

COMMONWEALTH OF AUSTRALIA

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

*Petroleum Search Subsidy Acts*  
PUBLICATION No. 64

**SUMMARY OF DATA AND RESULTS**  
**OTWAY BASIN, SOUTH AUSTRALIA**

**Mount Salt No. 1 Well**

**OF**

**OIL DEVELOPMENT NO LIABILITY**

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

1965<sup>9</sup>

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.*

## FOREWORD

Under the Petroleum Search Subsidy Act 1959-1961, agreements relating to subsidized operations provide that the information obtained may be published by the Commonwealth Government six months after the completion of field work.

The growth of the exploration effort has greatly increased the number of subsidized projects and this increase has led to delays in publishing the results of operations.

The detailed results of subsidized operations may be examined at the offices of the Bureau of Mineral Resources in Canberra and Melbourne (after the agreed period) and copies of the reports may be purchased.

In order to make the main results of operations available early, short summaries are being prepared for publication. These will be grouped by area and date of completion as far as practicable. Drilling projects and geophysical projects will be grouped separately. In due course, full reports will be published concerning those operations which have produced the more important new data.

This Publication contains a summary of data and results of the drilling operation undertaken at Mount Salt No. 1 in the Otway Basin, South Australia. The information has been abstracted by the Petroleum Exploration Branch of the Bureau of Mineral Resources from the well completion report furnished by Oil Development No Liability.

J.M. RAYNER  
DIRECTOR

## CONTENTS

	Page
SUMMARY ... ..	1
WELL HISTORY ... ..	2
General data ... ..	2
Drilling data ... ..	2
Logging and testing ... ..	3
GEOLOGY ... ..	4
General ... ..	4
Stratigraphy ... ..	4
Structure ... ..	6
Relevance to occurrence of petroleum ... ..	6
Porosity and permeability of sediments penetrated ... ..	6
Contribution to geological concepts resulting from drilling ... ..	7
REFERENCES ... ..	7
ADDITIONAL DATA FILED IN THE BUREAU OF MINERAL RESOURCES ... ..	8

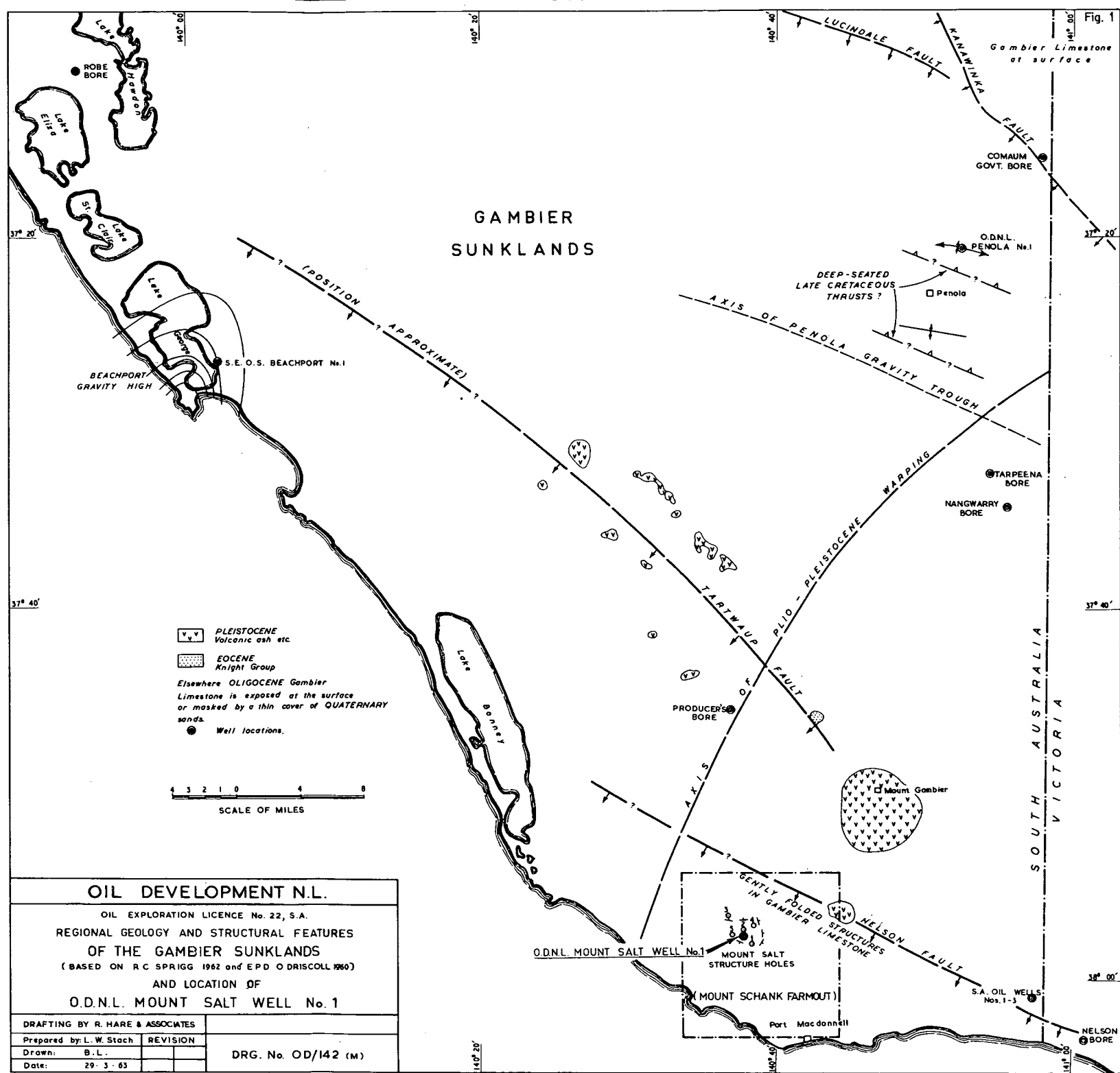
## ILLUSTRATIONS

### FIGURES

Figure 1: Locality Map, Mount Salt No. 1 ... ..	Frontispiece
Figure 2: Geological cross section from Beachport No. 1 Well south- east to Nelson Bore, through Mount Salt No. 1 Well	Opp. p. 6

### PLATES

Plate 1: Composite Well Log, Mount Salt No. 1	At back of report
---	-------------------



## MOUNT SALT NO. 1

### SUMMARY OF DATA AND RESULTS\*

#### SUMMARY

Mount Salt No. 1 Well was located approximately twelve miles south-west of Mount Gambier in the South Australian part of the Otway Basin. The well was drilled by Reading and Bates (Australia) Pty Ltd for Oil Development No Liability, to a total depth of 10,044 feet. Drilling commenced on 9th May, 1962 and was completed on 21st September, 1962. A full programme of logging, testing, and coring was undertaken.

After passing through about 3260 feet of Oligocene and Eocene-Palaeocene sediments, the well entered a thick sequence of Upper Cretaceous sands, siltstones and clays that persisted to total depth. The upper part of this section has been correlated with the (?) Paaratte Formation, and the well bottomed in either basal Upper Cretaceous or uppermost Lower Cretaceous marine or brackish strata that probably correlate with either the top of the Waarre Formation or the Flaxmans Beds of Flaxmans No. 1 Well. The base of the Upper Cretaceous is not clearly defined, and no definite conclusions as to the correlation of the section below the Knight Group (? 590 to ? 3260 feet) have been advanced.

Mount Salt No. 1 Well was drilled to test the petroleum potential of Cretaceous sediments in a closed structure detected by photogeology and proved by a structure drilling programme. Traces of crude oil were detected by core analysis and a show of gas was recorded from the interval 9830 to 9848 feet. Five drillstem tests were attempted but only one, over the interval 9813 to 9892 feet, was successful, obtaining 4070 feet of highly saline water.

The stratigraphic drilling operation at Mount Salt No. 1 was subsidized under the Petroleum Search Subsidy Act 1959-1961, from 980 feet to total depth.

---

\* Abstracted from Well Completion Report, Mount Salt Well No. 1, South Australia, by J. Cundill and L.W. Stach, for Oil Development No Liability, 1963.

## WELL HISTORY

### General Data

Well name and number:	Mount Salt No. 1
Location:	Latitude 37° 57' 25" S. Longitude 140° 37' 43" E.
Name and address of Tenement Holder:	General Exploration Company of Australia Ltd, 68 Grenfell Street, Adelaide, South Australia
Details of Petroleum Tenement:	Oil Exploration Licence No. 22/1; issued by the State of South Australia
Total Depth:	10,044 feet K.B.
Date drilling commenced:	9th May, 1962
Date drilling completed:	21st September, 1962
Date well abandoned:	23rd September, 1962
Date rig released:	23rd September, 1962
Elevation (ground):	70 feet
Elevation (K.B.):	86 feet (datum for depths)
Status:	Dry hole; plugged and abandoned
Cost:	£201,000 (approx.)

### Drilling Data

Drilling Plant:	
Make:	National-Ideal
Type:	50
Hole sizes and depths:	22 " to 44 feet 17 1/2" to 575 feet 12 1/4" to 5185 feet 8 3/4" to 10044 feet
Casing details:	
Size (in.):	18 3/8 13 3/8 9 5/8
Weight (lb./ft):	- 48 36
Grade:	- H.40 J.55
Setting depth (ft):	44 558 5174

## Logging and Testing

### Ditch Cuttings:

Interval: Ten feet from surface to total depth, excluding 93 to 575 feet.

Coring: Thirty-four cores were cut using a Hughes "J" Type core barrel with both hard formation and soft formation cutter heads. A total of 497 feet was cored and 266 feet (53.5%) recovered.

Sidewall Cores: None

### Electric and other logging: (Schlumberger):

Electrical Log: 555-10036 feet (5 runs)

Microlog: 555-10036 feet (5 runs)

Caliper Log: 555-10036 feet (5 runs)

Section Gauge Log: 40- 553 feet ( 1 run)

Continuous Dipmeter: 5174- 9885 feet ( 1 run)

Temperature Log: 0- 552 feet (4 runs)

Drilling Time and Gas Log: A Geograph record of drilling time was kept throughout the drilling of the well, and an Esterline-Angus drilling rate recorder was also used at intervals while drilling. A Wemco hydrogen flame ionizing cell gas detector was operated on the mud stream throughout the drilling of the well. Later, a JW cuttings analyser together with a Waring Blendor, were added to the gas detection equipment.

Formation Testing: Five drillstem tests were carried out; details are tabulated below:

<u>Test No.</u>	<u>Interval Tested</u> (feet)	<u>Method</u>	<u>Results</u>
1	9813 - 9892	Halliburton	Rec. 4070 feet salt
		Hydro-spring	water
2	9400 - 9435	ditto	Misrun
3	9390 - 9435	ditto	Misrun
4	9400 - 9435	ditto	Misrun
5	9405 - 9435	ditto	Misrun

Deviation Surveys: Deviation surveys were run with a Totco instrument; the maximum deviation was 2°<sub>0</sub>, measured at 5650 feet. At 10,032 feet, the deviation was 1 3/4°.

## GEOLOGY

### General

Over most of the Mount Schank "farmout" area (see Fig. 1) the Oligocene Gambier Limestone is exposed at the surface, but in places it is covered by ridges of Pleistocene aeolianites and at Mount Schank by Pleistocene volcanic ash, scoria and basalt which were extruded through the Gambier Limestone.

Photogeological investigation of the area revealed the presence of very gentle dips in the Gambier Limestone which provided a pattern suggestive of gentle en echelon folding. The drilling of five shallow structure holes to depths of about 1000 feet on the crest, flanks, and plunges of the most prominent of these gentle folds, in the vicinity of the Mount Salt homestead, proved that this structure does, in fact, persist in depth at least into the upper part of the Eocene Knight Group sands and clays, with dips down the flanks and plunges of the order of two degrees. A suitable location for the Mount Salt No. 1 Well was therefore selected close to the surface culmination of the structure, in order to provide a structural test to 10,000 feet of the potentialities of the substantial thickness of marine Cretaceous sediments that was expected to be found underlying the Eocene sands and clays of the Knight Group in this part of the Gambier Sunklands.

### Stratigraphy

Palaeontological and palynological data relating to Mount Salt No. 1 Well are not in agreement; the stratigraphic sequence listed here is based on palaeontology and lithology.

Gambier Limestone (Oligocene): Surface to (?) 480 feet

There was no recovery of cuttings over this interval because of loss of circulation. The adjacent Structure Hole No. 2, which was drilled only a few hundred feet away from Mount Salt No. 1, indicated the presence of the Gambier Limestone.

Buccleuch Group (Eocene): (?) 480 to (?) 590 feet (110 feet)

There was no recovery of cuttings over this interval because of loss of circulation. The Buccleuch Group is presumed to be present, by comparison with the adjacent Structure Hole No. 2.

Knight Group (Eocene): (?) 590 to (?) 3260 feet (2670 feet)

Dartmoor Formation (Eocene): (?) 590 to 3131 feet (2541 feet)

Alternating thick beds of poorly consolidated sandstone, siltstone, and soft clay, with a few thin, hard bands of dolomitic sandstone. The sandstones range from fine-grained to pebbly and consist of quartz with subordinate mica, pyrite, and glauconite. The siltstone is brown to dark grey, clayey, micaceous, carbonaceous, and pyritic. The clay is brown or grey, micaceous and carbonaceous, and contains abundant marine fossils including mollusca, fish teeth, and foraminifera.

Bahgallah Formation (Palaeocene): 3131 to (?) 3260 feet (129 feet)

Dark green, silty grit containing limonite and chamosite pellets, and fish teeth of a different type from those found in the Dartmoor Formation. No fossils of definite Palaeocene age were found, but, on the basis of the lithology, this unit was correlated with the Bahgallah Formation of western Victoria.

Upper Cretaceous: (?) 3260 to 10,044 feet (6784 feet+ )

Below the base of the Bahgallah Formation, a monotonous sequence of poorly consolidated sand and silt, and soft clay and shale continues to total depth. Feldspars, decomposing to kaolin, are common. The subdivision of this sequence is debatable. It may consist only of the Paaratte Formation, or it may include the Belfast Mudstone, the Flaxmans Beds, and the Waarre Formation. The following subdivisions have been suggested :

<u>Formation</u>	<u>Intervals</u> (feet)		
	<u>1</u>	<u>2</u>	<u>3</u>
Paaratte Formation	3260	3260	3260
	to	to	to
	5900	7460	10044
Belfast Mudstone	5900	7460	
	to	to	
	9200	10044	
Flaxmans Beds	9200		
	to		
	9900		
Waarre Formation	9900		
	to		
	10044		

The palaeontological and palynological evidence suggest that this entire sequence of 6784 feet of sediments, obviously deposited very rapidly and under conditions of turbulence, could all belong to the Upper Cretaceous, and that the lower part of the section is probably not older than Turonian. Both the palaeontological and palynological evidence also indicate that some portion of the upper part of this section should correspond with the Paaratte Formation, and the underlying portion with the Belfast Mudstone, and possibly older formations (Flaxmans Beds and Waarre Formation). However, as there is no marked change in lithology within the Upper Cretaceous section and, in particular, no great thickness of dark grey, glauconitic mudstone grading to siltstone which could correspond directly to the Belfast Mudstone, the possibility still exists that the entire Upper Cretaceous sequence down to total depth could belong to the Paaratte Formation and that the Belfast Mudstone might be present at greater depth than was reached by the Mount Salt well. Arenaceous and calcareous foraminifera and abundant microplankton indicate a partly marine environment alternating with deltaic or estuarine facies.

At this stage, no definite conclusions as to the correlation of the section below the Knight Group can be advanced, other than that it probably represents a greatly thickened sequence of the Upper Cretaceous section found farther to the east in the Otway Basin. The equivalent of this section farther to the west at Beachport is doubtfully represented by only 90 feet of section between the underlying Lower Cretaceous Runnymede Formation and the overlying Knight Group. Farther to the north, at Penola No. 1, Upper Cretaceous sediments are absent altogether, and the Knight Group rests directly on the Lower Cretaceous Runnymede Formation.

The resistivities in the Upper Cretaceous section below the Bahgallah Formation are generally low, down to about 8200 feet, and of the same order as the lower 800 feet of the Dartmoor Formation. Below 8200 feet, however, there is a notable increase in the resistivity.

### Structure

The well was drilled on a small closed anticlinal structure identified by surface mapping and confirmed by shallow structure drilling to 1000 feet. It is possible that no closure occurs at depth and that no structural trap exists.

This surface structure is developed in the Gambier Limestone, and the dips on the flanks and plunges of the structure are of the order of two degrees. As some doubt existed as to whether this surface structure persisted in depth, a group of five shallow structure holes were drilled at selected locations to depths of about 1000 feet, which was sufficient in all cases to penetrate a short distance into the upper part of the Knight Group. The drilling of these structure holes proved that the surface structure persists in depth at least into the upper part of the Knight Group.

Although much of the section penetrated by the Mount Salt No. 1 Well is badly affected by cross-bedding and current-bedding, and slumping and other features indicative of rapid deposition under turbulent conditions, the overall dip in the cores, where determinable, appears to be flat. Cross-bedding in sands ranged up to about 25 degrees, but in most cases the cross-bedded sands were truncated by overlying silts or clays along a practically horizontal contact.

### Relevance to Occurrence of Petroleum

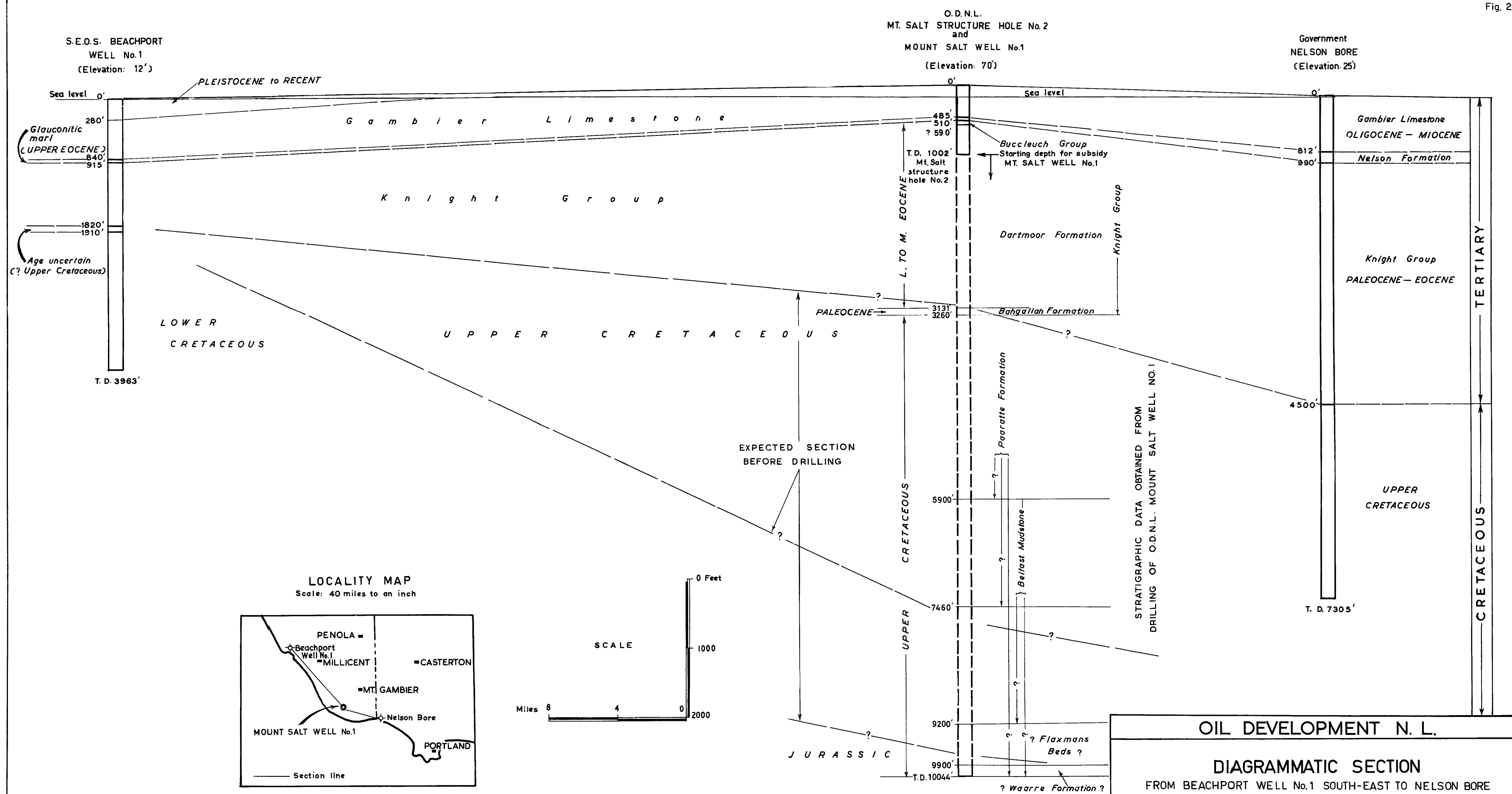
The drilling of Mount Salt No. 1 Well in the central part of the Gambier Sunklands has proved the existence of a thick section of Upper Cretaceous, dominantly marine, clastic sediments. Data available from wells drilled to the north and west, at Penola and Beachport, show that these sediments wedge out completely to the west and north within distances of a few tens of miles, probably against upthrust blocks of Lower Cretaceous sediments.

The Upper Cretaceous sequence consists of interbedded, generally thick beds of highly porous sandstones, impermeable clays and shales, and siltstones, which could provide excellent reservoir and cap rock where closed subsurface structure or fault traps might be developed, or where stratigraphic traps might be present farther updip along the regional gradient rising toward the north.

Analyses of cores indicated the presence of traces of crude oil in a few cores, but hydrocarbon gases were detected in the drilling fluid at only one short interval between 9830 and 9848 feet. The only successful drillstem test showed the presence of highly saline formation water (39,450 ppm), within the interval 9813 to 9892 feet. Assuming that northern closure was lacking at depth in the structure, hydrocarbons could have migrated through the many porous sands present in the section, updip toward the north and north-west along the regional gradient.

### Porosity and Permeability of Sediments Penetrated

The upper part of the well section, down to about 5000 feet, is dominantly sandy and generally highly porous and permeable, with only a few thin interbeds of clay and shale. The clay and shale interbeds are probably lenticular so that vertical migration of hydrocarbons



OIL DEVELOPMENT N. L.			
DIAGRAMMATIC SECTION			
FROM BEACHPORT WELL No. 1 SOUTH-EAST TO NELSON BORE THROUGH LOCATION OF MOUNT SALT WELL No. ONE			
R. HARE & ASSOCIATES		SCALE VERTICAL 1000 feet to an inch HORIZONTAL 4 miles to an inch	
Prepared: P. W. BOLLEN	REVISION	DRG. No. O.D./85 (Addition: L.W. Stach 27-3-63)	
Drawn: I.R.			
Date: 27. 3. 62.			

could have taken place through this upper part of the section. Below 5000 feet, however, the proportion of clay and shale increases in the sequence and impermeable beds of a few to several tens of feet in thickness become more frequent toward total depth, separating highly porous and permeable sands up to 100 feet or more in thickness. The impermeable beds appear to be thick enough to be continuous over wide areas and, in this case, they could act as a seal to vertical migration of hydrocarbons from underlying sands. The porosity and permeability of the sands are both generally high; porosities range generally from about 20% to 35%, and permeabilities from a few hundred up to 2000 millidarcys.

#### Contribution to Geological Concepts resulting from Drilling

The drilling of Mount Salt No. 1 Well has established that a very thick section of dominantly marine sediments of late Cretaceous age are present at depth in the central part of the Gambier Sunklands. Although wells drilled less than fifty miles to the north and north-west of Mount Salt No. 1 have reached Lower Cretaceous section at relatively shallow depths after passing through the Eocene Knight Group, the only Upper Cretaceous sediments previously known in the Gambier Sunklands of South Australia are possibly about 90 feet of section between the Knight Group and Lower Cretaceous in the Beachport well. Within a distance of 50 miles south-east from the Beachport well, the possible 90 feet of Upper Cretaceous sediments have increased to a thickness of nearly 7000 feet, or more, and this same section has wedged out entirely within the distance of 45 miles northwards to the Penola well.

The correlation of the Upper Cretaceous section in the Mount Salt No. 1 Well with the stratigraphic units of the Upper Cretaceous section recognized in the Otway Basin and south-west Victoria is not yet clear, and either more detailed palaeontological study or the drilling of more deep wells will be necessary, before a precise correlation can be made. At this stage the alternatives appear to be that Mount Salt No. 1 was (i) still in equivalents of the Paaratte Formation at total depth, or (ii) in equivalents of the Belfast Mudstone at total depth, or (iii) in equivalents of the upper part of the Waarre Formation at total depth. Whichever of these interpretations may be correct, it is very evident that a substantially thicker section of dominantly marine Upper Cretaceous sediments is present in this part of the Gambier Sunklands than has been found to date farther eastwards in the Otway Basin.

The thickness of the Knight Group in the Mount Salt No. 1 Well (about 2670 feet) was found to be comparable to that in the Nelson bore (3510 feet), located about 20 miles to the east, rather than to the lesser thicknesses proved in wells farther to the north and north-west (Penola, 740 feet; Beachport, 920 feet; Robe, 580 feet).

#### REFERENCES

- |   |       |  |
|---|-------|--|
| BUREAU OF MINERAL<br>RESOURCES, GEOLOGY<br>AND GEOPHYSICS, (Ed.), | 1965: | Summary of data and results Flaxmans No. 1 Well, Otway Basin, Victoria, of Frome-Broken Hill Company Pty Ltd. <u>Bur. Min. Resour. Aust. Petrol. Search Subs. Acts Publ.</u> 62. |
| LUDBROOK, N.H.,   | 1961: | Stratigraphy of the Murray Basin in South Australia. <u>Geol. Surv. S. Aust. Bull.</u> 36.   |
| O'DRISCOLL, E.P.D.,   | 1960: | The hydrology of the Murray Basin Province in South Australia. <u>Geol. Surv. S. Aust. Bull.</u> 35.   |

### REFERENCES (Cont'd)

- OIL DEVELOPMENT N.L., 1962: Completion report for Oil Development N.L., on Mount Salt structure drilling project (Unpubl.).
- OIL DEVELOPMENT N.L., 1963: O.D.N.L. Penola No. 1 Well, South Australia. Bur. Min. Resour. Aust. Petrol. Search Subs. Acts Publ. 42.
- SOUTH EAST OIL SYNDICATE LTD, 1962: Completion report for South East Oil Syndicate Ltd, on Beachport No. 1 Well (Unpubl.).
- SPRIGG, R.C., 1962: Oil and gas prospects of the Gambier - Portland Basin. A.P.E.A. Conf. Pap. 57-70.
- SPRIGG, R.C., AND BOUTAKOFF, N., 1953: Summary report on the petroleum possibilities of the Gambier Sunklands. S. Aust. Min. Rev. 95, 41-57.

### ADDITIONAL DATA FILED IN THE BUREAU OF MINERAL RESOURCES

The following additional data relating to Mount Salt No. 1, have been filed in the Bureau of Mineral Resources, Canberra, and are available for reference:

- (i) Well Completion Report, by J. Cundill and L.W. Stach 18 pp.
- Appendix 1 : Petrological report, by J. Cundill 12 pp.
- Appendix 2a : Palaeontological report, by N.H. Ludbrook 11 pp.
- Appendix 2b : Palynological report, by P.R. Evans 4 pp.
- Appendix 3 : Water analysis, by T.R. Frost 1 p.
- Appendix 4 : Core analyses, by BMR. 2 pp.
- Appendix 5 : Interpretation of logs, by G. Guigues 2 pp.
- Appendix 6 : Report on Drillstem Test No. 1. 1 p.
- (ii) Daily drilling reports for period 9th May, 1962 to 23rd September, 1962.
- (iii) Well logs including the following :
- (a) Electrical Log
- Run 1, 555 - 5172 feet (2", 5" = 100 ft)
- Run 2, 5174 - 7098 feet (2", 5" = 100 ft)
- Run 3, 6920 - 8560 feet (2", 5" = 100 ft)
- Run 4, 8400 - 9206 feet (2", 5" = 100 ft)
- Run 5, 9100 - 10036 feet (2", 5" = 100 ft)

(b) Microlog and Caliper Log

Run 1, 555 - 5190 feet (2", 5" = 100 ft)

Run 2, 5174 - 7098 feet (2", 5" = 100 ft)

Run 3, 7000 - 8560 feet (2", 5" = 100 ft)

Run 4, 8400 - 9206 feet (2", 5" = 100 ft)

Run 5, 9100 - 10036 feet (2", 5" = 100 ft)

(c) Section Gauge Log

Run 1, 40 - 553 feet (2", 5" = 100 ft)

(d) Continuous Dipmeter

Run 1, 5174 - 9885 feet (1.2" = 100 ft)

(e) Temperature Log

Runs 1-4, 0 - 552 feet (1", 5" = 100 ft)

(f) Drilling Time and Gas Log.

# COMPOSITE WELL LOG

COMPANY: OIL DEVELOPMENT N.L.  
WELL NUMBER: O.D.N.L. MOUNT SALT WELL No.1

PETROLEUM TENEMENT: OIL EXPLORATION LICENCE No.22/1

STATE: SOUTH AUSTRALIA

4-MILE SHEET: PENOLA

BASIN: GAMBIER SUNKLANDS  
(MURRAY OR OTWAY BASIN)

WELL STATUS: ABANDONED

LOCATION: 749' along true bearing 131°16' from NW corner of Allotment 783, Hundred of Macdonnell, County Grey South Australia. Latitude 37° 57' 25"S, Longitude 140° 37' 43"E  
ELEVATION: Ground Level — 70.07' above mean low tide Port Adelaide  
Kelly Bushing — 86.07' above mean low tide Port Adelaide

Date Spudded: 9 May, 1962  
Date Drilling Stopped: 21 September, 1962  
Date Rig Off: 1 October, 1962

Total Depth: Driller: 10,044'  
E-Log: 10,037'

Hole Size: Diameter From To  
22" 0' 44'  
17 1/2" 44' 575'  
12 1/2" 575' 5185'  
8 3/4" 5185' 10044'

Casing: O.D. Wt. Grade Depth Cement Cmt'd to Surface  
18 3/4" Conductor 44'  
13 3/8" 48 lb/ft H-40 558' 1260 sacks up to 150' and from surface to 44'  
9 5/8" 36 lb/ft J-55 5174' 525 sacks 4084'

Cement Plugs: From To Sacks  
1. (Failed) 40  
2. 9892' 9992' 40  
3. 9435' 9540' 44  
4. 5070' 5170' 40  
5. 11' 23' 5

Well Head Fitting: Welded steel plate on 5' riser  
Drilled by: Reading & Bates (Australia) Pty. Ltd.  
Logged by: Schlumberger Seaco Inc.  
Drilling Method: Surface hole (0-44') Percussion Rig  
Remainder of hole: Rotary, National-50 Rig  
Cemented by: Reading & Bates (Australia) Pty. Ltd.  
Plugs: (For Testing and abandonment) Halliburton Co

ELECTRIC LOG DATA										MICROLOG CALIPER DATA					SECTION GAUGE	TEMPERATURE SURVEYS			CONTINUOUS DIPMETER SURVEY	
RUN NUMBER	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	RUN NUMBER	1-3	4	RUN NUMBER	1
Date	19.6.62	10.7.62	31.7.62	27.8.62	9.9.62	19.6.62	10.7.62	31.7.62	27.8.62	9.9.62	15.5.62	16.5.62	17.5.62	18.5.62	19.5.62	Date	16.5.62	17.5.62	Date	15.9.62
First Reading	5172'	7098'	8560'	9206'	10036'	5190'	7098'	8560'	9206'	10036'	555'	7098'	8560'	9206'	10036'	First Reading	552'	552'	Total Depth—Schlumb.	9888'
Last Reading	555'	5174'	6920'	8400'	9100'	555'	5174'	7000'	8400'	9100'	40'	40'	40'	40'	40'	Last Reading	0'	0'	" — Driller	9892'
Interval Measured	4617'	1924'	1640'	808'	936'	4635'	1924'	1560'	808'	936'	513'	513'	513'	513'	513'	Footage Measured	552x3	552'	" — Reached	9885'
Casing—Schlumberger	555'	5174'	5174'	5174'	5174'	555'	5174'	5174'	5174'	5174'	5174'	5174'	5174'	5174'	5174'	Depth Reached	554'	554'	Mud Nature	Bent.
Casing—Driller	558'	5142'	5142'	5142'	5142'	558'	5142'	5142'	5142'	5142'	5142'	5142'	5142'	5142'	5142'	Bottom — Driller	554'	554'	Density lb/g	10-3
Depth Reached	5173'	7099'	8561'	9207'	10037'	5192'	7099'	8561'	9207'	10037'	556'	7099'	8561'	9207'	10037'	Mud Nature	Bent	Water	Viscosity, Marsh	230
Bottom Driller	5203'	7096'	8565'	9211'	10044'	5203'	7096'	8565'	9211'	10044'	575'	7096'	8565'	9211'	10044'	Fluid Level	Full	Full	Resistivity	1.74, 66°F
Mud Nature	Bent	Bent	Bent	Bent	Bent	Bent	Bent	Bent	Bent	Bent	Bent	Bent	Bent	Bent	Bent	Max. Temp.	69°F	83°F	B.H.T.	164°F
Density lb/g	10.5	10.4	10.6	9.6	10.3	10.5	10.4	10.6	9.6	10.3	No circulation	Cementation Date	15.5.62	16.5.62	17.5.62	Water Loss, 30min	3-6 cc	20007 hr		
Viscosity(Marsh)	181	85	104	95	230	181	85	104	95	230	"	"	"	"	"	Time Started	18:30	18:30	Logging Speed	20007 hr
Resistivity	240, 66°F	160, 70°F	148, 80°F	121, 82°F	174, 66°F	210, 66°F	160, 70°F	148, 80°F	121, 82°F	174, 66°F	"	"	"	"	"	Time Finished	19:00	19:00	First Reading	9883'
Resistivity BHT	150, 116°F	90, 126°F	166, 145°F	165, 156°F	175, 164°F	150, 116°F	90, 126°F	166, 145°F	165, 156°F	175, 164°F	"	"	"	"	"	Sacks Cement	600	600	Last Reading	5174'
pH	9.5	9.5	9.6	9.8	9.0	9.5	9.5	9.6	9.8	9.0	"	"	"	"	"	Calculated Top	—	150'	Feet Measured	4711'
Fluid Loss, 30min	52 cc	62 cc	49 cc	4-0 cc	3-6 cc	52 cc	62 cc	49 cc	4-0 cc	3-6 cc	"	"	"	"	"	Recorded by	G. Guigues	Recorded by	G. Guigues	
Origin of sample	Circ.	Circ.	Circ.	Circ.	Circ.	Circ.	Circ.	Circ.	Circ.	Circ.	"	"	"	"	"			Computer	Ed. Ba	
Rmt	180, 66°F	170, 55°F	140, 66°F	180, 80°F	180, 66°F	180, 66°F	170, 55°F	140, 66°F	180, 80°F	180, 66°F	"	"	"	"	"			Mag. Declination	11° East	
Rmc	260, 68°F	240, 55°F	—	156, 66°F	—	260, 68°F	240, 55°F	—	156, 66°F	—	"	"	"	"	"			Levels	1-55	
Recorded by	G. Guigues for all runs					G. Guigues for all runs					G. Guigues									

## LITHOLOGIC LEGEND

	Quartz pebbles		Carbonaceous
	Sand, sandstone		Cherty
	Silt, siltstone		Feldspathic
	Clay, shale		Glaucouitic *
	Marl		Micaceous
	Limestone		Pyritic
	Limestone with sponge spicules		Molluscan fossils
	Coal		

## WELL SYMBOLS

	Core interval
	No. % age recovery
	Cement plug
	Cement rise
	Casing diameter
	Casing shoe

## OIL DEVELOPMENT N.L.

O.D.N.L. MOUNT SALT WELL No.1

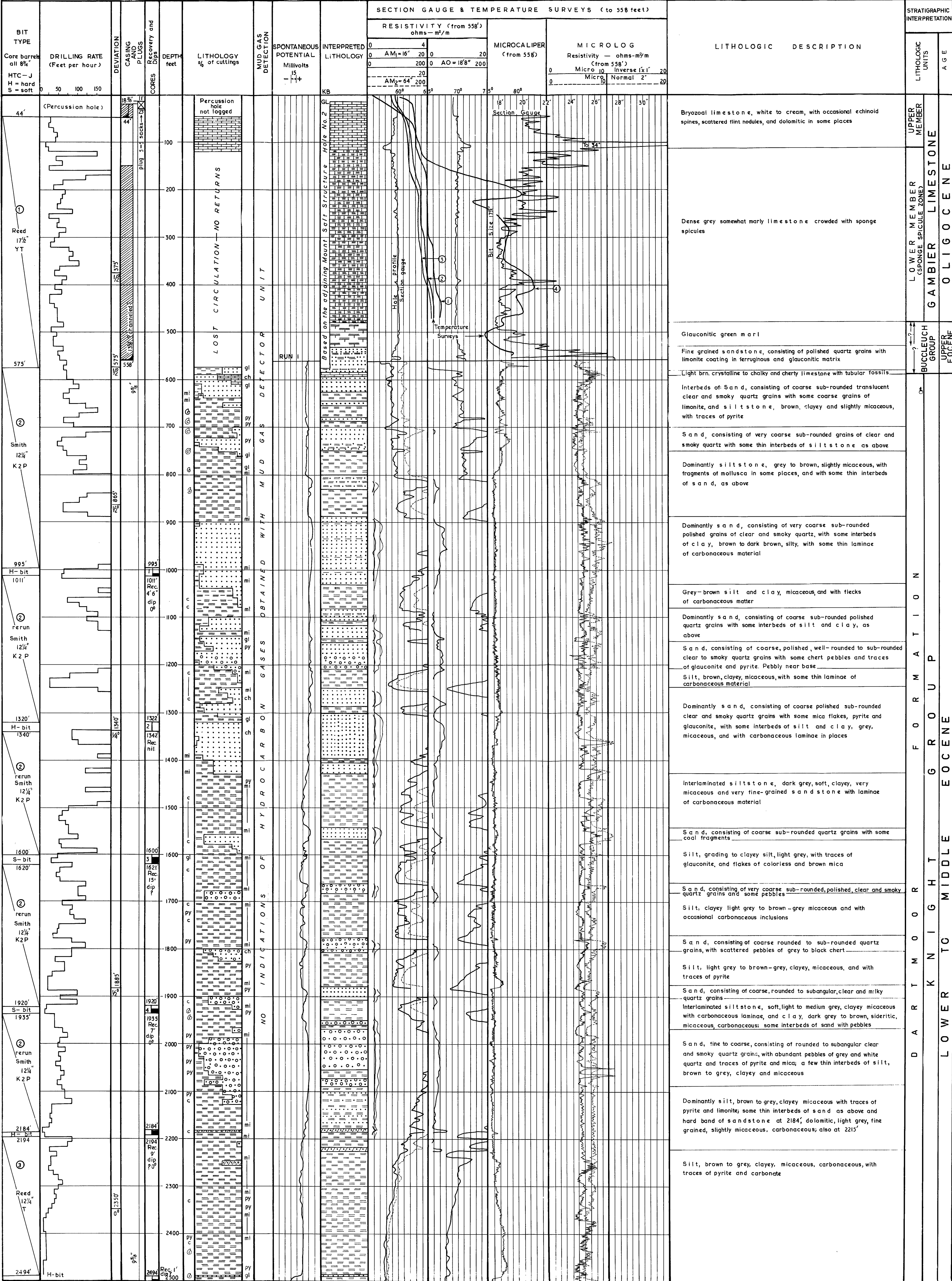
## COMPOSITE WELL LOG

0 — 2500'

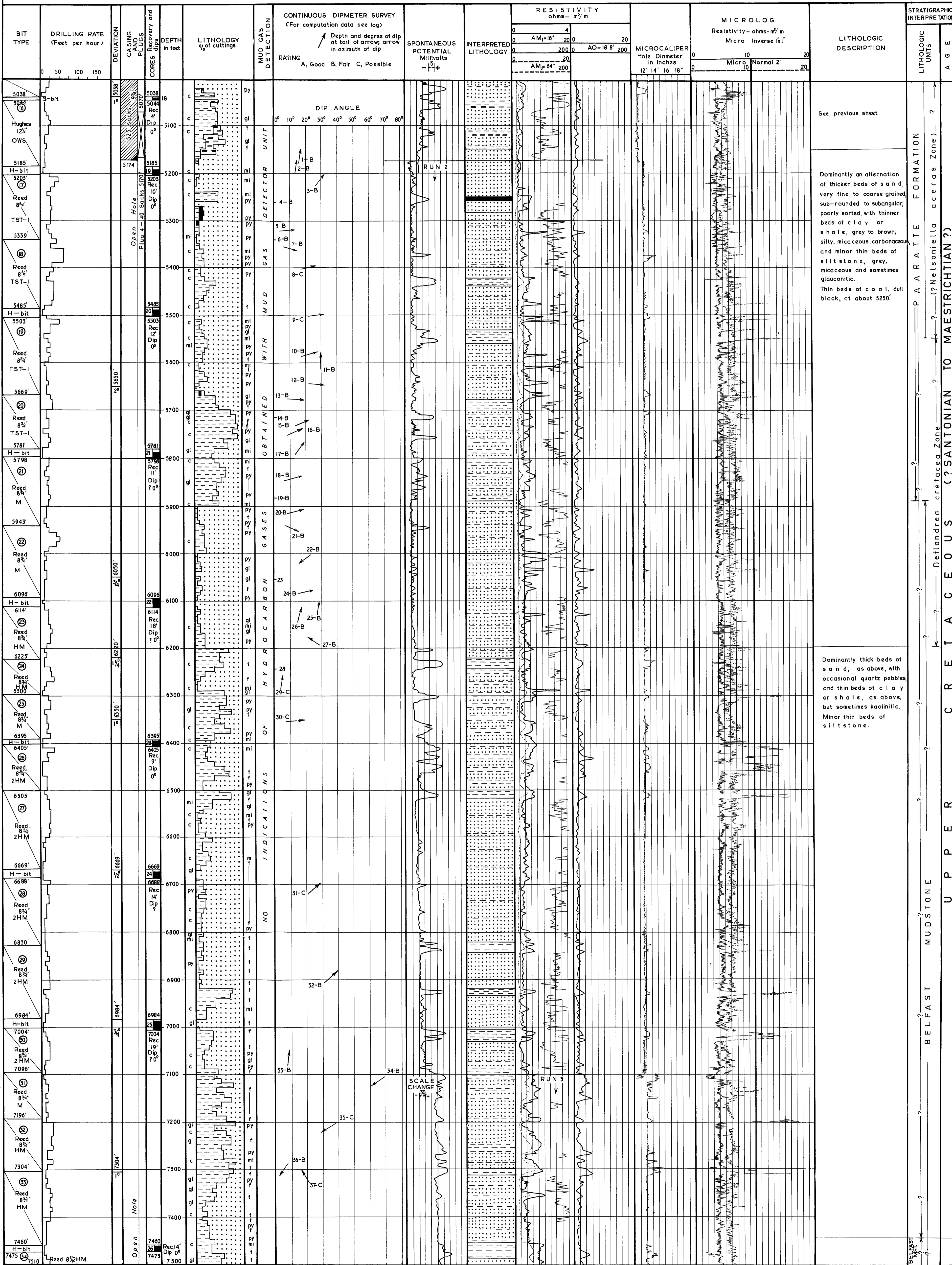
SHEET 1 OF 4

Prepared: L.W. STACH	REVISION	Vertical Scale: 1 inch = 100 feet
Drawn: I. Rade		DRG. No. O.D./125
Date: 11.2.65.		

Drafting by: R. HARE & ASSOCIATES



[illegible]

COMPOSITE WELL LOG  
O.D.N.L. MOUNT SALT WELL No. 15000 — 7500'  
SHEET 3 OF 4  
DRG. No. O.D./25PLATE 1  
SHEET 3

[illegible]