

NORTH DAKOTA GEOLOGICAL SURVEY CIRCULAR NO. 187

Summary of the Calvert Drilling, Inc. - Arnold Gerber #1
Logan County, North Dakota
Well #1355 - Permit #1367

January, 1958
by Jay Garske

Calvert Drilling, Inc. - Arnold Gerber #1. Location: 560 feet from south line and 660 feet from west line in the NW 1/4 NW 1/4, Section 11, T. 135N., R. 72W. Regular location inaccessible due to terrain. Elevation: 2058 G.L., 2069 K.B., Total Depth: 3200 feet.

The Calvert Drilling, Inc., - Arnold Gerber #1 was spudded January 26, 1957; drilled to a total depth of 3200 feet, found dry and plugged February 1, 1957. There were no drill stem tests taken, and no cores were cut.

Logs: Electrical, and gamma ray-neutron to 3012 feet.

Casing Record:

Set 10 3/4" surface casing at 205 feet K.B. with 150 sacks cement and 3 sacks chloride.

Plugging Record:

2913' to 2853' 20 sacks cement

2402' to 2342' 20 sacks cement

215' to 175' 20 sacks cement

Cement plug in top of surface casing left out at request of land owner.
Well capped only.

Formation tops were determined from samples and electric logs, corrected to the electric logs. Doubtful or obscure formations were not picked. Colors and descriptive numbers were taken from the Goddard, et. al., 1951 Rock-Color chart distributed by the Geological Society of America, New York, New York.

FORMATION TOPS

Cretaceous System

Niobrara formation 1224

Greenhorn formation 1808

Newcastle ("Muddy") sandstone 2220

Basal cretaceous sandstone 2402

Jurassic System 2523

Piper limestone 2778

Mississippian System

Mission Canyon formation 2914

Note: A correction was made in the drilling depth from approximately 630' to 2671'. Since the sample depths were not corrected, 33' should be subtracted from the intervals described between 630 and 2671 feet. The depths from 2671' to 3200' are corrected.

230-260	Sandstone, very fine to medium grained, moderately well cemented, calcareous, light olive gray, and much coarse to very coarse grained free quartz.
260-320	Siltstone and claystone, light olive gray 5Y5/2, with some dark yellowish green 10GY4/4 intermixed, earthy, lumpy, spongy, highly glauconitic.
320-350	Siltstone, and shale, very light olive gray 5Y6/2, lumpy, compact, slightly glauconitic.
350-410	Shale, light olive gray, earthy, foliated, to lumpy, compact, slightly glauconitic.
410-620	Shale, very light olive gray, earthy, lumpy, compact.
620-1040	Shale, greenish gray 5GY6/1, brittle, fissile to lumpy.
1040-1070	Shale, as above, little white bentonite, some greenish gray bentonite, and much bentonitic shale.
1070-1100	Shale, bentonitic shale, and greenish gray bentonite as above.
1100-1210	Shale, bentonitic, greenish gray, lumpy, compact.
1210-1240	Lignite, brownish gray to brownish black, lumpy and lignitic shale, dark gray to grayish black, lumpy, brittle, little white bentonite.
1240-1270	Bentonite, white, moderately soft, chalky, and lignite, dark gray, some brownish gray, lumpy compact.
1270-1300	Shale, medium gray, lumpy, compact.
1300-1360	Shale, medium light gray to light gray, lumpy, soft, with white calcareous specks.
1360-1420	Shale, light gray to medium gray, compact little with white calcareous specks.
1420-1510	Shale, medium light gray, lumpy, compact, slightly calcareous.
1510-1630	Shale, as above, little pyrite.
1630-1690	Shale, as above, to dark gray.
1690-1720	Shale, medium light gray to light gray, lumpy, compact.
1720-1780	Shale, medium light gray to medium dark gray, lumpy, compact, some pyrite and little white bentonite.
1780-1840	Shale, and bentonite as above.
1840-1870	Shale, greenish gray, lumpy, compact.
1870-1900	Shale, medium dark gray to dark gray, compact.
1900-1930	Shale, as above some with white specks, some greenish gray, few pieces quartz sandstone, little slightly glauconitic, little white bentonite.
1930-1960	Shale, greenish gray, with white calcareous specks, lumpy, compact, little dark gray shale and abundant Inoceramus prisms.
1960-1990	Shale, as above, little glauconite.
1990-2020	Shale, greenish gray, lumpy, compact, little glauconite, slightly calcareous.
2020-2050	Shale, medium light gray to dark gray, little greenish gray, little pyrite and glauconite.
2050-2110	Shale, medium light gray to medium dark gray, lumpy, compact, little pyrite and little greenish gray shale.
2110-2140	Shale, medium dark gray, soft, little medium light greenish gray 5GY7/1 compact, and some very fine grained, moderately well cemented, white sandstone, calcareous and slightly glauconitic in part.
2140-2170	Shale, as above.
2170-2200	Shale, medium dark gray to dark gray, platy to lumpy, and some light olive gray, well cemented siltstone.

2200-2230 Shale, greenish gray 5GY6/1, and medium gray to dark gray, few pieces of white, fine grained sandstone and numerous pieces of white bentonite, along with some greenish gray bentonitic clay.

2230-2290 Shale, as above and some greenish gray bentonitic clay.

2290-2320 Shale, and bentonitic clay as above, some pyrite and little glauconite.

2320-2350 Shale, bentonitic clay and little pyrite as above, few pieces of white fine grained sandstone.

2350-2410 Shale, and bentonitic clay as above, some white bentonite.

2410-2440 Shale, bentonitic clay, and bentonite as above, and few pieces of moderate yellowish brown 10YR5/4, very fine grained, very well cemented, sandstone.

2440-2470 Shale, greenish gray and dark gray, lumpy, moderately soft, much bentonitic, and little pyrite.

2470-2510 Missing.

2510-2520 Sandstone, fine grained, friable, calcareous cement, mostly white, some stained light brown 5YR5/6 to moderate yellowish brown 10YR5/4, some pyrite and much greenish gray and dark gray probable shale cavings.

2520-2530 Missing.

2530-2590 Sandstone, fine grained, mostly friable, little well cemented, calcareous in part, white to very light gray, some stained moderate yellowish brown 10YR5/4 and dark yellowish orange 10YR6/6, much pyrite, and shale cavings as above.

2590-2600 Sandstone, pyrite and shale cavings as above, and some light olive gray and light gray, very hard, calcareous claystone stained light brown 5YR6/4, and grayish orange 10YR7/4.

2600-2630 Shale, greenish gray to light greenish gray much medium gray to dark gray, splintery to flaky, compact, and little sandstone, pyrite and claystone as above.

2630-2650 Shale, as above.

2650-2660 Shale, dark gray, some greenish gray to light greenish gray, soft.

2660-2670 Shale, greenish gray to light greenish gray, lumpy, little dark gray, flaky.

2670-2680 Shale, as above and little fine grained friable white, calcareous sandstone, some stained dark yellowish orange 10YR6/6.

2680-2690 Shale, greenish gray to light greenish gray, flaky, some dark gray, and little sandstone as above.

2690-2710 Shale, greenish gray as above, mostly lumpy, little dark gray shale as above.

2710-2730 Shale, as above, increase in dark gray shale, little coarse grained clear, free quartz.

2730-2740 Shale, greenish gray to light greenish gray, compact, some medium gray compact shale, some pyrite.

2740-2750 Shale, as above, some very fine grained, well cemented, calcareous, moderate reddish orange 10R6/6 sandstone, little fine grained, white, calcareous sandstone, little greenish gray fine grained sandstone and little medium gray, lithographic limestone.

2750-2760 Shale, and sandstone as above, some pale reddish brown 10R5/4 siltstone, some yellowish gray 5Y8/1, sublithographic limestone, and little very pale orange 10YR8/2 oolitic limestone.

2760-2770 Limestone, medium oolitic, elliptical, very pale orange, and some shale and siltstone as above.

2770-2780 Limestone, as above, poor sample mostly shale cavings.
 2780-2790 Limestone, medium oolitic, very pale orange, some with clear calcite matrix, little coarse grained free quartz, and shale, sandstone and siltstone as above, probably cavings.
 2790-2800 Limestone, medium oolitic, some very fine crystalline, very pale orange, and much coarse to granular, clear quartz, little very pale blue 5B8/2 chert.
 2800-2810 Limestone, very fine crystalline, little oolitic, very pale orange, little quartz and chert as above.
 2810-2820 Limestone, very fine crystalline, little oolitic, very pale orange and pale red purple 5RP6/2 little quartz and chert as above.
 2820-2830 Limestone, sublithographic, very pale orange, much quartz and little chert as above.
 2830-2840 Limestone, as above to very fine crystalline, argillaceous, free quartz as above and little white chalky anhydrite.
 2840-2850 Limestone, as above, mostly dense, some with pinpoint porosity, quartz and anhydrite as above, little oolitic limestone.
 2850-2860 Limestone, as above, clear quartz as above, and some coarse, frosted, well rounded quartz grains.
 2860-2870 Limestone, and quartz as above and some soft, white anhydrite.
 2870-2880 Limestone, very fine crystalline, argillaceous, to sub-lithographic, little oolitic, very pale orange to moderate orange pink 5YR8/4, some quartz and anhydrite as above.
 2880-2890 Limestone, very fine crystalline, argillaceous, some dolomitic, moderate orange pink, much anhydrite and little quartz as above.
 2890-2910 Limestone, very fine crystalline to sublithographic, dolomitic in part, very pale orange, some coated with moderate reddish brown 10R4/6 clay, and some anhydrite and quartz as above.
 2910-2920 Limestone, lithographic, very dense, hard, moderate orange pink 10R7/4.
 2920-2930 Limestone, as above, and some fragmental limestone, grayish orange 10YR7/4.
 2930-2940 Limestone, sublithographic to lithographic, very pale orange 10YR8/2 to grayish orange 10YR7/4, little fragmental, as above.
 2940-2950 Limestone cryptocrystalline, little oolitic, and few pieces of pseudo-oolitic, very pale orange to pale yellowish brown 10YR6/2.
 2950-2960 Limestone, as above with little fine crystalline limestone, and less oolitic limestone.
 2960-2970 Limestone, fine crystalline to lithographic, very pale orange and grayish orange pink 5YR7/2.
 2970-2980 Limestone, very fine crystalline dense, pale red 10R6/2, grayish red 5R4/2 and very pale orange to very pale yellowish brown 10YR7/2, few pieces of gypsum.
 2980-2990 Limestone, sublithographic, few microfractures and little isolated pinpoint porosity, very pale orange.
 2990-3000 Limestone, very fine crystalline, little oolitic, mostly dense, little isolated pinpoint porosity, very pale orange.
 3000- Limestone, very fine crystalline to fine granular very pale orange, and pale red 10R6/2 to light red 5R6/6.
 3010 Circulation 1 hour. Limestone, as above.
 3010-3020 Limestone, as above, little sucrosic dolomite.
 3020-3030 Limestone, some dolomitic, fine crystalline, moderate red 5R5/4 to pale red 10R6/2.

3030-3040 Limestone, cryptocrystalline, little fragmental, some dolomitic dense, very pale orange, 10YR8/2, to very pale yellowish brown 10YR7/2.

3040-3050 Limestone, cryptocrystalline to very fine crystalline, little oolitic, mostly dense, little oolitic intergranular porosity, very pale orange to very pale yellowish brown, and pale red 5R6/2 to grayish red 5R4/2.

3050-3060 Limestone, cryptocrystalline to very fine crystalline, dense very pale orange to very pale yellowish brown.

3060-3070 Limestone, sublithographic, dense, very pale orange.

3070-3080 Dolomite, calcitic, microsugrosic, interstitial porosity, pale yellowish brown 10YR6/2, and pale red 5R6/2, some limestone as above.

3080-3090 Poor sample, mostly cottonseed hulls, little dolomite and limestone as above.

3090-3098 Missing.

3098-3105 Limestone, dolomitic, microsugrosic to very fine crystalline some dense, little with probable interstitial porosity and some with good cavernous porosity, pale red 5R6/2, pale yellowish brown, and very pale orange.

3105-3110 Dolomite, calcitic, argillaceous, very fine crystalline, dense, pale red 5R6/2, and very pale orange, some mottled limestone, very pale yellowish brown 10YR7/2.

3110-3115 Poor sample, mostly cavings, little dolomite as above.

3115-3125 Limestone, fine crystalline, pinpoint porosity, very pale yellowish brown 10YR7/2, little dolomite as above, some pseudo-oolitic limestone with angular dolomite inclusions, and little oolitic limestone, very pale orange.

3125-3130 Dolomite, calcitic, argillaceous, pale red 10R6/2 and limestone, fine crystalline to fragmental, very pale orange.

3130-3135 Limestone, fine crystalline dense, white to pale yellowish brown 10YR6/2, some dolomitic, argillaceous, very fine crystalline, limestone, pale red 5R6/2.

3135-3140 Dolomite, calcitic, microsugrosic, some pinpoint porosity, pale yellowish brown, little white and pale red limestone, as above.

3140-3145 Limestone, fine crystalline, dense, very pale orange to very pale yellowish brown 10YR7/2.

3145-3150 Limestone, fine crystalline, dense, pale red 10R6/2.

3150-3160 Limestone, mottled, some fragmental, dense, very pale orange to pale yellowish brown.

3160-3170 Limestone, mottled, grayish pink 5R8/2, and some crypto-crystalline limestone, pale yellowish brown.

3170-3180 Limestone as above and dolomite, calcitic, microsugrosic, little pinpoint and probable interstitial porosity, grayish red 10R4/2.

3180-3190 Dolomite, as above and little limestone, as above.

3190-3200 Limestone, as above and little dolomite, as above.

3200 Circulation 3/4 hour: Limestone, as above.

3200 Total Depth.