FORAMINIFERAL SEQUENCE IN WHALE #1.

For: HUDBAY OIL (AUSTRALIA) LTD.

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PALTECH CTG

MARINE MICROPALEONTOLOGISTS SYDNEY NEW SOUTH WALES MIDLAND WESTERN AUSTRALIA

THE FORAMINIFERAL SEQUENCE IN WHALE # 1

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Nineteen side wall cores from WHALE #1 were examined for foraminiferal content. On the basis of this examination the following biostratigraphic and environmental breakdown of the sequence was noted:-

Approx. E-log Sidewall Cores Unit Paleoenvironment Boundary Age Zone* Depth(m) F Shelf edge canyon(>100m) 388.3 Тор Early to 394.2 Miocene - - - -- - - - - transitional - - - - - - - -400.1 Mid shelf canyon (>40m) Early G to 412.0 Miocene - - - - - transitional - - - - -_ _ _ _ _ _ _ _ _ 417.0 Early H-1 Inner/mid shelf to to Miocene ?H-2 Canyon Head $(\sqrt{40m})$ 437.0 440.0 Estuarine tô Late Eocene K to to to 457.0 ?Oligocene ?J back barrier lagoon ---- 459.0 - - -460.0 ? No forams back barrier lagoon to found to deltaic 467.0 base of sequence examined - - - -- - - -*Planktonic foraminiferal zones after Taylor (in prep.).

A list of sidewall cores studied is shown on Tables 1 & 2. Side-wall cores at 470m, 472m & 475m were not examined as perusal indicated no meaningful yield of foraminifera would be obtained from destroying the sparse marterials recovered. Side-wall core at 407m was a very small sample and was not processed as samples above and below yielded sufficient data. Planktonic foraminiferal content varied; being sporadic in the deltaic / estuarine sediments, but consistantly diagnostic in the marine carbonate sediments above 437m.

Tables I & II (herein) detail the record summarised on page 1. A correlation diagram, Figure 1, is included, as is a micropaleontological data sheet which shows the interpreted reliability of the planktonic foraminiferal zone determinations.

CORRELATION OF WHALE # 1 with ADJACENT WELLS and LAKES ENTRANCE

Figure 1, a fence diagram, demonstrates both biostratigraphic and approximate paleobathymetric correlation. As correlation with Baleen #1 is the most significant point, reference is made to the Baleen report (Paltech Report 1982/01) in order to avoid repetition.

Comparison between Whale and the nearby Flathead #1 sequence shows a remnant of Oligocene Zone I sediment in the latter sequence, whereas Zone I was not recognised in the former. It is noted that Oligocene planktonic foraminifera were recycled into basal Miocene sediments of Whale.

1	BEN	THIC FORAMS (ENVIRONMEN	NTAL GROUPS)	RESIDUE	LITHOLOGY* *	PALEO- ENVIRONMENT				
	(AL	INNER SHELF	MID SHELF	MAJOR COMPONENTS	MINOR COMPONENTS	LINE Om				
L CORE n metres.	<i>i phon</i> spp LAGOON hragmoides spp.	ies brevoralis liina spp. lina spp. haeroidina sp. lepis victoriensis lalia spp. lalia spp. les lobatulus Cora les lobatulus Cora la maoria spp. la ria spp.	nnion spp. Inoides spp. tes mediocris tes subbaidingeri liina subglobosa bidina bulloides	<pre>b: bryozoa debris f: foraminifera sp: sponge spicules q: f. ang. qtz. Q: f-c ang. subrd. qtz. S: calc. siltstone g: glauc. clay G: glauc and/or goethite pellet</pre>	ags. aggs. eeth & bone frags. d spines & frags. ds ds spicules count. forams	AIC/LAGOONAL/ESTUAR (Transitional) N HEAD (~ 40m) N (Mid Shelf > 40m N (Shelf Edge > 10	k E-LOG ACTER CHANGES (m)	PLANK FORAMIN ASSEM	TONIC NIFERAL BLAGE	AGE
SIDEWAL Depth 1	Bathys. Haplop.	Cibici Lentici Textul Textul Gaudry Ammospi Hetero Notoroi Cibici Cibici Karrer	Astrone Anomal Cibicie Cibicie Cassidu Sphaere	p: pyrite *: cryst.siderite or dolomite	rock fi pyrite mica fish te clay tu echinoj c. ang c. ang c. ang c. ang c. ang c. ang	DELTU DELTU CANYC CANYC	MAJOI	ZONE	Depth at Base	
388.3.		× D	x° x		1000 2					
394.2→		D x x	0000	SSSSSSSSSSS SSSSSSSSSS SSSSSSSSS bb	500 40			F	394.2	
400.1 ₊		° x ° D °	x x °	5555555bbb 555555bbb	.500 20					EARLY
410.1 ₊		• • D • •	x °	SSSSSS bbb SSSSS bbb	r _E 200 20			G		MIOCENE
412.0.	- .		°	SSSS bbbb bbb	.200 40		-		412.0	
417.0.		RR° DR	x	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	r r 200 40					
420.0→ 425.0→		RR XDXXR RDR	x	G S S S B B B B B B B B B B B B B B B B	rr 200 10 r 200 - 5			H-1		
437 <u>,</u> 0 ₊		RRXRXXXX 1	RR -	5 5 6 6 6 7 6 7 7 7 7 7 7 7 7 7 7 7 7 7	r 1000 1			2H-2	425.0 437.0	PLATE OLIGOCENE
440.0 ₋₊		No forams found		qq G G G G C bb	·		439			
442.0-		No forams found	•	qqq qqq t**** G G G G G G G G G G G G G G G G G	rrrr ,			?		?
445.O _→	<u>,</u>	D 0		ddddd C C C C dddddd D C C C C	rr 2030			- <u>K/</u> 7J	445.0	late Eocene or ?Early Oligocene
450.0→	ł	No forams found		ddd & C C C C C C C C	rrr .					
457.0→	ر. •				10 30			?	457 0	? Late Eocene or
460.0 _→	<u>ה</u> -				<u> </u>	4	459	·	43/.0 .	?Early Oligocene
462.0→		No forame found			r :		1			
463.5.	(NO LOTAMS TOUND			r :		• •	····· ?	- <u>-</u>	. ?
467.0	2	······		5 5 5 5 5 2 2 2 2	r	<u>ri</u>				
1	KEY:	• <20 specimens								

x >20 specimens D >60% of total count R=reworked

r=rare

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** visual estimate of
processed sample.

TABLE 2: SIGNIFICANT BENTHONIC FORAMINIFERAL DISTRIBUTION, RESIDUE LITHOLOGY & PALEOENVIRONMENTAL ASSESSMENT -WHALE # 1.

MICROFALEONTOLOGICAL DATA SHEET

$M_{\rm e} \sim 2$												
BASIN: <u>GIPPSLAND</u>				ELEVATION: KB: 9.4 GL: 52.0								
WELL NAME:W		ME: <u>WHP</u>	ALE # 1				TOTAL DEPTH:					
			HIGHEST D				A	LOWEST DATA				A
		FORAM.	Preferred		Alternate		Two Way	Preferred		Alternate		Two Way
AGE		ZONULES	Depth	Rtg	Depth	Rtg	Time	Depth	Rtg	Depth	Rtg	Time
EIS		A ₁										
ЧĞ		^A 2										
1		^A 3			· · · · · · · · · · · · · · · · · · ·							
LIC		^A 4										
A 0		Bl										
	LATE	^B 2										
		С										
ല	MIDDLE	D ₁										
z		D_2			····							
ы С		El										
0		E ₂										
н	EARLY	F	388.3	1				394.2	0			
-		G	400 1	0				412	1			
		H ₁	<u> </u>	1 1				425				
	ARLY LATE	^Н 2	437	2				437	2			
- OLIGOCENE		1 1										
		I ₂										
		J	445*	2								
								· · · · · · · · · · · · · · · · · · ·	1	<u> </u>		
	L_ <u></u>	- к						457*				
ENE		Pre-K									1	
		<u> </u>	I	I	L	1		·	<u> </u>	L	J	

COMMENTS: SWCs at 445 and 457 contain only Globigerina angiporoides angiporoides

which ranges from K to top J; therefore a K/J determination is all

that can be given. However a Zone K designation is preferred.

CONFIDENCE RATING:

0:	SWC or Core	-	Complete assemblage (very high confidence).
1:	SWC or Core	-	Almost complete assemblage (high confidence).
2:	SWC or Core	-	Close to zonule change but able to interpret (low confidence).
3:	Cuttings	-	Complete assemblage (low confidence).
4:	Cuttings	-	Incomplete assemblage, next to uninterpretable or SWC with depth suspicion (very low confidence)

NOTE:

If an entry is given a 3 or 4 confidence rating, an alternative depth with a better confidence rating should be entered, if possible. If a sample cannot be assigned to one particular zone, then no entry should be made, unless a range of zones is given where the highest possible limit will appear in one zone and the lowest possible limit in another.

DATA	RECORDED BY:	PALTECH PTY.	LTD.	DATE:	4/1/1982.
DATA	REVISED BY:			DATE :	