

NORTH DAKOTA GEOLOGICAL SURVEY CIRCULAR NO. 59

Summary of National Associated Petroleum Company-Sarah G. Newhouse No. 1  
Bottineau County, North Dakota  
Permit #304, Well #288

by LaVerne B. Nelson  
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National Associated Petroleum Company-Sarah G. Newhouse #1, Bottineau County, North Dakota. C NE SE Section 3, T. 162N., R. 79W. (660 feet from West line and 660 feet from South line of Section 3). Elevation: D.F. 1498.

The National Associated Petroleum Company-Newhouse #1 was spudded March 16, 1953 10 3/4" casing set at 245 feet with 165 sacks cement. 5 1/2" at 3325. The well was drilled to a total depth of 3600 feet and temporarily abandoned.

Tests

DST 3214'-48' Open 1 1/2 hours, shut in 20 minutes. Gas surfaced 10 minutes steady blow throughout, received 90' oil cut mud, 150' mud cut oil, 120' salt water, shut down.

DST 3348'-60' Open 3 hours, shut in 30 minutes. Received 20' mud, slight gas cut.

PB 3325; Perforated 3203'-10', with 6 holes per foot, no recovery.

Formation tops were determined from sample and electric logs, not all lithologic tops were called in following list. Colors were determined from rock color chart.

FORMATION TOPS

Cretaceous System	
Niobrara Formation	1050
Greenhorn Formation	1649
Dakota	2086
Jurassic System	
Morrison Formation	2345
Sundance Formation	2433
Piper Formation	2803
Triassic System	
Spearfish Formation	3075
Mississippian System	
Charles Formation	3206
Mission Canyon	3367

<u>From</u>	<u>To</u>	<u>Formation</u>
130	200	Sandstone, poorly sorted, medium to coarse, a few very coarse, clear and frosted, rounded, globular, and subangular white quartz grains. Some glauconite. A few grains light brown 5YR6/4 to pale reddish brown. 140-180 better sorting, 90% medium sized quartz grains. Globular, some rounded. 180-90 Becoming very shaly. 190-200 Bigger % of very coarse angular quartz grains. Shaly.
200	260	Shale, medium light gray N6, lumpy, disaggregated, very slightly calcareous. A little glauconite and sand. Some dusky yellow 5Y6/4 chert.
260	920	Shale, medium light gray N6, massive, compact, firm, some foliation.
920	970	Shale, same as above, silty, calcareous.
970	1040	Shale, medium light gray N6, massive, firm.
1040	1200	Shale, medium gray N5, firm, brittle.
1200	1280	Shale, dark gray N3 to black N1, lumpy, disaggregated, highly bentonitic, much white bentonite.
1280	1360	Shale, medium gray N5, lumpy, disaggregated, bentonitic, calcareous.
1360	1380	Shale, grayish black N2 to black N1, firm, compact, slightly calcareous, slightly bentonitic.
1380	1400	Shale, medium dark gray N4, lumpy, calcareous.
1400	1420	Shale, same as above--some grayish black shale.
1420	1440	Shale, medium dark gray N4, calcareous, lumpy.
1440	1460	Shale, grayish black N2, lumpy.
1460	1480	Shale, medium gray N5 to medium dark gray N4, bentonitic, slightly calcareous.
1480	1520	Shale, dark gray N3, compact, firm, highly bentonitic, slightly calcareous.
1520	1540	Shale, medium gray N5, firm, bentonitic, highly calcareous, silty.
1540	1620	Shale, medium light gray to medium gray, lumpy, spongy, highly bentonitic, slightly calcareous.
1620	1660	Shale, medium gray, firm, highly calcareous, first white specks. Some grayish black, firm compact shale.
1660	1750	Shale, same as above, much grayish black shale very calcareous. Some inoceramus fragments, some limestone bentonitic.
1750	1920	Shale, dark gray, firm, compact, calcareous, some silty limestone.
1920	2100	Shale, medium dark gray, lumpy some siltstone.
2100	2210	Sandstone, coarse to medium, frosted, poorly sorted quartz grains, angular to subangular.
2210	2220	Shale, grayish black N2, brittle, splintery.
2220	2270	Sandstone, coarse to medium fine, frosted, subangular, quartz grains some medium gray silty shale.
2270	2310	Sandstone, same as above, much fine, clear, well rounded, well sorted quartz grains, cemented with calcite.
2310	2320	Shale, greenish gray, firm, brittle, much light olive gray, siltstone.

<u>From</u>	<u>To</u>	<u>Formation</u>
2320	2330	Sandstone, much fine to few coarse, subangular and rounded frosted quartz grains, much yellowish gray, calcareous siltstone, some glauconite and shale.
2330	2360	Shale, greenish gray, flaky, some quartz sand as above, some dark gray shale.
2360	2440	Shale, greenish gray, and medium gray, flaky and splintery some siltstone, some quartz grains.
2440	2530	Shale, greenish gray, splintery, some grayish orange pink anhydrite and a little microsucrosic limestone, some greenish gray calcareous siltstone. 2440-much anhydrite 2480-2530 much siltstone.
2530	2860	Greenish gray, medium dark gray, splintery, slightly silty and pyritic 2620 some brown shale. 2640-50 some dense limestone and a little anhydrite. 2660-70 much olive gray siltstone, some arkosic sandstone. 2690-2700 much reddish brown shale and orange anhydrite, some limestone. 2700-10 silty, anhydritic a few quartz grains. 2730-40 some brown shale, calcite, and anhydrite. 2750-70 some dense sub-lithographic limestone reddish brown shale and calcite. 2780-2800 some dense limestone, orange anhydrite, well cemented fine grained, clear quartz sand. 2810-20 much moderate brown, calcareous shale, some crystalline limestone, some anhydrite. 2820-50 much moderate brown calcareous shale, some dense, sublithographic, limestone, and some anhydrite. 2850-60 some moderate brown clay, some brown sandstone little dense, fine grained limestone.
2860	2870	Limestone, white to buff dense, fine grained and sub-lithographic silty limestone, some orange anhydrite, pyrite, and moderate brown clay, some shale as above.
2870	2880	Shale, grayish green and medium gray, flaky, some orange anhydrite white and buff dense and subcrystalline limestone some moderate brown clay.
2880	2890	Limestone, buff, sublithographic, dense, some moderate brown clay and greenish gray shale, greenish gray, fine grained, silty limestone, some angular, clear quartz grains some orange anhydrite.
2890	2900	Limestone, buff, fine grained, dense, silty, some crystalline (lithographic), greenish gray some moderate brown clay, some orange anhydrite, some pyrite and shale as above.
2900	2910	Limestone, lithographic, dense, dark greenish gray white oolitic limestone a little moderate brown clay, some white crystalline anhydrite some brown sandstone, shale as above.
2910	2920	Limestone, white and buff, fine grained and sublithographic some brown lithographic dolomitic limestone. A little pyrite and moderate brown clay some lithographic anhydrite.
2920	2930	Limestone, buff and white, sublithographic, dense, silty, some moderate brown clay, shale as above, subcrystalline orange and brown anhydrite.
2930	2940	Limestone, buff, sublithographic, dense, silty, some greenish gray, sublithographic limestone some brown, and orange crystalline, anhydrite a little pyrite, some shale as above, a few clean, angular, quartz grains, coarse.

<u>From</u>	<u>To</u>	<u>Formation</u>
2940	2950	Limestone, buff, fine grained, dense, some pyrite and anhydrite as above clay as above and shale.
2950	2970	Limestone, buff, sublithographic, dense, silty, anhydrite, and shale as above.
2970	3010	Limestone, white, sublithographic dense, much shale as above, much pyrite, anhydrite and moderate brown clay, some sucrosic, white limestone.
3010		1 hour circulation, same as above.
3010	3050	Limestone, white, fine to sublithographic, dense much orange crystalline anhydrite some white sucrosic limestone and moderate brown shale pyrite and shale as above.
3050	3080	Anhydrite white and orange, crystalline and lithographic. Some white fine grained limestone moderate brown clay and shale as above.
3080		3 hours circulation, much greenish gray, splintery, brittle shale, some anhydrite limestone, and clay as above.
3080	3110	Shale, greenish gray and medium dark gray, calcareous, foliated, brittle, a little white fine grained, crystalline, anhydrite.
3110		1 hour circulation, same as above.
3110	3135	Shale, greenish gray, calcareous, some medium dark gray, splintery brittle shale some moderate brown, calcareous clay and purple, sublithographic anhydrite a little white gypsum.
3135		2 1/2 hours circulation, same as above.
3135	3210	Shale, same as above, 3195 increase in amount of anhydrite.
3210	3215	Anhydrite, orange, subcrystalline anhydrite a little white crystalline gypsum, shale as above 3215 buff and orange subcrystalline anhydrite.
3222		3 hours circulation, same as above.
3227	3247	Limestone, buff; fine grained limestone some shale as above and clay, anhydrite and gypsum.
3247	3288	Shale, greenish gray, flaky, brittle some anhydrite, limestone and clay as above.
3288	3294	Shale, as above.
3294	3311	Shale, same as above, much anhydrite, and limestone.
3311	3341	Anhydrite, variegated purple, white, and brown, lithographic, some moderate brown clay and shale as above, a few coarse well rounded coarse to medium quartz grains.
3341	3364	Shale, as above, a little anhydrite as above some white microsucrosic limestone 3355 much anhydrite as above.
3364		1 hour circulation, as above.
3366		1 hour. Limestone, white, fine to sublithographic, tubular porosity some bluish gray anhydrite.
3366	3380	Limestone, buff, sublithographic, some vuggy porosity.
3380		1 hour, same as above.
3380	3515	Limestone, white to buff, sublithographic, dense with a little pinpoint and vuggy porosity, 3385-90 some vuggy porosity, 3390-95 some good vuggy porosity, 3395-3400 fairly dense, a little good vuggy porosity, 3405-20 good vuggy porosity, 3420-60 good pinpoint and vuggy porosity, 3460-95 dense, poor porosity, 3495-3515 a little medium gray shale.

<u>From</u>	<u>To</u>	<u>Formation</u>
3515		2 hours. Limestone, same as above, a little anhydrite.
3517	3536	Limestone, buff, fine grained to, sublithographic, dense to fair porosity, shaly.
3536		2 hours. Limestone, as above.
3536	3547	Missing samples.
3547		2 hours. Limestone, white to buff, fine grained, much medium dark gray brittle shale, some anhydrite.
3547	3563	Limestone, buff, fine grained, some orange and purple, anhydrite some white crystalline gypsum.
3563		3 hours as above.
3565		1 hour as above.
3565	3570	Missing samples.
3570	3575	Limestone, buff, fine grained, dense, some interstitial porosity, some anhydrite.
3575		2 hours as above.
3575	3600	Limestone, as above.
3601		Total depth

