

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

Re: Frontier Oil Company
No. 1 Eberly
NW SW SE 14-19S-15W
Barton County, Kansas

Dear Sir:

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

Drilling was supervised from 1600' to 3535', rotary total depth. Samples were examined from 1600' to 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 (L&S)	1915 GL	---	1920 KB
Anhydrite (Top)	850		(+1070)
(Base)	879		(+1051)
Herington	1763		(+ 157)
Winfield	1816		(+ 104)
Fort Riley	1911		(+ 9)
Council Grove	2074		(- 154)
Cottonwood	2212		(- 292)
Neva	2262		(- 342)
Red Eagle	2317		(- 397)
Brownville	2481		(- 561)
Tarkio	2599		(- 679)
Howard	2796		(- 876)
Topeka	2875		(- 955)
Heebner	3123		(-1203)
Toronto	3136		(-1216)
Brown Lime	3203		(-1283)
Lansing-Kansas City	3214		(-1294)
Base of Kansas City	3422		(-1502)
Conglomerate	3436		(-1516)
Sand	3469		(-1549)
Quartz	3478		(-1558)
RTD	3535		(-1615)

14-19-15W

Structurally, on top of the Lansing-Kansas City, the No. 1 Eberly ran 26' higher than the Frontier Oil Company's Curry No. 1, located approximately one location South and two locations West. The Sand came in at 3469' (-1549), 74' higher than the Curry No. 1.

ZONES OF INTEREST

HERINGTON (Top 1763)
1763 to 1780

Tan to light grey sucrosic limestone with no show of hydrocarbons.

WINFIELD (Top 1816)
1816 to 1825

Tan to light brown coarse crystalline fossiliferous limestone with no show of hydrocarbons.

FORT RILEY (Top 1911)
1911 to 1920

Light brown coarse crystalline fossiliferous limestone. Good fossil-cast porosity with no show of hydrocarbons.

COUNCIL GROVE (Top 2074)
2074 to 2082

Light tan fossiliferous limestone with good fossil-cast porosity and no show of hydrocarbons.

COTTONWOOD (Top 2212)
2212 to 2218

Light tan to tan fossiliferous limestone with fair fossil-cast porosity and no show of hydrocarbons.

NEVA (Top 2262)
2262 to 2270

White fossiliferous limestone with fair fossil-cast porosity and no show of hydrocarbons.

RED EAGLE (Top 2317)
2317 to 2330

Light tan fossiliferous limestone with good fossil-cast porosity and no show of hydrocarbons.

BROWNVILLE (Top 2481) *Eberly #1*
2481 to 2485 *14-19-15W*

Light tan fossiliferous limestone with no show of oil.

2548 to 2560

Light grey to tan very fine grained sandstone with no show of oil.
(Included in DST No. 1)

2570 to 2590

Scattered grey micaceous sandstone with no show of oil.
(Included in DST No. 1)

TARKIO (Top 2599)
2622 to 2635

Tan well-cemented micaceous sandstone with no show of oil.
(Included in DST No. 1)

2650 to 2660

Abundant tan to grey micaceous sandstone with no show of oil.
(Included in DST No. 1)

DRILL STEM TEST NO. 1 (FOC Test)

2488 to 2670

75-30 Weak blow dead in 5 minutes, flushed tool, weak blow dead in 10 minutes. Recovered 30' mud. Flow pressures 136 to 158#. Shut in pressure 543#.

HOWARD (Top 2796)
2796 to 2800

Tan fossiliferous limestone with no show of oil.

TOPEKA (Top 2875)
2875 to 2879

Light brown fine crystalline limestone with no show of oil.

2911 to 2922

Tan chalky limestone with no show of oil.

3069 to 3074

Tan well-developed oolitic limestone with no show of oil.
(Included in DST No. 2)

3096 to 3107

Light tan sucrosic to chalky limestone with no show of oil.
(Included in DST No. 2)

DRILL STEM TEST NO. 2 (FOC Test)

3018 to 3120

*Eberly #1
14-19-15W*

120-45 Strong blow.
Recovered 620' saltwater.
Flow pressures 113 to 385#.
Shut in pressure 1307#.

TORONTO (Top 3136)

3138 to 3144

White fine crystalline to chalky
limestone with no show of oil.
(Included in DST No. 3)

LANSING-KANSAS CITY (Top 3214)

3214 to 3220

Tan fine crystalline limestone with
no show of oil.
(Included in DST No. 3)

3226 to 3230

Dark tan fine crystalline limestone
with no show of oil.
(Included in DST No. 3)

DRILL STEM TEST NO. 3 (FOC Test)

3118 to 3238

120-30 Weak blow throughout.
Recovered 45' mud.
Flow pressures 91 to 114#.
Shut in pressure 793#.

3244 to 3247

Tan fine crystalline limestone
with no show of oil.
(Included in DST No. 4)

3261 to 3265

Light tan oolitic to slightly oolitic
limestone. Good interoolitic porosity,
good light oil staining, good show of
free oil, and a good odor.
(Included in DST No. 4)

DRILL STEM TEST NO. 4 (FOC Test)

3234 to 3268

120-45 Good blow throughout.
Recovered 1200' gas-in-pipe,
75' slightly oil and gas cut mud,
60' heavy oil and gas cut mud,
240' froggy oil.
Flow pressures 46 to 170#.
Shut in pressure 1152#.

3274 to 3278

Eberly #1
14-19-15W

Light tan vugular limestone.
Good spotted oil staining, good
show of free oil, and a fair odor.
(Included in DST No. 5)

DRILL STEM TEST NO. 5 (FOC Test)

3268 to 3282

120-45 Weak blow increasing to
good blow. Recovered 315' saltwater.
Flow pressures 34 to 181#.
Shut in pressure 1152#.

3286 to 3298

Light tan well-developed oolitic
limestone. Slight show of free oil,
and a fair odor.
(Included in DST No. 6)

3304 to 3309

Light tan well-developed oolitic
limestone with no show of oil.
(Included in DST No. 6)

DRILL STEM TEST NO. 6 (FOC Test)

3285 to 3330

120-45 Strong blow.
Recovered 1790' saltwater.
Flow pressures 91 to 838#.
Shut in pressure 1141#.

3340 to 3344

Light tan well-developed oolitic
limestone. Good saturated oil
staining, good show of free oil,
and a strong odor.
(Included in DST No. 7)

DRILL STEM TEST NO. 7 (FOC Test)

3328 to 3355

120-45 Strong blow.
Recovered gas-to-surface in 90 minutes,
60' slightly mud cut gassy oil, 300' gas,
315' gassy oil, and 440' froggy gassy oil.
Flow pressures 73 to 409#.
Shut in pressure 1107#.

3360 to 3364

*Eberly #1
14-19-15 W*

Light tan fossiliferous limestone with fair fossil-cast porosity. Good saturated oil staining, good show of free oil, and a fair odor. (Included in DST No. 8)

DRILL STEM TEST NO. 8 (FOC Test)

3352 to 3375

60-120 Oil and gas to surface in 45 minutes. Flow pressures 271 to 993#. Shut in pressure 1128#.

3374 to 3377

Light tan well-developed oolitic limestone with no show of oil. (Included in DST No. 9)

3388 to 3393

Light tan to white chalky limestone with no show of oil. (Included in DST No. 9)

3407 to 3413

Light tan slightly oolitic limestone with no show of oil. (Included in DST No. 9 & 10)

DRILL STEM TEST NO. 9 (FOC Test)

3370 to 3430

120-45 Fair blow throughout. Recovered 100' slightly oil cut mud, 520' mud cut gassy oil. Flow pressures 45 to 318#. Shut in pressure 838#. (Severe plugging action).

DRILL STEM TEST NO. 10 (FOC Test)

3399 to 3430

60-45 Fair blow dead in 20 minutes. Recovered 210' mud. Flow pressures 79 to 139#. Shut in pressure 193#.

SAND (Top 3469)
3469 to 3475

Eberly #1
14-19-15W

Well cemented angular clear quartz sand. Slight show of free oil and a faint odor.
(Included in DST No. 11)

DRILL STEM TEST NO. 11 (FOC Test)

3418 to 3475

120-45 Strong blow.
Gas-to-surface in 6 minutes.
15 minutes - 310,000 CFGPD
30 minutes - 167,000 CFGPD
45 minutes - 167,000 CFGPD
60 minutes - 196,000 CFGPD
75 minutes - 139,000 CFGPD
90 minutes - 139,000 CFGPD
105 minutes - 196,000 CFGPD
120 minutes - 167,000 CFGPD
Recovered 495' mud.
Flow pressures 215 to 203#.
Shut in pressure 1027#.

QUARTZ (Top 3478)
3478 to 3485

Clear fractured to solid quartz with scattered mica. No show of free oil, and no odor.
(Included in DST No. 12)

DRILL STEM TEST NO. 12 (FOC Test)

3420 to 3485

120-45 Strong blow.
Gas-to-surface in 5 minutes.
20 minutes - 328,000 CFGPD
35 minutes - 183,000 CFGPD
50 minutes - 196,000 CFGPD
80 minutes - 196,000 CFGPD
95 minutes - 196,000 CFGPD
120 minutes - 196,000 CFGPD
Recovered 650' gassy mud.
Flow pressures 124 to 243#.
Shut in pressure 282#.

ROTARY TOTAL DEPTH AT 3535

Eberly #1

14-19-15W

4-1/2" casing was set at 3534', 1' off bottom, with 275 sx common cement, 10% salt. Shoe joint is 36' long and zero point is 5' AGL.

Sincerely,

Steve D. Parker

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SDP/ss

DRILLING INFORMATION ON THE NO. 1 EBERLY

14-19-182J

Contractor: Red Tiger Drilling Co.

Drillers: Schmidt
B. Oden
Arnhold

Tool Pusher: Walt Oden

Spud Date: September 7, 1983

Date of RTD: September 20, 1983

Surface Pipe: 8-5/8" @ 862' w/425 sx

Casing: 4-1/2" @ 3534' w/275 sx com,
10% salt. SJ - 36'.

TOTAL FOOTAGE DRILLED PER DAY

Under Surface At 11:45 A.M. On September 8, 1983

1850	Feet	At	7:00 A.M.	On	September 9, 1983
2397	"	"	" "	"	September 10, 1983
2670	"	"	" "	"	September 11, 1983
2990	"	"	" "	"	September 12, 1983
3148	"	"	" "	"	September 13, 1983
3268	"	"	" "	"	September 14, 1983
3320	"	"	" "	"	September 15, 1983
3355	"	"	" "	"	September 16, 1983
3375	"	"	" "	"	September 17, 1983
3430	"	"	" "	"	September 18, 1983
3475	"	"	" "	"	September 19, 1983
3535	"	"	4:58 A.M.	"	September 20, 1983