

Computer Inventoried

FORMATION LOG

WENDELL S. JOHNS

Rine, Roberts and Murphy #4 Reed
SE/NW/SW; 28-26S-13W
Pratt County, Kansas
Elevation: 1952 derrick floor

Comm: 6/28/53
Comp: 7/29/53

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

The drilling measurements are from 2 to 6 feet deeper than the electric log measurements. The difference is great enough that had casing been set on the well the electric log measurements would have been used. However, since the well was abandoned as a dry hole the drilling measurements have been used throughout this report.

| <u>Depth</u> | <u>Formation Description</u> | <u>Remarks</u> |
|--------------|--|-----------------------------------|
| 0 - 30 | Surface clay and sand | Drillers log 0 - 3500' |
| 30 - 180 | Sand, gravel and shale | |
| 180 - 525 | Shale and red bed | |
| 525 - 852 | Shale, shells and sand | |
| 852 - 880 | Anhydrite | Stone Corral - Drillers top |
| 880 - 1365 | Shale, shells and salt | |
| 1365 - 1790 | Shale and shells | |
| 1790 - 2100 | Limestone and shale | |
| 2100 - 2245 | Limestone | |
| 2245 - 2685 | Shale and limestone | |
| 2685 - 3065 | Limestone and shale | |
| 3065 - 3360 | Limestone | |
| 3360 - 3460 | Limestone and shale | |
| 3460 - 3500 | Broken limestone | |
| 3500 - 3511 | Limestone, white to tan, sub-crystalline to finely crystalline; spotted vugular porosity. | Sample log 3500 - T.D. No show |
| 3511 - 3520 | Limestone, as above, shaly | |
| 3520 - 3530 | Limestone, cream to tan, oolitic and oolitic, finely crystalline; spotted oolitic porosity | No show |
| 3530 - 3566 | Limestone, as above; fair oolitic porosity. | No show |
| 3566 - 3581 | Limestone, gray to tan to brown, sub-crystalline to dense; streaks gray and gray-green shale; some gray, opaque chert. | |
| 3581 - 3590 | Limestone, white to cream, sub-crystalline, oolitic; fair porosity | No show |
| 3590 - 3595 | Limestone, as above, no porosity | |
| 3595 - 3603 | Shale, gray-black to black, micaceous | |
| 3603 - 3616 | Limestone, brown to tan, finely crystalline to dense | |
| 3616 - 3620 | Shale, brown-black, fissile, micaceous. | Heebner |
| 3620 - 3626 | Limestone, dark blue-gray, dense to sub-crystalline. | Leavenworth |
| 3626 - 3631 | Shale, gray and gray-green | Snyderville |
| 3631 - 3639 | Limestone, tan to white, finely crystalline. | Toronto |
| 3639 - 3675 | Shale, gray, silty, some brown and gray-green shale; some gray siltstone. | Top Douglas 3639 |
| 3675 - 3723 | Sand, gray, fine, angular, micaceous, argillaceous, some brown sand with good oil stain. | Ireland |

| <u>Depth</u> | <u>Formation Description</u> | <u>Remarks</u> |
|--------------|---|--------------------|
| 3723 - 3783 | Mostly shale, as above; much sand, as above | |
| 3783 - 3789 | Limestone, brown to chocolate brown, dense | Brown Lansing |
| 3789 - 3802 | Mostly gray shale, streaks limestone, as above. | |
| 3802 - 3808 | Limestone, brown, sub-crystalline to dense | |
| 3808 - 3812 | Shale, gray | |
| 3812 - 3824 | Limestone, tan, sub-crystalline to finely crystalline; some oolitic | Top Lansing 3812 |
| 3824 - 3842 | Limestone, gray, sub-crystalline to dense; streaks gray shale; trace gray, opaque chert. | |
| 3842 - 3850 | Limestone, white to gray, sub-crystalline; oolitic; good vugular porosity | Slight stain, odor |
| 3850 - 3866 | Limestone, gray, dense; trace gray chert; streaks gray and brown shale | |
| 3866 - 3872 | Limestone, white to gray, sub-crystalline, oolitic; good vugular porosity | Slight stain |
| 3872 - 3903 | Limestone, dirty gray, sub-crystalline to gray-brown, dense; chert, gray, opaque; streaks gray and brown shale. | |
| 3903 - 3907 | Limestone, gray to tan, sub-crystalline, oolitic; good vugular porosity | Fair stain |
| 3907 - 3913 | Limestone and shale streaks | |
| 3913 - 3925 | Limestone, porous, as above | Fair stain |
| 3925 - 3928 | Limestone, gray to tan, granular to sub- crystalline; chert, gray, opaque, mottled. | |
| 3928 - 3938 | Limestone, gray, sub-crystalline, poor vugular porosity; chert, blue-gray, opaque. | No show |
| 3938 - 3943 | Limestone and brown shale streaks | |
| 3943 - 3950 | Limestone, gray, sub-crystalline; very poor vugular porosity; chert, as above | Trace stain |
| 3950 - 3961 | Limestone, as above, no porosity; streaks brown and gray shale | |
| 3961 - 3966 | Limestone, blue-gray, finely sucrose, oolitic; good oolitic porosity. | Fair spotted stain |
| 3966 - 3980 | Limestone, gray to tan, dense; streak gray-brown shale at bottom | |
| 3980 - 3986 | Limestone, gray to tan, finely sucrose, oolitic; good oolitic porosity. | Fair to good stain |
| 3986 - 4000 | Limestone, finely crystalline, gray, fossiliferous; streaks gray and brown shale. | |
| 4000 - 4002 | Limestone, tan, granular, oolitic; fine spotted vugular porosity | Trace stain |
| 4002 - 4012 | Limestone, as above; no porosity | |
| 4012 - 4017 | Limestone, white to tan, sub-crystal- line, oolitic; good oolitic porosity. | Good spotted stain |
| 4017 - 4030 | Limestone, tan, dense to sub-crystalline; some gray, opaque chert. | |
| 4030 - 4033 | Limestone, white to tan, finely sucrose, fair oolitic porosity. | Spotted fair stain |

(3) Formation log; Rine, Roberts & Murphy #4 Reed.

| <u>Depth</u> | <u>Formation Description</u> | <u>Remarks</u> |
|--------------|--|--|
| 4033 - 4044 | Limestone, tan, sub-crystalline; streaks gray shale. | |
| 4044 - 4047 | Limestone, white to tan, sucrose; good oolitic and vugular porosity. | Spotted good stain |
| 4047 - 4082 | Limestone, gray to blue-gray, sub-crystalline, some fossiliferous; streak gray-brown shale 4074 - 79. | |
| 4082 - 4086 | Limestone, gray, sub-crystalline | Porous on electric log - no stain or porosity in samples |
| 4086 - 4128 | Limestone, blue-gray to white, sub-crystalline to dense, some oolitic; chert, gray, opaque; streaks gray-brown to brown/black shale. | Base Kansas City 4128 |
| 4128 - 4145 | Shale, gray-green and brown, micaceous, some purple and maroon to red shale. | Top Marmaton 4128 |
| 4145 - 4149 | Limestone, tan to brown, finely crystalline, some oolitic. | |
| 4149 - 4158 | Shale, as above; streaks limestone | |
| 4158 - 4165 | Limestone, brown, dense to sub-crystalline, some red and green, sub-crystalline. | |
| 4165 - 4168 | Shale, red and green | |
| 4168 - 4182 | Limestone, as above | |
| 4182 - 4187 | Shale, brown and gray | |
| 4187 - 4209 | Limestone, light gray, sub-crystalline; chert, orange to amber and salmon, translucent, vitreous. | |
| 4209 - 4271 | Much brown, gray and maroon shale; streaks green to cream, finely crystalline limestone; chert, red, salmon and white, translucent, vitreous; some fine gray, micaceous sand 4261 - 65 | |
| 4271 - 4295 | Chert, white and tan, vitreous, opaque; chert, white to brown, semi-devitrified to devitrified; chert, salmon, citrine and white, semi-translucent to opaque. | Top Mississippi 4271, good stain, no free oil; DST |
| 4295 - 4312 | Chert, as above; spotted porosity | Good stain, no free oil |
| 4312 - 4315 | Shale, gray-green and silver-gray, micaceous | Top Kinderhook 4312 |
| 4315 - 4336 | Limestone, gray to brown, sub-crystalline, argillaceous; streaks shale as above; some fine gray, argillaceous, micaceous sand. | |
| 4336 - 4350 | Chert, salmon to tan, translucent to semi-translucent, vitreous; chert, white to tan to brown, opaque, vitreous; some white, semi-vitreous | Slight trace free oil; DST |
| 4350 - 4353 | Shale, as above | |
| 4353 - 4391 | Shale, streaks limestone, as above | |
| 4391 - 4426 | Chert, white, opaque, vitreous; much white to blue-white, semi-translucent, vitreous chert; chert, white to brown, devitrified. | Top Viola 4391; brown oil stains, no free oil; DST |

(4) Formation log; Rine, Roberts & Murphy #4 Reed

| <u>Depth</u> | <u>Formation Description</u> | <u>Remarks</u> |
|--------------|--|--|
| 4426 - 4429 | Shale, green to green-black | |
| 4429 - 4439 | Limestone, white, sub-crystalline, Chalky; few scattered rounded sand grains in limestone. | |
| 4439 - 4443 | Shale, green-gray, sandy mostly sand, white, medium, shaly | Top Simpson 4439 |
| 4443 - 4457 | Sand, white to tan, rounded, fairly well sorted | Slight to fair show free oil, slight odor |
| 4457 - 4458 | Sand, as above, calcareous | No show |
| <u>4458</u> | | <u>Rotary total depth</u> |

Drill Stem Test Data:

The following drill stem tests were run on the #4 Reed:

Mississippi:

#1 DST 4260-4300; open 1 hour; good blow for 30 min., weakened
to small blow toward end of test
Recovered 35' mud, no oil, gas or water
Bottom hole pressure 45# (20 min.)

Kinderhook:

#2 DST 4325 - 4353; open 30 min; weak blow which died in 4 min.
Recovered 15' mud
Bottom hole pressure 30# (15 min.)

Viola:

#3 DST 4387-4422; open 1 hour; weak blow throughout test
Recovered 95' mud - no oil, gas or water
Bottom hole pressure 1255# (20 min.)

(Samples examined and log compiled by Willis Jack Magathan)

T I M E L O G

WENDELL S. JOHNS

Rine Drilling Company & Roberts and Murphy #4 Reed
 SE/NW/SW, 28-26S-13W
 Pratt County, Kansas
 Elevation: 1952 derrick floor
 1955 rotary bushing

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

| <u>Depth</u> | <u>Time</u> | <u>Remarks</u> |
|--------------|------------------------------|-----------------------------------|
| 3500 - 10 | 3-5-3-4-3-3-3-4-3-4 | |
| 20 | 4-3-3-4-4-4-4-3-5-3-4 | |
| 30 | 5-5-5-5-4-4-3-5-6-4 | |
| 40 | 4-6-5-5-5-3-4-3-3-4 | Trip 3535 |
| 50 | 3-3-3-2-3-3-4-4-5-5 | |
| 60 | 3-4-3-4-4-3-4-3-4-4 | |
| 70 | 4-4-3-3-5-4-4-4-4-5 | |
| 80 | 4-4-4-4-4-5-4-4-4-4 | |
| 90 | 4-3-2-1-2-2-2-2-3-3 | |
| 90 - 3600 | 3-3-4-4-4-3-5-4-4-3 | |
| 3600 - 10 | 3-3-4-4-2-3-5-5-5-4 | |
| 20 | 4-5-5-6-5-7-4-5-4-3 | Top Heebner 3616 |
| 30 | 3-2-2-3-7-7-7-4-4-4 | |
| 40 | 3-3-4-5-5-5-4-5-5-3 | |
| 50 | 3-3-3-3-3-4-3-4-4-4 | |
| 60 | 5-3-3-4-3-2-2-3-3-4 | |
| 70 | 4-3-4-3-4-4-4-4-4-4 | |
| 80 | 4-4-4-3-2-5-6-5-6-4 | |
| 90 | 3-3-3-2-3-2-1-2-2-2 | |
| 90 - 3700 | 2-1-2-1-2-2-2-2-2-1 | |
| 3700 - 10 | 2-1-2-1-2-1-2-1-2-2 | |
| 20 | 1-2-3-2-2-2-2-2-2-2 | |
| 30 | 3-4-2-3-3-2-2-3-4-3 | |
| 40 | 4-5-3-4-4-4-4-5-5-4 | |
| 50 | 4-3-4-4-4-4-4-3-4-4 | |
| 60 | 5-4-5-4-4-4-4-4-4-4 | |
| 70 | 4-4-4-4-4-4-4-4-4-4 | |
| 80 | 5-4-5-4-5-5-5-4-5-4 | |
| 90 | 6-5-6-9-15-5-8-7-9-7 | Top Brown Lansing 3783; Trip 3785 |
| 90 - 3800 | 7-6-6-6-5-6-4-6-6-6 | |
| 3800 - 10 | 6-7-8-11-9-11-10-11-6-7 | |
| 20 | 7-6-10-9-11-8-10-9-14-11 | Top Lansing 3812 |
| 30 | 9-7-9-10-7-9-10-8-8-8 | |
| 40 | 9-10-10-10-7-8-7-6-8-6 | |
| 50 | 6-6-6-7-6-6-5-6-5-6 | |
| 60 | 8-7-8-11-11-11-12-10-7-5 | |
| 70 | 5-4-5-3-4-5-4-2-3-3 | |
| 80 | 3-6-6-5-7-5-5-11-10-11 | |
| 90 | 12-12-11-8-10-13-13-12-13-12 | |
| 90 - 3900 | 11-12-13-16-16-10-11-8-9-10 | Trip 3895 |
| 3900 - 10 | 12-12-8-8-5-5-7-5-5-8 | |
| 20 | 5-5-8-6-4-4-5-5-4-6 | |
| 30 | 5-4-5-7-8-7-7-12-4-7 | |
| 40 | 10-6-7-5-6-7-7-6-9-9 | |
| 50 | 9-14-12-9-7-6-8-8-8-11 | |

(2) Time log; Rine, Roberts & Murphy #4 Reed

| <u>Depth</u> | <u>Time</u> | <u>Remarks</u> |
|--------------|---|--|
| 3950 - 60 | 11-12-12-12-12-14-9-6-4-8 | |
| 70 | 7-3-1-1- $\frac{1}{2}$ - $\frac{1}{2}$ -11-11-11-15 | |
| 80 | 13-13-11-12-10-X-10-8-4-10 | Kelly corr. 3975 = 3976 |
| 90 | 8-8-8-10-10-10-6-11-16-17 | Trip 3990 |
| 90 - 4000 | 10-10-9-9-8-10-11-10-9-8 | |
| 4000 - 10 | 2-4-5-9-9-9-9-8-5-5 | |
| 20 | 4-4-2-1-2-3-5-7-7-10 | |
| 30 | 9-10-10-13-13-12-12-13-11-8 | |
| 40 | 7-7-7-9-13-13-14-8-7-6 | |
| 50 | 7-12-11-8-8-9-10-13-13-13 | |
| 60 | 16-14-13-14-14-8-11-10-13-10 | Trip 4055 |
| 70 | 11-10-12-8-8-9-9-5-9-9 | |
| 80 | 10-13-10-7-6-6-9-8-9-15 | |
| 90 | 10-7-8-8-9-12-11-9-11-11 | |
| 90 - 4100 | 10-11-10-11-11-11-10-8-10-13 | |
| 4100 - 10 | 10-9-4-7-13-12-11-8-8-8 | |
| 20 | 10-10-9-11-10-10-9-9-9-8 | |
| 30 | 8-9-8-10-13-8-10-11-9-8 | Base Kansas City 4128 |
| 40 | 9-8-8-9-8-6-7-6-6-7 | |
| 50 | 5-7-6-6-7-9-11-11-10-9 | |
| 60 | 9-9-8-8-8-8-8-8-9-10 | |
| 70 | 11-11-12-13-13-12-11-13-14-14 | Trip 4170; new #7 |
| 80 | 11-12-10-10-10-8-8-8-10-9 | |
| 90 | 9-12-10-7-6-6-8-8-7-5 | |
| 90 - 4200 | 5-9-7-8-6-9-10-9-9-10 | |
| 4200 - 10 | 9-13-10-10-10-11-10-10-11-9 | |
| 20 | 11-10-9-8-9-10-9-9-7-8 | |
| 30 | 10-11-11-11-12-11-13-12-12-10 | |
| 40 | 13-10-11-12-12-10-11-13-11-11 | |
| 50 | 12-12-12-9-10-11-12-13-14-13 | Trip 4250 |
| 60 | 13-12-14-13-13-10-10-10-13-13 | |
| 70 | 13-11-6-6-7-10-11-10-6-6 | |
| 80 | 6-7-3-3-4-3-4-4-4-4 | Top Mississippi 4271 |
| 90 | 4-4-4-4-4-4-3-3-4-4 | |
| 90 - 4300 | 3-4-4-4-5-4-5-5-5-5 | New bit @ 4300 |
| 4300 - 10 | 4-4-4-5-4-4-4-3-5-5 | |
| 20 | 7-7-10-13-17-15-18-17-20-17 | Top Kinderhook 4312 |
| 30 | 20-17-18-15-19-18-15-17-10-11 | Trip 4328 |
| 40 | 10-10-10-10-10-9-5-4-4-5 | Circ. 1 hr. @ 4340 |
| 50 | 3-3-4-3-4-3-4-5-4-5 | |
| 60 | 5-7-16-14-15-14-12-12-14-11 | Circ. 1 hr. 4353; new bit 4353 |
| 70 | 13-13-13-13-12-11-14-12-13-13 | |
| 80 | 12-11-11-11-11-11-11-11-14-11 | |
| 90 | 10-11-10-9-11-11-11-10-10-10 | |
| 90 - 4400 | 10-7-7-6-5-5-6-5-4-4 | Top Viola 4391 |
| 4400 - 10 | 5-5-5-6-5-5-4-5-6-5 | |
| 20 | 5-6-6-5-4-6-4-5-6-7 | |
| 30 | 8-8-4-4-3-3-3-5-6-7 | New bit @ 4322 |
| 40 | 13-16-14-11-10-8-11-9-10-9 | Top Simpson 4439 |
| 50 | 9-10-8-5-6-9-7-5-5-7 | |
| 58 | 5-4-5-5-5-6-7-14 | Circ. 1 $\frac{1}{2}$ hr. 4458 R.T.D. |

(Time log condensed by Willis Jack Magathan)