Summary of the Caroline Hunt Trust Estate-John Waltz Jr. #1
Well No. 665 - Permit No. 679
by John L. Rainer


The Caroline Hunt Trust Estate - John Waltz Jr. No. 1 was spudded August 2, 1954; drilled to a total depth of 6782 ft; found dry and plugged September 3, 1954. No drill stem tests or cores were taken. Electrical, Micro and Gamma Ray logs were run by Schlumberger and Gamma Ray - Neutron logs were run by Lane Wells September 2 and 3, 1954.

Casing Record
Set 10 3/4" surface casing at 344 feet with 300 sacks of cement.

Plugging Record

<table>
<thead>
<tr>
<th>Plug</th>
<th>Depth Range</th>
<th>Cement Sacks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plug 1</td>
<td>Ground level</td>
<td>10 sacks</td>
</tr>
<tr>
<td>Plug 2</td>
<td>304' to 344'</td>
<td>20 sacks</td>
</tr>
<tr>
<td>Plug 3</td>
<td>2494' to 2550'</td>
<td>20 sacks</td>
</tr>
<tr>
<td>Plug 4</td>
<td>3844' to 3900'</td>
<td>20 sacks</td>
</tr>
<tr>
<td>Plug 5</td>
<td>5686' to 5770'</td>
<td>30 sacks</td>
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</tbody>
</table>

No oil shows reported.

Formation tops were determined from samples and electric logs. Doubtful or obscure formation tops were not picked. Color names and identifying numbers are from the 1948 color chart distributed by the National Research Council, Washington, D.C.

FORMATION TOPS

Cretaceous system
- Pierre formation 422
- Niobrara formation 1415
- Greenhorn formation 2054
- Dakota group sandstones 2597

Jurassic system 2883?
- Piper limestone 3210

Triassic system
- Spearfish formation 3445

Mississippian system
- Charles formation 3576
- Mission Canyon formation 3940
- Lodgepole formation 4187
- Englewood formation 4789

Devonian system
- Lyleton formation 4811
- "Nisku" formation 4840
<table>
<thead>
<tr>
<th>Formation/Formation</th>
<th>Depth (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duperow formation</td>
<td>4890</td>
</tr>
<tr>
<td>Ashern formation</td>
<td>5555</td>
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<tr>
<td>Silurian system</td>
<td></td>
</tr>
<tr>
<td>Interlake group</td>
<td>5575</td>
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<tr>
<td>Ordovician system</td>
<td></td>
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<tr>
<td>Stony Mountain formation</td>
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</tr>
<tr>
<td>Upper member</td>
<td>5772</td>
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<tr>
<td>Lower member</td>
<td>5862</td>
</tr>
<tr>
<td>Red River formation</td>
<td>5962</td>
</tr>
<tr>
<td>Winnipeg formation</td>
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</tr>
<tr>
<td>shale member</td>
<td>6560</td>
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<tr>
<td>sandstone member</td>
<td>6735</td>
</tr>
<tr>
<td>Total Depth</td>
<td>6782</td>
</tr>
</tbody>
</table>

344 - 350  Predominantly cement from drilling out of surface casing set at 340'. Quartz sand, clear to stained, angular to subrounded. Little shale, medium light gray, dense, compact. Little lignite.

350 - 420  Shale and quartz sand as above. Little lignite.

420 - 500  Shale, light olive gray 5Y6/1, lumpy, slightly bentonitic. Little lignite. Little sand as above.

500 - 600  Shale, medium light gray, lumpy, slightly bentonitic, little micaceous, sandy and silty.

600 - 750  Shale, silty, sandy and slightly bentonitic as above with much glauconite as pellets dispersed throughout the shale.

750 - 860  Shale as above. Shale, light gray, compact, micaceous.

860 - 900  Shale, medium light gray, lumpy, silty, micaceous. Little glauconite.

900 - 1000 Shale, medium light gray, compact, foliated. Few Inoceramus prisms.

1000-1090 Shale as above. Shale, medium light gray, lumpy, bentonitic.

1090-1190 Shale, medium light gray, compact, foliated.

1190-1250 Shale as above. Bentonite, white.

1250-1330 Shale as above.

1330-1420 Shale, medium light gray, compact, foliated. Shale, medium light gray, lumpy, bentonitic.

1420-1450 Shale, black, fissile.

1450-1540 Shale as above. Shale, medium dark gray, lumpy, bentonitic. Bentonite, bluish white 5B9/1, micaceous.

1540-1560 Shale, medium gray with “white specks”, foliated, calcareous.

1560-1700 Shale medium to medium dark gray, spongy, lumpy, bentonitic. Little pyrite.

1700-1920 Shale as above.

1920-1950 Shale as above. Shale, medium to dark gray, fissile.


1990-2000 Shale, grayish black to black with “white specks”, calcareous.


2050-2080 Shale, grayish black to black, foliated, “white specks”, calcareous.

2080-2100 Shale, medium light gray, lumpy, few included quartz grains. Inoceramus prisms. Little pyrite.

2100-2110 Quartz grains, subangular, clear to stained. Subrounded limestone pellets. Shale, medium light to medium dark gray, foliated. Inoceramus prisms, little pyrite.
2110-2130  Shale, medium dark to dark gray, foliated, some with “white specks” and calcareous. Quartz grains and little limestone as above. Inoceramus prisms.

2130-2150  Shale, medium light to medium gray, lumpy. Little shale as above. Some quartz grains and limestone as above. Inoceramus.

2150-2160  Subangular, quartz and subrounded limestone sand. Shale, medium light, gray foliated to medium dark gray with “white specks”. Inoceramus.

2160-2200  Shale, dark gray, foliated, some “white specks”, little bentonite. Inoceramus prisms.

2200-2260  Shale, medium gray, lumpy, bentonitic. Inoceramus prisms.

2260-2320  Shale, dark gray, lumpy, slightly bentonitic. Inoceramus prisms. Little shale, dark gray with “white specks”.

2320-2360  Shale, medium to dark gray, foliated.

2360-2400  Shale as above. Little quartz sand, subangular, clear to stained. Few Inoceramus prisms. Little pyrite.

2400-2420  Shale, medium to dark gray, foliated. Little pyrite.

2420-2480  Shale, medium to dark gray, foliated. Little sandstone, white, fine grained, pyritic cement.

2480-2520  Sand, unconsolidated, coarse, subangular to subrounded, clear quartz sand.

2520-2580  Shale, medium to dark gray foliated. Little sand as above. Little pyrite.

2580-2620  Sand, unconsolidated, course, subangular to subrounded, clear quartz sand.

2620-2660  Shale as above. Little sandstone, fine grained, pyritic cement.

2660-2710  Sand as above.

2710-2730  Missing.

2730-2750  Sand, unconsolidated, subangular to subrounded quartz sand. Shale as above. Little pyrite.

2750-2770  Shale as above. Little sandstone, white, fine grained, pyritic cement.

2770-2790  Sand, unconsolidated, course, subangular to subrounded, clear quartz sand.

2790-2810  Shale, medium to dark gray foliated. Little sand as above. Little pyrite.

2810-2830  Shale, medium to dark gray foliated. Little sand as above.

2830-2870  Sand as above.

2870-2910  Shale, medium to dark gray foliated. Little sand as above. Little shale, greenish gray 5G6/1, waxy slightly calcareous. Little siltstone, yellowish gray 5Y8/1, calcareous.

2910-2950  Shale, dark gray, foliated. Little siltstone as above.

2950-3010  Shale, medium to dark gray foliated, greenish gray 5G6/1, waxy slightly calcareous. Little siltstone, yellowish gray 5Y8/1, calcareous.

3010-3070  Shale, medium dark gray to black, foliated. Little bentonite.

3070-3110  Shale, medium gray, foliated, greenish gray 5G6/1, waxy slightly calcareous.

3110-3160  Shale, medium dark to dark gray foliated. Little limestone, yellowish gray 5Y8/1, fragmental.

3160-3200  Shale, light to dark gray foliated to fissile, shale, greenish gray, waxy. Little limestone, yellowish gray, some with gray streaks. Fragmental.

3200-3210  Shale as above, shale, moderate brown 5YR4/4, subwaxy, calcareous.

3210-3230  Shale as above. Little gypsum. Little dolomite, pale yellowish brown, microsucrosic.

3230-3260  Missing.

3260-3300  Shale, medium to dark gray, foliated, shale, greenish gray 5G6/1, subwaxy.

3300-3320  Limestone, white to very pale orange, sublithographic to fragmental. Little chert, white.
3210-3230 Dolomite, pale yellowish brown, microsucrosic, dense. Chert, very light gray.
3230-3250 Dolomite as above. Little gypsum. Shale, very light gray, dense, highly calcareous.
3250-3300 Limestone, white to very pale orange, finely crystalline, dense. Variegated shale, splintery.
3300-3380 Limestone, very pale orange, microcrystalline, dense. Little shale as above.
3380-3410 Limestone and shale as above. Little gypsum.
3410-3460 Shale, greenish gray 5GY6/1, foliated, grayish red 10R4/2, massive, gypsum.
3460-3490 Siltstone, pale reddish brown 10R5/4, gypsiferous, slightly calcareous. Shale as above.
3490-3560 Siltstone, pale reddish brown, gypsiferous, included quartz sand grains, rounded, frosted. Shale as above.
3560-3570 Limestone, very pale orange, microcrystalline, dense. Shale, grayish red, massive, shale, greenish gray, foliated, calcareous. Little gypsum.
3570-3590 Limestone, very pale orange to pale yellowish brown to grayish pink, microcrystalline to oolitic. Shale as above. Little gypsum.
3590-3610 Shale as above. Gypsum.
3610-3630 Shale and gypsum as above. Dolomite, grayish orange 10YR7/4 to light red 5R6/6, microcrystalline, silty.
3630-3710 Limestone, very pale orange 10YR8/2, microcrystalline, dense, pale brown anhydrite filling vugs. Shale as above. Little gypsum.
3710-3740 Shale as above. Dolomite, very light gray, microcrystalline. Gypsum.
3770-3790 Anhydrite, light gray.
3790-3820 Dolomite, yellowish gray 5Y8/1, microcrystalline, dense. Anhydrite as above.
3820-3830 Anhydrite, white, very light gray, grayish pink. Little dolomite as above.
3830-3850 Limestone, very pale orange, microcrystalline, anhydrite. Shale, moderate reddish brown, massive, greenish gray, foliated calcareous. Anhydrite.
3850-3920 Dolomite, very pale orange, microcrystalline, dense. Shale and anhydrite as above.
3920-3930 Limestone, very pale orange, dense to slightly vuggy to oolitic. Limestone, very pale orange, granular with pinpoint porosity to slightly oolitic.
3980-4040 Anhydrite, light gray to grayish pink. Little limestone as above.
4040-4070 Limestone, pale yellowish brown, granular to microsucrosic, some pinpoint porosity, slightly dolomitic.
4110-4150 Limestone, very pale oranges fragmental. Little limestone as above.
4150-4170 Limestone as above, some oolites.
4170-4230 Limestone, pale yellowish brown to medium gray, fragmental, argillaceous, fossiliferous.
4230-4390 Limestone, pale yellowish brown to medium gray, fragmental to oolitic, argillaceous, fossiliferous.
4390-4480  Limestone, light to medium light gray, fragmental to granular, argillaceous, fossiliferous.
4480-4490  Limestone, medium light gray, fine grained, dense, argillaceous.
4490-4540  Limestone, pale yellowish brown, fragmental, fossiliferous.
4540-4580  Limestone as above. Little chert.
4580-4600  Limestone, medium light gray, fragmental, argillaceous, fossiliferous.
4600-4720  Limestone, pale yellowish brown, medium light gray, fragmental. Chert, medium dark gray.
4720-4750  Limestone, medium light gray, argillaceous, fossiliferous.
4750-4780  Limestone yellowish gray, fragmental.
4780-4800  Shale, dark gray, carbonaceous, slightly calcareous, lumpy.
4800-4810  Dolomite, yellowish gray, microsucrosic, silty, shale, dark gray, foliated.
4810-4820  Calcareous shale, moderate reddish brown 10R4/6, light gray, lumpy. Dolomite, grayish pink 5R8/2, greenish gray 5GY6/1, very pale orange, and light gray, microcrystalline, argillaceous.
4820-4030  Dolomite, as above.
4800-4820  Dolomite, pale brown 5YR5/2, granular, little vuggy porosity.
4860-4890  Dolomite, pale yellowish brown, granular, vuggy.
4890-4920  Dolomite, pale yellowish brown, microsucrosic, anhydrite. Dolomite, medium grain, microcrystalline, argillaceous. Little shale, greenish gray, fissile.
4920-4940  Dolomite, pale yellowish brown, granular to microsucrosic, anhydritic. Anhydrite. Little shale as above.
4940-5080  Dolomite, pale brown, granular, pinpoint porosity, anhydritic.
5080-5090  Limestone, very pale orange 10YR8/2, pale yellowish brown 10YR6/2 and little pale red 10R6/2, dense, finely crystalline.
5090-5130  Limestone, very pale orange to pale yellowish brown, finely crystalline to microsucrosic, dense. Little argillaceous limestone, medium light gray, dense.
5130-5150  Dolomite, pale yellowish brown, microsucrosic, dense.
5150-5270  Dolomite, medium light gray to pale yellowish brown, microsucrosic, dense. Little anhydrite.
5270-5290  Dolomite as above. Limestone, medium gray, argillaceous, dense.
5290-5320  Limestone, very pale orange to pale yellowish brown, finely crystalline, dense. Little argillaceous limestone as above.
5320-5350  Dolomite, pale brown 5YR5/2, sucrosic, pinpoint porosity. Anhydrite cleavage fragments.
5350-5370  Limestone, very pale orange to pale yellowish brown, finely crystalline, dense.
5370-5390  Limestone as above. Shale, dark greenish gray 5GY4/1, foliated.
5390-5400  Limestone and shale as above. Dolomite, pale reddish brown, 10R5/4, argillaceous, fine grained, dense.
5400-5440  Dolomite, very pale orange, finely crystalline, dense. Dolomite, pale reddish brown, argillaceous, fine grained, dense.
5440-5470  Dolomite, very pale orange, finely crystalline, dense.
5470-5490  Limestone, pale yellowish brown to brownish gray, fragmental, dense, fossiliferous.
5490-5510  Limestone as above. Little limestone, mottled white and pale red 10R6/2 sublithographic.
5510-5540  Dolomite, pale red 10R6/2, finely crystalline to microsucrosic, dense.
5540-5560  Limestone, white, sublithographic. Dolomite, yellowish gray 5Y8/1, dense, very finely crystalline, anhydritic.
5560-5580 Dolomite, pale red 10R6/2 to grayish red 10R4/2, argillaceous, dense. Shale, medium light gray to dark gray, greenish gray 5GY6/1 to dark greenish gray 5GY4/1, foliated, little calcareous.
5580-5590 Limestone, white, sublithographic. Shale and dolomite as above.
5590-5700 Dolomite, very pale orange 10YR8/2, pale red 10R6/2, and yellowish gray 5Y8/1, slightly siliceous, fine grained, dense.
5700-5740 Dolomite, very pale orange, slightly siliceous, fine grained, dense.
5740-5750 Shale, medium gray, massive. Dolomite as above.
5750-5770 Dolomite, very pale orange, little pale red 10R6/2, fine grained, dense, slightly siliceous.
5770-5810 Dolomite as above with few included quartz sand grains.
5810-5850 Dolomite, yellowish gray 5Y7/2, finely granular, silty, few included quartz sand grains.
5850-5870 Dolomite, pale yellowish brown with dark gray banding, finely granular, silty, little pinpoint porosity.
5870-5890 Limestone, light gray, fossiliferous, argillaceous. Dolomite as above.
5890-5930 Limestone, light gray with dark gray to black shale streaks, fossiliferous, predominantly bryozoa, fragmental. Few quartz sand grains.
5930-5960 Limestone as above. Considerable quartz sand grains, clear, rounded to subangular. Shale, light to dark gray.
5960-5990 Limestone, pale yellowish brown, some dolomitic, finely crystalline, dense.
5990-6020 Dolomite, pale yellowish brown, microsucrosic, dense.
6020-6070 Dolomite, pale yellowish brown, microcrystalline, dense, slightly anhydritic.
6070-6170 Dolomite, pale yellowish brown, microsucrosic to finely granular, dense.
6170-6200 Dolomite as above. Limestone, very pale orange, sublithographic.
6200-6350 Limestone, very pale oranges sublithographic to fragmental. Dolomite as above.
6350-6400 Limestone, very pale orange to yellowish gray 5Y7/2, finely crystalline, fossiliferous. Dolomite, pale yellowish brown, microsucrosic, dense.
6400-6430 Limestone, yellowish gray 5Y7/2, very finely granular, slightly dolomitic, dense.
6430-6480 Limestone as above. Dolomite, pale yellowish brown, microsucrosic. Quartz sand and dark gray shale caving.
6480-6600 Limestone, yellowish gray 5Y8/1 to pale yellowish brown, fragmental, fossiliferous, dense. Quartz sand caving as above.
6600-6630 Limestone, yellowish gray 5Y7/2 to light greenish gray 5GY8/1, finely crystalline, argillaceous. Shale, dark greenish gray 5G4/1, foliated.
6630-6740 Shale as above. Limestone and quartz sand caving as above.
6740-6780 Sandstone, clear, subangular to rounded, course, friable quartz grains. Shale and limestone caving as above.
6780 Total Depth.