

NORTH DAKOTA GEOLOGICAL SURVEY CIRCULAR NO. 119

Summary of the Calvert Exploration Co. - National Bulk Carriers - Stadum #1
Benson County, North Dakota
Permit No. 646 - Well No. 632

by Clarence Carlson

Calvert - National Bulk Carriers, Stadum #1, Benson County, North Dakota, NW SE of Section 31, T. 154N., R. 70W., (500 feet from the south line, 660 feet from the east line). Elevation 1637 K.B., 1628 G.L.

The Calvert, National Bulk Carriers - Stadum #1 was spudded June 21, 1954. 10 3/4" casing was set at 182 feet with 125 sacks of cement. The well was drilled to a total depth of 5144 feet. Plugged and abandoned July 17, 1954.

Cored Intervals
2714-2739
5060-5065

TESTS

DST #1 2595-2618, open 1 hour, good blow to very poor blow in 60 minutes, recovered 200 feet of salty muddy water. HP 1340- 1300#, FP 0#, SIP 25 minutes 500#.
DST #2 4569-4584, open 2 hours, shut in 15 minutes, recovered 794 feet of heavily to slightly mud cut salt water. HP 2400#, FP 0-340#, SIP 1940#.
DST #3 5057-5065, open 15 minutes, strong blow immediate to very strong blow at end of test; recovered 4750 feet of muddy salt water. HP 2900-2700#, FP 2340-2400#, SIP 20 minutes 2400#.

Plugging Record

Plugs of 15 sacks each were set at:
4900-4950 2550-2600
4220-4270 1870-1920
3140-3190 base of surface pipe

Top of surface pipe and collar filled with cement.

Formation tops were picked from samples radioactivity and electric logs corrected to electric logs. Colors were determined from the rock color chart.

FORMATION TOPS

Cretaceous System	
Niobrara Formation	978
Greenhorn Formation	1492
Dakota Sand	1910
Jurassic System	
Jurassic Shale	2302
Piper Lime	2416

Mississippian System	
Mission Canyon Formation	2595
Lodgepole Formation	2665
Devonian System	
Nisku Formation	3205
Duperow Formation	3243
Souris River Formation	3498
Dawson Bay Formation	3660
Winnipegosis Formation	3745
Ashern Formation	3895
Silurian System	
Interlake Group	3920
Ordovician System	
Upper Stony Mountain	4125
Lower Stony Mountain	4205
Red River Formation	4293
Winnipeg Shale	4905
Winnipeg Sand	5050
Precambrian	
Granite	5142

330-390	Shale, medium light gray, lumpy, compact.
390-480	Shale, medium light gray and medium dark gray, lumpy, compact, little light gray bentonite.
480-600	Shale, medium dark gray, and medium light gray, lumpy, compact.
660-780	Shale, medium light gray, lumpy, compact.
1000-1010	Shale, medium light gray, lumpy, compact.
1010-1050	Shale, medium gray, calcareous, white specks, lumpy, compact, some medium dark gray, lumpy, compact.
1050-1090	Shale, medium gray, lumpy, compact.
1100-1140	Shale, medium light gray, very pale brown, lumpy, compact and white, bentonite.
1140-1290	Shale, medium gray, lumpy, spongy to compact.
1290-1380	Shale, medium gray, and medium dark gray, lumpy spongy to compact.
1380-1410	Shale, medium light gray, lumpy, compact.
1410-1450	Shale, medium light gray and medium dark gray, lumpy, compact.
1450-1520	Shale, medium dark gray, lumpy, spongy to compact.
1520-1580	Shale, medium gray to medium dark gray, lumpy, compact calcareous, with white specks, many Inoceramus fragments.
1590-1740	Shale, medium gray to medium dark gray, lumpy, compact.
1740-1780	Shale, medium dark gray, lumpy, compact.
1760-1800	Shale, medium to medium dark gray, lumpy, compact.
1810-1880	Shale, medium gray and medium dark gray, lumpy, compact.
1880-1900	Shale, medium dark gray, foliated, spongy to compact.
1910-1950	Shale, medium dark gray, lumpy and foliated, spongy to compact.
1950-1970	Samples are all shale, as above, should be some sand from (1950-1970).
1970-2000	Shale, medium dark gray, lumpy, spongy to compact.
2000-2010	Shale, as above, a little sandstone, light gray, very fine grained, calcareous.
2010-2020	Shale, medium dark gray, platy, compact.
2020-2030	Shale, as above, a little sandstone, light gray to light greenish gray, fine grained, calcareous, glauconitic.

2030-2060 Shale, medium dark gray and medium gray, platy, compact and spongy.

2060-2090 Shale, as above, some sandstone, fine grained, with pyrite cement, a few loose, medium, angular quartz.

2090-2100 Shale, as above, sandstone, orangish gray, medium grained, subangular quartz, cavings.

2100-2130 Shale, medium dark gray, platy, spongy to compact.

2130-2150 Shale, as above, some sandstone orangish gray, medium grained.

2150-2170 Shale, as above, some loose, medium to coarse, subrounded to subangular quartz, some sandstone as above.

2180-2230 Shale, medium dark gray, splintery, spongy to compact, some loose quartz grains.

2230-2240 Shale, medium dark gray and medium gray, splintery, spongy, to compact, some loose, medium to coarse, subrounded to subangular quartz.

2240-2250 Limestone, white, fine grained, with carbonaceous streaks, sandstone medium grained, subangular, shale, as above.

2250-2280 Shale, medium gray, some medium dark gray, splintery, spongy to compact, some pieces of limestone as above.

2280-2320 Shale, medium gray, splintery, spongy to compact, some loose coarse quartz.

2320-2330 Shale, medium gray, splintery, spongy to compact.

2330-2350 Shale, as above, some sandstone, very light gray, fine grained calcareous.

2350-2380 Shale, as above, some loose, coarse, rounded quartz.

2380-2410 Shale, grayish red 10R4/2, to pale reddish brown, light olive gray slightly calcareous, lumpy, compact.

2410-2420 Shale, as above, sandstone, white, fine grained, calcareous and anhydrite cement.

2420-2430 Sandstone, as above, limestone, yellowish gray to very light gray, fine to medium grained.

2430-2450 Limestone, yellowish gray, sublithographic to microsucrosic.

2450-2500 Limestone, yellowish gray, light gray, sublithographic, some shale, medium gray, and pale reddish brown.

2500-2520 Limestone, light gray, sublithographic, shale, medium gray, a little pale reddish brown shale.

2520-2530 Anhydrite, white, sugary and dense, much shale, as above.

2530-2580 Anhydrite, white, sugary to dense, shale, pale red and pale reddish brown, calcareous, lumpy, compact.

2584 Circulation 2/3 hr. Anhydrite and shale, grayish red to pale reddish brown, calcareous.

2580-2590 Shale, as above, anhydrite, white, dense.

2590-2600 Limestone, very light gray to yellowish gray, sublithographic, anhydrite.

2600-2610 Limestone, yellowish gray, oolitic, with fine grained filling, anhydrite, some yellowish gray, sublithographic.

2618 Circulation 2/3 hr. Limestone, yellowish gray, oolitic with fine grained, limestone and anhydrite filling, some yellowish gray, fine grained, microsucrosic.

2620-2630 Limestone, yellowish gray to white, fine grained, anhydrite, some white dense anhydrite, some pinkish gray, dense limestone.

2630-2640 Limestone, yellowish gray, microsucrosic, slightly anhydrite.

2640-2650 Limestone, yellowish gray and pinkish gray, microsucrosic and finely crystalline, dense, some white limestone, oolitic with anhydrite and fine grained limestone filling pore spaces.
 2650 Circulation. Limestone, pale red to pinkish gray, microsucrosic.
 2650-2660 Limestone as above.
 2660-2670 Limestone, yellowish gray to pinkish gray, microsucrosic.
 2670-2710 Limestone, yellowish gray, finely crystalline, with a few scattered shell fragments, some microsucrosic, as above, some reddish mottling.
 2714 Circulation 1 hr. Limestone, yellowish gray, oolitic also limestone as above.

Cores

2714-2719 Limestone, pinkish gray, fine to medium grained, fragmental with stylolitic seams, limestone, pinkish gray, fine grained to microsucrosic.
 2719-2724 Limestone, yellowish gray to pinkish gray, fine grained oolitic, some shell fragments, with secondary filling of calcite.
 2724-2729 Limestone, as above and pinkish gray, fine grained, microsucrosic, slightly silty.
 2729-2734 Limestone, pinkish gray, fine to medium grained, oolitic to fragmental stylolitic seams.
 2734-2739 Limestone, yellowish gray to pinkish gray, fine to coarse grained, fragmental, fossiliferous, stylolitic.
 2739-2760 Limestone, pinkish gray, fine to medium grained, fragmental to oolitic.
 2760-2770 Limestone, yellowish gray to pinkish gray, fine to medium grained, fragmental, fossiliferous.
 2780-2790 Limestone, pinkish gray, fine to medium grained, fragmental.
 2790-2810 Limestone, as above, with a little light gray chert.
 2810-2910 Limestone, pinkish gray to yellowish gray, fine to medium grained, fragmental, fossiliferous, slightly argillaceous.
 2910-2920 Limestone, medium light gray, sublithographic.
 2920-2930 Limestone, medium light gray, as above and yellowish gray to pinkish gray, fine to medium grained, fragmental, fossiliferous, a little medium gray shale, lumpy, spongy.
 2930-2960 Limestone, yellowish gray to pinkish gray, fine to medium grained, fragmental, fossiliferous.
 2960-2970 Limestone, as above and yellowish gray, microsucrosic.
 2970-3010 Limestone, yellowish gray to pinkish gray, microsucrosic.
 3010-3030 Limestone, as above, and shale, medium gray, spongy to compact, splintery.
 3030-3040 Limestone, yellowish gray, fine grained, microsucrosic, fragmental in part, some chert, white and pinkish gray.
 3040-3050 Limestone, yellowish gray to pinkish gray, microsucrosic, a little white chert.
 3050-3070 Limestone as above, much chert, white and pinkish gray.
 3070-3110 Chert, pinkish gray to light gray, slightly calcareous some limestone pinkish gray, sublithographic to fine grained.
 3110-3140 Chert, white, some pinkish gray, slightly calcareous, some limestone, yellowish gray, microsucrosic.
 3140-3190 Limestone, yellowish gray to very light gray, microsucrosic, much white chert, some pinkish gray slightly calcareous.

3190-3210 Shale, medium dark gray, foliated spongy to compact, some limestone, yellowish gray, sublithographic to fine grained.

3203 Circulation 1/2 hr. Limestone, pale 10R4/2, fine to medium crystalline, microsucrosic in part.

3210-3250 Limestone, pinkish gray, fine to medium grained, granular.

3250-3260 Dolomite, white to yellowish gray, fine to medium grained, granular, some shale, pale reddish brown, calcareous, lumpy and medium dark gray, flaky, spongy, calcareous.

3260-3280 Limestone, pinkish gray, slightly dolomitic, fine to medium grained, granular.

3280-3320 Limestone, pinkish gray, finely crystalline, to microsucrosic with some anhydrite filling of pore space.

3320-3350 Limestone, pinkish gray, microsucrosic and some sublithographic.

3350-3390 Limestone, pinkish gray, microsucrosic, some anhydrite, pinkish gray, sugary.

3390-3420 Limestone, pinkish gray to pale red, medium grained, sucrosic to microsucrosic.

3420-3450 Limestone, pinkish gray, finely crystalline, dense, some microsucrosic.

3450-3470 Limestone, pinkish gray to white, sublithographic to microsucrosic.

3470-3490 Limestone, pinkish gray to pale red, microsucrosic and finely crystalline, dense.

3490-3520 Limestone, yellowish gray, sublithographic.

3520-3530 Limestone, pinkish gray to yellowish gray, microsucrosic and some finely crystalline, dense.

3530-3550 Limestone, pinkish gray to yellowish gray, dolomitic, microsucrosic.

3550-3560 Limestone, as above, some shale, light greenish gray, 5G8/1 lumpy, compact.

3560-3600 Limestone, yellowish gray to light brownish gray, microsucrosic some white anhydrite (3570-3600).

3600-3610 Limestone, yellowish gray to very light gray sublithographic.

3610-3620 Limestone, yellowish gray, microsucrosic, some white anhydrite.

3620-3640 Limestone, yellowish gray, sublithographic, some microsucrosic.

3640-3660 Limestone, yellowish gray, microsucrosic, slightly dolomitic.

3660-3680 Limestone, yellowish gray to very light gray, sublithographic microsucrosic in part.

3680-3690 Limestone, very light gray, sublithographic.

3690-3700 Limestone, as above and yellowish gray, microsucrosic.

3700-3730 Limestone, yellowish gray, microsucrosic, good intergranular porosity.

3730-3750 Limestone, as above, some shale, medium dark gray, flaky spongy.

3750-3810 Limestone, yellowish gray, finely crystalline, with a few Brachiopod fragments.

3810-3858 Dolomite, grayish orange, fine grained, argillaceous, limey.

3858-3870 Limestone, yellowish gray to light gray, microsucrosic.

3870-3880 Limestone, very light gray to light yellowish gray, microsucrosic.

3880-3900 Limestone, very light gray, sublithographic and brownish gray, finely crystalline, argillaceous.

3900-3910 Limestone, very light gray to pinkish gray, very finely crystalline, dense.

3910-3950 Limestone, as above, some shale, medium dark gray, flaky spongy, maybe cave.

3950-3980 Dolomite, yellowish gray to pinkish gray, very finely crystalline, dense.

3980-4000 Limestone, pinkish gray, fine to medium grained, granular, some dolomite, as above.

4000-4040 Dolomite, yellowish gray to very light gray, very finely crystalline, limey.

4040-4090 Limestone, white to pinkish gray, sublithographic to very fine grained.

4090-4100 Limestone, pinkish gray, sublithographic, slightly dolomitic.

4100-4130 Dolomite, white to very light gray, sublithographic slightly limey.

4130-4140 Dolomite, as above and pinkish gray, fine grained, limey.

4140-4150 Dolomite, pinkish gray, fine grained, limey.

4150-4170 Limestone, pinkish gray to yellowish gray, fine to medium grained, granular with some fine to medium rounded, frosted quartz grains.

4170-4190 Dolomite, yellowish gray, microsucrosic limey.

4190-4200 Limestone, very light gray to yellowish gray, very finely crystalline, dense.

4200-4210 Dolomite, yellowish gray, microsucrosic, limey and limestone as above.

4210-4220 Limestone, light gray, fine grained, fragmental, some dolomite as above.

4220-4260 Limestone, light gray, fine grained, fragmental, slightly argillaceous, a few bryozoa fragments.

4260-4290 Limestone, as above, some shale, medium gray, splintery, spongy to compact.

4290-4303 Limestone, yellowish gray to pinkish gray.

4303-4340 Limestone, very light gray, fine grained, earthy.

4350-4410 Limestone, very light gray, sublithographic.

4410-4440 Limestone, very light gray to yellowish gray, sublithographic.

4140-4460 Limestone, as above and yellowish gray, microsucrosic.

4460-4540 Limestone, yellowish gray, microsucrosic.

4540-4580 Limestone, very light gray, sublithographic to fine grained, earthy some limestone as above.

4580-4610 Limestone, yellowish gray to light brownish gray, microsucrosic.

4610-4630 Limestone, very light gray, fine grained to sublithographic.

4630-4660 Limestone, light gray, fine grained and yellowish gray, microsucrosic.

4660-4670 Dolomite, yellowish gray to light brownish gray, microsucrosic, limey.

4670-4680 Dolomite, as above, some chert, light gray to white.

4680-4700 Dolomite, light brownish gray, microsucrosic, some limestone very light gray, sublithographic, some light gray chert.

4700-4720 Dolomite, light brownish gray, microsucrosic, limey chert, light gray to white.

4720-4730 Dolomite, light brownish gray, microsucrosic, limey, limestone, very light gray, sublithographic.

4730-4790 Limestone, very light gray, finely crystalline, to sublithographic.

4790-4850 Limestone, very light gray, finely crystalline, dense.

4850-4880 Limestone, light gray, finely crystalline, dense, fragmental in part.

4880-4890 Limestone, as above, shale, greenish gray 5G6/1 calcareous flaky, spongy.

4890-4920 Shale, medium light gray and greenish gray, as above, a little limestone light gray, fine grained.

4920-4990 Shale, greenish gray 5G6/1 splintery, compact.

4990-5020 Shale, greenish gray and grayish red, splintery compact.

5020-5060 Shale, greenish gray, splintery, compact.

5060-5080 Sandstone, fine to medium grained, rounded to subrounded colorless, quartzose sand, very friable.

5080-5090 Sand, loose medium, rounded quartz, much shale greenish gray, splintery, compact.

5090-5120 Shale, greenish gray, splintery, compact, some limestone, yellowish gray finely crystalline, some sandstone white, very fine grained.

5120-5130 Sandstone, very fine to medium grained, rounded, quartzose, glauconitic, shale, greenish gray.

5144 Granite, grayish orange pink, medium grained unweathered, composed largely of pink feldspar and quartz, small amounts of Biotite.