MICROPALAEONTOLOGICAL REPORT
for LAKE OIL P/L
on TWO SAMPLES from Patrobus-1

REPORT 02/05

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INTRODUCTION

The following is a report on two samples from Patrobus-1 in Gippsland. The lithology is briefly described. A sample was processed by standard micropalaeontological techniques. The biozonation used in this work is shown on Figure 1 and the biostratigraphic data in Table 1.

Sample 267m

Sample description

Lithology: dark grey-green cemented pebbly (Palaeozoic clasts) sandstone with shell fragments including bivalves, bryozoans and foraminifera

Microfauna: A diverse microfauna occurs in this sample.
Benthic: Benthic foraminfera include common and include common *G. subglobosa, Cibicides* spp. and the semi-endemic *Parrellina crespinae* and *Notorotalia howchini*
Planktonic: Plankton are absent.

Palaeoenvironment: The fauna and facies suggest a high-energy middle shelf environment with transported inner shelf taxa present.

Age: Probably Late Oligocene (see comment below)

Correlatives: The age, facies and nature of the fauna typifies the **Lake Entrance Formation** as described in Holdgate and Gallagher (1997).

Sample 273m

Sample description

Lithology: yellow green dolomitized silty fine sand with echinoderm spines, bryozoans, ostracods and foraminifera.

Microfauna: A diverse microfauna occurs in this sample.
Benthic: Benthic foraminfera include common and include: *G. subglobosa, Cibicides* spp. and the semi-endemic *Parrellina crespinae* and *Notorotalia howchini*
Planktonic: Plankton are absent.

Palaeoenvironment: The fauna and facies suggest a lower-energy middle to outer shelf environment.

Age: Probably Late Oligocene (see comment below).

Correlatives: The age, facies and nature of the fauna typifies the **Lake Entrance Formation** as described in Holdgate and Gallagher (1997).

Comment: In the absence of any plankton, the occurrence of the benthic rotaliid *P. crespinae* and N. *howchini* suggests an Oligo-Early Miocene age (these two taxa are common in strata of this age, however they may be rare in later Miocene or younger strata). The sandy silty facies, dolomitisation and lack of plankton with the presence of *G. subglobosa* and *Parrellina* peaks are typical of the **Late Oligocene Lakes Entrance Formation** (see Fig. 2, adapted from Holdgate and Gallagher, 1997). The absence of abundant glauconite and agglutinated taxa such as *Haplophragmoides* suggest the interval is not the Early Oligocene Colhoun Gravel. The biofacies

and relative lack of carbonate in the facies precludes assignment to the Miocene Gippsland Limestone, Wuk wuk Marl or Bairnsdale limestone.

Conclusion: **Based of the bio- and lithofacies considerations the samples are from the Lakes Entrance Formation and have a probable Late Oligocene age.**

References:

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TABLE 1						**Patrobus-1**	**LAKES OIL**			
							Epoch			**Probably Late Oligocene**
							Palaeoenvironment			Middle-outer shelf
							Stratigraphic Unit			Lake Entrance Formation
							Holdgate & Gallagher 1997			
	I	**M**	O	ub	mb	**ROTALIIDS**				
							Depth	273	267	**Palaeodepth**
i	1	1				*Sigmoidella*	spp.		x	**Middle**
i	3	2	1			*Elphidium*	*crispum*	x	x	
i	3	2	1			*Elphidium*	*macellum*	x		
	3	2	1			*Notorotalia*	*howchini*	x	x	**shelf**
i	3	2	1			*Elphidium*	spp.		x	
e	3	2				*Discorbis*	spp.	x		**to**
e	2	1	1			*Glabratella*	spp.	x		
i	2	1	2	2	2	*Bolivina*	spp.	x		**Outer**
i	2	1	2	2	2	*Bolivinella*	*folia*	x		
e		3	3	3	3	*Cibicidoides*	*perforatus*	x		
e	1	3	3	2	1	*Cibicides*	*mediocris*	x	x	**shelf**
e	1	3	3	2	1	*Cibicides*	*vortex*	x	x	
e	1	3	3	2	1	*Cibicides*	*lobatulus*		x	
e	1	3	3	2	1	*Cibicides*	spp.		x	
i	1	3	2	1		*Parrellina*	*crespinae*	x	**xx**	common
i	1	2	3	2	1	*Astrononion*	*tasmanensis*	x		
e		2	3	2	1	*Anomalinoides*	*macraglabra*	x		
e	1	1	2	2		*Eponides*	*repandus*	x	x	
i		1	3	3	1	*Globocassidulina*	*subglobosa*	x	**xx**	common
e		1	2	2	1	*Heterolepa*	*subhaidingeri*	x		
e			2	2	1	*Gyroidinoides*	spp.	x		
e			2	2	1	*Gyroidinoides*	*zealandica*	x	x	
i						*Nonion*	spp.	x		
i						Polymorphinid		x		
i						*Reussella*	spp.	x		
						MILIOLINIDS				
e						*Quinqueloculina*	spp.		x	
						TEXTULARID				
e						*Gaudryina*	*crespinae*		x	
e						*Dorothis*	spp.		x	
						PLANKTONIC		0	0	