

OIL and GAS DIVISION

Sup

13-0

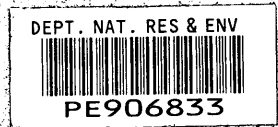
DIRECTOR
PETROLEUM & NATURAL GAS BRANCH



COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF NATIONAL DEVELOPMENT
BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

Petroleum Search Subsidy Acts
PUBLICATION No. 18



DIRECTOR
PETROLEUM & NATURAL GAS BRANCH

Port Campbell No. 1 and No. 2 Wells

Victoria

OF

FROME-BROKEN HILL COMPANY PROPRIETARY LIMITED

COMPLIMENTARY

*Issued under the Authority of the Hon. David Fairbairn
Minister for National Development*

1964

13 8-3 45



COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF NATIONAL DEVELOPMENT
BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

Petroleum Search Subsidy Acts

PUBLICATION No. 18

Port Campbell No. 1 and No. 2 Wells
Victoria

OF

FROME-BROKEN HILL COMPANY PROPRIETARY LIMITED

OIL and GAS DIVISION

*Issued under the Authority of the Hon. David Fairbairn
Minister for National Development*

1964 '9

COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF NATIONAL DEVELOPMENT

MINISTER: THE HON. DAVID FAIRBAIRN, D.F.C., M.P.

SECRETARY: SIR HAROLD RAGGATT, C.B.E.

BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

DIRECTOR: J. M. RAYNER

THIS REPORT WAS PREPARED FOR PUBLICATION IN THE PETROLEUM EXPLORATION BRANCH

ASSISTANT DIRECTOR: M. A. CONDON

Published by the Bureau of Mineral Resources, Geology and Geophysics

Canberra A.C.T.

CONTENTS

	Page
SUMMARY	1
INTRODUCTION	2
WELL HISTORY - PORT CAMPBELL NO. 1	2
General data	2
Drilling data	3
Logging and testing	8
GEOLOGY - PORT CAMPBELL NO. 1	11
Summary of previous work	11
Stratigraphy	12
Structure	13
Relevance to occurrence of petroleum	15
Porosity and permeability of sediments penetrated	15
Contribution to geological concepts resulting from drilling	16
WELL HISTORY - PORT CAMPBELL NO. 2	17
General data	17
Drilling data	18
Logging and testing	23
GEOLOGY - PORT CAMPBELL NO. 2	27
Summary of previous work	27
Stratigraphy	27
Structure	29
Relevance to occurrence of petroleum	30
Porosity and permeability of sediments penetrated	30
Contribution to geological concepts resulting from drilling	31
REFERENCES - PORT CAMPBELL NO. 1 and NO. 2 WELLS	32
APPENDICES	
Appendix 1. <u>Definitions of New Formation Names</u>	33
Appendix 2. <u>Lithological Descriptions and Analyses of Cores</u>	36
1. Detailed lithological description, Port Campbell No. 1	37
2. Detailed lithological description, Port Campbell No. 2	39
3. Core descriptions, Port Campbell No. 1	42
4. Core descriptions, Port Campbell No. 2	50
5. Porosity and permeability determinations, by Bureau of Mineral Resources	58

CONTENTS (Cont'd)

	Page
Appendix 3. <u>Palaeontological Reports</u>	59
1. Notes on Cretaceous macrofossils from Port Campbell No. 1, by P.R. Kenley	60
2. Plant fossils in Core No. 18, Port Campbell No. 2 Well, by Mary E. White	62
3. A palynological report on Port Campbell No. 1 and No. 2 Wells, Victoria, by P.R. Evans	62
Appendix 4. <u>Well Logging</u>	72
1. Electric logs, Port Campbell No. 1	73
2. Interpretation of electric logs, Port Campbell No. 2, by J.A.W. White	75
3. Deviation surveys, Port Campbell No. 2.. .. .	78
Appendix 5. <u>Reservoir Engineering</u>	80
1. Formation tests, Port Campbell No. 1	81
2. Formation tests, Port Campbell No. 2	94
3. Interpretation of formation tests, Port Campbell No. 2, by J.A.W. White	99
Appendix 6. <u>Evaluation of Formation Fluids</u>	101
1. Formation fluid data and analyses, Port Campbell No. 1, by Standard Vacuum Refining Company (Aust.) Pty Ltd; Vacuum Oil Company Pty Ltd; Gas and Fuel Corporation, Melbourne; State Laboratories, Melbourne, and Bureau of Mineral Resources	102
2. Formation fluid data and analyses, Port Campbell No. 2, by Standard Vacuum Refining Company (Aust.) Pty Ltd; Vacuum Oil Company Pty Ltd; State Laboratories, Melbourne; and Bureau of Mineral Resources	106
Appendix 7. <u>Additional Data filed in the Bureau of Mineral Resources</u>	121

ILLUSTRATIONS

FIGURES

1. Locality Map	Frontispiece
2. Stratigraphic column before drilling Port Campbell No. 1 ..	14
3. Seismic contour map - top of Jurassic prior to drilling Port Campbell No. 1	Opp. p. 14
4. Stratigraphic column after drilling Port Campbell No. 1 ..	" " "

ILLUSTRATIONS (Cont'd)

	Page
5. Seismic contour map - top of Waarre Formation, prior to drilling Port Campbell No. 2	Opp. p. 28
6. Stratigraphic column after drilling Port Campbell No. 2 ..	" " "
7. Geological cross section through Port Campbell No. 1 and No. 2 Wells	" " "
8. Microfossil distribution chart, Port Campbell No. 1 and No. 2 Wells	Opp. p. 71
9. Back pressure test data sheet, Port Campbell No. 1 ..	.. 90
10. Back pressure curve, Port Campbell No. 1 ..	.. 91

PLATES

1. Composite Well Log - Port Campbell No. 1 ..	At back of report
2. Composite Well Log - Port Campbell No. 2 ..	At back of report

APPENDIX 2

LITHOLOGICAL DESCRIPTIONS AND ANALYSES OF CORES

PORT CAMPBELL NO. 1 AND NO. 2 WELLS

CONTENTS

			Page
1. Detailed lithological description, Port Campbell No. 1	..	..	37
2. Detailed lithological description, Port Campbell No. 2	..	..	39
3. Core descriptions, Port Campbell No. 1	..	..	42
4. Core descriptions, Port Campbell No. 2	..	..	50
5. Porosity and permeability determinations, by Bureau of Mineral Resources	..	..	58

POROSITY AND PERMEABILITY DETERMINATIONS

PORT CAMPBELL NO. 1 AND NO 2 WELLS

by

Bureau of Mineral Resources

Port Campbell No. 1

<u>Core No.</u>	<u>Depth</u> (feet)	<u>Porosity</u> (% by vol.)	<u>Permeability</u> Millidarcys	
			<u>Horizontal</u>	<u>Vertical</u>
4	1458	8	3	0
5	1476	12	7	0
5	1478	37	729	694
11	3602-3604	25	65	85
13	4001-4003	31	98	95
13	4003-4005	33	231	130
18	4862-4864	21	10	4
20	5026-5028	20	22	0
22	5660-5662	24	169	660
22	5663-5665	26.5	2985	1695
23	5700-5702	14.8	5	2.75
23	5702-5704	12.5	0	0
23	5706-5708	8.6	0	0

Port Campbell No. 2

6	7904	14.6	0	0
7	7913-7930	13.8	0	0
10	8306-8311	11.0	83	91
11	8339-8346	8.4	19	3