

OPEN FILE

MAGELLAN PETROLEUM (N.T.) PTY. LTD.

NORTHWEST MEREENIE NO. 1

NORTHERN TERRITORY

FINAL WELL REPORT

by

R.A. Magee

PR 69/18A WELL FILE - CLOSED

Magellan Petroleum (N.T.) Pty. Ltd.

July 1, 1970

PR 69/18 B

CONTENTS

	<u>Page</u>	<u>Sect.</u>
<u>SUMMARY</u>	1 - 2	2
DRILLING	1	2
GEOLOGICAL	2	2
<u>INTRODUCTION</u>	3	2
<u>WELL HISTORY</u>	3 - 9	2-8
GENERAL DATA	3	2
DRILLING DATA	4 - 7	3
FORMATION SAMPLING	7 - 8	4
LOGGING & SURVEYS	8 - 9	5-7
TESTING	9	8
<u>GEOLOGY</u>	10 - 15	9-12
OBJECTIVES	10	9
CORRELATIONS	10	9
STRATIGRAPHY	11 - 12	10
POROSITY & PERMEABILITY	13 - 14	11
STRUCTURE	15	12
<u>REFERENCES</u>	16	13
<u>APPENDIX 1:</u> FLUID ANALYSES & GAS DETECTION OPERATIONS		14
<u>APPENDIX 2:</u> WIRELINE LOGS		15
<u>APPENDIX 3:</u> DRILLSTEM TESTS		16

ENCLOSURES

	Sect.
1. NORTHWEST MEREENIE NO.1 STRUCTURE MAP	1
2. COMPOSITE WELL LOG	17
3. NORTHWEST MEREENIE NO.1 SAMPLE LOG	18
4. NORTHWEST MEREENIE NO.1 TO WEST MEREENIE NO.1 STRATIGRAPHIC SECTION	19
5. WIRELINE LOGS	
- Acoustic Velocity Log Run 1 Scale 2"	20-21
- Acoustic Velocity Log Run 1 Scale 5"	
- Induction Electric Log Run 1 Scale 2"	
- Induction Electric Log Run 1 Scale 5"	

SUMMARY

DRILLING

Northwest Mereenie No.1 located approximately 160 miles west-south-west of Alice Springs, Northern Territory, was spudded on July 11, 1969. The hole was drilled to a total depth of 5,000 feet with a National 100 rig. Air and mist were used as drilling fluid.

Hole and casing sizes are as follows:

<u>Hole Size</u>	<u>Depth</u>	<u>Casing Size</u>	<u>Depth</u>
26"	34'	20" (Conductor)	34'
17-1/2"	245'	13-3/8" (Casing)	245'
12-1/4"	1,972'	9-5/8" (Casing)	1,963'
8-3/4"	5,000'	---	---

Drilling new hole, cement and reaming required 13 bits. There were no cores cut and no fishing jobs. The hole was surveyed with Induction-Electric and Caliper-Gamma Ray-Acoustic Velocity. Two drillstem tests were run in the Pacoota formation for pressure data. The first was a misrun. The second was a successful test.

Northwest Mereenie No.1 was plugged and abandoned on August 7, 1969.

GEOLOGICAL

Northwest Mereenie No.1 is located approximately 4.7 miles northwest of West Mereenie No.1 which was completed as a gas producer in the Pacoota formation. Northwest Mereenie No.1 was a long step-out designed to test the Stairway and Pacoota formations on the western nose of the Mereenie Anticline.

Lithologic units penetrated at Northwest Mereenie No.1 are: the Mereenie sandstone (surface) (Silurian?-Devonian), Stokes siltstone (1,750'), Stairway sandstone (2,943'), Horn Valley siltstone (3,844'), and Pacoota sandstone (4,210') of the Larapinta Group (Cambrian-Ordovician).

All formations penetrated were slightly lower than anticipated and also generally slightly thicker than encountered at West Mereenie No.1. A stratigraphic section (Enclosure 4) using the Gamma Ray for both wells indicates that sandstones in the Pacoota formation tend to shale out or generally become dirtier in a westerly direction. Although the remaining sandstones at Northwest Mereenie No.1 were structurally high enough to be in the Mereenie gas and oil zone, they contained no significant hydrocarbons. The blooie line flared for thirty seconds when the hole was blown at 3,793' in the lower Stairway sandstone prior to drilling ahead with NB 10.

Salt water was recovered below 4,920 feet in the Pacoota (P₃).

Drilling was terminated at 5,000 feet in the Pacoota (P₃).

INTRODUCTION

Northwest Mereenie No.1 was drilled by Magellan Petroleum (N.T.) Pty. Ltd. to test primarily the Pacoota formation at a 4.7 mile northwest step-out location to the Mereenie field.

Operations were conducted by Mr. L.G.G. Pearce, Wellsite Geologist, and Mr. L.Z. Anderson, Drilling Superintendent, under the supervision of Mr. R.A. Magee, Division Manager.

WELL HISTORY

GENERAL DATA:

Name - Northwest Mereenie No.1

Operator - Magellan Petroleum (N.T.) Pty. Ltd., Seventh Floor, Alexandra Chambers, 201 Wickham Terrace, Brisbane, Queensland.

Tenement Holder - United Canso Oil & Gas Co. (N.T.) Pty. Ltd., Seventh Floor, Alexandra Chambers, 201 Wickham Terrace, Brisbane, Queensland.

Petroleum Tenement - Oil Permit No. 56

District - Mount Liebig, Northern Territory

Location - Latitude 23^o 53' 22" South
Longitude 131^o 22' 27" East

Elevation - Ground - 2,385' above sea level
Kelly Bushing Datum - 2,402' above sea level

Total Depth - 5,000 feet

Drilling Commenced - July 11, 1969

Total Depth Reached - August 4, 1969

Rig Released - August 7, 1969

Drilling Time to Total Depth - 25 days

Status - Abandoned with tops of the cement plugs at 4,044', 1,835' and surface. Welded steel plate with valve on top of 9⁵/₈" casing and erected permanent marker.

Total Cost - \$218,683

DRILLING DATA:

Drilling Contractor - Oil Drilling and Exploration
(N.T.) Pty. Ltd., 37 York Street, Sydney, New South Wales.

Drilling Plant - National Ideal Type 100, rated
capacity 14,000 feet with 4-1/2 inch drillpipe. Motors -
3 Paxman, Model 12, Series 1, 500 H.P.

Mast - Ideco FM 136-450 Full View, 700,000 lbs. capacity

Pumps and Compressors -

Mud Pumps - Two
Make - Gardner Denver
Type - GR-100
Size - 7-3/4" x 16"
Motors - Draw Works Compound
Air Compressors - Three
Make - Ingersoll Rand
Type - H.H.E.
Size - Two 1500 cfm primaries and
one 1500 psi booster.
Motors - Waukesha, 400 H.P.

Blowout Preventors - Schaffer Rotating B.O.P.,
Schaffer Model 50-900 (3,000 psi), Schaffer Model LWS-1500,
(5,000 psi), and Hydril Model GR-1500 (5,000 psi).

Hole Sizes and Depths -

<u>Diameter</u>	<u>Depth</u>
26"	34'
17-12/16"	245'
12-1/4"	1,972'
8-3/4"	5,000'

Casing, Liner and Cementing Details -

	<u>Conductor</u>	<u>Surface</u>	<u>Intermediate</u>
Size (inches)	20	13-3/8	9-5/8
Weight (lbs/ft)	-	48	36
Grade	-	H40	J55
Range	-	2	2
Setting Depth (ft)	34	245	1963
Shoe Type	None	Guide	Guide
Shoe Depth (ft)	-	244	1962
Collar Type	None	Float	Float
Collar Depth (ft)	-	215	1936
Stage Tool Type	None	None	None
Stage Tool Depth (ft)	-	-	-
Centralizer Depths (ft)	None	234, 136	1952, 1900, 1773
Scratchers	None	None	None
Cement Used (sacks)	15	329	350
Top of Shoe Cement (ft)	Surface	Surface	1026
Top of Stage Cement (ft)	-	-	-
Cementing Method	No Plugs	Single Plug	Two Plugs

Plug No.1 - Displaced 70 sacks of Class 'E' cement with mud through open end drillpipe at 4,200'. Waited on cement 8-1/2 hours and checked with 20,000 lbs. drill string weight. Top of plug at 4,044' - held satisfactorily.

Plug No.2 - Displaced 113 sacks of Class 'E' cement with mud through open end drillpipe at 2,063'. Waited on cement 10-1/2 hours and checked with 20,000 lbs. drill string weight. Top of plug at 2,098'. Plug had slipped and did not run across 9-5/8" casing shoe.

Plug No.3 - Displaced 113 sacks of Class 'E' cement with mud through open end drillpipe at 2,098'. Waited on cement 6-1/2 hours and checked with 20,000 lbs. drill string weight. Top of plug at 1,835' - held satisfactorily.

Plug No.4 - Displaced 45 sacks of Class 'E' cement with mud through open end drillpipe at 100'. Top of cement at surface. Welded steel plate with valve on top of 9-5/8" casing and erected well marker.

Fishing Operations - None

Side-Tracked Hole - None

Drilling Observations - Water was encountered in the Mereenie sandstone as expected and the drilling fluid was changed from air to mist. Air drilling was resumed after the 9-5/8" casing was set in the Stokes siltstone.

At 2,980' while drilling in the upper Stairway sandstone the hole became damp and it was necessary to revert to mist drilling from 3,015' to total depth.

Gas flows anticipated in the lower Stairway and upper Pacoota were not present.

A total of twelve bits were used in making new hole as follows: one 26", one 17-1/2", three 12-1/4" and seven 8-3/4". The combination of air or mist and generally button bits resulted in a very satisfactory penetration rate of 16 feet per hour.

FORMATION SAMPLING:

Ditch Cuttings - While air and mist drilling a specially designed trap in the bloopie line was used to catch cuttings. Samples were lagged when there was significant delay in circulating cuttings to the surface.

An attempt was made to sample each ten feet of hole. Samples were not obtained over the following intervals: surface - 245' (13-3/8" casing depth), 245' - 280', 400' - 410', 420' - 470', 520' - 540', 550' - 570', 650' - 660', 860' - 890', 1,670' - 1,680', 1,890' - 1,900', 1,910' - 1,920', 2,980' - 2,990', 3,160' - 3,170', 3,720' - 3,730'.

One set of samples has been given to the Resident Geologist in Alice Springs, Northern Territory and three sets are stored in the Operator's Alice Springs warehouse.

At 2,980' while drilling in the upper Stairway sandstone the hole became damp and it was necessary to revert to mist drilling from 3,015' to total depth.

Gas flows anticipated in the lower Stairway and upper Pacoota were not present.

A total of twelve bits were used in making new hole as follows: one 26", one 17-1/2", three 12-1/4" and seven 8-3/4". The combination of air or mist and generally button bits resulted in a very satisfactory penetration rate of 16 feet per hour.

FORMATION SAMPLING:

Ditch Cuttings - While air and mist drilling a specially designed trap in the blowie line was used to catch cuttings. Samples were lagged when there was significant delay in circulating cuttings to the surface.

An attempt was made to sample each ten feet of hole. Samples were not obtained over the following intervals: surface - 245' (13-3/8" casing depth), 245' - 280', 400' - 410', 420' - 470', 520' - 540', 550' - 570', 650' - 660', 860' - 890', 1,670' - 1,680', 1,890' - 1,900', 1,910' - 1,920', 2,980' - 2,990', 3,160' - 3,170', 3,720' - 3,730'.

One set of samples has been given to the Resident Geologist in Alice Springs, Northern Territory and three sets are stored in the Operator's Alice Springs warehouse.

Coring - The coring program was designed to core only on hydrocarbon shows at the discretion of the Wellsite Geologist. No outstanding hydrocarbon show was encountered while drilling and consequently no cores were cut.

Side-wall Sampling - No side-wall sampling was attempted.

Fluid Sampling - Water encountered at 199', 475' and 2,980' was not sampled. Salt water found below 4,920' was sampled while drilling and by D.S.T. No.2.

LOGGING AND SURVEYS:

Wireline Logging - Welex wireline logs were run at total depth. Log types and total intervals logged are as follows:

Induction-Electric	1,961' - 4,998'
Caliper-Gamma Ray* - Acoustic Velocity	1,961' - 4,998'

* Gamma Ray also 1,961' to surface through 9-5/8" casing.

Log Scales: 2" = 100' and 5" = 100'

Penetration Rate and Gas Logs - Rates of penetration as recorded by the geolograph are presented in the Composite Log (Enclosure 2) that accompanies this report.

Data on gas detection is presented in Appendix 1.

Coring - The coring program was designed to core only on hydrocarbon shows at the discretion of the Wellsite Geologist. No outstanding hydrocarbon show was encountered while drilling and consequently no cores were cut.

Side-wall Sampling - No side-wall sampling was attempted.

Fluid Sampling - Water encountered at 199', 475' and 2,980' was not sampled. Salt water found below 4,920' was sampled while drilling and by D.S.T. No.2.

LOGGING AND SURVEYS:

Wireline Logging - Welex wireline logs were run at total depth. Log types and total intervals logged are as follows:

Induction-Electric	1,961' - 4,998'
Caliper-Gamma Ray* - Acoustic Velocity	1,961' - 4,998'

*Gamma Ray also 1,961' to surface through 9-5/8" casing.

Log Scales: 2" = 100' and 5" = 100'

Penetration Rate and Gas Logs - Rates of penetration as recorded by the geolograph are presented in the Composite Log (Enclosure 2) that accompanies this report.

Data on gas detection is presented in Appendix 1.

Deviation Surveys - Periodic surveys of hole

deviation were made while drilling as follows:-

<u>Depth</u> <u>(feet)</u>	<u>Deviation</u> <u>(degrees)</u>	<u>Depth</u> <u>(feet)</u>	<u>Deviation</u> <u>(degrees)</u>
140	3/4-	2,796	1+
227	3/4-	3,101	1-1/4
455	3/4	3,612	2
575	3/4	3,793	2+
816	3/4	4,109	3
1,147	1/4	4,440	4-
1,658	1/4	4,621	3-3/4
1,972	1	4,981	3-3/4
2,272	1-		

Temperature Surveys - The only hole temperature recorded was 137° F at 4,950' when Welex ran wireline logs.

TESTING:

Formation Testing - Two drillstem tests were run to check the fluid content and pressures of salt water sandstones below 4,912 feet.

<u>DST</u> <u>No.</u>	<u>Interval</u>	<u>Recovery</u>	<u>Remarks</u>
1	4,855' - 5,000'	65' mud	Misrun. Packer failed to seat.
2	4,771' - 5,000'	3,060' muddy water	Moderate blow after opening tool on IF. Blow remained good throughout flow periods.

See Appendix 3 for test data and charts.

Production Testing - Nil

Deviation Surveys - Periodic surveys of hole

deviation were made while drilling as follows:-

<u>Depth</u> <u>(feet)</u>	<u>Deviation</u> <u>(degrees)</u>	<u>Depth</u> <u>(feet)</u>	<u>Deviation</u> <u>(degrees)</u>
140	3/4-	2,796	1+
227	3/4-	3,101	1-1/4
455	3/4	3,612	2
575	3/4	3,793	2+
816	3/4	4,109	3
1,147	1/4	4,440	4-
1,658	1/4	4,621	3-3/4
1,972	1	4,981	3-3/4
2,272	1-		

Temperature Surveys - The only hole temperature recorded was 137^oF at 4,950' when Welex ran wireline logs.

TESTING:

Formation Testing - Two drillstem tests were run to check the fluid content and pressures of salt water sandstones below 4,912 feet.

<u>DST</u> <u>No.</u>	<u>Interval</u>	<u>Recovery</u>	<u>Remarks</u>
1	4,855' - 5,000'	65' mud	Misrun. Packer failed to seat.
2	4,771' - 5,000'	3,060' muddy water	Moderate blow after opening tool on IF. Blow remained good throughout flow periods.

See Appendix 3 for test data and charts.

Production Testing - Nil

Deviation Surveys - Periodic surveys of hole

deviation were made while drilling as follows:-

<u>Depth</u> <u>(feet)</u>	<u>Deviation</u> <u>(degrees)</u>	<u>Depth</u> <u>(feet)</u>	<u>Deviation</u> <u>(degrees)</u>
140	3/4-	2,796	1+
227	3/4-	3,101	1-1/4
455	3/4	3,612	2
575	3/4	3,793	2+
816	3/4	4,109	3
1,147	1/4	4,440	4-
1,658	1/4	4,621	3-3/4
1,972	1	4,981	3-3/4
2,272	1-		

Temperature Surveys - The only hole temperature recorded was 137° F at 4,950' when Welex ran wireline logs.

TESTING:

Formation Testing - Two drillstem tests were run to check the fluid content and pressures of salt water sandstones below 4,912 feet.

<u>DST</u> <u>No.</u>	<u>Interval</u>	<u>Recovery</u>	<u>Remarks</u>
1	4,855' - 5,000'	65' mud	Misrun. Packer failed to seat.
2	4,771' - 5,000'	3,060' muddy water	Moderate blow after opening tool on IF. Blow remained good throughout flow periods.

See Appendix 3 for test data and charts.

Production Testing - Nil

GEOLOGY

OBJECTIVES:

Northwest Mereenie No.1 was drilled firstly to obtain information on the size and geometry of the Mereenie hydrocarbon accumulation; and secondly, to obtain information on the fluid content and reservoir characteristics of the Stairway and Pacoota formations.

The absence of significant hydrocarbons in the Stairway and Pacoota and salt water below 4,920' in the Pacoota resulted in drilling being stopped at 5,000' in the Pacoota (P₃).

It was anticipated that this well would be within the Mereenie field thereby indicating structural closure on the western end of the Mereenie Anticline. Cuttings, log analysis, structural interpretation and the general lack of hydrocarbons would now suggest stratigraphic closure somewhere between West Mereenie No.1 and Northwest Mereenie No.1.

CORRELATIONS:

The closest well to Northwest Mereenie No.1 is West Mereenie No.1 located 4.7 miles to the southeast which was completed as a gas producer.

STRATIGRAPHIC TABLES

The following table shows the formations, ages, depths and thicknesses of units penetrated in Northwest Mereenie No.1 relative to KB and sea level.

<u>Age</u>	<u>Formation</u>	<u>Depth</u>	<u>Subsea Depth</u>	<u>Thickness</u>
Silurian? - Devonian	Mereenie	Surface	+2,385'	1,750'+
	<u>Larapinta Group</u>			
Ordovician	Stokes	1,750'	+ 652'	1,193'
Ordovician	Stairway	2,943'	- 541'	901'
Ordovician	Horn Valley	3,844'	-1,442'	366'
Cambrian- Ordovician	Pacoota (P ₁)	4,210'	-1,808'	288'
	(P ₂)	4,498'	-2,096'	230'
	(P ₃)	4,728'	-2,326'	272'+
	T.D.	5,000'	-2,598'	

Units penetrated at Northwest Mereenie No.1 are generally thicker than at West Mereenie No.1 which was anticipated. The following chart illustrates this westerly thickening.

	<u>Thickness at Northwest Mereenie No.1</u>	<u>Thickening in Feet</u>	<u>Thickness at West Mereenie No.1</u>	
Mereenie	1,750'+	321'	1,429'+	Mereenie
Stokes	1,193'	35'	1,158'	Stokes
Stairway	901'	49'	852'	Stairway
Horn Valley	366'	38'	328'	Horn Valley
Pacoota (P ₁)	288'	2'*	290'	Pacoota (P ₁)
(P ₂)	230'	20'	210'	(P ₂)
(P ₃)	272'+	-	257'	(P ₃)

* (P₁) thicker at West Mereenie No.1 by 2 feet.

The general lack of porosity and permeability in the Stairway and Pacoota sandstones at Northwest Mereenie No.1 was more severe than expected, although stratigraphic closure on the western end of the Mereenie Anticline had been suggested.

The top of the Pacoota at Northwest Mereenie No.1 is 512 feet structurally lower than at West Mereenie No.1. This reduces the thickness of upper Pacoota to 320 feet versus 832 feet at West Mereenie No.1 that could possibly contain gas if one assumes that the gas/oil contact for the Mereenie field is essentially horizontal at a subsea depth of -2,128'. (Gas/oil contact determined by Exoil at West Mereenie No.1) The oil zone at West Mereenie No.1 is in the better sands of the P_4 however the increased thickening and the westerly dip of the beds at Northwest Mereenie has placed most of the more desirable P_3 and definitely P_4 sandstones below any proven oil column in the Mereenie field. (This is based on a oil/water contact of -2,403' at East Mereenie No.2)

POROSITY & PERMEABILITY OF SEDIMENTS PENETRATED

Visual estimations of porosity were made microscopically from cuttings.

The hole became damp at 199' in the Mereenie sandstone indicating porosity. Samples were not recovered from surface to 280'. Water was again encountered at 475' however the first indication of porosity in cuttings is at 540' and from there to the base of the Mereenie (1,750') intergranular porosity estimated to a maximum of 12 percent is generally exhibited. The Mereenie was behind 9-5/8" casing on the only wireline logging run.

The Stokes siltstone and shale provides an impermeable barrier separating the fresh water sandstones in the Mereenie from the underlying Stairway sandstone. This was shown by successfully air drilling below the 9-5/8" casing through the Stokes and into the upper Stairway.

The Stairway sandstones are generally tight in samples and the wireline logs tend to confirm that there is little effective porosity except for the interval 3,110' to 3,122'. The hole did become damp at 2,980' and a change in the drilling fluid from air to mist was made at 3,015'.

The Horn Valley consists of predominantly shale with minor interbeds of limestone and dolomite. The carbonates exhibit no porosity in cuttings however the Acoustic Velocity log suggests some low porosity.

The sandstones of the Pacoota have intermittent very low intergranular porosity in cuttings. From the top of the Pacoota (4,210') to 4,912' the sandstones shown in the wireline logs appear to be either tight or have very low effective porosity. The sandstone interval 4,912' to 4,933' has low porosity however good permeability as indicated by the Caliper log and a salt water influx at 4,920'.

The stratigraphic section (Enclosure 4) demonstrates the general thinning and decreasing porosity and permeability of the Pacoota sandstones from West Mereenie No.1 to Northwest Mereenie No.1.

STRUCTURE

The western nose of the Mereenie Anticline plunges slightly more rapidly than anticipated in the well prognosis as shown in the following chart.

	<u>Actual Tops</u> <u>(Ref: KB)</u>	<u>Estimated</u> <u>Tops</u>
Mereenie	Surface	Surface
Stokes	1,750'	1,400'
Stairway	2,943'	2,700'
Horn Valley	3,844'	3,630'
Pacoota	4,210'	4,000'

The largest discrepancy was the Mereenie formation which is thicker than estimated and consequently the underlying Stokes formation was lower than anticipated. This trend of lower formation tops was true for all formations penetrated and Northwest Mereenie No.1 is therefore structurally lower than predicted.

The porosities at West Mereenie No.1 were lower than in the wells in the eastern part of the field and this westerly decline in porosity was also true at Northwest Mereenie No.1. This phenomenon is probably responsible for the lack of significant hydrocarbons at Northwest Mereenie No.1 and may be considered as evidence for stratigraphic closure on the western end of the Mereenie structure.

REFERENCES

Benbow, D.D., Lawson, W.
and Planalp, R.N.

Well Completion Report,
West Mereenie No.1 Well,
Exoil (N.T.) Pty. Ltd.,

Geophysical Assoc. Int.
Ltd., 1965

Missionary Plain Seismic
and Gravity Survey, Oil
Permits 43 and 56, N.T.,
for Magellan Petroleum
(N.T.) Pty. Ltd. (unpubl.)

Geophysical Assoc. Int.
Ltd., 1966.

Mt. Rennie - Ooraminne
Seismic Survey, Oil
Permits 43 and 56, N.T.,
for Magellan Petroleum
(N.T.) Pty. Ltd. (unpubl.)

Wells, A.T., Ranford, L.C.,
Cook, P.J., and Forman, D.J.,
1967.

The Geology of the
Amadeus Basin Central
Australia. Bur. Min.
Resources, Aust. Rec.92.

APPENDIX I

FLUID ANALYSES

and

GAS DETECTION OPERATIONS

OIL, GAS AND WATER ANALYSES

There were no oil shows. The blooie line flared for 30 seconds when the hole was blown at 3,793' prior to drilling ahead with NB 10. This small low pressure gas zone would appear to be in the interval 3,140' to 3,793' in the Stairway sandstone. The blooie line flared momentarily again under similar circumstances prior to drilling ahead with NB 11 and it is probably a safe assumption that the gas came from the same zone. No gas samples were collected.

Small amounts of water entered the hole at 199', 475' and 2,980' which necessitated changing the drilling fluid from air to mist on each occasion. Samples were not taken in the first two cases as the Mereenie is a known fresh water aquifer and there was insufficient influx at 2,980' in the Stairway formation for sampling.

While mist drilling at 4,920 feet there was an obvious increase in water discharged from the blooie line and samples were collected while drilling at 4,935' and 4,995'.

The recovery from D.S.T. No.2 (4,771' - 5,000') was 3,060' of muddy salt water.

Analyses from water samples collected at 4,935', 4,995' and from D.S.T. No.2 are enclosed.

GAS DETECTION OPERATIONS

A flare was maintained at the end of the blowie line from surface to total depth while drilling with air or mist for continuous open hole evaluation. The blowie line flared on two occasions. Evaluation would suggest that the gas flared was from a very low pressure, thin zone in the Stairway sandstone. No samples were collected.

A gas detector was on location to qualitatively evaluate any samples collected and for use in the event that the drilling fluid was changed to mud.



COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF NATIONAL DEVELOPMENT

BUREAU OF MINERAL RESOURCES GEOLOGY AND GEOPHYSICS

CNR. CONSTITUTION AVENUE AND ANZAC PARADE, CANBERRA

Postal Address: Box 378, P.O. Canberra City

Telephone: 49 9111 Telegrams: Buromin Telex: 62109

In reply please quote:

62/318

1 SEP 1969

Mr. R.A. MaGee,
Division Manager,
Magellan Petroleum (N.T.) Pty. Ltd.,
Box 413, P.O.,
ALICE SPRINGS. N.T. 5750

Dear Mr. MaGee,

I refer to your letter of August 11th 1969, requesting determination of physico - chemical characteristics of five fluid samples from North West Mereenie No. 1 well.

These determinations were carried out in our Petroleum Technology Laboratory and are tabulated below:

Recovery Interval	Samples taken from	pH	Rw @ 20°C (OHM-METERS)	Cl- (ppm)	NcCl (ppm)	Possible Contaminants
Probably water sandstone, just below 4900'	Blooie line	6.5	0.23	11,980	29,650	ADAFOAM
Ditto	Blooie line	6.5	0.20	21,010	34,700	ADAFOAM
DST No. 2 4,771'-5,000'	Top of 3,060' fluid column	7.0	0.22	16,980	28,000	Drilling mud
Ditto	Middle of 3,060' fluid column	7.0	0.19	19,050	31,400	"
Ditto	Bottom of 3060' fluid column	7.0	0.20	18,000	29,700	"

Yours faithfully,

(M.C.KONECKI)

Acting Chief Petroleum Technologist.

APPENDIX 2

WIRELINE LOGS

WIRELINE LOGS

Wireline logs were run at Northwest Mereenie No.1 at total depth. Logs recorded were as follows:

<u>Date</u>	<u>Log Type</u>	<u>Interval</u>
5/8/69	Induction-Electric	1,961' - 4,998'
	Caliper-Gamma Ray*-Acoustic Velocity	1,961' - 4,998'

* Gamma Ray also 1,961' to surface
through 9-5/8" casing.

Log Scales: 2" = 100' and 5" = 100'

APPENDIX 3

DRILLSTEM TESTS

Flow Time	1st Min.	2nd Min.	Date	Aug. 5, 1969		Ticket Number	T 457912	
Closed In Press. Time	1st Min.	2nd Min.	Kind of Job	OPEN HOLE DST.		Halliburton District	ALICE SPRINGS.	
Pressure Readings	Field		Office Corrected	Tester L.H. VAN BLADEL		Witness L. ANDERSON		
Depth Top Gauge	4046 Ft.		NO Blanked Off	Drilling Contractor OIL DRILLING & EXPLORATION				
BT. P.R.D. No.	1906		24 Hour Clock	Elevation 4855 ^{GROUND LEVEL} Backer		Top 4855.		
Initial Hydro Mud Pressure				Total Depth	5000		Bottom Packer	
Initial Closed in Pres.				Interval Tested	4855 - 5000		Formation Tested SAND.	
Initial Flow Pres.	1			Casing or Hole Size	8 3/4"		Casing Perfs. { Top Bot.	
Final Flow Pres.	2			Surface Choke	NO		Bottom Choke 1/2"	
Final Closed in Pres.	1			Size & Kind Drill Pipe	4 1/2" FH.		Drill Collars Above Tester 2 1/16" I.D. - LENGTH 356'	
Final Hydro Mud Pressure				Mud Weight	8.4		Mud Viscosity 38	
Depth Cen. Gauge	Ft.		Blanked Off	Temperature	137 °F Actual		Anchor Size & Length	ID 2 1/16" x 174. OD 5" x 6"
BT. P.R.D. No.			Hour Clock	Depths Mea. From	V.B.		Depth of Tester Valve 4840 Ft.	
Initial Hydro Mud Pres.				Cushion	Ft.		Depth Back Pres. Valve Ft.	
Initial Closed in Pres.				Recovered	65 Feet of		MUD.	
Initial Flow Pres.	1			Recovered	Feet of			
Final Flow Pres.	2			Recovered	Feet of			
Final Closed in Pres.	1			Recovered	Feet of			
Final Hydro Mud Pres.				Oil A.P.I. Gravity			Water Spec. Gravity	
Depth Bot. Gauge	5000 Ft.		YES Blanked Off	Gas Gravity			Surface Pressure psi	
BT. P.R.D. No.	1907		24 Hour Clock	Tool Opened	1.20. 1.26 PM		Tool Closed	1.26 AM. P.M.
Initial Hydro Mud Pres.				Remarks MISRUN, PALMER FAILED TO SEAT.				
Initial Closed in Pres.								
Initial Flow Pres.	1							
Final Flow Pres.	2							
Final Closed in Pres.	1							
Final Hydro Mud Pres.	2							

FORMATION TEST DATA

Legal Location Sec. - Twp. - Rng.

NORTH WEST MEREMINIA

1

1

Field Area MEREMINIA

W.P.N.P.C.

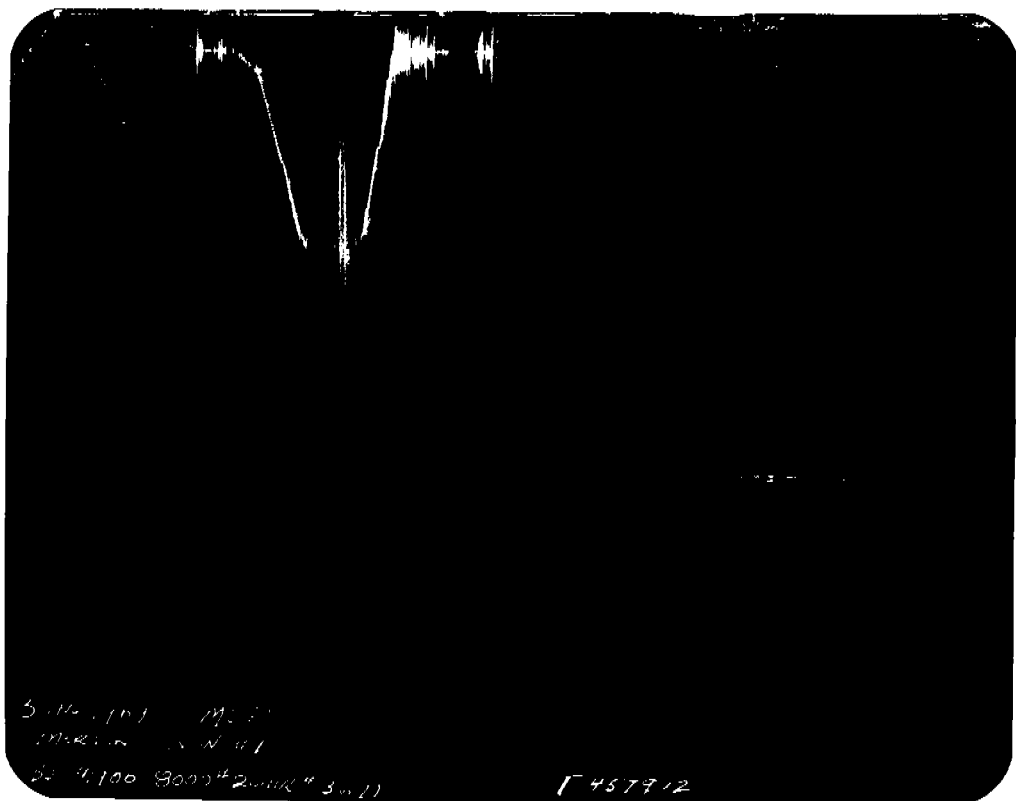
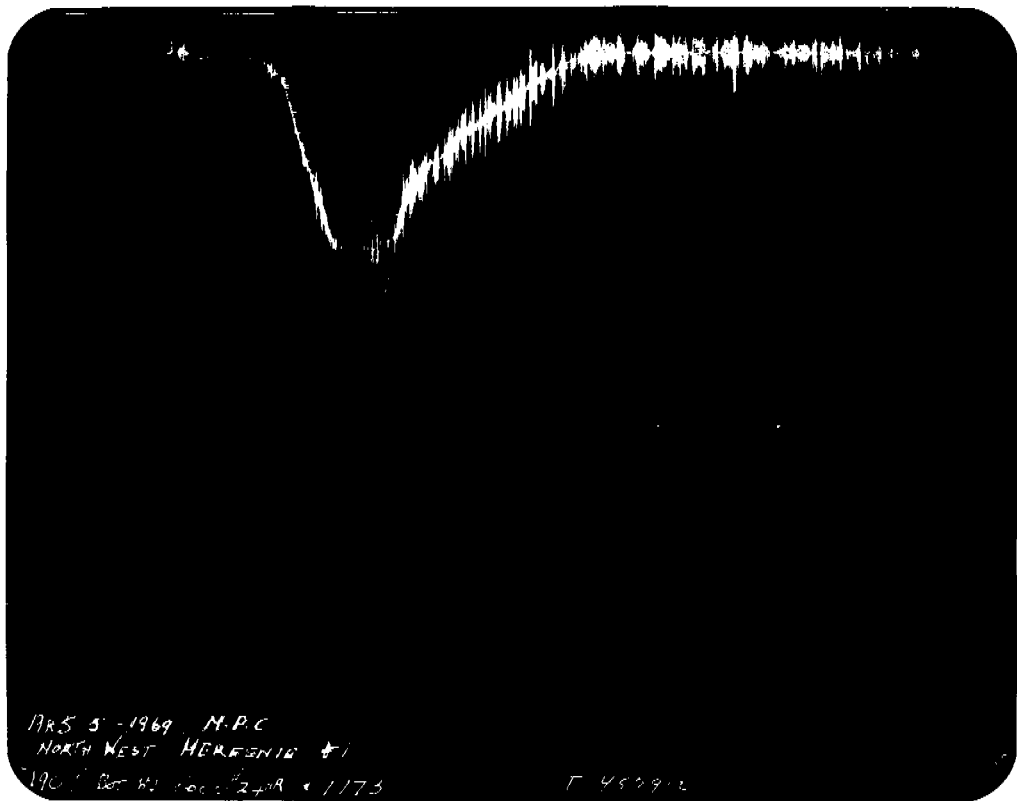
Lease Owner/Company Name

County

State

ALICE SPRINGS

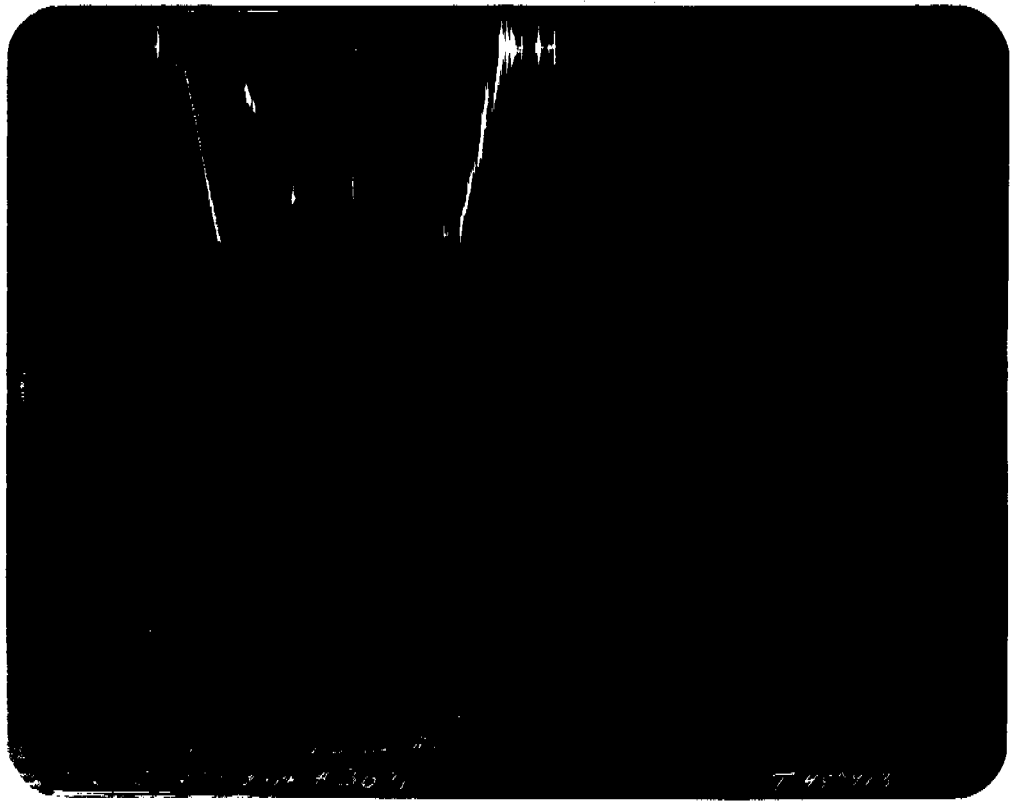
Owner's District



Flow Time	1st 15 Min.	2nd 90 Min.	Date	AUG 6 1969		Ticket Number	457913				
Closed In Press. Time	1st 60 Min.	2nd 150 Min.	Kind of Job	OPEN HOLE D.S.T.		Halliburton District	ALICE SPRINGS.				
Pressure Readings	Field		Office Corrected	Tester L.N. VAN BLADEL		Witness L. ANDERSON					
Depth Top Gauge	4760 Ft.		NO Blanked Off	Drilling Contractor OIL DRILLING + EXPLORATION.							
BT. P.R.D. No.	1906		24 3671 Hour Clock	Elevation	GROUND LEVEL		Top Packer	4771			
Initial Hydro Mud Pressure	2198			Total Depth	5000		Bottom Packer				
Initial Closed in Pres.	1890			Interval Tested	4771 - 5000		Formation Tested SAND.				
Initial Flow Pres.	529 1			Casing or Hole Size	8 3/4		Casing Perfs. Top Bot.				
Final Flow Pres.	1189 1			Surface Choke	NO		Bottom Choke 1/2"				
Final Closed in Pres.	1890			Size & Kind Drill Pipe	4 1/2" FH		Drill Collars Above Tester 2 1/4" I.D. - LENGTH 445'				
Final Hydro Mud Pressure	2198			Mud Weight	8.4		Mud Viscosity 38				
Depth Cen. Gauge	X		Blanked Off	Temperature	137 °F Est. °F Actual		Anchor Size & Length ID 2 1/4" x 229' OD 5" x 6"				
BT. P.R.D. No.					Depths Mea. From	KID.		Depth of Tester Valve		4756 Ft.	
Initial Hydro Mud Pres.					Cushion			Depth Back Pres. Valve		Ft.	
Initial Closed in Pres.					Recovered	3060 Feet of MUDDY WATER		Mea. From Tester Valve			
Initial Flow Pres.					Recovered	Feet of					
Final Flow Pres.					Recovered	Feet of					
Final Closed in Pres.					Recovered	Feet of					
Final Hydro Mud Pres.					Oil A.P.I. Gravity			Water Spec. Gravity			
Depth Bot. Gauge				5000 Ft.		YES Blanked Off	Gas Gravity			Surface Pressure psi	
BT. P.R.D. No.				1907		24 7773 Hour Clock	Tool Opened	7.15		Tool Closed	10.00
Initial Hydro Mud Pres.	2198			Remarks MODERATE BLOW AFTER OPENING.							
Initial Closed in Pres.	1890			BLOW REMAINED GOOD THROUGHOUT							
Initial Flow Pres.	529 1			FLOW PERIODS. RECORDED AT SURFACE GAUGE							
Final Flow Pres.	837 2			AFTER PERIODS OF FLOW. NO PRESSURE							
Final Closed in Pres.	991 1			RECORDED ON SURFACE GAUGE.							
Final Hydro Mud Pres.	1605 2			CLOCK # 7773 WAS RUNNING TOO FAST.							

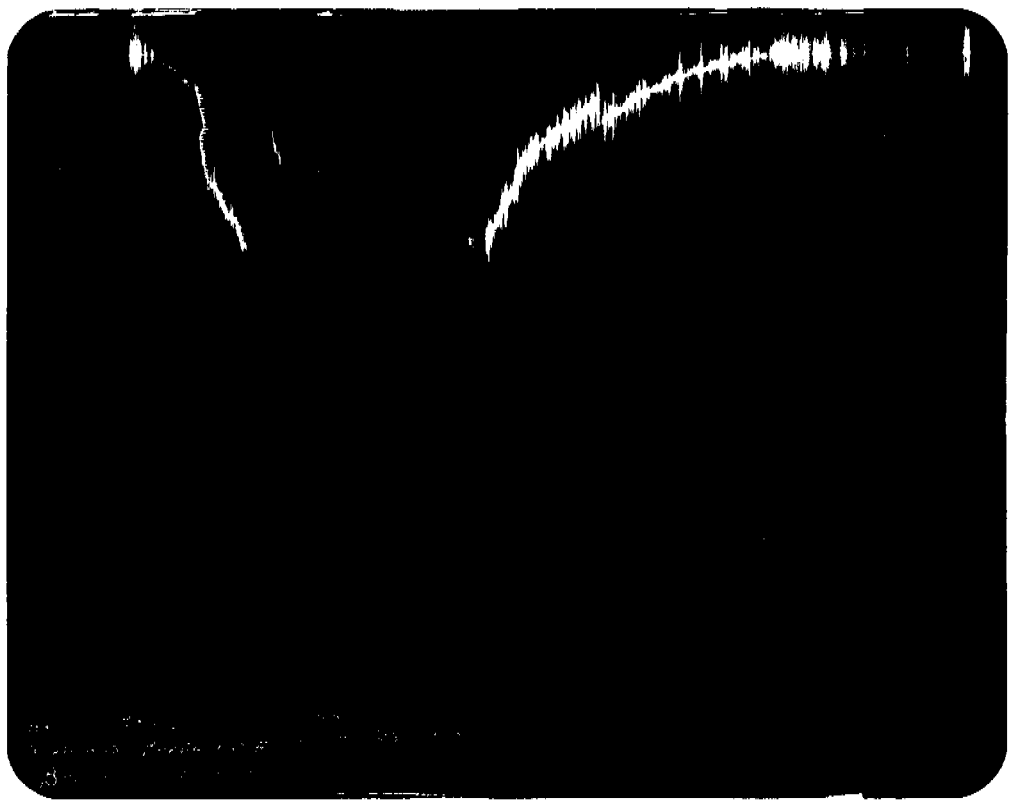
FORMATION TEST DATA

NORTH WEST HERRENIA
 Lease Name
 Well No. 41
 Test No. 2
 Field HERRENIA
 County
 Lease Owner/Company Name M.P.C.
 Owner's District ALICE SPRINGS



12-11-41
#307

T 452413



12-11-41
#307