

32-15-11W

LEE H. CORNELL
Petroleum Geologist

PHONE AMHERST 2-3921
706 ORPHEUM BUILDING
WICHITA 2, KANSAS

May 18, 1964

S. and C. Drilling, Inc.
Box 271
Hays, Kansas

Re: Borrell "B" No. 4
C/ N/2 SW NW 32-15S-11W
Russell County, Kansas

Gentlemen:

Drilling progress at the above captioned well was observed from 2960 to total depth. One foot drilling time was kept from 2500' to total depth, 10 foot samples were saved from 2500 to 2900' and 5 foot samples saved from 2900' to total depth. All samples were examined at the well and discarded except samples through the Toronto section, the upper Lansing section and from 3300', to total depth. These samples were delivered to the Kansas Well Sample Bureau for storage.

MISCELLANEOUS DATA

Contractor: S. and C. Drilling, Inc.
Surface Hole: May 4, 1964
Rotary Drlg. Completed: May 12, 1964
Surface Casing: 8 5/8" at 305', cemented w/ 165 sacks
Oil String: 5 1/2" at 3337', cemented 3/ 175 sacks
Centralizers: (1) Shoe, (2), 3205', (3) 3085', (4) 3020', (5) 2870'
Drill Stem Tests: Four, by Halliburton
Electric Log: By Great Guns, detail 2300' to total depth.

FORMATION TOPS (Electric Log)

Elevation: 1858, KB

Anhydrite	713	+1145
Tarkio Ls.	2368	- 510
Topeka	2644	- 786
Heebner	2892	-1034
Toronto	2911	-1053
Douglas	2924	-1066
Iatan	2984	-1126
Lansing	2999	-1141
B/ KC	3264	-1406
Conglomerate	3298	-1430
Arbuckle	3334	-1476
Total Depth	3342	-1484

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STRUCTURAL POSITION

On top of the Arbuckle, No 4 Borrell is the lowest well in the Davidson Pool and is 23 feet lower than No 1, 16 feet lower than No. 2 and 14 feet lower than No. 3. On the Heebner Shale, which is the most reliable Pennsylvanian marker in the area, No. 4 Borrell is relatively flat with other wells in the pool. It is 7 feet lower than No. 1, 1 foot lower than No. 2, 3 feet lower than No. 3 and from flat to 9 feet higher than the other wells in the pool.

Measurements, porosity and water saturation shown below are by Great Guns.

TORONTO SECTION

2913-15: Limestone, medium crystalline, slight porosity, fair to good stain. (Samples not examined wet, but odor was reported by the crew.) 7% porosity, 47% water saturation. Should be perforated before abandonment.

LANSING SECTION

3000-04: (Top Zone) Limestone, oolitic, fair odor, small small free oil, light oil stain, barren in part. 14-15% porosity, 34-35% water saturation. Should be perforated before abandonment.

3030-34: (30 ft. Zone) Limestone, oolitic, fair odor, small show of free oil, scattered light stain. 20 to 30% porosity, 23-42% water saturation. Should be considered for perforating before abandonment.

3062-64 and 3066-69: (75' Zone) Limestone, tan, pin-hole to small vugular porosity, faint odor, gas bubbles in wet sample, light oil stain. 9½% porosity, 45% water saturation; 6½% porosity and 64% water saturation.

DST No. 1: 3054-73 Open 1½ hrs. Good blow throughout, recovered 1050 ft. gas in pipe, 30 ft. oil cut mud, no water. ICIP 639#/30 min., FCIP 808#/30 min; IFP 16#, FFP 30#.
Recommend perforating before abandonment.

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3088-96 and 3100-13: (90' Zone) Limestone, coarsely oolitic, slight odor, small show free oil, scattered stains. Much barren oolitic porosity. 21% saturation, 35% water saturation. (The upper part of this section is covered in DST #2)

DST #2: 3078-3100 Open 1 hr., good blow, recovered 840 ft. of gas in pipe, 30 ft. of gassy, oil cut mud, 340' gassy, muddy water; ICIP 842#/30 mins.; FCIP 749#/30 min.; IFP 34#, FFP 160#. Zone NOT recommended for perforating.

3188-94: (180' Zone) Limestone, oolitic, slight odor, show light brown, free oil, scattered light stain, some barren oolitic limestone. 17% porosity, 34% water saturation.

DST #3: 3178-3202 Open 1 hr. Good blow, recovered 70 feet of gas in pipe, 15 feet of slightly oil cut mud, 30 feet of muddy water; ICIP 893#/30 min.; FCIP 808#/30 min.; IFP 25#, FFP 45#. Zone NOT recommended for perforating.

CONGLOMERATE SECTION

3296-3334: Red and gray shales, limestone and various colored cherts. No sandstone, no shows of oil.

ARBUCKLE SECTION

3334-42: Dolomite, gray, fine crystalline, fair odor, small show free oil. Scattered prices with good stain. Note: This section was drilled with a very dull bit and samples were mostly very small pieces, not suitable for proper analysis.

DST #4: 3437-42 Open 1 hour, strong blow throughout test. Recovered 1250 feet of clean oil (Gr. 37.1 @ 60) and 30 feet of oil cut muddy water. ICIP 1028#/30 mins., FCIP 977#/30 mins. IFP 22#, FFP 470#.

It was recommended that 5½" casing be set five feet off bottom at 3337' and that the well be completed with cable tools.

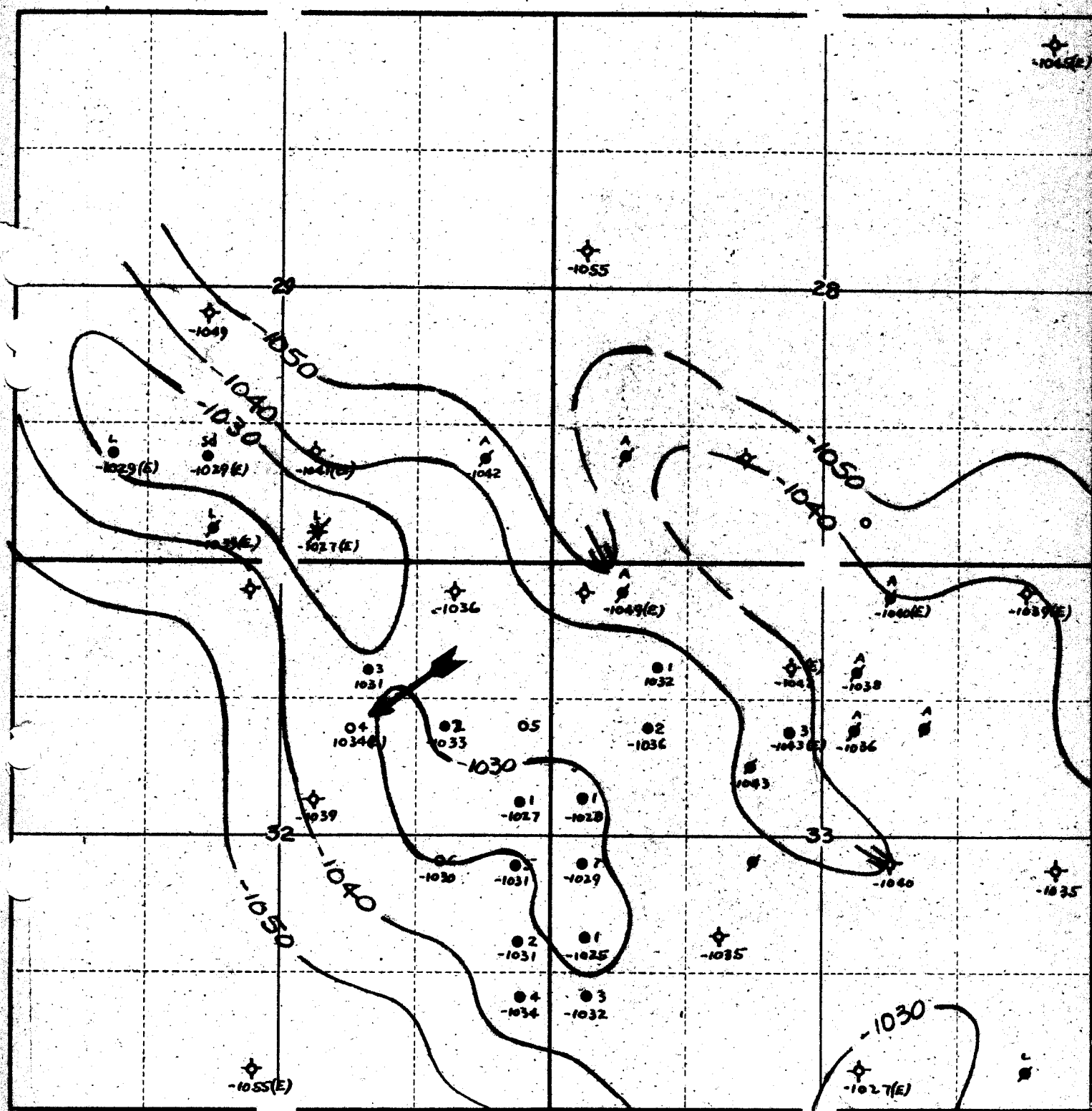
Yours very truly,


Lee H. Cornell,

Petroleum Geologist

LHC/mlb
encl.

Township 15 Range 11w County Russell State Kansas



Key

- -1029 (E) = Electric Log
- -1031 = Time Log & Samples
- = No Tap available

Top of the Heebner shale
Contour Interval - 10 ft.
By Lee H. Cornell

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