of South Australia Publications* 6:1-26.

Krieg, G.W., Rogers, P.A., Callen, R.A., Freeman, P.J., Alley, N.F. and Forbes, B.G., 1991, CURDIMURKA. *South Australia, Geological Survey of South Australia, 1:250,000 Geological Series Explanatory Notes,* sheet SH53-8.

Moore, P.S. and Pitt, G.M., 1984. Cretaceous of the Eromanga Basin - implication for hydrocarbon exploration. *APEA Journal,* 24:358-376.

Moore, P.S. and Pitt , G.M., 1985. Cretaceous subsurface stratigraphy of the southwestern Eromanga Basin - a review: in J.M. Lindsay (editor), Stratigraphy, Palaeontology, Malacology. Papers in honour of Dr Nell Ludbrook. *South Australia Department of Mines and Energy,* special publication 5:269-286.

Moore, P.S., Pitt, G.M. and Dettmann, M.E., 1986. The Early Cretaceous Coorikiana Sandstone and Toolebuc Formation: Their recognition and stratigraphic relationship in the southwestern Eromanga Basin: in D.I. Gravestock, P.S. Moore and G.M. Pitt (eds.), Contribution to the Geology and Hydrocarbon Potential of the Eromanga Basin. *Geological Society of Australia, special publication,* 12:97-114..

Morgan, R., 1980. Eustacy in the Australian Early and Middle Cretaceous. *Geological survey of New South Wales Bulletin 27.*

Morton, J.G.G., 1987. Post Cretaceous structure of the Cooper Basin region in South Australia and its relevance to petroleum migration and entrapment. *South Australia Department of Mines and Energy. Report Book,* 81/83.

Moussavi-Harami, R and Gravestock, D.I., 1995. Burial history of the eastern Officer Basin, South Australia. *APPEA Journal,* 35:307-320.

Ozimic, S., 1986. The geology and petrophysics of the Toolebuc Formation and its time equivalents, Eromanga and Carpentaria Basins. in D.I. Gravestock, P.S. Moore and G.M. Pitt (eds.), Contribution to the Geology and Hydrocarbon Potential of the Eromanga Basin. *Geological Society of Australia, special publication,* 12:119-138.

Paine, A.G.L. (editor), 1992. Australia, evolution of a continent. *Bureau of Mineral Resources, Paleogeographic Group, Australia.*

Paton, I.M., 1986. The Birkhead Formation - a Jurassic petroleum reservoir: in D.I. Gravestock, P.S. Moore and G.M. Pitt (eds.) Contribution to the Geology and Hydrocarbon Potential of the Eromanga Basin. *Geological Society of Australia, special publication,* 12:119-138.

Price, P.L., Filatoff, J., Williams, A.J., Pickering, S.A. and Wood, G.R., 1985. Late Paleozoic and Mesozoic palyno-stratigraphical units. *CSR Oil and Gas Division, palynology facility report,* 274/25 (unpublished).

Sclater, J.G. and Christie, P.A.F., 1980. Continental stretching: An explanation of the post Mid-Cretaceous subsidence of the Central North Sea Basin. *Journal of Geophysical Research,* 85:3711-3739.

Shaw, R.D., 1991. Tertiary structuring in southwest Queensland: implication for petroleum exploration. *Exploration Geophysics,* 22:339-344.

Sherwood, N.R. and Cook, A.C., 1986. Organic matter in the Toolebuc Formation: in D.I. Gravestock, P.S. Moore and G.M. Pitt, Contributions to the Geology and Hydrocarbon Potential of the Eromanga Basin. *Geological Society of Australia, Special Publication,* 12:255-266.

Tupper, N.P. and Burckhardt, D.M., 1990, Use of the methylphenanthrene index to characterise expulsion of Cooper and Eromanga Basin oils: *APEA Journal,* 30:373-385.

Veevers, J.J. (editor), 1984. Phanerozoic Earth History of Australia. *Oxford Geological Sciences Series, 2, Clarendon Press, Oxford,* 418p.

Veevers, J.J., Powell, C. McA and Roosts, S.R., 1991. Review of seafloor spreading around Australia. I. Synthesis of the patterns of spreading. *Australian Journal of Earth Sciences,* 38:373-389.

Veevers, J.J. and Li, Z.X., 1991. Review of seafloor spreading around Australia. II. Marine magnetic anomaly modelling. *Australian Journal of Earth Sciences*, 38:391-408.

Wiltshire, M.J., 1989. Mesozoic stratigraphy and palaeogeography, eastern Australia: in B.J. O'Neil (editor), The Cooper and Eromanga Basins, Australia: Proceedings of the Cooper and Eromanga Basins Conference, Adelaide, 1989. *Petroleum Exploration Society of Australia, Society of Petroleum Engineers, Australian Society of Exploration Geophysicists (SA branches),* pp.279-291.

Wopfner, H., 1974. Post-Eocene history and stratigraphy of northeastern South Australia. *Royal Society of South Australia, Transactions,* 98:1-12.

Wopfner, H. and Cornish, B.E., 1967. S.A.G. Fortville No. 3, Well Completion Report; *Geological Survey of South Australia, Report of Investigation,* No.29:61P.

Wopfner, H., Freytag, I.B. and Heath, G.R., 1970. Basal Jurassic-Cretaceous rocks of western Great Artesian Basin, South Australia: Stratigraphy and environment. *American Association of Petroleum Geologists Bulletin,* 54:383-416.

Wopfner, H., Callen, R. and Harris, W.K., 1974. The Lower Tertiary Eyre Formation of the southwestern Great Artesian Basin. *Journal of the Geological Society of Australia,* 21:17-51.

Zhou, S., 1989. Subsidence history of the Eromanga Basin, Australia: in B.J. O'Neil (editor), The Cooper and Eromanga Basins, Australia. *Proceedings of the Cooper and Eromanga Basins Conference, Adelaide, 1989, Petroleum Exploration Society of Australia, Society of Petroleum Engineers, Australian Society of Exploration Geophysicists (SA branches),* pp.329-335.

BURIAL HISTORY OF THE EROMANGA BASIN IN NORTHEAST SOUTH AUSTRALIA

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ABSTRACT

The intracratonic Eromanga Basin of central Australia was formed during the Early Jurassic, approximately 193 m.y. ago. The southwestern portion of the Eromanga Basin in South Australia contains four unconformity-bounded sequence and sequence set, from Jurassic to Quaternary in age. the thickness of sediments in the study area range from less than 1200 metres in the south to 2200 metres in the north (Patchawarra and Napamerri troughs). Burial history is interpreted from a series of diagrams generated from well data in the key tectonic and stratigraphic elements of the Cooper Basin region in northeast South Australia. During the Early Jurassic to beginning of the Early Cretaceous, the subsidence rate was higher in the north (Patchawarra Trough) than south (Tinga Tingana Trough). Differences in subsidence rates are related to sediment loading and compaction. During the Early Cretaceous, subsidence in the northeast created more accommodation space for marine transgression from northeast into South Australian portion of the Eromanga Basin. From Early to Late Cretaceous, the subsidence rate in the study area was high, probably due to rapid deposition of fine-grained siliciclastic sediments of the marine and non-marine succession, as well as tectonic subsidence. During the Tertiary to Quaternary, subsidence rates were low to moderates due to sediment loading rather than tectonic sinking. The Jurassic source rocks of the Eromanga Basin are likely to have reached initial stages of hydrocarbon generation in the late Early to Late Cretaceous, when the subsidence rate was relatively high, and became fully mature in Late Cretaceous to Early Tertiary