

NORTH DAKOTA GEOLOGICAL SURVEY CIRCULAR NO. 82

Summary of the Midwest Exploration Corporation
Union Central Life Insurance and H. Amann No. 1
Towner County, North Dakota
Well No. 390 - Permit No. 406

By Carole Smith
June, 1954

The Midwest Exploration Corporation - UCLI and H. Amann #1, located C SW SE, Section 24, T. 160 N., R. 67 W. (660 feet from south line, 1980 feet from east line, Section 24), Elevation 1535 GL; 1544 KB.

The Midwest - UCLI and Amann #1 was spudded August 29, 1953 and 350' of 10 3/4 inch casing was set with 150 sacks of cement. Plugs of 20 sacks were set at 3300-3370, 2200-2270, 1600-1670, 1450-1520, and the top of the hole. The well was abandoned September 12, 1953 at a total depth of 4074' (to granite).

TESTS

DST 3520-3540 - open 1 hour, received 1350' of slightly mud cut brackish water with a trace of light brown oily-looking substance on top. FP 120-600#, 15 minutes SIP 1420#, HP 1950.

No cores.

FORMATION TOPS

Cretaceous System	
Niobrara	718
Greenhorn	1100
"Muddy"	1380
Dakota	1480
Jurassic System	1600
Sundance (?)	1655
Piper lime	1900
"Red Beds"	2118
Devonian System	
Duperow	2222
Souris River	2415
Dawson Bay	2480
Ashern	2818
Silurian System	
Interlake	2850
Ordovician System	
Upper Stony Mountain	3160
Lower Stony Mountain	3240
Red River	3325
Winnipeg Shale	3915
Winnipeg Sand	4040
Granite	4064
Total Depth	4075 (?)

Formation tops were picked from samples and electric logs; not all lithologic formation tops were called. Colors were determined from the rock color, chart.

<u>From</u>	<u>To</u>	<u>Formation</u>
400	790	Shale, medium grey, slightly green, firm.
790	940	Shale, medium grey, firm; traces of bentonite, brown siltstone, shell fragments and white specks beginning at 850, some shale is limy, beginning at 910.
940	970	Shale, brownish grey, partly light grey, rather firm; some dark grey, limy shale.
970	1000	Shale, medium grey, slightly green, rather firm; some calcite; dense (brown) siltstone, and limy grey shale.
1000	1060	Shale, medium grey, rather firm; traces of brown siltstone, sand, calcite, pyrite, and dense grey limestone, missing sample 1030-60.
1060	1150	Shale, medium dark grey to dark grey, lumpy and firm, slightly limy in part; scattered traces of chalky limestone, inoceramus prisms, and pyrite.
1150	1210	Limy shale, grey black to black, lumpy, white specked; small amounts of inoceramus fragments; traces of pyrite.
1210	1240	Limy shale, medium grey to dark grey, lumpy, partially white specked; traces of inoceramus prisms.
1240	1300	Limy shale, dark grey to grey black, partially white specked, flaky and lumpy; traces of inoceramus prisms and pyrite.
1300	1350	Shale, grey black to black, flaky; traces of inoceramus fragments.
1350	1440	Shale, dark grey, firm, becoming partly darker at 1370; small amounts of very coarse, subrounded sand, increasing in quantity at 1380; scattered traces of pyrite; much sand at 1430; missing samples 1420-1430.
1440	1470	Limy shale, medium grey; some reddish brown and greenish shale; small amounts of sand; traces of very light grey siltstone and white gypsum; missing samples 1450-1470.
1470	1480	Shale, light brown (5YR 6/4), partly silty and limy, traces of grey and greenish shale.
1480	1500	Silty shale and shaly siltstone, light brown, some grey shale; small amounts of white siltstone; missing samples 1490-1500.
1500	1510	Shale, grey, greenish, brownish, partly silty, limy, and lumpy; traces of siltstone and very coarse sand.
1510	1520	Shale, medium dark grey, much white to very light reddish brown siltstone; some coarse sand.
1520	1530	Limy shale, dark grey, partly green, some reddish, limy siltstone.
1530	1550	Shale, light brown to reddish brown, limy, silty; some grey and green shales, gypsum and coarse sand; increasing amounts of grey shale.
1550	1560	Shale, medium dark grey with few white specks, slightly limy; traces of reddish shale as above.

<u>From</u>	<u>To</u>	<u>Formation</u>
1560	1580	Shale, medium grey to medium dark grey, partly silty; some medium to very coarse, subrounded sand; some limy; reddish brown shale beginning at 1570; small amounts of limy, white siltstone beginning at 1570.
1580	1590	Shale, grey, partly green and reddish, partly limy and silty; traces of coarse sand and white siltstone.
1590	1610	Limy shale; gray green, firm; some gray shale beginning at 1600; traces of sand and siltstone, partly reddish.
1610	1660	Shale, medium grey to dark grey, partly greenish and limy; some coarse, subrounded sand; traces of reddish shale and siltstone.
1660	1680	Shale, greys, greens, and reddish browns, mostly lumpy, partly silty; traces of fine, white sandstone.
1680	1700	Shale, dark grey; some reddish brown, silty, slightly limy shale, increasing somewhat in quantity; some pink and white gypsum; traces of coarse sand.
1700	1710	Shale, dark grey to grey black, flaky; small amounts of reddish brown shale, traces of sand, grey brown siltstone, and white gypsum.
1710	1720	Shale, medium dark grey, firm, limy; traces of white sandstone (fine), gypsum, pyrite, silty reddish shale, and limy greenish shale.
1720	1730	Shale, dark grey, flaky; some fine, white, limy siltstone; traces of gypsum and reddish shale.
1730	1750	Shale, dark grey, firm and lumpy, slightly limy, partly silty; traces of reddish shale, siltstone, and gypsum; small amounts of medium to coarse, rounded sand beginning at 1740.
1750	1770	Shale, medium dark grey to dark grey, partly greenish and limy, firm to lumpy; traces of siltstone and gypsum.
1770	1800	Shale, medium dark grey to grey black, some reddish brown, silty, slightly limy shale; traces of sand, pyrite, and gypsum.
1800	1820	Shale, dark grey to black, firm to lumpy, partly limy; small amounts of reddish, greenish, and brownish shales; some very coarse sand; traces of gypsum and lithographic, white limestone.
1820	1840	Shale, medium dark grey to dark grey, flaky; some greenish grey, firm, slightly limy shale; some siltstone and coarse sand; small amounts of lithographic, white limestone, increasing in quantity; traces of shell fragments and reddish shale.
1840	1880	Shale, dark grey, flaky; some reddish, brownish, and greenish, partly limy shale; some white lithographic limestone, traces of sand.
1880	1930	Shale, dark grey, flaky; small amounts of reddish and greenish shales, increasing somewhat in quantity; some very pale yellow brown to white, lithographic limestone, starting to decrease in quantity at 1900; traces of gypsum.
1930	1950	Shale, medium grey to dark grey, partly greenish, firm to flaky; small amounts of pale, lithographic limestone increasing in quantity; traces of reddish shale.

<u>From</u>	<u>To</u>	<u>Formation</u>
1950	1970	Limestone, very light grey to white, lithographic; much dark grey and greenish, partly limy shale; traces of reddish shale.
1970	1980	Shale, medium grey to dark grey; small amounts of reddish, light brown, and greenish shale, much white to very light brown, lithographic limestone.
1980	2020	Shale, greenish grey, firm, slightly limy; some reddish and brownish shale, small amounts of grey shale, increasing in quantity; scattered traces of gypsum; missing samples 1990-2000.
2020	2050	Shale, medium grey to grey black, firm, slightly limy in part; some reddish, brownish, and greenish shales; small amounts of white gypsum, increasing at 2040.
2050	2060	Shale, medium dark grey to dark grey, flaky; small amount of reddish and greenish shales; some white gypsum.
2060	2080	Gypsum and anhydrite, white to very light grey; some shale as above.
2080	2100	Shale, black, flaky, much moderate reddish brown; some gypsum and anhydrite.
2100	2110	Shale as above, some limy greenish shale; traces of gypsum.
2110	2120	Shale, reddish to grey green, firm, slightly limy; small amounts of gypsum, anhydrite, and grey shale.
2120	2130	Shale, medium dark grey to grey black, flaky, some light greenish grey, partly silty shale; some red shale; some reddish, shaly siltstone, and sandstone; small amounts of gypsum and coarse rounded sand.
2130	2140	Shale, reddish brown and moderate red, some greys and greens; small amounts of gypsum and anhydrite.
2140	2150	Shale, medium blue grey; some grey black shale, partly limy and fossiliferous; small amounts of reddish, fine to coarse, limy sandstone, traces of gypsum.
2150	2170	Silty sandy shale, reddish brown, limy; some grey and greenish shale, increasing in quantity; some medium, round sand (2150-2160); traces of gypsum.
2170	2180	Shale, reddish brown, grey, and greenish, partly limy and silty; small amounts of round medium to coarse sand.
2180	2190	Shale, medium dark grey, flaky, limy; some reddish and brownish, partly silty shale; small amounts of greenish shale, gypsum, and anhydrite.
2190	2200	Shale, greenish, much grey, browns, and reddish, partly limy; some greyish orange pink, micro-sugary limestone.
2200	2210	Limestone, white to very pale yellow brown, micro-sugary to dense, partly chalky; some dark grey shale; traces of anhydrite and silty limy, firm, reddish brown shale.
2210	2220	Limestone, very pale yellow brown to white, chalky to micro-sugary, partly crystalline; some grey, red, and green shales.
2220	2260	Limestone, very pale yellow brown to white, chalky to sub-lithographic small amounts of shale; missing samples 2230-2260.
2260	2300	Shale, medium dark grey to dark grey; small amounts of red and green shales; much very pale yellow brown, partly pale orange, dense to micro-sugary limestone beginning at 2270.

<u>From</u>	<u>To</u>	<u>Formation</u>
2300	2310	Limestone, white to pale yellow brown, chalky to sub-lithographic, small amounts of shale.
2310	2320	Shale, greys, reds, greens, partly limy; small amounts of gypsum, anhydrite and limestone as above.
2320	2330	Limestone, pale, micro-sugary to sublithographic; much shale as above, some gypsum.
2330	2340	Shale, grey, green, red, brown, partly limy; much white gypsum; small amounts of sublithographic, pink and grey limestone.
2340	2360	Limestone, yellow brown to reddish brown, sugary, slightly dolomitic; traces of very pale yellow brown, lithographic limestone.
2360	2380	Dolomitic limestone to limy dolomite, yellow brown, fine sugary; small amounts of shale.
2380	2410	Limestone, yellow brown; micro-sugary to fine sugary, slightly dolomitic, increasing amounts of pale, sub-lithographic limestone; small amounts of shale, increasing greatly in quantity at 2400.
2410	2430	Limestone, very pale yellow brown to white, sublithographic to lithographic; small amounts of shale, increasing in quantity; traces of gypsum.
2430	2440	Shale, black, flaky, some red and green, partly limy; some pale, dense to sublithographic limestone; small amounts of gypsum.
2440	2470	Limestone, very pale yellow brown, micro-sugary to sub-lithographic, partly oolitic at 2450; some red, green, and grey shales.
2470	2480	Shale, medium dark grey to grey black, traces of red and waxy green; some greyish orange pink, lithographic limestone.
2480	2490	Dolomitic limestone, greyish orange pink, micro-sugary; some shale as above.
2490	2500	Limestone, greyish pink, micro-sugary, partly chalky; some medium dark grey shale; small amounts of greenish shale.
2500	2510	Shale, medium dark grey, soft, flaky, some reddish and greenish; small amounts of pale, micro-sugary limestone.
2510	2520	Limy shale, moderate reddish brown, very soft and lumpy; some dark grey and dark reddish brown shale; small amounts of pale micro-sugary limestone.
2520	2540	Limestone, yellow grey, micro-sugary, becoming partly chalky; small amounts of shale, increasing somewhat in quantity.
2540	2560	Limestone, greyish pink, micro-sugary, partly sub-lithographic, argillaceous; some grey shale, increasing in quantity; small amounts of red and green shales.
2560	2570	Dolomitic limestone, greyish orange pink, micro-sugary, partly pink and argillaceous as above; traces of shale.
2570	2580	Limestone, grayish orange pink to yellow grey, micro-sugary, partly chalky, argillaceous; traces of shale.
2580	2590	Limestone, moderate reddish orange, chalky, shaly; traces of shale, anhydrite and white, lithographic limestone.
2590	2600	Dolomitic limestone, yellow grey to greyish orange pink, micro-sugary, argillaceous; small amounts of shale.

<u>From</u>	<u>To</u>	<u>Formation</u>
2600	2610	Shale, dark grey, flaky; small amounts of limy red and greenish shales, some limestone as above.
2610	2630	Limestone, moderate reddish orange to yellow grey, micro-sugary to fine sugary, argillaceous, becoming partly pale yellow brown and sublithographic; traces of shale.
2630	2640	Limestone, greyish orange pink, chalky to micro-sugary, argillaceous; small amounts of shale.
2640	2650	Dolomitic limestone; greyish pink, moderate reddish orange, micro-sugary to fine sugary, partly dense and moderate red; small amounts of shale.
2650	2670	Limy dolomite, moderate red, fine sugary to dense, small amounts of shale; some very pale yellow brown, lithographic limestone beginning at 2660.
2670	2690	Shale, reddish, grey, and greenish, partly lumpy and limy; some dense pearly limestone, increasing in quantity; a small amount of dense, pale yellow brown, limy dolomite at 2680.
2690	2730	Dolomite, greyish orange pink and moderate red, dense; some grey shale, increasing at 2720; small amounts of red and greenish shales.
2730	2740	Shale, grey, red and greenish grey, partly limy; much white to pale yellow brown, micro-sugary to dense limestone.
2740	2750	Limy dolomite, greyish orange pink, moderate red, partly pale yellow brown, dense; some shale as above.
2750	2770	Limy dolomite, greyish pink, micro-sugary; some shale as above.
2770	2780	Limestone, very pale yellow brown, sublithographic, partly pinkish and dolomitic; much grey green and reddish shale.
2780	2800	Limestone, very pale greyish orange pink to white, dense to sublithographic; much grey shale; small amounts of red and green shales.
2800	2810	Limestone, pale, sublithographic; much shale as above; small amounts of pink and white gypsum.
2810	2840	Shale, light grey to dark grey, reddish brown, some limy greens, some pale, micro-sugary to sublithographic, pinkish, increasingly dolomitic limestone.
2840	2850	Shale as above; small amounts of pale; micro-sugary limestone.
2850	2860	Limy shale, black, reddish brown to orange red, small amounts of greenish; some pale red to yellow brown, fine sugary to dense, partly dolomitic limestone.
2860	2870	Limy dolomite, very light grey with dark red spots, micro-sugary to dense; small amounts of shale.
2870	2880	Dolomite, pinkish gray, micro-sugary, partly limy.
2880	2910	Limestone, light yellow grey to white, slightly pink in parts, micro-sugary and/or chalky.
2910	2920	Dolomite to dolomitic limestone, greyish orange pink, micro-sugary to dense.
2920	2930	Dolomite, very pale pinkish grey to white, micro-sugary to dense.
2930	2940	Dolomitic limestone, very light yellow grey to pinkish grey, micro-sugary to dense.
2940	2950	Dolomite, pink, micro-sugary to dense, partly sub-lithographic.

<u>From</u>	<u>To</u>	<u>Formation</u>
2950	2960	Dolomitic limestone to limy dolomite, very light pinkish grey, micro-sugary.
2960	2990	Limestone, almost white, chalky to sublithographic; much medium dark grey shale, decreasing steadily in quantity.
2990	3010	Limestone, white to almost white, micro-sugary to lithographic, partly dolomitic (2990-3000); small amounts of shale.
3010	3030	Limestone, almost white to white, micro-sugary to sub-lithographic; slightly pink at 3020; small amounts of shale.
3030	3040	Limestone, white, sublithographic to chalky.
3040	3050	Dolomite to limestone, white to almost white, sub-lithographic to lithographic.
3050	3060	Dolomite, very pale yellow brown, dense, partly limy.
3060	3080	Limy dolomite to dolomitic limestone, white to almost white, sublithographic to lithographic.
3080	3090	Dolomite to dolomitic limestone, white to very pale yellow brown, dense to sublithographic, partly chalky, tiny vugs.
3090	3100	Limestone, very light grey to white, chalky to micro-sugary; small amounts of grey and reddish purple shale.
3100	3130	Dolomite, white, sublithographic to lithographic, slightly limy; small amounts of grey and reddish purple shale; much grey black, flaky shale beginning at 3120.
3130	3140	Shale, dark grey to grey black, flaky; much red, green, pink, and yellow, partly limy shale; small amounts of pink and white, dense to lithographic limestone.
3140	3160	Shale, dark grey to grey black, partly limy; small amounts of red, green, and olive shale; traces of white, lithographic limestone.
3160	3220	Shale, dark grey, partly limy; traces of lithographic limestone and variegated shale; traces of pale, micro-sugary, limy dolomite beginning at 3200 and increasing greatly in quantity at 3210.
3220	3240	Limy dolomite, almost white, sublithographic; much grey shale, some red, traces of olive.
3240	3250	Dolomite, pink, micro-sugary, partly limy; much pink, red, green, and grey, partly limy shales.
3250	3260	Shale, dark grey, greenish, flaky, partly limy, traces of pink and red; some dolomite as above.
3260	3280	Limy shale, medium grey to dark grey, greenish, reddish, partly lumpy; much very light grey, sublithographic, argillaceous, limy dolomite; small amounts of grey and white, crystalline, partly chalky, shaly limestone beginning at 3270.
3280	3290	Shale, greys, partly limy, much grey, micro-sugary, shaly; partly chalky limestone.
3290	3320	Limestone, grey, micro-sugary to sublithographic, partly chalky, shaly; much grey shale; missing samples 3310-3320.
3320	3330	Shale, medium grey to grey black, some red and greenish; small amounts of pale, chalky to sublithographic limestone.
3330	3340	Limestone, greyish pink, micro-sugary to sublithographic; some greenish grey, flaky, slightly limy shale.
3340	3370	Limestone, very light grey, slightly pink, sublithographic, becoming whiter and partly lithographic.

<u>From</u>	<u>To</u>	<u>Formation</u>
3370	3390	Dolomitic limestone, greyish orange pink, micro-sugary.
3390	3400	Limestone, pinkish, lithographic to chalky, partly micro-sugary.
3400	3410	Dolomitic limestone, white, lithographic.
3410	3420	Dolomitic limestone to limy dolomite, white, lithographic.
3420	3480	Limestone, white, lithographic to chalky, slightly dolomitic, becoming slightly pink and sublithographic.
3480	3490	Dolomitic limestone, very pale, micro-sugary to sublithographic.
3490	3500	Dolomite, very light brown, slightly pink, dense.
3500	3520	Dolomite; pale yellow brown to yellow brown, dense to sublithographic, somewhat limy.
3520	3530	Limestone to dolomite, pale, partly pinkish brown, dense to micro-sugary.
3530	3540	Limy dolomite, pale yellow brown to light grey, slightly pink, sugary to dense.
3540	3550	Dolomite, very light grey to pinkish grey, micro-sugary to sublithographic, partly limy; small amounts of lithographic, white, dolomitic limestone.
3550	3560	Limestone, white, sublithographic; some pale yellow grey, sugary dolomite.
3560	3570	Limestone, very pale, micro-sugary to dense; small amounts of grey and red shale.
3570	3590	Limestone, pinkish to white, pearly, dense; some grey and green shale.
3590	3600	Dolomite, very pale yellow grey to pinkish, sugary to dense.
3600	3610	Limestone, white to very light pinkish grey, sublithographic; some dolomite as above; much grey, red and green shale.
3610	3620	Limestone, very light grey, slightly pink in parts, occasional dark red spots, sublithographic; small amounts of shale.
3620	3630	Limestone, greyish pink, micro-sugary to dense; some limy, greyish green shale.
3630	3650	Limestone, almost white to white, becoming partly very pale yellow brown, sublithographic to lithographic; small amounts of green and dark grey shale.
3650	3660	Limestone, very pale yellow brown to white, micro-sugary and/or chalky, partly sublithographic; some grey and green shale.
3660	3670	Limestone, white to yellow grey to light orange grey, sugary to lithographic; small amounts of shale.
3670	3680	Limestone, white to very pale yellow brown, sublithographic to lithographic; small amounts of shale.
3680	3800	Limestone, very light grey to white, sublithographic to lithographic, small amounts of dark grey shale beginning at 3740.
3800	3830	Limestone, very light grey to white, sublithographic to lithographic, some dark grey shale, decreasing somewhat in quantity; traces of purple red shale.
3830	3840	Limestone as above; much grey and greenish grey, lumpy shale.

<u>From</u>	<u>To</u>	<u>Formation</u>
3840	3860	Limestone as above; some dark grey, partly limy, flaky shale, increasing in quantity and becoming partly green.
3860	3870	Limestone as above; much grey, limy shale and shaly limestone.
3870	3880	Limestone, very light grey, sublithographic; some dark grey shale.
3880	3920	Limy shale and shaly lime, very light grey, slightly green, lumpy, chalky, becoming darker and greener at 3910.
3920	3930	Shale, dark grey and green; small amounts of limestone and reddish shale.
3930	3940	Limey shale, grey green, lumpy.
3940	3970	Shale, pale green, splintery, becoming partly greyish, lumpy and limy; small amounts of reddish brown shale.
3970	3990	Shale, pale green, splintery, becoming partly greyer, lumpy and limy; small amounts of reddish brown and brown shales.
3990	4000	Limy shale, grey green, lumpy.
4000	4050	Shale, pale green, splintery; small amounts of olive shale, lumpy shale, and lithographic limestone; much subangular to subround; poorly sorted sand begins at 4040.
4050	4060	Shale as above; much coarse sand increasing in quantity; some reddish and brownish shale, also increasing in quantity.
4060	4065	Coarse sand and light brown, coarse, shaly sandstone; some shale as above.
4065	4075	Granite.
4075		Total Depth.