

Robert D. Dougherty

Certified Professional Geologist

Member: American Institute of Professional Geologists
American Association of Petroleum Geologists

P. O. BOX 1065

Great Bend, Kansas 67530

AREA 316 - 793-9055

GEOLOGIC REPORT

Continental Oil Company
No. 3 Smith
C NW NW Section 34-21s-24w
Hodgeman County, Kansas

*Copy for
Jim Ebanks*

CONTRACTOR: Rains & Williamson SURFACE CASING: 8 5/8" @ 625'
SPUD: April 7, 1977 PRODUCTION CASING: 5 1/2" @ 4710'
COMPLETED: April 16, 1977 MEASUREMENT: Kelly Bushing
ELEVATION: 2410 ft.-KB, 2400 ft.-GL.

GEOLOGIC FORMATION TOPS

Anhydrite	1668 + 742	Pawnee	4472 -2062
Base Anhydrite	1702 + 708	Ft. Scott	4521 -2111
Heebner	3936 -1526	Cherokee	4546 -2136
Toronto	3955 -1545	Conglomerate	4594 -2184
Lansing	3986 -1576	Mississippian	4618 -2208
Base K. C.	4366 -1956	Miss. Dolomite	4626 -2216
Marmaton	4375 -1965	Miss. Osage	4670 -2260
Altamont	4412 -2002	Rotary T. D.	4710 -2300

The above tops are electric log measurements and are in close agreement with rotary measurements.

Dresser-Atlas ran the following logs:

Gamma-Ray, Neutron, Laterolog, Caliper.

The #3 Smith was under geologic supervision from 4010 feet to rotary total depth. Samples were saved from 3100 feet and examined from 3900 feet to total depth.

I. STRATIGRAPHY AND LITHOLOGY

The stratigraphy and lithology is presented on the geologic log accompanying this report.

It is noted that sample quality was quite good throughout most of the well until the top of the Mississippian was penetrated. The Basal Pennsylvanian Conglomerate Chert section is highly abrasive and was drilled with a J-22 bit. In retrospect it appears that the slow drilling in the top of the Mississippian is due to a worn out bit more than to hard rocks. A bit trip was made at 4643 feet and all buttons were worn off. It is believed that most of the cuttings from the top of the Mississippian were ground very fine. While Mississippian lithology was recognized, a detailed analysis of porosity zone thickness, etc. was quite difficult.

II. DRILL STEM TESTS

None taken.

III. STRUCTURAL GEOLOGY

Structural comparison with the #1 Smith is shown on the geologic log. It is noted that the top of the Mississippian is 16 feet low and the Dolomite is 24 feet low. Compared to higher wells in the Bandy Field the Mississippian was encountered from 29 to 38 feet low.

IV. REMARKS

Production casing was set on the #3 Smith after the electric log was run without further testing in the open hole.

Based on sample and log analysis it is believed that the zone from 4634 to 4639 feet offer the best chance for oil production. Other zones of interest in the Mississippian are from 4645 to 4649 feet and from 4626 to 4630 feet.

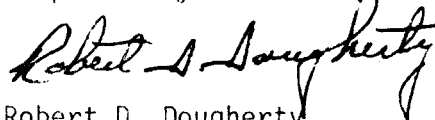
Slight shows of oil with scattered fair to good porosity was noted in the Conglomerate Chert section. This section is potentially oil productive from 4605 to 4611 feet, however the permeability could be limited.

A zone in the Altamont formation of the Marmaton Group from 4452 to 4456 feet calculates to have 17% porosity and 13% water saturation. This porosity was noted in the samples as intrafossiliferous porosity, however no shows of oil were noted. It is believed that the high resistivity in this zone is due more to well cemented rock matrix than to hydrocarbon saturation.

No shows of oil were noted in the Lansing-Kansas City section.

Slight shows of oil were seen from thin limestone zones in the Cherokee, however it is believed that these zones have little commercial value.

Respectfully submitted,



Robert D. Dougherty
Certified Professional Geologist

RDD;bst