

NORTH DAKOTA GEOLOGICAL SURVEY CIRCULAR NO. 9
Summary of the H. L. Hunt Oil Company Oliver Olson No. 1

Bottineau County, North Dakota
By Sidney B. Anderson
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H. L. Hunt Oil Company - Oliver Olson #1, Bottineau County, North Dakota. SW/4 NW/4, Section 18, T. 1638N., R. 77W. (1980 feet S. of N. line, 660 feet E. of W. line, Section 18) Elevation 1510.32 G.L., Elevation 1521.08 D.F.

The Hunt Olson #1 was spudded April 28, 1952, and 10 3/4 inch surface casing was run at 350 feet. The well was drilled to 6422 feet, plugged and abandoned.

Fifteen sack plugs were set at top of surface casing, Muddy-1400, Mississippian-3090, Devonian-3912, Silurian-5100, Ordovician-5542, and a 25 sack plug on bottom of hole.

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

Formation Tops

<u>Formation</u>	<u>Depth</u>
Cretaceous System	
Niobrara Member	1200 (electric log) 1170 (sample log)
Greenhorn Member	1535
Dakota	1960
Jurassic System	
Ellis Group	2280
Piper Formation (Sawtooth)	2628
Triassic System	
Spearfish	2895
Mississippian System	
Charles Formation	3010
Mission Canyon Formation	3170
Lodgepole Formation	3302
Englewood Formation	3870
Devonian System	
Lyleton Formation	3930
Ashern Formation	5055
Silurian System	
Stonewall Formation	5110

<u>Formation</u>	<u>Depth</u>
Ordovician System	
Stony Mountain Formation	5430?
Stony Mountain Shale Member	5550
Red River Formation?	5597
Winnipeg Formation	6160
Winnipeg Sand	6290
Pre-Cambrian	6420
Total Depth	6420

Oliver Olson No. 1 Well

<u>From</u>	<u>To</u>	<u>Formation</u>
350	640	Light gray N7 shale to medium light, gray N6 shale.
640	660	Medium light gray N7 shale.
660	710	Light gray to light green gray shale.
710	720	Same as above, little brown silty shale.
720	950	Light gray to light green gray shale, little brown hard siltstone and inoceramus prisms 760'-770'.
850	880	Green gray 5GY6/1 shale, white specks.
980	980	Green gray 5GY6/1 shale, some hard brown siltstone 920'-930'; much hard brown siltstone 940'-950'.
990	1010	Same as above and light gray N3 shale.
1010	1160	Dark gray N3 shale. White bentonite 1100-1150. Few pieces of brown siltstone 1120-1160. Few pieces very light gray dense limestone 1080-1090.
1160	1180	Dark gray N3 shale, few white specks, calcareous, few pieces blue bentonite 1170'.
1180	1220	Dark gray N3 shale, white specks, (few pieces very light gray limestone, dense, 1180-90).
Niobrara		
1220	1230	Dark gray N3 shale, no white specks.
1230	1250	Dark gray N3 shale, white specks.
1250	1270	Dark gray 153 shale.
1270	1310	Medium to medium dark gray shale, calcareous.
1310	1390	Medium dark gray to dark gray shale.
Greenhorn 1535		
1390	1530	Dark gray N3 shale.
1534	1540	Dark gray N3 shale and little very fine grained gray sandstone, calcareous.
1540	1570	Dark gray N3 shale, white specks and very little, sandstone as above 1540 - 50'.
1570	1580	Medium dark gray N4 shale, white specks, calcareous.
1580	1600	Medium dark gray N4 shale.
1600	1820	Dark gray N3 shale. Piece of fine grained calcareous sandstone, 1620 - 30'; light gray 1720 - 30'.
1820	1840	Medium dark gray shale.

<u>From</u>	<u>To</u>	<u>Formation</u>
1840	1850	Medium dark gray to dark gray shale.
1850	1890	Medium dark gray N4 to dark gray N3 shale.
1890	1910	Dark gray N3 shale.
1910	1940	Medium dark gray N4, to dark gray N3 shale.
1940	1960	Shale as above and some medium to coarse free quartz.
1960	1970	Shale as above and much medium to coarse free quartz.
1970	2030	Sandstone, medium to coarse colorless quartz sand, sub-rounded to rounded. pyrite 2010 -
2030	2050	Medium dark gray and medium green shale. Light gray calcareous sandstone.
2050	2060	Whitish medium grained sandstone pellets, calcareous.
2060	2070	Medium grained whitish to light gray calcareous sandstone.
2070	2080	Whitish medium grained calcareous sandstone pellets.
2080	2100	Whitish to light gray calcareous sandstone and shale.
2100	2120	Medium dark gray to dark gray shale and free quartz, medium to coarse gained.
2120	2130	Much medium to coarse grained free quartz and shale as above.
2130	2140	Shale and some sand as above.
2140	2170	Shale and some free quartz as above; some white calcareous sandstone, medium grained.
2170	2190	Shale as above, little medium grained white calcareous sandstone.
2190	2210	Shale as above, some free medium to coarse quartz.
Ellis 2280		
2210	2310	Shale as above.
2310	2320	Shale as above, some light gray fine grained sandstone.
2320	2330	Shale as above.
2330	2340	Shale as above, little light gray fine grained sandstone.
2340	2350	Shale as above.
2350	2460	Shale as above and little sandstone as above.
2460	2470	Shale as above and some moderate brown shale.
2470	2480	Medium dark gray shale.
2480	2490	Medium dark gray and green gray shale, little white very, fine grained calcareous sandstone.
2490	2500	Varigated shale and little white very fine grained calcareous sandstone.
2500	2530	Varigated shale.
2530	2550	Varigated shale, mostly reddish and gray, little whitish sandstone.
2550	2570	Gray shale and some sandstone as above.
2570	2590	Reddish and gray shale.
2590	2600	Varigated shale and little whitish sandstone, fine grained.
2600	2610	Varigated shale and little white limey sandstone.
2610	2620	Varigated shale.
2620	2630	Varigated shale, little whitish to light gray limestone, little white limey sandstone.

<u>From</u>	<u>To</u>	<u>Formation</u>
Sawtooth 2628		
2630	2640	Varigated shale, mostly reddish and gray, little gray limey shale; limestone as above.
2640	2650	Shale as above and light gray shaley limestone.
2650	2660	Shale as above and much medium grained free quartz.
2660	2670	Same as above, some medium grained sandstone and limestone as above, little anhydrite.
2670	2690	Reddish and gray shale, little limestone as above.
2690	2800	Varigated shale, some very light gray dense limestone, little yellow gray sandstone 2770-2780 anhydrite 2760-2770. Much medium dark gray shale N4 at 2790 feet, and some white anhydrite, at 2780-2790.
Big Snowy 2850		
2800	2890	Varigated shale, little white anhydrite, 2840-2850, little white anhydrite, 2870-2880.
2880	2910	Varigated shale, much dark gray N3 shale.
2910	2920	Varigated shale and some moderate brown 5YR4/4 to reddish very fine grained sandstone.
2920	2960	Shale as above, very fine grained sandstone as above.
2960	3000	Varigated shale (some sand as above 2970-3000).
3000	Madison 3040	Varigated shale, little white anhydrite 3020-3030.
3040	group 3050	Varigated shale and white anhydrite.
3050	3080	Varigated shale, whitish to very pale reddish anhydrite.
3080	3090	Varigated shale, mostly gray; little white anhydrite.
Core		
3093	3100	Yellow gray 5Y8/1 fragmental limestone.
3100	3110	Same as above.
3110	3120	Yellow gray 5Y8/1 limestone, fine granular with light gray anhydrite bands.
3120	3130	Yellow gray vuggy dolomite, good pinpoint porosity, and some colorless anhydrite.
3130	3140	Light gray to pinkish gray dolomite, finely crystalline, very little pinpoint porosity.
3140	3147	Pale red 10R6/2 to colorless anhydrite.
Core No. 2		
3148	3165	Yellow gray limestone, finely granular, fair pinpoint porosity; dolomite, anhydrite.
End of Core 3165		
Colorless anhydrite with yellow gray limestone band and pale yellow brown to pale red mottled dolomite, dense; yellow gray, vuggy to oolitic limestone, good pinpoint porosity in vuggy limestone.		
Core No. 3		
3185	3190	Yellow gray, finely saccharodal or finely granular dense limestone.
3190	3200	Limestone as above to saccharoidal, some pinpoint porosity. Dolomite.
3200	3220	Yellow gray fragmental limestone, fair porosity.
3220	3231	Yellow gray fragmental limestone, some porosity.

<u>From</u>	<u>To</u>	<u>Formation</u>
Core No. 4		
3240	3250	Whitish fragmental limestone, saccharoidal.
3250	3260	Whitish fragmental limestone, finely granular, some pinpoint porosity.
3260	3270	Whitish fragmental limestone, finely granular.
3270	3280	Whitish to light gray fragmental limestone, finely granular.
End Core No. 4	3289	Yellow gray fragmental limestone, saccharoidal, some pinpoint porosity.
3289	3320	Missing.
3320	3330	Whitish to very light brown fragmental limestone, saccharoidal, some pinpoint porosity; some medium dark gray shale.
3330	3340	Limestone and much gray shale as above, white anhydrite.
3340	3350	Light gray fragmental and whitish crystalline limestone, some gray shale as above.
3350	3360	Whitish to light gray fragmental limestone, little white anhydrite and gray shale.
3360	3370	Medium dark gray shale and little light brown limestone.
3370	3380	Gray shale as above, reddish shale, some light brown limestone dense.
3380	3390	Gray shale as above and little red shale, little light gray limestone, fragmental.
3390	3400	Medium dark gray shale.
3400	3410	Medium dark gray and medium light gray shale, light gray to yellow gray limestone, fragmental to oolitic.
3410	3420	Medium dark gray shale and little limestone as above.
3420	3430	Reddish and gray shale, little limestone as above.
3430	3500	Same as above and little green gray shale.
3500	3510	Shale as above anti very light gr s andy limestone.
3510	3520	Dark gray N3 shale and light gray fragmental limestone.
3520	3530	Dark gray N3 shale and light gray fragmental and sandy limestone.
3530	3540	Gray green and reddish shale, light gray limestone, fragmental.
3540	3550	Dark gray shale and light gray limestone as above.
3550	3600	Varigated shale, mostly medium dark gray, little limestone as above.
3600	3610	Light gray limestone fragmental, mostly medium dark gray shale.
3610	3620	Varigated shale and limestone as above.
3620	3630	Varigated shale and very little limestone as above.
3630	3650	Varigated shale and little limestone as above.
3650	3660	Limestone and shale as above, mostly gray shale.
3660	3670	Gray shale and medium light gray dense crystalline limestone.
3670	3680	Gray and reddish shale, limestone as above.
3680	3690	Medium light gray dense limestone.

<u>From</u>	<u>To</u>	<u>Formation</u>
3690	3710	Medium light gray limestone, dense, finely granular. Little reddish gray shale.
3710	3740	Same as above, gray shale.
3740	3800	Varigated shale and limestone as above.
3800	3840	Gray shale, medium dark gray and medium light gray crystalline limestone, dense.
3840	3860	Very light gray and medium light gray limestone, dense, little shale as above.
3860	3870	Very light gray limestone, dense, crystalline, some white anhydrite and shale.
Englewood		
5180	3900	Gray shale as above. (drilling mud?)
3900	3910	Drlg. mud and very little gray shale.
3910	3920	Gray red shale.
3920	3930	Gray red and medium dark gray N4 shale.
3930	Lyleton 3940	Gray red and medium dark gray N4 shale.
3940	3950	Light gray to yellow gray 5Y7/2 sandy limestone.
3950	3960	Pale yellow brown sandy limestone and medium dark gray shale.
Core No. 5		
3970	3980	Medium gray to light olive gray anhydritic limestone.
3980	3990	Whitish to pale yellow brown anhydrite limestone; pale yellow brown saccharoidal limestone. Very few pinpoint vugs.
3990	4000	Limestone as above.
4000	4010	Yellow gray, granular to crystalline limestone.
4010	4020	Buff, granular limestone, dense.
4020	4050	Yellow gray finely granular limestone.
4050	4060	Whitish anhydrite and dolomite, limestone, yellow gray granular.
4060	4070	Whitish anhydrite and dolomite, limestone as above and yellow gray crystalline limestone.
4070	4080	Pale yellow brown and yellow gray dolomitic limestone, saccharoidal to crystalline, little white anhydrite and some medium gray N5 shale.
4080	4090	Light gray buff crystalline, dense and pale yellow brown saccharoidal limestone.
4090	4100	Light gray N7 limestone, finely granular, dense.
4100	4110	Light gray N7 dolomitic limestone, finely granular, dense.
4110	4120	Very, pale orange, finely granular limestone, light gray, finely granular dolomitic limestone, little white anhydrite.
4120	4130	Buff, finely granular to crystalline limestone, dense.
4130	4150	Buff to very pale yellow brown, finely granular to dense limestone.
4150	4200	Very pale yellow brown saccharoidal limestone.
4200	4210	Very pale yellow brown saccharoidal limestone, some pinpoint porosity, little white anhydrite.

<u>From</u>	<u>To</u>	<u>Formation</u>
4210	4230	Very pale yellow brown saccharoidal limestone, little light gray very finely granular dolomite.
4230	4250	Limestone as above and light gray, finely granular to saccharoidal dolomite.
4250	4260	Very pale yellow brown fragmental to saccharoidal limestone and little white anhydrite.
4260	4270	Buff to yellow gray dense limestone.
4270	4310	Same as above, finely granular to slightly saccharoidal.
4310	4330	Same as above to finely crystalline.
4330	4370	Color as above, dense crystalline limestone.
4370	4380	Color as above, fragmental to saccharoidal, little pinpoint porosity.
4380	4410	Same as above but dense and some crystalline.
4410	4430	Same as above, mostly crystalline.
4430	4450	Limestone, color as above, finely granular, dense.
4450	4460	Limestone as above, some light gray crystalline limestone, dense.
4460	4470	Limestone as above, little light gray crystalline limestone, dense.
4470	4490	Fine granular buff to yellow gray limestone, few free medium quartz grains.
4490	4500	Limestone as above (much pipe dope).
4500	4510	Limestone as above, much medium dark gray shale (pipe dope).
4510	4550	Limestone, color as above, finely granular to saccharoidal and some light gray limestone, crystalline.
4550	4560	Limestone, color as above, finely granular and little gray crystalline dolomite, dense.
4560	4570	Color as above, saccharoidal and little gray crystalline dolomitic limestone.
4570	4600	Missing.
4600	4630	Same as above, dolomitic.
4630	4660	Very pale yellow brown saccharoidal dolomitic limestone and light gray dense dolomite.
4660	4670	Very pale yellow brown saccharoidal limestone.
Core		
4677	4678	Olive gray saccharoidal dolomite, fair pinpoint porosity and brown gray crystalline dense dolomite.
4679	4680	Olive gray, finely granular dolomite, some pinpoint porosity.
4681	4682	Olive gray saccharoidal dolomite, some pinpoint porosity.
4683	4684	Yellow brown coarsely saccharoidal dolomite, good pinpoint porosity.
4685	4686	Yellow brown to brown gray, finely granular dolomite, little pinpoint porosity, anhydrite inclusions.
4687	4688	Yellow brown, finely granular to saccharoidal, dolomite, some pinpoint porosity, anhydrite inclusions.

<u>From</u>	<u>To</u>	<u>Formation</u>
4689	4690	Dolomite, color as above, granular to saccharoidal, some pinpoint porosity.
4691	4692	Light brown gray finely granular dense dolomite, some white anhydrite.
4693	4694	Pale yellow brown finely granular dolomite, fair to good pinpoint porosity.
4695	4696	Dolomite as above, dense; white anhydrite banding.
4697	4698	Pale yellow brown to very pale yellow brown, finely granular dolomite, some pinpoint porosity.
4699	4700	Light gray N7 dense crystalline dolomite.
4701	4702	Light gray, slightly green tinge, and dark gray spots, dense crystalline dolomite.
4703	4704	Same as above, dark gray banding.
4705	4706	Light gray, slight green tinge, dense crystalline dolomite.
4707	4708	Very light gray dense crystalline dolomite.
4709	4710	Same as above.
4711	4712	Tan, dense, crystalline dolomite.
4713	4714	Tan to light yellow gray 5Y7/2 dense crystalline dolomite.
4715	4716	Brown gray, dense crystalline dolomite.
4717	4118	Yellow brown dense crystalline dolomite.
4719	4720	Pale yellow brown 10YR6/2 to light olive gray 5Y6/1 dense crystalline dolomite.
4721	4722	Pale yellow brown grading to gray brown and very light gray N8 dense crystalline dolomite.
4723	4724	Light gray, slight greenish tinge, dense crystalline dolomite.
4725	4726	Same as above. End of core.
4726	4730	Dolomite as above and some shale, dirty sample.
4730	4770	Pale yellow brown 10YR6/2 saccharoidal dolomitic limestone.
4770	4790	Pale yellow brown 10YR6/2 saccharoidal dolomite, little porosity.
4790	4830	Pale yellow brown 10YR6/2 saccharoidal dolomitic limestone.
4830	4840	Pale yellow brown saccharoidal dolomitic and very pale yellow brown crystalline dense limestone.
4840	4880	Light gray to very pale yellow brown dense crystalline limestone.
4880	4890	Light gray dense crystalline limestone and pale orange dolomitic dense limestone.
4890	4930	Light gray to very pale yellow brown crystalline to saccharoidal dense limestone, medium dark to dark gray shale, some white anhydrite.
4930	4960	Pale yellow brown granular to saccharoidal dolomite, some shale and anhydrite as above, little limestone.
4960	4970	Much white anhydrite, little pale yellow brown limestone, saccharodal and little gray shale.
4970	4980	Very pale yellow brown to yellow gray and light gray saccharoidal dolomitic limestone, fair pinpoint porosity, some white anhydrite.

<u>From</u>	<u>To</u>	<u>Formation</u>
4980	4990	Very pale yellow brown saccharoidal dolomitic limestone, fair pinpoint porosity.
4990	5010	Very pale yellow brown finely granular to slightly saccharoidal limestone, dense.
5010	5020	Missing.
5020	5060	Very pale yellow brown to light gray, finely granular dense limestone.
Ashern 5055		
5060	5070	Very pale yellow brown, finely granular, dense limestone, little light gray dolomitic limestone.
5070	5080	Light gray finely granular dolomite, dense.
5080	5090	Pale red 10R6/2 finely granular dolomite, dense.
5090	5100	Dolomite as above, white crystalline to floury dense limestone.
5100	5110	White dolomite, crystalline, dense, some slightly vitreous.
Stonewall		
5110	5120	Dolomite as above, white dense limestone.
5120	5140	Missing.
5140	5150	White crystalline dense limestone.
5150	5160	Same as above and some very light tan dense limestone.
5160	5170	White crystalline, dense limestone and very light tan crystalline dense dolomite.
5170	5180	Moderate orange pink 5YR8/4 dense crystalline dolomite, few pieces of gypsum.
5180	5190	Missing.
5190	5200	White floury dense limestone to very light tan crystalline dense limestone.
5200	5220	Limestone as above and reddish to buff dolomite, dense crystalline.
5220	5230	Whitish to buff dense crystalline dolomite.
5230	5320	Missing.
5320	5330	Whitish to slightly buff colored, very finely granular to crystalline, dense dolomite.
5330	5340	Whitish very light brown to pinkish, finely granular to crystalline, dense dolomite.
5340	5350	Whitish, finely granular to crystalline, dense dolomite.
5350	5360	Whitish dense dolomite, crystalline.
5360	5370	Whitish to very light brownish, very finely granular to crystalline, dense dolomite.
5370	5380	Whitish dense crystalline dolomite.
5380	5410	Whitish to buff dense crystalline dolomite.
5410	5420	Same as above, much reddish dense crystalline dolomite.
5420	5430	Same as above, some reddish dense crystalline dolomite.
Stony Mtn.?		
5430	5440	Same as above, medium dark gray shale.

<u>From</u>	<u>To</u>	<u>Formation</u>
Break?		
5440	5450	Reddish to reddish orange dolomite and little limestone, dense crystalline.
5450	5460	Buff finely granular, dense dolomite.
5460	5470	Moderate orange pink, finely granular dense dolomite.
5470	5480	Whitish to slightly pinkish or orange, finely granular to crystalline dolomite.
5480	5530	Whitish, finely granular to crystalline, dense dolomite.
5530	5540	Whitish to very pale brown or buff, finely granular, dense dolomite.
5540	5550	Very pale brown or buff as above and light gray N7 crystalline dense dolomite.
Stony Mountain shale member		
5550	5570	Light gray shale, calcareous.
5570	5620	Same as above with medium dark gray shale, little buff dolomite as above.
5620	5630	Buff, finely granular to crystalline, some slightly saccharoidal, slightly dolomitic limestone.
5630	5650	Buff, finely granular to crystalline dolomite.
5650	5670	Buff, finely granular to crystalline limestone and dolomite.
Red River 5660		
5670	5680	Buff, finely granular to crystalline dolomite.
5680	5690	Buff, crystalline dense dolomitic limestone. Duplicate bags record Red River. Colorless to very pale orange, some moderate orange and pale red dolomite, dense, very finely crystalline and white floury limestone, few pieces of gypsum.
5690	5700	Buff to yellow gray dense limestone, crystalline to fragmental.
5700	5710	Buff to yellow gray dense, finely granular to fragmental? limestone.
5710	5720	Yellow gray to light brown gray granular dolomite, dense.
5720	5730	Yellow gray saccharoidal dolomitic limestone.
5730	5740	Light brown to pale yellow brown saccharoidal dolomitic limestone.
5740	5750	Light brown to pale yellow brown saccharoidal limestone.
5750	5760	Light brown to pale yellow brown saccharoidal to fragmental limestone, some crystalline dense.
5760	5770	Very light tan granular to slightly saccharoidal limestone.
5770	5780	Very light tan to whitish, granular to slightly saccharoidal and crystalline limestone.
5780	5790	Same as above and some medium dark gray shale.
5790	5800	Limestone, color as above, saccharoidal, fragmental to crystalline, much medium dark gray shale.

<u>From</u>	<u>To</u>	<u>Formation</u>
5800	5810	Limestone as above.
5810	5830	Very light tan to whitish, crystalline to granular dense limestone.
5830	5840	Very light tan to whitish, saccharoidal to fragmental limestone, dense.
5840	5850	Light brown, granular to light tan fragmental, dense dolomite.
5850	5860	Light brown to light olive gray, granular to saccharoidal limestone.
5860	5880	Same as above and some light tan to white fragmental dense limestone, brachiopod fragments.
5880	5890	Whitish to very light gray, fragmental, yellow gray, saccharoidal, limestone, dense.
5890	5930	Whitish to very light gray crystalline to fragmental to very light brown or very light olive gray saccharoidal limestone.
5930	5960	Very light tan fragmental to saccharoidal, dense limestone.
5960	5990	Same as above, mostly fragmental.
5990	6010	Same as above, fragmental to crystalline, dense limestone, few pieces saccharoidal limestone.
6010	6060	Same as above with saccharoidal limestone.
6060	6080	Limestone as above, much medium gray N5 shale.
6080	6100	Limestone as above and little shale.
6100	6120	Light tan fragmental limestone, dense.
6120	6160	Light tan to light gray fragmental limestone, dense. 6140-60 gray coating on samples, probably shale.
Winnepeg shale		
6160	6190	Light olive gray 5Y6/1, dark green gray and little reddish shale.
6190	6200	Mostly dark green gray, some light olive gray and reddish shale.
6200	6280	Dark green gray shale. 6210-20 some copper colored pellets.
6280	6300	Dark green gray shale and some medium grained free quartz. Sandstone.
Winnepeg sandstone 6290		
6300	6310	Dark green gray shale and medium to coarse rounded free quartz, some frosted.
6310	6350	Same as above and some cemented medium grained quartz, not calcareous.
6350	6360	Much medium grained cemented sandstone, glauconitic, not calcareous to slightly calcareous.
6360	6390	Green gray shale and sandstone as above.
6390	6410	Green gray shale and much medium to coarse free quartz and some medium grained cemented quartz as above.
Pre-Cambrian 6412		
6410	6420	Green gray shale and free quartz as above.
Total Depth		No granite in sample. Granite at 6412.