



# MINES ADMINISTRATION PTY LIMITED

## PALYNOLOGY FACILITY



PALYNOLOGICAL LABORATORY  
REPORT NO. 272/3  
STONEFORD NO. 1  
GAS AND FUEL EXPLORATION N.L.

M.S. DETTMANN

MAY 1984

**BRISBANE**

G.P.O. BOX 880,  
BRISBANE, Q'LAND. 4001  
PH.: (07) 228 4358

## 1 INTRODUCTION

One sidewall core and nine samples of cuttings from between 450 m and 1180 m in Stoneyford No. 1, western Victoria, have been examined palynologically. Results obtained from the investigation are summarised on the attached table and aspects of these findings are discussed below.

## 2 BIOSTRATIGRAPHICAL RESULTS

Biostratigraphical assessment of the samples is in terms of the scheme outlined by Dettmann & Douglas (1976) for Victorian Early Cretaceous sequences. All but one of the samples studied are cuttings which are susceptible to down-hole contamination. Accordingly, biostratigraphical analyses of such samples have been based entirely on last appearances or extinctions. This procedure necessarily limits the precision of results as compared with those based also on inceptions or first appearances, as in the case of the single sidewall core provided.

The section investigated is within the *Dictyotosporites speciosus* Zone, as follows.

### 2.1 SWC4 - 1155.5 m

An assemblage containing *Dictyotosporites speciosus* together with *Cyclosporites hughesii* confirms assignment to the older (Neocomian-Aptian) *Cyclosporites hughesii* Subzone of the *D. speciosus* Zone. Allocation to the middle part of the subzone is tentatively suggested since species diagnostic of the upper and lower parts of the subzone are lacking. Forms identified include ...

Gymnospermous pollen	<i>Alisporites grandis</i>
	<i>Araucariacites australis</i>
	<i>Classopollis classoides</i>
	<i>Microcachrydites antarcticus</i>
	<i>Podocarpidites</i> spp.
	<i>Pinuspollenites</i> spp.
Cryptogam spores	<i>Aequitriradites verrucosus</i>
	<i>Ceratosporites equalis</i>
	<i>Cyathidites australis/minor</i>
	<i>Cicatricosisporites australiensis</i>
	<i>Cicatricosisporites ludbrookae</i>
	<i>Cyclosporites hughesii</i>
	<i>Dictyophyllidites crenatus</i>
	<i>Dictyotosporites speciosus</i>
	<i>Foraminisporis wonthaggiensis</i>
	<i>Klukisporites scaberis</i>
	<i>Lycopodiumsporites circolumenus</i>
	<i>Lycopodiumsporites aminulus</i>
	<i>Lycopodiumsporites austroclavatidites</i>
	<i>Lycopodiumsporites reticulumsporites</i>
	<i>Leptolepidites verrucatus</i>
	<i>Neoraistrickia truncata</i>
<i>Pilosporites notensis</i>	
Algal microfossils	<i>Leiosphaeridia</i> spp.

## 2.2 Cuttings - 750-1180 m

All samples provided assemblages containing *Cyclosporites hughesii* which range to the top of the *C. hughesii* Subzone of the *D. speciosus* Zone. Accordingly, the section is considered to be of Neocomian-Aptian age.

## 2.3 cuttings - 450-600 m

Both samples yielded *Dictyotosporites speciosus* and are therefore considered to be no younger than the *D. speciosus* Zone of Neocomian to earliest Albian age. The absence of species restricted to either the older *C. hughesii* Subzone or the younger *C. striatus* Subzone precludes more precise biostratigraphical assignment.

## 3 DEPOSITIONAL ENVIRONMENT

Assemblage from all samples contain a preponderance of land-plant derivatives and several contain low frequencies of fresh-water algal microfossils, including *Leiosphaeridia*, *Microfosta evansii* and *Schizosporis reticulatus*. Marine indicators were not observed. Fluvial to paludal depositional environments are indicated.

## SUMMARY TABLE

STUDY: STONEYFORD NO. 1

REPORT NO.: 272/3

GAS AND FUEL EXPLORATION N.L.

Page 1 of 2

SAMPLE	DEPTH	AGE	STRATIGRAPHY		REMARKS
			BIOSTRATIGRAPHICAL UNIT	INFERRED STRATIGRAPHICAL LIMIT	
Cuttings	450 m	Neocomian - earliest Albian	<i>Dictyotosporites speciosus</i> Zone	Otway Group	Restricted, fern-rich assemblage OIL & GAS POTENTIAL; MATURE - LATE MATURE
Cuttings	600 m	Neocomian - earliest Albian	<i>Dictyotosporites speciosus</i> Zone	Otway Group	Fern-rich assemblage, common fresh-water algae; rare Permian remanié OIL POTENTIAL; MATURE - LATE MATURE
Cuttings	700 m	Neocomian - Aptian	<i>Cyclosporites hughesii</i> Subzone	Otway Group	Diverse assemblage, occasional fungal spores. GAS PRONE, LATE MATURE
Cuttings	900 m	Neocomian - Aptian	<i>Cyclosporites hughesii</i> Subzone	Otway Group	Diverse assemblage, occasional freshwater algae <i>Me</i> GAS PRONE: LATE MATURE
Cuttings	950 m	Neocomian - Aptian	<i>Cyclosporites hughesii</i> Subzone	Otway Group	Restricted assemblage. GAS PRONE, LATE MATURE
Cuttings	1009 m	Neocomian - Aptian	<i>Cyclosporites hughesii</i> Subzone	Otway Group	Diverse assemblage, frequent fresh-water algae. <i>ME</i> OIL POTENTIAL; LATE MATURE.
Cuttings	1050 m	Neocomian - Aptian	<i>Cyclosporites hughesii</i> Subzone	Otway Group	Lycopod-rich assemblage. OIL & GAS POTENTIAL; LATE MATURE
Cuttings	1100 m	Neocomian - Aptian	<i>Cyclosporites hughesii</i> Subzone	Otway Group	Diverse assemblage, occasional fresh-water algae. OIL POTENTIAL; LATE MATURE