Memorandum No. S/778

A BASIC GEOCHEMICAL EVALUATION OF ONE CORE SAMPLE FROM THE EAST MEREENIE-2 WELL

Project No. S/II/801/102

Prepared for:

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I

INTRODUCTION

A single core sample comprised of brown/black shale from 4201 feet in the East Mereenie-2 well was submitted for geochemical evaluation. The client indicated that the sample was of Ordovician age and was from the Amadeus Basin in Central Australia.

Analytical data are presented in Table 1.

II

RESULTS AND DISCUSSION

The sample was submitted for total organic carbon, pyrolysis, and visual kerogen analysis. The results of these basic 'screening' analyses were such that further solvent extraction analyses were not warrented.

Total organic carbon analysis indicates that the sample analysed contains below average organic carbon (0.79%) for a shale lithology. Pyrolysis analysis further indicates that the kerogen is hydrogen poor (hydrogen index 16) and has no capacity to generate significant amounts of hydrocarbons at higher maturity levels. The potential hydrocarbon yield from this sample (reported here as the sum of 'free' and 'bound' hydrocarbons) is considered 'poor' at 0.2 kg/ton. Although a large proportion of the total yield is present as 'free' hydrocabon (indicated by the high production index of 0.38), in quantitative terms the free hydrocarbon component is insignificant being equivalent to only about 80 ppm of extractable hydrocarbon.

Visual kerogen analysis indicates that amorphous kerogen with very little inertinite but common algal cysts is the dominant kerogen component.

Based on the preliminary laboratory analyses it was not recommended that further analyses be performed.

III

CONCLUSIONS

Although the sample analysed contains just below average organic carbon, it is dominated by a hydrogen poor kerogen. No hydrocarbon potential may be anticipated at the present or any future maturity level.

RA:ps
June 10, 1981

TABLE 1

"ROCK EVAL" PYROLYSIS DATA

COMPANY: PANCONTINENTAL PET. WELL: E. MEREENIE-2 LOCATION: AUSTRALIA

SAMPLE DEPTH (FEET)	GENERALISED LITHOLOGY (CORE)	ORGANIC CARBON %	TEMPERATURE (°C)	HYDROGEN INDEX	OXYGEN INDEX	PRODUCTION INDEX	POTENTIAL YIELD (KG/TON)
4201	Interbedded brn-blk sh	0.79	N.D.	16	0	0.38	0.2

TEMPERATURE (°C) = TEMPERATURE AT MAXIMUM RATE OF PYROLYSIS.

PRODUCTION INDEX = AN ESTIMATE OF PRESENT HYDROCARBON GENERATING POTENTIAL COMPARED TO THAT AT OPTIMUM MATURITY.

POTENTIAL YIELD = AN ESTIMATE OF HYDROCARBON PRODUCTION AT OPTIMUM MATURITY.

APPENDIX

ABBREVIATIONS USED IN ANALYTICAL DATA SHEETS

-	-	Sample not analysed
*	-	No results obtained
N.D.P.	-	No Determination Possible
N.O.F.	-	No Organic Fluorescence
N.D.O.F.	-	No Determinable Organic Fluorescence

LITHOLOGY

Aren	-	Arenaceous
Arg	-	Argillaceous
Calc	-	Calcareous
Carb	-	Carbonaceous
C.M.T.	-	Cement
Chk	-	Chalk
Cht	-	Chert
Cly	-	Clay
Clyst	-	Claystone
Crs	-	Coarse
Cgl	-	Conglomerate
Dol	-	Dolomite
Fer	-	Ferruginous
F	-	Fine
Frags	-	Fragments
Hd	-	Hard
Lam	-	Laminae/laminated
Lig	-	Lignite
Lstn	-	Limestone
Med	-	Medium
Mic	-	Micaceous
Mnr	-	Minor
Mdst	-	Mudstone
Musc	-	Muscovite
Ool	-	Oolitic
Pyr	-	Pyrite/pyritic
Qtz	-	Quartz
Snd	-	Sand
Sst	-	Sandstone
Sndy	-	Sandy
Sh	-	Shale
Shly	-	Shaly
Sil	-	Siliceous
Slt	-	Silt
Slst	-	Siltstone
Slty	-	Silty
Sft	-	Soft
Tr	-	Trace

COLOUR

Blk	-	Black
Bl	-	Blue
Brn	-	Brown
Dk	-	Dark
Gn	-	Green
G	-	Gold
Gy	-	Grey
Lt	-	Light
Mtl	-	Mottled
Ol	-	Olive
O	-	Orange
Ppl	-	Purple
Rd	-	Red
Wht	-	White
Y	-	Yellow
Vgt	-	Variegated

GENERAL

Ctg	-	Ditch Cuttings
L.C.M.	-	Lost Circulation Material
S.W.C.	-	Sidewall Core
Sl	-	Slightly
V	-	Very
Occ	-	Occassional

Gy-gn	-	Greyish green
Gn/gy	-	Green and/to grey
Gn-gy	-	Greenish grey