

NORTH DAKOTA GEOLOGICAL SURVEY CIRCULAR NO. 53

Summary of the Calvert Exploration Co. and Don Traders, Inc. A. Payne No. 1
McHenry County, North Dakota
Well No. 358, Permit No. 374

By Morton Strassberg
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Calvert and Don Traders - Payne No. 1, McHenry County, North Dakota. 210 feet from S/C SE NE Section 34, T. 156 N., R. 76W. (2190 feet from N. line and 650 feet from E. line, Section 34) Elevation D.F. 1502, G.L. 1490.

The Calvert and Don Traders - Payne No. 1 was spudded July 16, 1953 and 10 3/4 inch surface casing was set at 163 feet with 75 sacks of cement.

The drilling was completed August 1, 1953 and the well was abandoned. Total depth 4236 feet. Fifteen sack cement plugs were set at the following depths:

4128 - 4185	2146 - 2189
3562 - 3605	120 - 163
3300 - 3343	0 - 43
2450 - 2495	

Core #1 3303 - 3323

Formation tops were determined from samples, cores, electric and micro logs. Not all lithologic formation tops called in following list. Colors were determined from rock color chart.

	<u>TOPS</u>
Cretaceous System	<u>Depth</u>
Niobrara Formation	1070
Greenhorn Formation	1662
Dakota	2148
Jurassic System	
Morrison Formation	2448
Sundance Formation	2565
Piper Formation	2784
Triassic System	
Spearfish Formation	3045
Mississippian System	
Charles Formation	3169
Mission Canyon Formation	3295
Lodgepole Formation	3584
Englewood Formation	4187
Devonian System	
Lyleton Formation	4203
Total Depth	4236

<u>From</u>	<u>To</u>	<u>Formation</u>
290	320	Shale--medium light gray, silty.
320	410	Shale--medium light to medium gray, bentonitic. Very light gray fine grained limestone.
410	440	Shale--light to medium dark gray, micaceous, some white specks.
440	530	Shale--medium light gray, lumpy, bentonitic.
530	590	Shale--medium light gray, calcareous, bentonitic.
590	620	Shale--medium light to medium gray, calcareous, bentonitic.
620	950	Shale--medium light gray, flakey.
950	1070	Shale--light to medium light gray, bentonitic.
1070	1130	Shale--medium dark gray, white specks.
1130	1280	Shale--medium to medium dark gray, white specks, calcareous.
1280	1340	Shale--medium gray, calcareous.
1340	1380	Missing samples.
1380	1500	Shale--medium to medium dark gray, bentonitic.
1500	1530	Shale--medium dark and dark yellowish brown.
1530	1560	Shale--medium dark gray.
1560	1620	Shale--medium dark gray and dark yellowish brown, calcareous.
1620	1680	Shale--medium dark gray, white specks, calcareous.
1680	1800	Shale--medium to medium dark gray, highly calcareous.
1800	1860	Shale--medium to medium dark gray, white specks, calcareous.
1860	1920	Shale--medium to medium dark gray, calcareous, bentonitic.
1920	1980	Shale--medium to medium dark gray and dark yellowish brown, calcareous.
1980	2040	Shale--medium to medium dark gray, calcareous, bentonitic.
2040	2100	Shale--medium to medium dark gray.
2100	2130	Shale--medium gray, bentonitic.
2130	2150	Shale--medium to medium dark gray, silty, calcareous.
2154		(½ hr. Circulation) Sandstone--very light gray, very fine grained.
2154	2170	Sandstone--very fine to medium grained. Medium light to medium gray shale.
2170	2180	Missing samples.
2180	2200	Sandstone--very fine to fine grained. Medium light to medium dark gray.
2200		(½ hr. Circulation) Sandstone--coarse to very coarse grained, subrounded to subangular, frosted.
2200	2230	Sandstone--fine to coarse grained, subrounded, frosted, pyritic. Medium light gray silty shale.
2230	2260	Shale--medium to medium gray silty. Fine to coarse grained free quartz.
2260	2280	Sandstone--medium to very coarse grained, subrounded to subangular, frosted. Iron stained siltstone concretions. Medium light to medium gray shale.
2280	2290	Shale--medium light to medium gray silty.
2290	2310	Shale--medium light to medium gray, bentonitic and pale reddish brown. Medium to coarse grained quartz. Iron stained siltstone concretions.
2310	2340	Shale--medium light gray, silty. Coarse grained free quartz.
2340	2360	Shale--medium light to medium gray, bentonitic. Medium to coarse free quartz and iron stained, siltstone concretions.

<u>From</u>	<u>To</u>	<u>Formation</u>
2360	2380	Sandstone--very fine to coarse grained and siltstone concretions, medium light gray silty shale.
2380	2390	Shale--medium light gray. Very fine grained sandstone and coarse grained free quartz.
2390	2410	Shale--medium light and light olive brown, very fine grained sandstone.
2410	2450	Sandstone--medium to very coarse grained, subrounded to subangular, frosted.
2450	2480	Shale--medium light gray. Considerable medium to coarse grained free quartz.
2480	2500	Sandstone--very fine to coarse grained, frosted, subrounded. Medium light to medium gray shale.
2500	2520	Shale--medium light to medium gray. Medium to coarse free quartz.
2520	2540	Shale--medium light to pale reddish brown calcareous. Medium to coarse grained free quartz.
2540	2550	Shale--medium light to medium gray and greenish gray. Medium to coarse grained free quartz.
2550	2560	Shale--medium light to medium gray. Medium to coarse grained quartz.
2560	2590	Shale--medium light gray, pale reddish brown and greenish gray. Very fine grained calcareous sandstone. Medium to coarse grained free quartz.
2590	2600	Shale--medium light gray and little pale reddish brown.
2600	2650	Shale--medium light to medium gray, pale reddish brown and greenish gray.
2650	2680	Shale--medium light gray and little pale reddish brown.
2680	2720	Shale--pale, reddish brown and medium light gray calcareous.
2720	2740	Shale--medium light and pale reddish brown, calcareous. Medium to coarse free quartz.
2740	2760	Shale--pale reddish brown and medium light to greenish gray. Very fine grained sandstone.
2760	2780	Shale--medium light and pale reddish brown, calcareous.
2780	2790	Limestone--white to very light gray fine grained. Medium light and pale reddish brown shale.
2790	2800	Dolomite--very light gray, sublithographic. Little white anhydrite.
2800	2830	Limestone--pale yellowish brown fine grained.
2830	2860	Sandstone--fine to medium grained, calcareous. Pale yellowish brown fine grained limestone.
2860	2930	Limestone--very light gray, sublithographic.
2930	2940	Shale--medium light to medium gray, calcareous. Very light gray, sublithographic limestone.
2940	2970	Limestone--yellowish gray, sublithographic.
2970	2990	Limestone--very light to yellowish gray, sublithographic. White anhydrite.
2990	3000	Dolomite--light to yellowish gray, fine grained. White anhydrite.
3000	3030	Anhydrite--white sucrosic to massive. Light gray calcareous shale.
3030	3050	Anhydrite--white sucrosic to massive. Light gray to pale reddish brown calcareous shale.

<u>From</u>	<u>To</u>	<u>Formation</u>
3050	3070	Shale--Pale reddish brown and light gray, calcareous. White anhydrite.
3075		(3/4 hr. Circulation) Shale--pale reddish brown and light to greenish gray.
3075	3080	Shale--same as above.
3080	3090	Siltstone--pale reddish brown, argillaceous.
3090	3110	Sandstone--pale reddish brown, very fine, to coarse grained, argillaceous.
3110	3130	Shale--pale reddish brown. Pale reddish brown, argillaceous, fine to medium grained sandstone, white anhydrite.
3130	3150	Sandstone--pale reddish brown, fine to medium grained, argillaceous.
3150	3170	Sandstone--pale reddish brown, fine to medium grained, argillaceous.
3170	3180	Siltstone--pale reddish brown and fine to medium grained, sandstone. White anhydrite. Very light gray limestone.
3180	3210	Dolomite--very light to yellowish gray, sublithographic.
3210	3230	Shale--medium light gray and pale red calcareous. White anhydrite. Light gray sublithographic limestone.
3230		(1 hr. Circulation) Shale--same as above.
3230	3250	Dolomite--light gray sublithographic. Medium light and pale red calcareous shale.
3250	3300	Shale--medium light to medium gray, calcareous. White anhydrite.
3300	3303	Limestone--very light to yellowish gray, sublithographic.
3303		(1 hr. Circulation) Limestone--very light to yellowish gray, sublithographic to fine grained.
3303 ½	3308 ½	Limestone--yellowish gray, oolitic, vuggy. The vugs are filled with calcite crystals.
3308 ½	3310 ½	Limestone--white, chalky, vuggy, porosity, calcite crystals line the vugs.
3310 ½	3311 ½	Limestone--white, chalky to oolitic, some pinpoint porosity.
3311 ½	3312 ½	Limestone--white to yellowish gray, oolitic intergranular porosity.
3312 ½	3313 ½	Limestone--white, oolitic, tightly cemented.
3313 ½	3314 ½	Limestone--white, oolitic, vuggy porosity.
3314 ½	3320 ½	Limestone--white to yellowish gray, oolitic to dense chalky, some pinpoint to vuggy, porosity.
3320 ½	3323 ½	Limestone--yellowish gray, oolitic, vuggy, vugs filled with halite and anhydrite.
3323 ½	3330	Missing samples.
3330	3385	Limestone--yellowish gray, oolitic to microsugrosic, few small vugs, anhydritic.
3385	3400	Limestone--yellowish gray, microsugrosic to fragmental, some pinpoint porosity.
3400	3405	Limestone--very light gray, sublithographic.
3405	3410	Dolomite--pale red, microsugrosic.
3410	3425	Dolomite--yellowish gray to pale red, microsugrosic.
3425	3443	Shale--medium light to medium gray. White anhydrite.
3443	3450	(1 hr. Circulation) Limestone--very light to yellowish gray, fragmental to sublithographic. White anhydrite. Very light gray microsugrosic dolomite.

<u>From</u>	<u>To</u>	<u>Formation</u>
3450	3470	Limestone--yellowish gray, fragmental to oolitic.
3470	3490	Dolomite--light olive gray, microsucrosic, calcareous.
3490	3550	Limestone--yellowish gray, fragmental to oolitic, some intergranular porosity.
3550	3560	Limestone--very light to light, gray, fragmental. Light gray chert.
3560	3570	Shale--medium gray.
3570	3610	Shale--medium gray. Light gray, fragmental limestone.
3610	3690	Limestone--light gray fragmental.
3690	3750	Limestone--very light to light gray, fragmental.
3750	3800	Limestone--very light to light gray, fine grained to fragmental.
3800		(3/4hr. Circulation) Limestone--very light to light gray, oolitic to fragmental.
3800	3840	Limestone--same as above.
3840	3850	Shale--medium light to medium gray. Light gray fragmental limestone.
3850	3890	Limestone--very light to light gray, fragmental. Medium gray shale.
3890	3930	Limestone--very light to light gray, sublithographic to fine grained.
3930	3960	Limestone--very light to light gray, fine grained to fragmental.
3960	4000	Limestone--very light to light gray, fine grained dense to sublithographic.
4000	4010	Shale--medium light to medium gray. Light gray, fine grained limestone.
4010	4030	Limestone--light gray, fine grained to sublithographic. Medium gray shale.
4030	4050	Shale--medium gray and pale reddish brown, calcareous.
4050	4060	Limestone--very light gray, fragmental. Medium gray and pale reddish brown shale.
4060	4090	Shale--medium light to medium gray. Light to medium gray fine grained limestone.
4090	4110	Limestone--very light to light gray, fine grained to chalky. White to light gray chert.
4110	4130	Limestone--very light gray, sublithographic to chalky.
4130	4180	Limestone--very light gray, sublithographic cherty. Medium gray shale.
4180	4210	Shale--medium to medium dark grays calcareous.
4210	4220	Shale--medium to medium dark gray and pale red, calcareous.
4220	4236	Shale-moderate reddish orange, calcareous.