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Ind 21
1-12-18W

GEOLOGICAL REPORT

JUN 1 1984
State Geological Survey
WICHITA BRANCH

FRONTIER OIL COMPANY

PFEIFER "C" NO. 1

NW NE NE

1-12S-18W

ELLIS COUNTY, KANSAS

RELEASED
Date: JUN 1 1985
FROM CONFIDENTIAL

Commenced: April 7, 1984

Completed: April 16, 1984

RELEASED
JUN 10 1985
FROM CONFIDENTIAL

JUN 19 1984

CONFIDENTIAL
State Geological Survey
WICHITA BRANCH

RECEIVED
STATE CORPORATION COMMISSION

JUN 19 1984

CONSERVATION DIVISION
Wichita, Kansas

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

Re: Frontier Oil Company
Pfeifer "C" No. 1
NW NE NE 1-12S-18W
Ellis County, Kansas

Dear Sir:

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

Drilling was supervised from 2900' to 3643', rotary total depth. Samples were examined from 2900' to 3643', rotary total depth.

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

Elevation	2112 GL -- 2117 KB	
Anhydrite	1335 to 1393	(+762)
Topeka	3080	(-963)
Heebner	3311	(-1194)
Lansing-Kansas City	3355	(-1238)
Base-Kansas City	3591	(-1474)
Simpson	3602	(-1485)
Arbuckle	3635	(-1518)
RTD	3643	(-1526)
5½" Casing	3637	(-1520)

Structurally, on top of the Lansing-Kansas City, the Frontier Oil Company Pfeifer "C" No. 1 ran 2' high to the Carter Oil Company Leo Karlin No. 1, an abandoned Arbuckle producer, located 660' to the east.

On top of the Arbuckle the Pfeifer "C" No. 1 ran 11' high to the Leo Karlin No. 1.

ZONES OF INTEREST

TOPEKA (Top 3080)
3080 to 3095

3110 to 3124

Tan crystalline base and gray fossiliferous limes.

Tan to gray crystalline limes and tan sandy limes.

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DRILL STEM TEST NO. 1
3069 to 3130

Pfeifer C⁴
1-12-18W

TEST: 60-30-30-30. Weak blow throughout.
SI 30". No blow, flushed tool - no help.
SI 30". Recovered 65' of mud.
PRESSURES: 41-61, 61-72, 955-955 Bhps.

3244 to 3250

Gray to tan fossiliferous limes.

3264 to 3274

Tan to gray crystalline limes.

3280 to 3290

Same as above.

DRILL STEM TEST NO. 2
3226 to 3310

TEST: 60-30-60-30. Very weak blow throughout.
SI 30". Very weak blow throughout. SI 30".
Recovered 40' of mud.
PRESSURES: 72-72, 72-72, 614-552 Bhps.

HEEBNER (Top 3311)

TORONTO (Top 3332)
3332 to 3340

Scattered cherty limes with a trace of free oil and no odor.

LANSING-KANSAS CITY (Top 3355)
3355 to 3364

Scattered white cherty limes with a trace of free oil and a small show of dead oil.

3378 to 3382

Few pieces of tan junky lime, saturated with dead oil and no odor.

DRILL STEM TEST NO. 3
3308 to 3382

TEST: 60-30-60-30. Weak blow. SI 30". Weak blow. SI 30". Recovered 50' of mud.
PRESSURES: 81-81, 81-81, 495-400 Bhps.

3387 to 3394

Scattered white cherty to vuggy lime with a fair show of dead oil and no odor.

3400 to 3408

Tan oolitic, slightly weathered lime with a trace of free oil and plastic oil.

3410 to 3420

Scattered tan weathered, fine crystalline limes with a fair show of free oil and no odor.

DRILL STEM TEST NO. 4
3368 to 3420

MISSRUN - Plugged Tool.

DRILL STEM TEST NO. 5
3369 to 3420

TEST: 30-30-15-30. Weak blow, flushed tool - no increase. SI 30". Very weak blow, flushed with no increase. SI 30". Recovered 40' of mud.
PRESSURES: 50-50, 50-50, 480-455 Bhps.

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3430 to 3440 *Ofeifer "C" #1*
1-12-18W

Scattered fine crystalline silty lime with a trace of free oil and no odor.

3440 to 3450

Scattered tan fine crystalline silty lime with a trace of free oil and a faint odor.

3458 to 3464

Scattered white very slightly vuggy with a trace of plastic oil and a faint odor.

3470 to 3476

White slightly vuggy, slightly cherty lime with a trace of wet staining and no odor.

DRILL STEM TEST NO. 6
3418 to 3480

TEST: 30-30-15-30. Very weak blow for 5 minutes, flushed tool - no help. SI 30". No blow. Flushed tool - no help. Recovered 15' of mud.
PRESSURES: 60-81, 81-81, 427-406 Bhps.

3480 to 3486

Scattered oolitic and oolitic lime with a small show of wet staining and no odor.

3492 to 3500

Scattered white cherty, slightly vuggy lime with a small show of wet staining and no odor.

3533 to 3540

Scattered tan cherty limes with a trace of free oil and wet staining.

3548 to 3553

Tan crystalline to scattered vuggy lime with small shows of free oil and no odor.

DRILL STEM TEST NO. 7
3466 to 3580

TEST: 30-30-30-30. Weak blow for 3 minutes. SI 30". No blow, flushed tool, no help. SI 30". Recovered 10' of mud.
PRESSURES: 61-61, 61-61, 101-101 Bhps.

BASE-KANSAS CITY (Top 3591)

SIMPSON DOLOMITE (Top 3602)
3602 to 3610

Scattered fine crystalline brown to yellow dolomite with no show of oil, one piece of cherty crystalline lime with a fair show of free oil.

3613 to 3620

Greenish fine crystalline dolomite and scattered blue shales.

3627 to 3631

Rounded loosely bonded clear sand clusters with a small show of free oil and a good odor. Scattered gray fresh chert and pyrite.

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DRILL STEM TEST NO. 8
3568 to 3634

Speyer "C" #1
1-12-18W

TEST: 45-30-15-30. Weak blow for 5 minutes.
Flushed tool - no help. SI 30". No blow.
SI 30". Recovered 5' of mud.
PRESSURES: 50-50, 50-50, 61-61 Bhps.

ARBUCKLE (Top 3635)
3635 to 3640

Tan fine crystalline dolomite and scattered
vuggy dolomite with fair to good shows of
free oil and a good odor.

DRILL STEM TEST NO. 9
3568 to 3640

TEST: 60-30-60-30. Weak blow throughout.
SI 30". Weak blow throughout. SI 30".
Recovered 180' of slightly oil cut mud and
120' of heavy oil cut mud.
PRESSURES: 101-122, 122-162, 1022-1020 Bhps.

3540 to 3543

Tan fine to medium crystalline dolomite with
small to fair show of free oil and no odor
and blue shales.

DRILL STEM TEST NO. 10
3637 to 3643

TEST: 60-30-60-30. Fair blow throughout.
SI 30". Fair blow throughout. SI 30".
Recovered 600' of clean oil and 180' of water.
(Chlorides 29,000 PPM)
PRESSURES: 30-172, 193-315, 1110-1120 Bhps.

ROTARY TOTAL DEPTH @ 3643'

1 1 1900
State Geological Survey
WICHITA BRANCH

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Zefer "C" #1
1-12-18W

5½" Casing was set at 3637', 2' into the Arbuckle and 6' off bottom, with 175 sx of common cement plus 10% salt.

A Halliburton DV Tool was set at 1386' with 450 sx of 50/50 Pozmix plus 5% gel.

The shoe joint is 34.52' in length and zero point is 5' AGL.

Sincerely,

Stuart D. Angle

S. D. Angle

JUN 1 1968

State Geological Survey
Geological Section

1-12-18W¹⁷

DRILLING INFORMATION ON THE PFEIFER "C" NO. 1

1-12-18W

Drilling Contractor: Red Tiger Drilling Co.
Rig No. 4
Tool Pusher: Jerb Ogle

Drillers: J. Ogle
A. Bates
D. Ochs

Spud Date: April 7, 1984

Date of RTD: April 16, 1984

Surface Pipe: 8-5/8" @ 244' w/160 sx
60/40 Pozmix, 2% gel, 3% cc.
CDC.

Casing: 5-1/2" @ 3637' w/175 sx Common
Plus 10% Salt. DV @ 1386' w/450 sx
50/50 Pozmix.

TOTAL FOOTAGE DRILLED PER DAY
Under surface at 12:45 A.M. on 4-8-84

2320	Feet	At	7:00 A.M.	On	4-09-84
2985	"	"	"	"	4-10-84
3195	"	"	"	"	4-11-84
3378	"	"	"	"	4-12-84
3420	"	"	"	"	4-13-84
3480	"	"	"	"	4-14-84
3580	"	"	"	"	4-15-84
3640	"	"	"	"	4-16-84
3643	Feet	At	3:17 P.M.	On	4-17-84

MUD RECORD

Surface - 15 sx Bentonite, 1 sx lime, 3 sx hulls.
3110 - 60 sx salt mud, 40 sx starch, 2 sx Bentonite, 2 sx hulls, 2 sx preservative.
3310 - 30 sx salt mud, 6 sx starch, 3 sx Bentonite.
3420 - 35 sx salt mud, 6 sx starch.
3455 - 25 sx salt mud, 10 sx starch, 5 sx hulls, 1 sx Bentonite.
3580 - 20 sx salt mud, 6 sx starch.
3634 - 10 sx salt mud, 5 sx starch.
3640 - 10 sx salt mud, 5 sx starch, 2 sx hulls, 1 sx Bentonite.

10-1-1985
Red Tiger Drilling Co.
10-1-1985