EARLY CRETACEOUS / LATEST JURASSIC PALYNOLOGY REVIEW OF THE VICTORIAN OTWAY BASIN

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1 SUMMARY

Existing palynological data from 607 previous samples (plus 19 new samples reported herein) in 27 wells in the Victorian part of the Otway Basin are systematically reviewed. These have all been assigned to the established palynological zonation as summarised by Morgan *et al* (1995), and the assignments provide a consistent framework for correlation. Finer resolution at least on a local scale may be possible, and other palynological events are listed well by well to be tested.

2 INTRODUCTION

2.1 Project Brief

This work was initiated by Ciaran Lavin and Mike Woollands of the Department of Natural Resources and Environment, Victoria. The aim was for an experienced palynologist to review the existing palynology data and provide an internally consistent interpreted data set for reliable correlation and so to encourage petroleum explorers in Victoria.

2.2 Previous Work

The Early Cretaceous palynological framework has evolved to its present form progressively. A firm base was laid by Dettmann (1963), evolving through Evans (1966) and Dettmann and Playford (1969) to its present form in Dettmann (1986), largely based on Shell oil exploration wells from Victoria. Morgan, working mostly for Ultramar (later SAGASCO, now Boral) on South Australian oil wells modified the pan-Australian zonation of Helby, Morgan and Partridge (1987) as in Morgan (1986) to its present form in Morgan et al (1995). Recent attempts to increase resolution have resulted in the numerical assemblage zonation approach of Rowett (1996) and the new datums approach of Price (1996).

All of these schemes owe much to those that have gone before, with most of the correlation events in common. They can therefore be easily tabulated against each other as in Figure 1, taken from Morgan et al (1996).

Clearly, different authors place more trust in some events than others, based on their own experience and this results in differences between the schemes. Differences in experience can include geographic area studied (which will reflect palaeogeographic floral differences and local geology, including the extent of any unconformities), sampling (sample density varies widely according to the philosophy of the operators), and extent of experience (years spent and numbers of samples studied). Thus the high precision work of one author may work well in densely sampled sections in a small geographic area, but may not work basin wide.

In particular, Price (1996) has suggested some other correlation events (Figure 2, herein), but I have not found them to be of wide application and so have not used them herein. They are, however, identified in this report so that they can be further evaluated. Their limited use herein may be caused by the vintage of much of the data, or real problems with these events.

The numerical approach of Rowett (1966) has not been adopted herein as it relies on quantitative data and most of the data reviewed herein is qualitative.

Complicating factors in this basin include the non-marine nature of the sections (forcing the zonation to be based on terrestrial plant pollen and spores which exhibit facies control imposed by the palaeogeographic distribution of the parent plants), unfavourable sandy and barren lithologies in much of the Crayfish Group (resulting in wide spaced samples) containing monotonous low diversity fluvial microfloras, and the large angular unconformity at top Crayfish Group level (removing unknown amounts of section at many locations thus making it difficult for palynologists to evaluate possible useful events).

3 APPROACH HEREIN

Species lists for every sample were reviewed, although data quality is highly variable with quantitative data rare.

For zonation purposes (see Tables 1a-27a) important species are listed for every sample, key datums (including those of Price 1996) identified, and zones assigned according to the scheme of Morgan et al (1996). Zone intervals are summarized for each well in Tables 1b-27b), and these form the basis for regional correlation. Confidence levels are given as below, with 0 giving highest confidence and 4 giving lowest confidence.

0 = Multiple specimens of zone markers in core or swc.
1 = Few or single specimens of zone markers, or accessory zone markers in core or swc.
2 = No zone markers in swc or core. Samples are assigned on the absence of zone markers seen in the adjacent sample.
3 = Cuttings based interval top.
4 = Cuttings based interval base.
? = Very low confidence usually explained by discussion notes.

For palaeoenvironment purposes (see Tables 1a - 27a), content and diversity data were assembled separately for spores, pollen, saline algae and freshwater algae, and environments assigned according to Figure 3. These palaeoenvironmental critera

have been developed herein but draw on the Triassic environmental work of Bint and Helby (1988).

Where data quality precludes valid conclusions, question marks (?) are used in Tables 1-27.

4 NEW SAMPLES

Raw data for the 19 new samples herein is presented in Checklist format as Appendix 1. The samples from

Ballangeich-1	(1)
Bus Swamp-1	(1)
Greenslopes-1	(1)
Hawkesdale-1	(6)
Woolsthorpe-1	(2)
Casterton-1	(3)
Heathfield-1	(3)
Pretty Hill-1	(1)

are clearly marked in Tables 1a-27a, and their assignment discussed in the same format as the existing samples.

5 RECOMMENDATIONS

On a log correlation panel of the study wells, it would be useful to estimate lost section on the top Crayfish Group unconformity from seismic control. An estimate of section lost both from the base Eumeralla Formation and top Crayfish Group would help evaluate the current palynological datums and the suggested new ones.

Many of the older wells would benefit from new data generation especially to test some of the suggested new events. Multiple samples from conventional cores would minimise facies limitations and such cores exist for older wells like Heathfield-1, Casterton-1, Tullich-1, Eumerall-1, and Fergusons Hill-1. It is unfortunate that many of the older Dettmann wells cannot be restudied as the microscope slide sets were lost in the Brisbane flood many years ago.

6 REFERENCES

Alley, N.F. (1993) Palynological dating and correlation of samples from Bus Swamp-1, Otway Basin, Victoria SADME unpubl. rept. No. 93/43

Archer, V. (1983) Palynological report on samples from the Greenbanks-1 and Hotspur-1 wells, Otway Basin, GSV unpubl. report.

Bint, A.N. and Helby, R. (1988) Upper Triassic palynofacies and environmental interpretations for the Rankin Trend, northern Carnarvon Basin, W.A. In Proceedings Northwest Shelf Symposium Perth WA 591-598

Burger, D. (1993) Palynological examination of DEM Bus Swamp-1 stratigraphic hole, Otway Basin, Victoria B.M.R. unpubl. report.

Dettmann, M.E. (1963) Upper Mesozoic microfloras from south eastern Australia Proc. Roy. Soc. Vic. 77, 1-148

Dettmann, M.E. (1964a) Palynological report on sidewall cores from F.B.H. Fergusons Hill-1 well, Otway Basin, unpubl. rept.

Dettmann, M.E. (1964b) Palynological report on Hawkesdale-1 well, 1245 - 5690 feet unpubl. rept.

Dettmann, M.E. (1964c) Further palynological observations of F.B.H. Eumeralla-1 and F.B.H. Pretty Hill-1 wells unpubl. rept.

Dettmann, M.E. (1964d) Palynology report on F.B.H. Fergusons Hill No. 1 and F.B.H. Sherbrook No. 1 wells unpubl. rept.

Dettmann, M.E. (1965a) Palynological report on ODNL Anglesea-1 well, Otway Basin, unpubl rept.

Dettmann, M.E. (1965b) Palynological report on Planet Heathfield-1, Casterton-1 and Tullich-1 wells, Otway Basin, unpubl. rept.

Dettmann, M.E. (1967) Palynological report on Shell Nerita-1 well 2106 - 6456 ft., Otway Basin unpubl. rept.

Dettmann, M.E. (1968a) Palynological report of Interstate/Shell Garvoc-1 well 3076 - 4964 ft., Otway Basin, unpubl. rept.

Dettmann, M.E. (1968b) Palynological report on Interstate/Shell Purrumbete-1 well 1602 - 5925 ft., Otway Basin, unpubl. rept.

Dettmann, M.E. (1968c) Palynological report on Interstate Woolsthorpe-1 well 4300 - 6380 ft., Otway Basin, unpubl. rept.

Dettmann, M.E. (1969) Palynological zonation of Lower Cretaceous sediments of the Otway Basin, Victoria unpubl. rept.

Dettmann, M.E. (1970a) Palynology of core 25 Eumeralla-1, Otway Basin, unpubl. rept.

Dettmann, M.E. (1970b) Palynological report, Moyne Falls-1, 1289 - 3050 ft., Otway Basin, unpubl reprt.

Dettmann, M.E. (1984) Palynological report on Stoneyford-1, Otway Basin, unpubl. rept.

Dettmann, M.E. (1986) Early Cretaceous palynofloras of subsurface strata correlative with the Koonwarra Fossil Bed, Victoria Assoc. Australas. Paeontols., Mem. 3, 79-110

Dettmann, M.E. & Playford, G. (1969) Palynology of the Australian Cretaceous : a review In Stratigraphy and Palaeontology : essays in honour of Dorothy Hill (Ed Campbell, K.S.W.) 74-210 (ANU Press, Canberra)

Dudgeon, M.J. & Hos, D.P.C. (1986) Palynology Source Rocks and Maturity in Greenslopes-1, 1367 - 2562 m, Otway Basin, unpubl. rept.

Evans, P.R. (1966) Mesozoic stratigraphic palynology in Australia Australas. Oil & Gas J. 12, 58-63

Helby, R., Morgan, R. and Partridge, A.D. (1987) A palynological zonation of the Australian Mesozoic Australas. Assoc. Palaeontols. Mem. 4 1-94

Islam, A. (1987) Palynological report on Ballengeich-1, Otway Basin, unpubl. rept.

MacPhail, M.K. (1989a) Palynological analysis of samples from Angelesea-1, Torquay Sub Basin, Otway Basin, unpubl. rept.

MacPhail, M.K. (1989b) Palynological analysis of samples from Nerita-1A, Torquay Sub Basin, Otway Basin, unpubl. rept.

Morgan, R. (1986a) Otway Basin oil drilling : A selective palynology review, Otway Basin, unpubl. rept.

Morgan, R. (1986b) Palynology of Beach Lindon-1, onshore Otway Basin, Australia unpubl. rept.

Morgan, R. (1987a) Palynology of Anglesea-1, Torquay Embayment, Bass Basin, Australia, Otway Basin, unpubl. rept.

Morgan, R. (1987b) Palynology of Tirrengowa-1, Otway Basin, unpubl. rept.

Morgan, R. (1987c) Palynology of Minora Windermere-1, onshore Otway Basin, Victoria, unpubl. rept.

Morgan, R. (1988a) New palynology of Woolsthorpe-1, onshore Otway Basin, Victoria, unpubl. rept.

Morgan, R. (1988b) New palynology of Casteron-1, onshore Otway Basin, Victoria, unpubl. rept.

Morgan, R. (1988c) New palynology of Eumeralla-1 onshore Otway Basin, Victoria, unpubl. rept.

Morgan, R. (1988d) New palynology of North Eumeralla-1, onshore Otway Basin, Victoria, unpubl. rept.

Morgan, R. (1988e) New palynology of Pretty Hill-1, onshore Otway Basin, Victoria, unpubl. rept.

Morgan, R. (1989a) Palynology of Minora Windermere-2, onshore Otway Basin, Victoria, unpubl. rept.

Morgan, R. (1989b) Palynology of 13 selected cores from Tullich-1, Casterton-1 and Heathfield-1, Otway Basin, Victoria, unpubl. rept.

Morgan, R. (1990a Palynology of Gas and Fuel McEachern-1, Otway Basin, Australia, unpubl. rept.

Morgan, R. (1990b) Followup palynology of Gas and Fuel McEachern-1, Otway Basin, Victoria unpubl. rept.

Morgan, R. (1991a) Palynology of Warracbarunah-2, Otway Basin, unpubl. rept.

Morgan, R. (1991b) Palynology of Victorian Geological Survey Mocamboro-11, Otway Basin, Victoria, GSV unpubl. rept.

Morgan, R. (1993a) Updated palynology of Bus Swamp-1, Otway Basin, Victoria, Australia, GSV unpubl. rept.

Morgan, R. (1993b) New cuttings palynology of Tirrengowa-1 and Stoneyford-1, Otway Basin, Australia unpubl. rept. for GFE

Morgan, R. (1994) Palynology of six samples, Otway Basin, Victoria, Australia unpubl. rept. for Vic DME

Morgan, R., Alley, N.F., Rowett, A.I. and White, M.R., (1995) Chapter 6 ; Biostratigraphy In Morton and Drexel Eds. Petroleum Geology of South Australia, Volume 1, Otway Basin, unpubl. rept. book 95/12, 95-101

Price, R.L. (1996) A review of the palynostratigraphy of some Otway Basin wells unpubl. APG Consults rept. 264/24 for OCA

Rowett, A.I. (1996) Crayfish Group biostratigraphy study, Stage 11 report unpubl. MESA rept. book 95/44

Wilschut, J.G. (1974a) Palynological report, North Eumeralla-1 well completion report (Appendix 5), Otway Basin, unpubl. rept.

Wilschut, J.G. (1974b) Palynological report, Ross Creek-1 well completion report (Appendix 5), Otway Basin, unpubl. rept.

OTWAY BASIN NOMENCLATURE

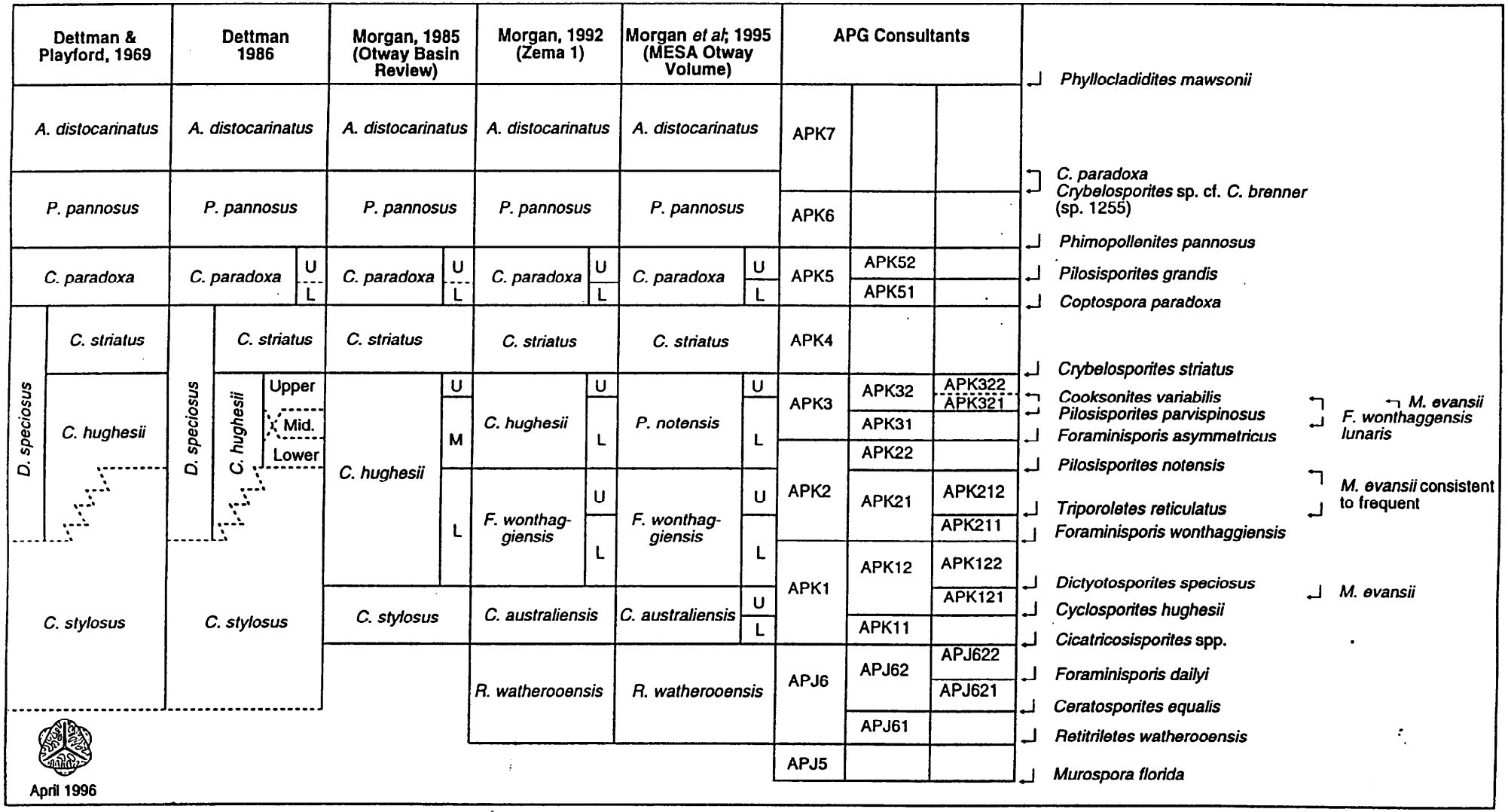

FIGURE 2 Otway Basin Early Cretaceous Zones and Events from Price (1966)

	SPORE CONTENT	SPORE DIVERSITY	SACCATE CONTENT	SACCATE DIVERSITY	FRESH ALGAE	SALINE ALGAE
LAKE	HIGH-MODERATE	MODERATE-LOW	MODERATE	LOW-MODERATE	COMMON 3+% *	NIL
SWAMP	HIGH 75% *	LOW *	LOW	LOW - MODERATE	CONSISTENT 1-<3%	NIL
SWAMP MARGIN	HIGH >50% *	HIGH *	LOW - MODERATE	LOW-MODERATE	MINOR <1%	NIL
FLOODPLAIN	HIGH-MODERATE	HIGH *	HIGH *	HIGH	NIL	NIL
CHANNEL	LOW	LOW *	HIGH *	LOW	MINOR-NIL	NIL
BRACKISH MARINE	VARIABLE	VARIABLE	VARIABLE	VARIABLE	MINOR-NIL	PRESENT *

* = OVER-RIDING CRITEREON FOR ENVIRONMENT TYPE

FIGURE 3 PALAEO-ENVIRONMENTAL FRAMEWORK

VICTABLE.XLS

TABLE 1a KEY DATA ANGLESEA-1 (Dettmann 1965a qualitative and only includes her key species, Morgan 1987a semiquantitative, MacPhail 1989a qualitative)
Palynomorphs carbonised and low reliability below 4800 ft.

DEPTH	TYPE	ZONE	KEY DATUMS	COMMENTS	SPORE CONTENT/ DIVERSITY	POLLEN CONTENT/ DIVERSITY	SALINE ALGAE %	FRESH ALGAE %	ENVIRONMENT	REFERENCE
588.6-584.7m (1931-51ft)	CORE 7	C. striatus	top P. notensis without C. paradoxa	C. australiensis, P. notensis, F. asymmetricus, P. parvispinosus, C. striatus present. Data incomplete, key species only.	?	?	?	?	?	Dettmann (1965a)
588.6-594.7m (1931-51ft)	CORE			abundant C. australiensis, T. reticulatus, C. striatus present	?/16	?/6	nil	nil	uncertain (no quantitative data)	MacPhail (1989a)
591.0m (1939 ft)	CORE	C. striatus		C. australiensis common, F. asymmetricus, C. striatus, D. filosus present	high/18	low/4	nil	rare	swamp margin	Morgan (1987a)
678.2-684.3m (2225-45ft)	CORE 8	indeterminate		C. australiensis, F. asymmetricus present No detailed data	?	?	?	?	?	Dettmann (1965a)
678.2m (2225 ft)	CORE	indeterminate		C. australiensis, F. wonthaggiensis, P. parvispinosus, F. dailyi present	mod/17	low/7	nil	nil	swamp margin/floodplain	Morgan (1987a)
696.8-699.5m (2286-95ft)	CORE 9	C. striatus		C. australiensis, P. notensis, F. asymmetricus, T. reticulatus, C. striatus. No detailed data.	?	?	?	?	?	Dettmann (1965a)
779.4-782.4m (2557-67ft)	CORE 10	C. striatus		C. australiensis, C. striatus present No detailed data	?	?	?	?	?	Dettmann (1965a)
781.8m (2565 ft)	CORE	C. striatus		C. australiensis, F. asymmetricus, C. striatus, F. dailyi present	high/19	low/6	nil	rare	swamp margin	Morgan (1987a)
871.7-874.8m (2860-70ft)	CORE 11	indeterminate		C. australiensis, P. parvispinosus present No detailed data	?	?	?	?	?	Dettmann (1965a)
872.3m (2862 ft)	CORE	C. striatus	base P. parvispinosus base C. striatus in Morgan data	C. striatus, C. australiensis, F. asymmetricus, F. wonthaggiensis, P. parvispinosus present	high/17	high/4	nil	rare	floodplain	Morgan (1987a)
962.6-965.6m (3158-68ft)	CORE 12	C. striatus	base C. striatus in Dettmann data	C. australiensis, D. speciosus, F. asymmetricus, T. reticulatus, C. striatus present No detailed data.	?	?	?	?	?	Dettmann (1965a)
962.6-965.6m (3158-68ft)	CORE	C. striatus		C. striatus, C. australiensis abundant, F. wonthaggiensis, F. asymmetricus, T. reticulatus present	?/16	?/4	nil	nil	?	MacPhail (1989a)

TABLE 1a KEY DATA ANGLESEA-1 (Dettmann 1965a qualitative and only includes her key species, Morgan 1987a semiquantitative, MacPhail 1989a qualitative)
Palynomorphs carbonised and low reliability below 4800 ft.

1054.6-1056.8m (3460-70ft)	CORE 13	indeterminate		No detailed data	?	?	?	?	?	Dettmann (1965a)
1135.1-1138.1m (3724-34ft)	CORE 14	indeterminate		No detailed data	?	?	?	?	?	Dettmann (1965a)
1222.5-1225.6m (4011-21ft)	CORE 16	indeterminate		No detailed data	?	?	?	?	?	Dettmann (1965a)
1222.5-1225.6m (4011-21ft)	CORE	?C. striatus (MacPahil) (specimens need checking)	base T. reticulatus (MacPhail)	abundant C. striatus claimed by MacPhail, C. australiensis abundant T. reticulatus, P. notensis, P. parvispinosus present	?/17	?/2	nil	nil	?	MacPhail (1989a)
1225.0m (4019 ft)	CORE	indeterminate		C. australiensis present, poor yield	low/8	low/4	nil	nil	uncertain ?channel (barren)	Morgan (1987a)
1287.2-1290.5m (4223-34ft)	CORE 17	indeterminate		C. australiensis present No detailed data	?	?	?	?	?	Dettmann (1965a)
1376.8-1379.8m (4517-27ft)	CORE 18	P. notensis (or younger)	base P. notensis (Dettmann)	C. australiensis, P. notensis present No detailed data	?	?	?	?	?	Dettmann (1965a)
1468.8-1471.9m (4819-29ft)	CORE 19	?P. notensis (on F. asymmetricus)		D. speciosus, C. australiensis, F. asymmetricus present No detailed data	?	?	?	?	?	Dettmann (1965a)
1469.4m (4821 ft)		?P. notensis (on F. asymmetricus)	base F. asymmetricus C. hughesi (Morgan data)	deepest good data in Morgan (1989) due to carbonisation. C. australiensis, C. hughesi, F. asymmetricus, present.	high/16	high/5	nil	nil	floodplain	Morgan (1987a)
1573.1-1576.1m (5161-71ft)	CORE	indeterminate (carbonised)		No data here or to TD in Dettmann report due to post-mature carbonisation	?	?	?	?	?	Dettmann (1965a)
1573.1-1576.1m (5161-71ft)	CORE	?C. striatus (MacPahil) (specimens need checking)	base C. striatus claimed by MacPhail but other Crybelosporites spp. can be confused	C. striatus claimed by MacPhail. C. australiensis present.	?/11	?/2				MacPhail (1989a)
1901.6m (6239 ft)	CORE	indeterminate		totally barren of palynomorphs due to carbonisation	nil (?)	nil (?)	nil (?)	nil (?)	?	Morgan (1987a)

TABLE 1a KEY DATA ANGLESEA-1 (Dettmann 1965a qualitative and only includes her key species, Morgan 1987a semiquantitative, MacPhail 1989a qualitative)
Palynomorphs carbonised and low reliability below 4800 ft.

1928.5-1934.5m	CORE	?P. notensis Zone on	base F. asymmetricus	C. australiensis abundant (MacPhail)	?/12	?/1	?	?	?	MacPhail (1989a)
(6327-47ft)		F. asymmetricus		possible C. striatus claimed by (MacPhail)						
		?C. striatus of ?C. striatus and		F. asymmetricus present (MacPhail)						
		abundant C. australiensis								
2299.4-2301.2m	CORE	?C. australiensis		C. australiensis present	?/6	?/0	?	?	?	MacPhail (1989a)
(7544-50ft)										
2395.4m	CORE	indeterminate		C. australiensis, some other nondescript forms	low/7	low/3	nil (?)	nil (?)	indeterminate	Morgan (1987a)
(7859 ft)		Cretaceous ??P. notensis		escaped carbonisation. C. australiensis						
		or ?C. australiensis		favours P. notensis Zone but is not						
				conclusive. Can be no older than						
				C. australiensis Zone.						
2648.7-2653.1m	CORE	?C. australiensis		C. australiensis fragment, C. equalis	?/3	?/1			?	MacPhail (1989a)
(8690-07ft)										
2652.1m	CORE	indeterminate		very few bland taxa escaped	v low/2	v low/1	nil (?)	nil (?)	indeterminate	Morgan (1987a)
(8701 ft)				carbonisation						
2790.7-2796.8m	CORE	indeterminate		Very poor. K. scaberis, C. equalis present.	?/8	?/0			?	MacPhail (1989a)
(9156-76ft)										
2938.6-2943.1m	CORE	indeterminate		Very poor. Gleicheniidites, C. equalis present.	?/7	?/2			?	MacPhail (1989a)
(9641-56ft)										
3081.7-3087.8m	CORE	?? P. notensis	base C. australiensis	Very poor. C. australiensis fragment present.	?/7	?/1			?	MacPhail (1989a)
(10045-65ft)		?C. australiensis								
3087.8m	CORE	indeterminate	base C. equalis	Very few bland taxa escaped carbonisation	v low/10	v low/2	nil (?)	nil (?)	indeterminate	Morgan (1987a)
(10065 ft)		Jurassic-Cretaceous		C. torosa, K. scaberis, C. equalis, C. clivosus						
		Middle R. watherooensis Zone								
		or younger on C. equalis.								

TABLE 1b SUMMARY SHEET, ANGLESEA-1

BASIN: OTWAY (TORQUAY EMBAYMENT)

WELL NAME: ANGLESEA-1

AGE		PALYNOLOGICAL ZONES	HIGHEST DATA				LOWEST DATA			
			Preferred Depth	Rtg	Alternate Depth	Rtg	Preferred Depth	Rtg	Alternate Depth	Rtg
Early Cret.	Albian	P. pannosus								
		upper C. paradoxa								
		lower C. paradoxa								
		C. striatus	588	1			965	0	1576	?
	Aptian	upper P. notensis	1379	?						
		lower P. notensis					1469	?	1934	?
	late Neoc.	upper F. wonthaggiensis								
		lower F. wonthaggiensis								
	early Neoc.	upper C. australiensis	2301	?						
		lower C. australiensis								
Late Jurassic	Tithonian	upper R. watherooensis								
		middle R. watherooensis								
		lower R. watherooensis								

Data below 965 m is ambiguous, and data below 1463.0 m is of low reliability due to carbonisation. MacPhail records C. striatus Zone down to 1576.1 m but Morgan and Dettmann do not. Re-examination of the MacPhail preparations is required, or reprocessing of samples.
P. notensis Zone is recognised here on Morgan and Dettmann data using base F. asymmetricus but could be at 1934 m on base F. asymmetricus using MacPhail data.
C. australiensis Zone is recognised on C. australiensis below F. asymmetricus, but C. australiensis is very rare below the P. notensis Zone, and it may all be younger.

TABLE 2a KEY DATA, BALLENGEICH-1 (Islam 1987 data qualitative)

DEPTH	TYPE	ZONE	KEY DATUMS	COMMENTS	SPORE CONTENT/ DIVERSITY	POLLEN CONTENT/ DIVERSITY	SALINE ALGAE %	FRESH ALGAE %	ENVIRONMENT	REFERENCE
810m	cutts	P. notensis (possibly base C. striatus) on top C. hughesi. Other elements most likely caved.	top C. hughesi	C. australiensis, C. hughesi, D. speciosus, F. asymmetricus, F. wonthaggiensis, P. notensis, P. parvispinosus, T. reticulatus together suggest P. notensis Zone. P. grandis and T. trioreticulosus suggest C. paradoxa Zone caved. C. striatus suggests C. striatus Zone caved, or that C. striatus with C. hughesi indicates basal C. striatus Zone.	?/42 (?caved)	?/7	nil	nil	?	Islam (1987)
860m	cutts	P. notensis	base consistent F. asymmetricus (but in (cutts) base caved P. grandis	C. australiensis, C. hughesi, D. speciosus, F. asymmetricus, P. notensis, P. parvispinosus, T. reticulatus, C. stylosus plus caved C. striatus and P. grandis all present.	?/42 (?caved)	?/9	nil	nil	?	Islam (1987)
865m	cutts	P. notensis		C. australiensis, C. hughesi, D. speciosus, P. notensis, P. parvispinosus, T. reticulatus plus caved C. striatus all present.	?/45 (?caved)	?/7	nil	nil	?	Islam (1987)
1200m	cutts	?F. wonthaggiensis	top R. watherooensis base T. reticulatus	C. australiensis, C. hughesi, D. speciosus, F. asymmetricus, F. wonthaggiensis, P. notensis, P. parvispinosus, T. reticulatus, R. watherooensis plus caved C. striatus, possibly caved F. asymmetricus all present.	?/40 (?caved)	?/12	nil	nil	?	Islam (1987)
1225-30m NEW SAMPLE HEREIN	cutts	?F. wonthaggiensis		Cyathidites and F. similis common with C. australiensis, D. speciosus, F. dailyi, F. wonthaggiensis, P. notensis, P. parvispinosus, R. watherooensis all present but many probably caved.	53%/22	47%/7	nil	trace	?floodplain (?caved)	NEW SAMPLE HEREIN
1240m	cutts	?F. wonthaggiensis		C. australiensis, C. hughesi, F. wonthaggiensis, P. notensis, P. parvispinosus, C. stylosus, R. watherooensis all present.	?/41 (?caved)	?/14	nil	nil	?	Islam (1987)
cuttings are all very similar with top ranges the only valid criterea. I do not accept the zonal criterea suggested by Islam (1987) in the WCR.										
Lack of quantitative or semi-quantitative data makes environmental conclusions impossible.										

TABLE 2b SUMMARY SHEET, BALLANGEICH-1

BASIN: OTWAY BASIN

WELL NAME: BALLENGEICH-1

AGE		PALYNOLOGICAL ZONES	HIGHEST DATA				LOWEST DATA			
			Preferred Depth	Rtg	Alternate Depth	Rtg	Preferred Depth	Rtg	Alternate Depth	Rtg
Early Cret.	Albian	P. pannosus								
		upper C. paradoxa								
		lower C. paradoxa								
		C. striatus								
	Aptian	upper P. notensis	810	3						
		lower P. notensis					865	4		
	late Neoc.	upper F. wonthaggiensis	1200	?			1200	?		
		lower F. wonthaggiensis	1225	?			1240	?		
	early Neoc.	upper C. australiensis								
		lower C. australiensis								
Late Jurassic	Tithonian	upper R. watherooensis								
		middle R. watherooensis								
		lower R. watherooensis								

1. Cuttings only make crisp zonation impossible, and many key markers are caving heavily.
2. upper F. wonthaggiensis is tentatively suggested on top R. watherooensis and base T. reticulatus.
3. lower F. wonthaggiensis is tentatively suggested on F. wonthaggiensis below T. reticulatus, but both assignments are unreliable.

TABLE 3a KEY DATA, BUS SWAMP-1 (Alley 1993 data qualitative, Burger 1993 data qualitative, Morgan 1993a data quantitative)

DEPTH	TYPE	ZONE	KEY DATUMS	COMMENTS	SPORE CONTENT/ DIVERSITY	POLLEN CONTENT/ DIVERSITY	SALINE ALGAE %	FRESH ALGAE %	ENVIRONMENT	REFERENCE
210-15m	cutts	lower C. paradoxa	top D. speciosus	Cyathidites, Falcisporites, M. antarticus common	40%/35 spp	55%/9 spp	nil	5%	non-marine lake	Morgan (1993a)
				P. grandis and B. holodictyus presumed caved					(freshwater algae)	
				C. striatus, consistent						
				D. speciosus, C. paradoxa very rare						
300.0m	swc	lower C. paradoxa	base C. paradoxa	Falcisporites, Cyathidites, O. wellmanii	49%/12	46%/7	nil	5%	non-marine lake	Morgan (1993a)
				common						
				very lean, C. paradoxa rare						
465.0m	swc	apparently C. striatus, could be	base F. asymmetricus	Falcisporites, O. wellmanii dominant	45%/12	48%/5	trace	1%	brackish	Morgan (1993a)
		upper P. notensis	without D. speciosus	very lean, absence of C. striatus						
				not definitive, oldest F. asymmetricus						
657.0m	swc	indeterminate		very poor yield						Burger (1993)
756.0m	swc	lower P. notensis	top C. variabilis	Cyathidites common, C. variabilis, C. hughesi	64%/21	35%/4	nil	1%	swamp margin	Morgan (1993a)
			top C. hughesi (Morgan)	present						
				top and base F. reticulowonthaggiensis						
830.0m	swc	lower P. notensis		P. notensis, T. reticulatus, P. parvispinosus,	dom/43	freq/8	nil	trace	swamp margin	Alley (1993)
				common						
				F. wonthaggiensis, C. variabilis, C. hughesi						
				present						
830-35m	cutts	P. notensis		F. wonthaggiensis, D. speciosus, P. notensis	dom/36	freq/8	nil	nil	swamp margin	Alley (1993)
									(diverse dominant spores)	
836.0m	Core 1	lower P. notensis		P. notensis, D. speciosus	?/21	?/3	nil	trace	swamp margin	Burger (1993)
				P. parvispinosus, ?F. wonthaggiensis present					(high spore content	
									and diversity)	
862.0m	swc	lower P. notensis	base P. notensis Morgan	Cyathidites, Retitriletes, Falcisporites common	high/24	mod/8	nil	nil	floodplain/swamp margin	Burger (1993)
			base P. notensis Burger	C. australiensis, F. wonthaggiensis,					(high spore and pollen	
			base C. australiensis,	T. reticulatus, P. parvispinosus, P. notensis,					content)	
			F. wonthaggiensis,	C. variabilis, C. stylosus, C. hughesi all						
			T. reticulatus,	present.						
			P. parvispinosus in swcs							
870m	cutts	?lower P. notensis		Cyathidites, saccates dominant.	60%/26	40%/7	nil	1%	swamp/floodplain	Morgan (1998a)
				No M. evansii.						
				clear caving present includes C. paradoxa.						

TABLE 3a KEY DATA, BUS SWAMP-1 (Alley 1993 data qualitative, Burger 1993 data qualitative, Morgan 1993a data quantitative)

				Other elements therefore not reliable						
				(P. notensis, C. australiensis,						
				F. wonthaggiensis).						
886.0m	swc	probably lower	possible base P. notensis	Cyathidites, O. wellmanii common.	75%/21	25%/6	nil	<1%	swamp (low diversity	Morgan (1993a)
		F. wonthaggiensis	considered contamination	No M. evansii. Extremely lean, 2 specimens					spores dominant)	
			Price (1996) considers it	only of P. notensis (Morgan 1993) in repeat						
			in place	preparation only not considered reliable.						
				No F. wonthaggiensis, C. australiensis or						
				T. reticulatus in either preparation.						
				Has C. variabilis.						
913.0m	swc	lower F. wonthaggiensis	D. speciosus without	A. hispidus, C. variabilis, C. hughes present,	dom/23	?/3	nil	trace	swamp margin (diverse	Burger (1993)
			younger markers.	nothing younger					dominant spores)	
957.0m	swc	lower F. wonthaggiensis	base certain	F. wonthaggiensis, D. speciosus, C. hughesi	?/30	?/10	nil	trace	swamp margin (diverse	Alley (1993)
			F. wonthaggiensis.	present, nothing younger.					dominant spores)	
982.0m	swc	indeterminate		barren	?	?	?	?	?channel (barren)	Alley (1993)
1105.0m	swc	lower F. wonthaggiensis		C. hughesi, D. speciosus, C. stylosus present	?/32	?/12	nil	nil	swamp margin (diverse	Alley (1993)
									dominant spores)	
1145.0m	swc	indeterminate		extremely lean with nothing age diagnostic	?/19	?/6	nil	nil	?channel (barren)	Alley (1993)
1190.0m	swc	lower F. wonthaggiensis		O. wellmanii, Falcisporites common	59%/20	41%/18	nil	nil	floodplain	Morgan (1993a)
				C. stylosus, D. speciosus, C. hughesi present					(saccates & spores)	
1325.0m	swc	upper C. australiensis or		C. equalis, Retitriletes common.	79%/22	19%/5	nil	2%	swamp margin (diverse	Morgan (1993a)
		younger		C. hughesi present.					dominant spores)	
				No D. speciosus or C. stylosus.						
1510.0m	Core 2	lower F. wonthaggiensis		C. stylosus, D. speciosus, C. hughesi,	dom/23	?/9	nil	trace	swamp margin (diverse	Burger (1993)
				M. evansii					dominant spores)	
1515.83m	Core 2	indeterminate		fair yield includes ?F. wonthaggiensis	?/21	?/7	nil	nil	?floodplain	Alley (1993)
				discounted. No other markers seen.						
1560.0m	swc	lower F. wonthaggiensis		Falcisporites, O. wellmanii common.	53%/17	47%/6	nil	nil	floodplain (saccates &	Morgan (1993a)
				D. speciosus present.					spores subequal)	
				No C. hughesi or C. stylosus.						
1640.0m	swc	lower F. wonthaggiensis		Falcisporites, O. wellmanii common.	56%/24	42%/7	nil	2%	swamp margin/flood-	Morgan (1993a)
				D. speciosus, C. hughesi present.					plain (subequal diverse	
									spores and pollen).	

TABLE 3a KEY DATA, BUS SWAMP-1 (Alley 1993 data qualitative, Burger 1993 data qualitative, Morgan 1993a data quantitative)

1730.0m	swc	lower F. wonthaggiensis		Falcisporites, Retitriletes, O. wellmannii common. D. speciosus, C. hughesi present.	58%/26	42%/7	nil	nil	swamp margin/floodplain. (subequal pollen and diverse spores)	Morgan (1993a)
1756.0m	swc	lower F. wonthaggiensis		C. stylosus, D. speciosus, C. hughesi present	dom/25	?/5	nil	trace	swamp margin (diverse dominant spores)	Burger (1993)
1765m	cutts	apparently lower F. wonthaggiensis		D. speciosus, C. hughesi present but could be caved	53%/20	47%/7	nil	trace	floodplain (subequal saccates and spores)	Morgan (1993a)
1785.0m	Core 3	lower F. wonthaggiensis	base D. speciosus	D. speciosus, C. hughesi, Cicatricosporites spp present	?/20	?/6	nil	trace	?	Burger (1993)
1787.0m	swc	apparently lower C. australiensis to upper R. watherooensis		No C. hughesi or D. speciosus. Present is R. watherooensis, F. dailyi	54%/26	46%/7	nil	trace	swamp margin (dominant diverse spores)	Morgan (1993a)
1790.0m	Core 3	upper C. australiensis	base C. hughesi	C. hughesi, nothing younger. doubtful F. wonthaggiensis discounted	?/29	?/9	nil	nil	swamp margin-floodplain (diverse spores and pollen)	Alley (1993)
1800-05m	*cutts	indeterminate-apparently upper C. australiensis		C. australiensis, C. hughesi but could be caved. F. asymmetricus considered caved.	?/27	?/9	nil	nil	?swamp margin ?floodplain (?caved)	Alley (1993)
1803.0m	swc	apparently lower C. australiensis to middle R. watherooensis	base C. equalis	C. equalis, R. watherooensis nothing younger.	?/11	?/4	nil	nil	?	Alley (1993)
1803.0m NEW SAMPLE HEREIN	swc	lower C. australiensis to upper R. watherooensis	base F. dailyi	F. similis, O. wellmanii common with C. cooksoniae, F. dailyi, R. watherooensis present. Common algal Leiospheres.	71%/19	29%/5	nil	21%	swamp/lake	NEW SAMPLE HEREIN
1815.0m	swc	indeterminate		barren	?	?	?	?	?	Burger (1993)
1840.0m	swc			extremely lean with no age diagnostic forms. Considered mud contamination of barren igneous basement.	?	?	?	?	?	Morgan (1993a)

* Sample type not shown in Alley (1993)

TABLE 3b SUMMARY SHEET, BUS SWAMP-1

BASIN: OTWAY

WELL NAME: **BUS SWAMP-1**

AGE		PALYNOLOGICAL ZONES	HIGHEST DATA				LOWEST DATA			
			Preferred Depth	Rtg	Alternate Depth	Rtg	Preferred Depth	Rtg	Alternate Depth	Rtg
Early Cret.	Albian	P. pannosus								
		upper C. paradoxa								
		lower C. paradoxa	215	3			300	0		
		C. striatus	465	?						
	Aptian	upper P. notensis					465	?		
		lower P. notensis	756	0			862	0	870	?4
	late Neoc.	upper F. wonthaggiensis								
		lower F. wonthaggiensis	886	?2	913	0	1785	0		
	early Neoc.	upper C. australiensis	1787	2			1790	0	1805	4
		lower C. australiensis	1803	2						
Late Jurassic	Tithonian	upper R. watherooensis					1803	0		
		middle R. watherooensis								
		lower R. watherooensis								

TABLE 4a KEY DATA, CASTERTON-1 (Dettmann 1965b raw data not available, Morgan 1986 qualitative, 1988b semiquantitative, 89b semiquantitative)

DEPTH	TYPE	ZONE	KEY DATUMS	COMMENTS	SPORE CONTENT/ DIVERSITY	POLLEN CONTENT/ DIVERSITY	SALINE ALGAE %	FRESH ALGAE %	ENVIRONMENT	REFERENCE
426.7m (1400 ft)	cutts	lower C. paradoxa (or ?older)	top D. speciosus top P. notensis	D. speciosus, F. asymmetricus, P. notensis, P. parvispinosus, C. paradoxa (possibly slightly caved) C. striatus, P. grandis (caved and indicating upper C. paradoxa Zone uphole)	mod/29 (?caved)	mod/5	nil	rare	floodplain	Morgan (1988b)
548.6m (1800 ft)	cutts	lower C. paradoxa (or ?older)	base C. paradoxa (but in cutts)	C. australiensis frequent. F. asymmetricus, P. notensis, P. parvispinosus, C. paradoxa (possibly caved) C. striatus present	mod/27 (?caved)	mod/5	nil	rare	floodplain	Morgan (1988b)
614.5-617.8m (2016-27ft)	CORE corresponds CORE 1	C. striatus	top C. hughesi base C. striatus in core	C. hughesi, D. speciosus, C. australiensis frequent. F. asymmetricus, P. notensis, P. parvispinosus, C. striatus present.	high/25	mod/2	nil	nil	swamp margin	Morgan (1986, 1988b)
701.4m (2300 ft)	cutts	P. notensis (lower)	top C. variabilis	D. speciosus, C. australiensis, C. variabilis, F. asymmetricus, P. notensis, P. parvispinosus, C. paradoxa (caved), C. striatus (caved), T. trioreticulosus (caved) all present.	high/30	low/6	nil	rare	swamp margin	Morgan (1988b)
740.7m (2430 ft)	CORE corresponds CORE 2	P. notensis (lower)	base P. parvispinosus in core	C. hughesi, D. speciosus, C. australiensis, C. variabilis, F. asymmetricus, P. notensis, P. parvispinosus present.	high/24	mod/7	nil	rare	swamp margin/floodplain	Morgan (1986, 1988b)
764.1-765.6m (2507-12 ft)	CORE (?no core here)	mislabelled apparently F. wonthaggiensis		M. evansii	v high/20	low/7	nil	nil	swamp margin	Morgan (1986, 1988b)
795.2-798.0m (2609-18 ft)	CORE (?no core here)	mislabelled apparently F. wonthaggiensis		O. wellmannii common. C. hughesi, D. speciosus, F. asymmetricus, M. evansii present.	v high/35	low/7	nil	rare	swamp margin	Morgan (1986, 1988b)
1096.1m (3596 ft)	CORE corresponds CORE 4	P. notensis (lower) (but with M. evansii suggesting F. wonthaggiensis)	base P. notensis in core	C. hughesi, D. speciosus, C. variabilis, F. asymmetricus, P. notensis, T. reticulatus, M. evansii (frequent)	v high/39	low/6	nil	nil	swamp margin	Morgan (1986, 1988b)
1219.2m (4000 ft)	cutts	apparently lower P. notensis (but in cutts)		D. speciosus, C. australiensis (?caved), C. variabilis, F. wonthaggiensis, P. notensis (?caved), P. parvispinosus (?caved)	high/28 (?caved)	mod/5	nil	rare	swamp margin/floodplain	Morgan (1986, 1988b)

TABLE 4a KEY DATA, CASTERTON-1 (Dettmann 1965b raw data not available, Morgan 1986 qualitative, 1988b semiquantitative, 89b semiquantitative)

1341.1m	cutts	apparently lower P. notensis	base P. notensis,	C. hughesi, C. australiensis (?caved),	high/25	mod/5	nil	rare	swamp margin/floodplain	Morgan (1986,
(4400 ft)		(but in cutts)	P. parvispinosus but	C. variabilis, F. asymmetricus (?caved)	(?caved)					1988b)
			in cutts	P. notensis (?caved), P. parvispinosus (?caved)						
				T. reticulatus (?caved)						
1373.7-1375.3m	CORE	F. wonthaggiensis, lower	top M. evansii	O. wellmanii frequent.	mod/22	low/6	nil	rare	floodplain	Morgan (1989b)
(4507-12 ft)	corresponds		below P. notensis	D. speciosus, F. dailyi, M. evansii present.						
	CORE 8									
1374.3m	CORE	lower F. wonthaggiensis	frequent M. evansii	O. wellmanii, Cyathidites, F. similis common.	66%/17	30%/5	nil	4%	lake	new prep
(4509 ft)	new prep		below P. notensis	C. hughesi, D. speciosus present.						herein
	(CORE 8)			M. evansii frequent.						
1438.7-1441.7m	cutts	lower F. wonthaggiensis	rare M. evansii	Cyathidites, O. wellmanii common.	82%/17	18%/4	nil	trace	swamp	new prep
(4720-30ft)	new prep.		base F. wonthaggiensis	D. speciosus, F. wonthaggiensis, M. evansii,						herein
			but in cutts	F. dailyi present. Single P. notensis						
				considered caved. No T. reticulatus.						
1496.0-1498.7m	CORE	indeterminate		extremely lean and bland	mod/11	mod/7	nil	nil	?channel (barren)	Morgan 1986,
(4908-17ft)										1988b)
1549.6m	CORE	indeterminate		extremely lean and bland	mod/8	mod/5	nil	trace	?channel (barren)	Morgan (1986,
(5084 ft)										1988b)
1609.3m	CORE	upper C. australiensis or		C. hughesi. Lean and bland	mod/12	mod/7	trace	nil	brackish	Morgan (1986,
(5280 ft)		younger								1988b)
1709.6-1712.4m	CORE	lower F. wonthaggiensis		O. wellmanii, Falcisporites common.	51%/25	49%/7	nil	trace	floodplain	new prep
(5609-18ft)	corresponds			C. hughesi, D. speciosus, F. dailyi, M. florida,						herein
	CORE 12			R. watherooensis present.						
	new prep.									
1816.0-1819.0m	CORE	F. wonthaggiensis lower	base D. speciosus	D. speciosus. Lean and bland.	mod/9	mod/4	nil	trace	channel (barren)	Morgan (1986,
(5958-68ft)										1988b)
1952.5m	CORE	indeterminate		bland	mod/16	mod/7	nil	nil	floodplain	Morgan (1986,
(6406 ft)	corresponds									1988b)
	CORE 14									
2061.4-2063.2m	CORE	C. australiensis, upper	base C. hughesi	M. antarcticus, C. equalis	mod/18	mod/7	nil	rare	floodplain	Morgan (1986,
(6763-69ft)				C. hughesi, bland						1988b)

TABLE 4a KEY DATA, CASTERTON-1 (Dettmann 1965b raw data not available, Morgan 1986 qualitative, 1988b semiquantitative, 89b semiquantitative)

2088.8-2090.6m (6853-59ft)	CORE	indeterminate		lean and bland	low/2	mod/4	trace	nil	brackish channel	Morgan (1986, 1988b)
2210.7m (7253 ft)	CORE	indeterminate		lean and bland	mod/7	mod/5	?	?	floodplain	Morgan (1986, 1988b)
2250.9-2254.0m (7385-95ft)	CORE corresponds CORE 18	middle R. watherooensis lower C. australiensis	base R. watherooensis	C. equalis, Dictyotosporites coarse, R. watherooensis	mod/9	mod/2	nil	nil	floodplain	Morgan (1986, 1988b)
2358.8-2361.9m (7739-49ft)	CORE	middle R. watherooensis to lower C. australiensis	base C. equalis	C. equalis, Dictyotosporites coarse	low/4	v high/5	nil	nil	channel	Morgan (1986, 1988b)
2422.2-2425.3m (7947-57ft)	CORE	indeterminate		totally barren	-	-	?	?	?	Morgan (1986, 1988b)
2447.2-2450.3m (8029-39ft)	CORE	indeterminate		Bland and lean. Gleicheniidites present.	low/2	low/1	nil (?)	nil (?)	?	Morgan (1986, 1988b)

TABLE 4b SUMMARY SHEET, CASTERTON-1

BASIN: OTWAY

WELL NAME: CASTERTON-1

AGE		PALYNOLOGICAL ZONES	HIGHEST DATA				LOWEST DATA			
			Preferred Depth	Rtg	Alternate Depth	Rtg	Preferred Depth	Rtg	Alternate Depth	Rtg
Early Cret.	Albian	P. pannosus								
		upper C. paradoxa	?				?			
		lower C. paradoxa	426	3			548	4		
		C. striatus	614	2			617	0		
	Aptian	upper P. notensis								
		lower P. notensis	701	1			1096.1	0	1341	4
	late Neoc.	upper F. wonthaggiensis								
		lower F. wonthaggiensis	1373	2			1819	1		
	early Neoc.	upper C. australiensis	2061	2			2063	1		
		lower C. australiensis	2250	2						
Late Jurassic	Tithonian	upper R. watherooensis								
		middle R. watherooensis					2361	1		
		lower R. watherooensis								

1. upper C. paradoxa Zone elements are seen as caving.

TABLE 5a KEY DATA, EUMERALLA-1 (Dettmann 1964c not available, Dettmann 1970a qualitative, Morgan 1988c semiquantitative)

DEPTH	TYPE	ZONE	KEY DATUMS	COMMENTS / KEY SPECIES	SPORE CONTENT/ DIVERSITY	POLLEN CONTENT/ DIVERSITY	SALINE ALGAE %	FRESH ALGAE %	ENVIRONMENT	REFERENCE
1009.2-1015.3m	CORE 5	P. pannosus	base P. pannosus	Stereisporites, Cyathidites common	v high/28	v low/3	nil	frequent	swamp margin	Morgan 1988c
3311-31 ft			top P. majus	D. speciosus (rew), F. wonthaggiensis,						
			top C. striatus	F. asymmetricus, C. striatus, P. majus,						
				P. pannosus present						
1158.2-1161.9m	CORE 6	C. paradoxa	top P. grandis	Cyathidites common Cicatricosisporites	v high/24	low/4	nil	rare	swamp margin	Morgan 1988c
3800-12 ft		upper		frequent.						
				F. wonthaggiensis, F. asymmetricus,						
				C. striatus, P. grandis, T. trioreticulosus,						
				P. majus present.						
1306.1-1310.6m	CORE 7	C. paradoxa	base P. grandis	Cicatricosisporites, Cyathidites frequent,	high/23	low/5	nil	nil	swamp/swamp margin	Morgan 1988c
4285-00 ft		upper	top C. paradoxa	F. wonthaggiensis, F. asymmetricus,						
				C. striatus, P. grandis, T. trioreticulosus,						
				P. majus present.						
1461.8-1436.8m	CORE 8	C. paradoxa	base P. majus	Cyathidites, Falcisporites frequent	mod/20	mod/5	rare	nil	floodplain	Morgan 1988c
4796-14 ft		upper		F. dailyi, F. asymmetricus, C. striatus,						
				C. paradoxa, P. majus present.						
1614.5-1587.7m	CORE 9	C. paradoxa	base C. paradoxa in	Cyathidites, Falcisporites frequent.	high/19	mod/6	rare	nil	floodplain	Morgan 1988c
5297-09 ft			cores	C. hughesi (?rew), F. dailyi, F. asymmetricus,						
				C. paradoxa present.						
1694.7-1697.7m	cutts	C. paradoxa	base C. paradoxa (cutts)	Falcisporites, Cyathidites frequent.	mod/17	mod/4	nil	nil	floodplain	Morgan 1988c
5560-70 ft		lower	top P. parvispinosus	F. dailyi, F. asymmetricus, P. parvispinosus,						
				C. striatus, C. paradoxa present.						
1767.5-1772.7m	CORE 10	C. paradoxa	base T. trioreticulosus	Cyathidites common,	v high/28	low/4	rare	nil	swamp margin	Morgan 1988c
5799-16 ft		lower	top P. notensis	Cicatricosisporites frequent.						
			single C. hughesi	C. hughesi (?rew), F. wonthaggiensis,						
				P. notensis, F. asymmetricus, P. parvispinosus,						
				C. striatus, T. trioreticulosus present.						
1839.2-1845.3m	CORE	indeterminate	near barren	No zone diagnostic species.	low/7	low/5	nil	nil	?channel (near barren)	Morgan 1988c
6034-54 ft										
1902.7-1905.6m	CORE 13	indeterminate	near barren	No zone diagnostic species.	low/12	low/3	nil	nil	?channel (near barren)	Morgan 1988c
6242-52 ft										

TABLE 5a KEY DATA, EUMERALLA-1 (Dettmann 1964c not available, Dettmann 1970a qualitative, Morgan 1988c semiquantitative)

1978.2-1981.2m	cutts	C. striatus		Falcisporites, Cyathidites, Osmundacidites	mod/30	mod/5	nil	nil	?floodplain (?caved)	Morgan 1988c
6490-00 ft				frequent.	(?caved)					
				?C. hughesi, F. wonthaggiensis, P. notensis,						
				F. asymmetricus, P. parvispinosus, C. striatus,						
				C. paradoxa (caved), P. grandis (caved)						
				all present.						
2043.4-2048.3m	CORE 15	C. striatus	base C. striatus	Cyathidites common, Falcisporles and	high/17	mod/2	nil	nil	floodplain	Morgan 1988c
6704-20 ft				Osmundacidites frequent,						
				C. australiensis, F. dallyi, P. notensis,						
				F. asymmetricus, P. parvispinosus, C. striatus						
				present.						
2202.2-2206.8m	CORE	P. notensis, upper	top consistent	Cyathidites common, Falcisporites frequent.	high/24	mod/4	nil	nil	swamp margin/floodplain	Morgan 1988c
7225-40 ft			C. hughesi	C. australiensis, C. hughesi, D. speciosus,						
				F. dallyi, F. wonthaggiensis, P. notensis						
				present.						
2346.0-2350.6m	CORE	P. notensis, upper		Cyathidites, Osmundacidites frequent,	high/16	low/4	rare	rare	brackish swamp/	Morgan 1988c
7697-12 ft				C. hughesi, D. speciosus, P. notensis,					lagoon	
				P. parvispinosus present.						
2350.6-2352.1m	CORE 18	P. notensis, upper		Cyathidites common, Falcisporites,	high/16	mod/4	nil	nil	floodplain	Morgan 1988c
7712-17 ft				Osmundacidites frequent.						
				D. speciosus, C. australiensis, P. parvispinosus,						
				P. notensis present.						
2482.0-2485.9m	CORE 19	indeterminate	very lean	No zone diagnostic species.	v low/5	v low/5	nil	nil	?channel (near barren)	Morgan 1988c
8143-56 ft										
2578.3-2580.1m	CORE 20	P. notensis, upper	base P. parvispinosus	Cyathidites common, Falcisporites,	high/23	mod/3	nil	rare	floodplain	Morgan 1988c
8459-65 ft				Osmundacidites frequent.						
				C. australiensis, C. hughesi, D. speciosus						
				present.						
2717.0-2720.0m	CORE 21	P. notensis, lower	top C. variabilis	Cyathidites, Osmundacidites frequent,	high/25	low/3	nil	nil	swamp margin	Morgan 1988c
8914-24 ft			top P. linearis	C. australiensis, C. variabilis, D. speciosus,						
				F. dallyi, F. wonthaggiensis, P. linearis,						
				P. notensis present.						

TABLE 5a KEY DATA, EUMERALLA-1 (Dettmann 1964c not available, Dettmann 1970a qualitative, Morgan 1988c semiquantitative)

2856.9-2860.5	CORE 22	P. notensis, lower	base P. notensis	Cyathidites, Osmundacidites common,	v high/29	low/6	nil	nil	swamp margin	Morgan 1988c
9373-85 ft				C. australiensis, C. hughesi, D. speciosus,						
				P. linearis, P. notensis, F. asymmetricus						
				present.						
2977.0-2979.1m	CORE 23	F. wonthaggiensis,	base F. asymmetricus	Cyathidites common, Falcisporites,	v high/26	mod/5	nil	nil	swamp margin	Morgan 1988c
9767-74 ft		lower		Osmundacidites frequent.						
				C. australiensis, C. hughesi, D. speciosus,						
				F. wonthaggiensis, F. dailyi, F. asymmetricus						
				present.						
3011.7-3014.5m	CORE 24	F. wonthaggiensis,	top M. evansii	Cyathidites, Falcisporites, Osmundacidites	v high/24	mod/4	?	rare	swamp margin/floodplain	Morgan 1988c
9881-90 ft		lower		frequent.						
				C. australiensis, C. hughesi, D. speciosus,						
				F. wonthaggiensis, P. linearis, F. dailyi,						
				M. evansii present.						
3035.6-3038.9m	cutts	F. wonthaggiensis,		Cyathidites, Falcisporites frequent,	mod/25	mod/5	nil	nil	floodplain	Morgan 1988c
9960-70 ft		lower		C. australiensis, C. hughesi, D. speciosus,						
				P. linearis, F. dailyi, P. notensis (caved)						
				present.						
3093.7-3096.8m	cutts	indeterminate		Falcisporites frequent.	mod/17	mod/5	nil	nil	floodplain	Morgan 1988c
10150-				C. australiensis, F. dailyi, P. notensis (caved)						
10160 ft				present.						
3139.4-3141.0m	CORE 25	F. wonthaggiensis,	base D. speciosus	Cyathidites common, C. australiensis,	v high/27	low/6	nil	nil	swamp margin	Morgan 1988c
10300-		lower	base	Osmundacidites frequent.						
10305 ft			F. wonthaggiensis	C. variabilis, C. hughesi, D. speciosus,						
				F. wonthaggiensis, P. linearis present.						
3139.4-3141.0m	CORE	F. wonthaggiensis,	isolated T. reticulatus	C. australiensis, C. hughesi, D. speciosus,	?/22	?/7	nil	nil	swamp margin/floodplain	Dettmann 1970a
10300-		apparently upper but more	suggests upper	F. dailyi, F. wonthaggiensis, M. florida,						
10305 ft		likely contaminated into	F. wonthaggiensis	T. reticulatus						
		lower subzone.	unless it is							
			contamination							

TABLE 5b SUMMARY SHEET, EUMERALLA-1

BASIN: OTWAY

WELL NAME: EUMERALLA-1

AGE		PALYNOLOGICAL ZONES	HIGHEST DATA				LOWEST DATA			
			Preferred Depth	Rtg	Alternate Depth	Rtg	Preferred Depth	Rtg	Alternate Depth	Rtg
Early Cret.	Albian	P. pannosus	1009	1			1015	0		
		upper C. paradoxa	1158	2			1436	0		
		lower C. paradoxa	1694	3			1772	0		
		C. striatus	1978	2			2048	0		
	Aptian	upper P. notensis	2202	1			2580	2		
		lower P. notensis	2717	1			2860	0		
	late Neoc.	upper F. wonthaggiensis								
		lower F. wonthaggiensis	2977	2			3141	0		
	early Neoc.	upper C. australiensis								
		lower C. australiensis								
Late Jurassic	Tithonian	upper R. watherooensis								
		middle R. watherooensis								
		lower R. watherooensis								

TABLE 6a KEY DATA, FERGUSONS HILL-1 (Text of Dettmann 1964a, 1964d available but no raw data plus correlation table of Wilschut (1974b), no raw data available)

DEPTH	TYPE	ZONE	KEY DATUMS	COMMENTS	SPORE CONTENT/ DIVERSITY	POLLEN CONTENT/ DIVERSITY	SALINE ALGAE %	FRESH ALGAE %	ENVIRONMENT	REFERENCE
835.5-841.2m	CORE 7			Barren or very poor yield.						
2741-60 ft										
939.1-946.4m	CORE 8			Barren or very poor yield.						
3081-105 ft										
946.4-948.2m	CORE 9	P. pannosus (Wilschut)		C. paracoxa Zone in Dettmann 1964d						
3105-11 ft				changed to P. pannosus Zone in Wilschut						
				(1974b)						
1042.1-1045.8m	CORE 10	C. paradoxa								
3419-31 ft		?upper								
1137.5-1143.6m	CORE 11									
3732-52 ft										
1247.2-1253.3m	CORE 12									
4092-112 ft										
1382.0-1388.1m	CORE 13									
4534-54 ft										
1547.5-1553.5m	CORE 14									
5077-97 ft										
1692.9-1697.4m	CORE 15									
5554-69 ft										
1808.6-1813.6m	CORE 16									
5934-50 ft										
2012.6-2018.7m	CORE 17	C. paradoxa, ?upper								
6603-23 ft										
1998.0-2002.5m	CORE 18	C. paradoxa, lower	top D. speciosus	D. speciosus with C. paradoxa (Dettmann						
6555-70 ft				1964a)						
2144.9-2147.9m	CORE 19	C. striatus								
7037-47 ft										

TABLE 6a KEY DATA, FERGUSONS HILL-1 (Text of Dettmann 1964a, 1964d available but no raw data plus correlation table of Wilschut (1974b), no raw data available)

2200.7-2205.8m	CORE 20	C. striatus		D. speciosus with C. striatus						
7220-37 ft										
2232.2-2238.6m	CORE 21	C. striatus		D. speciosus with C. striatus						
7330-45 ft										
2382.9-2387.2m	CORE 22	P. notensis	top C. hughesi	C. hughesi with D. speciosus						
7818-32 ft										
2513.7-2518.3m	CORE 23	P. notensis, upper								
8247-62 ft										
2669.4-2674.3m	CORE 24	P. notensis, upper								
8758-74 ft										
2802.6-2807.5m	CORE 25	P. notensis, lower or	top C. variabilis	C. variabilis present						
9195-211 ft		older								
2812.1-2813.6m	CORE 26			C. variabilis present						
9226-31 ft										
3076.0-3078.8m	CORE 27									
10092-										
10101 ft										
3223.0-3227.2m	CORE 28			CORES beneath are barren or very poor						
10574-				yielding.						
10588 ft										
3249.2-3251.6m	CORE 29									
10660-										
10668 ft										
3377.9-3381.5m	CORE 30									
11080-										
11094 ft										
3480.5-3484.5m	CORE 31			C. hughesi with D. speciosus						
11419-										
11432 ft										
3486.3m	swc	lower F. wonthaggiensis		D. speciosus present						Dettmann 1964a
11438 ft		or younger								

TABLE 6a KEY DATA, FERGUSONS HILL-1 (Text of Dettmann 1964a, 1964d available but no raw data plus correlation table of Wilschut (1974b), no raw data available)

3503.7m	swc	C. australiensis or younger		C. australiensis present						Dettmann 1964a
11495 ft										
3511.0-3515.6m	CORE 32									
11519-										
11534 ft										
3530.2-3533.5m	CORE 33									
11582-										
11593 ft										
3540.6-3542.4m	CORE 24									
11616-										
11622 ft										

FIGURE 6b SUMMARY SHEET, FERGUSONS HILL-1

BASIN: OTWAY

WELL NAME: FERGUSONS HILL-1

AGE		PALYNOLOGICAL ZONES	HIGHEST DATA				LOWEST DATA			
			Preferred Depth	Rtg	Alternate Depth	Rtg	Preferred Depth	Rtg	Alternate Depth	Rtg
Early Cret.	Albian	P. pannosus	946	1			948	0		
		upper C. paradoxa	1041	2			2018	2		
		lower C. paradoxa	1998	1			2002	2		
		C. striatus	2144	2			2238	0		
	Aptian	upper P. notensis	2382	2			2674	2		
		lower P. notensis	2802	1						
	late Neoc.	upper F. wonthaggiensis								
		lower F. wonthaggiensis					3486	0		
	early Neoc.	upper C. australiensis								
		lower C. australiensis								
Late Jurassic	Tithonian	upper R. watherooensis								
		middle R. watherooensis								
		lower R. watherooensis								

No raw data is available so assignments cannot be assessed.
They are taken from Wilschut (1974b) and Dettmann (1964a, d) comments.

TABLE 7a KEY DATA, GARVOC-1 (Dettmann 1968a data semiquantitative)

DEPTH	TYPE	ZONE	KEY DATUMS	COMMENTS	SPORE CONTENT/ DIVERSITY	POLLEN CONTENT/ DIVERSITY	SALINE ALGAE %	FRESH ALGAE %	ENVIRONMENT	REFERENCE
937.6m	swc	Indeterminate		very rare long ranging spores only seen.	ex low/3	nil	-	-	??channel	Dettmann (1968a)
(3076 ft)		Early Cretaceous		Almost barren.					(near barren)	
994.3m	swc	Indeterminate		lean, non-descript assemblage of long-	low/5	low/3			??channel (very lean)	Dettmann (1968a)
(3262 ft)		Early Cretaceous		ranging spores and pollen						
1016.2m	swc	C. paradoxa, lower	top D. speciosus	Cyathidites, S. antiquasporites, M. antarcticus	v high/26	high/6	nil	rare	floodplain	Dettmann (1968a)
(3334 ft)			top P. notensis	all abundant,						
			base C. paradoxa	C. paradoxa, C. striatus, C. australiensis,						
				D. speciosus, F. asymmetricus, P. notensis,						
				T. reticulatus present						
1081.7m	swc	P. notensis	no C. striatus	Cyathidites, M. antarcticus abundant,	v high/29	high/7	nil	rare	floodplain/swamp margin	Dettmann (1968a)
(3549 ft)			top C. hughesi	C. australiensis, C. hughesi, D. speciosus,						
			base F. asymmetricus	D. filosus, F. asymmetricus, F. wonthaggiensis,						
				P. notensis, T. reticulatus present						
1110.1m	swc	P. notensis, lower	top C. variabilis	Cyathidites, M. antarcticus, Podocarpidites all	v high/22	high/4	nil	nil	floodplain	Dettmann (1968a)
(3642 ft)				abundant						
				C. australiensis, C. variabilis, C. hughesi,						
				D. speciosus, F. wonthaggiensis, P. notensis						
				present						
1146.0m	swc	P. notensis, lower	top P. parvispinosus	Cyathidites, M. antarcticus abundant.	v high/28	high/7	nil	rare	floodplain/swamp margin	Dettmann (1968a)
(3763 ft)				C. australiensis, C. variabilis, C. hughesi,						
				D. speciosus, F. wonthaggiensis, P. notensis,						
				P. parvispinosus, T. reticulatus present						
1200.9m	swc	lower P. notensis or older		lean with rare C. australiensis, C. variabilis,	mod/13	low/4	nil	nil	??channel (lean)	Dettmann (1968a)
(3940 ft)				T. reticulatus						
1243.0m	swc	P. notensis		lean with rare C. australiensis, D. speciosus,	low/13	low/4	nil	nil	??channel (lean sand)	Dettmann (1968a)
(4078 ft)				P. notensis, T. reticulatus plus Albian and						
				Tertiary caving						
1275.9m	swc	P. notensis, lower		Cyathidites and M. antarcticus abundant,	v high/26	high/6	nil	rare	swamp margin/floodplain	Dettmann (1968a)
(4184 ft)				C. australiensis, C. variabilis, C. hughesi,						
				D. speciosus, F. wonthaggiensis, P. notensis,						
				P. parvispinosus, T. reticulatus present						

TABLE 7a KEY DATA, GARVOC-1 (Dettmann 1968a data semiquantitative)

1302.1m	swc	P. notensis, lower		Cyathidites, Falcisporites, M. antarcticus all	high/14	v high/5	nil	nil	floodplain/channel	Dettmann (1968a)
(4272 ft)				abundant						
				C. australiensis, C. variabilis,						
				F. wonthaggiensis, P. notensis present						
1340.0m	swc	indeterminate		very lean, non-descript	ex low/6	ex low/3	-	-	??channel	Dettmann (1968a)
(4394 ft)										
1368.2m	swc	P. notensis, lower	base P. parvispinosus	Cyathidites, M. antarcticus, Podocarpidites all	ex high/27	high/5	nil	nil	swamp margin/floodplain	Dettmann (1968a)
(4489 ft)			base T. reticulatus	abundant						
			base F. wonthaggiensis	C. australiensis, C. variabilis,						
			poss base P. notensis	C. hughesi, D. speciosus, P. notensis,						
			(see 1513.0 m swc)	F. wonthaggiensis, P. parvispinosus,						
				T. reticulatus present						
1381.4m	swc	indeterminate		totally barren. The sequence of near barren	-	-	-	-	??channel (barren)	Dettmann (1968a)
(4532 ft)				samples suggests sandy lithologics of the						
				Crayfish Group.						
1413.4m	swc	indeterminate		barren of recognisable palynomorphs	-	-	-	-	??channel (barren)	Dettmann (1968a)
(4637 ft)										
1434.1m	swc	indeterminate		extremely lean. C. australiensis present.	ex low/5	nil	-	-	??channel (ex lean)	Dettmann (1968a)
(4705 ft)										
1462.4m	swc	indeterminate		extremely lean. Non-descript.	ex low/2	ex low/4	-	-	??channel (ex lean)	Dettmann (1968a)
(4798 ft)										
1486.8m	swc	apparently lower	top M. florida	Cyathidites, M. antarcticus abundant.	v high/20	high/7	nil	nil	floodplain	Dettmann (1968a)
(4878 ft)		C. australiensis		C. australiensis, F. dailyi, M. florida						
				present						
1505.7m	swc	indeterminate (lean)		very lean, non-descript, F. dailyi	low/6	low/6	nil	nil	??channel	Dettmann (1968a)
(4940 ft)				present						
1513.0m	swc	apparently lower P. notensis		O. wellmanii, Cyathidites both abundant	v high/25	v high/8	nil	nil	floodplain	Dettmann (1968a)
(4964 ft)		(common C. australiensis,		C. australiensis common						
		rare P. notensis) but absence		rare C. variabilis, C. hughesi, D. speciosus,						
		of F. wonthaggiensis,		M. florida, P. notensis						
		T. reticulatus and perhaps								
		F. asymmetricus suggests								
		downhole contamination of								
		sandy core has occurred.								

TABLE 7b SUMMARY SHEET, GARVOC-1

BASIN: OTWAY

WELL NAME: GARVOC-1

AGE		PALYNOLOGICAL ZONES	HIGHEST DATA				LOWEST DATA			
			Preferred Depth	Rtg	Alternate Depth	Rtg	Preferred Depth	Rtg	Alternate Depth	Rtg
Early Cret.	Albian	P. pannosus								
		upper C. paradoxa								
		lower C. paradoxa	1016	0			1016	0		
		C. striatus								
	Aptian	upper P. notensis	1081	2			1081	2		
		lower P. notensis	1110	1			1368	1		
	late Neoc.	upper F. wonthaggiensis								
		lower F. wonthaggiensis								
	early Neoc.	upper C. australiensis								
		lower C. australiensis	1486	2			1486	0		
Late Jurassic	Tithonian	upper R. watherooensis								
		middle R. watherooensis								
		lower R. watherooensis								

1. Sample at 1513.0 m swc contains a lower P. notensis Zone assemblage but is considered to be mud contamination.
2. Sample at 1486.0 m swc appears to be lower C. australiensis Zone, but it could be younger if key species are excluded by facies.

TABLE 8a KEY DATA, GREENBANKS-1 (Archer 1983 data qualitative)

DEPTH (m)	TYPE	ZONE	KEY DATUMS	COMMENTS	SPORE CONTENT/ DIVERSITY	POLLEN CONTENT/ DIVERSITY	SALINE ALGAE %	FRESH ALGAE %	ENVIRONMENT	REFERENCE
569.0	swc	C. paradoxa	top spores	C. australiensis, C. striatus, D. speciosus	?/14	?/5	nil	rare	?	Archer (1983)
			base T. trioreticulosus,	(?reworked), T. trioreticulosus plus common						
			base C. striatus	caved Tertiary H. harrisii						
755.5	swc	C. paradoxa	top C. paradoxa,	C. australiensis, C. paradoxa, F. asymmetricus,	?/12	?/5	nil	rare	?floodplain	Archer (1983)
			F. asymmetricus	T. reticulatus, B. holodictyus present						
812.0	swc	C. paradoxa	base C. paradoxa	C. australiensis, C. paradoxa, F. asymmetricus,	?/19	?/6	nil	nil	?swamp margin	Archer (1983)
			base F. asymmetricus	T. reticulatus plus common caved Tertiary						
			base T. reticulatus	Nothofagidites present						
1155.0	swc	P. notensis (?upper on	top C. hughesi	C. australiensis, C. hughesi, D. speciosus,	?/14	?/6	nil	nil	?floodplain	Archer (1983)
		absence of C. variabilis)	top P. notensis	P. notensis present						
			base C. australiensis							
1195.0	swc	P. notensis (?upper)	base P. notensis	D. speciosus, F. wonthaggiensis, P. notensis	?/19	?/5	nil	rare	?swamp margin	Archer (1983)
				present						
1207.5	swc	indeterminate		lean and bland. Rare questioned C. variabilis	?/9	?/5	nil	nil	??channel	Archer (1983)
		(possibly F. wonthaggiensis)		present						

TABLE 8b SUMMARY SHEET, GREENBANKS-1

BASIN: OTWAY

WELL NAME: GREENBANKS-1

AGE		PALYNOLOGICAL ZONES	HIGHEST DATA				LOWEST DATA			
			Preferred Depth	Rtg	Alternate Depth	Rtg	Preferred Depth	Rtg	Alternate Depth	Rtg
Early Cret.	Albian	P. pannosus								
		upper C. paradoxa	569	1						
		lower C. paradoxa					812	0		
		C. striatus								
	Aptian	upper P. notensis	1155	2						
		lower P. notensis					1195	0		
	late Neoc.	upper F. wonthaggiensis	1207	??						
		lower F. wonthaggiensis					1207	??		
	early Neoc.	upper C. australiensis								
		lower C. australiensis								
Late Jurassic	Tithonian	upper R. watherooensis								
		middle R. watherooensis								
		lower R. watherooensis								

1. Sample at 1207.5 m swc is lean and bland and indeterminate. Taxa present may be mud contamination.

TABLES 9a KEY DATA, GREENSLOPES-1 - (Dudgeon and Hos 1986 data not quantitative, Morgan 1994 quantitative)

DEPTH (m)	TYPE	ZONE	KEY DATUMS	COMMENTS	SPORE CONTENT/ DIVERSITY	POLLEN CONTENT/ DIVERSITY	SALINE ALGAE %	FRESH ALGAE %	ENVIRONMENT	REFERENCE
500-540	cutts	C. paradoxa, upper	top C. paradoxa, base P. grandis (cutts) No D. speciosus or P. notensis	C. australiensis, Cyathidites, F. similis all common C. paradoxa, C. striatus, F. asymmetricus, P. majus, P. grandis plus caved Tertiary and late Cretaceous present	56%/23	39%/7	nil	5%	floodplain/swamp margin	Morgan (1994)
1367.0	swc	P. notensis, upper	top P. notensis, top C. hughesi No C. striatus	C. australiensis, D. speciosus, F. wonthaggiensis, C. hughesi, F. asymmetricus, P. notensis, P. parvispinosus present	?/40	?/6	trace	rare	brackish (?swamp margin)	Dudgeon & Hos 1986
1373.0	swc	P. notensis, upper		C. australiensis, D. speciosus, F. wonthaggiensis, F. asymmetricus, P. notensis present	?/27	?/7	nil	nil	swamp margin	Dudgeon & Hos 1986
1381.0	swc	P. notensis, lower	top C. variabilis base P. parvispinosus	C. australiensis, D. speciosus, F. wonthaggiensis, R. watherooensis, C. hughesi, C. variabilis, P. notensis, P. parvispinosus present	?/35	?/5	nil	rare	swamp margin	Dudgeon & Hos 1986
1567.0	swc	apparently F. wonthaggiensis	No P. notensis but seen below	C. australiensis, D. speciosus, F. wonthaggiensis, C. hughesi, M. florida, C. variabilis present	?/31	?/3	nil	nil	swamp margin	Dudgeon & Hos 1986
1816.0	swc	P. notensis, lower	base P. notensis base F. asymmetricus	C. australiensis, D. speciosus, F. wonthaggiensis, C. hughesi, C. variabilis, F. asymmetricus, P. notensis, R. watherooensis present	?/34	?/6	trace	nil	brackish swamp margin	Dudgeon & Hos 1986
1853.0	swc	F. wonthaggiensis (?lower)	base C. variabilis base consistent F. wonthaggiensis, base consistent C. australiensis	C. australiensis, D. speciosus, F. wonthaggiensis, C. hughesi, C. variabilis, R. watherooensis present	?/34	?/6	nil	nil	swamp margin	Dudgeon & Hos 1986
1963.0	swc	F. wonthaggiensis, lower		D. speciosus, C. hughesi present	?/18	?/4	nil	nil	?swamp	Dudgeon & Hos 1986
1977.0	swc	upper C. australiensis or younger		C. hughesi, R. watherooensis present	?/20	?/8	trace	trace	brackish (?swamp)	Dudgeon & Hos 1986

TABLES 9a KEY DATA, GREENSLOPES-1 - (Dudgeon and Hos 1986 data not quantitative, Morgan 1994 quantitative)

2172.0	swc	C. australiensis or younger		C. australiensis present	?/7	?/10	nil	nil	floodplain	Dudgeon & Hos 1986
2214.0	swc	upper C. australiensis or younger		C. hughesi present	?/20	?/7	trace	nil	brackish (?swamp)	Dudgeon & Hos 1986
2265.0	swc	lower F. wonthaggiensis		D. speciosus, M. florida, R. watherooensis present	?/19	?/9	nil	nil	?swamp	Dudgeon & Hos 1986
2283.0	swc	C. australiensis or younger		non-descript, C. australiensis present	?/18	?/9	nil	rare	?swamp	Dudgeon & Hos 1986
2307.0	swc	F. wonthaggiensis, lower		C. australiensis, D. speciosus, C. hughesi, M. florida, R. watherooensis	?/31	?/6	trace	rare	brackish (?swamp margin)	Dudgeon & Hos 1986
2365.5	swc	indeterminate		almost barren	?/2	?/6	nil	rare	??channel (barren)	Dudgeon & Hos 1986
2436.0	swc	upper C. australiensis or younger		C. hughesi, R. watherooensis present	?/19	?/5	nil	rare	swamp	Dudgeon & Hos 1986
2443.0	swc	F. wonthaggiensis, lower		D. speciosus, C. hughesi, M. florida, R. watherooensis present	?/15	?/3	nil	nil	?swamp	Dudgeon & Hos 1986
2490.0	swc	F. wonthaggiensis, lower		D. speciosus, C. hughesi present	?/20	?/6	nil	trace	?swamp	Dudgeon & Hos 1986
2505.0	swc	F. wonthaggiensis, lower		D. speciosus, C. hughesi, M. florida present	?/18	?/6	nil	rare	?swamp	Dudgeon & Hos 1986
2536.0	swc	F. wonthaggiensis, lower	D. speciosus present	D. speciosus, M. florida, R. watherooensis present	?/20	?/10	nil	rare	?/floodplain	Dudgeon & Hos 1986
2547-50 NEW SAMPLE HEREIN	cutts	apparently lower C. australiensis to upper R. watherooensis	F. dailyi without younger markers	F. similis, O. wellmanii common with F. dailyi, C. equalis, M. florida, R. watherooensis present.	50%/16	47%/7	nil	3%	floodplain	NEW SAMPLE HEREIN
2556.0	swc	apparently upper C. australiensis or younger	C. hughesi without younger markers	C. australiensis, C. hughesi, R. watherooensis present	?/19	?/9	trace	rare	brackish (?floodplain)	Dudgeon & Hos 1986
2562.0	swc	F. wonthaggiensis, lower or older if D. speciosus and F. wonthaggiensis are caved/ mud contamination	base D. speciosus, base inconsistent F. wonthaggiensis	C. australiensis, D. speciosus, F. wonthaggiensis, R. watherooensis present	?/15	?/8	nil	nil	?swamp	Dudgeon & Hos 1986

TABLE 9b SUMMARY SHEET, GREENSLOPES-1

BASIN: OTWAY

WELL NAME: GREENSLOPES-1

AGE		PALYNOLOGICAL ZONES	HIGHEST DATA				LOWEST DATA			
			Preferred Depth	Rtg	Alternate Depth	Rtg	Preferred Depth	Rtg	Alternate Depth	Rtg
Early Cret.	Albian	P. pannosus								
		upper C. paradoxa	500	3			540	4		
		lower C. paradoxa								
		C. striatus								
	Aptian	upper P. notensis	1367	0			1373	2		
		lower P. notensis	1381	1			1816	1	1373	?
	late Neoc.	upper F. wonthaggiensis								
		lower F. wonthaggiensis	1853	2	1567	?	2562	1	2536	0
	early Neoc.	upper C. australiensis	2556	?			2556	?		
		lower C. australiensis								
Late Jurassic	Tithonian	upper R. watherooensis								
		middle R. watherooensis								
		lower R. watherooensis								

1. Mud contamination may be carrying some Zones deeper. Possible lower F. wonthaggiensis Zone occurs at 1567.0 m swc but P. notensis Zone is seen at 1816 m below where it may be caved. C. australiensis Zone appears to be present at 2556.0 m swc but swc at 2562 m is lower F. wonthaggiensis Zone but may be caved.

TABLE 10a KEY DATA, HAWKESDALE-1 (Dettmann 1964 data semiquantitative, Morgan herein data quantitative)

DEPTH	TYPE	ZONE	KEY DATUMS	COMMENTS	SPORE CONTENT/ DIVERSITY	POLLEN CONTENT/ DIVERSITY	SALINE ALGAE %	FRESH ALGAE %	ENVIRONMENT	REFERENCE
379.5m	swc	C. striatus	C. striatus without	Cyathidites, S. antiquasporites, A. australis,	v high/25	ex high/7	nil	rare	floodplain	Dettmann (1964)
(1245 ft)			C. paradoxa	F. grandis, M. antarcticus, Podocarpidites						
				all abundant. C. australiensis common.						
				Rare are C. striatus, D. filosus, D. speciosus,						
				F. asymmetricus, F. wonthaggiensis,						
				P. notensis						
439.5m	swc	C. striatus	top C. hughesi	O. wellmanii, Cyathidites, R. austroclavatidtes,	v high/28	v high/9	nil	rare	floodplain	Dettmann (1964)
(1442 ft)			top P. parvispinosus	S. antiquasporites, F. grandis, M. antarcticus,						
			base C. striatus	Podocarpidites all abundant.						
				C. australiensis, C. hughesi, C. striatus,						
				F. wonthaggiensis, P. parvispinosus,						
				T. reticulatus present.						
522.4m	swc	P. notensis, upper		O. wellmanii, Cyathidites, F. grandis,	v high/20	v high/7	nil	rare	floodplain	Dettmann (1964)
(1714 ft)				C. torosa, M. antarcticus all abundant						
				C. australiensis common.						
				C. hughesi, D. speciosus, F. wonthaggiensis,						
				P. notensis present.						
615.1m	swc	P. notensis, upper		C. australiensis, Cyathidites, M. antarcticus,	v high/22	v high/6	nil	rare	floodplain	Dettmann (1964)
(2018 ft)				Podosporites all abundant.						
				C. hughesi, D. speciosus, F. asymmetricus,						
				F. wonthaggiensis, P. notensis,						
				P. parvispinosus, T. reticulatus present.						
708.7m	swc	P. notensis, lower	top C. variabilis	O. wellmanii, Cyathidites, M. antarcticus,	v high/22	v high/5	high	high	brackish marine	Dettmann (1964)
(2325 ft)			base P. parvispinosus	Podocarpidites all abundant.						
				C. variabilis, C. australiensis, D. speciosus,						
				F. asymmetricus, P. notensis,						
				F. wonthaggiensis, P. parvispinosus,						
				T. reticulatus present.						
785.2m	swc	P. notensis, lower		O. wellmanii, Cyathidites, L. verrucatus,	v high/23	v high/6	nil	nil	floodplain	Dettmann (1964)
(2576 ft)				R. austroclavatidites, R. eminulus, C. nitidus,						
				M. antarcticus all abundant.						
				C. australiensis, C. hughesi, C. variabilis,						
				D. speciosus, F. wonthaggiensis present.						
853.4m	swc	P. notensis, lower		O. wellmanii, C. equalis, Cyathidites,	v high/23	v high/8	nil	rare	floodplain	Dettmann (1964)

TABLE 10a KEY DATA, HAWKESDALE-1 (Dettmann 1964 data semiquantitative, Morgan herein data quantitative)

(2800 ft)				S. antiquasporites, F. grandis, C. torosa,						
				Podocarpidites all abundant.						
				C. australiensis, C. variabilis, D. speciosus,						
				F. asymmetricus, F. wonthaggiensis,						
				P. notensis, T. reticulatus present.						
877.2m	swc	P. notensis, lower	base consistent	O. wellmanii, C. ludbrookiae, Cyathidites,	v high/31	v high/9	nil	common	swamp margin/swamp	Dettmann (1964)
(2878 ft)			P. notensis,	Dictyophyllidites, M. antarcticus, Podocarpidites						
			base F. asymmetricus	all abundant.						
				C. variabilis, C. hughesi, D. speciosus,						
				F. asymmetricus, F. wonthaggiensis,						
				P. notensis, T. reticulatus present.						
877.2m	swc	lower P. notensis	base P. notensis in	Cyathidites, M. antarticus, O. wellmanii	71%/26	27%/7	nil	2%	swamp margin	NEW SAMPLE
(2878 ft)			swcs	common, with C. australiensis, C. variabilis,						HEREIN
NEW				C. hughesi, D. speciosus, P. notensis,						
SAMPLE				T. reticulatus present.						
HEREIN										
887.9m	swc	upper C. australiensis or		very lean, C. australiensis, C. hughesi	v low/7	ex low/1	-	-	??channel (very lean)	Dettmann (1964)
(2913 ft)		younger		present.						
943.4m	swc	indeterminate		totally barren	-	-	-	-	??channel (barren)	Dettmann (1964)
(3095 ft)										
962.9m	swc	indeterminate		very lean, non-descript	v low/5	ex low/1	-	-	??channel (very lean)	Dettmann (1964)
(3159 ft)										
999.1m	swc	possibly upper		very lean, C. variabilis, F. wonthaggiensis	v low/7	v low/3	nil	nil	??channel (very lean)	Dettmann (1964)
(3278 ft)		F. wonthaggiensis or younger		present.						
1008.6m	swc	lower F. wonthaggiensis	no P. notensis, or	R. austroclavatidites, F. simlis common with	72%/22	21%/7	nil	7%	swamp margin	NEW SAMPLE
(3309 ft)			T. reticulatus	C. hughesi, M. florida present.						HEREIN
NEW			top M. florida							
SAMPLE										
HEREIN										
1018.0m	swc	apparently P. notensis	base P. notensis	Cyathidites, Falcisporites, Podocarpidites all	v high/17	v high/6	nil	common	swamp/lake	Dettmann (1964)
(3340 ft)		lower but could be	(?caved)	abundant. Common P. notensis.						
		F. wonthaggiensis if		C. australiensis, C. variabilis, D. speciosus,						
		common P. notensis is mud		F. wonthaggiensis, M. florida present.						
		contamination								
1059.2m	swc	F. wonthaggiensis, lower	base D. speciosus	O. wellmanii, Cyathidites, R. austroclavatidites,	v high/21	v high/7	nil	nil	floodplain	Dettmann (1964)

TABLE 10a KEY DATA, HAWKESDALE-1 (Dettmann 1964 data semiquantitative, Morgan herein data quantitative)

(3475 ft)				S. antiquasporites, A. australis, M. antarcticus,						
				Podocarpidites all abundant.						
				C. ludbrookiae, C. variabilis, C. hughesi,						
				D. speciosus present.						
1062.5m	swc	extremely lean	2 specimens of	Cyathidites, F. simillis common in extremely	54%/13	44%/7	nil	2%	floodplain	NEW SAMPLE
(3488 ft)		apparently P. notensis but	P. notensis	lean assemblage. Two specimens of						HEREIN
NEW		likely caved		P. notensis seen with no other younger						
SAMPLE				elements, but may be mud contamination of						
HEREIN				this lean swc.						
1068.6m	swc	indeterminate		totally barren	-	-	-	-	??channel (barren)	Dettmann (1964)
(3506 ft)										
1100.6m	swc	lower F. wonthaggiensis	M. florida and	F. simillis abundant, O. wellmanii frequent	48%/21	47%/7	nil	5%	floodplain/swamp	NEW SAMPLE
(3611 ft)			D. speciosus present	with C. hughesi, D. speciosus, M. florida,						HEREIN
NEW				R. watherooensis present.						
SAMPLE										
HEREIN										
1196.3m	swc	indeterminate		Very few longranging palynomorphs,	-	-	-	-	?channel	NEW SAMPLE
(3925 ft)				abundant.						HEREIN
NEW				Tracheid shaids.						
SAMPLE										
HEREIN										
1226.8m	swc	indeterminate		totally barren	-	-	-	-	??channel (barren)	Dettmann (1964)
(4025 ft)										
1710-13m	cutts	indeterminate	heavy caving	Triassic abundant with F. dailyi,	38%/17	61%/7	nil	1%	?floodplain	NEW SAMPLE
(5610-20ft)				C. australiensis, P. notensis (caved)					(?caved and reworked)	HEREIN
NEW				P. parvispinosus (caved) present.						
SAMPLE										
HEREIN										
1715.1m	swc	apparently lower	base F. wonthaggiensis	C. equalis, Cyathidites, L. verrucatus,	v high/16	v high/5	nil	nil	floodplain	Dettmann (1964)
(5627 ft)		C. australiensis but oldest	base C. australiensis	R. eminulus, S. antiquasporites, M. antarcticus,						
		F. wonthaggiensis suggests		all abundant.						
		lower F. wonthaggiensis		C. australiensis, F. wonthaggiensis present.						
		Zone.								
1717.2m	swc	indeterminate		lean, carbonised and bland with L. verrucatus,	high/3	high/3	nil	nil	?floodplain	Dettmann (1964)
(5634 ft)				Cyathidites and trisaccates abundant plus						
				abundant Triassic reworking						

TABLE 10b SUMMARY SHEET, HAWKESDALE-1

BASIN: OTWAY

WELL NAME: **HAWKESDALE-1**

AGE		PALYNOLOGICAL ZONES	HIGHEST DATA				LOWEST DATA			
			Preferred Depth	Rtg	Alternate Depth	Rtg	Preferred Depth	Rtg	Alternate Depth	Rtg
Early Cret.	Albian	P. pannosus								
		upper C. paradoxa								
		lower C. paradoxa								
		C. striatus	379	2			439	0		
	Aptian	upper P. notensis	522	1			615	2		
		lower P. notensis	708	1			877	0	1018, 1062	?
	late Neoc.	upper F. wonthaggiensis								
		lower F. wonthaggiensis	1008	2			1100	0	1715	?
	early Neoc.	upper C. australiensis								
		lower C. australiensis	1715	?			1715	?		
Late Jurassic	Tithonian	upper R. watherooensis								
		middle R. watherooensis								
		lower R. watherooensis								

1. Samples down to 877.2 m swc are clearly P. notensis Zone. Beneath, 1008.6 m swc, 1059.2m swc and 1100.6 m swc appear to lower F. wonthaggiensis Zone, but 1018.0 m swc and 1062.5 m swc contain P. notensis and so appear to be P. notensis Zone. Given the sandy lithologies, the latter two may represent mud contaminations.
2. Sample at 1715.1 m swc contains F. wonthaggiensis (Dettmann data) suggesting F. wonthaggiensis Zone, but it may be mud contamination as the other markers were not seen. Ignoring F. wonthaggiensis, the lower C. australiensis Zone is suggested.

TABLE 11a KEY DATA, HEATHFIELD-1 (Dettmann 1965b data not available, Dettmann 1969 is discussion only, Morgan 1989b data semiquantitative, Morgan new data herein quantitative)

DEPTH	TYPE	ZONE	KEY DATUMS	COMMENTS	SPORE CONTENT/ DIVERSITY	POLLEN CONTENT/ DIVERSITY	SALINE ALGAE %	FRESH ALGAE %	ENVIRONMENT	REFERENCE
566.3-567.8m	CORE 3	?P. pannosus		Dettmann 1969 says sample is heavily						Dettmann 1969
1858-63 ft				contaminated						
567.8-571.0m	CORE 4	indeterminate (Dettmann)								Dettmann 1969
1863-73 ft										
720.9-723.3m	CORE 5	C. paradoxa								Dettmann 1969
2365-73 ft										
723.3-725.7m	CORE 6	C. paradoxa								Dettmann 1969
2373-81 ft										
876.0-879.0m	CORE 7	C. paradoxa								Dettmann 1969
2874-84 ft										
1023.2-1032.4m	CORE 8	?C. paradoxa								Dettmann 1969
3357-87 ft										
1144.2-1147.3m	CORE 9	C. striatus								Dettmann 1969
3754-64 ft										
1263.1-1266.1m	CORE 10	C. striatus	top P. notensis	Cyathidites, P. notensis frequent,	high/25	low/6	nil	rare	swamp margin	Morgan 1989b
4144-54 ft			base C. striatus	C. striatus, F. asymmetricus, F. dailyi,						
			base P. parvispinosus	P. notensis, P. parvispinosus present						
1298.4-1300.3m	CORE 12	P. notensis	top D. speciosus	C. hughesi, F. dailyi, P. notensis,	low/21	low/6	nil	rare	floodplain/channel	Morgan 1989b
4260-68 ft			top C. hughesi	F. wonthaggiensis, D. speciosus present						
1531.9-1535.0m	CORE 13	P. notensis		Cyathidites common.	high/24	low/5	nil	rare	swamp margin	Morgan 1989b
5026-36 ft				C. hughesi, D. speciosus, F. asymmetricus,						
				F. dailyi, F. wonthaggiensis, P. notensis						
				present						
1647.7-1650..8m	CORE 14	P. notensis		Cyathidites common	high/16	low/4	nil	nil	swamp/swamp margin	Morgan 1989b
5406-16 ft				D. speciosus, F. dailyi, P. notensis						
				present						
1735.2-1707.8m	CORE 15	P. notensis	base F. wonthaggiensis	C. australiensis, C. hughesi, F. asymmetricus,	mod/23	low/4	nil	rare	floodplain	Morgan 1989b
5693-03 ft			base P. notensis	F. dailyi, F. wonthaggiensis, P. notensis,						

TABLE 11a KEY DATA, HEATHFIELD-1 (Dettmann 1965b data not available, Dettmann 1969 is discussion only, Morgan 1989b data semiquantitative, Morgan new data herein quantitative)

			single M. evansii	M. evansii present.						
			base F. asymmetricus							
1825.8-1828.8m	CORE 16	F. wonthaggiensis, apparently	top R. watherooensis	Cyathidites common.	high/19	low/4	nil	rare	swamp	Morgan 1989b
5990-00 ft		lower	base F. asymmetricus,	C. australiensis, D. speciosus,						
			base D. speciosus	F. asymmetricus, F. dailyi present.						
1944.0m	CORE 17	upper F. wonthaggiensis	base T. reticulatus	Cyathidites, O. wellmanii common	77%/25	22%/3	nil	1%	swamp margin	NEW SAMPLE
NEW SAMPLE				with C. australiensis, C. cooksoniae, C. hughesi,						HEREIN
HEREIN				D. speciosus, F. dailyi, F. wonthaggiensis,						
				T. reticulatus present.						
1944.6-1947.8m	CORE 17		base T. reticulatus	Dettmann (1969) assigns this to her						Dettmann 1969
6380-90 ft				T. reticulatus Subzone, suggesting presence						
				of T. reticulatus						
2100.0m	CORE 18A	lower F. wonthaggiensis		Cyathidites, O. wellmanii, Falcisporites common	57%/12	38%/6	1%	4%	floodplain/lake	NEW SAMPLE
NEW SAMPLE				with C. australiensis, D. speciosus, present.						HEREIN
HEREIN				Lean.						
2100.1-2103.1m	CORE 18									Dettmann 1969
6890-00 ft										
2282.0m	CORE 19A	lower F. wonthaggiensis		Cyathidites, O. wellmanii, Falcisporites common	78%/21	22%/4	nil	trace	swamp margin	NEW SAMPLE
NEW SAMPLE				with C. cooksoniae, D. speciosus,						HEREIN
HEREIN				?F. wonthaggiensis present.						
2282.0-2286.0m	CORE 19									Dettmann 1969
7487-00 ft										

TABLE 11b **SUMMARY SHEET, HEATHFIELD-1**

BASIN: **OTWAY**

WELL NAME: **HEATHFIELD-1**

AGE		PALYNOLOGICAL ZONES	HIGHEST DATA				LOWEST DATA			
			Preferred Depth	Rtg	Alternate Depth	Rtg	Preferred Depth	Rtg	Alternate Depth	Rtg
Early Cret.	Albian	P. pannosus	566	?			567	?		
		upper C. paradoxa	720	2			879	0	1032	?
		lower C. paradoxa								
		C. striatus	1144	2			1266	0		
	Aptian	upper P. notensis	1298	1			1707	0		
		lower P. notensis								
	late Neoc.	upper F. wonthaggiensis	1825	2			1944	0		
		lower F. wonthaggiensis	2100	2			2282	0		
	early Neoc.	upper C. australiensis								
		lower C. australiensis								
Late Jurassic	Tithonian	upper R. watherooensis								
		middle R. watherooensis								
		lower R. watherooensis								

1. ?P. pannosus Zone may represent late Cretaceous caving into the top of the C. paradoxa Zone, or may be "in place" P. pannosus Zone.
2. No raw data is available above 1144 m, so samples are less confidently assigned.

TABLE 12a KEY DATA, LINDON-1 (Morgan 1986b data semiquantitative)

DEPTH (m)	TYPE	ZONE	KEY DATUMS	COMMENTS	SPORE CONTENT/ DIVERSITY	POLLEN CONTENT/ DIVERSITY	SALINE ALGAE %	FRESH ALGAE %	ENVIRONMENT	REFERENCE
1545.0	swc	upper C. paradoxa	top C. paradoxa,	M. antarticus common, with C. australiensis,	mod/25	high/7	nil	rare	floodplain	Morgan (1986b)
			top P. grandis	C. striatus, F. asymmetricus, C. paradoxa,						
			No P. pannosus	F. wonthaggiensis, T. reticulatus,						
			base B. holodictyus in	B. holodictyus, P. grandis, P. majus, C. hughesi						
			swcs	(reworked) all present						
			base P. majus							
1752.5	swc	indeterminate	top P. notensis	very lean with C. australiensis, F. asymmetricus	ex low/7	ex low/1	-	rare	??channel	Morgan (1986b)
1948.0	swc	upper C. paradoxa	base P. grandis	C. australiensis, C. striatus, P. notensis,	mod/21	mod/6	nil	nil	floodplain	Morgan (1986b)
			top P. parvispinosus	P. parvispinosus, F. asymmetricus,						
				C. paradoxa, F. wonthaggiensis, P. grandis						
				present.						
2010	cutts	lower C. paradoxa-C. striatus	top D. speciosus	S. antiquasporites common.	high/32	mod/7	nil	rare	floodplain/swamp margin	Morgan (1986b)
			top D. filosus	C. australiensis, C. striatus, D. speciosus,						
			base T. trioreticulosus	P. notensis, P. parvispinosus, F. asymmetricus,						
			(cutts)	F. wonthaggiensis, T. reticulatus, D. filosus,						
				T. trioreticulosus present.						
2130	cutts	lower C. paradoxa-C. striatus		C. australiensis, F. simlis, O. wellmanii	high/19	mod/7	nil	rare	floodplain	Morgan (1986b)
				frequent with C. striatus, D. speciosus,						
				P. notensis, P. parvispinosus, F. asymmetricus,						
				T. reticulatus, B. holodictyus (caved)						
				C. paradoxa (?caved)						
2210	cutts	lower C. paradoxa-C. striatus		C. australiensis common, C. striatus,	high/19	mod/4	nil	rare	floodplain	Morgan (1986b)
				P. notensis, F. asymmetricus,						
				F. wonthaggiensis, T. reticulatus, C. paradoxa						
				(?caved)						
2253.0	swc	C. striatus	base C. striatus in swcs	S. antiquasporites, Gleichenlidites	high/24	low/7	nil	rare	swamp margin	Morgan (1986b)
			top C. hughesi	frequent with C. australiensis, C. striatus,						
			base consistent	P. notensis, P. parvispinosus, C. hughesi,						
			F. asymmetricus	F. asymmetricus, T. reticulatus present.						
			base T. reticulatus							
2330	cutts	P. notensis, upper		Cyathiditos common with C. australiensis,	high/18	mod/5	nil	rare	floodplain	Morgan (1986b)
				D. speciosus, P. notensis, P. parvispinosus						

TABLE 12a KEY DATA, LINDON-1 (Morgan 1986b data semiquantitative)

2400	cutts	P. notensis, upper		Cyathidites common with C. australiensis frequent and D. speciosus, P. notensis present.	high/19	mod/5	nil	rare	floodplain/swamp margin	Morgan (1986b)
2449.0	swc	P. notensis, upper		Cyathidites, P. notensis frequent with C. australiensis, D. speciosus, C. hughesi, F. wonthaggiensis present.	high/22	low/6	nil	nil	swamp margin	Morgan (1986b)
2500	cutts	P. notensis, upper		Cyathidites common with C. australiensis, P. notensis, C. hughesi present.	v high/16	mod/6	nil	rare	swamp	Morgan (1986b)
2620	cutts	P. notensis, lower	top C. variabilis	Cyathidites common, P. notensis C. australiensis frequent with C. variabilis present.	v high/20	low/6	nil	rare	swamp margin	Morgan (1986b)
2720	cutts	P. notensis, lower		Cyathidites common, with C. australiensis, C. variabilis, D. speciosus, P. parvispinosus, P. notensis, C. hughesi present.	v high/17	low/5	nil	rare	swamp/swamp margin	Morgan (1986b)
2810	cutts	P. notensis, lower	base consistent P. parvispinosus but in cutts	Cyathidites common with C. australiensis, C. variabilis, D. speciosus, P. parvispinosus, P. notensis, C. paradoxa (caved)	v high/24	low/6	nil	nil	swamp margin	Morgan (1986b)
2848.0	swc	P. notensis, lower	base P. notensis in swcs, see beneath in cutts	lean with P. notensis	mod/10	low/3	nil	nil	??channel (lean)	Morgan (1986b)
2890	cutts	P. notensis-F. wonthaggiensis	P. notensis present but in cutts.	Cyathidites common with C. variabilis, D. speciosus, P. notensis (?caved)	v high/19	low/4	nil	rare	swamp margin/swamp	Morgan (1986b)
2900.0	swc	indeterminate		Cyathidites common, F. similis frequent with bland assemblage	v high/8	mod/5	nil	nil	floodplain	Morgan (1986b)
2902.5	swc	P. notensis (lower)	oldest F. asymmetricus in swcs	Cyathidites, F. similis frequent with C. australiensis, D. speciosus, C. hughesi, F. asymmetricus present.	mod/16	mod/5	nil	nil	floodplain	Morgan (1986b)
2950	cutts	F. wonthaggiensis (if P. notensis, F. asymmetricus caved)-P. notensis (if in place)	base F. asymmetricus but in cutts	Cyathidites common, L. verrucatus frequent with C. australiensis, D. speciosus, F. asymmetricus (?caved), P. notensis (?caved) present.	v high/21	low/4	nil	rare	swamp margin	Morgan (1986b)
2980	cutts	?F. wonthaggiensis	top M. evansii base P. notensis,	C. australiensis frequent with M. evansii, P. notensis, P. parvispinosus, D. speciosus,	high/25	mod/6	nil	rare	swamp margin	Morgan (1986b)

TABLE 12a KEY DATA, LINDON-1 (Morgan 1986b data semiquantitative)

			P. parvispinosus,	C. australiensis present.						
			D. speciosus,							
			C. australiensis but in							
			cutts							
3005.0	swc	C. australiensis or younger		Cyathidites common with bland assemblage	v high/11	low/5	nil	nil	?swamp	Morgan (1986b)
				including Cicatricosisporites ludbrookiae						

TABLE 12b SUMMARY SHEET, LINDON-1

BASIN: OTWAY

WELL NAME: LINDON-1

AGE		PALYNOLOGICAL ZONES	HIGHEST DATA				LOWEST DATA			
			Preferred Depth	Rtg	Alternate Depth	Rtg	Preferred Depth	Rtg	Alternate Depth	Rtg
Early Cret.	Albian	P. pannosus								
		upper C. paradoxa	1545	0			1948	0		
		lower C. paradoxa	2010	1						
		C. striatus					2253	0		
	Aptian	upper P. notensis	2330	3			2500	4		
		lower P. notensis	2620	3			2902	1		
	late Neoc.	upper F. wonthaggiensis	2980	3						
		lower F. wonthaggiensis					2980	4		
	early Neoc.	upper C. australiensis								
		lower C. australiensis								
Late Jurassic	Tithonian	upper R. watherooensis								
		middle R. watherooensis								
		lower R. watherooensis								

1. Cuttings at 2950 m and 2980 m are clearly contaminated but 2980 m contains M. evansii. The absence of T. reticulatus suggests lower F. wonthaggiensis Zone
2. Swc at 3005.0 m is extremely lean and cannot be confidently assigned.

TABLE 13a KEY DATA, McEACHERN-1 (Morgan 1990a, 1990b data semiquantitative)

DEPTH (m)	TYPE	ZONE	KEY DATUMS	COMMENTS	SPORE CONTENT/ DIVERSITY	POLLEN CONTENT/ DIVERSITY	SALINE ALGAE %	FRESH ALGAE %	ENVIRONMENT	REFERENCE
160	cutts	P. pannosus	top C. paradoxa	Cyathidites abundant with C. australiensis,	v high/13	low/5	nil	nil	?swamp	Morgan (1990 b)
			top P. pannosus	C. paradoxa, C. striatus, P. pannosus						
				present.						
170	cutts	P. pannosus	base P. pannosus but	Cyathidites abundant, with C. australiensis,	v high/14	low/5	nil	nil	?swamp	Morgan (1990 b)
			in cutts	C. paradoxa, C. striatus, P. pannosus,						
				T. reticulatus present.						
504.6	swc	lower C. paradoxa	top D. speciosus	F. similis common, M. antarcticus frequent,	high/19	v high/3	trace	trace	brackish	Morgan (1990 a)
			base C. paradoxa	with F. asymmetricus, C. australiensis,					(?channel/?floodplain)	
				C. striatus, D. speciosus, C. paradoxa,						
				T. reticulatus, P. majus present.						
699.6	swc	C. striatus	top P. notensis	F. similis, C. australiensis	high/21	mod/3	nil	rare	swamp margin	Morgan (1990 a)
			base C. striatus	O. wellmanii, R. austroclavatidites all frequent						
			top F. wonthaggiensis	with P. notensis, F. asymmetricus, C. striatus						
				D. speciosus, F. wonthaggiensis present						
905.6	swc	P. notensis, ?upper	base F. asymmetricus,	Cyathidites common, with P. notensis,	v high/28	low/2	nil	rare	swamp margin	Morgan (1990 a)
			base F. wonthaggiensis	F. asymmetricus, C. australiensis, D. speciosus,						
			base P. parvispinosus	F. wonthaggiensis, P. parvispinosus,						
			base T. reticulatus	T. reticulatus present						
1048.6	swc	P. notensis, ?upper	base P. notensis	F. similis, R. austroclavatidites, Cyathidites	high/13	high/7	nil	rare	floodplain	Morgan (1990 a)
				frequent, with P. notensis, C. australiensis						
				present.						
1174.5	swc	F. wonthaggiensis, lower	top M. evansii	Cyathidites, L. verrucatus common with	v high/29	low/4	nil	rare	swamp margin	Morgan (1990 a)
			base C. australiensis	C. australiensis, C. hughesi, D. speciosus						
			top C. cooksoniae	present.						
1289.5	swc	F. wonthaggiensis, lower		lean with C. hughesi, D. speciosus	mod/20	low/5	nil	rare	swamp margin/swamp	Morgan (1990 a)
1365.0	swc	indeterminate		F. similis, Cyathidites, O. wellmanii frequent,	high/15	mod/4	nil	nil	?floodplain	Morgan (1990 a)
				lean and non-descript						
1414.1	swc	F. wonthaggiensis, lower		L. verrucatus common, with C. hughesi,	v high/20	low/8	nil	nil	swamp margin	Morgan (1990 a)
				D. speciosus, C. cooksoniae						
1461.1	swc	indeterminate		almost barren with minor bland spores	ex low/4	nil	-	-	??channel (near barren)	Morgan (1990 a)

TABLE 13a KEY DATA, McEACHERN-1 (Morgan 1990a, 1990b data semiquantitative)

1504.6	swc	indeterminate		almost barren, bland	ex low/5	ex low/1	-	trace	??channel (near barren)	Morgan (1990 a)
1523.6	swc	indeterminate		O. wellmanii abundant, Cyathidites common, with C. cooksoniae present.	ex high/12	low/6	-	rare	swamp	Morgan (1990 a)
1649.1	swc	F. wonthaggiensis, lower		Cyathidites, O. wellmanii frequent with D. speciosus present.	high/10	low/2	nil	nil	?swamp	Morgan (1990 a)
1857.6	swc	indeterminate		F. similis, Cyathidites frequent, with bland assemblage	mod/6	low/2	nil	nil	?channel/?floodplain	Morgan (1990 a)
1946.1	swc	F. wonthaggiensis, lower	base D. speciosus	F. similis, R. austroclavatidites, Cyathidites, O. wellmanii frequent, with C. hughesi, D. speciosus present.	high/20	mod/5	nil	nil	floodplain/swamp margin	Morgan (1990 a)
2075	cutts	C. australiensis, upper		lean with C. hughesi	mod/21	low/5	nil	nil	swamp margin	Morgan (1990 a)
2120	cutts	apparently upper C. australiensis but in cutts	top M. florida	lean with M. florida, C. hughesi (possibly caved) present.	mod/16	low/3	nil	nil	?swamp margin	Morgan (1990 a)
2354	cutts	apparently upper C. australiensis but in cutts	base C. hughesi but in cutts	lean with C. hughesi, M. florida, C. australiensis (?caved)	mod/21	low/6	nil	nil	swamp margin	Morgan (1990 a)
2364	cutts	lower C. australiensis-middle R. watherooensis		lean and bland with F. asymmetricus caved and M. antarcticus, C. equalis present.	mod/11	low/3	nil	nil	?swamp	Morgan (1990 a)
2374	cutts	lower C. australiensis-lower R. watherooensis	base M. florida R. watherooensis	R. austroclavatidites, Cyathidites, O. wellmanii frequent with M. evansii (?caved), R. watherooensis present.	high/14	low/2	trace (?caved)	rare	?brackish ?swamp	Morgan (1990 a)
2384	cutts	lower C. australiensis-middle R. watherooensis		C. dampieri, F. similis, R. austroclavatidites frequent with C. equalis, M. antarcticus present.	mod/13	v high/6	rare (?caved)	rare	floodplain/channel	Morgan (1990 a)

TABLE 13b SUMMARY SHEET, McEACHERN-1

BASIN: OTWAY

WELL NAME: **McEACHERN-1**

AGE		PALYNOLOGICAL ZONES	HIGHEST DATA				LOWEST DATA			
			Preferred Depth	Rtg	Alternate Depth	Rtg	Preferred Depth	Rtg	Alternate Depth	Rtg
Early Cret.	Albian	P. pannosus	160	3			170	4		
		upper C. paradoxa								
		lower C. paradoxa	504	1			504	1		
		C. striatus	699	2			699	0		
	Aptian	upper P. notensis	905	2						
		lower P. notensis					1048	1		
	late Neoc.	upper F. wonthaggiensis								
		lower F. wonthaggiensis	1174	2			1946	1		
	early Neoc.	upper C. australiensis	2075	3			2354	4		
		lower C. australiensis	2364	3						
Late Jurassic	Tithonian	upper R. watherooensis								
		middle R. watherooensis					2384	4		
		lower R. watherooensis								

TABLE 14a KEY DATA, MOCAMBORO-11 (Morgan 1991b data semiquantitative)

DEPTH (m)	TYPE	ZONE	KEY DATUMS	COMMENTS	SPORE CONTENT/ DIVERSITY	POLLEN CONTENT/ DIVERSITY	SALINE ALGAE %	FRESH ALGAE %	ENVIRONMENT	REFERENCE
9.8-12.8	CORE	upper C. paradoxa	top C. paradoxa, top F. asymmetricus	Cyathidites frequent with C. australiensis, F. asymmetricus, C. paradoxa present.	high/8	mod/2	nil	nil	?swamp	Morgan (1991b)
25.9-28.8	CORE	upper C. paradoxa	base P. grandis, base T. tribotrys	F. similis common, Cyathidites, M. antarcticus frequent with C. paradoxa, T. trioreticulosus, C. striatus, P. grandis, T. tribotrys present.	mod/14	v high/6	nil	nil	channel/floodplain	Morgan (1991b)
98.7-103.0	CORE	C. paradoxa	base C. paradoxa T. trioreticulosus	Cyathidites, C. australiensis frequent with C. paradoxa, T. trioreticulosus, C. striatus present.	high/21	low/4	nil	nil	swamp margin	Morgan (1991b)
213.4-214.4	CORE	C. striatus	top P. parvispinosus	Cyathidites, C. australiensis both common with F. asymmetricus, P. parvispinosus, C. striatus present.	v high/17	mod/6	nil	rare	swamp margin/swamp	Morgan (1991b)
324.5-328.5	CORE	C. striatus	top D. speciosus top F. wonthaggiensis top P. notensis	Cyathidites, M. antarcticus, O. wellmanii, F. wonthaggiensis frequent with D. speciosus, F. wonthaggiensis, C. australiensis, P. notensis, P. parvispinosus, C. striatus present.	v high/20	low/3	nil	rare	swamp margin	Morgan (1991b)
360.0	swc	C. striatus	base C. striatus	Cyathidites, F. similis, M. antarcticus frequent with D. speciosus, F. wonthaggiensis, C. striatus present.	high/15	v high/4	nil	nil	floodplain	Morgan (1991b)
414.0	swc	P. notensis	top C. hughesi	Cyathidites common, F. similis frequent with C. hughesi, D. speciosus, P. parvispinosus, P. notensis present.	v high/12	mod/6	nil	rare	swamp	Morgan (1991b)
550.0	swc	P. notensis	top F. reticulowonthaggiensis	Cyathidites, F. grandis, R. austroclavatidites frequent, with C. hughesi, D. speciosus, P. notensis, F. reticulowonthaggiensis present.	high/16	high/4	nil	nil	swamp	Morgan (1991b)
577.2-578.5	CORE	P. notensis		Cyathidites, F. similis common, with C. hughesi, D. speciosus, F. wonthaggiensis, C. australiensis, P. notensis present.	high/22	high/6	nil	rare	floodplain	Morgan (1991b)
590.0	swc	P. notensis		Cyathidites, F. similis frequent with D. speciosus, P. notensis, P. parvispinosus	mod/11	mod/4	nil	nil	?floodplain/?channel	Morgan (1991b)

TABLE 14a KEY DATA, MOCAMBORO-11 (Morgan 1991b data semiquantitative)

				present.						
609.0	swc	P. notensis		Cyathidites, P. notensis frequent with	high/13	low/4	nil	frequent	swamp/lake	Morgan (1991b)
				D. speciosus, F. wonthaggiensis,						
				C. australiensis, P. notensis,						
				P. parvispinosus, C. paradoxa (caved)						
				present.						
613.7-	CORE	P. notensis		Cyathidites common, O. wellmanii frequent	v high/24	low/4	nil	rare	swamp margin	Morgan (1991b)
618.1				with C. hughesi, D. speciosus, T. reticulatus,						
				F. asymmetricus, F. wonthaggiensis,						
				P. notensis present.						
669.0	swc	P. notensis		F. similis common, Cyathidites, F. grandis	high/10	v high/4	nil	nil	floodplain	Morgan (1991b)
				frequent with D. speciosus, P. notensis,						
				P. parvispinosus present.						
705.1-	CORE	P. notensis	base	Cyathidites abundant, Falcisporites,	v high/20	high/4	nil	frequent	swamp margin/swamp	Morgan (1991b)
706.3			F. reticulowonthaggiensis	R. austroclavatidites frequent with						
				C. hughesi, D. speciosus, F. wonthaggiensis,						
				P. notensis, P. parvispinosus,						
				F. reticulowonthaggiensis present.						
777.8-	CORE	P. notensis	base P. parvispinosus	Cyathidites, O. wellmanii frequent with	high/27	low/5	nil	rare	swamp margin	Morgan (1991b)
788				C. hughesi, D. speciosus, F. wonthaggiensis,						
				C. australiensis, P. notensis, P. parvispinosus						
				present.						
832.4-	CORE	P. notensis		Cyathidites abundant, with C. hughesi,	v high/19	mod/5	nil	rare	swamp/swamp margin	Morgan (1991b)
835.4				D. speciosus, F. asymmetricus,						
				C. australiensis, P. notensis present.						
905.9-	CORE	P. notensis		Cyathidites frequent with C. hughesi,	high/22	low/6	nil	nil	swamp margin	Morgan (1991b)
907.6				T. reticulatus, C. australiensis, P. notensis,						
				present.						
				C. paradoxa caved						
965.0	swc	P. notensis	base P. notensis,	Cyathidites and F. similis frequent, with	high/17	mod/6	nil	nil	floodplain	Morgan (1991b)
			C. australiensis	D. speciosus, C. australiensis, P. notensis						
				present.						
979.1-	CORE	indeterminate		very lean, Cyathidites and Falcisporites	low/9	low/3	nil	nil	??channel	Morgan (1991b)
985.0				frequent, with no markers. C. paradoxa						
				caved						

TABLE 14a KEY DATA, MOCAMBORO-11 (Morgan 1991b data semiquantitative)

997.0-	CORE	Indeterminate		very lean, Cyathidites frequent	low/6	low/3	nil	nil	??channel	Morgan (1991b)
1000.0										
1006.0	swc	F. wonthaggiensis, upper	base F. asymmetricus,	O. wellmanii common, with C. hughesi,	v high/26	high/6	nil	trace	floodplain	Morgan (1991b)
			F. wonthaggiensis,	D. speciosus, T. reticulatus, F. wonthaggiensis,						
			top and base M. evansii	F. asymmetricus (?caved), M. evansii						
1061.1-	CORE	F. wonthaggiensis, upper	base D. speciosus,	F. similis, Cyathidites common, with	v high/23	high/5	nil	nil	floodplain	Morgan (1991b)
1066.7			T. reticulatus	C. hughesi, D. speciosus, T. reticulatus						
				present.						
1161.8-	CORE	Indeterminate		very lean, F. similis common	low/4	high/6	nil	nil	?channel	Morgan (1991b)
1166.1										
1252.7-	CORE	Indeterminate		nearly barren	ex low/7	ex low/5	nil	nil	?channel	Morgan (1991b)
1258.8										
1317.0-	CORE	C. australiensis, upper	top C. stylosus	Cyathidites common, with C. hughesi,	v high/10	mod/5	nil	nil	?swamp	Morgan (1991b)
1323.0				C. stylosus present.						
1346.0	swc	C. australiensis, upper	base C. hughesi	O. wellmanii common, F. similis frequent,	v high/14	mod/6	nil	nil	?swamp	Morgan (1991b)
				C. hughesi present.						

TABLE14b SUMMRY SHEET, MOCAMBORO-11

BASIN: OTWAY

WELL NAME: MOCAMBORO-11

AGE		PALYNOLOGICAL ZONES	HIGHEST DATA				LOWEST DATA			
			Preferred Depth	Rtg	Alternate Depth	Rtg	Preferred Depth	Rtg	Alternate Depth	Rtg
Early Cret.	Albian	P. pannosus								
		upper C. paradoxa	9	0			28	0		
		lower C. paradoxa	96	2			103	0		
		C. striatus	213	2			360	0		
	Aptian	upper P. notensis	414	1						
		lower P. notensis					965	0		
	late Neoc.	upper F. wonthaggiensis	1006	1			1066			
		lower F. wonthaggiensis								
	early Neoc.	upper C. australiensis	1317	2			1346	0		
		lower C. australiensis								
Late Jurassic	Tithonian	upper R. watherooensis								
		middle R. watherooensis								
		lower R. watherooensis								

TABLE 15a KEY DATA, MOYNE FALLS-1 (Dettmann 1970b data semiquantitative)

DEPTH	TYPE	ZONE	KEY DATUMS	COMMENTS	SPORE CONTENT/ DIVERSITY	POLLEN CONTENT/ DIVERSITY	SALINE ALGAE %	FRESH ALGAE %	ENVIRONMENT	REFERENCE
392.9m (1289 ft)	swc	C. paradoxa, upper	base P. majus, T. trioreticulosus	C. australiensis, Cyathidites, S. antiquasporites, Podocarpidites all abundant, with B. holodictyus, C. striatus, P. majus, T. reticulatus, T. trioreticulosus, T. tribotrys present.	ex high/14	high/4	nil	nil	floodplain	Dettmann (1970b)
422.1m (1385 ft)	swc	lower C. paradoxa-C. striatus	top C. striata F. asymmetricus	lean with C. australiensis, C. striata, F. asymmetricus, T. reticulatus present.	low/8	low/3	nil	nil	??channel	Dettmann (1970b)
440.1m (1444 ft)	swc	lower C. paradoxa-C. striatus	base C. striata	ex lean with C. australiensis, C. striata, T. reticulatus present.	ex lean/4	ex lean/2	nil	nil	??channel	Dettmann (1970b)
480.4m (1576 ft)	swc	C. striatus-P. notensis	top F. wonthaggiensis	O. wellmanii, C. australiensis, Cyathidites, R. austroclavatidites, S. antiquasporites, A. australis, M. antarcticus, Podocarpidites all abundant, with F. asymmetricus, F. wonthaggiensis, T. reticulatus present.	ex high/11	ex high/6	nil	nil	floodplain	Dettmann (1970b)
527.9m (1732 ft)	swc	C. striatus	top D. speciosus base C. striatus	O. wellmanii, C. australiensis, Cyathidites, L. verrucatus, R. austroclavatidites, S. antiquasporites, C. torosa, Podocarpidites all common, with C. striatus, D. speciosus, F. asymmetricus, F. wonthaggiensis, T. reticulatus present.	v high/18	v high/7	nil	nil	floodplain	Dettmann (1970b)
549.2m (1802 ft)		P. notensis (?lower if common C. variabilis is not reworked)	top C. variabilis and common top P. parvispinosus top P. notensis	A. spinulosus, O. wellmanii, Cyathidites, Podocarpidites all abundant, with C. variabilis, C. australiensis, F. asymmetricus, F. wonthaggiensis, P. notensis, P. parvispinosus, T. reticulatus present.	ex high/19	high/5	nil	nil	swamp margin	Dettmann (1970b)
579.7m (1902 ft)		P. notensis	base P. parvispinosus	O. wellmanii, Cyathidites, R. austroclavatidites, Podocarpidites abundant, with D. speciosus, P. parvispinosus present.	v high/10	high/5	nil	rare	swamp	Dettmann (1970b)
595.0m (1952 ft)	swc	P. notensis- lower F. wonthaggiensis		O. wellmanii, Cyathidites, R. austroclavatidites, S. antiquasporites, Podocarpidites abundant, with C. australiensis, C. variabilis, C. hughesi, D. speciosus, F. wonthaggiensis present.	ex high/22	v high/7	nil	rare	swamp margin/floodplain	Dettmann (1970b)

TABLE 15a KEY DATA, MOYNE FALLS-1 (Dettmann 1970b data semiquantitative)

616.3m	swc	P. notensis, lower	base P. notensis	O. wellmanii, Cyathidites, R. austroclavatidites,	ex high/17	v high/8	nil	nil	floodplain	Dettmann (1970b)
(2022 ft)				S. antiquasporites, M. antarcticus,						
				Podocarpidites all abundant, with						
				C. australiensis, C. variabilis, D. speciosus,						
				F. asymmetricus, F. wonthaggiensis,						
				P. notensis, T. reticulatus present.						
660.2m	swc	F. wonthaggiensis, upper		O. wellmanii, Cyathidites, R. austroclavatidites,	ex high/20	v high/6	rare	nil	brackish (?floodplain)	Dettmann (1970b)
(2166 ft)				R. eminulus, M. antarcticus abundant, with						
				C. australiensis, C. hughesi, D. speciosus,						
				F. wonthaggiensis, T. reticulatus present.						
710.2m	swc	F. wonthaggiensis, upper	base T. reticulatus	Cyathidites, L. verrucatus, R. austroclavatidites,	ex high/18	v high/4	nil	nil	floodplain/swamp	Dettmann (1970b)
(2330 ft)				R. eminulus, Podocarpidites all abundant with					margin	
				D. speciosus, C. australiensis, C. hughesi,						
				T. reticulatus present.						
929.6m	swc	indeterminate		totally barren	-	-	-	-	-	Dettmann (1970b)
(3050 ft)										

TABLE 15b SUMMARY SHEET, MOYNE FALLS-1

BASIN: OTWAY

WELL NAME: MOYNE FALLS-1

AGE		PALYNOLOGICAL ZONES	HIGHEST DATA				LOWEST DATA			
			Preferred Depth	Rtg	Alternate Depth	Rtg	Preferred Depth	Rtg	Alternate Depth	Rtg
Early Cret.	Albian	P. pannosus								
		upper C. paradoxa	392	1			392	0		
		lower C. paradoxa	422							
		C. striatus					527	0		
	Aptian	upper P. notensis	549	2						
		lower P. notensis	549	?			616	0		
	late Neoc.	upper F. wonthaggiensis	660	2			710	0		
		lower F. wonthaggiensis								
	early Neoc.	upper C. australiensis								
		lower C. australiensis								
Late Jurassic	Tithonian	upper R. watherooensis								
		middle R. watherooensis								
		lower R. watherooensis								

TABLE 16a KEY DATA, NERITA-1 (Dettmann 1967 data semiquantitative, MacPhail 1989b data qualitative)

DEPTH	TYPE	ZONE	KEY DATUMS	COMMENTS	SPORE CONTENT/ DIVERSITY	POLLEN CONTENT/ DIVERSITY	SALINE ALGAE %	FRESH ALGAE %	ENVIRONMENT	REFERENCE
1464.3m	swc	Early Cretaceous	top F. asymmetricus	lean flora lacks Late Cretaceous types, has	low/5	low/4	?nil	?nil	possibly channel	Dettmann (1967)
(4804 ft)		(P. pannosus-C. striatus)		F. asymmetricus						
1506.9m	swc	C. striatus	top D. speciosus	C. australiensis common	mod/13	mod/5	nil (Det)	nil (Det)	floodplain (Dettmann)	Dettmann (1967)
(4944 ft)			C. striatus present	C. striatus, D. speciosus present (Dettmann)			trace (Mac)	trace (Mac)	brackish (McPhail)	
			no C. paradoxa or	C. striatus, T. reticulatus, D. speciosus,						
			P. notensis	C. australiensis present (MacPhail)						MacPhail (1989b)
1611.5m	swc	indeterminate		D. speciosus, F. asymmetricus,	high/16	high/6	nil	nil (Det)	floodplain	Dettmann (1967)
(5287 ft)		(lacks key markers)		F. wonthaggiensis all rare. Nothing older				trace (Mac)		
				(Dettmann) F. asymmetricus, D. speciosus						
				F. asymmetricus, D. speciosus (MacPhail)						MacPhail (1989b)
1695.0m	swc	indeterminate	no zone markers	rare longranging forms only	low/4	low/2	nil	nil	indeterminate	Dettmann (1967)
(5561 ft)		(near barren)								
1728.2-31.3	cutts	apparently C. striatus		C. striatus, F. asymmetricus, D. speciosus	?/20	?/4	nil	trace		MacPhail (1989b)
(5670-80 ft)		(but could be older if C. striatus		(McPhail)						
		is caved)								
1798.3m	swc	indeterminate	no zone markers	C. australiensis rare	low/9	low/5	nil	trace	?swamp margin	Dettmann (1967)
(5900 ft)		Early Cretaceous		P. linearis rare otherwise non-descript						
				(Dettmann) lean						
1822.7-25.8	cutts	apparently C. striatus	base C. striatus in cutts	C. striatus, F. asymmetricus, T. reticulatus,	?/25	?/3	trace	trace		MacPhail (1989b)
(5980-90 ft)		(but could be older)		T. trioreticulosus (caved)	(?caved)		(cutts)			
1849.5m	swc	C. striatus (caving possible,	base C. striatus in swcs	Cyathidites abundant,	high/16	mod/6	nil	nil	swamp margin/floodplain	Dettmann (1967)
(6068 ft)		but unlikely given lack of		Aequitriradites, C. australiensis,						
		P. notensis or C. hughesi)		F. asymmetricus, T. reticulatus, Corollina,						
				M. antarcticus all common,						
				C. striatus, D. speciosus, F. wonthaggiensis						
				present (Dettmann)						
				F. asymmetricus, T. reticulatus, D. speciosus						
				present (MacPhail)						MacPhail (1989b)
1898.9-1902	cutts	apparently C. striatus (but could		C. striatus (?caved)	high/27	low/1	nil	trace	?swamp margin (cutts)	MacPhail (1989b)
(6230-40 ft)		be older if C. striatus is		F. asymmetricus, T. reticulatus,	(?caved)					
		caved)		T. trioreticulatus (caved) all present						

TABLE 16a KEY DATA, NERITA-1 (Dettmann 1967 data semiquantitative, MacPhail 1989b data qualitative)

1967.8m	swc	zone indeterminate, no older		C. australiensis common, nothing younger	mod/10	high/6	nil	nil	fluvial/floodplain	Dettmann (1967)
(6456 ft)		than C. australiensis		(Dettmann)						
				F. asymmetricus (MacPhail)						MacPhail (1989b)
1966.0-69.0	cutts	indeterminate								MacPahil (1989b)
(6450-60 ft)		(caved Paleocene)								

TABLE 16b SUMMARY SHEET, NERITA-1A

BASIN: OTWAY (TORQUAY SUB-BASIN)

WELL NAME: NERITA-1A

AGE		PALYNOLOGICAL ZONES	HIGHEST DATA				LOWEST DATA			
			Preferred Depth	Rtg	Alternate Depth	Rtg	Preferred Depth	Rtg	Alternate Depth	Rtg
Early Cret.	Albian	P. pannosus								
		upper C. paradoxa								
		lower C. paradoxa								
		C. striatus	1506	2			1849	0	1902	4
	Aptian	upper P. notensis								
		lower P. notensis								
	late Neoc.	upper F. wonthaggiensis								
		lower F. wonthaggiensis								
	early Neoc.	upper C. australiensis								
		lower C. australiensis								
Late Jurassic	Tithonian	upper R. watherooensis								
		middle R. watherooensis								
		lower R. watherooensis								

1. Samples below 1902 m (cutts) are indeterminate.

TABLE 17a KEY DATA, NORTH EUMERALLA-1 (Wilschut 1974a data quantitative, Morgan 1988d data semiquantitative)

DEPTH	TYPE	ZONE	KEY DATUMS	COMMENTS	SPORE CONTENT/ DIVERSITY	POLLEN CONTENT/ DIVERSITY	SALINE ALGAE %	FRESH ALGAE %	ENVIRONMENT	REFERENCE
1036.9m (3402 ft)	swc	P. pannosus	top C. striatus top F. asymmetricus base P. pannosus	C. australiensis frequent C. striatus, P. pannosus, F. asymmetricus, T. reticulatus, C. hughesi (reworked) present	mod/29	low/9	nil	trace	swamp margin	Wilschut (1974a)
1077.2m (3534 ft)	swc	upper C. paradoxa	top C. paradoxa T. trioreticulosus	C. australiensis frequent C. striatus, C. paradoxa, T. trioreticulosus present	mod/19	low/5	nil	nil	swamp/swamp margin	Wilschut (1974a)
1096.1m (3596 ft)	swc	upper C. paradoxa		C. australiensis frequent C. striatus, F. asymmetricus, T. trioreticulosus present	mod/18	mod/7	nil	nil	floodplain	Wilschut (1974a)
1129.6m (3706 ft)	swc	indeterminate		C. striatus, C. australiensis present (lean)	mod/10	mod/5	nil	nil	?channel (lean)	Wilschut (1974a)
1155.2m (3790 ft)	swc	C. paradoxa		C. australiensis abundant C. striatus, F. asymmetricus, F. wonthaggiensis, C. paradoxa present	high/23	mod/9	nil	trace	swamp margin/floodplain	Wilschut (1974a)
1194.9m (3920 ft)	swc	C. paradoxa		C. striatus common, C. paradoxa present	high/18	mod/6	nil	nil	?swamp	Wilschut (1974a)
1232.0m (4042 ft)	swc	C. paradoxa, upper		C. striatus, C. paradoxa, T. trioreticulatus present	high/15	mod/4	nil	nil	?swamp	Wilschut (1974a)
1264.9m (4150 ft)	swc	C. paradoxa, upper	base T. trioreticulosus (swcs)	C. striatus common, T. trioreticulosus present	high/10	mod/5	nil	trace	?swamp	Wilschut (1974a)
1313.1m (4308 ft)	swc	indeterminate		C. australiensis abundant	v high/12	low/2	nil	nil	?swamp	Wilschut (1974a)
1319.8m (4330 ft)	cutts	C. paradoxa, upper	possible base P. grandis but in cutts	C. striatus, D. speciosus (?reworked) C. paradoxa, P. grandis, (?caved), P. parvispinosus (?reworked), F. asymmetricus, F. wonthaggiensis, T. trioreticulosus (?caved) all present	mod/26	low/4	nil	trace	?swamp margin (cutts)	Morgan (1988d)
1428.3m (4686 ft)	swc	indeterminate		barren	-	-	-	-	?channel (barren)	Wilschut (1974a)

TABLE 17a KEY DATA, NORTH EUMERALLA-1 (Wilschut 1974a data quantitative, Morgan 1988d data semiquantitative)

1466.1m	cutts	C. paradoxa		C. hughesi (reworked), C. striatus,	mod/25	low/4	nil	nil	?swamp margin (cutts)	Morgan (1988d)
(4810 ft)				F. asymmetricus, F. wonthaggiensis						
				present						
1509.7m	swc	C. paradoxa	base C. paradoxa (swcs)	Cyathidites super abundant	high/14	low/4	nil	nil	swamp margin	Wilschut (1974a)
(4892 ft)				C. australiensis abundant						
				C. paradoxa present						
1588.0m	cutts	C. paradoxa (?upper)	base P. grandis in	F. asymmetricus, C. paradoxa, C. striatus,	mod/25	low/5	nil	trace	swamp margin	Morgan (1988d)
(5210 ft)			cuttings, not recorded	C. striata, P. grandis (?caved) all present						
			in swcs							
1593.2m	swc	indeterminate		C. australiensis rare	-	-	-	-	?fluvial channel	Wilschut (1974a)
(5227 ft)				extremely lean						
1606.0m	swc	indeterminate		C. australiensis rare	-	-	-	-	?fluvial channel	Wilschut (1974a)
(5269 ft)				extremely lean						
1649.0m	cutts	lower C. paradoxa	top consistent	D. speciosus, P. notensis	mod/30	low/5	nil	trace	?swamp margin (cutts)	Morgan (1988d)
(5410 ft)			D. speciosus (cutts)	F. asymmetricus, C. paradoxa, C. striatus,						
			top P. notensis	T. trioreticulosus present						
			?base C. paradoxa							
			(?caved beneath)							
1666.3m	swc	C. striatus	top D. speciosus (swcs)	Cicatricosisporites spp. abundant	high/20	low/2	nil	nil	swamp margin	Wilschut (1974a)
(5467 ft)			(see 1649 in cutts)	D. speciosus, F. asymmetricus,						
			without C. paradoxa	F. wonthaggiensis, T. reticulatus present						
1705.1m	swc	C. striatus		C. australiensis abundant	high/15	low/4	nil	nil	swamp margin	Wilschut (1974a)
(5594 ft)				C. striatus, D. speciosus, F. asymmetricus,						
				F. wonthaggiensis, T. reticulatus						
1740.4m	cutts	uncertain, possible caving		D. speciosus, P. notensis, P. parvispinosus,	high/36	low/3	nil	trace	?swamp margin (cutts)	Morgan (1988d)
(5710 ft)				F. asymmetricus, C. paradoxa (?caved),	(?caved)					
				C. striatus, T. trioreticulosus present						
1746.2m	swc	C. striatus		C. striatus, D. speciosus, F. asymmetricus,	mod/21	mod/4	nil	nil	floodplain	Wilschut (1974a)
(5729 ft)				F. wonthaggiensis present						
1793.4m	swc	C. striatus	base C. striatus (swc)	C. australiensis super-abundant	high/27	low/2	nil	nil	swamp margin	Wilschut (1974a)
(5884 ft)			top C. hughesi	C. striatus, C. hughesi, D. speciosus,						
			base F. asymmetricus	F. asymmetricus, T. reticulatus,						
			(swc)	F. wonthaggiensis, P. notensis, D. filosus						
			top P. notensis (swc)	present						

TABLE 17a KEY DATA, NORTH EUMERALLA-1 (Wilschut 1974a data quantitative, Morgan 1988d data semiquantitative)

			see 1649m in cutts							
1831.8m	cutts	uncertain (caving)	base C. striata in cutts	D. speciosus, P. notensis, C. australiensis	mod/32	low/5	nil	trace	?swamp margin (cutts)	Morgan (1988d)
(6010 ft)				frequent, P. parvispinosus, F. asymmetricus,	(?/caved)					
				F. wonthaggiensis, C. paradoxa, C. striatus,						
				C. striata, T. trioreticulosus (caved)						
				all present						
1859.3m	swc	indeterminate	base T. reticulatus	T. reticulatus, C. australiensis present,	low/5	low/4	nil	nil	?fluvial channel (lean)	Wilschut (1974a)
(6100 ft)			(swcs) consistent down	but very lean.						
			to 1962 in cuttings							
1888.5m	swc	indeterminate		almost barren	-	-	-	-	?fluvial channel	Wilschut (1974a)
(6196 ft)										
1918.4m	swc	P. notensis (?upper)	base P. notensis (swcs)	Cyathidites dominant with D. speciosus,	high/15	low/4	nil	nil	swamp margin	Wilschut (1974a)
(6294 ft)			base C. australiensis	P. notensis, C. australiensis, C. ludbrookiae						
			base Clcat. ludbrookiae	present						
1962.9m	cutts	P. notensis, lower	top C. variabilis,	P. notensis frequent, C. variabilis, C. hughesi	high/28	low/4	nil	trace	?swamp margin (cutts)	Morgan (1988d)
(6440 ft)			top consistent	P. parvispinosus, F. asymmetricus,	(?caved)					
			C. hughesi in cutts	C. paradoxa, C. striatus, T. reticulatus						
			base C. striatus (cutts)							
			consistent							
			base P. parvispinosus,							
			base T. reticulatus,							
			base F. asymmetricus							
			in cutts							
2044.3m	swc	indeterminate		almost barren	-	-	-	-	?fluvial channel	Wilschut (1974a)
(6707 ft)										
2077.2m	swc	lower F. wonthaggiensis	single C. stylosus	O. wellmanii frequent	low/19	high/6	nil	nil	fluvial	Wilschut (1974a)
(6815 ft)			O. wellmanii frequent	C. hughesi, D. speciosus, F. wonthaggiensis,						
			without P. notensis	C. stylosus present						
			or T. reticulatus							
2103.1m	cutts	unclear (possible caving)		D. speciosus, P. notensis frequent	high/26	low/4	nil	trace	?swamp margin (cutts)	
(6900 ft)				C. variabilis, C. hughesi present	(?caved)					
2174.4m	swc	lower F. wonthaggiensis		O. wellmanii common	mod/23	low/7	nil	nil	floodplain	Wilschut (1974a)
(7134 ft)				C. hughesi, D. speciosus, F. wonthaggiensis,						
				present						

TABLE 17a KEY DATA, NORTH EUMERALLA-1 (Wilschut 1974a data quantitative, Morgan 1988d data semiquantitative)

2194.6m (7200 ft)	cutts	F. wonthaggiensis	top M. evansii	D. speciosus, M. evansii, C. variabilis, C. hughesi, F. wonthaggiensis, M. florida, T. reticulatus (?caved) present	high/34 (?caved)	low/4	nil	trace	?swamp margin (cutts)	Morgan (1988d)
2225.0m (7300 ft)	swc	lower F. wonthaggiensis		D. speciosus present, lean	low/9	nil	nil	nil	?fluvial channel (very lean)	Wilschut (1974a)
2279.0m (7477 ft)	swc	indeterminate	top B. spectabilis (swc)	O. wellmanii common C. hughesi, B. spectabilis present	high/20	low/7	nil	nil	swamp margin	Wilschut (1974a)
2299.4m (7544 ft)	swc	lower F. wonthaggiensis		C. equalis abundant O. wellmanii frequent D. speciosus, F. wonthaggiensis, Couperi. tabulatus present	high/14	mod	nil	nil	swamp margin/floodplain	Wilschut (1974a)
* F. wonthaggiensis below 2077.2m is an unknown quantity. Some specimens of O. wellmanii can mimic F. wonthaggiensis and have been misidentified in the past.										
2307.3m (7570 ft)	cutts	unclear (caving)		D. speciosus, P. notensis frequent (?caved), C. variabilis, C. hughesi, P. parvispinosus (?caved), F. wonthaggiensis, D. speciosus	high/29	low/2	nil	trace	swamp margin	Morgan (1988d)
2417.1m (7930 ft)	cutts	F. wonthaggiensis (?lower)	base F. wonthaggiensis in cuttings (?caved)	M. evansii, P. notensis (caved) C. variabilis, T. reticulatus (caved), F. asymmetricus (caved), F. wonthaggiensis (?caved)	v high/27	low/2	nil	trace	?swamp margin (cutts)	Morgan (1988d)
2468.9m (8100 ft)	swc	indeterminate		non-descript microflora	mod/13	mod/6	nil	nil	floodplain	Wilschut (1974a)
2520.7m (8270 ft)	cutts	apparently F. wonthaggiensis, lower		D. speciosus, C. hughesi, F. salasii, P. parvispinosus (caved) all present	high/19	mod/5	nil	trace	swamp margin/ floodplain	Morgan (1988d)
2526.5m (8289 ft)	swc	indeterminate		B. spectabilis present O. wellmanii abundant	high/27	mod/10	nil	nil	floodplain	Wilschut (1974a)
2603.0m (8540 ft)	cutts	apparently F. wonthaggiensis, lower		D. speciosus, M. evansii present, O. wellmanii common	v high/22	low/5	nil	trace	swamp margin	Morgan (1988d)
2613.7m (8575 ft)	swc	upper C. australiensis or younger		C. hughesi, B. spectabilis, M. florida present O. wellmanii common	mod/30	mod/9	nil	nil	floodplain/swamp margin	Wilschut (1974a)
2635.6m (8647 ft)	swc	lower F. wonthaggiensis	base F. dailyi M. florida, D. speciosus (swcs)	O. wellmanii abundant F. similis abundant F. dailyi, B. spectabilis, D. speciosus, F. wonthaggiensis	high/35	high/9	nil	trace	floodplain	Wilschut (1974a)

TABLE 17a KEY DATA, NORTH EUMERALLA-1 (Wilschut 1974a data quantitative, Morgan 1988d data semiquantitative)

2636.5m	cutts	apparently F. wonthaggiensis,	?base D. speciosus	D. speciosus (?caved), M. evansii,	v high/20	low/4	nil	trace	swamp	Morgan (1988d)
(8650 ft)		lower	(but in cutts)	C. australiensis (consistent above but						
				largely caved), C. variabilis, C. hughesi,						
				T. reticulatus (caved), P. notensis (caved)						
2675.2m	swc	upper C. australiensis	base C. hughesi and	C. hughesi, F. wonthaggiensis, C. equalis	mod/20	mod/5	nil	nil	floodplain/channel	Wilschut (1974a)
(8777 ft)			F. wonthaggiensis	present. Sample lean.						
			(swcs)							
2712.7m	cutts	indeterminate		D. speciosus (?caved), M. evansii, P. notensis	v high/12	low/2	trace	trace	indeterminate (swamp	Morgan (1988d)
(8900 ft)				(caved)					facies caved)	
				cutts in metamorphic basement, therefore all						
				caved.						

TABLE 17b SUMMARY SHEET, NORTH EUMERALLA-1

BASIN: OTWAY

WELL NAME: NORTH EUMERALLA-1

AGE		PALYNOLOGICAL ZONES	HIGHEST DATA				LOWEST DATA			
			Preferred Depth	Rtg	Alternate Depth	Rtg	Preferred Depth	Rtg	Alternate Depth	Rtg
Early Cret.	Albian	P. pannosus	1036	0			1036	0		
		upper C. paradoxa	1077	2			1319	0	1588	4
		lower C. paradoxa	1649	3			1649	4		
		C. striatus	1666	2			1793	0		
	Aptian	upper P. notensis	1918	2			1918	0		
		lower P. notensis	1962	0			1962	4		
	late Neoc.	upper F. wonthaggiensis								
		lower F. wonthaggiensis	2077	2			2635	0		
	early Neoc.	upper C. australiensis	2675	2			2675	0		
		lower C. australiensis								
Late Jurassic	Tithonian	upper R. watherooensis								
		middle R. watherooensis								
		lower R. watherooensis								

TABLE 18a KEY DATA, PRETTY HILL-1 (Morgan 1988e data semiquantitative)

DEPTH	TYPE	ZONE	KEY DATUMS	COMMENTS	SPORE CONTENT/ DIVERSITY	POLLEN CONTENT/ DIVERSITY	SALINE ALGAE %	FRESH ALGAE %	ENVIRONMENT	REFERENCE
892.5-896.1 (2928-40ft)	CORE 7	P. pannosus	top C. paradoxa base P. pannosus	C. striatus, C. paradoxa, P. pannosus, F. asymmetricus present	high/20	low/2	nil	rare	swamp margin	Morgan (1988e)
1018.0-1024.1m (3340-60ft)	CORE 8	C. paradoxa, upper	top P. grandis	C. striatus, C. paradoxa, P. grandis, T. trioreticulosus present	v high/22	mod/5	nil	rare	floodplain	Morgan (1988e)
1161.2-1167.4m (3810-30ft)	CORE 9	indeterminate		C. striatus, D. speciosus (?reworked) present. bland	high/20	high/7	nil	nil	floodplain	Morgan (1988e)
1264.9m (4150 ft)	cutts	C. paradoxa, upper	top C. striata (?reworked)	C. striatus, C. paradoxa, T. tribotrys, T. trioreticulosus, C. striata (?reworked) present	mod/24	mod/4	nil	trace	floodplain	Morgan (1988e)
1315.2-1319.2m (4315-28ft)	CORE 10	C. paradoxa, upper		C. striatus, C. paradoxa, C. striata present	mod/27	low/4	trace	nil	brackish marine	Morgan (1988e)
1409.7-1414.3m (4625-40ft)	CORE 11	C. paradoxa, upper		C. striatus, D. speciosus (reworked) C. paradoxa, T. trioreticulosus present.	mod/22	low/2	nil	rare	swamp margin	Morgan (1988e)
1414.3-1418.8m (4640-55ft)	CORE 12	indeterminate		bland, lean	low/11	high/4	nil	nil	channel	Morgan (1988e)
1418.3m (4850 ft)	CORE 12	C. paradoxa, upper		C. striatus, C. paradoxa, T. tribotrys, T. trioreticulosus present.	mod/17	low/2	trace	nil	brackish marine	Morgan (1988e)
1478.3m (4850 ft)	cutts	upper C. paradoxa	base P. majus	P. majus, extremely lean	ex low/1	nil	nil	nil	?channel (barren)	Morgan (1988e)
1505.7-1512.1m (4940-61ft)	CORE 13	C. paradoxa, upper	top C. striata	C. paradoxa, C. striata present.	v high/20	low/4	nil	nil	swamp margin/swamp	Morgan (1988e)
1569.7m (5150 ft)	cutts	lower C. paradoxa	top consistent D. speciosus base P. grandis, and	C. striatus, D. speciosus, P. grandis (caved) T. trioreticulosus, C. striata, F. asymmetricus all present.	v high/26	low/3	nil	trace	swamp margin	Morgan (1988e)

TABLE 18a KEY DATA, PRETTY HILL-1 (Morgan 1988e data semiquantitative)

			C. striata but in cutts							
1645.9-	CORE 14	lower C. paradoxa-C. striatus		C. variabilis (reworked), C. striatus,	mod/17	mod/4	nil	trace	floodplain	Morgan (1988e)
1652.0m				D. speciosus present.						
(5400-20ft)										
1652.0-	CORE 15	lower C. paradoxa	base T. trioreticulosus,	C. striatus, D. speciosus, C. paradoxa,	v high/19	low/4	nil	rare	swamp margin	Morgan (1988e)
1653.2m			base C. striatus,	P. notensis, T. triobotrys, T. trioreticulosus,						
(5420-24ft)			base C. paradoxa in	F. asymmetricus present.						
			CORE							
			top P. notensis							
1737.4m	cutts	indeterminate		bland and very lean	v low/7	v low/1	nil	trace	?channel (very lean)	Morgan (1988e)
(5700 ft)										
1809.0-	CORE 16	lower P. notensis	top consistent	F. asymmetricus frequent	high/25	high/4	trace	rare	brackish marine	Morgan (1988e)
1812.6m			C. variabilis	C. variabilis, P. notensis, C. hughesi present.						
(5935-47ft)			base P. notensis in							
			CORES							
1850.1-	CORE 17	indeterminate		very lean and bland	v low/4	low/2	nil	nil	?channel (barren)	Morgan (1988e)
1853.2m										
(6070-80ft)										
1862.3m	cutts	uncertain (possible and	?base P. notensis	C. striatus (caved), C. paradoxa (caved),	mod/24	low/4	nil	rare	swamp margin	Morgan (1988e)
(6110 ft)		definite caving) possibly	(?caved)	P. grandis (caved), P. notensis (?caved),						
		lower P. notensis	?base T. reticulatus	T. reticulatus (?caved)						
			(?caved)							
1877.5m	cutts	uncertain (possible and	base P. parvispinosus	C. striatus (caved), F. asymmetricus,	high/29	high/3	nil	trace	floodplain	Morgan (1988e)
(6160 ft)		definite caving)	(cutts)	C. paradoxa (caved), P. notensis (?caved),	(?caved)					
				T. reticulatus, P. parvispinosus						
1943.4-	CORE 18	apparently F. wonthaggiensis,	base C. australiensis,	C. variabilis, C. striatus (caved), D. speciosus,	mod/15	low/4	nil	trace	swamp	Morgan (1988e)
1947.1m		lower	F. asymmetricus in	F. asymmetricus, C. australiensis present						
(6376-88ft)			CORES							
			(could be contaminated							
			given clean sands)							
2039.1-	CORE 19	indeterminate (lean)		C. equalis, R. wathercoensis present	low/14	low/2	nil	trace	?channel (barren)	Morgan (1988e)
2042.8m				very lean and bland						
(6690-02ft)										

TABLE 18a KEY DATA, PRETTY HILL-1 (Morgan 1988e data semiquantitative)

2136.6m (7010 ft)	cutts	indeterminate (lean)		very lean and bland. F. equalis present.	low/10	low/3	nil	trace	?channel (barren)	Morgan (1988e)
2194.6m-2198.8m (7200-14ft)	CORE 20	indeterminate (lean)		M. antarcticus present.	low/9	low/2	nil	nil	?channel (barren)	Morgan (1988e)
2194.6-98.8m (7200-14 ft) new sample herein	CORE 20	lower F. wonthaggiensis	base D. speciosus	very lean, Botryococcus dominant, F. simillis common, D. speciosus present	17%/13spp	29%/5spp	nil	54%	lake	new sample herein
2311.9-2315.6m (7585-97ft)	CORE 21	indeterminate (lean)		K. scaberis present.	low/5	low/3	nil	trace	?channel (barren)	Morgan (1988e)
2334.8m (7660 ft)	cutts	indeterminate (lean)		V. triquetrus present.	low/4	low/2	nil	trace	?channel (barren)	Morgan (1988e)
2402.8-2406.4m (7883-95ft)	CORE 22	indeterminate (barren)		totally barren	nil	nil	nil	nil	?channel (barren)	Morgan (1988e)
2471.0-2476.2m (8107-24ft)	CORE 23	indeterminate (barren)		caved Late Cretaceous only	nil	nil	nil	nil	?channel (barren)	Morgan (1988e)

TABLE 18b SUMMARY SHEET, PRETTY HILL-1

BASIN: OTWAY

WELL NAME: PRETTY HILL-1

AGE		PALYNOLOGICAL ZONES	HIGHEST DATA				LOWEST DATA			
			Preferred Depth	Rtg	Alternate Depth	Rtg	Preferred Depth	Rtg	Alternate Depth	Rtg
Early Cret.	Albian	P. pannosus	892	0			896	0		
		upper C. paradoxa	1018	2			1478	0		
		lower C. paradoxa	1505	1			1653	0		
		C. striatus								
	Aptian	upper P. notensis								
		lower P. notensis	1809	1			1812	0		
	late Neoc.	upper F. wonthaggiensis								
		lower F. wonthaggiensis	1943	2			2198	0		
	early Neoc.	upper C. australiensis								
		lower C. australiensis								
Late Jurassic	Tithonian	upper R. watherooensis								
		middle R. watherooensis								
		lower R. watherooensis								

1. Cores at 2311.9 m - 2476.0 m are virtually barren and indeterminate.

TABLE 19a KEY DATA, PURRUMBETE-1 (Dettmann 1968b data semiquantitative)

DEPTH	TYPE	ZONE	KEY DATUMS	COMMENTS	SPORE CONTENT/ DIVERSITY	POLLEN CONTENT/ DIVERSITY	SALINE ALGAE %	FRESH ALGAE %	ENVIRONMENT	REFERENCE
488.3m	swc	lower C. paradoxa	top D. speciosus,	Cyathidites abundant	high/26	mod/7	nil	nil	swamp margin	Dettmann (1968b)
(1602 ft)			top C. striata	C. paradoxa, C. striata, C. striatus,						
			base C. paradoxa	D. speciosus, F. asymmetricus						
640.1m	swc	indeterminate		D. speciosus, F. asymmetricus present.	low/7	low/5	nil	nil	?channel (barren)	Dettmann (1968b)
(2100 ft)				Bland and lean.						
701.4m	swc	indeterminate		Bland and nearly barren.	ex low/1	low/5	nil	nil	?channel	Dettmann (1968b)
(2300 ft)										
792.5m	swc	C. striatus	top P. parvispinosus	Cyathidites, Falcisporites, M. antarcticus	high/26	high/6	nil	nil	floodplain/swamp	Dettmann (1968b)
(2600 ft)				all abundant.					margin	
				C. striatus, D. speciosus, D. filosus,						
				F. asymmetricus, P. parvispinosus,						
				T. reticulatus present.						
853.4m	swc	C. striatus		C. striatus, D. speciosus, T. reticulatus present	low/8	low/4	nil	nil	?channel (barren)	Dettmann (1968b)
(2800 ft)				lean						
886.4m	swc	uncertain, bland		D. speciosus, F. wonthaggiensis present	low/7	low/4	nil	nil	?channel (barren)	Dettmann (1968b)
(2908 ft)				bland and lean						
912.9m	swc	indeterminate		barren of palynomorphs	nil	nil	nil	nil	?channel (barren)	Dettmann (1968b)
(2995 ft)										
1005.8m	swc	C. striatus	base C. striatus	Cyathidites, M. antarcticus, Podocarpidites	v high/20	v high/20	nil	nil	floodplain	Dettmann (1968b)
(3300 ft)				all abundant.						
				C. striatus, D. speciosus, F. asymmetricus,						
				P. notensis, T. reticulatus present.						
1069.8m	swc	P. notensis, upper		O. wellmanii, M. antarcticus abundant.	high/16	high/5	nil	nil	floodplain	Dettmann (1968b)
(3510 ft)				D. speciosus, F. asymmetricus, P. notensis,						
				T. reticulatus present.						
1130.8m	swc	indeterminate		Cyathidites, S. antiquasporites, M. antarcticus	high/12	high/8	nil	nil	floodplain	Dettmann (1968b)
(3710 ft)				abundant.						
				C. australiensis, F. asymmetricus present.						
1167.4m	swc	P. notensis, upper		Cyathidites, M. antarcticus, Podocarpidites	high/15	high/6	nil	nil	floodplain	Dettmann (1968b)
(3830 ft)				all abundant.						

968b data semiquantitative)

	C. australiensis, D. speciosus, F. asymmetricus, T. reticulatus present.						
	C. australiensis, D. speciosus lean	mod/14	mod/5	nil	nil	floodplain	Dettmann (1968b)
C. hughesi F. asymmetricus	Cyathidites, M. antarcticus, Podocarpidites all abundant.	high/29	high/5	nil	rare	floodplain/swamp margin	Dettmann (1968b)
	C. hughesi, D. speciosus, D. filosus, F. asymmetricus, P. notensis present.						
C. variabilis	Cyathidites, M. antarcticus abundant.	v high/21	high/4	nil	nil	swamp margin/floodplain	Dettmann (1968b)
	C. australiensis, C. variabilis, D. speciosus, P. notensis, T. reticulatus present.						
	D. speciosus present, lean and bland.	low/9	low/4	nil	nil	?channel (barren)	Dettmann (1968b)
	Cyathidites abundant.	v high/16	mod/3	nil	nil	swamp margin	Dettmann (1968b)
	C. hughesi, D. speciosus, P. notensis, T. reticulatus, C. australiensis present.						
	Cyathidites, M. antarcticus abundant.	v high/18	high/5	nil	nil	swamp margin/floodplain	Dettmann (1968b)
	C. australiensis, C. hughesi, D. speciosus, F. wonthaggiensis present.						
C. variabilis	Cyathidites, M. antarcticus abundant.	v high/16	high/5	nil	nil	swamp margin/floodplain	Dettmann (1968b)
	C. australiensis, C. variabilis, C. hughesi, F. wonthaggiensis, P. notensis, T. reticulatus						
P. notensis	Cyathidites, M. antarcticus abundant.	v high/14	high/4	nil	trace	swamp margin/swamp	Dettmann (1968b)
	C. australiensis, D. speciosus, F. wonthaggiensis, P. notensis						

TABLE 19b SUMMARY SHEET, PURRUMBETE-1

BASIN: OTWAY

WELL NAME: PURRUMBETE-1

AGE		PALYNOLOGICAL ZONES	HIGHEST DATA				LOWEST DATA			
			Preferred Depth	Rtg	Alternate Depth	Rtg	Preferred Depth	Rtg	Alternate Depth	Rtg
Early Cret.	Albian	P. pannosus								
		upper C. paradoxa								
		lower C. paradoxa	488	0			488	0		
		C. striatus	792	2			1005	0		
	Aptian	upper P. notensis	1069	2			1286	2		
		lower P. notensis	1368	1			1805	0		
	late Neoc.	upper F. wonthaggiensis								
		lower F. wonthaggiensis								
	early Neoc.	upper C. australiensis								
		lower C. australiensis								
Late Jurassic	Tithonian	upper R. watherooensis								
		middle R. watherooensis								
		lower R. watherooensis								

TABLE 20a KEY DATA, ROSS CREEK-1 (Wilschut 1974b data quantitative)

DEPTH	TYPE	ZONE	KEY DATUMS	COMMENTS	SPORE CONTENT/ DIVERSITY	POLLEN CONTENT/ DIVERSITY	SALINE ALGAE %	FRESH ALGAE %	ENVIRONMENT	REFERENCE
813.8m (2670 ft)	swc	P. pannosus	top P. pannosus	C. australiensis, P. pannosus. Very lean.	ex low/3	ex low/1	nil	nil	??channel	Wilschut (1974b)
836.7m (2745 ft)	swc	P. pannosus		C. australiensis frequent	high/24	high/8	nil	nil	floodplain	Wilschut (1974b)
862.6m (2830 ft)	swc	indeterminate		barren	-	-	-	-	??channel	Wilschut (1974b)
893.1m (2930 ft)	swc	P. pannosus	base P. pannosus top F. asymmetricus	C. australiensis frequent. P. pannosus, F. asymmetricus present.	high/22	high/9	nil	nil	floodplain	Wilschut (1974b)
917.4m (3010 ft)	swc	indeterminate		almost barren	nil	ex low/2	-	-	??channel	Wilschut (1974b)
946.1m (3104 ft)	swc	indeterminate		C. australiensis common, M. florida present.	vhigh/17	low/3	nil	nil	swamp margin	Wilschut (1974b)
978.4m (3210 ft)	swc	C. striatus or younger		C. australiensis and C. torosa common, F. asymmetricus, C. striatus, T. reticulatus present.	high/19	high/8	nil	trace	floodplain	Wilschut (1974b)
1008.9m (3310 ft)	swc	C. striatus or younger		C. australiensis, C. striatus present. Very lean.	vlow/5	vlow/2	-	-	??channel	Wilschut (1974b)
1010.7m (3316 ft)	swc	indeterminate		C. australiensis frequent, M. antarcticus abundant, D. speciosus (reworked)	mod/16	ex high/6	nil	trace	?channel	Wilschut (1974b)
1025.0m (3363 ft)	swc	C. paradoxa-?P. pannosus	top C. paradoxa ?base P. pannosus	Cyathidites abundant, M. antarcticus common, C. australiensis frequent, P. pannosus?, C. striatus, T. reticulatus, C. paradoxa	vhigh/18	high/7	nil	nil	floodplain	Wilschut (1974b)
1035.0m (3396 ft)	swc	indeterminate		extremely lean	ex low/3	low/3	-	-	??channel (sand)	Wilschut (1974b)
1039.7m (3411 ft)	swc	indeterminate		extremely lean	ex low/1	ex low/4	-	-	??channel (sand)	Wilschut (1974b)
1041.8m (3418 ft)	swc	indeterminate		almost barren	ex low/1	nil	-	-	??channel (sand)	Wilschut (1974b)

› data quantitative)

	barren	-	-	-	-	?channel (barren sand)	Wilschut (1974b)
	barren	-	-	-	-	??channel (barren sand)	Wilschut (1974b)
	almost barren	ex low/2	ex low/1	-	-	??channel (barren sand)	Wilschut (1974b)
	barren	-	-	-	-	??channel (barren sand)	Wilschut (1974b)
	C. australiensis, C. striatus, C. paradoxa, present. Very lean.	ex low/3	ex low/2	nil	nil	??channel (lean sand)	Wilschut (1974b)
ioreticulosus	M. antarcticus abundant, C. australiensis common, F. asymmetricus, T. reticulatus, C. paradoxa, T. trioreticulosus present.	high/38	ex high/6	nil	nil	floodplain	Wilschut (1974b)
	barren	-	-	-	-	??channel (barren sand)	Wilschut (1974b)
randis	Podocarpidites, O. wellmanii and Corollina abundant, C. australiensis, F. asymmetricus, C. striatus, T. reticulatus, C. paradoxa, T. trioreticulosus, P. grandis present.	vhigh/28	vhigh/6	nil	rare	floodplain	Wilschut (1974b)
	Podocarpidites abundant, C. australiensis, F. asymmetricus, C. striatus, T. reticulatus, C. paradoxa, T. trioreticulosus	mod/34	high/9	nil	nil	floodplain	Wilschut (1974b)
	Corollina, A. australis common, C. australiensis, F. asymmetricus, C. striatus, C. paradoxa present.	mod/16	high/10	nil	rare	channel/floodplain	Wilschut (1974b)
ibotrys mon/abundant aliensis	C. australiensis abundant, F. asymmetricus, C. striatus, T. reticulatus, T. tribotrys present.	ex high/25	ex low/4	nil	rare	swamp margin	Wilschut (1974b)
	C. australiensis, O. wellmanii common, F. asymmetricus, C. striatus, T. reticulatus, C. paradoxa, T. trioreticulosus, P. grandis	high/23	low/3	nil	nil	swamp margin	Wilschut (1974b)

TABLE 20a KEY DATA, ROSS CREEK-1 (Wilschut 1974b data quantitative)

				present.						
1484.4m	swc	upper C. paradoxa		C. australiensis, T. reticulatus common,	ex high/19	low/5	nil	nil	swamp margin	Wilschut (1974b)
(4870 ft)				F. asymmetricus, C. striatus, C. paradoxa,						
				P. grandis, T. trioreticulosus present.						
1508.8m	swc	indeterminate		C. australiensis super-abundant,	ex high/13	ex low/3	nil	nil	swamp	Wilschut (1974b)
(4950 ft)				F. asymmetricus, C. striatus, T. reticulatus						
				present.						
1544.1m	swc	C. paradoxa, upper		Cyathidites super-abundant,	ex high/21	low/7	nil	nil	swamp/swamp margin	Wilschut (1974b)
(5068 ft)				C. australiensis, T. reticulatus abundant,						
				C. striatus, C. paradoxa, T. trioreticulosus,						
				T. tribotrys present.						
1570.9m	swc	C. paradoxa, upper		C. australiensis, T. reticulatus abundant,	ex high/17	low/7	nil	nil	swamp margin	Wilschut (1974b)
(5154 ft)				F. asymmetricus, C. striatus, C. paradoxa,						
				T. trioreticulosus present.						
1604.5m	swc	C. paradoxa, upper	P. grandis present	R. austroclavatidites common, C. australiensis,	mod/24	low/5	nil	nil	swamp margin	Wilschut (1974b)
(5264 ft)				F. asymmetricus, C. striatus, T. reticulatus,						
				C. paradoxa, T. trioreticulosus, P. grandis						
				present.						
1630.4m	swc	C. paradoxa, upper	base T. tribotrys	C. australiensis super-abundant, O. wellmanii	v high/24	mod/7	nil	nil	swamp margin	Wilschut (1974b)
(5349 ft)				abundant, F. asymmetricus, C. striatus,						
				T. reticulatus, C. paradoxa, T. trioreticulosus,						
				T. tribotrys present.						
1664.2m	swc	upper C. paradoxa	base T. trioreticulosus	C. australiensis, T. reticulatus, Cyathidites all	ex high/24	ex low/3	nil	nil	swamp	Wilschut (1974b)
(5460 ft)			P. grandis present	super-abundant, F. asymmetricus, C. paradoxa,						
				T. trioreticulosus, P. grandis present.						
1703.2m	swc	C. paradoxa		C. australiensis common, F. asymmetricus,	high/20	mod/14	nil	nil	floodplain	Wilschut (1974b)
(5588 ft)				T. reticulatus, C. paradoxa present.						
1743.5m	swc	C. paradoxa		C. australiensis, T. reticulatus, C. paradoxa	low/12	low/3	nil	nil	channel/floodplain	Wilschut (1974b)
(5720 ft)				present. Lean.						
1769.4m	swc	C. paradoxa, upper	base P. grandis	P. grandis, C. australiensis super-abundant,	ex high/26	low/5	nil	nil	swamp	Wilschut (1974b)
(5805 ft)			top D. filosus	D. filosus, C. striatus, C. paradoxa						
1899.5m	swc	indeterminate		Very lean, C. australiensis present.	vlow/7	vlow/2	nil	nil	??channel	Wilschut (1974b)
(6232 ft)										

TABLE 20a KEY DATA, ROSS CREEK-1 (Wilschut 1974b data quantitative)

1944.3m	swc	C. striatus or younger		C. australiensis abundant, Podocarpidites	high/12	high/3	nil	nil	floodplain	Wilschut (1974b)
(6379 ft)				common, F. asymmetricus, D. filosus,						
				C. striatus, T. reticulatus present.						
1963.5m	swc	C. striatus or younger		C. australiensis and Podocarpidites common,	high/16	mod/2	nil	nil	swamp margin/floodplain	Wilschut (1974b)
(6442 ft)				F. asymmetricus, D. filosus, C. striatus,						
				T. reticulatus present.						
1997.0m	swc	C. striatus or younger		C. australiensis and Podocarpidites common,	high/16	mod/4	nil	nil	floodplain/swamp margin	Wilschut (1974b)
(6552 ft)				F. asymmetricus, C. striatus, T. reticulatus						
				present.						
2057.1m	swc	C. striatus or younger	top P. notensis	C. australiensis super-abundant,	ex high/17	low/5	nil	nil	swamp/swamp margin	Wilschut (1974b)
(6749 ft)				F. asymmetricus, D. filosus, C. striatus,						
				T. reticulatus, P. notensis present.						
2122.3m	swc	C. paradoxa, lower	top D. speciosus	C. australiensis, F. asymmetricus, D. filosus,	mod/26	low/5	nil	nil	swamp margin	Wilschut (1974b)
(6963 ft)			top F. wonthaggiensis	C. striatus, T. reticulatus, D. speciosus,						
				F. wonthaggiensis present.						
2148.5m	swc	lower C. paradoxa		C. australiensis common, F. asymmetricus,	high/22	mod/7	nil	nil	floodplain	Wilschut (1974b)
(7049 ft)				D. filosus, C. striatus, T. reticulatus,						
				D. speciosus, C. paradoxa, P. notensis,						
				F. wonthaggiensis present.						
2180.0m	swc	C. paradoxa lower	base C. paradoxa	C. australiensis super-abundant,	vhigh/24	low/6	nil	nil	swamp margin/swamp	Wilschut (1974b)
(7155 ft)				F. asymmetricus, D. filosus, C. striatus,						
				T. reticulatus, D. speciosus, C. paradoxa,						
				P. notensis						
2213.2m	swc	C. striatus		C. australiensis common, F. asymmetricus,	high/25	mod/6	nil	nil	floodplain/swamp margin	Wilschut (1974b)
(7261 ft)				D. filosus, C. striatus, T. reticulatus,						
				D. speciosus, P. notensis, F. wonthaggiensis						
2248.8m	swc	C. striatus		O. wellmanii common, C. australiensis,	mod/20	mod/8	nil	nil	floodplain	Wilschut (1974b)
(7378 ft)				F. wonthaggiensis, C. striatus, D. speciosus,						
				P. notensis						
2281.7m	swc	C. striatus	top C. hughesi	Cyathidites, Podocarpidites and	mod/20	mod/6	nil	nil	floodplain	Wilschut (1974b)
(7486 ft)			but intermittent	C. australiensis frequent, F. asymmetricus,						
			occurence suggests	T. reticulatus, D. speciosus, P. notensis,						
			possible reworking	F. wonthaggiensis, C. hughesi (?reworked)						

TABLE 20a KEY DATA, ROSS CREEK-1 (Wilschut 1974b data quantitative)

2319m	swc	C. striatus		Podocarpidites, C. australiensis, O. wellmanii,	high/19	mod/4	nil	nil	floodplain/swamp margin	Wilschut (1974b)
(7610 ft)				common, C. striatus, T. reticulatus,						
				D. speciosus, P. notensis present.						
2355.5m	swc	C. striatus	C. hughes (possibly	Podocarpidites common, C. australiensis	mod/23	mod/6	nil	nil	floodplain	Wilschut (1974b)
(7728 ft)			reworked)	frequent, F. asymmetricus, D. filosus,						
				C. striatus, T. reticulatus, D. speciosus,						
				P. notensis, C. hughesi (?reworked) present.						
2382.0m	swc	indeterminate		very lean, C. australiensis, D. speciosus	vlow/6	vlow/1	-	-	??channel (near barren	Wilschut (1974b)
(7815 ft)				present.					sand)	
2425.0m	swc	C. striatus	base C. striatus (swcs)	C. australiensis common, C. striatus,	high/20	low/4	nil	nil	swamp margin	Wilschut (1974b)
(7956 ft)				D. speciosus, C. variabilis (presumed						
				reworked) present.						
2465.2m	swc	P. notensis, upper	top consistent	lean, C. australiensis frequent, D. speciosus,	mod/16	low/3	nil	nil	?swamp	Wilschut (1974b)
(8088 ft)			C. hughesi	P. notensis, C. hughesi, F. wonthaggiensis						
				present.						
2466.4m	swc	P. notensis, upper		Podocarpidites common, F. asymmetricus,	mod/22	high/6	nil	nil	channel/floodplain	Wilschut (1974b)
(8092 ft)				D. speciosus, P. notensis, C. hughesi,						
				F. wonthaggiensis present.						
2499.1m	swc	C. paradoxa, upper	oldest abundant	C. australiensis abundant, O. wellmanii,	vhigh/19	low/5	nil	nil	swamp	Wilschut (1974b)
(8199 ft)			C. australiensis	P. notensis common, D. speciosus,						
				T. reticulatus present.						
2553.6m	swc	P. notensis, upper		Cyathidites frequent, C. australiensis,	mod/23	low/4	nil	nil	swamp margin	Wilschut (1974b)
(8378 ft)				D. speciosus, P. notensis, C. hughesi						
				present.						
2587.8m	swc	indeterminate		very lean, almost barren	ex low/4	ex low/1	-	-	??channel	Wilschut (1974b)
(8490 ft)										
2621.3m	swc	P. notensis, lower	top C. variabilis	C. australiensis, F. asymmetricus,	mod/29	mod/8	nil	nil	floodplain	Wilschut (1974b)
(8600 ft)				T. reticulatus, D. speciosus, P. notensis,						
				C. hughesi, C. variabilis present.						
2653.6m	swc	P. notensis		C. australiensis, F. asymmetricus, D. filosus,	mod/29	low/4	nil	nil	swamp margin	Wilschut (1974b)
(8706 ft)				T. reticulatus, D. speciosus, P. notensis,						
				C. hughesi present.						
2714.0m	swc	P. notensis		Cyathidites, O. wellmanii common	high/28	mod/8	nil	nil	floodplain	Wilschut (1974b)

TABLE 20a KEY DATA, ROSS CREEK-1 (Wilschut 1974b data quantitative)

(8904 ft)				C. australiensis, F. asymmetricus,						
				T. reticulatus, D. speciosus, P. notensis,						
				F. wonthaggiensis present.						
2745.0m	swc	P. notensis		C. equalis common, D. speciosus, P. notensis,	mod/18	low/6	nil	nil	swamp margin	Wilschut (1974b)
(9006 ft)				F. wonthaggiensis present.						
2784.7m	swc	P. notensis		C. australiensis, C. ludbrookiae frequent,	high/19	low/5	nil	nil	swamp margin	Wilschut (1974b)
(9136 ft)				F. asymmetricus, D. speciosus present.						
2845.6m	swc	P. notensis, lower		O. wellmanii, C. australiensis, Cyathidites	high/19	low/7	nil	nil		Wilschut (1974b)
(9336 ft)				common, D. speciosus, P. notensis,						
				C. variabilis present.						
2945.9m	swc	P. notensis		L. verrucatus common, C. australiensis,	high/23	ex low/4	nil	nil	swamp margin	Wilschut (1974b)
(9665 ft)				F. wonthaggiensis, D. filosus, D. speciosus,						
				P. notensis, C. hughesi present.						
2953.3m	swc	P. notensis		lean, C. australiensis, D. filosus, D. speciosus,	low/9	ex low/2	nil	nil	??channel (sand)	Wilschut (1974b)
(9722 ft)				P. notensis present.						
2996.8m	swc	P. notensis		lean, Cyathidites frequent, C. australiensis,	mod/17	ex low/2	nil	nil	swamp margin	Wilschut (1974b)
(9832 ft)				F. asymmetricus, T. reticulatus, D. speciosus,						
				P. notensis present.						
3020.9m	swc	P. notensis, lower		C. australiensis common, P. notensis	high/27	ex low/2	nil	nil	swamp margin	Wilschut (1974b)
(9911 ft)				frequent, F. asymetricus, D. filosus,						
				D. speciosus, C. hughesi, C. variabilis						
				present.						
3098.0m	swc	P. notensis		lean, C. australiensis, F. asymmetricus,	mod/20	low/3	nil	nil	swamp margin	Wilschut (1974b)
(10164 ft)				D. speciosus, P. notensis, C. variabilis						
				present.						
3145.2m	swc	P. notensis, lower	oldest T. reticulatus	lean, Cyathidites common, C. australiensis,	mod/22	low/3	nil	nil	swamp margin	Wilschut (1974b)
(10319 ft)			(possibly caused by	F. asymmetricus, T. reticulatus, D. speciosus,						
			post maturity)	P. notensis, C. hughesi, C. variabilis						
				present.						
3165.7	swc	P. notensis	oldest F. wonthaggiensis	lean, Cyathidites common, F. asymmetricus,	mod/16	low/2	nil	nil	swamp/swamp margin	Wilschut (1974b)
(10386 ft)			(possibly caused by	D. filosus, D. speciosus, F. wonthaggiensis,						
			post maturity)	C. hughesi present.						
3174.8m	swc	indeterminate		lean D. filosus	mod/9	low/2	nil	nil	?swamp margin	Wilschut (1974b)

TABLE 20a KEY DATA, ROSS CREEK-1 (Wilschut 1974b data quantitative)

(10416 ft)										
3186.4m	swc	P. notensis		lean, Cyathidites common, C. australiensis,	high/15	low/4	nil	nil	swamp margin	Wilschut (1974b)
(10454 ft)				F. asymmetricus, D. filosus, D. speciosus,						
				P. notensis present.						
3196.4m	swc	indeterminate		almost barren (?carbonised)	-	-	-	-	-	Wilschut (1974b)
(10487 ft)										
3234.8m	swc	F. wonthaggiensis or		Spores carbonised below this point	ex low/8	nil	-	-	-	Wilschut (1974b)
(10613 ft)		younger		reducing precision, very rare D. speciosus,						
				C. hughesi present.						
3254.3m	swc	F. wonthaggiensis or		lean, C. australiensis, D. filosus, D. speciosus,						
(10677 ft)		younger		C. hughesi present.	mod/12	low/3	nil	nil	?swamp margin	Wilschut (1974b)
3272.0m	swc	indeterminate		totally barren (carbonised) fossils very scarce	-	-	-	-	-	Wilschut (1974b)
(10735 ft)				below this point						
3287.0m	swc	P. notensis	base P. notensis (swc)	Cyathidites spp super-abundant	high/18	ex low/1	nil	nil	swamp margin	Wilschut (1974b)
(10784 ft)				C. australiensis, F. asymmetricus, D. filosus,						
				D. speciosus, P. notensis present.						
3290.9m	swc	indeterminate		almost barren (?carbonised)	-	-	-	-	-	Wilschut (1974b)
(10797 ft)										
3297.9m	swc	?P. notensis		Cyathidites common, frequent	high/16	low/6	nil	nil	?swamp/?swamp margin	Wilschut (1974b)
(10820 ft)				C. australiensis suggests P. notensis Zone or						
				younger. Also present are F. asymmetricus,						
				D. speciosus, C. hughesi						
3299.2m	swc	?P. notensis		Cyathidites common, frequent C. australiensis	high/14	mod/6	nil	nil	swamp margin	Wilschut (1974b)
(10824 ft)				suggests P. notensis Zone or younger.						
				Also present are F. asymmetricus,						
				D. speciosus, C. hughesi						
3334.5m	swc	indeterminate		almost barren, base common coal suggests	ex low/2	ex low/1	-	-	-	Wilschut (1974b)
(10940 ft)				base Eumeralla and therefore P. notensis Zone.						
3362.2m	swc	indeterminate		totally barren	-	-	-	-	-	Wilschut (1974b)
(11031 ft)										
3420.2m	swc	indeterminate		totally barren, top massive sand suggests	-	-	-	-	-	Wilschut (1974b)
(11221 ft)				Crayfish Formation and therefore						

TABLE 20a KEY DATA, ROSS CREEK-1 (Wilschut 1974b data quantitative)

				F. wonthaggiensis Zone						
3461.9m	swc	apparently	oldest D. speciosus	Cyathidites common, D. filosus, D. speciosus,	mod/17	low/4	nil	trace	?swamp margin	Wilschut (1974b)
(11358 ft)		F. wonthaggiensis		C. hughesi present.						
3510.1m	swc	upper C. australiensis or		R. austroclavatidites frequent.	mod/19	low/6	nil	nil	?swamp margin	Wilschut (1974b)
(11516 ft)		younger		C. hughesi present.						
3524.1m	swc	indeterminate		totally barren	-	-	-	-	-	Wilschut (1974b)
(11562 ft)										
3546.7m	swc	upper C. australiensis or	oldest C. hughesi in	lean, carbonised, bisaccates common,	mod/12	high/6	nil	rare	channel/floodplain	Wilschut (1974b)
(11636 ft)		younger	swcs	C. australiensis, C. hughesi present.						
3582.0m	swc	indeterminate		almost barren, carbonised	-	-	-	-	-	Wilschut (1974b)
(11752 ft)										
3585.7m	swc	indeterminate		almost barren, carbonised	ex low/5	nil	-		sand	Wilschut (1974b)
(11764 ft)										
3659.1m	cutts	indeterminate		almost barren	ex low/4	ex low/1	-	-	-	Wilschut (1974b)
(12005 ft)										

TABLE 20b SUMMARY SHEET, ROSS CREEK-1

BASIN: OTWAY

WELL NAME: ROSS CREEK-1

AGE		PALYNOLOGICAL ZONES	HIGHEST DATA				LOWEST DATA			
			Preferred Depth	Rtg	Alternate Depth	Rtg	Preferred Depth	Rtg	Alternate Depth	Rtg
Early Cret.	Albian	P. pannosus	813	1			893	0	1025	?
		upper C. paradoxa	946	2			1769	0	2057	?2
		lower C. paradoxa	2122	0			2180	0		
		C. striatus	2213	2			2425	0		
	Aptian	upper P. notensis	2465	2			2553	2		
		lower P. notensis	2621	1			3287	0		
	late Neoc.	upper F. wonthaggiensis								
		lower F. wonthaggiensis	3461	2			3461	?		
	early Neoc.	upper C. australiensis	3510	2			3546	1		
		lower C. australiensis								
Late Jurassic	Tithonian	upper R. watherooensis								
		middle R. watherooensis								
		lower R. watherooensis								

1. basal 370 m are post mature and unreliable (3290 - 3660 m).

TABLE 21a KEY DATA, STONEYFORD-1 (Dettmann 1984 qualitative in part, no raw data in part, Morgan 1993b data quantitative)

DEPTH	TYPE	ZONE	KEY DATUMS	COMMENTS	SPORE CONTENT/ DIVERSITY	POLLEN CONTENT/ DIVERSITY	SALINE ALGAE %	FRESH ALGAE %	ENVIRONMENT	REFERENCE
450m	cutts			no raw data	high	?	nil	?		Dettmann (1984)
				top D. speciosus (Dettmann)						
490m	cutts	P. notensis, lower	top C. variabilis	C. australiensis, C. variabilis, C. hughesi	58%/25spp	42%/6spp	nil	nil	floodplain	Morgan (1993b)
				P. notensis, P. parvispinosus present.						
600m	cutts			no raw data	high	?	nil	common	?lake	Dettmann (1984)
700m	cutts			no raw data	?	?	nil	?		Dettmann (1984)
				top C. hughesi (Dettmann)						
900m	cutts			no raw data	?	?	nil	rare		Dettmann (1984)
950m	cutts			no raw data, lean	?	?	nil	?		Dettmann (1984)
1009m	cutts			no raw data	?	?	nil	frequent	swamp/lake	Dettmann (1984)
1015m	cutts	P. notensis, lower	top and base	C. australiensis, C. variabilis, C. hughesi,	73%/29	26%/5	nil	trace	swamp margin	Morgan (1993b)
			F. reticulowonthagglensis	F. asymmetricus, F. reticulowonthagglensis,						
			top T. bireticulatus	P. notensis, T. bireticulatus, T. reticulatus						
			top M. evansii	present.						
			(single broken specimen							
			considered reworked)							
			base F. asymmetricus							
			(cutts)							
1050m	cutts			no raw data	high	?	nil	?		Dettmann (1984)
1055m	cutts	F. wonthaggiensis	top consistent M. evansii	O. wellmannii common	79%/25	19%/5	nil	rare	swamp margin	Morgan (1993b)
			common O. wellmanii	M. evansii, C. australiensis, C. variabilis,						
			extremely rare	C. hughesi, P. notensis, T. bireticulatus,						
			P. notensis considered	T. reticulatus present.						
			caved							
1075m	cutts	F. wonthaggiensis ?upper	base T. reticulatus	M. evansii, F. wonthaggiensis,	75%/30	22%/6	nil	rare	swamp margin	Morgan (1993b)
			(cutts)	C. australiensis, C. variabilis, C. hughesi,						
				M. florida, P. notensis, T. bireticulatus,						
				T. reticulatus all present.						

984 qualitative in part, no raw data in part, Morgan 1993b data quantitative)

	no raw data	?	?	nil	rare		Dettmann (1984)
e T. bireticulatus	M. evansii, C. australiensis, C. variabilis,	71%/29	29%/4	nil	rare	swamp margin	Morgan (1993b)
ts)	P. notensis, T. bireticulatus, F. wonthaggiensis						
	present.						
	M. evansii, C. australiensis, C. variabilis,	58%/26	41%/6	nil	rare	floodplain	Morgan (1993b)
	P. notensis present.						
	C. australiensis, C. hughesi, D. speciosus,	mod/17	mod/6	nil	rare	floodplain	Dettmann (1984)
	F. wonthaggiensis, P. notensis present						
	(considered mud contamination as it occurs						
	with consistent M. evansii).						
	no raw data, lean	-	-	nil	-		Dettmann (1984)

TABLE 21b SUMMARY SHEET, STONEYFORD-1

BASIN: OTWAY

WELL NAME: STONEYFORD-1

AGE		PALYNOLOGICAL ZONES	HIGHEST DATA				LOWEST DATA			
			Preferred Depth	Rtg	Alternate Depth	Rtg	Preferred Depth	Rtg	Alternate Depth	Rtg
Early Cret.	Albian	P. pannosus								
		upper C. paradoxa								
		lower C. paradoxa								
		C. striatus								
	Aptian	upper P. notensis								
		lower P. notensis	490	3			1015	4	1155	?1
	late Neoc.	upper F. wonthaggiensis	1055	3						
		lower F. wonthaggiensis					1155	1		
	early Neoc.	upper C. australiensis								
		lower C. australiensis								
Late Jurassic	Tithonian	upper R. watherooensis								
		middle R. watherooensis								
		lower R. watherooensis								

1. The section is entirely cuttings controlled except for 1155.5 m (swc). Top ranges of C. variabilis and M. evansii are used here, but precision is low.
2. The swc at 1155.5 m (swc) appears mixed as it contains consistent M. evansii with P. notensis (considered caved). It could therefore be assigned to the P. notensis Zone (if P. notensis is in place) or F. wonthaggiensis Zone (if P. notensis is caved).

TABLE 22a KEY DATA, TIRRENGOWA-1 (Morgan 1987b data semiquantitative, Morgan 1993b data quantitative)

DEPTH	TYPE	ZONE	KEY DATUMS	COMMENTS	SPORE CONTENT/ DIVERSITY	POLLEN CONTENT/ DIVERSITY	SALINE ALGAE %	FRESH ALGAE %	ENVIRONMENT	REFERENCE
420.6m	cutts	apparently upper P. notensis	top C. hughesi	C. australiensis, C. striatus, C. hughesi,	51%/25spp	49%/5spp	nil	nil	floodplain	Morgan (1993b)
(1380 ft)		Zone with caved C. striatus	base C. striatus	F. asymmetricus, P. notensis,						
		Zone	but in cutts.	P. parvispinosus, T. reticulatus present.						
			Tertiary occurs at							
			337.1m							
427.9	swc	indeterminate		extremely lean and bland	low/6	low/2	nil	nil	?channel (barren)	Morgan (1987b)
(1404 ft)										
598.9m	swc	upper P. notensis		C. australiensis, F. wonthaggiensis, C. hughesi,	high/26	high/7	nil	nil	floodplain/swamp margin	Morgan (1987b)
(1965 ft)				P. notensis, P. parvispinosus, F. asymmetricus,						
				C. stylosus (?reworked), D. speciosus present.						
716.3m	swc	upper P. notensis-	C. hughesi with	F. wonthaggiensis, C. hughesi, D. speciosus	mod/18	low/3	nil	rare	swamp/swamp margin	Morgan (1987b)
(2350 ft)		lower F. wonthaggiensis	D. speciosus							
896.1m	swc	upper P. notensis-		C. australiensis, D. speciosus,	v high/28	low/4	nil	rare	swamp margin	Morgan (1987b)
(2940 ft)		lower F. wonthaggiensis		F. wonthaggiensis, C. hughesi, F. asymmetricus						
1097.3m	swc	P. notensis, upper	base F. asymmetricus	C. hughesi, P. notensis, P. parvispinosus,	high/24	mod/6	trace	nil	brackish	Morgan (1987b)
(3600 ft)				F. asymmetricus present.						
				Subtilisphaera (dinoflagellate)						
1131.7m	swc	P. notensis, lower	top C. variabilis	C. variabilis, P. parvispinosus present.	high/17	low/5	nil	nil	swamp margin	Morgan (1987b)
(3713 ft)										
1184.1m	swc	P. notensis, lower	base P. notensis	C. australiensis, F. wonthaggiensis,	high/32	low/6	nil	rare	swamp margin	Morgan (1987b)
(3885 ft)			base P. parvispinosus	C. variabilis, C. hughesi, P. notensis,						
				P. parvispinosus present.						
1216.2m	cutts	F. wonthaggiensis apparently		C. australiensis, C. variabilis, C. hughesi,	65%/28	35%/6	nil	rare	swamp margin/floodplain	Morgan (1993b)
(3990 ft)		upper but could be caved		T. bireticulatus present						
				O. wellmanii common						
1223.5m	swc	F. wonthaggiensis ?lower	top M. evansii	M. evansii, C. australiensis, D. speciosus,	high/26	high/7	nil	rare	floodplain	Morgan (1987b)
(4014 ft)		(no T. reticulatus in swc)		F. wonthaggiensis present.						
1228.3m	cutts	F. wonthaggiensis,	base T. reticulatus but	M. evansii, C. australiensis, C. hughesi,	69%/32	31%/6	nil	rare	swamp margin/floodplain	Morgan (1993b)
(4030 ft)		apparently upper but could	in cutts	P. notensis (caved), T. bireticulatus,						
		be caved.		T. reticulatus present.						
				O. wellmanii common						

TABLE 22b SUMMARY SHEET, TIRRENGOWA-1

BASIN: OTWAY

WELL NAME: TIRRENGOWA-1

AGE		PALYNOLOGICAL ZONES	HIGHEST DATA				LOWEST DATA			
			Preferred Depth	Rtg	Alternate Depth	Rtg	Preferred Depth	Rtg	Alternate Depth	Rtg
Early Cret.	Albian	P. pannosus								
		upper C. paradoxa								
		lower C. paradoxa								
		C. striatus	?				?			
	Aptian	upper P. notensis	420	3			1097			
		lower P. notensis	1131	1			1184	0		
	late Neoc.	upper F. wonthaggiensis	1216	3						
		lower F. wonthaggiensis					1228	4		
	early Neoc.	upper C. australiensis								
		lower C. australiensis								
Late Jurassic	Tithonian	upper R. watherooensis								
		middle R. watherooensis								
		lower R. watherooensis								

1. 1223.5 m (swc) appears to be lower F. wonthaggiensis Zone, suggesting all of 1216 m (cutts) - 1228 m (cutts) may be lower F. wonthaggiensis Zone, with T. reticulatus in the cuttings presumed caved.
2. C. striatus is present in cuttings at 420 m and is presumed caved.

TABLE 23a KEY DATA, TULLICH-1 (Dettmann 1965b data not available, Morgan 1989b data semiquantitative)

DEPTH	TYPE	ZONE	KEY DATUMS	COMMENTS	SPORE CONTENT/ DIVERSITY	POLLEN CONTENT/ DIVERSITY	SALINE ALGAE %	FRESH ALGAE %	ENVIRONMENT	REFERENCE
912.0m	CORE	C. striatus	base C. striatus	Cyathidites, Falcisporites, Microcachryidites	high/20	high/4	nil	rare	floodplain	Morgan 1989b
2982-92 ft			top P. notensis	C. striatus common						
				F. asymmetricus,						
				F. wonthaggiensis, P. notensis						
				P. parvispinosus present						
1063.4m	CORE	P. notensis	top D. speciosus	common Cyathidites, Osmundacidites,	v high/21	low/3	nil	trace	swamp/?swamp margin	Morgan 1989b
3479-89 ft			base P. notensis	Retitriletes frequent						
			base P. parvispinosus	D. speciosus, F. dailyi, P. notensis,						
				P. parvispinosus present.						
1218.9m	CORE	F. wonthaggiensis,	top R. watherooensis	Cyathidites common, Falcisporites,	high/22	mod/5	nil	rare	swamp margin/floodplain	Morgan 1989b
3994-99 ft		lower	No T. reticulatus	Retitriletes frequent						
				C. hughesi, D. speciosus, F. dailyi,						
				R. watherooensis present						
1373.1m	CORE	F. wonthaggiensis,		Cyathidites, Osmundacidites, Retitriletes	v high/25	low/7	nil	rare	swamp margin	Morgan 1989b
4500-05 ft		lower		frequent						
				D. speciosus, F. dailyi present						
1479.8m	CORE	F. wonthaggiensis,	top and base	Cyathidites dominant	v high/32	low/4	rare	nil	brackish	Morgan 1989b
4841-55 ft			M. evansii	C. hughesi, F. asymmetricus, F. dailyi,					swamp margin	
				R. watherooensis, M. evansii present					(?estuary)	
1665.1m	CORE	F. wonthaggiensis,	base D. speciosus	Falcisporites common, D. speciosus	mod/13	high/4	nil	nil	channel/floodplain	Morgan 1989b
5460-63 ft		lower		present						

TABLE 23b SUMMARY SHEET, TULLICH-1

BASIN: OTWAY

WELL NAME: TULLICH-1

AGE		PALYNOLOGICAL ZONES	HIGHEST DATA				LOWEST DATA			
			Preferred Depth	Rtg	Alternate Depth	Rtg	Preferred Depth	Rtg	Alternate Depth	Rtg
Early Cret.	Albian	P. pannosus								
		upper C. paradoxa								
		lower C. paradoxa								
		C. striatus	912	2			912	0		
	Aptian	upper P. notensis	1063	2						
		lower P. notensis					1063	0		
	late Neoc.	upper F. wonthaggiensis								
		lower F. wonthaggiensis	1218	2			1665	0		
	early Neoc.	upper C. australiensis								
		lower C. australiensis								
Late Jurassic	Tithonian	upper R. watherooensis								
		middle R. watherooensis								
		lower R. watherooensis								

1. Sample at 1063.4 m CORE lacks C. variabilis and so appears to be lower F. wonthaggiensis Zone.

TABLE 24a KEY DATA, WARRACBARUNAH-2 (Morgan 1991a data semiquantitative)

DEPTH	TYPE	ZONE	KEY DATUMS	COMMENTS	SPORE CONTENT/ DIVERSITY	POLLEN CONTENT/ DIVERSITY	SALINE ALGAE %	FRESH ALGAE %	ENVIRONMENT	REFERENCE
743.4m	CORE 6	P. notensis, upper	top C. hughesi	C. australiensis, D. speciosus,	high/31	high/5	nil	rare	floodplain/ swamp margin	Morgan (1991a)
			base F. reticulowonth-	F. reticulowonthaggiensis, F. wonthaggiensis,						
			aggiensis	P. notensis, C. hughesi present.						
765m	cutts	lower F. wonthaggiensis or		C. australiensis, D. speciosus,						
		younger (on D. speciosus)		F. wonthaggiensis present.	high/18	high/2	nil	nil	floodplain	Morgan (1991a)
804m	cutts	P. notensis, upper		C. australiensis, D. speciosus, P. notensis,	high/15	low/5	nil	nil	swamp margin/swamp	Morgan (1991a)
				F. wonthaggiensis present.						
864m	cutts	P. notensis, lower	top C. variabilis	C. australiensis, D. speciosus, P. notensis,	high/14	low/3	nil	rare	swamp	Morgan (1991a)
			base P. notensis (cutts)	C. variabilis, F. asymmetricus, T. reticulatus						
				present.						
903m	cutts	F. wonthaggiensis, upper		C. australiensis, D. speciosus,	high/13	low/3	nil	rare	swamp	
				F. wonthaggiensis, T. reticulatus, C. hughesi						
960.9m	CORE 7	F. wonthaggiensis, upper	base consistent	C. australiensis, D. speciosus,	high/20	mod/2	nil	nil	swamp/swamp margin	Morgan (1991a)
			C. australiensis	F. wonthaggiensis, F. asymmetricus (?caved),						
			base F. asymmetricus	T. reticulatus present.						
			top common O. wellmanii	common O. wellmanii						
999m	cutts	F. wonthaggiensis	M. evansii top and base	M. evansii (2%) D. speciosus,	high/17	low/4	nil	rare	swamp	Morgan (1991a)
			base consistent	F. wonthaggiensis present.						
			F. wonthaggiensis							
1032.9m	CORE 8	F. wonthaggiensis, upper	base T. reticulatus	T. reticulatus, C. stylosus, M. florida	mod/17	low/2	nil	nil	swamp/swamp margin	Morgan (1991a)
			(and in CORE)	present.						
1110m	cutts	F. wonthaggiensis, lower	base F. wonthaggiensis	D. speciosus, F. wonthaggiensis present.	high/13	low/5	nil	rare	swamp	Morgan (1991a)
			(cutts)	common O. wellmanii						
1152.8m	CORE	F. wonthaggiensis, lower		D. speciosus present.	high/20	mod/5	nil	trace	swamp margin	Morgan (1991a)
1215m	cutts	uncertain		C. australiensis (?caved)	mod/15	mod/3	nil	nil	floodplain	Morgan (1991a)
				P. notensis (?caved) both present.						
1253.6m	CORE	possibly lower		?D. speciosus, C. hughesi present.	high/17	low/6	nil	rare	swamp margin	Morgan (1991a)
		F. wonthaggiensis		common O. wellmanii						

TABLE 24a KEY DATA, WARRACBARUNAH-2 (Morgan 1991a data semiquantitative)

1347.8m	CORE 11	uncertain		Bland and lean.	mod/14	low/6	nil	nil	?channel	Morgan (1991a)
1389.8m	CORE 12	lower F. wonthaggiensis	base C. hughesi	D. speciosus, C. hughesi present.	mod/19	low/4	nil	rare	swamp margin	Morgan (1991a)
1445.7m	CORE 13	F. wonthaggiensis, lower	base D. speciosus	D. speciosus, M. florida present. common O. wellmannii	mod/18	low/6	nil	nil	swamp margin	Morgan (1991a)

TABLE 24b SUMMARY SHEET, WARRACBARUNAH-2

BASIN: OTWAY

WELL NAME: **WARRACBARUNAH-2**

AGE		PALYNOLOGICAL ZONES	HIGHEST DATA				LOWEST DATA			
			Preferred Depth	Rtg	Alternate Depth	Rtg	Preferred Depth	Rtg	Alternate Depth	Rtg
Early Cret.	Albian	P. pannosus								
		upper C. paradoxa								
		lower C. paradoxa								
		C. striatus								
	Aptian	upper P. notensis	743	0			804	4		
		lower P. notensis	864	3			864	4		
	late Neoc.	upper F. wonthaggiensis	903	3	960	1	1032	0		
		lower F. wonthaggiensis	1110	3			1445	0		
	early Neoc.	upper C. australiensis								
		lower C. australiensis								
Late Jurassic	Tithonian	upper R. watherooensis								
		middle R. watherooensis								
		lower R. watherooensis								

TABLE 25a KEY DATA, WINDERMERE-1 (Morgan 1987c data semiquantitative)

DEPTH (m)	TYPE	ZONE	KEY DATUMS	COMMENTS	SPORE CONTENT/ DIVERSITY	POLLEN CONTENT/ DIVERSITY	SALINE ALGAE %	FRESH ALGAE %	ENVIRONMENT	REFERENCE
1090-00	cutts	P. pannosus	top C. paradoxa	Cyathidites, O. wellmanii common,	v high/26	low/7 spp	nil	trace	swamp margin	Morgan (1987c)
				C. paradoxa, P. pannosus, B. holodictyus	spp.				(diverse spores	
				C. striatus, F. asymmetricus all rare.					dominant)	
1180	swc	P. pannosus	base P. pannosus	Cyathidites common,	high/7	low/2	nil	trace	swamp/swamp	Morgan (1987c)
				P. grandis, F. asymmetricus, P. pannosus,					margin/floodplain	
				rare in lean assemblage						
1205	swc	upper C. paradoxa		Cyathidites common,	high/27	low/7		trace	swamp margin	Morgan (1987c)
				C. striatus, F. asymmetricus, P. grandis,					(diverse spores	
				C. paradoxa, B. holodictyus present.					dominant)	
1320-30	cutts	upper C. paradoxa	base consistent	C. australiensis common,	high/29	mod/5	nil	nil	floodplain	Morgan (1987c)
			P. grandis but in	C. striatus, F. asymmetricus, P. grandis,						
			cuttings	C. paradoxa, B. holodictyus present.						
1512.5	swc	lower C. paradoxa	top C. striata	Cyathidites common,	high/15	low/2	nil	trace	swamo	Morgan (1987c)
				C. striatus, F. asymmetricus, C. paradoxa,						
				C. striata present.						
1550-60	cutts	lower C. paradoxa-C. striatus	base T. trioreticulosus	C. striatus, F. asymmetricus, B. holodictyus,	mod/34	low/5	nil	nil	swamp margin	Morgan (1987c)
			but in cuttings, top	C. paradoxa, P. grandis (?caved), D. speciosus,						
			D. speciosus	P. pannosus (caved) all present.						
1670-80	cutts	lower C. paradoxa-C. striatus		C. australiensis, Cyathidites common,	vhigh/28	low/9	nil	nil	swamp margin	Morgan (1987c)
				C. striatus, F. asymmetricus, B. holodictyus,						
				C. paradoxa present.						
1740-50	cutts	lower C. paradoxa-C. striatus	top P. notensis	Cyathidites, O. wellmanii common,	vhigh/20	low/1	nil	trace	swamp margin	Morgan (1987c)
			base C. paradoxa (but	C. striatus, F. asymmetricus, P. notensis,						
			in cutts)	P. parvispinosus, B. holodictyus, C. paradoxa,						
				C. striata (caved), P. grandis (caved)						
				present.						
1830-40	cutts	C. striatus	oldest C. striatus	S. antiquasporites common,	high/29	low/7	nil	trace	swamp margin	Morgan (1987c)
			without C. hughesi	C. striatus, F. asymmetricus, P. notensis,						
				P. parvispinosus present, no C. hughesi						

TABLE 25b SUMMARY SHEET, WINDERMERE-1

BASIN: OTWAY

WELL NAME: WINDERMERE-1

AGE		PALYNOLOGICAL ZONES	HIGHEST DATA				LOWEST DATA			
			Preferred Depth	Rtg	Alternate Depth	Rtg	Preferred Depth	Rtg	Alternate Depth	Rtg
Early Cret.	Albian	P. pannosus	1090	3			1180	0		
		upper C. paradoxa	1205	1			1330	4		
		lower C. paradoxa	1512	1						
		C. striatus					1840	4		
	Aptian	upper P. notensis								
		lower P. notensis								
	late Neoc.	upper F. wonthaggiensis								
		lower F. wonthaggiensis								
	early Neoc.	upper C. australiensis								
		lower C. australiensis								
Late Jurassic	Tithonian	upper R. watherooensis								
		middle R. watherooensis								
		lower R. watherooensis								

TABLE 26a KEY DATA, WINDERMERE-2 (Morgan 1989a data semiquantitative)

DEPTH (M)	TYPE	ZONE	KEY DATUMS	COMMENTS	SPORE CONTENT/ DIVERSITY	POLLEN CONTENT/ DIVERSITY	SALINE ALGAE %	FRESH ALGAE %	ENVIRONMENT	REFERENCE
1010-20	cutts	P. pannosus	top C. paradoxa	C. paradoxa, C. striatus present with late	mod/13 in	low/3	nil	nil	swamp	Morgan (1989a)
			top C. striatus	Cretaceous caving. Also T. reticulatus	place					
				present						
1090-1100	cutts	P. pannosus	top P. grandis	top P. grandis, F. asymmetricus, P. pannosus	mod/25	mod/4	nil	nil	floodplain/swamp margin	Morgan (1989a)
			F. asymmetricus	also C. striatus, C. paradoxa present and single						
				D. speciosus considered reworked						
1150-60	cutts	P. pannosus (or older)		Cyathidites, O. wellmanii common,	vhigh/26	mod/4	nil	trace	swamp margin/floodplain	Morgan (1989a)
				C. paradoxa, C. striatus, P. majus,						
				F. asymmetricus, B. holodictyus, P. pannosus,						
				T. reticulatus, P. pannosus could be caved into						
				older zones						
1190-1200	cutts	P. pannosus (or older)	top F. wonthaggiensis	C. paradoxa, C. striatus, F. asymmetricus,	mod/21	low/5	nil	trace	swamp/swamp margin	Morgan (1989a)
			base P. pannosus but in	P. pannosus (possibly caved) T. reticulatus						
			cutts	present.						
1290-1300	cutts	upper C. paradoxa	base P. majus	C. paradoxa, C. striatus, P. majus,	mod/28	low/6	nil	trace	swamp margin	Morgan (1989a)
				F. asymmetricus, F. wonthaggiensis, P. grandis,						
				T. reticulosus, T. trioreticulosus, B. holidictyus						
1480-90	cutts	upper C. paradoxa (or older)	base P. grandis but in	C. paradoxa, C. striatus, F. asymmetricus,	mod/30	low/4	nil	trace	swamp margin	Morgan (1989a)
			cutts	F. wonthaggiensis, P. grandis, T. reticulatus,						
			top T. trioreticulosus	T. trioreticulosus, B. holodictyus present.						
				Single C. hughesi considered reworked						
1650-60	cutts	lower C. paradoxa	top C. striata	B. holodictyus, C. paradoxa, C. striatus,	high/26	mod/4	nil	nil	floodplain/swamp margin	Morgan (1989a)
			base B. holodictyus	F. asymmetricus, F. wonthaggiensis, C. striata						
			but in cutts	present.						
1748	CORE	lower C. paradoxa	base C. paradoxa,	C. paradoxa, C. striatus, D. speciosus,	mod/24	mod/4	nil	nil	floodplain/swamp margin	Morgan (1989a)
			base C. striata	F. asymmetricus, F. wonthaggiensis, C. striata,						
			top D. speciosus,	T. trioreticulosus, P. parvispinosus						
			top P. parvispinosus	present.						
1825-30	cutts	C. striatus	youngest P. notensis	C. striatus, F. asymmetricus, D. speciosus,	mod/27	mod/4	nil	nil	floodplain	Morgan (1989a)
			base T. trioreticulosus	P. notensis, T. trioreticulosus (possibly caved)						
			(probably caved)	P. parvispinosus present.						

TABLE 26a KEY DATA, WINDERMERE-2 (Morgan 1989a data semiquantitative)

1913.0	swc	Indeterminate		very lean, lacking key markers	low/7	low/3			Indeterminate	Morgan (1989a)
2007.0	swc	C striatus	base C. striatus	C. striatus, F. asymmetricus, F. wonthaggiensis, P. parvispinosus	mod/21	low/4	nil	trace	swamp margin	Morgan (1989a)
2240.0	swc	upper P. notensis	top C. hughesi base consistent F. asymmetricus	C. hughesi, D. speciosus, F. asymmetricus, P. notensis present	mod/21	mod/4	nil	nil	floodplain	Morgan (1989a)
2526.0	swc	lower P. notensis	top C. variabilis (?high-?reworked)	Cyathidites common D. speciosus, F. wonthaggiensis, P. notensis, C. variabilis present.	high/23	low/5	nil	nil	swamp margin	Morgan (1989a)
2615.0	swc	lower P. notensis		Cyathidites common C. hughesi, D. speciosus, F. wonthaggiensis, P. notensis, C. variabilis, P. parvispinosus present	high/25	low/5	nil	trace	swamp margin	Morgan (1989a)
2806.0	swc	lower P. notensis or older		Cyathidites common F. wonthaggiensis, C. variabilis present	high/14	mod/4	nil	nil	floodplain	Morgan (1989a)
2925-30	cutts	lower P. notensis		Cyathidites common F. wonthaggiensis, P. notensis, T. reticulatus, C. variabilis present	high/21	mod/4	nil	nil	floodplain	Morgan (1989a)
2930	cutts	P. notensis		Cyathidites common D speciosus, P. notensis, P. parvispinosus	high/11	low/3	nil	nil	floodplain	Morgan (1989a)
2940	cutts	lower P. notensis		F. wonthaggiensis, P. notensis, T. reticulatus, C. variabilis, P. parvispinosus present.	mod/13	low/3	nil	trace	swamp	Morgan (1989a)
3000	cutts	P. notensis		F. wonthaggiensis, P. notensis present.	mod/8	low/2	nil	trace	swamp	Morgan (1989a)
3055.0	swc	P. notensis		Cyathidites common, P. notensis, P. parvispinosus, D. speciosus	high/16	low/4	nil	nil	floodplain/swamp margin	Morgan (1989a)
3100.0	swc 7	P. notensis		Cyathidites, Falcisporites common, D. speciosus, P. notensis present	high/12	high/4			floodplain	Morgan (1989a)
3167.0	swc	P. notensis	base P. parvispinosus in swcs	Cyathidites common, F. asymmetricus, F. wonthaggiensis, P. notensis, T. reticulatus, P. parvispinosus,	high/18	low/5	nil	trace	swamp	Morgan (1989a)

TABLE 26a KEY DATA, WINDERMERE-2 (Morgan 1989a data semiquantitative)

				D. speciosus present.						
3200.0	swc	lower P. notensis	base P. notensis and	Cyathidites common,	high/20	low/6	nil	nil	floodplain/swamp margin	Morgan (1989a)
			F. asymmetricus in swcs	C. hughesi, D. speciosus, F. asymmetricus,						
			base swcs	F. wonthaggiensis, P. notensis, C. variabilis						
3245-50	cutts	apparently lower P. notensis	P. notensis	Cyathidites common,	high/19	low/6	nil	trace	swamp	
		but in cutts	above M. evansii	C. hughesi, F. asymmetricus, F. wonthaggiensis,						
				F. wonthaggiensis, P. notensis, C. variabilis,						
				P. parvispinosus present.						
3290	cutts	indeterminate		barren	-	-	-	-	indeterminate	Morgan (1989a)
									(? barren channel sand)	
3335-40	cutts	probably	top M. evansii and	Cyathidites common,	high/24	low/5	nil	trace	swamp margin	Morgan (1989a)
		F. wonthaggiensis	consistent below	P. notensis (? caved)						
		probably upper (but	base T. reticulatus	P. parvispinosus (? caved)						
		T. reticulatus could be caved)	but in cutts	T. reticulatus, M. evansii, F. asymmetricus						
				(?caved), C. australiensis present.						
3360	cutts	F. wonthaggiensis (or older)		almost barren but with M. evansii present.	-	-	nil	trace	indeterminate (almost	Morgan (1989a)
									barren ?channel sand)	
3415-20	cutts	F. wonthaggiensis		Cyathidites common,	high/21	low/5	nil	trace	swamp	Morgan (1989a)
		(possibly lower)		D. speciosus, F. asymmetricus (? caved),						
				F. wonthaggiensis, P. notensis (? caved),						
				M. evansii, C. australiensis present.						
3565-70	cutts	F. wonthaggiensis		C. variabilis, C. hughesi, D. speciosus,	high/18	low/4	nil	trace	swamp	Morgan (1989a)
		(possibly lower)		P. notensis (? caved), P. parvispinosus						
				(? caved), M. evansii, C. australiensis						
				present						

TABLE 26b SUMMARY SHEET, WINDERMERE-2

BASIN: OTWAY

WELL NAME: WINDERMERE-2

AGE		PALYNOLOGICAL ZONES	HIGHEST DATA				LOWEST DATA			
			Preferred Depth	Rtg	Alternate Depth	Rtg	Preferred Depth	Rtg	Alternate Depth	Rtg
Early Cret.	Albian	P. pannosus	1010	3			1100	4	1200	?4
		upper C. paradoxa	1290	3			1490	4		
		lower C. paradoxa	1650	3			1748	0		
		C. striatus	1825	3			2007	0		
	Aptian	upper P. notensis	2240	1			2240	2		
		lower P. notensis	2526	1			3200	0	3250	?4
	late Neoc.	upper F. wonthaggiensis	3335	3						
		lower F. wonthaggiensis					3570	4		
	early Neoc.	upper C. australiensis								
		lower C. australiensis								
Late Jurassic	Tithonian	upper R. watherooensis								
		middle R. watherooensis								
		lower R. watherooensis								

1. T. reticulatus occurs at 3335-40 m in cutts and not beneath, If it is caved, all of 3335 - 3570 m is lower F. wonthaggiensis. If it is in place, 3335-40 m is upper F. wonthaggiensis and 3414-3570 m (cuuts) is lower F. wonthaggiensis Zone.
2. lower P. notensis appears much thicker here than elsewhere and may be real, or may be caused by reworking of C. variabilis.

TABLE 27a KEY DATA, WOOLSTHORPE-1 (Deltmann 1968c data semiquantitative, Morgan 1988a data semiquantitative New samples herein quantitative)

DEPTH (m)	TYPE	ZONE	KEY DATUMS	COMMENTS	SPORE CONTENT/ DIVERSITY	POLLEN CONTENT/ DIVERSITY	SALINE ALGAE %	FRESH ALGAE %	ENVIRONMENT	REFERENCE
335.3 (1100 ft)	cutts	C. striatus	base C. striatus in place top D. speciosus, top P. notensis base consistent F. asymmetricus	Cyathidites common, C. striatus, D. filosus, D. speciosus, F. asymmetricus, F. wonthaggiensis, P. notensis, T. reticulatus present.	high/25 spp	low/4 spp	nil	rare	swamp margin	Morgan (1988a)
609.6 (2000 ft)	cutts	upper P. notensis	top C. hughesi	Cyathidites common, D. speciosus, F. wonthaggiensis, P. notensis, C. hughesi all present.	high/25	low/4	nil	rare	swamp margin	Morgan (1988a)
762.0 (2500 ft)	cutts	lower P. notensis	top P. parvispinosus, C. variabilis	Cyathidites common, C. stylosus (reworked), D. speciosus, F. wonthaggiensis, P. notensis, C. hughesi, C. variabilis, P. parvispinosus present.	high/27	low/4	nil	rare	swamp margin	Morgan (1988a)
914.4 (3000 ft)	cutts	lower P. notensis		Cyathidites common, D. speciosus, F. wonthaggiensis, P. notensis, C. hughesi, C. variabilis, P. parvispinosus, C. australiensis present.	high/30	low/4	nil	rare	swamp margin	Morgan (1988a)
1051 (3450 ft)	cutts	lower P. notensis		Cyathidites common, D. speciosus, F. wonthaggiensis, P. notensis, T. reticulatus, C. hughesi, C. variabilis, P. parvispinosus, C. australiensis present.	high/27	low/2	nil	rare	swamp margin	Morgan (1988a)
1097.3 (3600 ft)	cutts	lower P. notensis	top F. reticulo-wonthaggiensis base P. parvispinosus in cutts	Cyathidites common, C. striatus (caved), F. asymmetricus (?caved), F. wonthaggiensis, P. notensis, C. variabilis, P. parvispinosus, C. australiensis, F. reticulowonthaggiensis present.	high/23	low/2	nil	rare	swamp margin/swamp	Morgan (1988a)
1188.7 (3900 ft)	cutts	lower P. notensis		Cyathidites common, O. wellmanii frequent, lean with F. wonthaggiensis, C. variabilis present.	high/19	low/4	nil	nil	swamp margin/swamp	Morgan (1988a)
1310.6 (4300 ft)	cutts	P. notensis - F. wonthaggiensis	dowhole influx Contignisporites top M. evansii (?reworked)	Cyathidites common, D. speciosus, F. asymmetricus, F. wonthaggiensis, P. notensis, T. reticulatus, C. hughesi, C. variabilis, C. australiensis,	high/25 (?caved)	nil/0	nil	rare	swamp margin	Morgan (1988a)

TABLE 27a KEY DATA, WOOLSTHORPE-1 (Dettmann 1968c data semiquantitative, Morgan 1988a data semiquantitative New samples herein quantitative)

			base	F. reticulowonthaggiensis, Contignisporites						
			F. reticulowonthaggiensis	frequent, M. evansii (?reworked),						
				R. watherooensis present.						
1310.6	swc	P. notensis		C. australiensis, Cyathidites, M. antarcticus	high/19	med/3	nil	nil	floodplain	Dettmann (1968c)
(4300 ft)				all abundant						
				F. asymmetricus, F. wonthaggiensis,						
				P. notensis, D. speciosus, C. australiensis						
				no M. evansii						
1376.2	swc	lower P. notensis	base P. notensis, base	O. wellmanii, Cyathidites, M. antarcticus	high/19	mod/5	nil	trace	floodplain/swamp margin	Dettmann (1968c)
(4515 ft)			Cicatricosisporites in	all abundant						
			swcs, top C. variabilis,	C. hughesi, C. variabilis,D. speciosus,						
			top M. evansii	P. notensis, T. reticulatus, M. evansii						
			(?reworked)	(?reworked)						
1432.6	cutts	F. wonthaggiensis,	top frequent M. evansii	D. speciosus, F. asymmetricus, C. hughesi,	high/26	low/1	nil	frequent	swamp margin/lake	Morgan (1988a)
(4700 ft)		apparently lower	no P. notensis	C. variabilis, C. australiensis, frequent						
				M. evansii present						
1447.8	swc	F. wonthaggiensis		very lean, C. variabilis present	?/5	?/2	nil	nil	?lean channel sand	Dettmann (1968c)
(4750 ft)										
1469.1	cutts	?F. wonthaggiensis	base frequent	Cyathidites, O. wellmanii common	high/31	low/3	nil	frequent	lake/swamp margin	Morgan (1988a)
(4820 ft)		?lower	M. evansii (cutts)	D. speciosus, P. notensis (?caved),	(?caved)					
				C. variabilis, P. parvispinosus (?caved),						
				frequent M. evansii						
1475.5	swc	?F. wonthaggiensis		very lean, D. speciosus present	?/6	?/3	nil	nil	?lean channel sand	Dettmann (1968c)
(4841 ft)										
1525.5	SWC	lower F. wonthaggiensis		Cyathidites, S. antiquasporites, P. ellipticus,	mod/20	mod/5	nil	nil	floodplain	Dettmann (1968c)
(5005 ft)				M. antarcticus abundant						
				C. variabilis, D. speciosus, C. cooksoniae,						
				M. florida present						
1554.5	cutts	?F. wonthaggiensis		Cyathidites abundant,	high/29	low/3	nil	rare	swamp margin	Morgan (1988a)
(5100 ft)		(heavy caving)		D. speciosus, F. wonthaggiensis, P. notensis	(?caved)					
				(?caved), T. reticulatus (?caved), C. hughesi,						
				C. variabilis, C. australiensis (?caved),						
				M. evansii, R. watharooensis all present						
1578.3	swc	lower F. wonthaggiensis		O. wellmanii, Cyathidites, R. austroclavatidites,	mod/19	mod/4	nil	trace	floodplain/swamp margin	Dettmann (1968c)
(5178 ft)				M. antarcticus, P. ellipticus abundant						

TABLE 27a KEY DATA, WOOLSTHORPE-1 (Dettmann 1968c data semiquantitative, Morgan 1988a data semiquantitative New samples herein quantitative)

				D. speciosus, C. hughesi, F. dailyi, M. florida						
				present						
1607.8	swc	lower F. wonthaggiensis		Cyathidites, P. ellipticus, M. antarcticus	mod/16	mod/4	nil	nil	floodplain	Dettmann (1968c)
(5275 ft)				abundant,						
				D. speciosus, F. dailyi present						
1609.3	cutts	?F. wonthaggiensis		D. speciosus, F. asymmetricus (caved)	high/25	low/3	trace	rare	swamp margin (?brackish)	Morgan (1988a)
(5280 ft)		(heavy caving)		F. wonthaggiensis (?caved), P. notensis			(cutts)			
				(caved), C. hughesi, M. evansii,						
				R. watherooensis, Microhystridium present.						
1674.9	swc	lower F. wonthaggiensis		Cyathidites, M. antarticus, P. ellipticus	high/13	mod/4	nil	nil	floodplain	Dettmann (1968c)
(5495 ft)				abundant,						
				D. speciosus, P. notensis present						
				(presumed caved)						
1737.4	cutts	?F. wonthaggiensis		D. speciosus, F. dailyi, F. wonthaggiensis	high/23	low/4	nil	rare	swamp margin/floodplain	Morgan (1988a)
(5700 ft)		(heavy caving)		(?caved) P. notensis (caved) T. reticulatus						
				(caved) C. variabilis, M. evansii present.						
1798.3	swc	Indeterminate		almost barren, no age diagnostic forms	?/1	?/2	nil?	nil?	Indeterminate	Dettmann (1968c)
(5900 ft)									(?sandy channel)	
1837.9	cutts	?F. wonthaggiensis		D. speciosus, F. asymmetricus (caved)	high/33	low/4	nil	rare	swamp margin	Morgan (1988a)
(6030 ft)		(heavy caving)		F. wonthaggiensis (caved), P. notensis	(?caved)					
				(?caved), T. reticulatus (?caved), C. variabilis,						
				P. parvispinosus (caved), M. evansii,						
				R. watharooensis all present.						
1856.2	swc	Indeterminate		O. wellmanii, Cyathidites, M. antarticus,	mod/6	mod/4	nil?	nil?	floodplain/?channel	Dettmann (1968c)
(6090 ft)				P. ellipticus abundant,						
				very lean, no age diagnostic forms seen						
1865-68m	cutts	lower F. wonthaggiensis		F. similis, O. wellmanii common	52%/20 spp	46%/6 spp	nil	2%	floodplain	Morgan
(6120-30 ft)				with D. speciosus, C. hughesi, F. dailyi,						New sample
New sample				R. watherooensis present.						herein
herein										
1868.4	swc	Indeterminate (? all key		Cyathidites, O. wellmanii, F. similis common,	60%/26 spp	38%/6 spp	0	1%	floodplain	Morgan
(6130 ft)		markers may be caved)		C. australis, C. striatus (caved), C. hughesi,						New sample
New sample				D. speciosus, F. wonthaggiensis (caved),						herein
herein				M. florida, P. notensis (caved), P. parvispinosus						
				(caved) all present.						

TABLE 27a KEY DATA, WOOLSTHORPE-1 (Dettmann 1968c data semiquantitative, Morgan 1988a data semiquantitative New samples herein quantitative)

1898.9	swc	lower F. wonthaggiensis	base D. speciosus	O. wellmanii, Cyathidites, M. antarcticus,	mod/26	mod/5	nil	rare	swamp margin/floodplain	
(6230 ft)			base C. hughesi (swc)	P. ellipticus abundant,						
				Cicatricosisporites ludbrookiae, C. hughesi,						
				D. speciosus, F. dailyi, M. florida, C. equalis						
				present						
1929.4	cutts	indeterminate	base C. hughesi (cutts)	D. speciosus (?caved), F. wonthaggiensis,	high/29	low/3	nil	rare	swamp margin	Morgan (1988a)
(6330 ft)		(heavy caving)		P. notensis (caved), C. variabilis,	(?caved)					
				C. australiensis, F. reticulowonthaggiensis						
				(caved), M. evansii						
1944.6	swc	apparently lower-	base C. equalis	O. wellmanii, Cyathidites, M. antarcticus	high/13	mod/7	nil	nil	floodplain (moderate	Dettmann (1968c)
(6380 ft)		C. australiensis - upper		abundant,						
		R. watherooensis		C. equalis, single doubtful C. stylosus						
				nothing younger						

TABLE 27b SUMMARY SHEET, WOOLSTHORPE-1

BASIN: OTWAY

WELL NAME: WOOLSTHORPE-1

AGE		PALYNOLOGICAL ZONES	HIGHEST DATA				LOWEST DATA			
			Preferred Depth	Rtg	Alternate Depth	Rtg	Preferred Depth	Rtg	Alternate Depth	Rtg
Early Cret.	Albian	P. pannosus								
		upper C. paradoxa								
		lower C. paradoxa								
		C. striatus	335	3			335	4		
	Aptian	upper P. notensis	609	3			609	4		
		lower P. notensis	762	3			1376	0		
	late Neoc.	upper F. wonthaggiensis								
		lower F. wonthaggiensis	1432	2			1898	0		
	early Neoc.	upper C. australiensis								
		lower C. australiensis	1944	2						
Late Jurassic	Tithonian	upper R. watherooensis								
		middle R. watherooensis					1944	0		
		lower R. watherooensis								

1. lower P. notensis Zone seems very thick but may be apparent, caused by reworking of C. variabilis.

VARIOUS WELLS – ENERGY & MINERALS

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CLIENT: ENERGY & MINERALS VICTORIA
WELL: VARIOUS
FIELD / AREA: OTWAY BASIN ONSHORE
SECTION: TOWNSHIP: RANGE:
COUNTY: STATE:
KB ELEVATION: TOTAL DEPTH:
ANALYST: ROGER MORGAN DATE : NOVEMBER 1996
NOTES: ALL DEPTHS ARE IN METRES.
ALL FIGURES ARE PERCENTAGES BASED ON A 100 SPECIMEN COUNT.
X = RARE PRESENCE OUTSIDE COUNT.

RANGE CHART OF OCCURRENCES BY ALPHABETICAL

	1 SPINIFERITES FURCATUS/RAMOSUS	2 BOTRYOCOCCUS	3 LEIOSPHAERIDIA	4 SCHIZOSPORIS RETICULATUS	5 AEQUITRIRADITES SPINULOSUS	6 AEQUITRIRADITES VERRUCOSUS	7 ARATRISPORITES BANKSII	8 ARATRISPORITES PARVISPINOSUS	9 ARAUCARIACITES AUSTRALIS	10 CALLIALASPORITES DAMPIERI	11 CALLIALASPORITES TURBATUS	12 CERATOSPORITES EQUALIS	13 CICATRICOSISPORITES AUSTRALIENSIS	14 CONTIGNISPORITES COOKSONIAE	15 COROLLINA TOROSUS	16 CORONATISPORA PERFORATA	17 CRYBELOSPORITES STRIATUS	18 CYATHIDITES AUSTRALIS	19 CYATHIDITES MINOR	20 CYCADOPITES FOLLICULARIS	21 CYCLOSPORITES HUGHESI	22 DICTYOPHYLLIDITES	23 DICTYOTOSPORITES CF SPECIOSUS	24 DICTYOTOSPORITES COMPLEX	25 DICTYOTOSPORITES SPECIOSUS	26 FALCISPORITES AUSTRALIS	27 FALCISPORITES GRANDIS	28 FALCISPORITES SIMILIS	29 FORAMINISPORIS DAILYI	30 FORAMINISPORIS WONTHAGGIENSIS	31 GLEICHENIIDITES	32 ISCHYOSPORITES PUNCTATUS	33 KLUKISPORITES SCABERIS	34 KUYLISPORITES LUNARIS	35 LEPTOLEPIDITES MAJOR	36 LEPTOLEPIDITES VERRUCATUS	37 MATONISPORITES COOKSONIAE	38 MICROCACHRYIDITES ANTARCTICUS
ANGEICH-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
-30 CUTTS	2	.	.	X	X	1	.	.	1	.	1	2	1	.	2	.	.	12	19	1	.	.	.	X	X	.	11	26	1	2	.	X	X	X	.	3	.	5
SWAMP-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	19	1	.	1	.	.	.	.	1	.	1
.0 SWC	.	.	21	.	.	.	.	.	3	1	3	X	.	X	X	X	.	3	7	1	.	.	.	.	.	.	5	27	X	.	.	X	.	.	1	.	5
NSLOPES-1	.	.	.	.	.	.	.	.	1	3	2	3	.	.	3	X	.	4	11	.	.	1	.	.	.	.	2	10	X	.	.	.	.	.	1	.	5
-50 CUTTS	.	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
ESDALE-1	.	.	.	.	.	.	.	.	.	.	.	.	X	.	1	.	.	3	10	3	.	1	X	.	.	.	7	23	X	X	.	.	X	.	1	1	1	4
-13 CUTTS	.	1	.	.	.	1	X	X	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
STHORPE-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
5-68 CUTTS	.	.	1	X	1	1	.	.	3	X	1	4	3	.	1	.	X	9	15	1	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

	MURospora florida	Neoraistrickia	Neoraistrickia truncata	Osmundacidites wellmanii	Perotriletes	Pilosisporites notensis	Pilosisporites parvispinosus	Playfordispara crenulata	Polycingulatisporites crenulatus	Retitriletes austroclavatidites	Retitriletes circoluhenus	Retitriletes circoluhenus "fine"	Retitriletes eminulus	Retitriletes nodosus	Retitriletes watharooensis	Sestrosporites pseudoalveolatus	Staplinisporites caminus	Steriesporites antiquasporites	Vitreisporites pallidus	Reworking - Permian	Reworking - Triassic	
	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	
LANGEICH-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	BALLANGEICH-1
5-30 CUTTS	.	.	.	5	.	X	1	.	X	2	X	.	X	1	X	.	.	.	1	X	.	1225-30 CUTTS
SWAMP-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	BUS SWAMP-1
03.0 SWC	.	4	X	22	.	.	.	.	.	8	.	X	X	X	1	.	.	1	.	.	.	1803.0 SWC
ENSLOPES-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	GREENSLOPES-1
7-50 CUTTS	X	1	.	20	.	.	.	.	.	6	1	.	1	X	1	.	.	.	1	.	.	2547-50 CUTTS
KESDALE-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	HAWKESDALE-1
.0-13 CUTTS	.	4	.	3	X	X	X	X	.	2	.	.	.	1	.	.	.	1	4	2	7	1710-13 CUTTS
OLSTHORPE-1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	WOOLSTHORPE-1
5-68 CUTTS	1	1	.	16	.	X	X	.	.	4	1	.	.	.	.	X	X	X	.	.	.	1865-68 CUTTS

SPECIES LOCATION INDEX

ex numbers are the columns in which species appear.

EX BER	SPECIES
5	AEQUITRIRADITES SPINULOSUS
6	AEQUITRIRADITES VERRUCOSUS
7	ARATRISPORITES BANKSII
8	ARATRISPORITES PARVISPINOSUS
9	ARAUCARIACITES AUSTRALIS
2	BOTRYOCOCCUS
0	CALLIALASPORITES DAMPIERI
1	CALLIALASPORITES TURBATUS
2	CERATOSPORITES EQUALIS
3	CICATRICOSISPORITES AUSTRALIENSIS
4	CONTIGNISPORITES COOKSONIAE
5	COROLLINA TOROSUS
6	CORONATISPORA PERFORATA
7	CRYBELOSPORITES STRIATUS
8	CYATHIDITES AUSTRALIS
9	CYATHIDITES MINOR
0	CYCADOPITES FOLLICULARIS
1	CYCLOSPORITES HUGHESI
2	DICTYOPHYLLIDITES
3	DICTYOTOSPORITES CF SPECIOSUS
4	DICTYOTOSPORITES COMPLEX
5	DICTYOTOSPORITES SPECIOSUS
6	FALCISPORITES AUSTRALIS
7	FALCISPORITES GRANDIS
8	FALCISPORITES SIMILIS
9	FORAMINISPORIS DAILYI
0	FORAMINISPORIS WONTHAGGIENSIS
1	GLEICHENIIDITES
2	ISCHYOSPORITES PUNCTATUS
3	KLUKISPORITES SCABERIS
4	KUYLISPORITES LUNARIS
3	LEIOSPHAERIDIA
5	LEPTOLEPIDITES MAJOR
6	LEPTOLEPIDITES VERRUCATUS
7	MATONISPORITES COOKSONIAE
8	MICROCACHRYIDITES ANTARCTICUS
9	MUROSPORA FLORIDA
0	NEORAISTRICKIA
1	NEORAISTRICKIA TRUNCATA
2	OSMUNDACIDITES WELLMANII
3	PEROTRILETES
4	PILOSISPORITES NOTENSIS
5	PILOSISPORITES PARVISPINOSUS
6	PLAYFORDISPARA CRENULATA
7	POLYCINGULATISPORITES CRENULATUS
8	RETITRILETES AUSTROCLAVATIDITES
9	RETITRILETES CIRCOLUMENUS
0	RETITRILETES CIRCOLUMENUS "FINE"
1	RETITRILETES EMINULUS
2	RETITRILETES NODOSUS
3	RETITRILETES WATHAROOENSIS
8	REWORKING - PERMIAN
9	REWORKING - TRIASSIC
4	SCHIZOSPORIS RETICULATUS
4	SESTROSPORITES PSEUDOALVEOLATUS
1	SPINIFERITES FURCATUS/RAMOSUS
5	STAPLINISPORITES CAMINUS
6	STERIESPORITES ANTIQUASPORITES
7	VITREISPORITES PALLIDUS

VICTORIAN SURVEY - MULTI WELLS

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CLIENT: VICTORIAN SURVEY - MULTI WELLS
WELL:CASTERTON#1, HEATHFIELD#1, HAWKESDALE#1, PRETTY HILL#1,WOOLSTHORPE#1
FIELD / AREA: OTWAY BASIN
SECTION: _____ TOWNSHIP: _____ RANGE: _____
COUNTY: _____ STATE: _____
KB ELEVATION: _____ TOTAL DEPTH: _____
ANALYST: ROGER MORGAN DATE : OCTOBER 1997
NOTES: ALL DEPTHS ARE IN METRES.
FIGURES ARE PERCENTAGES BASED ON 100 SPECIMEN COUNT.
"X" INDICATES RARE PRESENCE OUTSIDE THE COUNT.

RANGE CHART OF OCCURRENCES BY ALPHABETICAL (By Groups)

		BOTRYOCOCCUS	MICRHYSTRIDIUM	MICROFASTA EVANSII	SCHIZOSPORIS PARVUS	SCHIZOSPORIS RETICULATUS	VERYHACHIUM	AEQUITRIRADITES SPINULOSUS	AEQUITRIRADITES TILCHAENESIS	AEQUITRIRADITES VERRUCOSUS	ANNULISPORITES FOLLICULOSA	ARAUCARIACITES AUSTRALIS	BIRETRISPORITES SPECTABILIS	CALLIALASPORITES DAMPIERI	CALLIALASPORITES TURBATUS	CERATOSPORITES EQUALIS	CICATRICOSISPORITES AUSTRALIENSIS	CICATRICOSISPORITES AUSTRALIENSIS MEGA	CONCAVISSIMISPORITES VARIVERRUCATUS	CONTIGNISPORITES COOKSONIAE	CONTIGNISPORITES GLEBULENTUS	COOKSONITES VARIABILIS	COROLLINA TOROSUS	CORONATISPORA PERFORATA	COUPERISPORITES TABULATUS	CYATHIDITES AUSTRALIS	CYATHIDITES MINOR	CYCADOPITES FOLLICULARIS	CYCLOSPORITES HUGHESI	DICTYOPHYLLIDITES	DICTYOTOSPORITES COMPLEX	DICTYOTOSPORITES SPECIOSUS	FALCISPORITES GRANDIS	FALCISPORITES SIMILIS	FORAMINISPORIS CAELATUS	FORAMINISPORIS DAILYI	FORAMINISPORIS WONTHAGGIENSIS	FOVEOTRILETES PARVIRETUS	GLEICHENIIDITES
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
STERTON-1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
74.3	CORE	1	.	4	.	.	.	.	.	.	.	2	.	.	.	1	.	.	.	1	.	.	2	1	X	7	16	.	X	.	1	1	4	18	.	.	.	.	.
41.7	CUTTS	.	.	X	X	X	.	X	.	.	.	.	.	X	.	3	X	.	.	.	.	.	.	.	.	18	29	.	.	.	.	X	4	13	.	X	1	.	.
09-12	CORE	.	.	X	.	.	.	1	.	1	.	2	1	4	X	3	.	.	X	.	X	.	2	1	3	1	4	1	1	.	X	?	8	30	.	1	.	.	.
ATHFIELD-1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
44	CORE	.	.	1	.	.	.	X	.	.	.	.	X	.	.	3	.	X	.	X	.	.	.	.	1	4	24	.	X	.	.	1	4	15	.	X	1	.	.
00	CORE	4	.	X	.	.	1	.	.	.	.	.	.	X	1	1	1	.	.	.	.	.	.	.	.	.	7	17	.	.	.	.	X	3	32	.	.	.	.	.
32	CORE	.	.	.	.	X	.	X	.	.	.	.	X	X	1	6	.	.	.	X	.	.	.	.	.	12	15	.	.	.	1	X	5	15	.	.	?	.	.
WKESDALE-1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
7.2	SWC	X	.	.	X	.	.	.	.	1	.	.	.	X	1	3	4	.	.	4	1	1	1	.	1	5	20	.	1	1	.	1	2	13	.	.	.	.	.
08.6	SWC	8	X	.	.	.	.	.	.	.	X	.	.	1	1	5	.	.	.	X	1	.	3	.	.	2	5	2	1	.	.	.	1	12	.	.	.	1	1
52.5	SWC	2	.	.	.	.	.	.	X	.	.	1	.	1	.	1	.	.	.	.	.	.	1	.	.	11	23	1	.	.	.	.	5	24	.	1	.	.	.
00.6	SWC	5	X	.	.	.	X	.	.	.	.	1	.	2	.	2	.	.	.	.	.	.	2	X	.	3	10	.	1	.	X	X	5	32	X	.	.	.	.
96.3	SWC	.	.	.	.	.	.	.	.	.	.	X	.	X	.	.	.	.	.	.	.	.	.	.	.	F	F	.	.	.	.	.	X	C	.	.	.	.	.
ETTY HILL-1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
94-98	CORE	54	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.	6	.	.	2	2	2	.	.	.	X	1	18	.	.	.	.	.
OLSTHORPE-1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
58.4	SWC	2	.	.	.	X	.	.	.	X	.	2	.	3	2	4	.	.	.	.	.	.	.	X	.	4	9	X	X	X	.	X	1	30	.	X	.	X	.

		ISCHYOSPORITES PUNCTATUS	JANUASPORITES SPINULOSUS	KLUKISPORITES SCABERIS	LAEVIGATOSPORITES BELFORDI	LEPTOLEPIDITES MAJOR	LEPTOLEPIDITES VERRUCATUS	LYCOPODIACIDITES ASPERATUS	MICROCACHRYIDITES ANTARCTICUS	MURospora FLORIDA	NEORAISTRICKIA TRUNCATA	NEVESISPORITES VALLATUS	OSMUNDACIDITES WELLMANII	PERINOPOLLENITES ELATOIDES	PEROTRILETES WHITFORENSIS	PILOSISPORITES NOTENSIS	PILOSISPORITES PARVISPINOSUS	RETITRILETES AUSTROCLAVATIDITES	RETITRILETES CIRCOLUMENUS	RETITRILETES EMINULUS	RETITRILETES FACETUS	RETITRILETES NODOSUS	RETITRILETES WATHAROOENSIS	SESTROSPORITES PSEUDOALVEOLATUS	STAPLINISPORITES CAMINUS	STAPLINISPORITES MANIFESTUS	STERIESPORITES ANTIQUASPORITES	TRIPOROLETES BIRETICULATUS	TRIPOROLETES RETICULATUS	VELOSPORITES TRIQUETRUS	VITREISPORITES PALLIDUS		
		39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68		
TERTON-1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	CASTERTON-1	
4.3	CORE	.	.	.	.	.	X	X	4	.	.	.	29	.	2	.	.	5	X	1	.	X	.	.	.	.	.	.	.	.	.	1374.3	CORE
1.7	CUTTS	.	.	.	X	.	X	.	1	.	.	.	28	.	X	X	.	2	X	.	.	X	.	.	1	.	.	.	.	X	.	1441.7	CUTTS
9-12	CORE	.	.	X	.	.	X	.	3	X	.	X	28	.	.	.	.	4	1	X	.	.	X	X	.	.	.	.	.	.	.	1709-12	CORE
THFIELD-1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	HEATHFIELD-1	
4	CORE	.	.	2	X	X	1	.	3	.	1	.	33	.	.	.	.	3	X	1	1	.	.	.	.	.	.	1	X	X	.	1944	CORE
0	CORE	.	X	.	.	X	X	.	1	.	.	.	28	.	.	.	.	3	X	X	.	.	.	.	.	.	.	.	.	.	1	2100	CORE
2	CORE	2	1	1	X	1	X	.	.	.	.	.	30	1	.	.	.	7	1	X	1	X	.	X	.	.	.	.	.	.	.	2282	CORE
KESDALE-1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	HAWKESDALE-1	
.2	SWC	1	1	.	.	.	1	1	11	.	X	.	14	.	.	X	?	8	.	1	X	1	.	X	.	.	X	X	X	.	1	877.2	SWC
8.6	SWC	.	.	.	.	10	7	.	2	X	5	.	1	.	.	.	.	28	X	1	X	X	.	1	.	.	X	.	.	.	1	1008.6	SWC
2.5	SWC	.	.	.	.	.	2	.	9	.	.	.	8	.	.	X	X	6	.	1	.	.	.	.	.	.	.	.	.	.	3	1062.5	SWC
0.6	SWC	2	.	X	.	1	1	.	4	X	4	.	12	.	.	.	.	7	X	1	.	1	X	.	.	1	.	.	.	.	3	1100.6	SWC
6.3	SWC	.	.	.	.	.	.	.	X	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X	1196.3	SWC
TTY HILL-1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	PRETTY HILL-1	
4-98	CORE	.	.	X	.	.	X	.	2	.	.	.	X	1	.	.	.	8	1	1	.	.	.	X	.	.	.	.	.	.	2	2194-98	CORE
LSTHORPE-1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	WOOLSTHORPE-1	
8.4	SWC	.	.	1	.	1	1	.	8	X	2	.	21	.	.	.	.	6	2	.	1	.	X	X	.	.	.	.	.	.	1868.4	SWC

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