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18-6S-20W

MAR 25 1985

State Geological Survey
WICHITA BRANCH

Jrd

GEOLOGICAL REPORT

FRONTIER OIL COMPANY

RELEASED

MAY 01 1988

Date: _____

FROM CONFIDENTIAL

MC CLURG NO. 1

SE SE SW Sec. 18-6S-20W

ROOKS COUNTY, KANSAS

MAY 01 1988

SURVEY

KANS.

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STATE CORPORATION COMMISSION

JAN 16 1985

Commenced: October 10, 1984

Date of RTD: October 18, 1984

CONSERVATION DIVISION
Wichita, Kansas

Richard D. Parker

MAR 25 1985

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**State Geological Survey
WICHITA BRANCH**

Frontier Oil Company
1720 Kansas State Bank Building
Wichita, Kansas 67202

Re: Frontier Oil Company
No. 1 McClurg
SE SE SW 18-6S-20W
Rooks County, Kansas

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Dear Sir:

The following is a Geological Report with a Time Log attached on the above captioned well.

Drilling was supervised from 3100 ft. to 3850 ft., rotary total depth. Samples were examined from 3100 ft. to rotary total depth.

All formation tops, zones of porosity, and stainings are based on rotary bushing measurements. Any corrections in measurement during the drilling of this well have been incorporated into this report.

Elevation	2292 DF ---	2295 KB
Anhydrite	1902	(+ 393)
Topeka	3300	(-1005)
Heebner	3499	(-1204)
Toronto	3524	(-1229)
Lansing-Kansas City	3541	(-1246)
Base of Kansas City	3733	(-1438)
Marmaton	3768	(-1473)
Cherty Conglomerate	3784	(-1489)
Arbuckle	3811	(-1516)
Rotary Total Depth	3850	(-1555)
4-1/2" pipe at	3848	(-1553)

Structurally on top of the Lansing-Kansas City the No. 1 Mc Clurg ran flat with Woodman-Iannitti's No. 1 Nichol located approximately one half mile Northwest. On top of the Arbuckle the No. 1 Mc Clurg ran 17 ft. low to the No. 1 Nichol.

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ZONES OF INTEREST

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TOPEKA (Top 3300)

3334 to 3340

Tan fine crystalline lime with
no show of oil.

3360 to 3466

Tan fine crystalline to chalky
lime with some pin point porosity,
fair show of free oil, good odor,
and fair stain.
(Included in DST No. 1).

3476 to 3482

Tan fossiliferous to fine crystalline
lime with no show of oil.

DRILL STEM TEST NO. 1 (Formation Testing)

3436 to 3490

60-30-60-30
First open fair increasing to strong
blow. Second open fair increasing
to strong blow.
Recovered 280' muddy saltwater.
Initial flows 39 to 107#.
Final flows 116 to 155#.
Initial shut in pressure 1039#.
Final shut in pressure 1000#.

TORONTO (Top 3524)

3524 to 3530

White fossiliferous lime with a good
show of free oil, good light oil stain,
and a very faint odor.

DRILL STEM TEST NO. 2 (Formation Testing)

3496 to 3538

30-30-30-30
First open weak blow. Second open
no blow first 20 minutes very weak
blow last 10 minutes.
Recovered 35' mud with few specks of oil.
Initial flows 28 to 28#.
Final flows 39 to 39#.
Initial shut in pressure 1039#.
Final shut in pressure 924#.

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LANSING-KANSAS CITY (Top 3541)

3541 to 3548

Tan dense to cherty lime with
no show of oil, no odor.
(Included in DST No. 3).

3574 to 3578

Light tan fine crystalline to chalky
lime with a trace of free oil, trace
of stain and a very faint odor.
(Included in DST No. 3).

3592 to 3596

Tan fine crystalline to dense lime
with a trace of free oil, trace of
stain and a very faint odor.
(Included in DST No. 3).

3610 to 3615

Light tan to white fossiliferous
lime with some pin point porosity,
scattered show of free oil, fair
dark oil stain, and a very faint odor.

DRILL STEM TEST NO. 3 (Formation Testing)

3536 to 3626

60-30-60-30

First open weak increasing to
strong blow. Second open weak
increasing to strong blow.
Recovered 20' free oil, 160' slightly
oil cut muddy saltwater, 240' muddy
salt water.
Initial flows 68 to 165#.
Final flows 184 to 213#.
Initial shut in pressure 1145#.
Final shut in pressure 1116#.

DRILL STEM TEST NO. 4 (Formation Testing)

3600 to 3626

30-30-30-30

First open weak blow for 17 minutes.
Second open no blow, flushed tool,
no help.
Recovered 5' mud.
Initial flows 28 to 28#.
Final flows 28 to 28#.
Initial shut in pressure 87#.
Final shut in pressure 68#.

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3630 to 3634

Tan dense to cherty lime with a trace of free oil, trace of stain, and no odor.

3669 to 3674

Light tan dense to cherty lime with no show of oil.

3691 to 3696

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Tan fine crystalline to fossiliferous lime with a scattered show of free oil, trace of dark oil stain and a fair odor.
(Included in DST No. 5).

3704 to 3708

Tan fine crystalline to slightly fossiliferous lime with a trace of free oil, trace of stain and a very faint odor.

DRILL STEM TEST NO. 5 (Formation Testing)

3678 to 3714

30-30-30-30
First open weak blow for 10 minutes.
Second open no blow flushed tool, no help.
Recovered 20' mud with specks of oil.
Initial flows 28 to 28#.
Final flows 28 to 28#.
Initial shut in pressure 49#.
Final shut in pressure 38#.

BASE OF KANSAS CITY (Top 3733)

3748 to 3752

White fossiliferous to medium crystalline lime with a scattered show of free oil, fair staining, and no odor.

MARMATON (Top 3768)

3775 to 3778

White sandy to tan dense cherty lime with a fair show of free oil, fair staining and no odor.

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DRILL STEM TEST NO. 6 (Formation Testing)

3703 to 3785

30-30-30-30

First open weak blow.

Second open weak blow.

Recovered 3' free oil, 70' oil cut mud.

Initial flows 38 to 48#.

Final flows 55 to 55#.

Initial shut in pressure 952#.

Final shut in pressure 886#.

ARBUCKLE (Top 3811)

3811 to 3818

Tan medium crystalline dolomite
with scattered black flakes of oil,
no show of free oil, no odor.

3820 to 3850

Tan and red medium crystalline
dolomite with some scattered red
chert. No show of oil.

4-1/2" pipe was set at 3848', 37' in the Arbuckle and 2' off bottom with
150 sacks common cement 10% added salt. A Halliburton F O Tool was set at 1915'.
The shoe joint is 35-52' long and zero point is 5' AGL.

Sincerely,

Richard D. Parker

Richard D. Parker

ss

RDP:ss

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DRILLING INFORMATION ON THE MC CLURG NO. 1

Contractor: Red Tiger Drilling Co.

Drillers: Kerns

Tool Pusher: Sam Waggoner

Waggoner, Sam
Waggoner, Mike

Spud Date: October 10, 1984

Date of RTD: October 18, 1984

Surface Pipe: 8-5/8" @ 204' w/135 sx

Casing: 4-1/2" @ 3848' w/150 sx
Hall. FO tool @ 1915'

TOTAL FOOTAGE DRILLED PER DAY

Under Surface At 9:15 P.M. on October 10, 1984

1042	Feet	At	7:00 A.M.	On	October 11, 1984
2370	"	"	" "	"	October 12, 1984
3240	"	"	" "	"	October 13, 1984
3490	"	"	" "	"	October 14, 1984
3626	"	"	" "	"	October 15, 1984
3714	"	"	" "	"	October 16, 1984
3785	"	"	" "	"	October 17, 1984
3850	"	"	12:32 A.M.	"	October 18, 1984

BIT RECORD

BITS

TYPE

FOOTAGE

No. 1

Reed Y11 (New)

215' to 1722'

No. 2

Smith F2 (New)

1722' to 3850'

MUD RECORD

(Mud-Column)

Surface:	30 sx premium gel, 4 sx hulls, 2 sx lime
1042'	15 sx premium gel, 41 sx hulls
3490'	40 sx premium gel, 15 sx hulls, 8 sx soda ash, 8 sx caustic soda, 2 sx lignite, 4 sx driscose
3538'	8 sx premium gel, 2 sx hulls, 1 sx caustic soda
3630'	2 sx caustic
3775'	15 sx premium gel, 1 sx caustic

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DRILLERS TIME LOG

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Frontier Oil Company
No. 1 Mc Clurg

SE SE SW
Sec. 18-6S-20W
Rooks County, Kansas

Elev.: 2292 DF
2295 KB

DEPTH	MINUTES	REMARKS
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1 Foot Drilling Time

3100 to	3110	2-3-2-2-2-2-3-2-3-2
	3120	2-1-2-1-2-1-2-1-1-1
	3130	1-1-1-1-1-2-1-1-1-2
	3140	1-2-3-3-2-3-1-2-1-2
	3150	1-1-2-4- $\frac{1}{2}$ -1 $\frac{1}{2}$ -4-2-3-3
	3160	1-2-2-1-3-4-3-1-3-3
	3170	3-2-3-2-3-2-3-4-4-4
	3180	3-4-3-4-1-2-3-2-2-2
	3190	1-3-3-4-5-2-2-3-3-3
	3200	2-2-2-2-2-3-2-2-1-1
3200 to	3210	2-4-2-2-4-3-1-2-3-3
	3220	4-4-3-2-3-4-5-4-3-3
	3230	4-2-3-3-2-3-3-2-3-2
	3240	3-2-2-2-3-2-3-2-3-2
	3250	3-4-3-3-3-2-3-3-3-3
	3260	2-3-4-2-1-2-2-1-2-2
	3270	4-4-4-4-3-4-3-4-4-3
	3280	3-3-1-1-1-3-4-4-2-1
	3290	2-1-1-1-1-3-5-3-2-1
	3300	2-4-3-3-2-3-3-3-3-2
3300 to	3310	3-3-3-2-2-2-1-1-2-2
	3320	4-4-3-4-4-3-4-5-3-2
	3330	3-3-4-5-3-5-4-3-3-3
	3340	3-3-3-5-2-3-3-3-4-5
	3350	4-5-5-3-5-6-5-2-4-2
	3360	2-2-2-2-1-2-2-2-2-3
	3370	2-2-1-1-2-1-2-4-2-2
	3380	2-2-2-5-5-4-4-3-3-2
	3390	3-3-3-5-3-3-3-4-3-2
	3400	3-4-4-3-3-4-2-2-3-3

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3400 to	3410	2-1-2-2-2-2-2-1-2-1
	3420	2-1-2-2-2-2-2-2-2-2
	3430	2-3-3-3-3-2-3-4-4-4
	3440	3-3-4-4-4-5-5-4-4-4
	3450	3-3-3-3-3-4-6-4-6-4
	3460	5-5-3-2-4-4-4-3-3-4
	3470	2-2-3-3-3-3-4-5-5-5
	3480	5-5-5-5-3-2-5-3-1-2
	3490	3-3-5-5-4-4-3-2-3-2
	3500	2-2-2-4-3-4-4-3-3-2
3500 to	3510	2-3-3-2-2-2-4-4-4-4
	3520	3-2-3-3-3-3-2-2-4-4
	3530	4-3-4-5-3-3-3-2-3-2
	3540	4-7-6-6-5-6-5-5-2-2
	3550	2-3-4-3-3-3-4-2-4-3
	3560	4-4-4-5-4-4-4-5-4-5
	3570	4-4-4-3-4-5-4-3-4-4
	3580	3-4-3-4-3-3-3-3-4-4
	3590	4-4-5-6-6-4-4-4-2-2
	3600	3-4-3-5-3-4-5-5-5-5
3600 to	3610	5-6-4-4-5-5-4-4-4-4
	3620	5-4-4-3-2-5-4-5-5-4
	3630	6-5-5-6-5-5-2-2-3-4
	3640	3-3-4-5-5-5-4-4-4-4
	3650	4-4-5-4-2-5-5-5-6-5
	3660	6-5-4-5-5-5-4-3-3-3
	3670	4-4-2-4-3-3-4-3-6-3
	3680	5-5-4-3-3-4-4-5-5-4
	3690	5-5-5-5-3-3-4-3-4-3
	3700	5-3-4-4-4-5-5-3-5-4
3700 to	3710	4-5-4-5-3-3-4-4-5-3
	3720	5-5-6-5- - - - -
	3730	4-4-5-5-5-5-3-2-4-3
	3740	5-5-6-4-3-3-2-2-2-2
	3750	2-2-2-2-2-2-2-2-3-3
	3760	3-4-4-5-4-4-5-3-2-2
	3770	2-3-3-3-3- - -3-3-5
	3780	5-5-5-5-6-4-4-5-4-5
	3790	5-5-6-6-4-3-3-4-4-4
	3800	4-3-1-1-1-1- $\frac{1}{2}$ - $\frac{1}{2}$ -1-1
3800 to	3810	1-1-1-1- $\frac{1}{2}$ -1-2-1-1-1
	3820	1-2-1-4-3-3-3-3-3-1
	3830	2-3-3-4-5-2-2-1-1-1
	3840	2-2-3-3-3-4-3-3-4-4
	3850	3-3-3-3-3-2-3-3-2-4

DST No. 1 (3436 to 3490)

DST No. 2 (3496 to 3538)

DST No. 3 (3536 to 3626)

DST No. 4 (3600 to 3626)

DST No. 5 (3678 to 3714)

DST No. 6 (3703 to 3785)

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MC CLURG #1
(Completion)

18-6-20W
SESESE
Jad

Rig 1

- 10/29/84 Moved Rig #1 cable tools from Probasco Lease to McClurg #1. Rigged up.
- 10-30-84 Swabbed well down. Ran Gamma Ray/Neutron Cased hole log. Perforated 1 shot at 3782', 3771', and 3756'. Swabbed well down. Show of oil. Treated w/1500 gal., 15% regular acid. Max. press. - 1800#. 1st hole broke at 1300#. Treated at 7 BPM at 1800# to 1700#. ISIP - 1000#. Let set 30 min. and swab load back (short 31 bbl.). Good show of oil last 3 pulls.
- 10-31-84 Overnight fillup - 1400'; Swab down - 23.38 Bbl., 85% oil. 1st hr. - 3.34 Bbl., 80% oil; 2nd hr. - 2.50 Bbl., 80% oil; 3rd hr. - 2.50 Bbl., 80% oil; Perforated from 3780' to 3784', 3769' to 3773', and 3754' to 3759' w/4 shots per ft. D.P.'s. Swabbed well down. 1st hr. - 1.67 Bbl., 85% oil; 2nd hr. - 1.67 Bbl., 85% oil.
- 11-1-84 Overnight fillup - 1150'; Swab down - 19.20 Bbl., 75% oil. 1st hr. - 2.50 Bbl., 75% oil; 2nd hr. - 2.50 Bbl., 85% oil; 3rd hr. - 1.67 Bbl., 85% oil; 4th hr. - 1.67 Bbl., 85% oil. Treated w/1000 gal., 28% Regular acid. Max. press. - 1000#. Treated at 5 BPM at 750# to 1000#. ISIP - 750#. On 0# in 45 min. Swabbed load back. Short 37 bbl.
- 11-2-84 Overnight fillup - 1800'; Swab down - 28.39 Bbl., 65% oil. 1st hr. - 5.01 Bbl., 85% oil. Perforated from 3666' to 3672' w/4 shots per ft. D.P.'s. Set RBP at 3705'. Swabbed well down. Treated w/500 gal., 15% regular acid. Max. press. - 950#. Treated at 3 BPM at 850#. ISIP - 800#. 5 min. drop to 700#. Let set 1 hr. and swab load back. Short 14 Bbl. Very slight show.
- 11-3-84 Overnight fillup - 50'; Swab down - .83 Bbl., trace of oil. Pulled out RBP. Perforated 3528' to 3532' w/4 shots per ft. D.P.'s. Set RBP at 3595'. Swabbed well down. Treated w/500 gal., 15% regular acid. Max. press. - 750#. Treated at 3 BPM at 750# to 700#. ISIP - 550#. Let set 1 hr. and swab load back. Short 12.50 Bbl. 1st hr. - 1.67 Bbl., trace of oil.

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#1 McClurg
Completion
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18-6-a
SESESW

11-4-84 Shut down.

11-5-84 Overnight fillup - 1650'; Swab down - 27.55 Bbl., 20% oil.
1st hr. - 2.50 Bbl., 15% oil; 2nd hr. - 2.50 Bbl., 25% oil;
3rd hr. - 2.08 Bbl., 45% oil. Pulled out RBP. Rigged up
to run tubing and rods.

11-6-84 Ran 15' mud anchor, 1' seating nipple on 120 jts - 3770' -
2-3/8" upset tubing (used). Ran 2" X 1-1/4" X 12' M to M
insert pump on 149 - 3725' - 3/4" sucker rods. Hooked up
well head and tore down.

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