

DEPARTMENT OF MINES AND ENERGY

SOUTH AUSTRALIA



OPEN FILE ENVELOPE SERIES

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SR27/4/91

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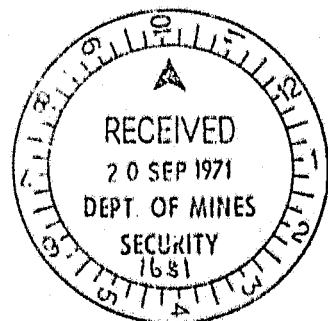
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003

BEACH
PETROLEUM
NO LIABILITY

ANNUAL REPORT
AND STATEMENT OF ACCOUNTS

For the year ended 30th June, 1970



BEACH PETROLEUM

NO LIABILITY

Registered Office:

Seventh Floor, Da Costa Building,
68 Grenfell Street, Adelaide

004

BOARD OF DIRECTORS

E. W. Palmer (Chairman)
L. R. Ackland
R. L. Baillieu
Sir Lindesay Clark
M. W. Howell

J. M. Dwyer (Deputy Chairman)
H. C. Meyer
R. F. Middleton
H. M. Morgan
R. C. Sprigg

NOTICE OF ANNUAL GENERAL MEETING

NOTICE IS HEREBY GIVEN that the NINTH ANNUAL GENERAL MEETING of shareholders in the abovenamed company will be held in the Chamber of Commerce Inc. Board Room, 54 Currie Street, Adelaide, on Tuesday, the 20th October, 1970, at 12.00 noon.

BUSINESS

1. To receive the Report of the Directors and Statement of Accounts for the period ended 30th June, 1970.
2. To elect four Directors, Dr. J. M. Dwyer and Messrs. R. L. Baillieu, M. W. Howell and H. M. Morgan retire in accordance with the Articles of Association and, being eligible, offer themselves for re-election.
3. To consider and if deemed fit to pass the following resolutions, namely:—

SPECIAL RESOLUTION

"That the Articles of Association of the Company be amended by deleting Article 4."

ORDINARY RESOLUTION

"That the Nominal Capital of the Company be increased from eight million dollars (\$8,000,000) to sixteen million dollars (\$16,000,000) by the creation of sixteen million new shares of fifty cents each."

4. To appoint Auditors for the ensuing year. Messrs. Ewens and Alexander, who retire, are eligible and offer themselves for re-appointment.
5. To fix the remuneration of the Auditors for the year ended 30th June, 1970.
6. To transact any other ordinary business.

By order of the Board,
R. F. MIDDLETON,
Secretary.

25th September, 1970

NOTE: A member of the Company entitled to attend and vote at the above meeting is entitled to appoint a proxy to attend and vote instead of the member. No person shall be appointed a proxy who is not a member of the Company save that a Corporation being a member of the Company may appoint as its proxy any officer of such Corporation whether a member of the Company or not.

Ninth Annual Report of Directors

*To be presented to the Shareholders at the
Annual General Meeting on Tuesday, 20th October, 1970*

Your Directors present the Ninth Annual Report covering the period ended 30th June, 1970, together with the audited Balance Sheets as at that date.

FINANCE

At the balance date group cash at bank and on short term deposit totalled \$988,156 and debtors and subsidies receivable were \$181,874. Current liabilities amounted to \$109,153 leaving net funds available of \$1,060,877.

A call of 30c a share was made on the 5,000,000 issued contributing shares paid to 10c (making such shares paid to 40c), payable on the 10th June, 1970. This call provides \$1,500,000 of new funds, \$1,285,000 of which was received by the 30th June, 1970.

EXPLORATION

During the year ended 30th June, 1970, your Company considerably expanded its exploration activities and acquired new interests in New Zealand and Turkey. Attention has been directed to geologically younger sedimentary basins where petroleum potential is considered more prospective. Tertiary-Mesozoic sedimentary accumulations representing existing and past continental shelves are now of prime exploration interest.

Basin studies undertaken have included the south-west Pacific, the East Indies and the Turkish portion of the Persian Gulf Basin.

**REVIEW OF
OPERATIONS**

A detailed interim report on operations during the year was forwarded to shareholders in April, 1970.

The following is a summary of operations to the 30th June, 1970.

1. The Simpson Desert — the western part of the Great Artesian Basin, Northern Territory — O.P. 57.

A comprehensive reassessment of the sedimentary and structural features of the Simpson Desert Basin has been continued and a detailed gravity survey has been completed in the south-western portion of the permit area. The new data is being assessed.

2. St. Vincent Basin -- St. Vincent Gulf and Surrounds, South Australia — P.E.L. 7 and E.P.P. S.A. 9.

A combined seismic, magnetic and gravity survey was completed in the Lake Fowler area, Yorke Peninsula, defining several faulted anticlines developed within Cambrian and Permian sediments. Sites for drilling one or more intermediate depth test wells have been selected. Feasibility studies for a submarine gravity survey of Investigator Strait have been commenced.

3. Gambier-Otway Basin — South-East of South Australia — P.E.L. 8 and E.P.P. S.A. 8.

Your Company has a 1% interest in the whole of the licence and permit areas. Esso Exploration and Production Australia Inc. has a farmout in respect of one-half of the area adjoining the northern boundary of the Geltwood Beach area referred to in paragraph 4. Esso drilled three exploratory wells, Lake Eliza 1, Lake George 1 and Lucindale 1, which yielded stratigraphic information of value in interpreting seismic results and also proved the presence of reservoir sands.

4. Geltwood Beach — the Gambier-Otway Basin — Hundred of Mayurra in the South-East of South Australia — Part of P.E.L. 8 and E.P.P. S.A. 8.

Evaluation of the area under farmout is continuing.

5. Canning-Fitzroy Basin — Western Australia — P.E.'s 151H, 152H and 153H. Australian Aquitaine Petroleum Pty. Ltd., under farmout arrangement with Beach-General Exploration Pty. Ltd. (in which Beach Petroleum N.L. has a 60% interest), carried out seismic and geological work in the Canning-Fitzroy Basin and has announced its intention to conduct further seismic and gravity surveys.

6. Mootwingee Area — north-east of Broken Hill in New South Wales — P.E.L. 155

Planet Exploration Company Pty. Ltd., the farmouttee, drilled Gnalta No. 1 stratigraphic bore to a depth of 2,346 feet on the Menamurtee Dome. The petroleum potential prospects of the area are not encouraging.

7. New Zealand Concessions — P.P.L.'s 693 and 776/83, under farmout arrangement, and P.P.L.'s 396, 420 and 597.

New Zealand Aquitaine Petroleum Ltd. in association with Murphy-Australia Oil Company and Odeco New Zealand Inc. (under farmout arrangement with Tasman Petroleum Ltd. in which Beach Petroleum N.L. has a 50% interest) drilled Tasman No. 1 Well, which was completed as a dry hole at a depth of 5,345 feet in the Cook Strait area. New Zealand Aquitaine Petroleum Ltd. announced plans to drill Cook No. 1 Well, 16 miles offshore and 60 miles west of Tasman No. 1 Well.

Tasman Petroleum Ltd. carried out gravity surveys in the Nelson-Waimen graben area and plans to conduct reflection seismic surveys.

New licence areas covering approximately 18,200 square miles on the Chatham and Pitt Islands (about 500 miles east of Christchurch) and surrounding territorial waters and continental shelf have been acquired by Tasman Petroleum Ltd. Preliminary land geological and geophysical surveys were completed and promising developments of Upper Cretaceous coal measures carrying extensive sands and bituminous coaly detritus have been investigated on Pitt Island. Additional gravity and helicopter-borne magnetometer surveys are now planned as a preliminary to offshore magnetic surveys and extensive marine seismic work.

8. Diyarbakir Basin -- Turkey — Licence AR/TBL/831

New acreage in which Beach Petroleum N.L. (through a wholly-owned subsidiary, Turkish Beach Petroleum Pty. Ltd.) may earn a 63% interest has been acquired in south-eastern Turkey. Following detailed gravity surveys the drilling of Divana No. 1 Well was commenced in the Diyarbakir Basin. Further drilling sites have been selected and additional test wells are planned. A number of producing oilfields lie within a few miles of the southern boundary of the concession area.

To comply with statutory requirements it is reported that other than mentioned above and as shown in Annual Accounts and Balance Sheets:

1. The results of the operations of the Company have not been materially affected by items of an abnormal character.
2. No circumstances have arisen which render adherence to the existing method of valuation of assets or liabilities of the company misleading or inappropriate.
3. No contingent liabilities have been undertaken by the Company since the end of the period covered by the last report and no contingent liability has become enforceable within the succeeding period of twelve months which will materially affect the Company in its ability to meet its obligations as and when they fall due.

On behalf of the Board,

E. W. PALMER,
Chairman.

BEACH PETROLEUM NO LIABILITY

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Tenement Areas

Tenement	Location	See Note	Square Miles
P.E.L. 7 and E.P.P. S.A. 9	St. Vincent Basin, South Australia		5,150
P.E.L. 8 and E.P.P. S.A. 8	Gambier-Otway Basin, South Australia — Mayurra Farmout	(i) (ii)	4,900 193
O.P. 57	Western Part of Great Artesian Basin, Northern Territory		9,313
P.E.L. 155	Darling Basin, New South Wales	(iii)	2,895
P.E.'s 151H, 152H and 153H	Fitzroy/Canning Basin, Western Australia	(iv)	29,175
P.P.L.'s 693 and 776/83	Southern Extension of Taranaki Basin, offshore South Island, New Zealand	(v)	5,928
P.P.L. 420	do.	(vi)	198
P.P.L.'s 396 and 597	Reefston Trough, South Island, New Zealand	(vi)	258
Numbers not available	Chatham Rise, offshore South Island, New Zealand		18,200
AR/TBL/831	Diyarbakir Basin, Turkey	(vii)	193

NOTES:

- (i) 1% interest under farmout arrangement with General Exploration Company of Australia Pty. Ltd. and Alliance Oil Development Australia No Liability.
- (ii) 50% interest under farmout arrangement with General Exploration Company of Australia Pty. Ltd. and Alliance Oil Development Australia No Liability.
- (iii) A farmout agreement has been negotiated with Planet Exploration Company Pty. Ltd. Beach Petroleum N.L. retains a 15% carried interest.
- (iv) 60% interest in Beach-General Exploration Pty. Ltd., holder of these Permits. A farmout agreement has been negotiated with Australian Aquitaine Petroleum Pty. Ltd. (Beach Petroleum N.L. has a 15% carried interest).
- (v) 50% interest in Tasman Petroleum Ltd., holder of these Licences. A farmout agreement has been negotiated with New Zealand Aquitaine Petroleum Ltd., Murphy-Australia Oil Company and Odeco New Zealand Inc.
- (vi) 50% interest in Tasman Petroleum Ltd., holder of these Licences.
- (vii) 63% interest may be earned through a wholly-owned subsidiary, Turkish Beach Petroleum Pty. Ltd. under an arrangement with United Petroleum Reserves N.L. and North American International Oil and Gas Inc. of Texas (which have a separate arrangement with Flinders Petroleum N.L.)

BEACH PETROLEUM NO LIABILITY**Consolidated Balance**

1969			1970
\$	\$	\$	\$
AUTHORISED CAPITAL			
<u>8,000,000</u>	16,000,000 shares of 50c	<u>8,000,000</u>	
ISSUED CAPITAL			
500,000	1,000,000 ordinary shares fully paid ..	500,000	
4,309,700	9,000,000 ordinary shares fully paid ..	4,500,000	
500,000	5,000,000 ordinary shares paid to 10c	500,000	
	1st call of 30c per share due for pay- ment on or before 10/6/70	1,500,000	
—	Amounts in arrears at 30/6/70	<u>215,000</u>	1,285,000
<u>5,309,700</u>			<u>6,785,000</u>
MINORITY INTEREST			
200	Minority shareholding in subsidiary company	200	
CURRENT LIABILITIES AND PROVISIONS			
15,935	Bank overdraft	10,010	
62,409	Trade creditors	22,857	
103,585	Other creditors	46,918	
6,927	Provisions: Income Tax	22,138	
3,996	Other	7,230	
<u>192,852</u>		<u>109,153</u>	
<u><u>5,502,752</u></u>		<u><u>6,894,353</u></u>	

TY AND SUBSIDIARY COMPANIES

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Sheet at 30th June, 1970

1969		1970	
\$	\$	\$	\$
FIXED ASSETS (Note 3)			
311,049	Freehold property, plant and equipment	337,114	
INVESTMENTS			
125	Shares in associated company	125	
25,000	Shares in listed company at cost	—	
<u>25,125</u>		<u>125</u>	
CURRENT ASSETS			
400,537	Cash at bank and on short term deposit	988,156	
56,531	Commonwealth subsidies receivable ..	7,566	
168,174	Trade debtors, less provision for doubtful debts	99,206	
29,560	Sundry debtors	75,101	
19,944	Stocks on hand, at cost	233,466	
<u>674,746</u>		<u>1,403,495</u>	
EXPLORATION AND DEVELOPMENT			
3,470,448	Net cost of operations (including cost of acquiring exploration licences)	4,075,174	
SHARE ISSUE AND PRELIMINARY EXPENSES			
143,626	Brokerage and commission	143,626	
159,713	Share issue, calls and transfer costs ..	216,444	
12,038	Preliminary expenses	12,368	
<u>315,377</u>		<u>372,438</u>	
OTHER NET INTANGIBLES			
206,007	Goodwill on consolidation	206,007	
500,000	Discount on shares issued	500,000	
<u>706,007</u>		<u>706,007</u>	
<u><u>5,502,752</u></u>		<u><u>6,894,353</u></u>	

BEACH PETROLEUM**Balance Sheet at**

1969		1970	
\$	\$	\$	\$
AUTHORISED CAPITAL			
	8,000,000	16,000,000 shares of 50c each	8,000,000
ISSUED CAPITAL			
500,000		1,000,000 ordinary shares fully paid ..	500,000
4,309,700		9,000,000 ordinary shares fully paid ..	4,500,000
500,000		5,000,000 ordinary shares paid to 10c .	500,000
		1st call of 30c per share due for pay- ment on or before 10/6/70	1,500,000
—		Amount in arrears at 30/6/70 ..	215,000
	5,309,700		1,285,000
			6,785,000
CURRENT LIABILITIES AND PROVISIONS			
37,634		Trade creditors ..	—
400		Sundry creditors ..	4,917
6,927		Provision for income tax ..	7,803
	44,961		12,720
	<u>5,354,661</u>		<u>6,797,720</u>

NO LIABILITY**30th June, 1970**

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1969		1970	
\$	\$	\$	\$
FIXED ASSETS			
3,352	Office furniture and machines, at cost	3,352	
716	Less Provision for depreciation	913	
<hr/>	2,636	<hr/>	2,439
INVESTMENT			
580,000	Shares in associated company	580,000	
INVESTMENT IN SUBSIDIARY COMPANIES			
436,220	Shares and shareholders' loans at cost	436,720	
CURRENT ASSETS			
398,745	Cash at bank and on deposit	965,427	
56,531	Commonwealth Government subsidies receivable	7,566	
27,650	Owing by subsidiary companies	454,699	
—	Sundry debtors ..	6,154	
<hr/>	482,926	<hr/>	1,433,846
EXPLORATION AND DEVELOPMENT			
3,037,502	Net cost of operations (including cost of acquiring exploration licences)	3,472,607	
SHARE ISSUE AND PRELIMINARY EXPENSES			
143,626	Brokerage and commission	143,626	
159,713	Share issue, calls and transfer costs ...	216,444	
12,038	Preliminary expenses	12,038	
<hr/>	315,377	<hr/>	372,108
OTHER INTANGIBLES			
500,000	Discount on shares issued ..	500,000	
<hr/>		<hr/>	
<u>5,354,661</u>		<u>6,797,720</u>	

NOTES ON COMPANY AND CONSOLIDATED ACCOUNTS

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1. SHARES FORFEITED

To the 30th June, 1970, shares forfeited for non-payment of calls made since the incorporation of the company and sold subsequently in accordance with statutory requirements are as follows:—

1962-63	1st call—10c per share—15,400 shares.
1963-64	2nd call—10c per share—54,375 shares.
1967-68	3rd call— 5c per share—71,372 shares.
1969-70	4th call—5c per share—10,500 shares.
1969-70	5th call—30c per share—8,601 shares.

2. FORFEITED SHARES TRUST ACCOUNT

Cash funds held in Forfeited Shares Trust Account at 30th June, 1970, amounted to \$20,087.

3. FIXED ASSETS (Consolidated)

	Cost		Depreciation Provision		Residual Value	
	1969	1970	1969	1970	1969	1970
Land and Buildings	53,267	53,702			53,267	53,702
Aircraft	74,021	74,021	17,726	26,656	56,295	47,365
Drilling Equipment	69,010	70,114	42,758	48,685	26,252	21,429
Motor Vehicles	89,259	123,018	61,600	52,559	27,659	70,459
Office furniture and machines	38,319	41,941	15,497	17,635	22,822	24,306
Plant and equipment	94,649	124,965	52,619	69,022	42,030	55,943
M.V. "Saori"	108,389	108,389	58,092	68,326	50,297	40,063
Seismic equipment	105,133	96,774	72,706	72,917	32,427	23,857
	<u>\$632,047</u>	<u>\$692,914</u>	<u>\$320,998</u>	<u>\$355,800</u>	<u>\$311,049</u>	<u>\$337,114</u>

4. AUDITORS' REMUNERATION

	Consolidated		Parent Company	
	1969	1970	1969	1970
Charged in accounts:				
Operations account	916	1,150	400	400
Share issue, calls and transfer costs	10,055	10,650	10,055	10,650
	<u>\$10,971</u>	<u>\$11,800</u>	<u>\$10,455</u>	<u>\$11,050</u>

5. SUBSIDIARY COMPANIES

7.014

The following companies were subsidiaries or sub-subsidiaries of Beach Petroleum No Liability at 30th June, 1970. All companies in the group were incorporated in South Australia, with the exception of Beach-General Exploration Pty. Limited which was incorporated in Western Australia.

South Coast Petroleum Pty. Limited

Geosurveys of Australia Pty. Limited

Geoseismic (Australia) Pty. Limited

Geoservices Pty. Limited

South Australian Oceanographic Research Institute Pty. Ltd.

Beach-General Exploration Pty. Limited

Turkish Beach Petroleum Proprietary Limited

6. CONTINGENT LIABILITIES

- (a) The Company could be required to repay subsidy received for drilling wells in which oil or gas is discovered in quantities of commercial significance; and in certain circumstances a subsequent discovery of commercial significance could involve repayment of subsidy received for a previous non-commercial well on the same structure.
- (b) Beach Petroleum No Liability has guaranteed the bank overdraft of a wholly-owned subsidiary company.
- (c) A farmout agreement has been entered into with Australian Aquitaine Petroleum Pty. Limited which provides for possible participation by the company in expenditures on P.E.'s 151H, 152H, and 153H at some future time.
- (d) There are other contingent liabilities amounting to \$124,000 (\$55,000—1969).

BEACH PETROLEUM NO LIABILITY AND SUBSIDIARY COMPANIES

..015

*Consolidated Operations Account for the year ended
30th June, 1970*

1969			1970
\$	\$		\$
	424,921	Cost of operations	655,900
		After charging:	
916		Audit fees	1,150
10,000		Directors' fees	10,083
63,739		Depreciation on fixed assets	57,106
(20,250)		Provision for income tax	21,889
2,685		Provision for long service leave pay	3,234
(1,092)		Loss on sales of fixed assets ..	3,041
16,788		Less Interest received	19,424
57,411		Subsidies received	31,750
	74,199		51,174
	350,722	Net cost of operations	604,726
	3,119,726	Add cost of operations brought forward	3,470,448
	3,470,448	Cost of operations carried forward	4,075,174

BEACH PETROLEUM NO LIABILITY

Operations Account for the year ended 30th June, 1970

1969			1970
\$	\$		\$
	347,359	Cost of operations	486,279
		After charging:	
400		Audit fees	400
10,000		Directors' fees	10,083
197		Depreciation on fixed assets	197
7,156		Provision for Income tax	7,553
20		Loss on sale of fixed assets ..	—
16,788		Less Interest received	19,424
57,411		Subsidies received ...	31,750
	74,199		51,174
	273,160	Net cost of operations	435,105
	2,764,342	Add cost of operations brought forward	3,037,502
	3,037,502	Cost of operations carried forward	3,472,607

BEACH PETROLEUM NO LIABILITY

: 016

AUDITORS' REPORT: In our opinion:—

- (a) the accompanying balance sheets and operations accounts, read in conjunction with the notes thereon, are properly drawn up in accordance with the provisions of the Companies Act, 1962-68, and so as to give a true and fair view of the state of affairs of the company and of the group, consisting of the company and its subsidiaries, at 30th June, 1970, and of the results for the year ended on that date, and
- (b) the accounting and other records (including registers) of the company examined by us are properly kept in accordance with the provisions of the Companies Act, 1962-68.

Adelaide,
25th September, 1970.

EWENS & ALEXANDER,
Chartered Accountants.

DIRECTORS' STATEMENT:

We, ERNEST WILLIAM PALMER and JOHN MATTHEW DWYER, being two of the Directors of Beach Petroleum No Liability, do hereby state that in the opinion of the Directors, the accompanying balance sheet and operations account, together with the notes thereon (supplemented by the information given in the consolidated accounts), are drawn up so as to give a true and fair view of the state of affairs of the company at 30th June, 1970, and of the results of the business of the company for the year ended on that date.

Signed on behalf of the Board this 25th day of September, 1970.

E. W. PALMER, *Director.*

J. M. DWYER, *Director.*

DECLARATION BY THE SECRETARY:

I, RENNIE FRANCIS MIDDLETON, Secretary of Beach Petroleum No Liability, do solemnly and sincerely declare that the accompanying balance sheet and operations account together with the notes thereon (supplemented by the information given in the consolidated accounts) are, to the best of my knowledge and belief, correct. And I make this solemn declaration conscientiously believing the same to be true and by virtue of the provisions of the Oaths Act, 1936.

Declared at Adelaide this 25th day of September, 1970.

R. F. MIDDLETON, *Secretary.*

Before me: R. G. REES, a Justice of the Peace in and for the State of South Australia.

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APPLICATION FOR SUBSIDY

FOR

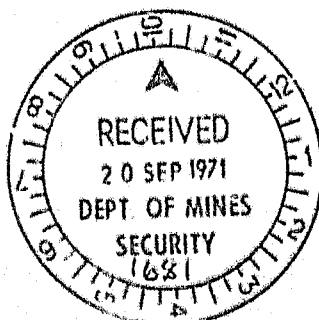
THREE CORNERS SEISMIC AND GRAVITY

SURVEY,

O. P. 57. NORTHERN TERRITORY

BEACH PETROLEUM NO LIABILITY

July. 1971



A N N E X U R E S

ANNEX 1.	PROPOSED SEISMIC AND GRAVITY PROGRAMME MAP	B.P. 788
ANNEX 2.	EAST-WEST SECTION IMMEDIATELY SOUTH OF O.P. 57	B.P. 772
ANNEX 3.	BOUGUER ANOMALY MAP 1:250,000	B.P. 767
ANNEX 4.	TENTATIVE JURASSIC THICKNESS C-P ISOCHRON	B.P. 785
ANNEX 5.	TENTATIVE JURASSIC-PERMIAN UNCONFORMITY 1:100,000	B.P. 784
ANNEX 6.	BEACH PETROLEUM N.L. ANNUAL REPORT AND STATEMENT OF ACCOUNTS	
ANNEX 7.	CONTRACT	
ANNEX 8.	DETAILED ESTIMATE OF COSTS	
ANNEX 9.	LICENCE FOR AREA	B.P. 793

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i. NAME OF PROJECT

Three Corners Seismic and Gravity Survey.

ii. NAME OF APPLICANT

Beach Petroleum No Liability.

iii. REGISTERED OFFICE OF APPLICANT

For Technical Matters:

Geosurveys of Australia Pty. Ltd.,
G.P.O. Box 1479L,
Adelaide, S.A. 5001.

For Administrative Matters:

The Executive Officer,
Beach Petroleum No Liability,
G.P.O. Box 155611,
Adelaide, S.A. 5001.

iv. LOCATION OF PROJECT

The survey is located in the S.E. corner of O.P. 57 in the Northern Territory. The area of the survey is enclosed by $136^{\circ} 35'$ to $137^{\circ} 15'$ longitude and $25^{\circ} 30'$ to $26^{\circ} 00'$ latitude, which falls on the 1:250,000 map sheet Simpson Desert South, SG-53-8, published by the Department of National Mapping.

The location of the proposed programme is shown on Annexure 1.

v. APPRECIATION OF THE REGIONAL GEOLOGY

O.P. 57 (held by Beach Petroleum N.L.), lying in the central Simpson Desert, N.T., straddles the margins of two major sedimentary basins - the Amadeus Basin to the north and west, containing over 18,000 feet of Upper Proterozoic to Middle Palaeozoic shallow glacio-marine, and fluvial sediments, and the Groat Artesian Basin to the east and south, containing up to 8,000 feet of Mesozoic fluvial sandstones and shallow-marine shales. Sandwiched between the accumulations of these two major basins are Permian strata of the Eringa-Fedirka and Simpson Desert Sub-basins, comprising in stratigraphic order: (1) glaciogene boulder-clays, (2) shallow marine? dark shales, and (3) freshwater sandstones and siltstones with some shale and coal interbeds. The Permian rocks have a total thickness of up to 3,000 feet.

Potential source beds, reservoir rocks and cap rocks, ranging in age from Upper Proterozoic to Mesozoic, are sufficient to make the Simpson Desert region a potential petroleum province. The Permian

sediments, which are draped over "basement" anticlinal highs, are the most prospective. Thinner Permian sequences over the crests of such anticlines comprise mainly porous sandstones, passing away from the anticlines into thicker sequences containing sandstones, carbonaceous shales, and coals. Such structural, palaeogeomorphic and facies relationships compare with those of the Permian sediments of the Cooper Basin (Gidgealpa and Moomba fields). In the Cooper Basin, the Permian dark shales and coals are regarded as the most likely source rocks for the commercial hydrocarbons found in the overlying Permian freshwater beds. Lower Triassic shales are also of importance, forming the cap-rock above the late Permian gas-producing strata. Similar Permian and Triassic strata are sought in the Simpson Desert Sub-basin.

The two exploratory wells drilled within O.P. 57 (McDills No. 1 and Hale River No. 1) have not adequately tested the hydrocarbon potential of the Permian sediments within O.P. 57.

vi. EXISTING GEOPHYSICAL INFORMATION

Previous geophysical surveys have been completed within O.P. 57 and the adjoining areas. The reports are listed:

1. Report on a gravity survey, Simpson Desert Oil Permit 57, N.T., 1962.
2. Anacoora Bore gravity survey, portion of O.P. 57, N.T., 1964. (Final Report). For Beach Petroleum N.L. By W.F. Stackler, Geosurveys of Australia Pty. Ltd. report.
3. Dakota Bore gravity survey. Portion of Oil Permit No. 57, N.T., 1965. For Beach Petroleum N.L. By W.F. Stackler, Geosurveys of Aust. Pty. Ltd. report.
4. Report on a reflection seismic survey of the Andado and Anacoora area, Simpson Desert O.P. 57, N.T., 1965.
5. Report on a reflection seismic survey of the Dakota Bore area, Simpson Desert, O.P. 57, N.T., 1965. For Beach Petroleum N.L. By A. Yakunin, Geoseismic of Australia Pty. Ltd. report.
6. Poolowanna seismic and gravity survey, northern area of O.E.L. 20-21 (S.A.), 1965. For French Petroleum Co. (Aust.) Pty. Ltd. By Compagnie Generale de Geophysique.
7. Simpson Desert 'A' seismic survey Oil Permit 57, N.T., 1966. For Amerada Petroleum Corp. By Austral Geoprospectors Pty. Ltd.
8. Simpson Desert 'C' seismic survey Oil Permit 57, N.T., 1966. For Amerada Petroleum Corp. By Austral Geoprospectors Pty. Ltd.

9. Beach Petroleum N.L. Simpson Desert gravity survey, Oil Permit 57, N.T., 1968. By R.M. Hoogenraad, Geosurveys of Aust. Pty. Ltd. report.
10. Beach Petroleum N.L. Mt. Daer gravity survey, O.P. 57, N.T., 1970. By W.F. Stackler, G. Schoenharting, and P.G. Brunt, Geosurveys of Aust. Pty. Ltd. report.

vii. REASONS FOR UNDERTAKING THE SURVEY

Seismic:

Previous seismic reflection surveys completed for Amerada Petroleum Corp. within O.P. 57, and for French Petroleum immediately to the south, indicate a thickening of section above the Permian and also within the Permian section towards the S.E. corner of O.P. 57.

The main objective of the survey is to locate closed structure within the Permian in areas where the upper beds of the Permian section have been preserved. The reflections from top Permian and within the Permian section can be clearly followed. The base of the Permian is indefinite but can be checked by offset shooting.

The past seismic surveys have indicated several anomalous features in the Three Corners Zone. Further work is necessary to accurately define these structures.

In summary, the objectives are:

1. To more accurately define structures in the Permian on the Three Corners Shelf area.
2. To define areas of structural "closure" within the Upper Permian beds of dimensions likely to justify test drilling for hydrocarbons.

Gravity:

The earlier gravity lines in the Three Corners Shelf Zone were too widely spaced to give other than a regional appreciation.

To augment the results already obtained, gravity stations are to be established on each of the new seismic shot points.

These additional profiles will provide a semi-detailed gravity picture over the area. Anomalies are expected to relate extensively to structures developed at or below the Permian levels. The use of stripping methods can be expected to assist interpretation of structure below the top of the Permian and will compliment the seismic data. Top and base of Permian will be obtained from seismic.

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In summary, the objectives are:

1. To provide a semi-detailed coverage of the area under consideration.
2. To attempt further definition of structures below the top of Permian by application of gravity stripping methods.

viii. OUTLINE OF OPERATION

1. Timing of the Survey

The survey is expected to commence by 8th August, 1971. Track clearing will commence before this date.

2. Duration of the Survey

Two months - 2 x 220 hour periods.
Date of completion - September 30th, 1971.

3. Date of Submission of Final Report

Estimated to be January 31st, 1972.

4. Tentative Proposal for Traverses

110 miles of single fold seismic has been programmed. In addition, 30 miles are being kept in reserve for line ties for defining structures. Relatively high production is expected on the cord shooting but offset shooting to check the base of Permian will slow the rate of production.

The gravity stations are to be established at each seismic shot point. A total of 350 to 400 stations is planned.

5. Techniques to be Used

Split Spreads: Each spread is 1,800 feet in length. A weathering spread 360 feet long will be shot at specified shot points if first breaks do not provide sub-weathering velocities. An end on/offset shooting technique will be employed on occasion.

Explosive Cord: Premium grade cord is to be used as a seismic source.

Length of Cord: The length of cord to be used is 300 feet. Two strands will normally be shot. More strands will be used when needed to increase the energy returns.

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Experimentation: A noise spread will be shot at commencement of the survey to see whether a staggered array of cord is necessary to cancel any unwarranted noise. This will be repeated when record quality deteriorates.

Geophones: Multiple geophone detectors (HSJ-20) having a preferred frequency response of 15 to 150 HZ will be used in strings of 10 geophones spaced at 15 feet apart.

Instruments: Geospace Model III amplifiers will be used together with an SIE VRO-60 oscillograph. An Electro-tech type AM tape recorder will be used for tape recording.

Type of shooting: A normal split spread single fold shooting technique will be used as a standard recording method.

In conjunction with the reflection shooting on each line an offset reflection/refraction shooting technique will be employed. The objective of the offset shooting will be to carry reflections to their breakover point and to measure the refractor velocity of the underlying pre-Permian beds.

Corrections: The records will be corrected to +300 foot datum, which was previously used in O.P. 57. First breaks will be plotted to correct for variations in weathering.

Data Processing: The tapes will be digitized and processed at a digital centre. The parameters for processing will be established when field data is reduced, however, it is anticipated that time variant filtering and deconvolution will be used. The record sections will be plotted on a variable area format at a scale compatible to former sections 6" = 1 second.

Gravity:

The new stations will be established at shot points, and will be along N.W.-S.E. trending lines positioned midway between the old lines.

It is expected that gravity base stations established during the 1967 Simpson Desert gravity survey will provide sufficient base coverage. Any additional bases required will be tied to the existing network with a minimum of three independent readings. For the field stations, the time between repeat readings at base stations will generally not exceed 5 hours for the LaCoste and Romberg gravity meter.

To tie to the existing surveys a combined elevation correction factor (Free Air and Bouguer) of 0.06992 mg1/ft will be used. Gravimeter used will be checked against the official Adelaide Calibration Range before and after the survey.

ix.

SURVEYING

Vertical Control:

All stations will be optically levelled and tied by loop closure or double run. All traverses will be tied to elevations established during the 1967 Simpson Desert Gravity Survey.

The accuracy of loop closure will be $0.5/\sqrt{m}$ feet where m is the length of the traverse in miles. In all cases, the vertical accuracy of single stations will be better than ± 0.5 foot.

Horizontal Control:

The horizontal control will be attained by using shot points established during the Simpson Desert 'A' seismic survey as commencement points. Traverses will be carried by latitude and departures using theodolite with compass attachment. Distances between shot points will be chained. Checks on azimuth control will be made by identification of points of definite detail on aerial photographs. In all cases the error in horizontal position after adjustment shall be less than ± 300 feet.

Base Maps:

The maps will be prepared at a scale of 1:100,000 on a Transverse Mercator Grid.

The final seismic and gravity maps will be presented at a scale of 1:100,000 and 1:250,000.

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Permanent Marks:

All bases and traverse stations at intersections will be permanently marked.

x. SUPERVISION OF FIELD OPERATIONS

Seismic: A. Yakunin
Gravity: Dr. G. Schoonharting

Staff:

Party Chief - Geophysicist	B. Proctor
Party Manager	A. Willmet
Chief Computer	J. Radus
Computer	R. Newall
Observer	R. Hasee
Junior Observer	D. Thompson
Shooter	
4 Cablemen	
2 Tractor Operators	
2 Recording Helpers	
1 Surveyor	J. Owens
1 Assistant Surveyor	
1 Rodman	

xi. PROGRESS REPORTS

Progress reports will be submitted at half-monthly intervals by Geosurveys of Australia Pty. Limited, providing statistical data on hours worked, lines and number of shots, days lost due to weather etc., stations established, and any notable results.

Any changes in personnel or equipment will be noted.

The progress of the survey will be shown in map form.

At monthly intervals a copy of the contractor's monthly statistical report and appropriate progress contour maps will also be submitted.

xii. FINAL REPORT

A final report will be prepared as specified in the "Guide to Applicants and Operators 1970", and will be submitted within four months of the completion of field operations.

xiii. DETAILS OF PETROLEUM LICENCE

Refer to annex 9.

xiv. ESTIMATED COST OF OPERATION

Refer to Annexure 8.

xv. EVIDENCE OF FUNDS

Evidence of funds for the full performance of the operation is attached as Annexure 6.

xvi. CONTRACT

The operation will be conducted by Geosurveys of Australia Pty. Ltd. of Da Costa Building, Grenfell Street, Adelaide, S.A.

A copy of the contract is attached as Annexure 7.

* * *

ANNEXURE 7

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C O N T R A C T

GEOPHYSICAL CONTRACT INDEX

Clause 1	Type and location of survey
Clause 2	Submission of Final Report
Clause 3 (a) (b)	Supply and maintenance Supply and maintenance of field unit
Clause 4 (a)) (b)) (c))	Supply of personnel Supply of Supervising Geophysicist
Clause 5 (a) (b) (c) (d) (e)) (f)) (g)	Additional personnel Control of personnel Maintenance of equipment Patents and trademarks Entry into property, repairs for damages and inaccessible locations Replacement of personnel
Clause 6	Company's instructions for work
Clause 7	Submission of reports, maps and data
Clause 8	Secrecy
Clause 9	Standard of work
Clause 10	Company's obligation to pay
Clause 11	Clearance of land
Clause 12	Permits, licences, maps and charts for work
Clause 13 (a) (b)	Method of payment
Clause 14 (a) (b) (c) (d)	Contractor's liability Contractor's insurance Contractor's failure to comply with obligations Company's failure to comply with obligations
Clause 15	Force Majeure
Clause 16	Duration and termination
Clause 17	Company representation on survey
Clause 18	Contractor's right to independence
Clause 19	Sub-contracting
Clause 20	Waiving of requirements of agreement
Clause 21	Governing Law
Clause 22	Settlement of disputes
Clause 23	Delivery of notices and documents
Schedule A	Description of areas and type of survey
B	Personnel and equipment to be supplied by Contractor
C	Contract fee

THIS AGREEMENT is made the 26th day of July 1971

BETWEEN BEACH PETROLEUM NO LIABILITY of 749 Da Costa Building, Grenfell Street, Adelaide in the State of South Australia (hereinafter called "Company") and GEOSURVEYS OF AUSTRALIA PROPRIETARY LIMITED, having its registered office at 68 Grenfell Street, Adelaide, South Australia 5000 (hereinafter called "Contractor").

WITNESSETH and it is hereby agreed and declared as follows:-

Object of the Contract

1. The Contractor shall conduct for the Company with all due diligence and in accordance with the terms hereof a Detailed Geophysical Survey of the type and in such areas described and delineated in Schedule "A" hereto.

The Contractor's Obligations

2. The Contractor shall carry out the survey and all work connected therewith with all due despatch, diligence and precaution and as an independent Contractor as set out in Article 18. The Contractor warrants that the final report shall be delivered to the Company not later than four months after completion of the field work.
3. (a) The Contractor shall supply and maintain during the currency hereof such of the equipment stipulated in Schedule "B" hereto as is in the opinion of the Company necessary for the performance of the Survey.
(b) All operating supplies necessary to operate and maintain the field unit, including but not limited to spare parts, food and provisions.
4. (a) The Contractor shall supply for the field work such of the personnel as listed in Schedule "B" hereto as is in the opinion of the Company necessary for the performance of the Survey.
(b) The supply of personnel includes but is not limited to the payment of all wages, allowances and social insurance for such personnel during the term of the Agreement.
(c) The Contractor agrees to provide a Supervising Geophysicist to ensure proper supervision of the field party as well as accuracy of the data obtained.
5. (a) The Contractor shall supply any or all additional personnel, or equipment as may be requested by the Company above those stipulated by this Agreement, such additional personnel, or equipment to be specified and on terms to be agreed upon by letter.

- (b) The Contractor shall ensure that all personnel supplied hereunder shall be men in good health at the time the survey shall commence and thereafter of good conduct throughout the duration of this Agreement.
- (c) The Contractor shall ensure that all equipment, and expendables supplied hereunder shall at all times be of proved reliability tested in practice and be maintained in good condition.
- (d) The Contractor shall ensure that it holds all necessary patents and proprietary rights in respect of any device, apparatus or method used by it while carrying out the operations. The Contractor shall at all times keep the Company indemnified against all actions proceedings claims demands or prosecutions whatsoever which may be brought commenced or prosecuted against it and also against all costs damages and expenses which it may in any wise pay or incur in defending or settling the same arising from or incurred by reason of any infringement or alleged infringement of letters patent or other proprietary rights in respect of any device apparatus system or method of use supplied by the Contractor. In the event of any claim being made or action brought against the Company in respect of any such matters as aforesaid the Contractor shall be immediately notified thereof and it shall with the assistance if it so requires of the Company but at the sole expense of the Contractor conduct all negotiations for the settlement of the same or any litigation that may arise therefrom.
- (e) Prior to the Contractor commencing work for the Company hereunder the Contractor shall contact the owners of property upon which work will be done. The Contractor shall use its best endeavours to gain satisfactory right of ingress egress and regress for its employees servants and agents in respect of such property. At the conclusion of such work The Contractor shall rectify at the Company's authority and expense any damage or injury caused during the course of normal operations on the said work so that such property is restored to as near to its condition prior to the commencement of such work as is practicable.
- (f) In the event of consent to enter or work upon a property being withheld by the land or property owner or lessee the Company will be contacted by the Contractor. The Company will then assume the responsibility of obtaining such permission to enter as is required. In the event of unsuccessful negotiation by the Company for the entry to such properties a mutually satisfactory relocation or

abandonment of survey lines will be made between the Company and the Contractor. All efforts would be made to avoid such an occurrence. The Parties shall agree on an equitable financial arrangement which will apply from the time the Company is advised that consent to enter or work upon a property is withheld until the Company obtains such consent and advises the Contractor thereof or until relocation or abandonment of survey lines as aforesaid.

- (g) The Contractor shall not replace personnel or equipment without obtaining the Company's consent, which shall not be unreasonably withheld.
6. The Contractor shall comply with all reasonable instructions given by the Company with regard to the survey and all work connected therewith.
 7. The Contractor shall submit to the Company all original survey data in the manner specified by the Company. The Contractor shall submit reports at intervals and in a manner to be agreed with the Company, together with all maps and data in accordance with the specifications furnished by the Company.
 8. The Contractor shall keep secret all knowledge that he shall acquire in connection with the survey, including all plans, maps, sections, field notes, reports and facts relating thereto, the results of the survey and all deductions arrived at in regard to it. The Contractor guarantees that its personnel shall also observe the requirements as to confidential information in this article. The Contractor shall return to the Company all data, records or information in the Contractor's possession pertaining to the survey upon termination of the Contract.
 9. The Contractor undertakes to perform the survey to the standard normally required by the Bureau of Mineral Resources.

The Company's Obligations

10. Subject to the provisions of Articles 14 (c) and 15, the Company shall make all payments and reimbursements due in accordance with the provisions of Schedule "C" and Article 13 herein.
11. When the Contractor finds it necessary for the proper execution of the performance of the survey to clear property or land of scrub, bush or other obstructions, the Contractor shall at the Company's authorisation (which will not unreasonably be withheld) and expense engage suitable personnel, firm or a company with necessary equipment to clear property or land of said scrub, bush or other obstruction.

12. The Company shall furnish or cause to be furnished (or upon authorisation by and at the expense of the Company the Contractor shall furnish) in whole or in part:-
- (i) Permits required and necessary to perform the survey work.
 - (ii) Programme charts and base maps required.
13. (a) The Company shall make the payments and reimbursements due under Schedule "C" in the following manner:-
- (i) An amount equal to 50% of the amount agreed between the Company and the Contractor as being a reasonable estimate of the total final contract price payable on completion of two-thirds of the field work then programmed by the Company for completion.
 - (ii) An amount equal to 25% of the amount agreed between the Company and the Contractor as being a reasonable estimate of the total final contract price payable on completion of the field work.
 - (iii) The balance of the total contract price payable within thirty days of receipt of the final report and receipt of an invoice therefor.
- (b) The Company shall make the payments and reimbursements due under Schedule "C" in Australian currency.

Liabilities and Insurances

14. (a) The Contractor shall be liable for any loss, damage or injury including death suffered by:-
- (a) any third party;
 - (b) the Contractor's personnel;
- and arising out of or resulting from the Contractor's operations under this contract and the Contractor shall indemnify and hold harmless the Company in respect of any claim or judgement, including costs and legal fees or disbursements, which may be rendered against the Company on account of any such loss, damage or injury.
- (b) The Contractor undertakes to insure with a company or companies authorised to do insurance business in Australia in conformity with local legislation, at its own expense, its liability under paragraph (a) of this Article, before commencing the operations, and to maintain such insurance for the duration of the Contractor's operations under this Contract. The Contractor shall produce to the Company on demand the insurance policy or policies and the receipt for current premiums thereunder.

- (c) If the Contractor's operations under this Contract are stopped or delayed in consequence of any failure on the part of the Contractor to comply with its obligations under this Contract; or by reason of the Contractor's personnel or any member thereof becoming incapacitated through their own fault; or due to any negligence or default on the part of the Contractor or its personnel, the payments mentioned under Schedule "C" shall not be payable in respect of the period of such stoppage or delay. If such stoppage or delay persists for more than 30 days, the Company may terminate the Contract forthwith by giving notice to that effect to the Contractor.
- (d) If the Contractor's operations under this Contract are stopped or delayed through lack of instructions or for any other reason for which the Company is solely responsible, the Company shall nevertheless make the payments at the Standby Rate mentioned in Schedule "C" in respect of the period of such stoppage or delay.

Force Majeure

15. Either party shall be excused from complying with the terms of this Contract if and so long as such compliance be delayed, hindered or prevented by any cause or event which is not within the control of such party and which cannot be prevented by reasonable diligence on its part. The Company's obligation to make the payments specified in Schedule "C" shall cease and the parties shall agree on an equitable financial arrangement which shall apply as long as such cause or event shall persist, provided that in such event either party may terminate the Contract forthwith by giving notice to that effect to the other party.

Duration and Termination

16. This Contract shall be deemed to come into force upon the execution hereof or commencement of the survey whichever is the earlier and, unless earlier terminated under the provisions of Articles 14 (c) or 15 will continue until all work to be performed by the Contractor hereunder has been successfully completed. The provisions of Article 8 will continue to apply to the Contractor after termination for any reason of this Contract.

Additional Provisions

17. The Company is entitled to have duly authorised representatives inform themselves that the work proceeds in a satisfactory manner who shall furthermore be entitled to change the station or shot-hole density or pattern during the course of the survey, provided these changes are given in writing.

18. In carrying out the survey and all work connected therewith, the Contractor is an independent contractor, with the authority to control and direct the performance of the detail of the work, subject to the provisions with regard to the Company's right to give instructions as laid down in this Contract, and to the Company's right to inspect and to supervise the survey.
19. The Contractor may engage sub-Contractors to perform all or any part of the survey work to be performed hereunder with the prior written consent of the Company; provided that the Contractor shall remain primarily responsible to the Company for all of its obligations hereunder.
20. None of the requirements of this Agreement shall be waived by either party unless waived in writing by such party or by a duly authorised agent or representative of such party.
21. This Agreement shall be governed by the laws of the State of South Australia or the Commonwealth of Australia as appropriate.
22. All disputes arising in connection with this Contract shall be finally settled at Adelaide by Arbitration under the Rules of Arbitration of the International Chamber of Commerce by one or more arbitrators in accordance with the said Rules. A dispute shall be deemed to have arisen when either party notified the other party in writing to that effect.
23. (a) Any reports, maps, advices or notices of any sort to be given or served under this contract by the Contractor to the Company shall be deemed to have been duly given to the Company if posted or handed personally to or left at the address below:-

Boach Petroleum No Liability,
749, Da Costa Building,
Grenfell Street,
ADELAIDE, South Australia 5000.
- (b) Any notifications to be given or served under this contract by the Company to the Contractor shall be deemed to have been duly given and received if left at or sent to:-

Geosurveys of Australia Pty. Ltd.,
68, Grenfell Street, or
G.P.O. Box 1479,
ADELAIDE, South Australia 5001.

A notice sent by post shall be deemed to be received at the time when in due course of post it would be delivered at the address to which it is sent. Either party may change its address for service at any time by giving notice of such change in writing to the other party.

IN WITNESS whereof the parties hereto have executed this Agreement.

THE COMMON SEAL of BEACH)
PETROLEUM NO LIABILITY was)
 hereunto affixed by the authority)
 of the Directors and in the)
 presence of:)

.....
 Director

.....
 Secretary

THE COMMON SEAL of GEOSURVEYS)
OF AUSTRALIA PROPRIETARY LIMITED)
 was hereunto affixed by the)
 authority of the Directors and)
 in the presence of:)

.....
 Director

.....
 Secretary



DESCRIPTION OF AREAS TO BE SURVEYED

The survey is located in those sectors of O.P.57 in the Northern Territory as designated by the Company.

TYPE OF SURVEY

A seismic and gravity survey as stipulated in the Company's "Application for Subsidy for Three Corners Seismic and Gravity Survey, O.P.57 Northern Territory", sent to the Bureau of Mineral Resources.

Geophysical Equipment and Personnel to be Supplied by Contractor at its own Expense

1. EQUIPMENT TO BE FURNISHED

(a) Seismic

Camera	SIE VR06D Camera
Amplifier	Geospace Model III with auxiliary programmed gain presetter.
Geophones	Reflection H.S.J. 20 cps (500)
	Refraction H.S.1 4½ cps (48)
Cables	Four 1,800 feet, twelve take-out
Radios	Two Eilco 6104 shooting radios
	1 only transceiver radio
Recorders	Electro-tech DS-7 AM recorder
	27 traces and junction box
	1 only fully equipped recording van (Toyota 4 x 4 long wheelbase Landcruiser).
	1 only Toyota (4 x 4) long wheel base Landcruiser fitted as cable and geophone laying unit (squirrelter).
	2 only Toyota (4 x 4) long wheelbase Landcruisers

Test Equipment

(b) Bulldozers

Oscilloscope multimeter

1 only D6B Bulldozer fitted with cord ripper and grader blade

1 only TD9 Bulldozer fitted with cord ripper and grader blade

1 only remote firing type blaster

1 only conventional blaster

1 only Mack 6 x 6 truck and dog trailer

(c) Shooting

(d) Supply

1 only Bedford truck 4 x 4

1 only aircraft hired as required

(e) Vehicles

1 only transceiver radio

3 only Toyota (4 x 4) long wheelbase Landcruisers.

(f) Gravity and Surveying

1 only Wild T1 Theodolite

2 only Survey staffs / 2 pocket calculators

1 only LaCoste and Romberg gravity meter

1 only Toyota (4 x 4) long wheelbase Landcruiser

Handwritten signature/initials

Handwritten signature/initials

SCHEDULE "B" (contd.)

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(g) Camp Equipment

3 only Office Billy Huts with office equipment.
1 only Marquoo
14 only Tents
1 only Kitchen caravan
1 only Eilco transceiver radio
1 only 240 volt lighting plant
1 only portable shower equipment.
Stretchers, mattresses, sheets, blankets, cooking and eating utensils as necessary.

2. PERSONNEL

(a) Supervision of Field Operations

A. Yakunin	-	Senior Geophysicist
Dr. G. Schoenharting	-	Senior Geophysicist
D.H.A. von Sanden	-	Operations Manager

(b) Seismic and Gravity

B. Proctor	Farty Chief/Geophysicist
A. Willmott	Assistant Operations Manager
R. Barnes	Administrative and Records Officer
F. Brunt	Surveyor
J. Owens	Surveyor
J. Radus	Computer
R. Nowall	Computer
R. Haseo	Observer

Other personnel and helpers to make a total crew of 23.

(c) Preparation of Final Report

A. Yakunin in conjunction with B. Proctor	-	Seismic Report
Dr. G. Schoenharting	-	Gravity Report

(d) Consultants

R.C. Sprigg and Dr. W.F. Stackler.

SCHEDULE "C"

CONTRACT FEE

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Company shall pay Contractor in accordance with the schedule of payments listed below and in the manner specified under Article 13 (a) and (b) of the contract.

SCHEDULE OF PAYMENTS

- (1) Crew positioning and depositioning, the sum of \$27,430.00
- (2) For bulldozing, including driver and driver's assistant, the sum per hour for the D6B - \$28.50 and the TD9 - \$22.00
- (3) For the basic crew and equipment as specified in Schedule "B" the sum of \$33,192.00 per 220 hour period plus a \$14.50 per gravity station and \$25.00 per base station.
- (4) The gravity per station price includes the gravity field work, gravity computations, drafting and gravity final report.
- (5) (a) No payment will be made for time lost through breakdown of equipment.
(b) Standby time will be paid for any time the crew are not working due solely to the lack of instructions by the Company and time loss in excess of an average of four hours per working week, due to inclement weather.
(c) Standby rate as mentioned in clause 14 (d) of this agreement and in clause (5) (b) above is \$1,052.00 per day.

MATERIALS AND SERVICES NOT INCLUDED IN BASIC CHARGES

- (1) Additional labour as authorised by the Company.
- (2) Explosives and expendables as required for the survey.
- (3) Permits necessary for the conduct of the survey.
- (4) Magnetic tapes.
- (5) Playback services.
- (6) Digital interpretation.
- (7) Transport and storage of all expendables.
- (8) Preparation of final report, plan printing, drafting, maps and stationery for the seismic survey.

DETAILED ESTIMATE OF COSTSAPPLICATION FOR SUBSIDYTHREE CORNERS SEISMIC AND GRAVITY SURVEY110 LINE MILES PROGRAMMED REFLECTION SEISMIC,30 LINE MILES OF DETAILED SEISMIC,440 GRAVITY STATIONS.

Basic party included all meals, accommodation, fuel and equipment hire.

	<u>Total</u>	<u>Per Mile</u>
<u>BASIC PARTY</u>		
Bulldozing tracks and cord laying:		
560 hours D6B at \$23.50 per hour	15,960	114.00
440 hours TD9 at \$22.00 per hour	9,680	69.14
Seismic crew: 440 hours at \$33,192 per 220 hour period	66,384	474.17
Positioning and depositioning of crew, vehicles, fuel, expendables and supplies	27,430	195.93
	<u>\$119,454</u>	<u>\$853.24</u>

EXPENDABLES

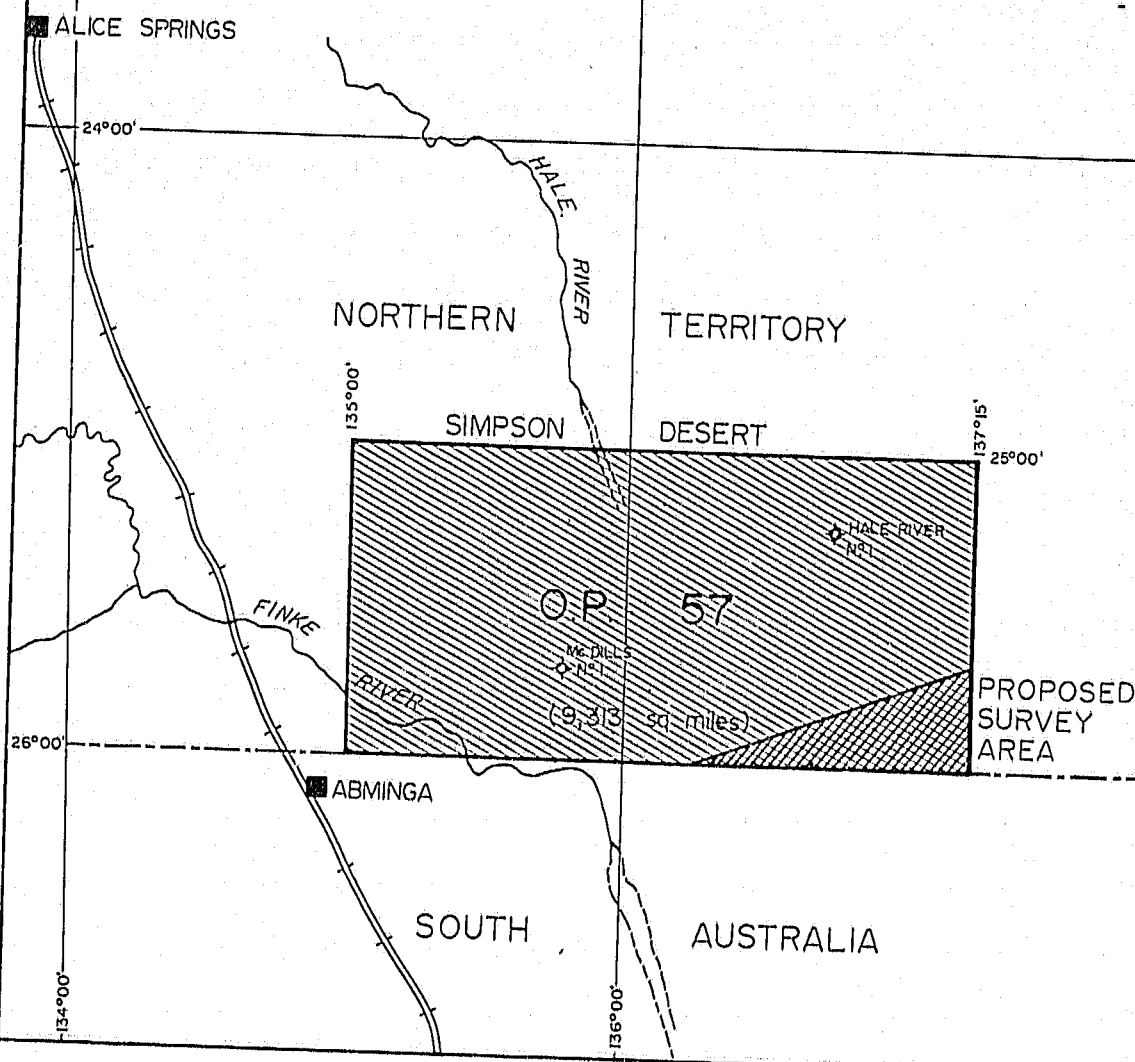
Trine Cord: 276,000 foot	7900		
Ammonium Nitrate 20,000 lbs	1375		
Boosters	95		
Detonators	730		
Hi-Drive	350		
Ammonium Nitrate additives	250		
Digital Processing	6000		
Magnetic Tapes	1012		
Firing Line	30		
Recording Paper	400		
Fixer and Developer	200		
Stakes	50		
Tapes	110		
Concrete Markers and Tags	52		
Batteries	105		
Sundries	300	18,959	135.42
		<u>\$138,413</u>	<u>\$988.66</u>

		<u>Total</u>	<u>Per Mile</u>
	(b/f)...	\$138,413	\$988.66
<u>REPORT</u>			
Interpretation, drafting and compiling report	6660		
Typing	180		
Maps and stationery	200	7,040	50.29
		<u>\$145,453</u>	<u>\$1038.95</u>

GRAVITY

440 Stations at \$14.50 per station	6,380
	<u>\$151,833</u>

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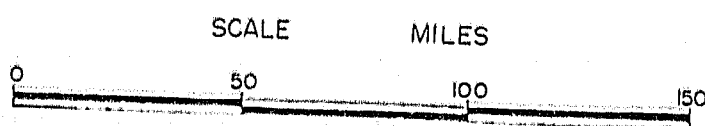


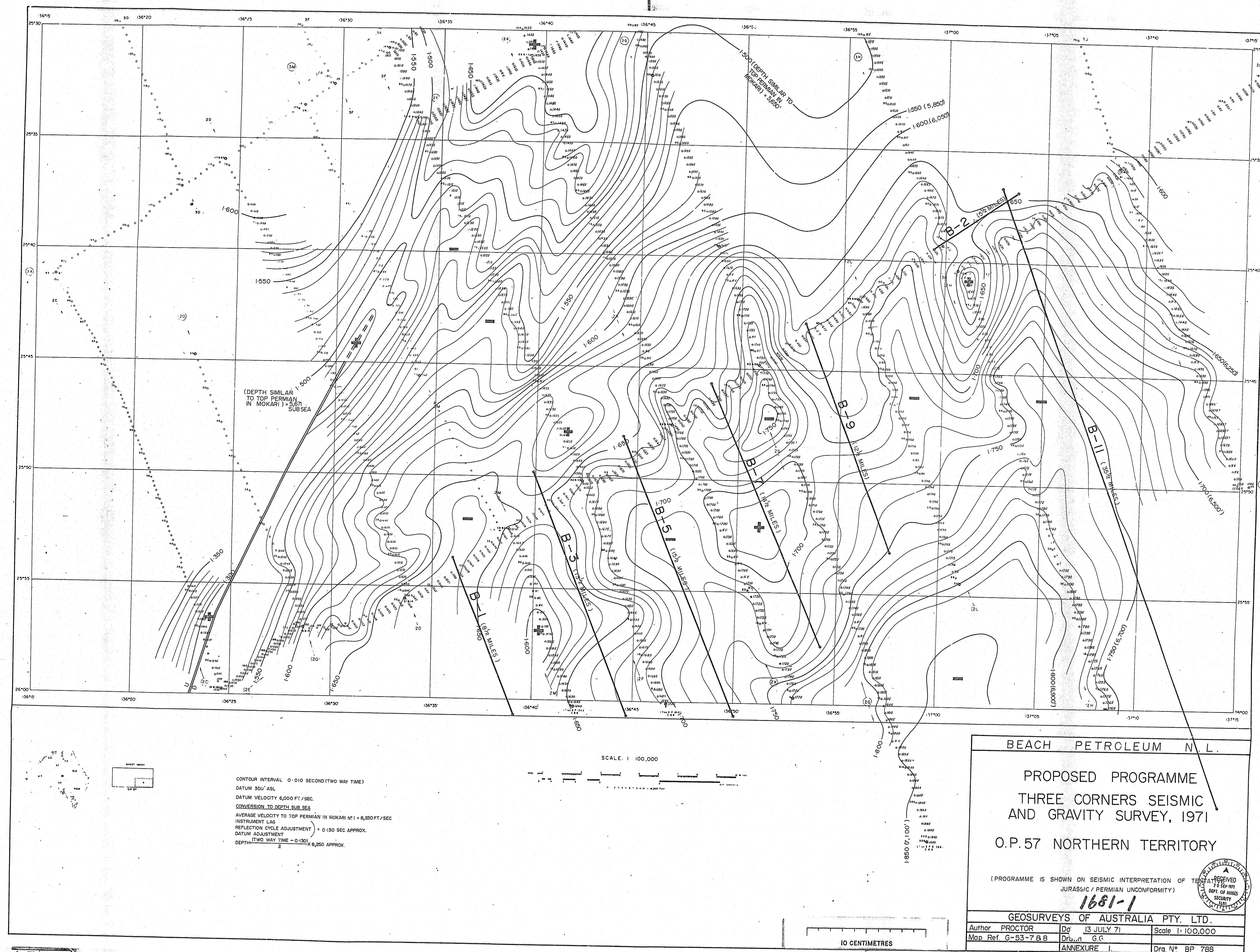
BEACH PETROLEUM N.L.

LOCATION MAP

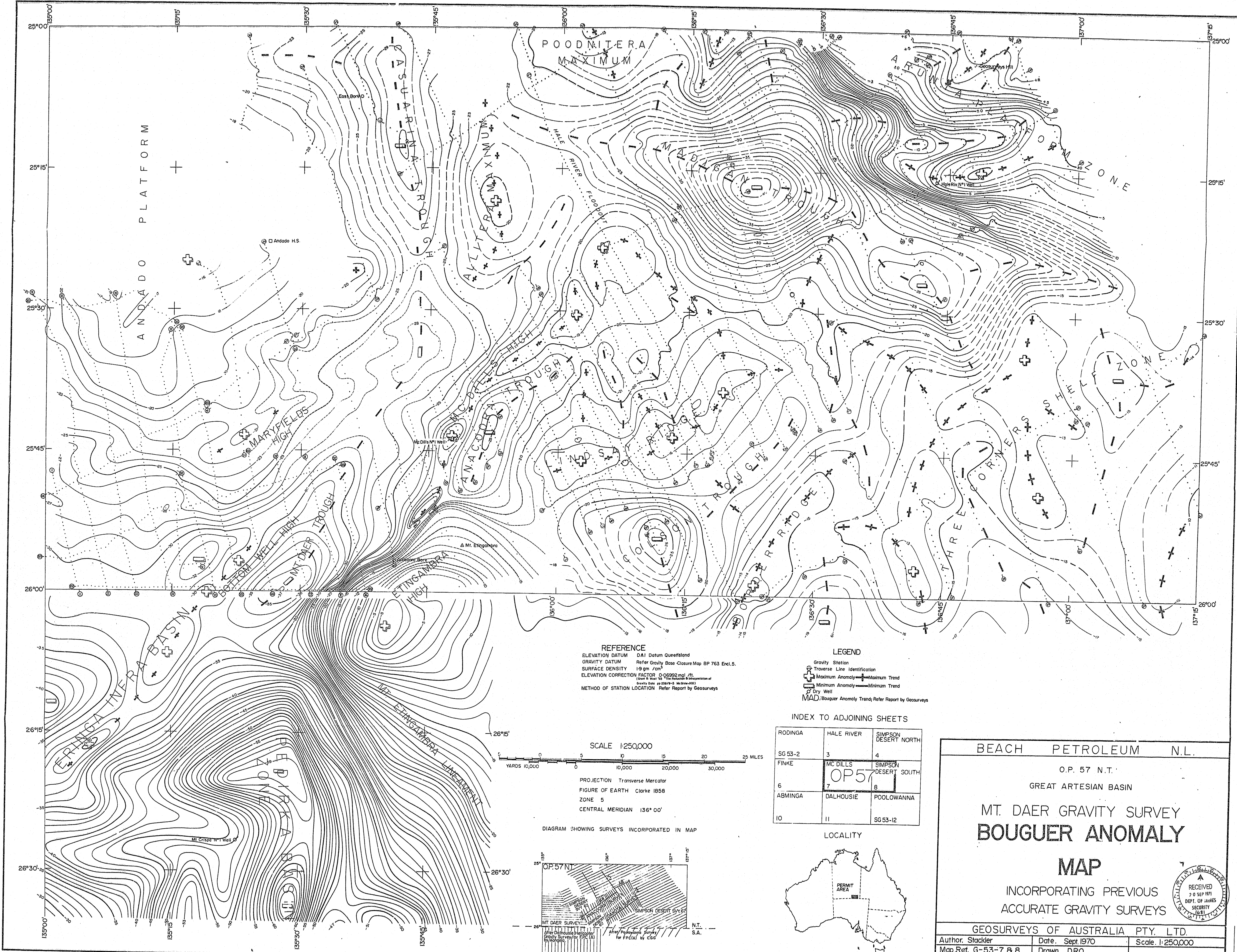
THREE CORNERS SEISMIC AND GRAVITY SURVEY

O.P. 57 N.T.





1306



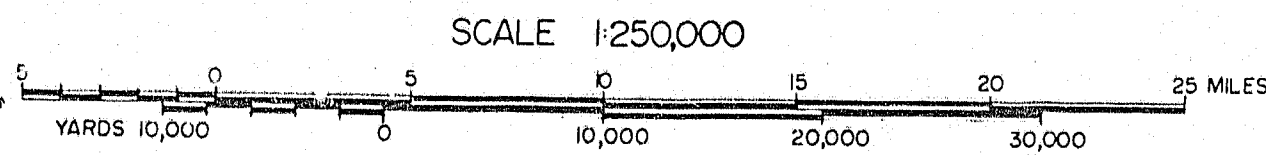
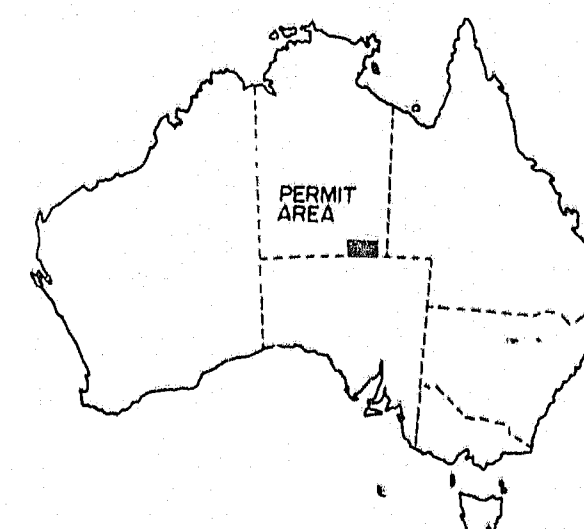
REFERENCE
 ELEVATION DATUM D.A.I. Datum Queensland
 GRAVITY DATUM Refer Gravity Base Closure Map BP 763 Encl. 5.
 SURFACE DENSITY 1.9 gm / cm³
 ELEVATION CORRECTION FACTOR 0.06992 mgl / ft.
(Based on 1961 G.S. 1702 Reduction & Interpretation of Gravity Data pp 239/240-5 Mc Graw-Hill)
 METHOD OF STATION LOCATION Refer Report by Geosurveys

LEGEND
 Gravity Station
 Traverse Line Identification
 Maximum Anomaly Maximum Trend
 Minimum Anomaly Minimum Trend
 Dry Well
 MAD/Bouguer Anomaly Trend; Refer Report by Geosurveys

INDEX TO ADJOINING SHEETS

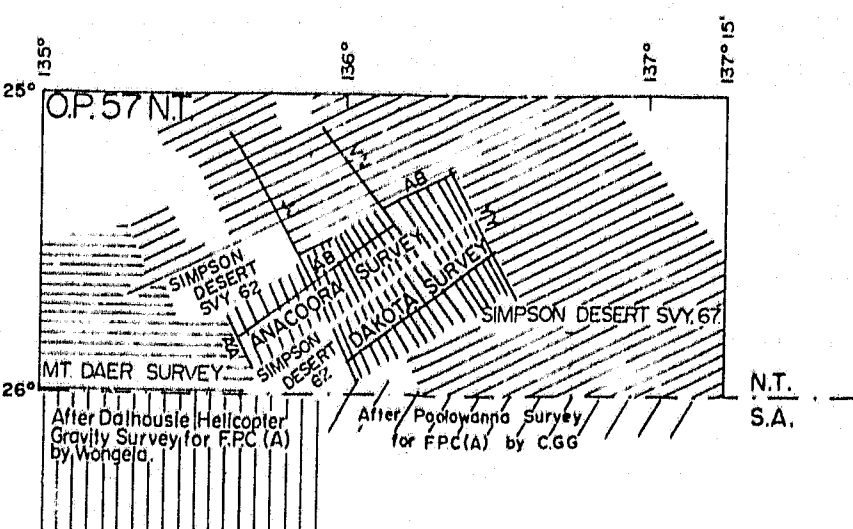
RODINGA	HALE RIVER	SIMPSON DESERT NORTH
SG 53-2	3	4
FINKE	MC DILLS	SIMPSON DESERT SOUTH
6	7	8
ABINGA	DALHOUSIE	POOLOWANNA
10	11	SG 53-12

LOCALITY



PROJECTION Transverse Mercator
 FIGURE OF EARTH Clarke 1858
 ZONE 5
 CENTRAL MERIDIAN 136° 00'

DIAGRAM SHOWING SURVEYS INCORPORATED IN MAP



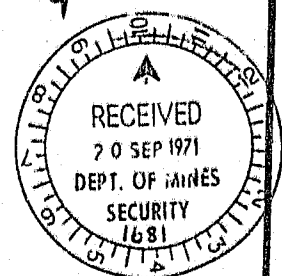
BEACH PETROLEUM N.L.

O.P. 57 N.T.
 GREAT ARTESIAN BASIN

**MT. DAER GRAVITY SURVEY
 BOUGUER ANOMALY**

MAP

INCORPORATING PREVIOUS
 ACCURATE GRAVITY SURVEYS

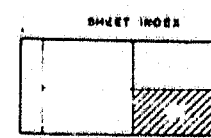
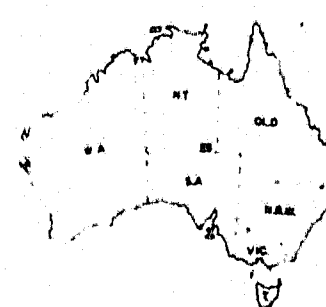
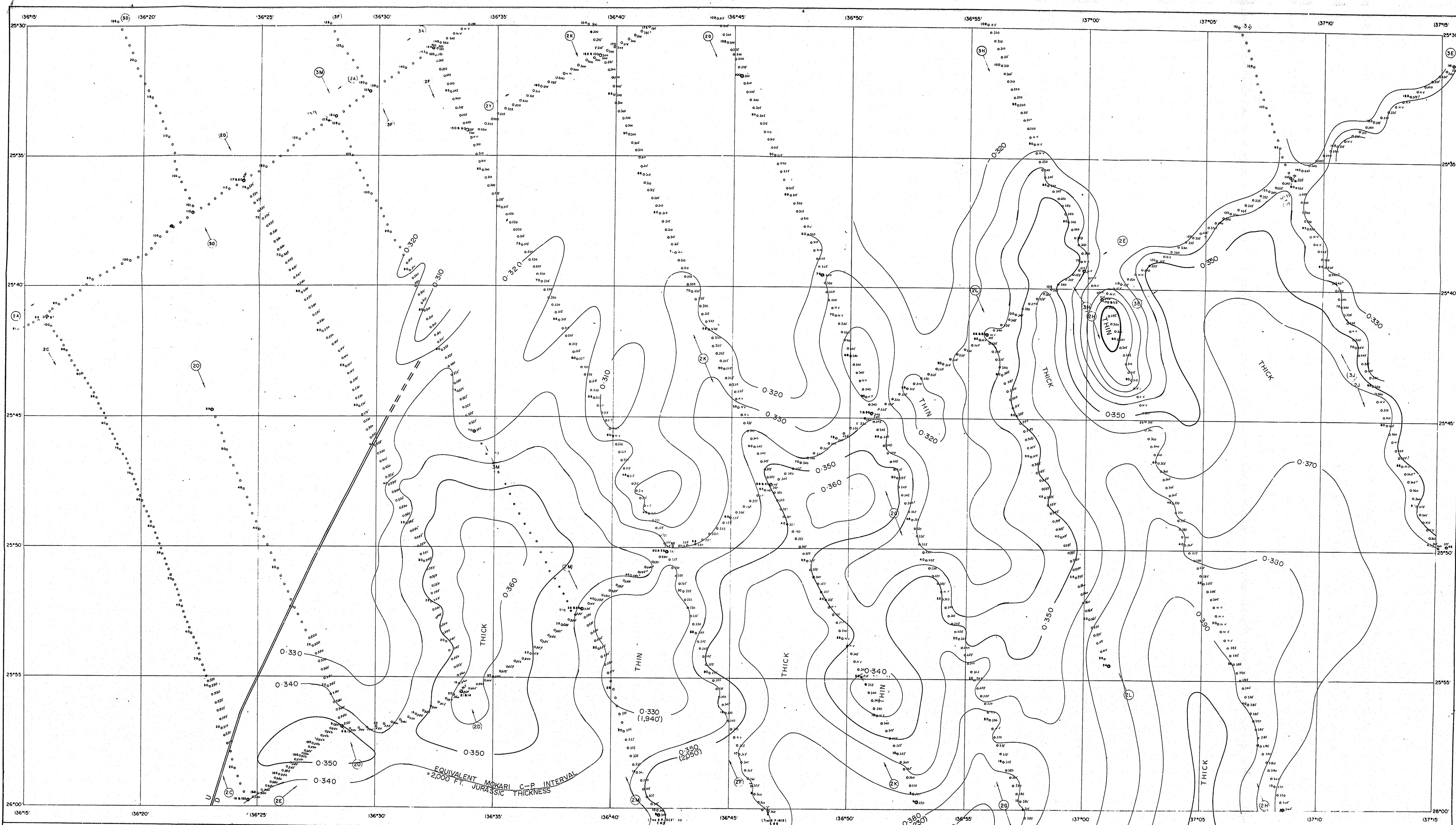


GEOSURVEYS OF AUSTRALIA PTY. LTD.

Author. Stackler	Date. Sept. 1970	Scale. 1:250,000
Map Ref. G-53-7 & 8	Drawn. D.R.O.	
Report N° 1970/18	ANNEXURE 3	Drq. N° BP 767

1681-3





CONTOUR INTERVAL 0.010 SECOND (TWO WAY TIME)
 DATUM 300' ASL
 DATUM VELOCITY 6,000 FT./SEC.
 THICKNESS CONVERSION
 C-P INTERVAL IN MOKARI N°1 IS EQUIVALENT TO 2,004 FT.
 (1,847 FT. JURASSIC + 157 FT. CRETACEOUS TRANSITION BEDS)
 C-P INTERVAL VELOCITY IN MOKARI N°1 = 11,750 FT./SEC.
 THICKNESS = TIME IN INTERVAL X 11,750 APPROX.

SCALE 1:100,000



BEACH PETROLEUM N.L.

O.P. 57 N.T.

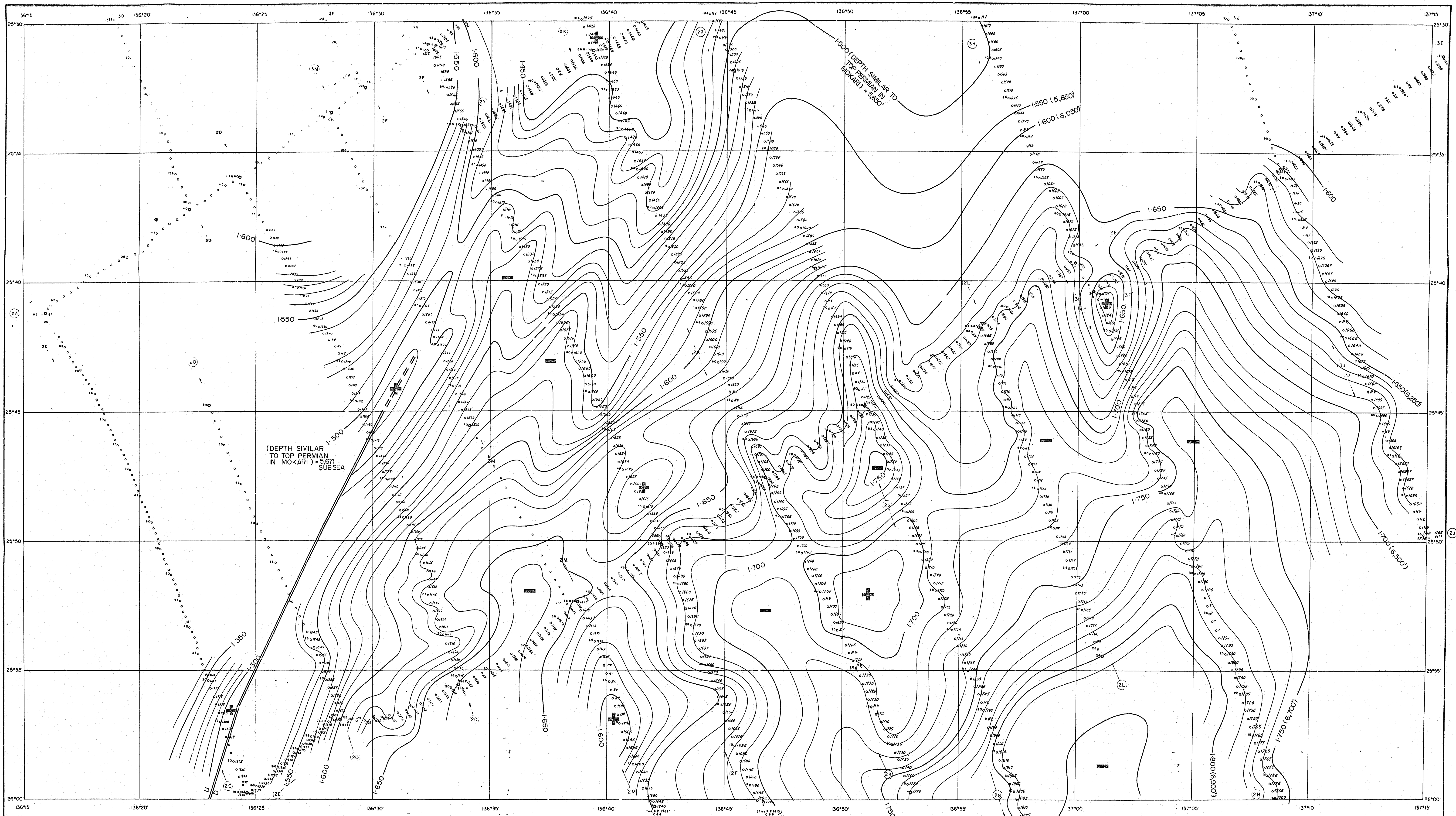
SIMPSON DESERT REVIEW
 1971

TENTATIVE 1681-4
 JURASSIC THICKNESS
 C-P ISOCHRON

GEOSURVEYS OF AUSTRALIA PTY. LTD.

Author PROCTOR	Date 28 JUNE 71	Scale 1:100,000
Map Ref. G-53-7 & 8	Drawn D.R.O.	
	ANNEXURE 4	Org N° BP 785

1306



CONTOUR INTERVAL 0.010 SECOND (TWO WAY TIME)
 DATUM 300' ASL
 DATUM VELOCITY 6,000 FT./SEC.
 CONVERSION TO DEPTH SUB SEA
 AVERAGE VELOCITY TO TOP PERMIAN IN MOKARI $\approx 8,250$ FT./SEC.
 INSTRUMENT LAG
 REFLECTION CYCLE ADJUSTMENT ≈ 0.130 SEC. APPROX.
 DATUM ADJUSTMENT
 (TWO WAY TIME ≈ 0.130)
 DEPTH $\approx 8,250$ APPROX.

SCALE 1:100,000

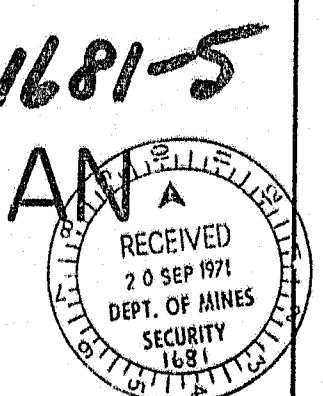


10 CENTIMETRES

BEACH PETROLEUM N.L.

O.P. 57 N.T.
 SIMPSON DESERT REVIEW
 1971

TENTATIVE
 JURASSIC / PERMIAN
 UNCONFORMITY



GEOSURVEYS OF AUSTRALIA PTY. LTD.

Author PROCTOR	Date 25 JUNE 71	Scale 1:100,000
Map Ref. G-53-7 & 8	Drawn D.R.O.	
	ANNEXURE 5	Drq. N° BP 784

1306