

NORTH DAKOTA GEOLOGICAL SURVEY CIRCULAR NO. 8

Summary of the Hunt Oil Company Shoemaker No. 1 Well

McHenry County, North Dakota

By Sidney B. Anderson

February 4, 1953

Hunt Oil Company - W. B. B. Shoemaker No. 1 Well McHenry County, North Dakota, NE $\frac{1}{4}$ of SW $\frac{1}{4}$, Section 3, T. 157N., R. 78W. (1980 feet N. of S line, 1980 feet E. of W. line, Section, 3). Elevation: 1480 D. F.

The Hunt Shoemaker No. 1 was spudded December 31, 1951 and 13-3/8 inch surface casing was run at 125 feet. The drilling was completed March 1, 1952 and the well abandoned. Total Depth 7218.

Formation tops determined from sample and electric logs, not all lithologic formation tops called in following list.

Formation tops

Cretaceous system	
Niobrara Member	1235
Greenhorn Member	1790
Dakota	2290
Jurassic System	
Ellis Group	2590
Piper Formation (Sawtooth)	3060
Triassic System	
Spearfish	3275
Mississippian System	
Charles Formation	3430
Mission Canyon Formation	3870
Lodgepole Formation	4005 (electric log)
Englewood Formation	4650
Devonian System	
Lyleton Formation	4710
Ashern Formation	5585
Silurian System	
Stonewall Formation	5617
Ordovician System	
Stony Mountain Formation	6220
Stony Mountain Shale Member	6252 (electric log)
Red River Formation	6270
Winnipeg Formation	6902
Winnipeg Sand	7020 (electric log)
Pre-Cambrian	7198 (electric log)

Shoemaker No. 1 Well

<u>From</u>	<u>To</u>	<u>Formation</u>
2100	2180	Medium dark gray N4 shale, few quartz grains.
2180	2190	Medium dark gray N4 shale, few rounded quartz grains.

<u>From</u>	<u>To</u>	<u>Formation</u>
2190	2200	Medium dark gray N4 shale, few rounded quartz grains, white bentonite.
2200	2220	Shale, same as above.
2220	2240	Sandstone, coarse sand and shale as above.
2240	2250	Shale as above, few sand grains.
2250	2260	Shale as above, few sand grains, little white bentonite.
2260	2270	Shale as above, pyrite, few sand grains, little bentonite.
2270	2280	Shale as above, few sand grains, little white and black bentonite.
2280	2290	Shale, medium dark gray N4 and medium light gray N6, some black carbonaceous matter.
2290	2300	Shale, as above, little sand.
2300	2310	Shale, medium dark gray N4 and medium light gray N6, some black carbonaceous matter, little sand.
2310	2320	Shale, same as above.
2320	2330	Shale, same as above white bentonite little sand.
2330	2340	Shale, medium dark gray N4 and medium light gray N6, little carbon matter, sand as above.
2340	2350	Shale, same as above, little sand.
2350	2360	Shale, same as above, pyrite, white bentonite, sand as above.
2360	2370	Shale, same as above, little mica muscavite? white bentonite, sand.
2370	2380	Sandstone and shale, much quartz sand and shale as above, some mica.
2380	2390	Shale as above, little sand and little mica shell fragments.
2390	2400	Shale same as above, little sand.
2400	2410	Shale as above, little sand, pyrite, white mica.
2410	2420	Shale as above, few quartz grains, little white bentonite.
2420	2430	Shale, medium dark gray N4 and medium light gray N6, few quartz grains, little white bentonite.
2430	2450	Shale as above, some rounded quartz grains, little white bentonite.
2450	2460	Shale, medium dark gray N4 and medium light gray N6, some rounded quartz grains, one piece of glauconite.
2460	2480	Shale as above, few rounded quartz.
2480	2490	Shale, medium dark gray N4 and medium light gray N6, inoceramus prisms, few quartz grains.
2490	2500	Shale as above, few quartz grains.
2500	2510	Shale, medium dark gray N4 and medium light gray N6 and gravel cave? Lumpy shale.
2510	2520	Shale as above, gravel cave? Lumpy shale.
2520	2530	Shale as above, gravel cave?
2530	2590	Missing.
Ellis		
2590	2600	Sandstone and shale, yellow gray 5Y7/2, very fine, grained sandstone or siltstone with glauconite and green gray 5GY6/1 shale, gray shale cave?

<u>From</u>	<u>To</u>	<u>Formation</u>
2600	2610	Sandstone and shale same as above.
2610	2620	Sandstone and shale same as above.
2620	2630	Sandstone and shale same as above.
2360	2660	Missng.
2660	2670	Sandstone and shale, yellow gray 5Y7/2 very fine grained sandstone or siltstone with glauconite green gray shale 5GY6/1, grayish cave?, calcareous cement.
2670	2680	Sandstone and shale same as above.
2680	2690	Sandstone and shale, yellow gray 5Y7/2 very fine grained sandstone or siltstone with glauconite and green gray 5GY6/1 shale, grayish cave?
2690	2700	Sandstone and shale same as above.
2700	2710	Sandstone and shale same as above, intercalated.
2710	2720	Sandstone and shale, yellow gray 5Y7/2 very fine grained sandstone or siltstone with glauconite and green gray 5GY6/1 shale, gray shale cave?
2720	2740	Sandstone and shale same as above.
2740	2750	Sandstone and shale same as above with little biotite.
2750	2790	Sandstone and shale, yellow gray 5Y7/2, very fine grained sandstone or siltstone with glauconite and green gray 5GY6/1 shale, gray shale cave.
2790	2800	Sandstone and shale same as above, shale somewhat splintery.
2800	2810	Sandstone and shale same as above.
2810	2820	Sandstone and shale, dark red brown shale 10R3/4 and pale brown 5YR5/2 sand, sand medium to coarse, black carbonaceous residue.
2820	2830	Sandstone and shale as above.
2830	2840	Sandstone and shale same as above, black carbon residue, little white calcite.
2840	2850	Shale, medium light gray N6, calcareous, slightly bentonite.
2850	2860	Shale and limestone, shale as above yellow gray 5Y8/1, sandy limestone, little sandstone and some red shale and pink anhydrite.
2860	2870	Shale as above, medium light gray, some limy sand or sandy lime.
2870	2880	Shale as above, medium light gray and some red shale, little sand.
2880	2890	Shale as above, medium light gray and some red and green gray shale, fine grained sandstone.
2890	2910	Shale, same as above.
2910	2920	Shale same as above, some yellow gray sandstone 5Y8/1, calcareous.
2920	2940	Shale same as above, little bentonite light blue gray 5B7/1.
2940	2960	Shale same as above.
2960	2980	Limestone, white and dense, much shale.
2980	2990	Limestone, white to yellow gray 5Y8/1, crystalline.
2990	3000	Limestone, white to yellow gray 5Y8/1, crystalline, some sandy limestone.

<u>From</u>	<u>To</u>	<u>Formation</u>
3000	3020	Limestone and shale as above, much shale as above, little limestone.
3020	3030	Limestone and shale as above, much shale as above and little bentonite.
3030	3040	Limestone, yellow gray 5Y8/1, dense, much shale cave?
3040	3050	Limestone, yellow gray 5Y8/1, dense, much shale cave?, little light blue gray bentonite.
3050	3060	Limestone and shale, limestone as above and much varied colored shale.
3060	3130	Shale varied color, little limestone and few quartz grains.
3130	3140	Limestone and shale as above, more limestone dense, yellow, gray 5Y8/1.
3140	3160	Limestone and shale as above, mostly gray shale, medium dark gray N4; more limestone, dense, yellow gray 5Y8/1.
3160	3180	Limestone and shale, shale as above, mostly dark gray N4; limestone yellow gray 5Y8/1; green gray red shale, quartz grained.
3180	3190	Limestone and shale as above, some crystalline, white anhydrite.
3190	3250	Anhydrite and shale as above, little limestone, some crystalline.
3250	3280	Shale as above, little anhydrite and limestone as above.
3280	3290	Shale varied color, some limestone and shale as above.
Spearfish		
3290	3310	Shale, varied color, some pale red brown 10R5/4 sandstone; shale as above.
3310	3340	Shale and sandstone; gray red shale 10R4/2, gray sand green shale; much moderate reddish orange sandstone 10R6/6.
3340	3360	Shale and sandstone as above with a little pale brown shale 5YR5/2.
Big Snowy Heath		
3360	3380	Shale and sandstone as above, both with more medium dark gray shale N4 cave?
3380	3390	Shale and sandstone as above, much dark gray N3 and medium dark gray N4 shale.
3390	3400	Shale as above but with much sandstone as above, cave? Some pale red siltstone 10R6/2.
3400	3410	Shale as above, much sandstone cave? Pale red siltstone.
3410	3420	Shale as above, black carbonaceous material.
3420	3430	Shale and limestone; shale as above, gray red 10R4/2 limestone.
3430	3440	Limestone, yellow gray, 5Y8/1, finely crystalline, dense; light olive gray 5Y6/1 dolomite, dense; little white anhydrite.

<u>From</u>	<u>To</u>	<u>Formation</u>
3440	3450	Limestone as above, samples coated with black carbonaceous material, pipe dope?
3450	3460	Limestone, yellow gray 5Y8/1 dense, finely crystalline, little white anhydrite.
3460	3470	Limestone and dolomite; yellow gray 5Y8/1, pale red dolomite.
3470	3480	Limestone, yellow gray 5Y8/1, slightly saccharoidal, pale red 5R6/2 dolomite, dense.
3480	3490	Limestone, yellow gray 5Y8/1 slightly saccharoidal, pale red 5R6/2 dolomite, white anhydrite.
3490	3500	Limestone, dolomite and shale as above except much gray and green gray shale, cave?
3500	3510	Limestone and dolomite as above.
3510	3520	Limestone as above.
3520	3530	Limestone as above, dense, some white calcite?
3530	3540	Limestone, yellow gray 5Y8/1 dense, some white anhydrite.
3540	3550	Limestone and dolomite as above, dense, some white anhydrite.
3550	3580	Limestone and dolomite as above.
3580	3600	Limestone, yellow gray 5Y8/1, much gray to some red shale cave? and light gray N7, very fine grained sandstone or siltstone, calcitic, white bentonite.
3600	3610	Limestone as above, gray and red shale as above, etc.
3610	3620	Limestone as above, little pale red dolomite, little anhydrite, much shale as above.
3620	3630	Limestone, yellow gray 5Y8/1 as above, shale as above, little anhydrite.
3630	3640	Limestone and shale as above.
3640	3650	Limestone, mostly pale red 10R6/2 and white anhydrite, some limestone as above.
3650	3660	Anhydrite as above.
3660	3700	Missing; strapped pipe.
3700	3710	Dolomite and anhydrite; dolomite, dense, pale red 10R6/2 and white anhydrite.
3710	3730	Anhydrite, white, very light gray, dense,
3730	3740	Anhydrite, white and very light gray; little limestone.
3740	3750	Anhydrite as above, much pale yellow brown dolomite, crystalline, pin point porosity.
3750	3760	Limestone, pale, yellow brown 10YR6/2, slightly saccharoidal to dense, some anhydrite as above.
3760	3770	Dolomite, yellow gray 5Y8/1 finely crystalline with pin point, porosity; anhydrite as above.
3770	3780	Dolomite and limestone as above, pale yellow brown limestone, saccharoidal; some anhydrite.
3780	3790	Limestone, yellow gray 5Y8/1 dense with some vugs.
3790	3800	Limestone, yellow gray, 5Y8/1 dense to slightly saccharoidal, pin point vugs.
3800	3830	Limestone, yellow gray, as above.
3830	3840	Limestone, color as above, saccharodal.

<u>From</u>	<u>To</u>	<u>Formation</u>
3840	3860	Limestone, color as above, saccharoidal, vuggy.
3860	3870	Dolomite, medium light gray, dense.
3870	3880	Dolomite as above, mostly pale yellow brown to yellow gray limestone.
3880	3890	Limestone as above, dense; little dolomite as above.
3890	3900	Limestone as above, saccharoidal, some pin point vugs.
3900	4000	Limestone as above.
4000	4010	Limestone as above, saccharoidal oolitic, fragment of brachiopod with bryzoa.
4010	4020	Limestone as above, saccharoidal oolitic.
Lodgepole		
4020	4030	Limestone medium light gray N6 and medium light gray and yellow gray mottling, some pin point porosity.
4030	4040	Limestone as above, saccharoidal, some pin point porosity, little salt.
4040	4050	Limestone as above, saccharoidal, some pin point porosity, shell fragments brachiopod.
4050	4060	Limestone as above, saccharoidal, some pin point, porosity.
4060	4070	Limestone, yellow gray 5Y8/1 oolitic, some pin point porosity.
4070	4080	Limestone, yellow gray and medium light gray mottling, saccharoidal, little pin point, porosity.
4080	4090	Limestone, yellow gray as above, mottling as above, some light brown and gray mottling, pin point, porosity.
4090	4100	Limestone as above, some porosity.
4100	4110	Limestone as above, saccharoidal, some porosity
4110	4120	Limestone as above, saccharoidal, some porosity.
4120	4140	Limestone as above, saccharoidal, some pin point porosity.
4140	4150	Limestone as above, saccharoidal, some porosity.
4150	4170	Limestone as above, saccharoidal, fair porosity, little anhydrite.
4170	4200	Limestone as above, light gray N7, mottled, fair porosity.
4200	4210	Limestone as above, light gray N7 mottled, fair porosity, pipe dope staining.
4210	4220	Limestone as above, light gray N7 mottled, fair pin point porosity.
4220	4230	Light gray mottled limestone, some porosity.
4230	4250	Limestone, light gray mottled, saccharoidal.
4250	4260	Limestone, light gray mottled, saccharoidal, some porosity.
4260	4280	Limestone, light gray mottled, crystalline to saccharoidal.
4280	4290	Limestone, yellow gray 5Y8/1 and some light gray mottled yellow gray oolitic.
4290	4300	Limestone, yellow gray 5Y8/1 oolitic.
4300	4310	Limestone, yellow gray, 5Y8/1 oolitic, crinoid stem.

<u>From</u>	<u>To</u>	<u>Formation</u>
4310	4320	Limestone, yellow gray 5Y8/1 oolitic, some light gray saccharoidal shell fragments.
4320	4340	Limestone, yellow gray and light gray oolitic.
4340	4350	Limestone as above, oolitic.
4350	4360	Limestone as above, oolitic, shell fragments.
4360	4370	Limestone as above, oolitic, some slightly, saccharoidal, shell fragments.
4370	4380	Limestone as above, oolitic, some slightly saccharoidal.
4380	4390	Limestone, light gray N7, finely crystalline, dense, poor porosity.
4390	4400	Limestone, light gray N7 and <u>medium gray N6 with a slight brown tinge</u> , finely crystalline, poor porosity.
4400	4440	Limestone as above.
4440	4450	Limestone as above, much gray shale cave?
4450	4460	Limestone as above (some oolitic limestone and gray shale cave?)
4460	4470	Limestone as above, (brown shale, red shale, and gray shale cave?)
4470	4480	Limestone as above, and shale same as above, little pink anhydrite.
4480	4490	Limestone as above, dense, poor porosity, little pink anhydrite.
4490	4500	Limestone as above, dense.
4500	4560	Limestone, medium light gray N6 and light gray N7 dense, some reddish brown and gray shale cave?
4560	4570	Limestone as above, little white anhydrite.
4570	4580	Limestone as above, some gray shale cave?
4580	4630	Limestone, medium light gray N6 and light gray N7 dense, some reddish brown and gray shale cave?
4630	4650	Limestone, medium light gray N6 and light gray N7.
Englewood		
4650	4670	Shale, dark gray N3 some medium gray rounded quartz and some limestone.
4670	4680	Shale, dark gray N3 some quartz and some limestone.
4680	4690	Shale, dark gray N3 and some medium dark gray N4 quartz some limestone.
4690	4700	Shale, dark gray N3 more medium dark gray N4 quartz, little pale reddish brown shale 10R5/4.
Lyleton		
4700	4710	Shale, dark gray N3 medium dark gray N4 quartz, some pale reddish brown 10R5/4 fine grain sandstone and shale.
4710	4720	Shale, pale reddish brown 10R5/4 calcareous, some quartz and some gray shale as above.
4720	4730	Shale same as above.
4730	4740	Shale same as above, with some limestone and dolomite, some yellow gray quartz? Reddish staining from shale.
4740	4750	Limestone and dolomite as above, dense, and shale as above, petrolferus odor when dissolved in HCl.

<u>From</u>	<u>To</u>	<u>Formation</u>
4750	4760	Limestone same as above, dense, petroliferus, odor when dissolved in HCl.
4760	4780	Limestone yellow gray 5Y8/1 sacchariodal, fair porosity.
4780	4800	Limestone as above, little dolomite.
4800	4820	Limestone, as above fair porosity.
4820	4830	Limestone yellow gray 5Y8/1, saccharoidal, fair porosity.
4830	4840	Dolomite same as above, much gray shale, saccharoidal to finely crystalline, dense, some anhydrite.
4840	4850	Limestone yellow gray, light brownish gray 5YR6/1 mostly yellowish gray, dense.
4850	4890	Limestone, yellow gray, finely crystalline, dense.
4890	4900	Limestone, same as above, some saccharoidal, may be cave?
4900	4910	Limestone, same as above, finely crystalline to saccharoidal, dense.
4910	4920	Limestone and dolomite same as above, dolomite is saccharoidal.
4920	4940	Limestone same as above, dense to oolitic, finely crystalline, fair porosity in oolitic.
4940	4950	Limestone, color same as above, dense to saccharoidal, fair porosity in saccharoidal matter, little white anhydrite.
4950	4960	Limestone, same as above with some oolitic limestone shell fragments.
4960	4970	Limestone same as above, dense to slightly saccharoidal, fair porosity.
4970	4980	Limestone same as above, crystalline to saccharoidal, fair porosity.
4980	4990	Limestone same as above, saccharoidal to oolitic, fair porosity.
4990	5000	Limestone same as above, some pale yellowish brown 10YR6/2, finely crystalline to slightly saccharoidal, Some porosity.
5000	5010	Limestone same as above, some medium gray limestone N6, fine to granular.
5010	5020	Limestone same as above, little gray dolomite, some shale.
5020	5050	Limestone, pale yellowish brown 10YR6/2, saccharoidal, good porosity.
5050	5060	Limestone same as above, some gray limestone.
5060	5080	Limestone, yellow gray 5Y8/1 to pale yellow brown, fine to saccharoidal, dense.
5080	5100	Limestone same as above, dense to saccharoidal,
5100	5110	Missing.
5110	5120	Limestone, yellow gray, some yellow brown, fine to granular.
5120	5130	Limestone same as above, fair porosity.
5130	5160	Limestone, yellow gray 5Y8/1, fine to granular, fair porosity.

<u>From</u>	<u>To</u>	<u>Formation</u>
5160	5170	Limestone, yellow gray 5Y8/1 fine to granular, some porosity.
5170	5190	Limestone yellow gray 5Y8/1, fine to granular quite dense, some porosity.
5190	5200	Limestone same as above, some grayish pink, dense, little anhydrite.
5200	5210	Limestone, color same as above, dense, fine grained.
5210	5220	Limestone, color same as above, medium grained, dense, little pink anhydrite.
5220	5260	Limestone, color same as above, fine to medium grained, dense.
5260	5270	Limestone, color same as above, little gray limestone and some shale.
5270	5280	Missing.
5280	5300	Limestone, same as above much cave? Shale and limestone.
5300	5310	Limestone, yellow gray 5Y7/2, otherwise same.
5310	5320	Dolomite and limestone, pale yellow brown 10YR6/2 dolomite and yellow gray 5Y8/1 limestone and dolomite, granular, limestone finely crystalline.
5320	5360	Dolomite, pale yellow brown as above, little yellow gray limestone.
5360	5370	Limestone, pale yellow, brown and yellow gray, granular, slightly saccharoidal, dense.
5370	5390	Limestone, pale yellow brown, granular, medium light gray limestone, finely crystalline, dense.
5390	5410	Limestone, pale yellow brown as above, some pin point porosity in medium light gray limestone.
5410	5420	Limestone mostly yellow gray, some pin point porosity.
5420	5440	Limestone, mostly yellow gray, dense, some pale yellow brown, saccharoidal.
5440	5450	Limestone as above, some porosity in pale yellow brown.
5450	5510	Dolomite, pale yellow brown 10YR6/2, saccharoidal, fair porosity.
5510	5520	Dolomite as above, some light gray limestone, dense, fair porosity.
5520	5530	Limestone and dolomite yellow gray 5Y8/1, finely crystalline, dense, pale yellow brown dolomite, crystalline.
5530	5540	Limestone, yellow gray 5Y8/1, finely crystalline, dense.
5540	5550	Limestone, pale yellow brown and yellow gray 5Y8/1, finely crystalline, dense.
5550	5560	Limestone and dolomite, pale yellow brown dolomite, yellow gray limestone, finely crystalline dense.
Ashern		
5560	5570	Limestone and dolomite and shale, limestone and dolomite as above, dense, shale, pale red 10R6/2 and moderate orange pink 10R7/4.
5570	5580	Shale as above, some limestone.

<u>From</u>	<u>To</u>	<u>Formation</u>
Stonewall		
5580	5590	Shale and limestone, shale as above, some slight limestone, dense, some yellow gray dolomite.
5590	5600	Dolomite, light gray N5 and medium light gray N6 yellow gray 5Y8/1 and some shale as above, probably cave?
5600	5620	Limestone, light gray N5 and medium light gray N6, dense, fine grained.
5620	5630	Limestone, light gray N5 and medium light gray N6, dense, fine grained, little pale yellow brown crystalline, same yellow gray 5Y8/1, dense.
5630	5640	Limestone, pale yellow brown, saccharoidal, fair porosity, some gray and yellow gray as above.
5640	5650	Limestone and dolomite, limestone pale yellow brown, saccharoidal, fair porosity.
5650	5670	Limestone, pale yellow brown, saccharoidal, fair porosity.
5670	5680	Limestone and dolomite, yellow gray limestone, dense, pale yellow brown dolomite as above.
5680	5690	Limestone, yellow gray, dense; pale yellow brown limestone, quite dense.
5690	5730	Limestone, mostly pale yellow brown and some yellow gray limestone, dense.
5730	5740	Limestone, pale yellow brown and yellow gray, dense.
5740	5750	Limestone, pale yellow brown, some saccharoidal and some yellow gray limestone, crystalline, quite dense; some gray shale.
5750	5760	Limestone and dolomite, pale yellow brown, some slightly saccharoidal, yellow gray limestone, crystalline, quite dense, gray dol. N6, shale N4.
5760	5770	Limestone as above, more gray dolomite.
5770	5780	Limestone and dolomite, some limestone as above, mostly gray crystalline dolomite and finely crystalline yellow gray dolomite.
5780	5790	Dolomite, yellow gray 5Y8/1, light gray N7, dense, very light gray N8 rectangular cleavage flake, satin spar gypsum.
5790	5800	Gypsum, anhydrite, dolomite; selinite and alabaster gypsum and anhydrite, some dolomite as above, some massive dolomite.
5800	5814	Dolomite, white and slightly yellow; gypsum.
5814	5820	Dolomite as above, some very coarsely crystalline.
5820	5840	Dolomite to as above.
5840	5850	Dolomite and gypsum as above, dolomite white yellow gray, little satin spar gypsum.
5850	5860	Dolomite same as above, some of dolomite extremely crystalline, some satin spar gypsum.
5860	5874	Dolomite same as above, some saccharoidal with good porosity.
5874	5880	Dolomite same as above, crystalline.
5880	5884	Dolomite as above, crystalline, some saccharoidal with fair porosity.

<u>From</u>	<u>To</u>	<u>Formation</u>
5884	5890	Dolomite as above, crystalline, some sacchardidal.
5890	5900	Dolomite as above, crystalline, some saccharoidal with fair porosity.
5900	5910	Dolomite as above, crystalline, some saccharoidal.
5914	5950	Dolomite same as above.
5950	5974	Dolomite same as above.
5974	5980	Dolomite as above, light olive gray dolomite 5Y6/1 and yellow gray.
5980	5984	Dolomite as above, yellow gray 5Y8/1 dolomite, some gray shale.
5984	5990	Dolomite same as above, fine grained, dense.
5990	5994	Dolomite, some anhydrite, yellow gray 5Y8/1 dolomite, fine grained, gray shale, dense.
5994	6014	Dolomite same as above, little gray shale.
6014	6030	Dolomite same as above with some saccharoidal, dolomite color as above.
6030	6034	Dolomite same as above, with little pale yellow brown 10YR6/2 and little gray shale.
6034	6040	Dolomite same as above with little pale yellow, some gray and green gray shale.
6040	6054	Dolomite same as above, little shale.
6054	6064	Dolomite same as above, some pale yellow brown dolomite, dense.
6064	6084	Dolomite same as above, yellow gray, dense.
6084	6104	Dolomite same as above with some pale red 10R6/2 dolomite, very pale yellow brown, dense.
6104	6120	Dolomite, yellow gray 5Y8/1 and pale red 10R6/2 fine grained, dense.
6120	6130	Dolomite, yellow gray 5Y8/1 and pale red 10R6/2 pale yellow brown dolomite, dense.
6130	6140	Same as above, slightly saccharoidal.
6140	6144	Dolomite, mostly pale yellow brown, some pale red and yellow gray, pale yellow brown. saccharoidal.
6144	6150	Dolomite, mostly pale yellow brown saccharoidal, some pale red and yellow gray.
6150	6164	Dolomite, mostly pale yellow brown, some saccharoidal, yellow gray dolomite, medium light gray dolomite, gray bentonite.
6164	6170	Dolomite same as above, some gray shale.
6170	6174	Dolomite, some pale yellow brown, some saccharoidal, yellow gray dolomite, mostly medium light gray dolomite, dense.
6174	6184	Dolomite, yellow gray 5Y8/1 to medium light gray N6, dense.
6184	6190	Dolomite same as above, fine grained dense.
6190	6194	Dolomite same as above, finely crystalline to crystalline, dense,
6194	6200	Dolomite same as above, few pin point vugs.
6200	6204	Dolomite same as above, quite dense, few pin point vugs.
6204	6210	Dolomite same as above, finely crystalline to crystalline.

<u>From</u>	<u>To</u>	<u>Formation</u>
6210	6220	Dolomite, yellow gray 5Y8/1 crystalline dense.
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6220	6234	Dolomite yellow gray 5Y8/1 and light gray N7 dolomite, both crystalline, some gray shale, dense.
6234	6244	Dolomite and limestone, yellow gray dolomite as above, light gray N7 limestone or limey dolomite, crystalline, dense.
6244	6250	Limestone, light gray N7 crystalline dense, some yellow gray dolomite cave? Dolomite and limestone.
6250	6290	Limestone same as above, dolomite.
6290	6294	Same as above, bryzoa fragments.
6294	6300	Limestone, light gray N7, crystalline dense.
6300	6310	Limestone, light gray and yellow gray 5Y8/1 limestone, dense, crystalline.
6310	6330	Limestone, yellow gray and light gray, dense, mostly yellow gray.
6330	6334	Limestone, yellow gray and light gray dense, some light olive gray 5Y4/1.
6334	6340	Limestone same as above, pale yellow brown 10YR6/2 slightly saccharoidal.
6340	6344	Limestone mostly pale yellow brown crystalline, otherwise same as above, bryzoa fragments.
6344	6354	Limestone, mostly pale yellow brown crystalline.
6354	6364	Dolomite same as above, some gray shale.
6364	6370	Dolomite yellow gray and light gray limestone, pale yellow brown dolomite, gray shale.
6370	6374	Dolomite same as above, mostly dolomite, quite a few quartz grains.
6374	6380	Limestone same as above, some gray shale.
6380	6384	Limestone and dolomite as above.
6384	6404	Dolomite yellow gray finely crystalline, dense.
6404	6410	Dolomite, yellow gray finely crystalline dense, some vuggy.
6410	6420	Same as above, some slightly saccharoidal.
6420	6430	Dolomite, yellow gray finely crystalline dense, little vuggy.
6430	6434	Dolomite and limestone, pale yellow brown crystalline dolomite, yellow gray finely crystalline limestone, dense.
6434	6444	Dolomite and limestone same as above, mostly yellow gray limestone.
6444	6454	Limestone yellow gray, dolomite finely crystalline to crystalline.
6454	6550	Limestone yellow gray, finely crystalline, dense.
6550	6614	Limestone yellow gray, finely crystalline, dense, some saccharoidal.
6614	6620	Limestone yellow gray, finely crystalline, dense, slightly saccharoidal, dolomite, limestone.
6620	6630	Limestone same as above and saccharoidal, dolomite.
6630	6640	Limestone, mostly yellow gray, finely crystalline, dense.

<u>From</u>	<u>To</u>	<u>Formation</u>
6640	6644	Limestone mostly yellow gray, finely crystalline, dense, some gray shale.
6644	6650	Limestone same as above, poor sample.
6650	6664	Limestone same as above, some gray shale.
6664	6670	Limestone mostly yellow gray, finely crystalline, some coarsely crystalline.
6670	6680	Limestone, yellow gray, finely crystalline, little pale yellow brown dense, dolomite coarsely crystalline.
6680	6720	Limestone, yellow gray, finely crystalline, dense, dolomite coarse crystalline, few quartz grains.
6720	6770	Limestone, yellow gray, finely crystalline, dense.
6770	6790	Limestone, yellow gray, finely, crystalline, dense, some pale yellow brown, coarsely crystalline to saccharoidal.
6790	6810	Limestone, yellow gray, finely crystalline, dense.
6810	6814	Limestone as above, white N9 some light gray N7, finely crystalline, dense.
6814	6820	Limestone, white to yellow gray, some light gray N7 dense.
6820	6824	Limestone and sandstone, various colored limestone, much quartz sand, little gray shale cave?
6824	6830	Limestone and sandstone, white to yellow gray, limestone dense, much quartz sand, little gray shale.
6830	6834	Limestone, sandstone, white to yellow gray limestone and some biotite, much quartz grains.
6834	6840	Limestone and sandstone, white to yellow gray limestone, some quartz sand, pipe dope.
6840	6844	Same as above, cave?
6844	6850	Limestone, yellow gray and pale yellow brown, dense.
6850	6854	Limestone, yellow gray and pale yellow brown, dense, some light gray limestone.
6854	6860	Limestone same as above, some quartz sand, pipe dope.
6860	6864	Limestone, yellow gray, some light gray limestone, dense, quartz sand.
6864	6890	Limestone, yellow gray 5Y8/1, some light gray limestone N7, dense, quartz sand.
6890	6900	Limestone, yellow gray 5Y8/1 and light gray limestone, dense, quartz sand.
6900	6910	Limestone, yellow gray and light gray, dense, N7, some gray shale.
6910	6914	Limestone, yellow gray and light gray, dense, some gray shale.
6914	6920	Limestone and shale, yellow gray and light gray dense, some gypsum and dark green gray 5GY4/1 shale, some sand, Winnipeg shale.
6920	6924	Shale and sandstone, medium dark gray N4 and dark green gray 5GY4/1, much coarse sand, splintery shale.
6924	6934	Shale and sandstone as above, some large pebbles sand, may be cave?
6934	7004	Shale and sandstone as above, little light gray and yellow gray limestone.

<u>From</u>	<u>To</u>	<u>Formation</u>
7004	7010	Same as above.
7010	7014	Very dirty lumpy sample, mostly aquagel.
7014	7020	Same as above.
7020	7034	Very dirty sample, lumpy.
7034	7040	Very dirty sample, pipe dope.
7040	7044	Shale and sandstone, very dirty lumpy sample, pipe dope.
7044	7060	Shale and sandstone, dark green gray 5GY4/1 shale and quartz sand.
7060	7074	Shale and sandstone same as above, sandstone fine to medium.
7074	7084	No samples.
7084	7090	Shale and sandstone, much quartz sand, medium to coarse, shale.
7090	7094	Sandstone and shale same as above, dark green gray and gray shale.
7094	7104	Shale and sandstone same as above, some limestone yellow gray.
7104	7164	Same as above.
7164	7184	Shale and sandstone same as above, some glauconite.