

Computer Inventoried

FORMATION LOG

WENDELL G. JOHNS

Rine Drilling Company, et al.  
#1 Morrison  
SW Corner Lot #1, Sec. 1-26S-14W  
Pratt County, Kansas  
Elevation: 1973 Kelly Bushing

8 5/8" Surface Casing: 325'  
Comm: 12-3-57  
Comp: 12-17-57

NOTE: All measurements are taken from the top of the kelly bushing.

<u>Depth</u>	<u>Formation Description</u>	<u>Remarks</u>
0 - 250	Sand	
250 - 326	Shale	
326 - 570	Red bed	
570 - 883	Shale and red bed	
883 - 898	Anhydrite	Stone Corral - electric log top
898 - 1800	Shale and shells	
1800 - 1905	Shale and limestone	
1905 - 3400	Limestone and shale	
3400 - 04	Shale, gray	Sample log 3400 to Total Depth
3404 - 08	Limestone, cream, finely sucrose, fair vugular porosity	No show
3408 - 31	Limestone, cream to buff, very finely sucrose, dolomitic, fair to good pinpoint porosity 3419-31	No show
3431 - 50	Limestone, gray to cream, sub-crystalline, fossiliferous; streaks dark gray shale	
3450 - 65	Limestone, tan, finely sucrose, finely oolitic, dolomitic; fair to good vugular and oolitic porosity	No show
3465 - 70	Limestone, gray to tan, sub-crystalline, shaly	
3470 - 74	Limestone, porous, as above	No show
3474 - 86	Limestone, tan, subcrystalline, shaly	
3486 - 93	Limestone, cream to white, finely sucrose, chalky, oolitic, fair spotted oolitic porosity	No show
3493 - 3514	Limestone, as above, non-porous	
3514 - 22	Limestone, porous, as above	No show

-2- Formation Log: Rine Drilling Company, et al #1 Morrison.

<u>Depth</u>	<u>Formation Description</u>	<u>Remarks</u>
3522 - 3529	Limestone, buff to tan, sub-crystalline; chert, white, subvitreous	
3529 - 65	Limestone, tan, finely sucrose, dolomitic, very finely oolitic, very good honeycomb porosity 3529-34 and 3539-65; some white devitrified chert	No show
3565 - 97	Limestone, tan to gray, subcrystalline; streaks gray-black shale	
3597 - 3603	Shale, brown-black, carbonaceous	Heebner
3603 - 07	Limestone, blue-gray, subcrystalline	Leavenworth
3607 - 13	Shale, gray to gray-green	Snyderville
3613 - 36	Limestone, cream to white, finely crystalline to subcrystalline; some gray, opaque figured chert	Toronto
3636 - 3753	Shale, gray to gray-green; few thin streaks very fine gray silty sand	Douglas
3753 - 57	Limestone, light to dark brown, subcrystalline to dense, fossiliferous	Top Brown Lime 3753
3757 - 87	Shale, gray; few plates limestone, as above	
3787 - 3812	Limestone, gray, subcrystalline, fossiliferous, some brown, resinous; streaks gray shale	Top Lansing 3787
3812 - 24	Limestone, cream to white, subcrystalline with large resinous oolites; trace inter-oolitic porosity	No show
3824 - 71	Limestone, cream to brown to gray, subcrystalline to dense; streaks gray shale	
3871 - 77	Limestone, buff, subcrystalline, slightly dolomitic, crypto-fossiliferous; trace porosity; chert, amber to tan	No show
3877 - 83	Shale, gray	
3883 - 3921	Limestone, tan to buff, finely crystalline to subcrystalline, fossiliferous much tan to gray, opaque, figured chert, some tan, semi-translucent chert	
3921 - 25	Shale, gray	

-3- Formation Log: Rine Drilling Company, et al #1 Morrison.

<u>Depth</u>	<u>Formation Description</u>	<u>Remarks</u>
3925 - 3928	Limestone, as above	
3928 - 32	Limestone, tan, sucrose, very oolitic	No show
3932 - 73	Limestone, tan to gray, sub-crystalline, chalky; streaks gray shale	
3973 - 83	Limestone, cream to buff, sub-crystalline to finely sucrose; fair to good oolitic porosity	No show
3983 - 94	Limestone, cream to tan, sub-crystalline, some chalky; chert, tan to gray, opaque	
3994 - 96	Limestone, buff, finely sucrose, fair oolitic porosity	Fair spotted show free oil, trace odor
3996 - 99	Limestone, as above, non-porous	
3999 - 4007	Shale, gray-green	
4007 - 35	Limestone, tan to gray, sub-crystalline, some crypto-oolitic; few streaks gray shale, possibly some porosity 4010-17	No show
4035 - 41	Shale, dark gray	
4041 - 61	Limestone, tan to buff, sub-crystalline, fossiliferous, some vugular porosity 4044-53	No show
4061 - 89	Limestone, cream to dark tan, subcrystalline, some oolitic; streaks black shale	Base Kansas City 4089
4089 - 4106	Shale, gray-green to dark gray, some white to green-white fine sand	Pleasanton
4106 - 24	Limestone, tan, salmon and green-gray, fossiliferous, subcrystalline; some amber to salmon to gray chert; streaks maroon to gray-green shale	Top Marmaton 4106
4124 - 32	Shale, maroon to green	
4132 - 43	Limestone, cream to greenish-white, as above, some brown, resinous. Some devitrified mottled chert	
4143 - 46	Shale, as above	
4146 - 66	Limestone, gray, tan and buff, subcrystalline, fossiliferous; chert, amber, translucent; chert amber to white, subvitreous; much tan silicified limestone	
4166 - 89	Shale, gray-green, gray and purple maroon; some chert and silicified limestone, as above	

-4- Formation Log: Rine Drilling Company, et al. #1 Morrison.

<u>Depth</u>	<u>Formation Description</u>	<u>Remarks</u>
4189 - 4195	Shale, brick-red and gray-green, weathered; much weathered, opaque jasperoid chert	Conglomerate
4195 - 4208	Chert, cream, buff and white, opaque, vitreous to subvitreous; chert, blue-white to brown, vitreous to devitrified	Mississippi; trace stain no odor or free oil
4208 - 13	Shale, dark gray to gray-green	Top Kinderhook 4208
4213 - 20	Sand, brown to white, fine to very fine, tight, shaly; some chert, as above	
4220 - 30	Shale, as above	
4230 - 42	Shaly sand, as above	
4242 - 80	Shale, as above; some pale green glauconitic shale; some light purple-maroon slightly sandy shale	
4280 - 87	Limestone, pink to white, medium crystalline to finely crystalline, weathered; some red limestone; some pale green subcrystalline dolomite; much light green to gray, vitreous chert; some slightly sandy green chert	Top Viola 4280
4287 - 91	Shale, maroon	
4291 - 98	Limestone, white to red, chalky, finely crystalline, slightly dolomitic	
4298 - 4313	Chert, cream, white, pale green and red, vitreous, semi-translucent to opaque, some lacy; much tan waxy, semi-translucent chert, much white opaque chert; some brown devitrified stained chert; some sand, fine, well sorted, brown with occasional large rounded quartz pebbles, possibly some staining in sand	Traces staining, D.S.T. #1 - 4285-4335
4313 - 59	Mostly chert, cream, buff and white, vitreous, opaque to translucent; much cream to white chalky dolomitic limestone; some finely sucrose dolomite with siliceous cement	
4359 - 84	Limestone, white, chalky, medium crystalline to coarsely crystalline; chert, light yellow-tan, semi-translucent	

-5- Formation Log: Rine Drilling Company et al. #1 Morrison.

<u>Depth</u>	<u>Formation Description</u>	<u>Remarks</u>
4384 - 4388	Shale, green-black	
4388 - 97	Limestone, white, medium to finely crystalline, chalky, very sandy; grades into cream very sandy dolomite then into medium to coarse subrounded poorly sorted dolomitic sand	
4397 - 4401	Shale, bright green to dark green, sandy	Top Simpson 4397
4401 - 15	Sand, gray, submedium to coarse, poorly sorted, slightly dolomitic, very porous	No show
4415 - 17	Shale, as above	
4417 - 19	Sand, tan to gray, subangular to subrounded, fairly well sorted, medium, dolomitic	
4419 - 51	Shale, gray-green, gray and dark green, sandy; thin streaks fine to medium sand with included phosphate nodules	
4451 - 55	Dolomite, pink to buff, sub-crystalline to finely crystalline; rounded included sand grains	Top Arbuckle 4451 No shows in Arbuckle
4455 - 66	Dolomite, tan to gray, finely crystalline to medium crystalline, rhombohedral, sandy; some vugular porosity	
4466	Total Depth	

Drill Stem Test Data: The following drill stem test was taken on the #1 Morrison. Halliburton tools were used.

Viola:

(1) D.S.T. 4285-4335; dual packers; 1 joint drill pipe on bottom, 20' perforated anchor on top.  
Open 1 hour - weak blow which died in 5 minutes - flushed tool at 10 minutes, had weak blow for 2 minutes - again flushed tool at 45 minutes - weak blow for 2 minutes.  
Recovered 30' mud.  
Initial Closed In Pressure: 48 p.s.i. (30 min.).  
Initial Flow Pressure: 48 p.s.i.  
Final Flow Pressure: 65 p.s.i.  
Final Closed In Pressure: 84 p.s.i. (30 min.).

Samples examined and log compiled by Willis Jack Magathan