

NORTH DAKOTA GEOLOGICAL SURVEY CIRCULAR NO. 225

Summary of the Fletcher Oil & Gas Co. & Signal Drilling &
Exploration Co. - Bueligen #1
Oliver County, North Dakota
Well No. 2183 - Permit No. 2195

by Herbert A. Mendoza
January, 1960

The Fletcher-Signal, Bueligen #1, located in C NW 1/4, NW 1/4, Section 34, T. 141N., R. 85W., Oliver County, North Dakota. Elevation of K.B. 2173 feet, ground elevation 2164 feet.

The well was spudded January 28, 1959 and drilled to a depth of 6894 feet, plugged and abandoned as a dry hole on April 18, 1959.

Logs run:

Schlumberger electric
Schlumberger laterolog
Schlumberger sonic

Core Record: none

Tests:

DST #1, 6710-6734: Shut in 1 hour, open 2 hours, final shut in 30 minutes; Recovery: 1000' mud cut salt water, 1000' slight mud cut salty sulfur water 1120' salty sulphur water.

Casing Record:

8 5/8 " 24# surface casing at 666' with 200 sacks of cement.

Plugging Record:

#1 6560 above Mission Canyon	15 sacks of cement
#2 5890 above Charles	15 sacks of cement
#3 5260 above Minnelusa	15 sacks of cement
#4 4050 above Dakota with	15 sacks of cement
#5 Base of surface casing	25 sacks of cement
#6 Surface	5 sacks of cement

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

FORMATION TOPS

Cretaceous system

Pierre formation	1340
Niobrara formation	2756
Greenhorn formation	3335
Fall River-Lakota Sandstone	4015
undifferent.	

Jurassic system

Piper limestone	4840
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Triassic system

Spearfish formation	4945
Permian System	
Opeche formation	4988
Pennsylvanian System	
Minnelusa formation	5140
Amsden formation	5400
Mississippian System	
Big Snowy group	5515
Kibbey lime	5874
Madison group	
Poplar interval	6030
Ratcliffe interval	6222
Midale sub-interval	6345
Probisher-Alida interval	6380
Tilston interval	6690
Bottineau interval	6843

0-300	Missing.
300-360	Shale, light to medium gray (N5), mostly in the form of clay aggregates, little lignite, black
360-480	Shale, light to medium gray, soft, carbonaceous, common lignite, vitreous black, and limestone light gray (N7), fine crystalline, abundant quartz and chert grains, subrounded.
480-520	Lignite, grayish black (N2), earthy to vitreous, crumbly, little shale, medium light gray.
520-580	Sandstone, light olive gray (5Y5/2), fine to medium grained, calcareous, poorly to well consolidated, common shale, medium light gray (N6), soft.
580-640	Shale as above, common lignite, grayish black.
640-700	Siltstone and sandstone, greenish gray (5GY6/1), fine to medium grained, calcareous, common shale, medium light gray (N6), soft, abundant clay aggregates, common lignite black,
700-910	Shale, medium light gray (N6), soft, highly arenaceous, little sandstone, greenish gray (5GY6/1), medium grained, calcareous, little limestone, gray.
910-1000	Same as above.
1000-1120	Shale, medium light gray to dark gray (N3), soft, arenaceous.
1120-1150	Sandstone, medium light gray (N6), fine to medium grained glauconitic little shale as above, abundant quartz grains.
1150-1210	Shale, medium light gray (N6), soft, micaceous, little sandstone as above.
1210-1300	Sandstone as above, calcareous and common shale, medium gray (N5), soft.
1300-1510	Shale and sandstone as above.
1510-1750	Shale, medium light gray (N5), soft, sandy, slightly calcareous, rare calcite prisms, common quartz grains.
1750-2300	Shale, light gray (N6), medium hard, platy, compact.
2300-2780	Shale, medium light gray, (N5), soft, rare siltstone, light olive gray (5Y6/1), medium grained, loosely cemented, rare calcite prisms, common bentonite, light greenish gray (5G8/1), soft.
2780-2900	Shale, medium light to dark gray (N3), soft, silty, common white specks, calcite prisms, rare bentonite.
2900-3310	Shale, medium light gray, soft, calcareous, rare calcite prisms and white specks.

3310-3340 Shale, medium light to dark gray (N3), soft, platy, common limestone, dark gray, medium grained, grainy, rare calcite prisms.

Greenhorn formation 3334

3340-3430 Same as above, abundant calcite prisms and white specks.

3430-3550 Shale, grayish black (N2), fissile to platy, calcareous, abundant white specks, calcite prisms.

3550-3640 Same as above, common shale, medium light gray (N5), spongy.

3640-4010 Shale, medium light to grayish black (N2), soft to compact, platy to fissile, common white specks, calcite prisms, rare amorphous pyrite.

Fall River formation 4015

4010-4150 Same as above

4150-4250 Shale, grayish black (N2), compact, platy, common clay aggregates, rare siderite pellets and quartz grains.

4250-4450 Shale, grayish black to medium light gray (N5), platy rare limestone, light bluish gray (5B7/1), oolitic, rare sandstone, white, fine grained, slightly glauconitic, rare siderite pellets, subrounded.

4450-4570 Shale as above, abundant sandstone, light gray to varicolored, very fine grained, well cemented, glauconitic, rare limestone, brownish gray (5YR4/1), fine crystalline, dense.

4570-4660 Shale, dark gray (N3) to greenish gray (5GY6/1), platy, common sandstone as above, little gypsum, moderate orange pink (10R7/4), coarse crystalline.

4660-4680 Cavings?

4680-4780 Shale, greenish gray (5GY6/1), soft, platy, silty.

4780-4810 Shale, greenish gray as above to moderate reddish brown (10R4/6), platy, waxy, little sandstone, varicolored, very fine grained, well cemented.

Finer limestone 4810

4810-4840 Shale and sandstone as above, little limestone, very light gray (N8), fine crystalline, dense.

4840-4880 Shale, varicolored, soft, platy, abundant limestone, grayish orange pink (5YR7/2), medium crystalline, calcitic to vuggy.

4880-4950 Limestone, very light gray (N8) to pale red purple (5RP6/2) to grayish orange pink (5YR7/2), fine to medium crystalline, dense, common shale, as above.

4950-4980 Shale, greenish gray (5GY6/1) to dark gray (N3), soft, platy, common sandstone, medium light gray (N5), fine grained, glauconitic.

4980-4990 Shale, varicolored, platy, little sandstone as above, rare gypsum, moderate orange pink (10R7/4), coarse crystalline.

Opeche 4988

4990-5140 Shale, greenish gray to moderate red (5R4/6) to varicolored, soft, anhydritic, rare sandstone, light gray (N7), very fine grained, micaceous, rare gypsum, white to moderate orange pink, common rounded quartz grains.

Minnelusa 5140

- 5140-5300 Same as above, rare to common limestone, pale red (5R6/2), fine crystalline, arenaceous, anhydritic, rare anhydrite, pinkish gray (5YR8/1), dense, common rounded quartz grains.
- 5300-5400 Limestone as above, common anhydrite, white to pinkish, gray (5YR8/1), common shale, varicolored, soft, common quartz grains, subrounded, clear to frosted.

Amsden 5400

- 5400-5490 Shale, varicolored, rare sandstone, white to pinkish gray (5YR8/1), fine grained, well consolidated, rare limestone, grayish red purple (5RP4/2) fine crystalline, dense.
- 5490-5540 Shale and sandstone as above, common limestone, greenish gray (5GY6/1) to pale red purple (5RP6/2), fine crystalline, dense.

Big Snowy group 5545

- 5540-5580 Same as above
- 5580-5680 Shale, varicolored, soft, waxy, little limestone as above, common gypsum (alabaster), white slightly calcareous.
- 5680-5820 Shale, varicolored, common limestone, very light gray (N8), fine crystalline, dense, rare anhydrite, white, grainy.
- 5820-5870 Shale, greenish gray (5GY6/1) to moderate red (5R4/6), soft, platy, little limestone as above, common sandstone, white, fine grained, well cemented.

Kibbey lime 5874

- 5870-5890 Same as above.
- 5890-5970 Limestone, yellowish gray (5Y7/2) to dark yellowish brown (10YR4/2), fine crystalline, dense, common shale, varicolored, common quartz grains, subrounded, clear.
- 5960-6030 Shale, greenish gray (5GY6/1), soft, splintery, silty, common quartz grains.

Madison group 6030

- 6030-6080 Shale as above, common limestone, yellowish gray (5Y7/2), medium crystalline, grainy to oolitic.
- 6080-6175 Limestone, yellowish gray (5Y7/2) to pale yellowish brown (10YR6/2), fine crystalline, dense to oolitic, slightly oil-stained, common shale, greenish gray (5GY6/1), soft, abundant cavings (?).
- 6175-6240 Limestone and shale as above, rare anhydrite, light bluish gray (5B7/1).
- 6240-6275 Limestone and shale as above (probably cavings), rare anhydrite light bluish gray (5B7/1) to pale red (10R6/2), rare dolomite, white to yellowish gray (5Y7/2), fine crystalline, dense.
- 6275-6295 Shale, greenish gray (5GY6/1), soft platy, abundant limestone, pale yellowish brown (10YR6/2), fine crystalline, oil-stained, no cut common anhydrite, light bluish gray (5B7/1) to moderate orange pink (10R7/4), dense.
- 6295-6350 Limestone, yellowish gray (5Y7/2) to pale yellowish brown (10YR6/2), fine crystalline, oil-stained, fluorescence no cut, shows banding, common shale and rare anhydrite as above.
- 6347 Circulation
- 6350-6360 Same as above

6360-6420 Shale, greenish gray to medium dark gray, platy, common limestone, yellowish gray (5Y7/2), fine crystalline, pinpoint porosity, common anhydrite, light bluish gray (5B7/1).

6420-6500 Anhydrite, light bluish gray (5B7/1), dense, slightly calcareous, common limestone, yellowish gray (5Y7/2) to pale yellowish brown (10YR6/2), fine to medium crystalline, dense, pinpoint porosity, little shale as above.

6500-6525 Anhydrite, very light gray to light bluish gray (5B7/1), slightly calcareous, dense, coated with halite, rare limestone as above.

Mission Canyon 6525

6525-6570 Anhydrite, light bluish gray (5B7/1), limy, common shale, medium dark gray to greenish gray (5GY6/1), platy, rare limestone, medium light gray to yellowish gray (5Y7/2), fine crystalline, dense, ostracods.

6570-6610 Limestone, pale yellowish brown (10YR6/2), fine crystalline, porous to grainy, oil-stained, no cut, common anhydrite and rare shale as above.

6610-6645 Limestone, pale yellowish brown (10YR6/2), medium to fine, crystalline, pinpoint porosity, slightly oil-stained, pseudo-oolitic to dense.

6645-6710 Limestone as above, common shale, medium gray to medium light gray, common anhydrite, light bluish gray (5B7/1), dense.

6710-6725 Same as above, oil-stained, fluorescence, no cut, DST #1 between 6710-6734 no oil recovered.

6725-6800 Limestone, pale yellowish brown (10YR6/2), sublithographic to fine crystalline, dense to vuggy to oolitic, no cut, calcitic, common anhydrite, light bluish gray (5B7/1).

6800-6815 Same as above, abundant shale cavings (?)

6815-6850 Limestone, pale yellowish to dark yellowish brown (10YR4/2), sublithographic to fine crystalline, dense to oolitic, rare shale cavings (?)

6850-6890 Limestone, medium light gray, fine crystalline.

6894 Total Depth.