

# Martin K. Dubois

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## GEOLOGIC REPORT

Jennings Drilling Company #5 Frey

SW SE NW 18-8S-22E

Leavenworth County, Kansas

### Daily Progress:

10-1 Moved on, set 7" surface casing at 42', plug down at 11:00 p.m.  
10-2 Drilled out beneath surface casing at 10:45 a.m.  
10-3 Drilling at 1101' at 7:00 a.m., RTD of 1321' reached at midnight.  
10-4 Ran E-Logs, set 4 1/2 " production casing

### Service Companies:

Contractor: McGown Drilling Company  
Cement: Consolidated Oilfield Services  
E-Logs: Log Tech  
Drilling Mud: Hughes Drilling Fluids

### Formation Tops (E-Log):

	#5 Frey SW SE NW 18 GL 910	Structural Relation to #4 Frey SE SW NW 18
Lansing	190 (+720)	+3
B. Kansas City	516 (+394)	flat
Cherokee	760 (+150)	flat
Coal Marker	1118 (-208)	+1
Upper McLouth	1206 (-296)	flat
Lower McLouth	1249 (-339)	flat
Burgess	1300 (-390)	absent
St. Louis	1305 (-395)	+3
Spergen	1309 (-399)	+16
Total Depth	1321 (-411)	---

### Oil and Gas Shows (E-Log Depths):

1131-34 Lower Cherokee Sandstone  
Sandstone, gray, fine grained, subrounded, well sorted, micaceous, carbonaceous material, fair porosity, show of dead oil and slight show of tarry oil.

1151-57 Sandstone, white, as above, trace of dead oil.  
Neutron-Density crossover indicated gas show but both zones calculate wet.

- Upper McLouth Sandstone  
(Cored 1212-1240, see detailed descriptions and analysis attached)
- 1206-12 Sandstone, light brown stain, fine grained, well sorted, subrounded, minor green clay filling pores, good porosity, fair odor, slight oil scum.
- 1212-28 Sandstone, dark brown stain, as above, with ripple crossbedding and scattered millimeter size green clay laminae, core is bleeding gassy oil throughout.
- 1228-40 Sandstone as above except with increase in clay laminae and oil appears heavier in lower 6 feet.  
Log Calculations average 22% porosity, 60 ohms resistivity, and 24% water saturation; Neutron-Density crossover in top 10' indicates a gas cap and the remaining 24' appears to be oil pay.
- Lower McLouth Sandstone  
(Cored, see detailed descriptions and analysis attached)
- 1250-57 Sandstone, dark brown stain, fine to medium grained, subrounded, moderate to well sorted, 10 degrees planar crossbeds, mm size green clay laminae, scattered carbonaceous plant material with cm size lignite layer near base, mud clasts in lower portion, fair to poor porosity, bleeding gassy oil except where tight.  
Log calculates 10 to 14% porosity, 30 ohms resistivity, and minimum of 48% water saturation. Probably too tight to be productive.

Summary:

Production casing was run in the Jennings Drilling Company #5 Frey well to test oil and gas shows in the Upper and Lower McLouth Sandstones. Due to lack of adequate porosity in the Lower McLouth (1250-1257') it is recommended that the Upper McLouth be perforated first. Contingent upon core analysis, the recommended interval is from 1223 to 1235.

Thirty-four feet of pay sand, 1206 to 1240', was encountered in the Upper McLouth, the lower portion of which may be correlative to what I have been calling Middle McLouth in a few other wells in the pool. Since the top 10' is most likely a gas cap, it should be avoided, if possible, in order to conserve reservoir energy for more efficient oil production.

Though it is doubtful that the Lower McLouth is capable of yielding much oil, it should eventually be tested. Likewise, the two sand stringers with Neutron-Density crossover, found at 1131 to 1134 and 1151 to 1157 should eventually be tested.

Respectfully Submitted,



Martin K. Dubois

MKD:gt

E-LOG DEPTH + 2' = CORE DEPTH		DETAILED CORE DESCRIPTIONS					
Depth	φ	K(m)	% oil sat	%	BBV	acc-ft	
1215	1715.6	22.1	35	30	44	514	Core #1 1215-35 Recovered 19'
	17.5	18.2	34	37	37	522	
	19.3	23.2	149	39	27	702	
20	21.4	21.7	60	42	27	707	
	23.6	22.4	110	35	28	608	
	25.4	22.7	158	44	21	775	
	27.5	20.1	13	41	33	639	Core #2 1235-55 Recovered 20'
	29.5	21.4	39	34	37	564	
	31.5	21.8	60	45	23	761	
	33.2	23.2	90	47	22	846	
35	35.5	21.5	35	36	32	601	
	37.4	23.0	169	44	22	785	
	39.5	23.4	163	47	20	853	Core #3 1255-65 Recovered 7
	41.5	23.3	371	35	17	633	
	51.8	21.3	89	34	39	562	
	53.5	22.8	127	28	46	495	
55	55.5	25.0	384	35	35	679	
							Core #3 1255-65 Recovered 7
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