

33-15-11W³¹

State Geological Survey
WICHITA BRANCH

GEOLOGICAL REPORT

FRONTIER OIL COMPANY

FOSTER 'A' NO. 2

APPROX. SW NW SE

33-15S-11W

RUSSELL COUNTY, KANSAS

Commenced: May 10, 1983

Completed: May 19, 1983

RECEIVED
STATE CORPORATION COMMISSION

JUL 07 1983

CONSERVATION DIVISION
Wichita, Kansas

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

Re: Frontier Oil Company
Foster 'A' No. 2
Approx. SW NW SE 33-15S-11W
Russell County, Kansas

Dear Sir:

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

Drilling was supervised from 2100' to 3253', rotary total depth. Samples were examined from 2100' to 3253', 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	1771 GL -- 1776 KB	
Anhydrite	625	(+1151)
Grandhaven	2209	(-433)
Dover	2235	(-459)
Tarkio Lime	2280	(-504)
Elmont Lime	2340	(-564)
Howard	2478	(-702)
Topeka	2560	(-784)
Heebner	2808	(-1032)
Toronto	2825	(-1049)
Douglass Shale	2837	(-1061)
Brown Lime	2899	(-1123)
Lansing-Kansas City	2917	(-1141)
Base-Kansas City	3159	(-1383)
Conglomerate	3223	(-1447)
Arbuckle	3249	(-1473)
RTD	3253	(-1477)
5½" Casing	3251	(-1475)

Structurally, on top of the Lansing-Kansas City, the Foster 'A' No. 2 ran 3' high to the Foster No. 1, located approximately 600' to the west.

On top of the Arbuckle, the Foster 'A' No. 2 ran approximately 1' high to the Foster No. 1.

ZONES OF INTEREST

TOPEKA (Top 2560)

2560 to 2570

Fine crystalline slightly silty lime.

2592 to 2600

White and tan chalky lime with no show of oil.

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2'A' Foster

2750 to 2760

White and tan crystalline, slightly vuggy limes with a fair show of free oil and no odor.

2770 to 2778

Tan, crystalline, vuggy, oolitic lime with a fair show of free oil and no odor.

DRILL STEM TEST NO. 1
2733 to 2800

TEST: 60-30-60-30. Fair blow throughout. SI 30". Fair blow throughout. SI 30". Recovered 170' of muddy water. PRESSURES: 52-103, 103-103, 889-868 Bhps.

HEEBNER SHALE (Top 2808)

TORONTO (Top 2825)
2825 to 2830

Tan surcrosic lime with a very small trace of free oil and no odor.

DOUGLASS SHALE (Top 2837)

2850 to 2860

Fine grey, slightly micaceous, bonded sand with no show of oil and no odor.

BROWN LIME (Top 2899)

LANSING-KANSAS CITY (Top 2917)
2917 to 2924

Tan crystalline, poorly developed oolitic lime with no show and no odor.

2930 to 2935

Tan oolitic and fossiliferous lime with no show of oil and no odor.

DRILL STEM TEST NO. 2
2906 to 2935

TEST: 60-30-15-30. Very weak blow for 35 minutes. SI 30". No. blow. SI 30". Recovered 20' of mud. PRESSURES: 21-21, 21-21, 41-21 Bhps.

2950 to 2960

Tan crystalline weathered oolitic lime with a trace of free oil and no odor.

2960 to 2970

Tan crystalline weathered oolitic and poorly developed oolitic lime with no show of free oil and no odor.

DRILL STEM TEST NO. 3
2929 to 2970

TEST: 60-30-60-30. Strong blow in 2 minutes, throughout. SI 30". Strong blow in 2 minutes, gas to surface in 45 minutes. Recovered 245' of gassy slightly oil cut mud. PRESSURES: 62-93, 93-114, 765-848 Bhps.

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2'A' Foster

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2978 to 2984

Tan crystalline to poorly developed oolitic lime with no show of oil and no odor.

2986 to 2993

Tan junky and tan fossiliferous lime with no show of oil and no odor.

2998 to 3002

Grey crystalline and tan fossiliferous lime with no show and no odor.

3020 to 3028

Tan fossiliferous lime with no show and no odor.

3040 to 3050

Tan crystalline lime with scattered poorly developed oolitic limes. No shows of oil and no odor.

DRILL STEM TEST NO. 4
2972 to 3051

TEST: 15-30-15-30. Weak blow for 10 minutes. Flushed tool - few bubbles. SI 30". No blow. SI 30". Recovered 30' of mud.
PRESSURES: 0-0, 52-52, 910-848 Bhps.

3060 to 3065

Tan dense to tan silty lime with no show of oil and no odor.

3067 to 3072

White junky fossiliferous limes with no show of oil and no odor.

3078 to 3084

White crystalline limes and scattered oolitic limes with no show of oil and no odor.

3090 to 3094

Tan crystalline dense lime with no show of oil and no odor.

3100 to 3106

White, fossiliferous, poorly developed oolitic limes with no show of oil and no odor.

3110 to 3115

White junky crystalline, some vuggy, limes with no show of oil and no odor.

3120 to 3125

White poorly developed oolitic limes with no show of oil and no odor.

3144 to 3150

Tan crystalline, slightly silty lime with no show of oil and no odor.

3152 to 3156

Brown, fine, crystalline lime with scattered shows of free oil and a very faint odor.

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2'A' Foster

DRILL STEM TEST NO. 5
3051 to 3156

TEST: 15-30-15-30. Weak blow for 10 minutes.
Flushed tool - a few bubbles. SI 30". No
blow. SI 30". Recovered 5' of mud.
PRESSURES: 83-83, 83-83, 930-868 Bhps.

BASE-KANSAS CITY (Top 3159)

3166 to 3170

Soft grey shales.

3172 to 3190

Junky limes.

3190 to 3196

Tan and white slightly cherty limes with
no show and no odor.

3200 to 3205

White to grey chalky limes and tan fine
crystalline limes with no show and no odor.

3214 to 3220

Oolitic and oolitic tan limes.

CONGLOMERATE (Top 3223)
3223 to 3230

Multi-colored fresh cherts, oolitic cherts
and red shales.

3230 to 3240

Same as above.

3240 to 3244

Tan white crystalline limes, scattered
cherts and red shales.

ARBUCKLE (Top 3249)
3249 to 3253

Greenish to white fine crystalline dolomite
with a trace of free oil and a good odor.

DRILL STEM TEST NO. 6
3154 to 3253

TEST: 60-30-60-30. Weak to fair blow through-
out. SI 30". Fair blow throughout. SI 30".
Recovered 360' of gassy heavy oil cut mud.
PRESSURES: 62-135, 145-218, 1073-1094 Bhps.

ROTARY TOTAL DEPTH @ 3253'

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2'A' Foster

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New 5½" casing was set @ 3251', 2' into the Arbuckle and 2' off bottom with 200 sx of common cement plus 10% salt.

The shoe joint is 41.87' in length and zero point is 5' AGL.

Sincerely,



Steven D. Angle

33-15-1/w

DRILLING INFORMATION ON THE FOSTER 'A' NO. 2

Drilling Contractor: Red Tiger Drilling
Rig No. 8
Tool Pusher: Kenneth Lyle

Drillers: Lyle
Waggoner
Koehler

Spud Date: May 10, 1983

Date of RTD: May 19, 1983

Surface Pipe: New 8-5/8" 24# set @ 636'
with 300 sx common, 2% gel
and 3% cc. CDC.

Casing: New 5 1/2" set @ 3251' with 200 sx
common plus 10% salt.

TOTAL FOOTAGE DRILLED PER DAY
Under surface at 1:30 P.M. on 5-11-83

1400	Feet	At	7:00 A.M.	On	5-12-83
2046	"	"	"	"	5-13-83
2434	"	"	"	"	5-14-83
2760	"	"	"	"	5-15-83
2918	"	"	"	"	5-16-83
2970	"	"	"	"	5-17-83
3092	"	"	"	"	5-18-83
3216	"	"	"	"	5-19-83
3253	Feet	At	7:26 P.M.	On	5-19-83

MUD RECORD

Surface - 30 sx Aquagel, 6 sx hulls, 4 sx lime.
2308 - 85 sx salt gel, 3 sx hulls.
2655 - 35 sx starch, 15 sx salt gel, 3 sx hulls, 2 sx preservative.
2803 - 10 sx zeogel, 6 sx impermix.
2970 - 18 sx starch, 12 sx zeogel, 3 sx hulls.
3156 - 2 sx starch 20 sx zeogel.
3253 - 12 sx starch, 16 sx gel, 2 sx hulls.