

NORTH DAKOTA GEOLOGICAL SURVEY CIRCULAR NO. 142

Summary of Shell Oil Company - J.O. Crum #1  
Benson County, North Dakota  
Well #624 - Permit #638

By Clarence Carlson

Shell Oil Co. - J. O. Crum #1, Benson County, North Dakota, NW SE  
Section 34, T. 156N., R. 70W. Elevation 1598 GL, 1618 K.B.

The Shell Oil Co. - J. O. Crum #1 was spudded June 21, 1954 and 8 5/8" casing was set at 250 feet with 150 sacks of cement. The well was drilled to a total depth of 2910 feet, completed June 26, 1954. Dry and abandoned.

Cement plugs of 10 sacks each were set at the following depths: 2580, 2370, 2030, 1900, 250 and 5 sacks at the surface.

Formation tops were determined from samples and electric logs, corrected to electric logs. Colors were determined from the rock color chart. Not all formation tops called in the following list.

FORMATION TOPS

Cretaceous System

Niobrara Formation	1048
Greenhorn Formation	1478
Dakota Group	1716
Dakota Group Sand	1880

Jurassic System

Piper Lime	2356
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Mississippian System

Lodgepole Formation	2567
Englewood Formation	2880

710-880	Shale, medium light gray, lumpy, compact.
880-890	Shale, very light gray, lumpy, spongy to compact.
890-910	Shale, light gray, lumpy, compact, some very light gray, micaceous entonite.
910-950	Shale, light gray, lumpy, spongy to compact.
950-960	Shale, medium gray to light gray, lumpy, compact.
960-980	Shale, medium gray, grayish orange, lumpy, spongy to compact, little white bentonite.
980-1030	Shale, light gray to medium gray, lumpy, compact.
1030-1040	Shale, medium gray, lumpy, compact, little white bentonite.
1040-1070	Shale, medium gray to medium dark gray, lumpy, spongy to compact.
1070-1140	Shale, medium light gray, calcareous, white specks, lumpy, spongy to compact.
1140-1160	Shale, dark gray, lumpy, compact.
1160-1350	Shale, dark gray, medium light gray, lumpy, compact.
1350-1380	Shale, medium gray to medium light gray, lumpy, compact.
1380-1490	Shale, dark gray to medium gray, lumpy, compact.
1490-1500	Shale as above with many inoceramus fragments.

1500-1550 Shale, medium dark gray, calcareous, white specks, lumpy, compact, many inoceramus fragments.

1550-1630 Shale, dark gray, lumpy, compact, many inoceramus fragments.

1630-1640 Shale, dark gray, flaky, spongy.

1640-1650 Shale, dark gray, flaky, spongy, some light gray bentonite.

1650-1720 Shale, dark gray, flaky, spongy, many inoceramus fragments.

1720-1820 Shale, medium gray to dark gray, lumpy, compact to flaky, spongy.

1820-1880 Shale, dark gray, lumpy to flaky, spongy.

1880-1910 Sand, medium to coarse, rounded to subangular clear quartz.

1910-1920 Sand as above, shale, medium gray.

1920-1960 Sand, medium to coarse, mostly rounded, some subangular, clear quartz, loose grains.

1960-2010 Sand, medium to coarse, mostly medium grained, rounded to subangular, clear, loose quartz.

2010-2080 Shale, medium gray to medium dark gray, flaky, spongy to compact, lumpy, much sand as above.

2080-2100 Sand, medium to coarse, subrounded to subangular clear quartz, a few pieces of light gray and pink chart.

2100-2140 Shale, light gray, greenish gray 5GY6/1, slightly calcareous, splintery, spongy to compact, some loose quartz, as above.

2140-2160 Sandstone, light gray, very fine grained, calcareous, friable, much shale, greenish gray, light gray, calcareous splintery, spongy to compact.

2160-2170 Shale as above, some sand, medium to coarse, subangular, clear quartz, some fine grained as above.

2170-2180 Sand as above, shale, light gray, flaky to splintery, spongy, some moderate reddish brown, compact.

2180-2190 Shale, light to medium gray, splintery, spongy, sand, loose quartz as above and some limestone, light gray, fine grained.

2190-2200 Shale, pale reddish brown, calcareous, lumpy, compact, some shale medium gray and greenish gray, splintery, spongy to compact, some sand and a little limestone as above.

2210-2230 Shale, light to medium gray, splintery, spongy to compact, some limestone light gray, fine grained with carbonaceous streaks, some loose, coarse quartz and light gray, fine grained, calcareous sandstone.

2230-2250 Shale, light to medium gray, pale reddish brown, little limestone, light gray, fine grained.

2250-2280 Shale as above, some sand, medium to coarse angular quartz, little limestone as above.

2280-2310 Limestone, very light gray, sublithographic, shale, greenish gray 5GY6/1, grayish red 10R4/2, calcareous splintery, brittle to compact.

2310-2320 Shale, greenish gray, grayish red, as above, little limestone as above.

2320-2330 Shale as above, sand, medium to coarse, subangular loose quartz, a little white, sugary gypsum.

2330-2350 Shale, pale reddish brown to grayish red, greenish gray, calcareous, splintery, brittle, some sandstone, very fine grained, calcareous, light gray to light greenish gray.

2350-2355 Shale, greenish gray, pale reddish brown, calcareous, splintery, brittle, a little white sugary gypsum.

2360-2385 Shale as above and medium gray, compact, a little light gray to light greenish gray, fine grained, calcareous sandstone, a little white spongy gypsum.

2385-2390 Sandstone, very light gray, fine grained, rounded, with calcareous and gypsum cement, some shale as above.

2390-2400 Limestone, yellowish gray, sublithographic, slightly sandy to very sandy, some sandstone as above.

2400-2420 Limestone, yellowish gray, sublithographic to very fine grained.

2420-2430 Limestone as above, much shale, greenish gray, splintery, brittle, calcareous, also medium gray, compact.

2430-2435 Limestone, yellowish gray to light gray, sublithographic.

2435-2450 Limestone, light gray, sublithographic.

2450-2455 Limestone, light gray to medium light gray, very fine grained to sublithographic, argillaceous.

2455-2465 Limestone as above and yellowish gray, fine grained, argillaceous.

2465-2470 Limestone, very light gray to light gray, sublithographic.

2470-2475 Limestone, very light gray, yellowish gray, sublithographic.

2475-2485 Limestone, very light gray, sublithographic.

2485-2490 Shale, light to medium gray and greenish gray, splintery, compact with some white, sugary gypsum or anhydrite, little limestone as above.

2490-2495 Anhydrite, colorless to white, some sugary, some quite dense.

2495-2500 Shale, greenish gray, grayish red, light to medium gray, splintery, compact, some white anhydrite and light gray, sublithographic limestone.

2500-2505 Anhydrite, colorless to white, some limestone, light gray, sublithographic.

2505-2510 Limestone, yellowish gray, sublithographic, slightly argillaceous.

2510-2515 Limestone, light gray, fine grained, argillaceous, some anhydrite.

2515-2525 Anhydrite, white to colorless.

2525-2535 Anhydrite, white to colorless, some shale, light to medium gray.

2535-2555 Anhydrite, white to colorless, some shale, greenish gray, grayish red, splintery, brittle.

2555-2570 Shale as above, some white anhydrite.

2570-2575 Limestone, white to very light gray, fine grained to sublithographic, anhydrite, white.

2575-2590 Limestone, white, red mottled, fine grained, slightly argillaceous.

2590-2610 Limestone, white, some red mottling, fine to medium grained, fragmental, a few brachiopod fragments and a little chert, white and light pink.

2610-2640 Limestone, white to pinkish gray, fine to medium grained, fragmental.

2640-2680 Limestone, white, some red mottling, fine grained, fragmental with a few brachiopod fragments, some chert, pinkish gray and white.

2680-2695 Limestone, light gray, reddish mottled, fine grained, fragmental, fossiliferous.

2695-2700 Shale, medium light gray, calcareous, compact, much limestone, light to medium light gray, fine grained to sublithographic, argillaceous and fragmental limestone as above.

2700-2710 Limestone, very light gray, sublithographic, some limestone light gray, red mottled, fine grained, fragmental, fossiliferous.

2710-2745 Limestone, very light gray, red mottling, fine to medium grained, fragmental, fossiliferous, a little pinkish gray to light gray chert.

2745-2755 Limestone, very light gray, fragmental as above, some limestone, very light gray to light pinkish gray, sublithographic, a little pinkish gray to light gray chert.

2755-2760 Limestone, very light gray, with reddish mottling, pinkish gray, fine to medium grained, fossiliferous, fragmental, little chert.

2760-2765 Limestone as above, and limestone, moderate orange pink, fine grained granular.

2765-2785 Limestone, very light gray, pinkish gray, fine grained, fossiliferous, fragmental, some white chert.

2785-2800 Limestone, pinkish gray, fine grained, granular, much white chert.

2800-2820 Chert, white and pinkish gray, limey, limestone, pinkish gray and light gray, fine grained to sublithographic.

2820-2830 Limestone, light gray, sublithographic, chert.

2830-2840 Limestone, white to very light gray, fine grained, fragmental.

2840-2855 Limestone, white to very light gray, fine grained, fragmental oolitic in part.

2855-2870 Limestone, white, fine grained, oolitic, some fine grained fragmental.

2870-2885 Limestone, white to very light gray, fine grained, fragmental.

2885-2910 Shale, dark gray, flaky, spongy.