

# NORTH DAKOTA GEOLOGICAL SURVEY CIRCULAR NO. 63

Summary of E. Wilson Germany and Cardinal Drilling Company and  
Leo Fallon #1  
Sheridan County, North Dakota

Permit #353, Well #337

by LaVerne B. Nelson  
April, 1954

E. Wilson Germany and Cardinal Drilling Company - Leo Fallon #1,  
Sheridan County, North Dakota, C NE SE Section 22, T. 148 N., R. 74 W. (660'  
from east line and 1980' from south line). Elevation 1882 G.L. 1891 R.B.

The Leo Fallon #1 was spudded August 19, 1953 and 10 3/4" casing was set  
at 3952 with 120 sacks of cement. The well was drilled to 3992 feet,  
plugged and abandoned.

15 sack plugs were set at surface casing, 395 feet, 2537 feet, and 3586  
feet.

Formation tops determined from samples and electric logs, not all  
lithographic formation tops called in following lists. Colors were  
determined from rock color chart.

## FORMATION TOPS

Cretaceous System	
Pierre	510
Niobrara	2013
Dakota	2535
Jurassic System	
Morrison	2784
Sundance	2870
Piper	3052
Triassic System	
Spearfish	3182
Mississippian System	
Charles	3305
Mission Canyon	3560
Lodgepole	3840

<u>From</u>	<u>To</u>	<u>Formation</u>
400	460	Claystone--very light gray, massive, porous micaceous calcareous silt.
460	520	Claystone--same as above. Some light brown and white chert. A little iron staining.
520	540	Claystone--greenish gray, massive and compact.
540	560	Claystone--very light gray, massive, porous, micaceous.

<u>From</u>	<u>To</u>	<u>Formation</u>
560	800	Claystone--greenish gray, lumpy, porous, calcareous, micaceous. Falls apart when placed in water.
800	940	Shale--greenish gray, platy, brittle.
940	960	Shale--medium light gray, platy, brittle. Some brown dolomite, well cemented siltstone. A little pyrite.
960	1230	Shale-medium light gray, platy, brittle. 1040-60 Some white bentonite. 1170-1210 Some white bentonite.
1230	1400	Shale--medium light gray to greenish gray laminated brittle 1250-1300. A little brown well cemented siltstone.
1400	1440	Shale--medium gray and medium dark gray, disaggregated. Some brown siltstone. Little pyrite.
1440	1500	Shale--medium light gray, disaggregated, much brown siltstone, very well cemented. A few shell fragments.
1500	1560	Shale--medium light gray, calcareous. First white specks. A few shell fragments. Little light olive gray siltstone. Little pyrite.
1560	1580	Shale--medium gray, micaceous. Little light olive gray siltstone.
1580	1640	Shale--medium gray and medium light gray, calcareous. Some limestone and calcite crystals. A little pyrite and siltstone.
1640	2020	Shale--medium dark gray, to dark gray, disaggregated, bentonitic. A little white bentonite and pyrite. A little siltstone.
2020	2080	Shale--medium light gray to medium gray disaggregated, calcareous. Some white specks. Numerous Inoceramus fragments. Microconglomerate with, calcite cement. A little pyrite.
2080	2120	Shale--medium gray, platy, calcareous, firm, speckled. Some Inoceramus fragments. A little oolitic, white limestone and crystalline limestone.
2120	2280	Shale--medium dark gray, lumpy to firm. Few Inoceramus fragments. A little pyrite, bentonite and calcite.
2280	2480	Shale--medium gray, disaggregated, calcareous little white sucrosic limestone. 2440-60 A few Inoceramus fragments. 2460-80 A little pyrite and Inoceramus fragments.
2480	2560	Shale--medium dark gray, platy, friable. 2480-2520 A little sucrosic limestone and pyrite.
2560	2600	Shale--medium dark gray, platy. Much very fine sandstone cemented with calcite. A few coarse, angular, clear quartz pebbles.
1/3-2600	2610	Shale-medium dark gray, platy. A few fine, rounded quartz grains and sandstone concretions.
2610	2630	Shale--medium grays platy. Some siliceous concretions.
2630	2640	Silt stone--numerous siliceous sandstone concretions, shaly. Some iron stained siltstone.
2640	2670	Shale--medium dark gray, splintery, friable, calcareous. A few siliceous concretions and quartz pebbles.
2670	2680	Siltstone--light brown and moderate red siliceous concretions. Some medium gray shale.

<u>From</u>	<u>To</u>	<u>Formation</u>
1/4-2680		Shale--medium light gray, lumpy. Very fine grained, siliceous cemented sandstone.
2680	2720	Sand stone--very, fine grained, siliceous cemented, quartz grains. Quite shaly. Some ironstone concretions.
2720	2750	Sandstone--very fine grained, well sorted, rounded cemented with calcite. Quite shaly. A little oolitic limestone. Some siliceous concretions.
2750	2790	Sandstone--fine to medium, fair sorting, rounded to globular, frosted. Some concretions as above. Shaly. 2770-Increase in grain size. Much coarse to very coarser subangular to rounded. frosted and clear angular quartz. Poorly sorted. Some angular grains.
2790	2800	Shale--medium dark gray, splintery. Some fine to medium rounded, frosted sandstone.
2800	2820	Shale--medium dark gray, splintery. Much medium to coarse, subangular to rounded frosted and clear quartz pebbles.
2820	2830	No sample.
2830	2850	Shale--medium light gray, splintery. A little fine grained, well-rounded quartz grains. A little chert.
2850	2870	Sandstone--poorly sorted, fine to coarse, subangular to rounded, frosted, Some siliceous concretions. Shaly.
2870	2900	Shale--grsenish gray, compact, brittle, calcareous. A little siltstone. 2900-10 much medium, subangular quartz.
2910	2940	Sandstone--medium, subangular to rounded. Some brown siltstone and green gray shale. Some white sucrosic limestone.
2940	3000	Shale--green gray and dark gray, flaky. Some fine, well rounded, quartz grains. Some sucrosic, argillaceous limestone.
3000	3050	Shale--green gray and moderate brown clay, A few medium to fine, well rounded quartz grains.
3050	3060	Shale--green gray and dark gray, platy. A little, white sucrosic.
3060	3070	Limestone--white, sucrosic. Some dark gray, splintery shale.
3070	3080	Shale--greenish gray and pale olive, lumpy. Some moderate red clay and white sucrosic limestone.
3080	3110	Sandstone--fine grained, calcareous cement. Some dense lithographic. limestone. A little gypsum.
3110	3120	Limestone-white and grayish orange pink, dense, sub-lithographic, dolomitic.
3120	3220	Limestone--white, sublithographic, dense. 3140-70 shaly. 3210-20 Some bluish white chert.
3220	3230	Shale--medium dark gray, flaky. Some moderate brown clay.
3230	3240	Shale--moderate brown shale. A little green gray shale.
3240	3330	Shale--green gray and dark gray, flaky. Some moderate brown shale. Some sublithographic limestone. Shaly.
3330	3360	Dolomite--grayish orange pink and white, mottled, sub-crystalline, dense. A little gypsum, Shaly.
3360	3370	Dolomite--mottled white, pale pink and grayish orange pink, dense, lithograaphic. Shaly.
3370	3380	Limestone--white, dense, sublithographic. A little oolitic limestone.

<u>From</u>	<u>To</u>	<u>Formation</u>
3380	3390	Dolomite--grayish orange pink, dense lithographic. Some white anhydrite. Shaly.
3390	3410	Limestone--very pale orange, dense, sublithographic, dolomitic. Some gypsum.
3410	3420	Shale--greenish gray, splintery. Some limestone and dolomite as above.
3420	3450	Dolomite--pule red, dense, lithographic. Some white, dense dolomitic limestone. Some anhydrite.
3450	3490	Dolomite--yellowish brown, dense, sublithographic. Quite shaly, greenish gray, splintery. A little anhydrite.
3490	3500	Limestone--grayish orange pink, dense sublithographic.
3500	3520	Shale--medium gray and moderate brown clay. A little limestone.
3520	3540	Limestone--white, sucrosic limestone. Quite shaly.
3540	3550	Shale--medium gray, friable, some limestone.
3550	3584	Dolomite--yellowish brown, dense, sucrosic. Some anhydrite.
3584	3640	Limestone--white, dense, sublithographic to sucrosic. Some oolitic limestone.
3640	3680	Limestone--very pale orange to white, fine grained, sucrosic. A little pinpoint porosity.
3680	3700	Limestone--same as above. Much medium gray, flaky, shale.
3700	3710	Limestone--pale red and bluish gray, dense, sublithographic.
3710	3726	Limestone--white, medium grained, sucrosic.
3/4-3726		Limestone--same as above.
3726	3790	Limestone--same as above.
3790	3800	Shale--medium dark gray, calcareous. Some limestone as above.
3800	3820	Limestone--grayish orange pink, fine grained, microsucrosic.
3820	3880	Limestone--white to very light gray, medium grained, dense, some subcrystalline limestone.
3880	3890	Shale--medium light gray, calcareous. Some pinkish gray sucrosic limestone.
3890	3920	Limestone--pinkish gray; fine grained, dense. Some shale as above.
3920	3940	Shale-medium gray, splintery. Much limestone as above.
3940	3992	Limestone--white and bluish gray, subcrystalline. Quite shaly.
3992		Total Depth.