

3

3-1S-34W

RESIDENCE
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April 19, 1971

OWLL

Murfin Drilling Co.
617 Union Center
Wichita, Kansas

Re: Murfin Drilling Co.
#3 Ohlson
C SE SE
Section 3-1S-34W
Rawlins County, Kansas

Gentlemen:

The following is a sample analysis report of the above captioned well. Samples were examined from 3500' to 4660', total depth. The well was under geological supervision from 3450' to total depth.

COMMENCED: 4-3-71
ROTARY RELEASED: 4-16-71
ELEVATIONS: 3103' K.B.
3100' D.F.
3098' G.L.
CASING RECORD: 10 3/4" @ 309' w/325 sx.

<u>FORMATION</u>	<u>DEPTH</u>	<u>SEA LEVEL DATUM</u>
Anhydrite	2952'	+151'
Base Anhydrite	2984'	+119'
Neva	3470'	-367'
Wabaunsee	3588'	-485'
Topeka	3804'	-701'
Deer Cr.	3834'	-731'
Oread	3890'	-787'
Douglas Sand	3958'	-855'
Lansing-Kansas City	3994'	-891'
Base Kansas City	4264'	-1161'
Ft. Scott	4390'	-1287'
Cherokee Shale	4427'	-1324'
Cherokee Sands	4519'	-1416'
Mississippi/cgl. Chert	4619'	-1516'

Granite Wash	4644'	-1541'
Pre-Cambrian	4656'	-1553'
Log Total Depth	4658'	-1555'
Drillers Total Depth	4660'	-1557'

All measurements from rotary bushing elevation.

DRILL STEM TESTS

#1	3547'-3615'	30-30-90-30. Recovered 960' muddy water. IF 71#, FF 486#, IBHP 1071#, FBHP 990#.
#2	4014'-56'	30-30-30-30. Recovered 56' very slightly oil cut mud. IF 30#, FF 47#, IBHP 1060#, FBHP 1016#.
#3	4060'-75'	30-30-120-30. Gas to surface 90 minutes. Recovered 2045' clean oil and 55' mud cut oil. IF 47#, FF 769#, IBHP 1013#, FBHP 996#.
#4	4076'-4110'	30-30-90-30. Recovered 1955' gas, 1425' clean oil and 90' mud cut oil. IF 47#, FF 583#, IBHP 1071#, FBHP 1013#.
#5	4106'-57'	30-30-30-30. Recovered 60' oil cut mud. IF 23#, FF 53#, IBHP 979#, FBHP 903#.
#6	4157'-72	30-30-90-30. Recovered 60' muddy oil and 60' oil cut mud. IF 6#, FF 47#, IBHP 286#, FBHP 262#.
#7	4157'-4200'	30-30-60-30. Recovered 70' heavily oil cut mud, 180' oil cut mud, 60' thin oil cut mud and 180' oil cut water. IF 83#, FF 250#, IBHP 250#, FBHP 250#.
#8	4210'-40'	30-30-90-30. Recovered 450' gas, 210' mud cut oil and 60' very heavily oil cut mud. IF 18#, FF 119#, IBHP 1285#, FBHP 1244#.

CORING RECORD

None.

ELECTRICAL SURVEY

A Great Guns R.A. Guard with a Variable Intensity Log was run from the surface to total depth.

WABAUNSEE

3588'-94' Gray, finely crystalline, fossiliferous limestone with spotted saturation in fair to poor fossil and vug porosity. Free oil. Odor. 9-13% porosity. 40-42% water saturation. This interval was tested by DST #1, recovered 960' muddy water.

DEER CR.

3838'-42' Gray, finely crystalline to chalky, fossiliferous limestone with a trace of gils-onite stain. 13% porosity. 58-75% water saturation.

POROUS ZONES IN THE LANSING-KANSAS CITY

The Lansing-Kansas City was topped at 3994' (-891'). This is 1' higher than the #2 Ohlson, a producer one location west.

3994'-4000' Gray, finely crystalline to dense, fossiliferous limestone with dead to asphaltic stain in poor fossil porosity. Trace heavy free oil. No odor. 11-20% porosity. 40-56% water saturation. This interval tested water in the #2 Ohlson, one location west.

4046'-52' Cream, finely crystalline, fossiliferous limestone with fair to dark saturation in fair fossil porosity. No odor. Free oil. 7-8% porosity. 54-65% water saturation. This interval was tested by DST #2, recovered 56' very slightly oil cut mud. This zone should be perforated for further testing before abandonment.

4069'-73' Cream, finely crystalline, fossiliferous limestone with good fossil porosity. No odor. Free oil. This interval was tested by DST #3, gas to surface 90 minutes, recovered 2045' clean oil and 55' mud cut oil. Electric log calculations give this interval 13% porosity and 34% water saturation. This interval should be perforated for further testing.

4096'-4101'

Gray, finely crystalline to dense, fossiliferous limestone. Spotted saturation. Fair to poor fossil porosity. No odor. Free oil. An attempt to test this interval was made by DST #4, recovered 1955' gas, 1425' clean oil and 90' mud cut oil; however, the lower packer was ruptured during the test which may have allowed communication with the zone from 4069'-73'. It is my recommendation that the interval 4097'-99' be perforated for further testing.

4148'-50'

Gray, finely crystalline, fossiliferous limestone with fair to poor fossil porosity. Spotted saturation. No odor. Free oil. 12% porosity. 32% water saturation. This zone was tested by DST #5, recovered 60' oil cut mud. It is my recommendation that the interval 4148'-50' be perforated for further testing.

4165'-68'

Gray, finely crystalline, fossiliferous limestone. Fair fossil porosity. Free oil. 12% porosity. 32% water saturation. This zone was tested by DST #6, recovered 60' muddy oil and 60' oil cut mud. It is my recommendation that this zone be perforated for further testing.

4189'-4200'

Gray, finely crystalline, fossiliferous limestone with good fossil and vug porosity. Light saturation. Odor. Free oil. This interval was tested by DST #7, recovered 70' heavily oil cut mud, 180' oil cut mud, 60' thin oil cut mud and 180' oil cut water. Electric log calculations give the interval 4189'-92', 14% porosity with 34% water saturation. The interval 4194'-4200' calculates 10-14% porosity and 60% water saturation. It is my recommendation that the interval 4189'-92' be perforated for further testing.

4232'-36'

Gray, finely crystalline, fossiliferous limestone with good fossil porosity and good saturation. Free oil. Electric log calculations give the interval 4232'-34', 12% porosity and 38% water saturation and the interval 4234'-36', 10% porosity and 75% water saturation. The zone was tested by DST #8, recovered 450' gas, 210' mud cut oil and 60' very heavily oil cut mud. It is my recommendation that the interval 4232'-34' be perforated for further testing.

CHEROKEE SANDS

- 4519'-31' Medium to coarse, angular to rounded quartz sand. No shows. 17% porosity. 95% water saturation.
- 4549'-56' Medium to coarse, angular to rounded quartz sand. No shows.
- 4564'-77' Medium to coarse, angular to rounded quartz sand. No shows. 12% porosity. 100% water saturation.
- 4580'-91' Medium to coarse, angular to rounded quartz sand with some clusters. No shows.
- 4612'-18' Medium to coarse, angular to rounded quartz sand. No shows.

MISSISSIPPI /CGL. CHERT

- 4619'-42' Yellow-white to pink, smooth, sharp, translucent to opaque cherts. No shows. 13% porosity. 92% water saturation.

REMARKS

It was my recommendation that casing be set at 4659'. The Mississippi /Cgl. Chert and the above described Cherokee Sands may be perforated for disposal purposes.

It is my recommendation that the following intervals be perforated for further testing the Lansing-Kansas City.

- 4232'-34'
4189'-92'
4165'-68'
4148'-50'
4097'-99'
4069'-73'
4046'-48'

Sincerely,


Bernard W. Lounsbury

BWL:ml