

NORTH DAKOTA GEOLOGICAL SURVEY CIRCULAR NO. 263

Summary of the S. D. Johnson Company - Joseph Taylor #1  
Foster County, North Dakota  
Well No. 652 - Permit No. 666

by John P. Bluemle  
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The S. D. Johnson Company - Joseph Taylor #1, Foster County, North Dakota. Location: SE SW Section 20, T. 145N., R. 67W. Elevation: 1652 Ground, 1659 D.F., Total Depth: 3050.

The S. D. Johnson Company - Joseph Taylor #1 was spudded July 11, 1954; drilled to a total depth of 3050 feet, found dry and plugged July 21, 1954. Three cores were cut. Electrical log was run by Schlumberger.

Logging Record:

Schlumberger electric log-run one 7/21/54, 202-3051

Coring Record:

#1 2470-2485  
#2 2485-2500  
#3 2665-2680

Casing Record:

Set 8 5/8" surface casing at 202 feet with 175 sacks of cement.

Plugging Record:

Plugs in 6 3/4" hole with 10 sacks cement at each place: 1736-1832; 2292; 2370; 2361.

FORMATION TOPS

Cretaceous System	
Pierre Formation	70
Niobrara Formation	900
Greenhorn Formation	1404
Belle Fourche Formation	1458
"Muddy"	1735
Skull Creek Formation	1758
Fall River Formation	1892
Jurassic System	
Undifferentiated	2097
Piper Formation	2178
Redbeds	2244
Mississippian System	
Tilston	2291
Lodgepole Formation	2371
Basal Miss Shale	2788
Devonian System	
Duperow Formation	2853
Souris River Formation	3012
Total Depth	3052

0-40 Sandstone, very fine to medium grained; subangular to angular with a few rounded, frosted grains of quartz; few shale chips.

40-70 Sandstone, same as above with more clay and shale chips.

70-101 Shale, medium light gray; some rounded grains of free quartz; poorly cemented sand in clay; some iron-staining.

101-129 Shale, medium gray; few rounded grains of sand, mainly quartz.

129-158 Shale, light olive gray.

158-187 Shale, light olive gray to olive gray.

189-220 Shale, medium light gray to medium dark gray.

220-240 Shale, medium light gray to light olive gray; siltier; pieces are calcareous.

240-270 Shale, light olive gray and calcareous to greenish gray and non-calcareous.

270-280 Shale, medium gray to light olive gray; slightly bentonitic.

280-300 Shale, medium light gray; few iron-stained pieces; micaceous.

300-330 Shale, light olive gray; micaceous; some iron-staining massive; some silty pieces; some calcareous pieces.

330-340 Shale, light olive gray micromicaceous; slightly calcareous; silty and spongy, limonite staining.

340-350 Shale, light olive gray, micaceous, much cement and bentonitic, slightly calcareous.

350-370 Shale, greenish gray, micaceous, some iron-carbonate, spongy slightly bentonitic and calcareous; much cement; a few dark gray, harder pieces.

370-410 Shale, medium gray, massive; iron-staining; micaceous.

410-440 Shale, medium gray; massive; pieces of siderite, micromicaceous.

440-470 Shale, medium gray, limonite stains; micromicaceous; few chips of limy (calcareous) shale.

470-490 Shale, medium gray with calcareous inclusions of limestone, micaceous; massive.

490-550 Shale, medium gray; siderite chips; fissile with a few spongy pieces; micromicaceous; some minor limestone laminated.

550-670 Shale, medium gray, fissile, micromicaceous, some limonite staining.

670-690 Shale, medium gray, silty, micromicaceous, limonite staining, siderite.

690-700 Shale, medium light gray, massive, limonite staining, micromicaceous.

700-830 Shale, medium light gray, fissile to massive, limonite staining, Inoceramus calcite prisms, a few limestone chips.

830-890 Shale, medium light gray, massive to spongy with considerable cementing material, limonite stains.

890-910 Shale, light olive gray; fissile to spongy; some bentonite, micromicaceous, slightly calcareous; a few chips of sandy limestone.

910-950 Shale, medium light gray, very slightly calcareous with white calcareous specks, soft and spongy; calcite prisms; a few chips of yellowish gray limestone; calcareous bands in shale.

950-980 Shale, medium light gray, slightly calcareous, few white specks, few spongy pieces.

980-990 Shale, medium light gray, tiny white specks; slightly calcareous, calcite prisms, bentonitic.

990-1070 Shale, medium light gray, white specks, calcite prisms, slightly calcareous.

1070-1090 Shale, medium gray; siderite; white specks, slightly calcareous, spongy to massive and fissile.

1090-1120 Shale, greenish gray, spongy, calcite prisms, white specks, lumpy, pyritic, limonite staining.

1120-1160 Shale, medium light gray, calcareous, calcite prisms, larger white specks; lumpy to fissile; a few micaceous pieces; small amount of light gray bentonite.

1160-1190 Shale, medium gray, lumpy, spongy, silty, calcareous; a few small white specks in more solid pieces of shale; becomes more massive with more white specks with depth.

1190-1220 Shale, medium light gray to medium dark gray, fissile, slightly calcareous, white specks; some white bentonite, small calcite prisms.

1220-1230 Shale, light olive gray, lumpy, massive and spongy; calcite prisms, calcareous.

1230-1320 Shale, medium gray, fissile to massive; calcite prisms and chips of yellowish gray limestone, slightly calcareous; some limonite staining, some bluish bentonite; scattered small white specks.

1320-1330 Shale, medium light gray, as above, but with yellowish limestone inclusions and increased calcareousness.

1330-1340 Shale, medium light gray, lumpy to massive, calcite prisms; chips of yellowish limestone; a few pieces of selenite.

1340-1370 Shale, medium light gray; large white specks; some bentonite; limonite stains; shell fragments; slightly calcareous.

1370-1400 Shale, medium gray; massive to fissile; shell fragments, calcite prisms, slightly calcareous.

1400-1410 Shale, as above, calcareous, sandy.

1410-1430 Shale, medium gray, calcareous, calcite prisms, pyritic, massive to disaggregated; white specks.

1430-1450 Shale, medium dark gray to dark gray, calcareous; white specks, abundant calcite prisms; increasing amount of medium gray shale downward.

1450-1490 Shale, medium light gray, disaggregated to massive, calcareous; abundant calcite prisms; silty, shell fragments; pyritic; some yellowish bentonite.

1490-1550 Shale, medium dark gray, fissile, abundant calcite prisms and large white calcite inclusions; very calcareous, shell fragments and Globigerina; becoming lighter with depth, a few chips of limestone.

1550-1570 Shale, medium dark gray, disaggregated, silty; white specks, calcite prisms; calcareous, shell fragments.

1570-1630 Shale, medium light gray, disaggregated, silty, pyritic; calcite prisms, calcareous; a few free quartz grains; small inclusions of limestone in the shale.

1630-1640 Shale, medium light gray, lumpy and disaggregated; pyritic, silty; calcite prisms, calcareous.

1640-1700 Shale, as above; siltstone, light olive gray, non-calcareous, massive, becoming more calcareous with depth, blue-gray bentonite, shell fragments.

1700-1750 Shale, medium dark gray, fissile to spongy, calcareous with small limestone inclusions; shell fragments, bentonitic, calcite prisms; becoming more fissile with depth.

1750-1860 Shale, medium gray, fissile, slightly calcareous, pyritic, a few grains of quartz; calcite prisms; siltstone, light gray, non-calcareous massive; bluish bentonite, becoming more disaggregated with depth.

1860-1940 Shale, medium gray, disaggregated, calcareous, sandy, gypsiferous, a few calcite prisms and grains of pyrite; becomes more sandy with depth.

1940-1945 Interval missing.

1945-1950 Shale, medium gray, disaggregated to fissile, calcareous, free quartz grains; some iron staining.

1950-1990 Interval missing.

1990-2040 Shale, dark gray to medium gray; fissile to massive; abundant iron-carbonate pellets; iron staining; considerable free quartz grains; calcareous, sandy.

2040-2050 ½ hr. cir. Limestone, grayish orange pink, coarsely crystalline, porous, iron carbonate pellets; shale, medium gray, as above.

2050-2030 Limestone, pinkish gray, coarsely crystalline and porous; iron carbonate pellets.

2080-2090 Shale, medium gray, disaggregated, calcareous; iron carbonate pellets, calcite prisms.

2090-2100 Shale, as above with an equal amount of iron carbonate pellets and pelletoidal limestone of coarse crystalline texture.

2100-2140 Shale, medium gray, disaggregated, calcareous; iron-carbonate pellets and limestone, as above; shale becomes darker and more fissile with depth.

2140-2160 Sandstone, light gray, very calcareous; and siltstone fissile to massive; increasing amount of shale with depth.

2160-2190 Shale, medium gray, disaggregated, calcareous, calcite crystals; increasing numbers of iron-carbonate pellets, pyrite and quartz with depth.

2190-2230 Limestone, yellowish gray, fossiliferous; shale as above; pyrite and quartz; limestone becomes sublithographic with depth.

2230-2260 Shale, medium dark gray, fissile and limestone, yellowish gray, sublithographic, fossiliferous, and iron stained; considerable iron carbonate.

2260-2290 Shale, medium dark gray, fissile with considerable reddish calcareous clay-cement, increasing downward.

2285-2290 Circulation. Shale, as above, limestone very pale orange, porous, microsucrosic to oolitic; light brown siltstone.

2290-2305 Limestone, as above and grayish red, dense; shale, medium dark gray, fissile.

2305-2315 Limestone, yellowish gray, microsucrosic; and shale, as above, a few chalky pieces of limestone.

2315-2320 Interval missing.

2320-2335 Shale, medium dark gray, fissile and brittle, micaceous, calcareous; siltstone, moderate reddish brown, highly calcareous; limestone as above.

2335-2345 Limestone, yellowish gray, microsucrosic; shale, medium dark gray, fissile, becoming more abundant with depth.

2345-2365 Limestone, yellowish gray, dense to porous; and shale, dark gray to medium dark gray, fissile and non-calcareous.

2365-2370 Interval missing.

2370-2395 Shale, medium gray, fissile; limestone, yellowish gray, as above.

2395-2405 Shale, medium dark gray, fissile; limestone, light brownish gray, silty to massive crystalline.  
2405-2430 Interval missing.  
2430-2470 Shale, medium gray, massive to fissile, non-calcareous; considerable free quartz; limestone, pinkish gray, microsucrosic with purple spots at 2445 and increasing in amount to 2470.

Core #1 (15' recovered) 2470-2485

2470-2474 Limestone, yellowish gray, microsucrosic with laminated calcite and specks of reddish sand in pores; tends to be silty; some pieces are recrystallized; texture is close.  
2474-2478 Limestone, as above, fossiliferous, more recrystallization than above, reddish brown blotches; coarsely crystalline, dense, texture.  
2478-2480 Limestone, yellowish gray to pinkish gray, fine grained with some calcite filling in veins.  
2480-2483 Limestone, pinkish gray, fossiliferous, close, coarse, crystals; fine grained downward.  
2483-2485 Limestone, yellowish gray, reddish sand specks and lamina, micro-sucrosic to coarse crystalline.

Core #2 (15' recovered) 2485-2500

2485-2487 Limestone, as above, fossiliferous and silty.  
2487-2488 Limestone as above; plus limestone, lithographic, shaly to silty, light gray, some porosity.  
2488-2494 Limestone, yellowish gray to light brownish gray, laminated, dense crystalline; some pieces with sporadic pinpoint porosity mostly silt-filled; remainder is granular-microsucrosic.  
2494-2499 Limestone, pinkish gray to light brownish gray, silty to shaly pieces, remainder is dense, crystalline to sublithographic, fossiliferous.  
2499-2500 Limestone as above, light brownish gray but with dusky red silty pieces.  
2500-2510 Lost circulation.  
2510-2540 Limestone, yellowish gray, dense, mottled red.  
2540-2590 Limestone, yellowish gray to moderate orange pink, porosity in the latter; fossiliferous.  
2590-2625 Limestone, as above; dolomite, pale yellowish orange, coarse, but close crystals; shale, yellowish gray, calcareous, very lamina.  
2625-2655 Limestone, as above; siltstone, light brown, calcareous.  
2655-2660 Limestone, yellowish gray, dense, crystalline; shale, medium gray, fissile, calcareous.  
2660-2665 Interval missing.

Core #3 (6' recovered) 2665-2680

2665-2669 Limestone, chalky white, fossiliferous, powdery to pelletoidal; a few small calcite crystals; vugular porosity.  
2669-2671 Limestone, as above, with increased porosity and laminated calcite; veins are mainly horizontal.  
2671-2680 Interval missing.  
2680-2720 Lost circulation; a few chips of very porous limestone, similar to above.  
2720-2830 Limestone, very pale orange, fossiliferous, microsucrosic and porous; texture is pelletoidal to oolitic; circulation poor throughout interval.

2830-2860 Limestone, as above but with a few chips of shale, moderate red, slightly calcareous, fissile, increasing in amount with depth.

2860-2890 Limestone, grayish orange, microsucrosic; red staining.

2890-2920 Limestone, very pale orange; composed of individual crystals with some resulting porosity; becomes more dense downward.

2920-2925 Interval missing.

2925-2960 Limestone, very pale orange, microsucrosic to coarse granular; some porosity.

2960-2990 Limestone, as above, more dense, fossiliferous; red shale.

2990-3010 Limestone, very pale orange, dense to intergranular porosity but this tends to be anhydrite filled; a few chips of pale green shale.

3010-3045 Limestone, as above; dolomite, moderate red; dense.

3052 Total depth.