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amdel

2 November 1982

F3/698/0
4343/82

Pancontinental Petroleum Limited,
20 Bond Street,
SYDNEY NSW 2000

Attention: Mr John Gorter

REPORT F4343/82

YOUR REFERENCE:	Letter dated 19 February 1982/ Telex No.2435 dated 20 October 1982.
MATERIAL:	Core
LOCALITY:	Mt Winter No.1
IDENTIFICATION:	SWC, 1747.5 m
DATE RECEIVED:	22 February 1982
WORK REQUIRED:	R3/4, R3/6

Investigation and Report by: Dr D.M. McKirdy, Dr B. Mooney and
Mr P. Marty

Chief - Fuel Section: Dr Brian G. Steveson
Manager, Mineral and Materials Sciences Division: Dr William G. Spencer

for Norton Jackson
Managing Director

cah

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R282/65C

SUMMARY OF ANALYTICAL METHOD

The sidewall core (2.1 gm) was extracted ultrasonically with petroleum ether (2 x 50 ml). The petroleum ether solution was filtered and the solvent removed by fractional distillation to yield the crude C₁₅₊ extract (8.3 mg).

The extract (or residual 'whole oil') was examined by gas chromatography using the following operating parameters:

Column SCOT 45 m x 0.5mm diameter coated with OV101.

Injection and detection temp. 300°C.

FID detection

Nitrogen carrier 3 mls/minute

Column temperature 60° for 3 mins. then programmed at 4° per minute to 180°C, held for 1 minute and reprogrammed at 3° per minute to 255°C and held for 60 minutes.

Alkane concentrations were obtained by measurement of peak areas above naphthenic hump.

INTERPRETATIVE COMMENTS

The high EOM yield (ca. 4000 ppm) is consistent with the sandstone being oil-stained. The 'whole-oil' chromatogram is typical of a mature marine crude derived from algal/bacterial remains (cf. pr/ph <2, pr/n-C₁₇ = 0.25, ph/n-C₁₈ = 0.20; maximum of n-alkane profile = C₁₇, no odd-even predominance in n-C₂₃₊ range).

The C₁₅ alkane distribution is very similar to that obtained by McKirdy (1977) from shale in the Gillen Member, Bitter Springs Formation, at Mt Charlotte No.1 (Core 19, 1652.9 m).

REFERENCE CITED

McKIRDY, D.M., (1977). Ph.D. thesis, A.N.U. (unpublished).

SOURCE ROCK

SAMPLE NO: 9

WELL: Mt Winter No.1

SAMPLE IDENTIFICATION: Johnnys Creek Beds, Bitter Springs Formation

DEPTH: 1747.5 m

TYPE OF SAMPLE: Sidewall core (sandstone with strong petroliferous odour)

Total organic carbon (TOC)		%
Weight of sample extracted	2.1	gm
Extracted organic matter (EOM)	3952	ppm
EOM as fraction of TOC		mg/g
Wt. EOM	8.3	mg

Analysis of extracted organic matter:-

Asphaltenes	% (wt)
Saturates	%
Aromatics	%
Resins	%
Loss of column	%

n-Alkane distribution of saturates:-

n-Alkane	C ₁₃	C ₁₄	C ₁₅	C ₁₆	C ₁₇	C ₁₈	C ₁₉	C ₂₀	C ₂₁	C ₂₂	C ₂₃
Rel abund.	0.4	1.1	3.7	11.6	15.3	14.0	11.6	9.1	7.3	5.9	4.6
n-Alkane	C ₂₄	C ₂₅	C ₂₆	C ₂₇	C ₂₈	C ₂₉	C ₃₀	C ₃₁	C ₃₂	C ₃₃	C ₃₄
Rel abund.	4.3	4.3	3.1	1.9	1.2	0.8	-	-	-	-	-

Isoprenoid distribution in saturates:

	IP16	IP18	Pr	Ph		
			3.82	2.80		
$\frac{IP16}{IP18}$	$\frac{IP18}{Pr}$	$\frac{Pr}{Ph}$	$\frac{IP16}{nC_{15}}$	$\frac{IP18}{nC_{16}}$	$\frac{Pr}{nC_{17}}$	$\frac{Ph}{nC_{18}}$
		1.37			0.25	0.20

MOUNT WINTER NO.1

SWC 9

WHOLE OIL CHROMATOGRAM

