

NORTH DAKOTA GEOLOGICAL SURVEY CIRCULAR NO. 226

Summary of the Pletcher Oil & Gas Co., and  
Signal Drilling and Exploration Co. Boehm #1  
Morton County, North Dakota  
Well No. 2185 - Permit No. 2197

by Herbert A. Mendoza  
February 1960

The Fletcher-Signal, Boehm #1, located in Central SW, NE, Section 11, T. 139N., R. 82W., Morton County, North Dakota. Elevations of K.B. 1861 ft.; G.L. 1852 ft.

The well was spudded on February 21, 1959 and drilled to a depth of 5350 ft.; plugged and abandoned as a dry hole on March 14, 1959.

Logs Run:

Schlumberger Electric  
Schlumberger Laterolog  
Schlumberger Microlaterolog

Core Record: None

Tests: None

Casing Record:

Surface pipe 8 5/8" 24# set at 678' with 200 sacks of cement.

Plugging Record:

#1 15 sacks of cement at 5173 (Mission Canyon)  
#2 15 sacks of cement at 4770 (Charles)  
#3 20 sacks of cement at 4040 (Minnelusa)  
#4 15 sacks of cement at 3240 (Dakota)  
#5 25 sacks of cement at base of surface casing  
#6 5 sacks of cement at top of surface casing

Formation tops were determined by the samples and logs. Color names used are those of the National Research Council Color Chart.

FORMATION TOPS

Cretaceous System	
Pierre formation	825
Niobrara formation	2000
Greenhorn formation	2530
Dakota group	2937
Fall River member	3225
Jurassic System	
Piper limestone	3783
Triassic System	
Spearfish formation	3980
Pennsylvanian System	
Minnelusa formation	4000
Amsden formation	4242

Mississippian System

Big Snowy group	4400
Madison group	
Poplar interval	4755
Ratcliffe interval	4926
Midale sub-interval	5036
Frobisher-Alida interval	5067
Tilston interval	5295

40-420	Sandstone, dark yellowish brown (10YR4/2), medium grained, glauconitic, limy, common shale, medium gray, carbonaceous, clayey to silty, spongy, rare lignite, dark gray.
420-540	Shale as above, abundant clay aggregates.
540-720	Shale, medium dark gray, silty, abundant siltstone, light gray, fine grained, loosely cemented, rare lignite.
720-960	Siltstone, greenish gray (5GY6/1) to light gray, fine grained, loosely to well cemented, calcareous, common shale, medium gray, platy.
960-1170	Shale, medium dark gray, platy, silty, rare white specks, rare bentonite, light bluish gray (5B7/1), soft.
1170-1710	Shale, medium light gray, blocky, hard, clayey, rare bentonite white, micaceous, rare calcite prisms and white specks.
1710-1920	Shale, dark gray to medium light gray, soft, splintery, common bentonite, light bluish gray (5B7/1), spongy, soft, common pyrite, amorphous.
1920-2040	Shale as above, abundant limestone, brownish gray (5YR4/1), fine crystalline, dense, broken concretions (?), common pyrite nodules.
2040-2070	Shale, dark gray, platy, abundant white specks, common calcite prisms.
2070-2100	Missing.
2100-2520	Shale, medium light gray, hard, blocky, rare white specks, common recrystallized calcite and calcite prisms.

Greenhorn 2530

2520-2610	Shale, dark gray to medium gray, splintery, common calcite prisms and white specks.
2610-2730	White specks, common calcite prisms, common shale as above.
2730-2820	Shale, medium dark gray, platy, rare white specks.
2820-2940	Shale, grayish black, platy to fissile, common calcite prisms, reworked.

Dakota Group 2937

2940-2970	Same as above.
2970-3000	Cavings.
3000-3030	Shale, grayish black, soft, platy, common calcite prisms.
3030-3090	Shale, black to grayish black, fissile.
3090-3230	Shale, dark gray to medium dark gray, soapy, rare white specks and calcite prisms.
3230-3310	Shale, dark gray, platy, rare sandstone, very light gray to white, very fine grained, well cemented, quartzose, rare bentonite, very light gray, spongy.
3310-3480	Shale as above, abundant quartz, granules, sub-rounded, abundant sandstone, light gray, fine grained, well cemented, micaceous.

3480-3540 Shale, dark gray, soft, platy, common calcite prisms, common quartz grains.  
3540-3770 Shale, greenish gray to dark gray, soft, platy, common sandstone, light gray, fine grained, slightly glauconitic, rare limestone, grayish pink (5YR7/2), medium crystalline, grainy.

Piper 3783

3770-3790 Same as above.  
3790-3830 Shale as above, common limestone, very light gray to grayish orange pink (10R8/2), very fine crystalline, dense.  
3830-3860 Limestone as above, dense to pinpoint porosity, common shale as above.  
3860-3960 Limestone, pale red purple (5RP6/2) to very light gray, fine crystalline, dense, pinpoint porosity, common shale, greenish gray (5GY6/1) to medium light gray, soft, soapy, slightly platy, common sandstone, light gray, very fine grained, probably cavings (?)

Spearfish (?) 3980

3960-3980 Shale, dark gray to greenish gray (5G6/1) to moderate red (5R4/6), soft, platy, partly anhydritic, little limestone as above, anhydrite, moderate reddish orange (10R6/6), dense.

Minnelusa 4000

3980-4020 Shale and anhydrite as above, chert, grayish pink (5R8/2) smooth.  
4020-4060 Shale and chert as above, common sandstone, moderate pink (5R7/4), very fine grained, loosely cemented, calcareous, common anhydrite white, grainy, slightly calcareous.  
4060-4110 Shale, greenish gray (5G6/1) to pale reddish brown (10R5/4) to medium dark gray, platy, common to abundant sandstone, pale red (10R6/2), very fine grained, loosely cemented, calcareous, common anhydrite, white to moderate orange pink (10R7/4), grainy to dense, rare limestone, pale yellowish brown (10YR6/2), fine crystalline, dense.  
4110-4150 Sandstone, shale, and limestone as above.

Amsden 4242

4150-4200 Cavings.  
4200-4330 Limestone, pale red (5P6/2) to yellowish gray (5Y7/2), fine crystalline, dense to grainy.  
4330-4400 Limestone, yellowish gray (5Y7/2) to grayish red purple (5RP4/2), fine crystalline, dense, abundant cavings (?)

Big Snowy 4400

4400-4410 Same as above.  
4410-4500 Shale, dark gray to medium gray, platy to splintery, common limestone as above.  
4500-4550 Limestone, yellowish gray (5Y7/2), fine crystalline, dense, oolitic, little shale as above.  
4550-4710 Shale, variegated, very little limestone as above, abundant quartz grains, rounded, clear.  
4710-4755 Shale, variegated, common sandstone, very light gray, fine to medium grained, loosely cemented, common quartz grains, rounded.

Madison 4755

4755-4760 Same as above.  
4760-4775 Shale, dark gray to variegated, little limestone, pale yellowish brown (10YR6/2), medium crystalline, angular fragments.  
4775-4785 Limestone, light gray to medium gray, fine crystalline, dense to oolitic, common shale variegated as above, cavings (?).  
4785-4795 Limestone as above, slightly oil-stained, no cut, little shale dark gray, splintery.  
4795-4815 Limestone as above, slight cut, common ostracods.  
4815-4840 Cavings.  
4840-4865 Limestone, medium light gray, fine crystalline, dense to pseudo-oolitic, common shale, variegated, probably cavings (?).  
4865-4880 Limestone, medium light gray to yellowish gray (5Y7/2), fine to medium crystalline, dense to oolitic, vuggy.  
4880-4900 Limestone, yellowish gray (5Y7/2), fine crystalline, pinpoint porosity, calcitic, slightly oil-stained, no cut, common ostracods.  
4900-4920 Cavings.  
4920-4950 Limestone as above, common anhydrite, white to light bluish gray (5B7/1), grainy, little shale, greenish gray (5GY6/1), soft, platy.  
4950-4995 Same as above, abundant cavings.  
4995-5015 Limestone, pale yellowish brown (10YR6/2), fine grained, pinpoint porosity, slightly oil-stained, shows banding, no cut, common anhydrite, white.  
5015-5050 Limestone as above, abundant anhydrite, white to light bluish gray (5B7/1), dense to grainy, common cavings.  
5050-5055 Circulation.  
5055-5080 Limestone, yellowish gray (5Y7/2) to pale yellowish brown (10YR6/2), medium crystalline, pinpoint porosity to dense, calcitic, common anhydrite light bluish gray (5B7/1), dense.  
5080-5090 Cavings.  
5090-5100 Anhydrite as above, common limestone as above.  
5100 Circulation.  
5100-5120 Limestone, yellowish gray (5Y7/2) to pale yellowish brown (10YR6/2), fine to medium, crystalline, slightly oil-stained, banded, no cut, common anhydrite, greenish gray (5G6/1), dense slightly calcareous.  
5120 Cavings.  
5150-5165 Limestone, pale yellowish brown (10YR6/2), fine crystalline, calcitic, common anhydrite, common cavings.  
5165 Circulation.  
5165-5190 Limestone, pale yellowish brown (10YR6/2), fine crystalline, common anhydrite.  
5190 Circulation.  
5190-5220 Limestone, light brownish gray (5YR6/1) to pale yellowish brown (10YR6/2), fine crystalline, calcitic to dense, pseudo-oolitic, common anhydrite.  
5220 Circulation.  
5220-5300 Limestone, pale yellowish brown (10YR6/2), fine to medium crystalline, vuggy to dense, slightly oil-stained, no cut.  
5300-5350 Limestone as above, common anhydrite, greenish gray (5G6/1), dense, common cavings.  
5350 Circulation.  
5350 Total depth.