Formation Log

W. H. Amis, Jr. #1 Henderson
NE SE SW; 6-26S-13W
Pratt County, Kansas
Elevation: 1968 Kelly bushing

8 5/8" surface casing: 799'
5½ " casing: 4025'
Comm: 6-23-55
Comp:

Note: All measurements are from the top of the rotary bushing which is 3' above the derrick floor.

Depth	Formation Description	Remarks
0 - 220	Sand	Drillers log 0 - 3500'
220 - 435	Shale and red bed	
435 - 805	Sand, shale and shells	
805 - 1198	Shale and sand streaks	
1198 - 1380	Shale and shells	
1380 - 1850	Sand, shale and shells	
1850 - 2025	Shale and limestone	
2025 - 2185	Shale and limestone streaks	
2185 - 2295	Limestone	
2295 - 2695	Limestone and shale streaks	
2695 - 3015	Shale and lime streaks	
3015 - 3315	Limestone	
3315 - 3365	Shale, and limestone	
3365 - 3500	Limestone and shale	
3500 - 10	Limestone, cream to tan, finely crystalline to coarsely crystalline, dolomitic and calcitic; streak porosity 3502-06	Sample log 3500' to T.D. No show
3510 - 51	Limestone, as above, some very large vugs and some good oolicastic porosity	No show
3551 - 59	Limestone, tan, finely sucrose to subcrystalline, grading into tan finely sucrose dolomite	
3559 - 64	Shale, soft gray-black to brown-black	
3564 - 81	Limestone, tan, subcrystalline, some slightly dolomitic; streaks shale, as above	
3581 - 87	Shale, gray-black to brown-black, soft	Heebner
3587 - 92	Limestone, tan, subcrystalline to dark brown-black, dense	Leavenworth
3592 - 3601	Shale, gray-black to gray-green	Snyderville
3601 - 25	Limestone, tan to cream, subcrystalline to nearly dense; streaks gray shale	Toronto

OWWO

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Depth	Formation Description	Remarks
3625 - 3742	Shale, gray to gray-green, some silty, thin streaks gray to light green, fine, calcareous, argillaceous sand	Douglas
3742 - 47	Limestone, brown, subcrystalline fossiliferous to dense, sharp resinous	Top Brown Lime 3742
3747 - 67	Shale, gray; few thin streaks limestone, as above	
3767 - 99	Limestone, tan, subcrystalline, some with dark gray to black fossils; streaks gray shale	Top Lansing 3767
3799 - 3806	Limestone, as above, finely crystalline, some vugular porosity	No show
3806 - 18	Limestone, light gray, dense; streaks gray shale	
3818 - 23	Limestone, light gray, finely crystalline, slightly porous, streaks brown, sucrose dolomite	No show
3823 - 53	Mostly limestone, tan to dark gray-brown, dense; trace brown and gray, opaque chert; streaks gray shale	
3853 - 55	Limestone, tan, oolitic and oolicastic; good porosity	Slight trace stain
3855 - 60	Mostly shale, gray-green to brown; some thin limestone streaks	
3860 - 69	Limestone, gray to brown, subcrystalline; very good vugular porosity; much gray, opaque chert	Good brown stain
3869 - 80	Cherty limestone and streaks shale, as above	
3880 - 91	Limestone and chert, as above; fair porosity	Spotted stain
3891 - 3900	Limestone and chert, as above; streak of gray and brown shale 3892-94	
3900 - 06	Limestone, gray-brown to tan, subcrystalline; chert, gray to white, opaque, some very fossiliferous	Spotted stain
3906 - 16	Limestone and gray-brown shale streaks	
3916 - 20	Limestone, tan, oolitic; fair vugular and oolicastic porosity	Fair odor and show free oil; D.S.T. 3908-22

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Depth	Formation Description	Remarks
3920 - 50	Limestone, light tan, subcrystalline to dense; streaks gray to dark gray shale; electric log shows streak porosity 3933-37, no porosity detected in samples	
3950 - 53	Limestone, tan to light brown, finely crystalline to dense; fair vugular porosity	Slight odor, slight show free oil; D.S.T. 3950-76
3953 - 63	Limestone, brown, dense	
3963 - 74	Limestone, cream to tan, subcrystalline, oolitic; good oolicastic porosity	Spotted good show free oil, strong odor
3974 - 87	Limestone, tan, subcrystalline to dense; streaks gray and gray-black shale	
3987 - 89	Limestone, cream to tan, subcrystalline, earthy, oolitic; spotted oolicastic and interoolitic porosity	Fair spotted show free oil; D.S.T. 3981-4010
3989 - 95	Shale gray to dark gray	
3995 - 97	Limestone, brown, subcrystalline, argillaceous	
3997 - 4002	Limestone, tan to brown, very finely sucrose; good oolicastic porosity	Good odor; fair to good spotted show free oil
4002 - 06	Limestone brown, dense; streaks dark gray shale	
4006 - 10	Limestone, porous as above	Show oil, as above
4010 - 28	Limestone tan, subcrystalline, fossiliferous to brown, dense	
4028 - 38	Shale, gray-black, soft	
4038 - 48	Limestone, tan to gray, subcrystalline, earthy; spotted vugular and oolicastic porosity 4040-48	Spotted stain
4048 - 78	Limestone, tan to gray, subcrystalline, fossiliferous; streaks gray-black shale	Base Kansas City 4048
4078 - 95	Shale, green-gray to gray	Top Marmaton 4078
4095 - 99	Limestone, tan to gray, subcrystalline, fossiliferous, some silicified; chert, green to tan, translucent	

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Depth	Formation Description	Remarks
4099 - 4103	Shale, as above	
4103 - 07	Limestone and chert, as above	
4107 - 24	Shale, streaks limestone, as above	
4124 - 32	Limestone, tan, dense to red, finely crystalline, silicified	
4132 - 38	Shale, tan to maroon to gray-green; nodules of finely crystalline red to salmon limestone	
4138 - 54	Limestone, tan to salmon to gray-green, subcrystalline to dense; some salmon to brown translucent chert	
4154 - 94	Shale, red to maroon to gray-green; some salmon to cream, opaque, subvitreous chert	
4194 - 97	Limestone, cream to gray, sub-crystalline, fossiliferous; some silicified limestone	
4197 - 4202	Shale, as above	
4202 - 21	Chert, cream to white, waxy, vitreous, opaque to semi-translucent; some vugs with trace free oil; much gray and cream to salmon and cream to brown devitrified chert; much tan subcrystalline calcitic limestone; trace saturated finely crystalline dolomite.	Top Mississippi 4202; trace free oil; D.S.T. 4198-4226
4221 - 26	Shale, gray, silver-gray and gray-green	Top Kinderhook 4221
4226 - 38	Sand, white to tan, well sorted, glassy, very shaly; few pieces with dark oil stain	No free oil
4238 - 73	Shale, green, sandy; shale, as above	
4273 - 90	Limestone, pink to white, finely crystalline, some dolomitic; chert, cream to white, vitreous, opaque to semi-translucent, figured	Top Viola 4273
4290 - 4300	Limestone and chert, as above; much gray-green to pale green shale	
4300 - 29	Limestone, white to tan, finely crystalline, some silicified; chert, as above; streaks gray-green to pale green shale	

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Depth	Formation Description	Remarks
4329 - 66	Limestone, white to cream, subcrystalline, dolomitic; some pink to white, coarsely crystalline limestone; chert, white, vitreous to subvitreous, opaque to semi-translucent; some cream to white, finely crystalline, sandy limestone toward bottom	
4366 - 79	Shale, dark green to pale green; trace pale green sandy shale	Top Simpson 4366
4379 - 94	Sand, white, medium, glassy, quartaitic, gilsonitic, shaly	
4394 - 4427	Shale, green-gray to green to brown-red, some sandy; streaks gray, medium to coarse, poorly sorted, glassy, dolomitic sand; trace red sandy dolomite.	
4427 - 33	Much cream to white and brown, translucent to opaque, oolitic chert; trace creamy finely sucrose, sandy weathered dolomite	Top Erosional Arbuckle 4427
4433 - 36	Dolomite, tan to buff, very finely sucrose to finely crystalline; trace vugular porosity	Top Arbuckle 4433; No show
4436 - 54	Dolomite, cream to tan, medium crystalline, few isolated vugs; much tan subcrystalline dolomite; streaks dark green shale; some white opaque to translucent vitreous chert.	
4454 - 56	Dolomite, tan to cream, medium to finely crystalline, oolitic; good oolicastic porosity	No show
4456 - 61	Dolomite, as above, very little porosity	
4461 - 62	Dolomite, porous, as above	No show
4462 - 70	Dolomite, cream to tan coarsely crystalline, rhombohedral, calcitic; streak dark green shale 4466-67	
4470 - 74	Dolomite, as above, oolitic; good oolicastic and vugular porosity	No show
4474 - 78	Dolomite, white to gray to tan, coarsely crystalline, rhombohedral, some with tripolitic, cement; chert, white, opaque, oolitic.	
4478 - 80	Shale, dark green	
4480	Total Depth	

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Drill Stem Test Data:

Lansing - Kansas City:

(1) D.S.T. 3908 - 22; Open 1 hour - strong blow throughout - gas to surface in 8 minutes.
Recovered 85' oily mud
240' muddy oil
Initial Flow Pressure: 46 p.s.i.
Final Flow Pressure: 156 p.s.i.
Bottom Hole Pressure: 915 p.s.i. (30 min.)

(2) D.S.T. 3950 - 76; Open 1 hour - fair blow throughout test
Recovered 375' gas
65' slightly oil and gas cut mud
Initial Flow Pressure: 35 p.s.i.
Final Flow Pressure: 58 p.s.i.
Bottom Hole Pressure: 1034 p.s.i. (30 min. still building rapidly

(3) D.S.T. 3981 - 4010; Open 1 hour - good blow throughout - gas to surface in 42 minutes.
Recovered 115' slightly oil and gas cut mud
125' very heavily oil and gas cut mud
Initial Flow Pressure: 75 p.s.i.
Final Flow Pressure: 100 p.s.i.
Bottom Hole Pressure: 1000 p.s.i. (30 min. - still building rapidly

Mississippi:

(4) D.S.T. 4198 - 4226; Open 1 hour - fair blow throughout test
Recovered 65' mud - few spots oil
Note: No pressures were recorded on this test due to failure of the recorders.

Samples examined and log compiled

by

Johns and Magathan