

# NORTH DAKOTA GEOLOGICAL SURVEY CIRCULAR NO. 70

Summary of Youngblood and Youngblood-Lester Kelstrom #1  
Grant County, North Dakota  
Permit #248, Well #232

By Carole Smith  
May, 1954

Youngblood and Youngblood-Lester Kelstrom #1, Grant County, North Dakota. C SW SW, Section 26, T. 133 N., R. 83 W. (660 feet from the South line and 660 feet from the West line, section 26.) Elevation: 1983 GL., 1997 K.B.

The Youngblood and Youngblood #1 Kelstrom was spudded December 5, 1952. 436' of 10 3/4" casing was set with 350 sacks of cement. Cement plugs of 15 sacks were set at 6360, 5600, 4700, 4230; cement plugs of 20 sacks were set at 3780 and 3050; a 25 sack plug was set at 450; a cement plug of 7 sacks was set at the surface. The well was abandoned January 16, 1953 at a total depth of 3800 feet.

## TESTS

DST: 4795'-4852'

Open 1 1/2 hours, received 320' MCSW, 412' black SW; FP 110-380#, 30 minutes SIP 2000#; BP 2535#.

DST: 4905'-4945'

Open 32 minutes, received 300' muddy fresh water, 730' black SW; FP 55-545#, 30 minutes SIP 2240#; BP 2620#.

No Cores

## FORMATION TOPS

Cretaceous System	
Niobrara	1745 ?
Greenhorn	2346
Muddy	2810
Dakota	3068
Jurassic System	
Morrison	3230
Sundance	3340
Piper Lime	3570
Triassic System	
Spearfish	3800
Mississippian System	
Amsden	3860
Big Snowy	4130
Charles	4363
Mission Canyon	4740
Lodgepole	5030
Englewood	5581
Devonian System	
Nisku	5615

Duperow	5665
Souris River	5836
Dawson Bay	5910
Elk Point	5970
Silurian System	
Interlake	5990
Ordovician System	
Upper Stony	6207
Lower Stony	6273
Red River	6363

Formation tops were determined from samples and electric log; not all lithologic tops were called. Colors were determined from the rock color chart.

700-950	Shale; light olive gray to brownish gray, becoming medium gray, partly silty; missing samples: 710-720; 730-940.
950-1010	Missing samples.
1010-1290	Shale; medium gray, firm, rather greenish, rare traces of bentonite and Inoceramus fragments; missing samples: 1030-1050, 1060-1100, 1150-1160, 1180-1190, 1220-1230, 1260-1270.
1290-1320	Shale; medium gray, firm, rather greenish, slightly brownish, partly lumpy and bentonitic.
1320-1330	Bentonitic shale; medium gray, slightly greenish, and brownish, lumpy, partly silty.
1330-1420	Shale; medium gray, slightly greenish or brownish in part, slightly bentonitic and silty.
1420-1530	Shale; moderate gray, firm to lumpy, slightly silty, pyritic, and bentonitic, becoming rather greenish at 1450; missing samples: 1440-1450.
1530-1580	Shale; medium gray, flaky to lumpy to firm, slightly silty and bentonitic in part; missing samples: 1550-1560.
1580-1590	Missing samples.
1590-1670	Shale; medium gray to dark gray, firm, becoming lumpy, slightly silty, or bentonitic in part; missing samples: 1600-1610.
1670-1730	Calcareous shale; medium gray to medium dark gray, firm to lumpy, becoming rather brownish and silty, missing samples: 1680-1720.
1730-1750	Shale; medium brownish gray, firm to lumpy, decreasingly calcareous, slightly silty.
1750-1770	Calcareous shale; medium gray, somewhat brownish, lumpy; iridescent shell fragment.
1770-1810	Calcareous shale; gray with white spots, decreasingly sandy; poor samples: 1780-1810.
1810-1820	Missing samples.
1820-2030	Shale; dark gray, lumpy to flaky, partly calcareous and silty, much is gray black beginning at 1930; poor samples.
2030-2210	Shale; medium gray to medium dark gray; firm, slightly calcareous; poor samples.
2210-2250	Shale; medium gray to dark gray, firm, partly lumpy, partly sandy.
2250-2290	Shale; medium gray to dark gray, flaky to lumpy, partly silty and brownish.
2290-2300	Shale; gray black, firm; some dark gray lumpy shale.

2300-2330	Shale; dark gray, lumpy, bentonitic, much firm, gray green shale, some firm, medium gray to dark gray shale.
2330-2360	Shale; gray black to black, lumpy, slightly sandy, slightly specked with white.
2360-2490	Calcareous shale; dark gray, fossiliferous; small amounts of Inoceramus prisms and fragmental limestone, increasing in quantity at 2420; missing samples: 2430-2440.
2490-2520	Shale; medium dark gray, firm to lumpy, mostly calcareous, small amounts of Inoceramus fragments; increasing in quantity (2500-2510).
2520-2550	Shale; medium gray to gray black, lumpy to firm, partly calcareous; small amounts of Inoceramus fragments; poor samples.
2550-2590	Calcareous shale; medium dark gray, lumpy; some Inoceramus limestone.
2590-2650	Shale; dark gray to gray black, lumpy, becoming mostly flaky; small amounts of Inoceramus prisms and limestone; the shale becomes partly calcareous at 2640; missing samples: 2630-2640.
2650-2800	Shale; black, flaky, partly lumpy, and calcareous; much medium gray; lumpy silty shale beginning at 2730 and decreasing rapidly in quantity thereafter; scattered traces of Inoceramus limestone; missing samples: 2700-2720.
2800-2890	Shale; black, firm to flaky; some glauconitic siltstone (2810-2830); small amounts of fragmental, Inoceramus limestone; greater in quantity between 2830- and 2850.
2890-2920	Shale; black, flaky to firm; much lumpy, silty dark gray shale.
2920-3020	Shale; gray black, firm; some glauconitic, light gray silty shale and shaly siltstone; some shaly, Inoceramus limestone; (2920-2930); missing samples: (2960-2990).
3020-3090	Shale; dark gray, lumpy, silty, somewhat calcareous; trace of fine, shaly sandstone; (3070-3080); partly sandy (3080-3090).
3090-3100	Shale; as above, much firm to flaky, dark gray shale.
3100-3130	Shale; medium dark gray, flaky, small amounts of siltstone and silty shale; traces of Inoceramus limestone; increasing greatly at 3120; traces of pitted, concretionary, orange quartz (3120-3130).
3130-3150	Shale; dark gray to gray black, flaky; some orange brown, crystalline calcite; some medium grained; light brown sandstone.
3150-3180	Shale; gray black, flaky; much medium gray, lumpy, silty shale; traces of pyrite and Inoceramus limestone.
3180-3210	Shale; gray black to black, flaky and platy; small amounts of Inoceramus limestone and dark gray, shaly sandstone.
3210-3240	Sandstone; fine to medium grained, limey quartzose, becoming very light brown; much dark gray shale as above; becoming mostly silty and rather brownish.
3240-3300	Shale; gray, silty, lumpy somewhat calcareous; traces of pyrite, sandstone, limestone.
3300-3340	Shale; black, lumpy and flaky; traces of sandstone; limestone, pyrite; much lumpy; silty, medium gray, slightly brown shale beginning at 3310; some waxy to soft, olive to pale green shale, appearing at 3320 and increasing in quantity.
3340-3370	Shale; greenish gray to medium gray, lumpy, very silty at 3360; traces of light brown sandstone.

3370-3400 Shale; medium gray to gray black, firm; much reddish brown silty shale; and shaly siltstone; some green shale (3390-3400); trace gypsum.

3400-3410 Silty shale; green gray and medium gray; some shale is not silty; traces of sandstone and silt.

3410-3420 Silt stone; pale greenish gray, shaly; some silty shale as above; some dark gray shale.

3420-3430 Shale; pale green to gray; partly silty; much light brown to reddish brown shaly siltstone; and silty shale.

3430-3440 Shale; and siltstone as above; some fine sugary pale limestone.

3440-3450 Shale; greenish gray, partly silty; some black and olive shale; small amounts of light brown silt and siltstone.

3450-3470 Shale; gray black; much limey greenish shale and siltstone as above.

3470-3550 Shale; greenish gray to dark gray, limey, partly silty; traces of fine sugary, shaly, gray limestone; much limey, shaly silt (3540-3550).

3550-3570 Shale; greenish gray, brownish gray, partly, silty, limey; shell fragments.

3570-3590 Shale; gray green to olive gray, limey; some micro-sugary, light gray limestone; shell fragments.

3590-3610 Shale; green to gray black; some pale red to yellow gray, micro-sugary to chalky limestone; traces of limey sandstone.

3610-3630 Limestone; almost white, micro-sugary and/or chalky, partly dolomite; gray and greenish shale as above; small amounts of white anhydrite.

3630-3680 Limey shale; greenish and grayish; some pale red to white limestone, decreasing between 3650-3670; small amounts of reddish orange, limey, shaly siltstone.

3680-3700 Shale; gray black to green gray, partly limey; small amounts of siltstone as above.

3700-3740 Shale; dark gray to gray black; small amounts of greenish shale, white anhydrite, dense limestone; small amounts of silty reddish shale increasing in quantity.

3740-3800 Shale; dark gray to gray black; much reddish brown siltstone, becoming mostly shale at 3750 and ending at 3780; traces of sandstone, green shale, white anhydrite; some pale red, micro-sugary, partly limey dolomite (3770-3790); traces of anhydrite, increasing at 3790.

3800-3870 Shale; gray black to dark gray; increasing amounts of reddish brown shale; some pale red, medium grained sandstone; becoming more abundant and coarser about 3815, much sandstone (3850-3870).

3870-3900 Shale; medium gray to greenish gray, partly limey, traces of reddish shale; sandstone, white limestone and anhydrite; much sandstone (3890-3900); some dolomite as above (3890-3900).

3900-3990 Shale; dark gray, some reddish brown; much white to pale red, micro-sugary dolomite, decreased in quantity (3910-3920); some yellow and white, medium coarse, quartzose sandstone beginning at 3930; traces of white anhydrite.

3990-4050 Shale; dark gray, reddish brown, limey greenish gray, much light gray, very fine sugary, shaly dolomite (4000-4010); traces of white anhydrite, increasing amounts of greenish, limey shale.

4040-4130 Shale; dark gray, flaky; small amounts of reddish and greenish shale traces of anhydrite much quartzose sandstone; (4100-4110).

4130-4170 Shale; gray black, becoming dark gray; small amounts of reddish and greenish shales; traces of white anhydrite.

4170-4210 Shale; dark gray, small amounts of greenish gray, reddish, partly limey shales; much dense, micro-sugary, white to very light gray dolomite; starting at 4180 and decreasing in quantity at 4200.

4210-4220 Shale; dark gray, reddish brown, greenish, yellowish; some micro-sugary, very light brown dolomite; traces of white anhydrite.

4220-4250 Shale; as above; small amounts of dense limestone; dolomite, and anhydrite; some white siltstone and sandstone beginning at 4240.

4250-4270 Sandy silty shale; dark gray, reddish brown, greenish, partly limey; much sugary white, limey sandstone.

4270-4280 Sandy shale and sand; as above, traces of shell fragments and anhydrite.

4280-4310 Shale; dark gray, some reddish brown, greenish, orangish and brownish, some fine to coarse grained, quartzose sandstone; some white to very light gray, micro-sugary, limestone beginning at 4290; much very light gray to white, micro-sugary; limey dolomite beginning at 4300.

4310-4335 Shale; variegated partly limey; some limestone as above; traces of anhydrite and dolomite.

4335-4355 Shale; variegated (more reddish brown), rather limey, fine sandy; increasing amounts of fine quartz sand.

4355-4380 Limey shale; medium to medium dark gray; small amounts of reddish brown shale; white anhydrite, sandstone; some fine to medium, subangular to subround quartz sand beginning at 4375.

4380-4395 Shale; as above; some shaly, limey sandstone; some pale, micro-sugary limestone; some oolitic limestone.

4385-4395 Oolitic limestone; light gray to medium gray; small amounts of shale, sandstone; and micro-sugary gray limestone.

4395-4415 Limestone; very pale orange, micro-sugary; becoming rather oolitic at 4410; some light brown dense and/or chalky limestone beginning at 4410; some variegated shale; traces of sand and anhydrite.

4415-4425 Limestone; light brown to very pale orange, micro-sugary and/or chalky and/or crystalline; some oolitic limestone; small amounts of shale and anhydrite.

4425-4465 Shale; medium dark gray; small amounts of reddish brown, greenish gray, partly limey shale; much very pale orange to light brown, micro-sugary, dolomitic limestone almost ending at 4430; traces of sand and anhydrite.

4465-4480 Shale; variegated; small amounts of anhydrite; much limestone as above beginning at 4475.

4480-4490 Limestone; white to very pale yellow brown, micro-sugary and/or chalky; small amounts of oolitic limestone, shale, anhydrite.

4490-4510 Dolomitic limestone; light gray, becoming slightly brownish, micro-sugary; some variegated shale; traces of anhydrite and oolitic limestone; some very pale orange, micro-sugary limestone beginning at 4495.

4510-4530 Shale; light olive brown to dusky yellow; some reddish and gray shales; some limestone as above ending at 4515; traces of anhydrite and sand; some micro-sugary limestone (4525-4530).

4530-4550 Shale; variegated, partly sandy; much very pale yellow brown to light gray, micro-sugary and/or chalky limestone, decreasing somewhat in quantity at 4545 and becoming dolomitic; small amounts of anhydrite.

4550-4560 Shale; variegated; small amounts of limestone and anhydrite.

4560-4575 Shale; medium gray to dark gray, some variegated, limey shale; increasing amounts of very pale yellow brown, micro-sugary limestone; small amounts of anhydrite.

4575-4595 Shale; variegated, partly limey; much very pale brown micro-sugary and/or chalky limestone; traces of anhydrite.

4595-4610 Shale; dark gray, reddish brown; much pale brown, micro-sugary limestone; small amounts of white anhydrite.

4610-4625 Shale; dark gray; small amounts are reddish brown; some very pale yellow brown, micro-sugary, dolomitic limestone beginning at 4615; small amounts of white anhydrite.

4625-4635 Limey dolomite; and dolomitic limestone; very light gray, micro-sugary and/or chalky; much dark gray shale; small amounts of reddish shale and white anhydrite.

4635-4650 Limestone; pale yellow brown, micro-sugary and/or chalky, partly dolomitic; much shale as above; traces of anhydrite.

4650-4675 Limestone; very light brown; micro-sugary and/or chalky, pseudo-oolitic in parts; some shale as above; scattered traces of anhydrite and chert.

4675-4695 Shale; medium gray to dark gray, small amounts are reddish brown; some limestone as above; decreasing in quantity.

4695-4715 Limestone; very pale yellow brown, micro-sugary and chalky; increasing amounts of medium gray shale; traces of anhydrite, reddish and greenish shale.

4715-4730 Shale; variegated, partly limey; much yellow brown and pale orange, micro-sugary, partly chalky limestone; some white anhydrite; (4725-4730).

4730-4755 Limestone; pale yellow brown to very light gray, fine to micro-sugary; much gray, reddish, and greenish shale; small amounts of white and bluish gray anhydrite.

4755-4820 Limestone; pale yellow brown, micro-sugary and chalky; some variegated, partly limey shale, decreasing in quantity.

4820-4845 Shale; medium dark gray to dark gray, slightly green and limey; much limestone as above; traces of white anhydrite.

4845-4855 Limestone; very pale yellow brown; fine to micro-sugary and/or chalky; some variegated shale.

4855-4870 Shale; dark gray to gray black; some limestone as above; traces of anhydrite and sand.

4870-4925 Limestone; very pale orange to very pale yellow brown; fine sugary and/or chalky; some shale as above; some blue-gray, dense dolomite beginning at 4905 and increasing in quantity until 4920.

4925-4945 Limestone; yellow brown, fine to micro-sugary and/or chalky; small amounts of dolomite as above and gray shale; scattered traces of white anhydrite; some oolitic and pseudo-oolitic limestone beginning at 4940.

4945-4950 Shale; medium dark gray to dark gray; much limestone as above; traces of dolomite and anhydrite.

4950-4960	Shale; as above; some reddish shale; some limestone as above; much medium grained, pink sandstone.
4960-4980	Limestone; yellow brown, oolitic; much medium grained, pink and white sandstone, ending at 4970; small amounts of variegated shale.
4980-4985	Limestone; pale yellow brown; micro-sugary, partly oolitic; some variegated shale; traces of pyrite, sandstone, anhydrite.
4985-4990	Shale; medium gray to dark gray; small amounts of light gray and reddish shales; some limestone as above.
4990-4995	Limestone; as above; some gray shale.
4995-5005	Limestone; very pale yellow brown; fine sugary; becoming rather crystalline, and pseudo-oolitic in part; small amounts of shale.
5005-5065	Limestone; very pale orange to light olive gray and light gray, fine sugary to micro-sugary; shell impressions and fragments, scattered traces of anhydrite and oolitic limestone; small amounts of shale.
5065-5085	Limestone; yellow brown and very pale orange, fine sugary and chalky, partly oolitic; fossils; traces of limestone as above; anhydrite, and shale.
5085-5090	Limestone; medium gray, fine sugary and chalky; much limestone as above, fossils; small amounts of shale.
5090-5095	Shale; medium dark gray to dark gray; much pale orange to medium gray, oolitic, micro-sugary limestone; traces of shale.
5095-5115	Limestone; light gray, fine sugary and chalky, fossiliferous; much medium gray shale, decreasing steadily in quantity.
5115-5195	Limestone; light gray to medium gray, fine to micro-sugary and chalky, partly crystalline, partly argillaceous, fossiliferous; small amounts of shale.
5195-5215	Limestone; gray, very pale orange, fine sugary and chalky, partly crystalline fossiliferous; small amounts of gray shale, increasing at 5210.
5215-5275	Limestone; gray, micro-sugary and chalky, partly crystalline, fossiliferous, decreasing amounts of medium dark gray shale.
5275-5320	Limestone; very pale orange to gray, fine sugary and chalky, partly crystalline, partly argillaceous, fossiliferous, traces of anhydrite, some gray shale beginning at 5290; and decreasing at 5300.
5320-5345	Limestone; very pale orange to very pale yellow brown; micro-sugary to crystalline and chalky, fossiliferous; some gray shale; traces of red and yellow shale, anhydrite, sand; some dense, yellow brown dolomite beginning at 5340.
5345-5365	Limestone; as above; much light brown and gray chert; some gray shale beginning at 5350 and ending at 5360.
5365-5390	Limestone; very pale orange to very pale yellow brown, micro-sugary, small amounts of chert, increasing greatly at 5375.
5390-5410	Limestone; light gray to very pale yellow brown, fine sugary and/or chalky; much very pale orange chert; missing samples: 5400-5405.
5410-5420	Shale; dark gray; much gray to light brown; chalky and fine sugary, shaly limestone.

5420-5485	Limestone; very light gray and very pale yellow brown, fine to micro-sugary and/or chalky, partly shaly; traces of variegated shales; small amounts of light olive gray, very dense dolomite beginning at 5455; traces of fossils (crinoids, bryozoa.)
5485-5490	Limestone; grays, crystalline and subcrystalline, fossiliferous; much yellow brown; micro-sugary limey dolomite; some gray shale.
5490-5520	Limestone; grays, very light brown, micro-sugary, hard, dense, partly shaly and fossiliferous; small amounts of hard, dense, brownish, limey dolomite; some medium gray to dark gray shale.
5520-5540	Limestone; gray, dense, partly chalky; some gray shale; some light olive gray, dense dolomite beginning at 5525.
5540-5545	Limestone; very pale orange to very pale yellow brown, micro-sugary, brittle; some gray chert; small amounts of gray shale.
5545-5565	Shale; medium dark gray to dark gray, partly limey; some dense and chalky pale limestone; traces of anhydrite, chert, iridescent shell fragments.
5565-5570	Limestone; very pale orange to very pale yellow brown, micro-sugary and dense; some chert and dense dolomite; much gray reddish and greenish shale.
5570-5595	Limestone as above; some gray and reddish shales; traces of pyrite, chert anhydrite and sandstone.
5595-5630	Limestone; very pale orange, partly gray, micro-sugary and/or chalky; much dark gray black and reddish brown shale; some crystalline, gray and white, partly chalky limestone beginning at 5610; some coarse, round sand.
5630-5690	Limestone; very pale orange to very pale yellow brown, fine to micro-sugary and/or chalky, partly crystalline; some gray shale; traces of reddish shale.
5690-5700	Shale; medium dark gray; limestone as above; traces of pink sandstone and reddish shale.
5700-5725	Limestone; as above; somewhat crystalline and subcrystalline in part; some gray shale.
5725-5745	Limestone; pale yellow brown; fine sugary and chalky; partly crystalline; some pale yellow brown fine sugary dolomite; some gray shale.
5745-5780	Limestone; very pale orange to very pale yellow brown, micro-sugary and/or chalky, partly crystalline; small amounts of dolomite as above; scattered traces of anhydrite; some shale as above.
5780-5810	Limestone; very pale orange to pale brown to gray, micro to fine sugary and/or chalky, partly crystalline, partly shaly, some gray and reddish shales; traces of anhydrite, sandstone, and sugary dolomite; much dark gray shale (5800-5810).
5810-5850	Limestone; medium gray to light gray, partly very pale orange, micro-sugary and/or chalky, partly crystalline; fossiliferous; some gray shale, traces of anhydrite and coarse sand grains.
5850-5870	Limestone; very pale orange very pale yellow brown, very light gray, micro-sugary and/or chalky; traces of shale and anhydrite; some pale yellow brown, fine sugary, limey dolomite at 5860.
5870-5885	Shale; medium dark gray to dark gray; some light gray to pale yellow brown, micro-sugary and chalky, partly crystalline increasing at 5880; some yellow brown, sugary dolomite; traces of anhydrite.



5885-5905 Limestone; pale yellow brown, micro-sugary, partly crystalline; some pale micro-sugary dolomite (5885-5890) some gray shale.

5905-5915 Limestone; very pale orange to light gray; some gray shale.

5915-5945 Limestone; very pale orange, micro-sugary, brittle, becoming almost white and chalky at 5935; traces of shale.

5945-5955 Limestone as above; partly fine sugary and dolomitic; somewhat sandy; much very light olive gray, dense limestone at 5950.

5955-6000 Limestone; light olive gray, partly very pale orange, dense, brittle; traces of shale and anhydrite; small amounts of rounded sand beginning at 5980; some yellow brown crystalline dolomite at 5985; some very sandy limestone (limey sandstone?) at 5990.

6000-6030 Dolomite; pale orange, dense; some limestone and sandy limestone as above (decreasing in quantity) traces of anhydrite, sand, gray and green shales.

6030-6035 Dolomite limestone and limey dolomite; pale orange, dense traces of anhydrite, sand and shale.

6035-6045 Dolomite; dense, pale orange, slightly pink and limey in part; much gray shale beginning at 6045; traces of sand and anhydrite.

6055-6075 Dolomite; pale orange, white, pink crystalline partly micro-sugary at 6070; much gray shale; small amounts of anhydrite crystals.

6075-6115 Dolomite; very pale orange, micro-sugary to chalky, partly crystalline at 6080; traces of shale and anhydrite; the dolomite becomes slightly limey at 6100; missing samples: 6110-6115.

6115-6160 Limestone; very pale orange, fine to micro-sugary, small amounts of gray shale and dolomite as above; the limestone becomes somewhat limey at 6155.

6160-6165 Limey dolomite and dolomitic limestone; very pale orange, micro-sugary and chalky, dense; small amounts of gray shale.

6165-6175 Limestone; very pale orange, micro-sugary, partly chalky, slightly dolomitic small amounts of gray and greenish shales.

6175-6180 Limey dolomite and dolomitic limestone; very pale orange, micro-sugary to very dense; small amounts of gray and greenish shales.

6180-6185 Limestone; very pale orange; slightly pink and dolomitic in part; small amounts of shale.

6185-6220 Dolomite; very pale orange, micro-sugary, somewhat limey; some limestone as above; traces of shale.

6220-6225 Limestone; very pale orange to very pale yellow brown, micro-sugary; some dense dolomite as above; much gray shale.

6225-6235 Limestone as above; some dense pale orange dolomite, becoming partly crystalline and pink; some gray shale.

6235-6240 Limestone as above; some dense pale orange dolomite; becoming partly crystalline and pink; some gray shale.

6235-6240 Dolomitic limestone and limey dolomite; very pale orange, micro-sugary; some gray shale.

6240-6245 Dolomite; very pale orange, dense, much pale; dense limestone; much gray shale.

6245-6255 Dolomite; very pale orange to very pale yellow brown, fine sugary partly limey; small amounts of gray shale.

6255-6260 Limey dolomite and dolomitic limestone; yellow brown, fine sugary; some dense limestone; small amounts of gray shale.

6260-6270 Limey dolomite; yellow brown, fine sugary.

6270-6305 Limey dolomite; very pale orange to very light gray, fine sugary, partly crystalline; much gray shale beginning at 6300.

6305-6310 Limestone; very pale orange, micro-sugary to chalky; much limey dolomite and gray shale as above.

6310-6330 Limestone; very pale orange, gray, chalky to dense; small amounts of dolomite as above; some gray shale.

6330-6350 Shaly lime (limey shale?) light brown, very soft; some limestone as above.

6350-6355 Shale; dark gray; some dense, pale orange dolomite.

6355-6360 Shale; medium gray to dark gray, partly sandy, traces of reddish shale; some grayish orange pink, dense dolomitic limestone.

6360-6370 Shale; as above; much very pale pink, grayish orange pink, dense to chalky limey dolomite; small amounts of chalky and crystalline, gray fossiliferous limestone.

6370-6385 Limestone; medium light gray to medium gray; partly light olive gray, dense; small amounts of shale and dolomite as above.

6385-6405 Limestone; light brown and very pale orange, dense to chalky; traces of gray shale.

6405-6415 Limestone; light brown to medium brown, dense to chalky; much pale orange; fine sugary dolomite.

6415-6420 Limestone; pale yellow brown to pale orange; fine sugary.

6420-6440 Limestone; yellow brown to pale orange, medium fine sugary to chalky.

6440-6450 Limestone; very pale orange to yellow brown, fine sugary to chalky, fossiliferous; traces of anhydrite crystals.

6450-6465 Limestone; brownish, dense; much gray shale (6450-6460).

6465-6470 Limestone as above; some very pale orange, fine sugary, limey dolomite; small amounts of gray shale.

6470-6475 Dolomitic limestone; pale orange, micro-sugary; much limestone as above, small amounts of shale.

6475-6485 Dolomite; yellow brown, dense, somewhat resinous; much limestone as above, small amounts of anhydrite and gray shale; trace of weathered chert at 6480.

6485-6505 Dolomite; very pale orange, micro-sugary, partly limey; some dense, pale orange limestone at 6500.

6505-6535 Dolomitic limestone; very pale orange, micro-sugary.

6535-6565 Limestone; very pale orange to yellow brown, chalky to sugary, some crystals, partly dolomitic (6545-6455).

6565-6595 Limestone; very pale orange to very pale yellow brown, micro-sugary and/or chalky, partly crystalline; scattered traces of shale and anhydrite crystals.

6595-6625 Limestone; very pale, sublithographic, becoming partly dolomitic at 6600; traces of anhydrite crystals.

6625-6645 Limestone; very pale orange to very pale yellow brown, micro-sugary to sublithographic; traces of shale and anhydrite crystals.

6645-6650 Limestone; very pale orange, fine sugary and/or chalky, much lumpy pale green shale.

6650-6675 Limestone; very pale, dense to fine sugary; traces of gray shale and anhydrite.

6675-6690	Limestone; very light gray to very pale orange; sub-lithographic; partly fine sugary; traces of shale and anhydrite.
6690-6700	Shale; medium dark gray; some limestone as above.
6700-6710	Limestone; very pale yellow brown and very pale orange, micro-sugary to fine sugary; much gray shale at 6700; traces of anhydrite.
6710-6715	Limestone; yellow brown, fine sugary; much limestone as above, partly dolomite.
6715-6740	Limestone; very light gray to yellow brown, fine sugary, partly chalky, traces of anhydrite and shale.
6740-6790	Limestone; very light gray and yellow brown, medium fine sugary, partly dolomitic; traces of shale.
6790-6800	Limestone; very pale orange to very light gray, medium fine sugary to chalky partly crystalline.
6800	Total depth