

GEOLOGICAL PROGRAM

Our ref:
EJM/bf-74/158
3. May 1974

MOBIL (OPERATOR), AMOCO/SAGA GROUP, CONOCO, ESSO, SHELL,
33/12-2 (WILDCAT WELL)
NORWEGIAN OFFSHORE

STATENS OLJEDIREKTORA	
003119 * 6.MAI74	
Fordeles til	Saks-beh.
Saks-nr.	Sett

Location:

Licence No. 037 Block 33/12

Coordinates: 1° 51' 24" East

61° 13' 34" North

Shotpoint: 160 on Line MNG 30

2.64 km south of north boundary and

2.16 km east of west boundary of Block

Water Depth

475'

K.B. Elevation

80'

Total Depth

15000' (or Devonian/or
Basement)

PURPOSE OF TEST

Wildcat 33/12-2 is proposed as the third test of the "Brent" structural feature that extends from the U.K. into Norwegian Blocks 33/9 and 33/12. The well is expected to encounter a Jurassic section similar to that present in the Brent Area to the southwest. The sandstone unit which is the reservoir in 33/12-1 which is some 3.0 Kilometers to the southwest will be thin or missing through erosion. The Liassic shale section is expected to be complete as is the Lower Jurassic-Triassic sandstone section. The well will be drilled to depth sufficient to test the Triassic section, a probable Permian section and could reach Devonian rocks at the proposed total depth of 15000'

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OBJECTIVES

The principal objective of this test well is the Lower Jurassic-Triassic sandstone which is expected to be oil bearing at this location. The prospect in Block 33/12 is defined by seismic mapping at a horizon that represents a major regional unconformity which, in this area, is at the top of the Jurassic section. It is also further defined by mapping of a seismic event which is interpreted to be near the top of the Triassic section. Deeper events which may correlate with the top of Permian have also been identified and mapped.

The section expected to be penetrated is illustrated in the attached geologic well prognosis. As shown by the prognosis, at this location the "Upper" Jurassic sandstone is interpreted to be thin or removed by erosion. The Triassic is expected to be a sandstone/shale sequence with potential reservoirs present.

The Permian Zechstein is expected to be present in a carbonate facies although no nearby well control is available to support this prognosis. Rotliegendes sandstone is expected below the Zechstein. Thickness and reservoir quality can only be speculative because of lack of well control for the Paleozoic section in the area. A Devonian section which may contain potential reservoir beds is presumed to be present below the Permian.

From regional considerations, it appears unlikely that the Paleocene section will contain potential reservoirs, but the Lower Tertiary will be examined carefully during drilling since it is structurally high.

WELL PROGNOSIS

STATENS OLJEDIREKTORAT
003119 * 6.MAI74 MSC
Førdeles til Saks- nr. Saks. beh. Sett - 5400

<u>Formation</u>	<u>Depth (Subsea)</u>	<u>Thickness (feet)</u>
Paleocene		+ 750
Cretaceous	- 6150'	+ 1500
Jurassic Unconformity	- 7750'	-
Middle Jurassic Sandstone	- 7750'	+ 45
Lias Shale	- 7750'	875
Lias Sandstone	- 8450'	410
Triassic (?)	- 8900'	4490
Permian (?)	-13650'	-

Estimated formation tops are related to seismic markers. These may be at some variance with the actual tops.

GEOLOGICAL WELL LOGGING

A contract mud logging service, Exploration Logging Ltd., will be employed to log the well for hydrocarbon shows, collect samples, prepare a sample log and operate auxilliary logging services throughout drilling operations.

Exploration Logging will also provide an engineering geologist as an additional staff member of the Mud Logging unit to carry out shale density measurements, pore pressure calculations and pressure plots during the drilling of 33/12-2 by the Norskald. Digital mud temperature equipment and recording has been added to the standard mud logging services.

Samples will be collected at 20 feet intervals through the Tertiary or until the drilling rate slows sufficiently to allow taking 10 feet intervals. This interval may be altered at the well site geologist's discretion.

Miller
 20" csg
 ?

 One cloth bag of samples for trade cut will be collected from first sample return depth to T.D. One set of paleontological samples will be collected at the above-indicated intervals and sent to Robertson Research along with the trade cut. Robertson Research will carry out paleontological analyses of the samples and will utilize appropriate techniques in micropaleontology and palynology. Selected samples may be sent to the Operator's stratigraphic Laboratory in Dallas, Texas, for further examination.

Experience in stratigraphic analyses of wells to the south suggests that identification of Triassic, Permian and Devonian strata will be difficult even with the application of the full range of paleontological techniques.

Sample cuts will be distributed to Group according to prior instructions. Operator will arrange for sample cuts, including core materials, to be sent to appropriate Norwegian Government agencies.

LOGGING PROGRAM

<u>Run</u>	<u>Interval</u>	<u>Hole Size</u>	
1	0-5000 (13 3/8" csg)	17 1/2"	1. SGR 2. IES
2	5000-9200 (9 5/8" csg)	12 1/4"	1. SGRC 2. IES 3. CNL + FDC 4. MLL-ML 5. HDT 6. DLL ^x
3	9200-15000 (Total Depth)	8 1/2"	1. SGRC 2. IES 3. CNL + FDC 4. MLL-ML 5. HDT 6. DLL ^x 7. Check Shot Survey

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 Pockets
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Check shot surveys will be run at the 9 5/8" casing point and also at total depth. Additional logging runs may be made at management's discretion. Sidewall guns will be left on the rig commencing with Run 2 until T.D. is reached. AN FIT sampler will be available commencing with Run 3.

All log data will be recorded on magnetic tape.

The Dual Laterolog will be available on location and can be run through zones of interest with resistivities of 100 ohm-meters or greater.

CORING PROGRAM

A core will be taken in the Jurassic sandstone section when it is encountered. The decision for additional coring in the Mesozoic and Paleozoic sections will be made based on information obtained during operation to that time.

An opportunity will be provided for members of the technical staffs of the Group to examine the cores.

Upon completion of this work, the cores will be sent to Robertson Research for storage.

TESTING PROGRAM

Drill stem tests of zones of interest, if present, will be made after logging and setting casing through the zone of interest.

Formation fluid sampling will be done with standard oil field practice in respect to types and volumes of sample.

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COMMUNICATION OF WELL INFORMATION

A daily well report will be sent by telex by Mobil Exploration Norway Inc. to Members of the Group. Other data, including field prints of logs, will be forwarded by post or messenger.

A final well report will be prepared for distribution to members of the Group and to appropriate Government agencies.

All data are considered confidential and will be released to third parties only by decision of the Policy Committee.

Stavanger, 16 April 1974.