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T/18P part I*

Bass Strait Oil & Gas N.L.
155 Dorcas Street,
South Melbourne. Vic. 3205

REPORT 705/4

DEPT. OF MINES	RECEIVED	24 NOV 1980	E&IL
ANSWER:	DEPT. OF MINES		
REF. No.			

QUARTERLY REPORT
ON
T.18P
BASS BASIN, TASMANIA
FOR
BASS STRAIT OIL & GAS N.L.

General Geological Services

Work Order 705

October 1980

I N D E X

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 - 2.20 Data Collection
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 - BAS 705/2 Basic Data Plan 1.250,000 (Preliminary)

Introduction

This report, the first for T.18P presents the operations carried out and planned in connection with the Permit during the period 1st July 1980 to 30th September 1980. The Permit T.18P was granted to the Bass Strait Oil & Gas N.L. Consortium on 23rd July 1980. The Consortium consists of the following group of companies:-

Bass Strait Oil & Gas N.L. - Manager and Operator
Tasmanian Oil & Gas N.L. - (Subsidiary of South
Eastern Resources Ltd.)
Terrex Resources N.L.
Hampton Oil and Gas Group

The main involvement during the period has been the establishment of operational procedure and initial data collection. The preparation of base maps to assist in planned interpretation has also commenced.

The permit area covers a total of 118 offshore graticular blocks, an area of some 7,690 sq. kms. (BAS 705/1 Location Plan)

A Consulting Group, General Geological Services, has been appointed technical managers and administrators for the exploration work and will provide the geological reporting for the Operator, Bass Strait Oil & Gas N.L..

2.10 Establishing Operations

The consortium has established an operational office at the following address:-

Bass Strait Oil & Gas N.L.

151-155 Dorcas Street,

South Melbourne 3205

Telephone 690 5900 Telex AA 33427

The permit investigations will be under the direct control of General Geological Services, the administrative and technical managers to the consortia who also work from the above address.

2.20 Data Collection

In order to fully understand the mechanisms of sedimentation, stratigraphy and hydrocarbon entrapments in the Basin, a full evaluation programme based on existing material has been planned for the permit area. This will include not only collection of available data within the permit, but also a regional evaluation of the Bass Basin so that a total picture of hydrocarbon trapping mechanisms can be obtained in order to assist in the outlining of prospective target areas.

Collection of previous geological and geophysical data has commenced and a list of seismic data is presented in the Section 5.30 of this report. Also a collection of wells drilled in the Basin has been obtained and these are under review. A list of these is presented in Section 5.40.

The position of the seismic lines collected and the wells investigated are shown on Plan Bas 705/2 Basic Data Plan.

1:250,000. All of these are in the preliminary investigation stage at this moment and will be upgraded during the next quarter.

Data collected from the wells includes basic well logs, time depth curves, core/cuttings descriptions and interpreted sections where available, to enable various formation tops of interest to be selected. Literature studies and collection of available publications both from Government and Company sources are also in the process of being carried out to aid in evaluation.

Seismic data is being collected from past surveys, mainly the subsidised surveys under the P.S.S.A. Commonwealth Government System and these will then be re-evaluated. The previous explorers in the area, Esso-BHP, have been approached to obtain seismic sections across the Basin to aid in this evaluation. A short discussion of the quality of the past seismic data is given in Section 5.20 of this report.

At this point the Company would like to thank the Officers of the Tasmanian Mines Department who gave them every assistance in the collection of data which was available in the library and archives of the Department. From time to time it will be necessary for our Geologists and Geophysicists to make use of the library and archive facility at the Department of Mines in order to fully extract all relevant information which can help in the evaluation of this permit area.

2.30 Geological and Geophysical Evaluation Programme

Base maps have been chosen to enable a complete evaluation of the area to begin and these are shown on the Basic Data Plan, a copy of which is located in Section 6 of this report. The planned initial basic maps are as follows:

<u>Scale</u>	<u>Map</u>	<u>Purpose</u>
1:250,000	Basic Data Map Bass Basin	To show available data on the Basin including regional geology, well location, useful seismic lines and general permit licence information
1:100,000	Shot Point Maps Evaluation Area	Permit area plus immediate surrounds for use as a base map for extended geological evaluation
1:50,000	Parts A - H	Base maps for detailed geological and geophysical interpretation

The main thrust during this quarter has necessarily been the initial collection of material, initial contact with the Mines Department and past survey groups that have conducted exploration in the Basin and initial preparation of base maps in order to commence interpretation.

2.40

TECHNICAL ADVICE AVAILABLE

A Consortium Operations Committee has been established to direct all exploration activities. This is composed of representatives of the permittees as listed in the application. The Operator, Bass Strait Oil & Gas N.L., will be responsible for the day to day activities which will be under the direct control of Mr. Colin Glazebrook, Chief Geologist and Exploration Manager.

MANAGEMENT AND ADMINISTRATIONAdministrative Management

All administrative affairs will be carried out by General Geological Services, 155 Dorcas Street, South Melbourne, Victoria.

Technical Management

The Operations Committee will be responsible for the overall policy and in particular the policy relating to the exploration activities of the Consortium. However, it is intended that they be advised in the latter regard by General Geological Services which have been retained as technical consultants and contractors. As well as advising the Committee on policy matters, General Geological Services will provide a full technical management service for the exploration effort and will co-ordinate and supervise any exploration activities that may be undertaken. The services of sub-contractors will be retained to undertake survey and drilling work and other additional Consultants will be retained from time to time to aid in evaluation of the prospect.

TECHNICAL QUALIFICATIONS OF CONSULTANTS PROVIDING TECHNICAL ADVICE.

General Geological Services is a small professional and technical consulting group of qualified

Geologists and allied earth scientists with a range of skilled field and research experience in the exploration and development of Petroleum and mineral resources in the Australasian, South Pacific and South-East Asian region.

The consultants collectively have a background in hard and soft rock geology throughout inland and coastal Australia and in the adjacent archipelagos and oceanic islands and have conducted large and small exploration programmes for oil, coal and minerals from initial inspection through to final evaluation.

The Principal Consultant is Mr. Colin Glazebrook whose qualifications and experiences are listed below:

MR. COLIN GLAZEBROOK. B.Sc. A.M.A.I.M.M., (Member of Geological Society of Australia) PETROLEUM GEOLOGIST - GEOPHYSICIST

Mr. Glazebrook acts as Exploration Manager and Chief Petroleum Geologist for the Consortium. He obtained his B.Sc. (Geology and Geophysics) at Melbourne University in 1963, and since that time has worked continuously as a Geologist in both the petroleum and mining industries.

Between 1963 and 1970 he was employed by Core Laboratories Incorporated, initially as a Geological Engineer and subsequently as a Consulting Petroleum Geologist. His initial employment within Australia and New Zealand and included work in Queensland (Surat, Adavale and Gallilee Basins), Victoria (Gippsland Basin) Northern Territory (Amadeus Basin), and Western Australia (Carnavon and Canning Basins); where he specialised in well site geology, basin studies, petroleum engineering and core analysis. In 1966

he was transferred by Core to their North Sea operations (as a Consultant Petroleum Geologist) and then to further offshore assignments in West Africa and the Persian Gulf.

On returning to Australia, he was engaged as Senior Geologist in Australia for Austin Anderson Inc.. In 1973 he established his own consulting business, General Geological Services, specialising in stratigraphic, structure and sedimentary studies for Minerals, Coal and Petroleum. During this time he carried out many investigations for clients throughout Australia and the South Pacific. Since 1978 he has been acting as Chief Petroleum Geologist and Exploration Manager for a Group of associated companies which include Oil and Minerals Quest N.L., Bass Strait Oil and Gas N.L., Zanex Limited and Cue Minerals N.L..

TECHNICAL QUALIFICATIONS OF OTHER CONSULTANTS PROVIDING

TECHNICAL ADVICE

ROBIN GLENIE, A.R.M.T.C. (GEOL) (MELB. 1956),
F.R.M.I.T. (GEOL) MELB. 1974 STRATIGRAPHER AND
SEDIMENTOLOGIST

Mr. Glenie has acquired a wide experience in sedimentary basin studies over many years since initial graduation. He commenced with the Department of Minerals and Energy (Vic) with which he worked from 1957 - 1970 carrying out geological investigations and writing and contributing to many technical papers and reports published by the Department.

During 1968 Mr. Glenie carried out work for U.N.O. throughout the Indonesian Islands as Hydrogeological Adviser to the Indonesian Government. From 1970 - 1971, as a Senior Geologist for Austin-Anderson (Australia) Pty. Ltd., Mr. Glenie carried out

mineral investigations throughout Australia and the South Pacific. From 1971 - 1973 as a Senior Consultant with Australian Groundwater Consultants Pty. Ltd. he carried out groundwater investigation and sedimentary studies both in Australia and Indonesia. Since 1973 Mr. Glenie has conducted his own consulting geological practice specialising in stratigraphic and sedimentary studies for groundwater coal and hydrocarbons. During this time he conducted investigations for clients throughout Australia and also in Southern Africa and the Middle East.

DR. ALBERT G. LINK (B.Sc (Melb) PhD (A.N.U.) M.A.A.P.G.
A.M.A.I.M.M. - Petroleum Geologist - Seismic
Stratigrapher and Depositional Analyst.

Dr. Link is currently a Senior Lecturer in the Department of Applied Geology at the Royal Melbourne Institute of Technology where he instructs in the areas of Advanced Sedimentology, Hydrology and Depositional Systems. Since graduation M.Sc. in 1964, he specialised in sedimentology, taking out a PhD in 1970. Since that time he has specialised in Depositional Systems Analysis and Modelling and written many research papers and publications on this topic.

Since Seismic interpretation provides such a useful insight into sedimentary deposition in sedimentary basins, Dr. Link has concentrated on interpretative techniques and methods with particular emphasis on the Gippsland, Bass and Otway Basins of Victoria.

Dr. Link has consented to work for the Consortium in a Consulting capacity in stratigraphic evaluation and structure analysis.

S.E.P. STANFORD, PETROLEUM ENGINEER.

Mr. Wells has had extensive experience within the United States of America, Middle East, South East Asia and Australia in Petroleum Engineering. For twenty years he worked for Tenneco Oil Company firstly as Area Engineer responsible for performance of general petroleum engineering, then as Chief Engineer responsible for reservoir engineering, data compilation, field evaluation and testing. Mr. Wells became Vice President of Tenneco in 1968 and held that position until 1972 when he came to Australia as Managing Director for the International Oil Company Group.

During the period 1972 - 1976, Mr. Wells directed the activities of the group and in particular the production operations of the Moonie and Alton Fields.

DR. P. G. LADD B.Sc. (HONS) PHD (BOTANY) -PALYNOLOGIST

Dr. Ladd obtained his B.Sc. (Hons) in Geology at University of Melbourne in 1971 and followed this with a degree of Doctor of Philosophy (Botany) also at University of Melbourne in 1977.

Dr. Ladd has carried out considerable research into both Tertiary Microfossils and Pollen Morphology, which has made him familiar with the pollen sequences for the Otway, Bass and Gippsland Basins of Southern Australia in particular.

This research and present lecture studies are in fact oriented towards the interpretation of fossil pollen sequences in terms of palaeoenvironments which have proved invaluable in the stratigraphic correlation of sedimentary units in the search for petroleum in the Southern Basins.

Dr. Ladd has written and published several papers on pollen studies as applied to stratigraphic interpretation and palaeoenvironments and his assistance and advice will greatly aid in the evaluation of seismic sequence studies and stratigraphic analyses planned for hydrocarbon investigation.

Dr. Ladd has agreed to act as a Consultant to the Consortium on an "as needed" basis.

DAVID TAYLOR M.Sc. - MICROPALAEONTOLOGIST

Since graduating from the University of Adelaide, Mr. Taylor has worked continuously in his field of study for 25 years. After an initial 7 years with the Victorian Department of Minerals and Energy, Mr. Taylor became the Consultant Palaeontologist to Esso Australia and pioneered the study of Faunal Zones with respect to offshore basin study evaluation for petroleum in the Gippsland, Otway and Bass Basins.

Since 1973, Mr. Taylor has conducted his own palaeontological Consulting Group, Paltech Pty. Ltd. which has developed many new concepts in the field of Micropalaeontological studies relevant to the petroleum industry,

Mr. Taylor has agreed to act as a Consultant on an "as needed" basis.

MR. KEITH R. VALE B.Sc. (W.A.) B.A. (MELB) GEOPHYSICIST

Mr. Vale obtained B.Sc. from the University of W.A. in 1944 and since that time has been involved in geophysical operations and evaluation. First with Seismograph Services Corp.. In USA, UK, Europe, and the Middle East, then since 1949 with the Bureau of

Mineral Resources (BMR) Canberra, Australia. At BMR, Mr. Vale was responsible for the Seismic Group, Sedimentary Geophysics which included direct leaderships for projects in the Surat, Gippsland, Otway, Canning and Carnarvon Basins. He was also responsible for regional gravity and seismic survey of the Australian Continental Margins.

Since 1977 Mr. Vale has applied his wide knowledge of Australian conditions to consulting in seismic interpretation.

MR. MANUAL ZAPATA B.Sc. (HONS) SENIOR PROJECT
GEOLOGIST

Mr. Zapata obtained his B.SC in 1963 with honours in Economic Geology. Since that time he has carried out exploration work for oil, gas, coal and oil shale covering regional appraisals, basin studies, photo geological interpretation, well logging and sedimentary studies leading to prospect evaluation.

Following closely developments within any prospect, additional Consultants, Junior Geological and Geophysical Staff and other technical staff will be appointed to the technical team under the management of General Geological Services.

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3.00 Operations Planned3.10 Interpretation

The next quarter should see the completion of the initial seismic and well compilations and also the completion of the initial collection of the majority of the published data on the Basin and in particular the permit area.

When this is complete, the following interpretative maps will be produced in a preliminary form to aid the selection of a seismic programme which is planned at present for the latter part of the first year.

(Jan.-Feb.1981) The following maps are planned:

Water Depth 1:250,000

Time Contour Maps (two way time)

This will be over the main basic stratigraphic intervals at present identified in the Basin

A - Top of the Oligocene

B - Top of the Eastern View Coal measures

C - Top of basement

Further intervals will be considered as the re-interpretation proceeds.

Following the production of the above maps, Structure Contour and Isopach Maps will be compiled.

As an aid to interpretation, some re-processing is possible later in the third quarter.

A review into these is being discussed at present and an initial report on this is presented in Section 5.20 of this report.

T/18P part J*

4.00 Expenditure

BASS STRAIT OIL & GAS N.L.

PERMIT TAS T.18P

QUARTERLY REPORT - EXPENDITURE

QUARTER ENDING: 30/9/80

LEASE FEES (RENTALS)	OFFICE OVERHEAD	OFFICE STUDIES	FIELD WORK		
			GEOLOGICAL	GEOPHYSICAL	DRILLING
\$1,000	\$3,000	\$15,200			

SIGNED: _____



5.00 Appendices.

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5.10 Work Programme - Year 1

BASS STRAIT OIL & GAS N.L.
155 dorcas street
south melbourne victoria 3205 australia
telephone 699 8058 telex AA33427

30th September 1980

The Director of Mines,
Department of Mines,
G.P.O. Box 124B,
HOBART. TAS. 7001

Dear Sir,

re: Work Programme Year 1 - Permit T.18P

As outlined in our submission, the following work will be carried out in the first year.

Data collection of available material, including maps, seismic records and sections, raw well data and available geological and technical reports.

Complete reappraisal of structure and hydrocarbon habitat within the basin will be carried out with particular emphasis on the identification of stratigraphic and combination stratigraphical - structural traps in the eastern view as well as the normal primary structural traps occupying the culmination along anticlinal axis.

Base maps will be produced and interpretive basin sections and profiles constructed to aid in basin geological evaluation. In particular, geological tie in with proven basin structures in this basin will be used working from well log and seismic data already conducted in the area.

Selected seismic reprocessing will be carried out in the area with expectation of enhanced record quality and providing a basis for interpretation of "seismic sequences" by identifying offlapping, onlapping and truncated patterns of cycle terminations. These sequences will be used to determine lateral variations of environment and lithofacies.

Revised velocity analysis and both D.A.S. (Deconvolution after Stack) and a Deconvolution before Stack will be tried. Further reprocessing may then be carried out over interesting situations to give as complete a picture as possible of structures in the Eastern View Group.

.../2

incorporated in the state of victoria

- 2 -

Preliminary service work totalling 250 km is envisaged in the northern part of the area with the possibility of a further 200 km previously planned for year 2. Details of this programmes will be submitted in due course.

Estimated Minimum Expenditure - Year 1 - \$205,000

With respect to "Oil Spill Contingency Plans" we are following generally accepted rules with respect to these as outlined in "APEA" Code of Environment Practice Offshore.

We have submitted these to you already earlier in the quarter.

Yours faithfully,
BASS STRAIT OIL & GAS N.L.

C. GLAZEBROOK
Exploration Manager

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5.20 Report on Seismic Data

REPORT ON AVAILABLE SEISMIC DATA

Bass Strait Block T.18P

An inspection of Bass Strait marine seismic data - Bass Basin West area has yielded the following results.

Offshore seismic surveys are identified by their line prefixes and those which extend into Block T.18P are:

Digital Surveys

1. HB 77A Series 1977,
GSI Aquapulse source 48 fold CDP Variable Area.
2. HB75A Series 1975
GSI Aquapulse source 48 fold CDP Variable Area
3. HB73A GSI Aquapulse source 48 fold CDP Variable Area
4. B72A Series 1972
GSI Aquapulse source 48 fold CDP Variable Density
5. B71A Series 1971
GSI Aquapulse source 12/24 fold CDP Variable Density
6. B70A Series 1970
GSI Aquapulse source 24 fold CDP Variable Density
7. EF Series 1968
Western Dynamite source 6 fold CDP Variable Density

Analog Surveys

8. EB Series 1966
GSI Dynamite source 6 fold CDP
9. EK-ES Series 1965
GSI Dynamite source 6 fold CDP
10. B Series 1965
Western Dynamite source 6 fold CDP

Record Quality

All record sections have been played out using either a variable area (post 1973) or variable density display. Quality varies greatly and demonstrates the advances that have been achieved in both recording and processing since exploration commenced offshore in the Bass area during 1963.

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Digital data series HB77A, HB75A and HB73A, are all very good and could be adequate for detecting stratigraphic anomalies. B72A, B71A and B70A are good for basic control. Analog data are inferior but all series shot for common depth point coverage are suitable for mapping structure.

Recommended Projects1. Data Acquisition

The following material has been requested from the Tasmanian Department of Mines, Esso and Hematite:

- (a) Transparencies of all final record sections in Block TAS T.18P plus lines tying wells within T.18P and to adjacent wells.
- (b) Shot Point Location Maps
- (c) Velocity Information for converting seismic times to depth.

Well geophone surveys

BHC Sonic logs

Synthetic seismograms

where available for wells within permit area and adjacent to the permit area.

2. Seismic Interpretation

Fortunately all the surveys carried out in this part, with the exception of HB77A and HB75A, of the Bass Basin to date have been subsidised.

Thus copies of the final reports have been requested from the B.M.R. in Canberra.

As exploration planning cannot proceed until a seismic interpretation is available, the following maps will be prepared initially:

Water Depth

Control for Top Oligocene

Control for Top Eastern View Coal Measure

Control for Basement

Isopach Top Oligocene - Top Eastern View

Top Eastern View - Basement

These maps will be prepared and presented in two way reflection time - the quickest way to get information on which to plan.

Within the prospect area several large structures are recognisable from previous surveys. These will be investigated prior to any search for more exotic traps.

5.30 Seismic Data Review - Preliminary

INFORMATION COLLECTED FROM MINES DEPARTMENT
AND FROM HEMATITE PETROLEUM LTD.

SEISMIC DATA

<u>MINES DEPARTMENT FILE</u>	<u>SURVEY</u>	<u>REQUIRED</u>
Offshore 5	HB77A	Shot point maps Final Report
Offshore 16	B72A	Shot point maps Final Report
Offshore 70	HB73A	Shot point maps Final Report
Offshore 24	B69B B70A	Shot point maps Final Report
Offshore 32	B71A	Shot point maps Final Report
Offshore 44 46 48	HB75A	Shot point maps Final Report
Offshore 63	B70A	Shot point maps Final Report

The above information is in the process of being copied at:

Tasmanian Office and Printing Service,
Hobart.

165027

T/18P part I*

5.40 Wella Data Review - Preliminary

T/18P part 1*

INFORMATION COLLECTED FROM MINES DEPARTMENTAND FROM HEMATITE PETROLEUM LTD.WELL DATA

<u>MINES DEPARTMENT FILE</u>	<u>WELL NAME</u>	<u>COLLECTED</u>
7	Bass 1, 2 Dondu 1 Nangkero 1 Yurongi 1	All basic logs, TDC - Sample descriptions, cuttings core descriptions.
10,96	Pelican 3	
12	Pelican 4	
13	Poonboon 1	
15	Durroon 1	
20,99	Dondu 1	
22,100	Yurongi 1	
26	Narimba 1	
40	Nangkero 1	
52	Narimba 1	
80	Bass 1	
81	Bass 2	
85,94	Pelican 1	
86,95	Pelican 2	
47,87,93	Cormorant 1	
38	Aroo 1	
19,65,98	Konkon 1	
35,101	Toolka 1A	

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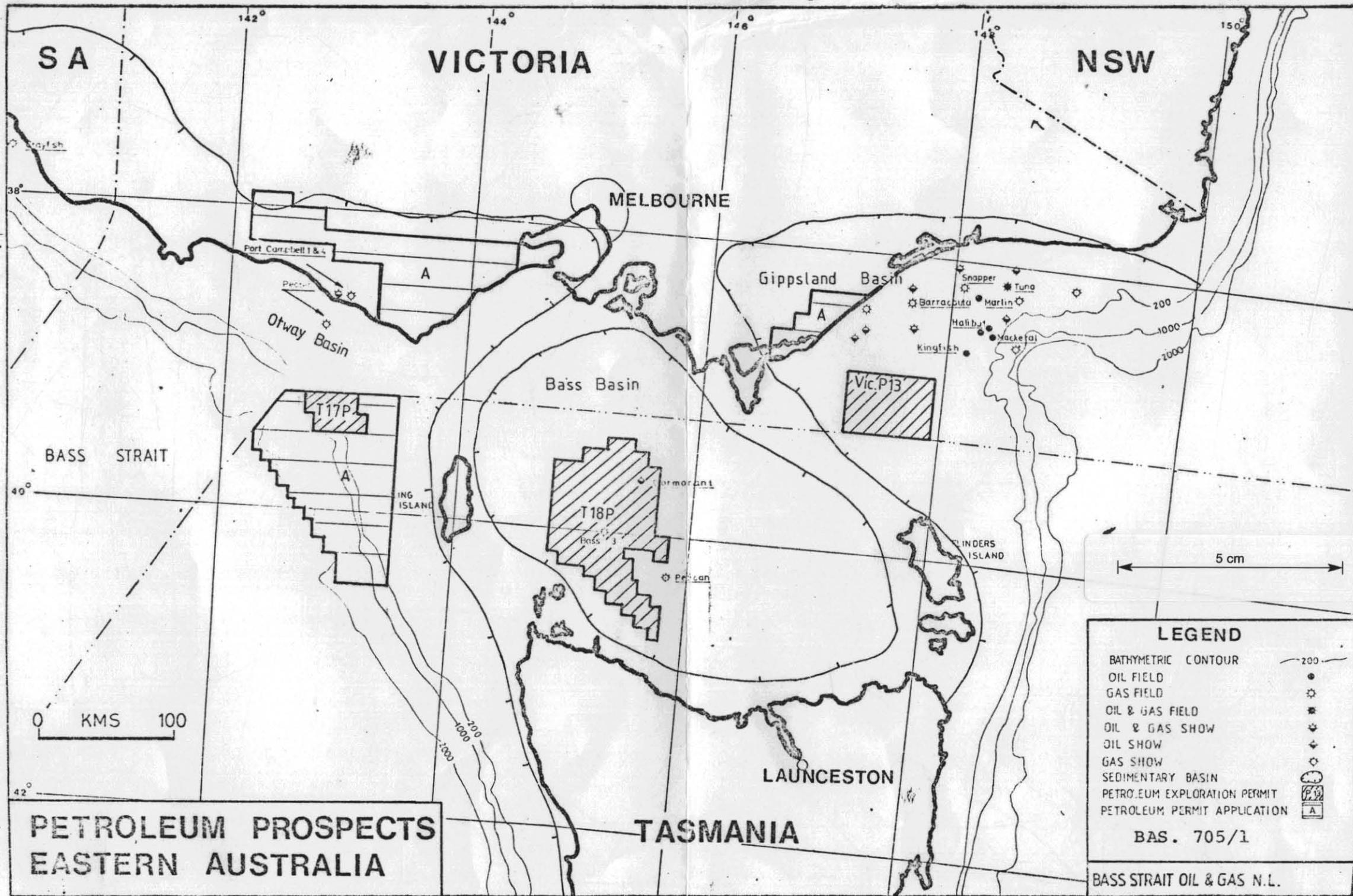
82,43

Bass 3

6.14

Tarook 1

T/18P part 1*



SA

VICTORIA

NSW

MELBOURNE

Gippsland Basin

Bass Basin

BASS STRAIT

LAUNCESTON

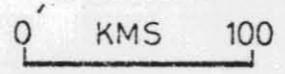
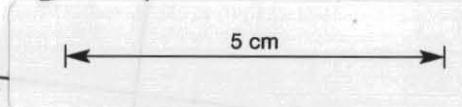
TASMANIA

PETROLEUM PROSPECTS
EASTERN AUSTRALIA

LEGEND

- BATHYMETRIC CONTOUR 200
- OIL FIELD
- GAS FIELD
- OIL & GAS FIELD
- OIL & GAS SHOW
- OIL SHOW
- GAS SHOW
- SEDIMENTARY BASIN
- PETROLEUM EXPLORATION PERMIT
- PETROLEUM PERMIT APPLICATION A

BAS. 705/1



T/18P part 1*

165030 OR-0162

Scale 1:250,000

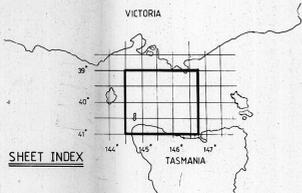


Projection: UTM Zone 55 C.M. 147E

BASS BASIN

BASIC DATA PLAN

Datum: Sea Level
Author: C. GLAZEBROOK
Drawn by: M. DUCKWORTH
Date: 17/4/80
Checked by:
Revised:



WELL DATA

- Oil Show
- Gas Show
- Oil & Gas Shows
- Analog Seismic Shot Point
- Digital Seismic Shot Point
- Oil Well
- Gas Well
- Oil & Gas Well
- Dry Hole (Abandoned)
- Drilling

FIELD DATA

- Oil
- Gas
- Oil & Gas

MAP DATA

- 1:100,000 Coverage
- 1:50,000 Coverage

TENEMENT DATA

- Licence Area
- Permit Area
- Gazetted Area
- Vacant
- 2317 Block No.

SEISMIC SURVEYS

SURVEY	YEAR	SURVEY	YEAR
B	1965	B70A	1970
EK	1965	B71A	1971
EB	1966	B72A	1972
E.F.	1968	HB73A	1973
B49B	1969	HB75A	1975

SHEET BSO.705/2

