county Dekalb

sec 18 twp 59 rge 32

owner Willman, Lawhon et al

elev 1048 MGS# ~~6275~~ #1-8 → 6276 (6275?) drillers rge log

farm Gottschall No. 1 TD 668 fm TD – shows none

status d&a - lost hole date completed 1940

remarks:

00019
00001

WI004

Log of Willman, Lawhon, *et al* No. 1 Gottschall. Location: 2635 feet west and 1355 feet north of southeast corner sec. 18, T. 59 N., R. 32 W., DeKalb County, Missouri. Surface elevation, 1048 feet (P.T.). Commenced, 6-14-1940, and completed, 8-21-1940. Total depth, 2422 feet. Dry and abandoned. Drilled with cable tools. Casing record: 12 1/2 inch set at 19 feet; and 8 inch at 1366 feet. Contractor: Veeder Supply and Development Company, Cherryvale, Kansas.

FORMATIONAL SUMMARY

	Thickness, feet	*Depth, feet*
Pleistocene Series:		
Glacial drift	125	125
Pennsylvanian system:		
Pedee group	65	190
Lansing group	110	300
Kansas City group	179	479
Pleasanton group	110	589
Henrietta group	96	685
Cherokee group	642	1327
Mississippian system:		
St. Louis formation	39	1366
Spergen-Upper Warsaw formations	29	1395
Warsaw formation	50	1445
Keokuk-Burlington formations	123	1568
Chouteau formation	63	1631
Kinderhook shale	37	1668

	Thickness, feet	Depth, feet
Devonian system (sandy, 2015-2050 feet)	382	2050
Silurian (?) system	14	2064
Ordovician system:		
Maquoketa shale	21	2085
Kimmswick formation	223	2308
Decorah formation	22	2330
Undetermined interval	18	2348
St. Peter sandstone	48	2396
Ordovician or Canadian system:		
Jefferson City formation	26	2422, T.D.

NOTE: In drilling this well, one hole was lost at 668 feet, the rig was skidded 48 feet west and a new hole started. In the latter it was necessary to whip stock. For these reasons the Pennsylvanian section may be in error to the extent of 5 or 10 feet on some contacts.

WATER ANALYSES

Horizon	T.D.S.	Cl.	SO_4	Na-K as Na
	Parts per million			
Cherokee at 878-894 ft. and 975-980 ft.	4449.0	1839.2	520.5	1518.5
Lower Cherokee, 1096 ft.	3383.0	1406.2	414.8	1218.0
Mississippian, 1545-1548 ft.	3699.0	685.8	1552.8	860.8
Mississippian, 1602-1609 ft.	5270.0	901.4	2198.9	1188.1
Devonian ("Hunton"), 1730 ft.	5211.0	896.7	2215.5	1168.4
Devonian ("Hunton"), 1842-1851 ft.	5165.0	939.0	2188.2	1173.1
Kimmswick, 2244 ft.	4957.0	990.6	2052.8	1270.7
St. Peter, 2332-2396 ft.	6468.0	2234.8	1533.2	1856.8
Jefferson City ("Arbuckle"), 2422 ft., T.D.	18617.0	8188.1	1690.9	4863.2

SAMPLE LOG

	Thickness, feet	Depth, feet
No samples	5	5
Glacial drift:		
Boulder clay, tan, sandy, containing some pebbles of limestone and gypsum	59	64
Sand, coarse, polished, arkosic with pebbles of granite, limestone and schist with some gypsum	16	80
Boulder clay, gray with pebbles of granite, limestone, and some gypsum	15	95
No samples	30	125
Pennsylvanian system:		
Pedee group:		
Shale, gray, sandy with plant remains and mica	10	135
Shale, gray, calcareous	10	145
Shale, gray, sandy	10	155
No samples	10	165
Shale, gray	25	190
Lansing group:		
Limestone, buff, earthy with some green shale partings	5	195
Shale, gray, sandy with some lime fragments	10	205
Limestone (Stanton), white, very fine-grained to dense, argillaceous with green shale partings. Residue, 15 to 20 percent, of green shale, sand and silicified brachiopod fragments	20	225
Limestone, brown, fossiliferous with some black shale between 225-230 feet. Residue, 10 percent, of white, tan and gray, porous chert, silicified fossil fragments and pyrite	20	245

	Thickness, feet	Depth, feet
Shale, gray, porous with some limestone fragments	20	265
Limestone (Plattsburg), gray, fossiliferous, shaly in the upper 5 feet. Residue, 15 percent, of gray, fossiliferous chert with pyrite and silicified ostracods and fossil fragments. Some gray shale occurs in residue from 265-270 feet	15	280
Shale, gray and black with some gray, earthy limestone fragments	10	290
Shale, gray with some limestone and fossil fragments	10	300
Kansas City group:		
Limestone, brown, argillaceous, fossiliferous. Residue, 30 percent, of gray shale and silicified spines and tubes	5	305
Shale, gray with some calcareous fossil fragments and concretions	10	315
Limestone, brown, crystalline, highly fossiliferous with black, carbonaceous shale. Residue, 40 percent, of black shale and pyrite with some pyritized crinoids	10	325
Shale, gray with some limestone fragments	10	335
Limestone, light tan, crystalline, fossiliferous. Some glauconite occurs at 350 feet. Residue, 10 percent, of porous chert and fossil fragments replaced by kaolin	20	355
Limestone and shale: limestone, gray, fossiliferous; and shale, gray. Residue contains gray shale and pyritized fossil fragments	10	365
Limestone, light tan, fossiliferous. Residue, 10 percent, of silicified spines, tubes and kaolin	15	380
No samples	10	390
Limestone (Winterset), light tan, crystalline, cherty, fossiliferous. Residue, 10 to 20 percent, of gray and white chert, fossiliferous chert, pyrite and chalcedony rosettes	30	420
Shale, black, platy, carbonaceous	6	426
Limestone (Bethany Falls), tan, lithographic, sparingly fossiliferous with green shale partings. Residue, 10 percent, of kaolin balls, green shale and pyrite	15	441
Limestone and shale: limestone, as described above; and shale, dark gray to black	9	450

NOTE: This sample should be split into 4 feet of Bethany Falls and 5 feet of shale.

Limestone (Hertha), light gray, dense, fossiliferous. Residue, 10 percent, of silicified spines, beekites, kaolin and pyrite	17	467
No samples	12	479

NOTE: The base of the Kansas City is placed at 477 feet according to the driller's log.

Pleasanton group:		
Shale, gray	16	495
Sandstone, shaly, medium-grained, arkosic with some limestone and calcareous cement	15	510
Shale, gray	30	540
Shale, gray with calcareous fossils, pyrite and some calcareous concretions	20	560
Sand, medium fine-grained, angular with calcareous cement	15	575
Sand and shale: sand, as described above; and shale, gray with calcareous fossils	5	580

	Thickness, feet	Depth, feet
Shale, gray, micaceous with fragments of brown, crystalline limestone	9	589
Henrietta group:		
Limestone, dark gray, dense, very argillaceous, sparingly fossiliferous. Residue, 20 percent, of gray shale, silicified tubes, spines and fine sand grains	6	595
No samples	13	608
Shale, red	2	610
Limestone and shale: limestone, tan, fossiliferous with gray shale. Residue contains some silicified brachiopod fragments	10	620
Shale, gray with brown and gray, nodular limestone	20	640
Limestone and shale: limestone, tan, dense, argillaceous, somewhat dolomitic. Residue, 30 percent, of gray shale, pyrite and fossil fragments replaced by kaolin	5	645
Sand, with black, carbonaceous shale, some limestone fragments, fine-grained sand and plant remains	10	655
Limestone, light tan, fossiliferous with gray shale. Residue, 40 percent, of gray shale and fossil fragments replaced by kaolin	10	665
Shale, gray with thin-bedded limestones similar to that described above and containing calcareous fossils	15	680
No samples	5	685
Cherokee group:		
Shale, gray with siderite concretions. A sandy shale zone occurs between 700-715 feet, and medium coarse sand grains from 755-760 feet	95	780
Limestone and shale: limestone, tan, fossiliferous; and shale, gray to black, carbonaceous	10	790
Shale, gray with siderite spherulites between 790-800 feet	21	811
Limestone, shale, coal: limestone, tan, fossiliferous with black shale and a thin seam of coal	9	820
Shale, black and gray with limestone, as above	21	841
No samples	17	858
Shale, gray with spherulites of siderite	7	865
Shale, black, platy with siderite spherulites	12	877
Sand, medium fine-grained, micaceous with some gray shale and siderite spherulites	13	890
Shale, dark gray, sandy with plant remains and mica. Some siderite spherulites and concretions occur above 910 feet and this interval is less sandy below 920 feet	40	930
Shale, dark gray to black	10	940
Shale, gray with a thin bed of coal	10	950
Shale, gray with many siderite spherulites	5	955
Sand, medium fine-grained, angular, micaceous, firmly cemented with siderite and containing many siderite spherulites	15	970
Shale, gray, sandy with some siderite spherulites	10	980
Sand, medium coarse-grained, porous with some siderite cement	20	1000
Shale, gray with medium coarse-grained sand and siderite spherulites	5	1005
No samples	4	1009
Sand, medium coarse-grained, angular with some gray shale below 112 feet	7	1016
Shale, gray, sandy with some red shale above 1025 feet and containing some siderite concretions and spherulites	23	1039

	Thickness, feet	Depth, feet
Sand, angular, medium coarse-grained. Siderite concretions occur above 1015 feet and from 1090-1110 feet. A bed of gray shale and sand occurs from 1085-1090 feet	81	1120
Sand, coarse-grained becoming very coarse below 1185 feet and containing much concretionary siderite below 1180 feet	35	1155
Shale, black, platy with some dark brown concretions of siderite	20	1175
Shale, gray and black with fine-grained sand aggregates and siderite concretions	15	1190
Shale, black, platy, carbonaceous with brown concretions of siderite. Thin coal beds occur between 1215-1220 feet, 1228-1234 feet and 1265-1270 feet. A bed of medium coarse sand occurs from 1223-1228 feet	80	1270
Sand, white, medium-grained, sub-angular, frosted. A small amount of flaky, white chert occurs from 1277-1287 feet	57	1327
Mississippian system:		
St. Louis formation:		
Limestone, tan, lithographic, slightly fossiliferous. Residue, 10 percent, of sand grains and quartzose chert	8	1335
Limestone, containing small, firmly cemented oolites. Residue, 10 percent, of quartzose chert and sand	5	1340
Limestone, light tan, lithographic. Some pink quartz rosettes occur below 1350 feet. Residue, small, 10 percent or less, of quartz rosettes, silicified brachiopod fragments and sand	26	1366
Spergen-Upper Warsaw formations:		
Dolomite limestone, fine-grained, argillaceous with green, silvery shale occurring below 1380 feet. Residue, about 10 percent, of chert, red, chalcedonic, and white geodal, with silicified spine aggregates, *Endothyra* and crinoids. The green shale makes up about 10 percent of the residue below 1380 feet	29	1395
Warsaw formation:		
Limestone, gray and white, crystalline, fossiliferous with gray shale from 1404-1410 feet. Residue, 30 percent, of gray, highly fossiliferous chert containing crinoids and bryozoans	15	1410
Limestone, tan, fine-grained, crystalline, dolomitic, cherty. Residue, 50 percent, of gray, fossiliferous chert	6	1416
Limestone, gray and white, crystalline, fossiliferous. Residue, 10 to 25 percent, of gray, crinoidal chert	24	1440
Limestone, tan, coarsely crystalline, fossiliferous. Residue, 10 percent, of rough chalcedonic chert and brown, sugary, silicified crinoids	5	1445
Keokuk-Burlington formations:		
Limestone, coarsely crystalline, crinoidal, cherty. Residue, 30 percent, of tan and white, dense chert and some crinoidal chert	24	1469
Limestone, white, crystalline, crinoidal, very cherty. Residue, 40 to 60 percent, of chert as described above	12	1481
Limestone white, crystalline, crinoidal. Residue, 15 to 30 percent, of white, dense to rough, crinoidal chert	37	1518

	Thickness, feet	Depth, feet
Dolomitic limestone, white to light gray, fine-grained crystalline, cherty. Residue, 20 percent, of white, rough, crinoidal chert	11	1529
Dolomite, white, fine-grained, crystalline, cherty. Residue, 60 to 70 percent, of dense, flaky chert	12	1541
Limestone, white, crystalline, crinoidal. Residue, 40 percent, of white, dense chert with some translucent and quartzose chert	27	1568
Chouteau formation:		
Limestone, gray, fine-grained, earthy, dolomitic between 1581-1589 feet. Residue, about 30 percent, of gray, rough chert, some gray, dense, flaky chert, gray and brown, porous shale, quartz and pyrite	40	1608
Limestone gray and tan, fine-grained, argillaceous, fossiliferous toward base. Residue, small, 10 percent or less, of gray chert, pyrite and brown and gray, porous shale. Some glauconite occurs in the residue in the sample from 1610-1620 feet	23	1631
Kinderhook shale (undifferentiated):		
Shale, sand, and dolomitic limestone: shale, green with fine-grained sand aggregates; and limestone, gray, fine-grained, argillaceous, dolomitic. Residue, consists of green shale and fine-grained sand aggregates	24	1655
Shale, green with large black spores (?) and some fragments of argillaceous limestone	5	1660
Shale, gray with large black spores (?)	8	1668
Devonian system:		
Limestone, cream-white, crystalline, fossiliferous. Residue, less than 10 percent, of shale and chert	10	1678
Limestone, as above, with a little dolomite. Residue, 40 percent, of gray-green shale	12	1690
Limestone, white, crystalline. Residue, 25 percent, of red shale and red, flax-seed oolitic iron	10	1700
Limestone, as above. Residue, 10 percent, of sand, pyrite, shale and some glauconite at 1710 feet	15	1715
Limestone, cream-brown, crystalline. Residue, 10 percent, of pyrite and shale	5	1720
Limestone, dark gray-tan, dense. Residue, as above, with some coralline chert	8	1728
Limestone, cream, crystalline. Residue, 10 percent, of fine sand	2	1730
Limestone, brown, granular. Residue, 10 percent, of green shale	15	1745
Limestone, as above, fossiliferous. Residue, 10 percent, of coralline chert	10	1755
Limestone, brown, dense. Residue, 10 percent, of green salmon-colored chert	17	1867
Dolomite, cream, sucrose. Residue, 10 percent, of fine sand	3	1775
Limestone, gray, dense to lithographic. Residue, 10 percent, of green shale	10	1785
Limestone, light gray, lithographic. Residue, 10 percent, of green shale, a little pyrite and fine sand	35	1820
Limestone, gray-tan, dense. Residue, 10 percent, of green shale	15	1835
Dolomite, brown, sucrose. Residue, 10 percent, of brown, quartzose chert	15	1850
Dolomite, gray, finely crystalline. Residue, 10 percent of salmon-colored chert	17	1867
Limestone, gray, dense. Residue, 10 percent, of translucent chert	13	1880

	Thickness, feet	Depth, feet
Dolomite, gray, granular. Residue, 10 percent, of brown, quartzose chert	10	1890
Dolomite, brown, crystalline. Residue, as above	10	1900
Limestone, gray, dense to lithographic. Residue, 10 percent, of green shale	30	1930
Dolomite, gray, finely crystalline. Residue, 10 percent, of quartzose chert, some silicified brachiopod fragments and about 10 percent of green shale at 1955 feet	25	1955
Limestone, gray, lithographic. Residue, 15 percent, of sub-translucent and gray, quartzose cherts	25	1980
Dolomite, white, finely crystalline to sucrose. Residue, 10 percent, of very fine sand and gray shale	15	1995
Dolomite, cream-tan, finely granular. Residue, less than 10 percent, of gray shale, sand and pyrite	5	2000
Limestone, gray, dense to lithographic. Residue, less than 10 percent, of translucent chert and pale green shale	8	2008
Dolomite, cream-brown, finely crystalline. Residue, less than 10 percent, of tan, quartzose chert and fine sand	5	2013
Limestone, cream-gray, dense. Residue, 20 percent, of fine, angular sand	7	2020
Limestone, as above. Residue, 60 percent, of tan, sub-translucent chert	7	2027
Dolomite, white, finely crystalline. Residue, 50 percent, of medium-grained, rounded sand	9	2036
Dolomite, light gray, dense. Residue, 50 percent, of sand, as above	14	2050
Silurian (?) system:		
Dolomite, light gray, finely granular. Residue, 15 percent, of quartz, quartzose chert, pyrite, green shale and sand	14	2064
Ordovician system:		
Maquoketa formation:		
Dolomite, gray, granular with gray shale. Residue, 60 percent, of shale, a little pyrite, chert and sand	10	2074
Shale, pale green and light brown, pyritic	11	2085
Kimmswick formation:		
Dolomite, gray, crystalline. Residue, 10 percent, of green shale (caved ?) and a little white chert	35	2120
Dolomite, as above. Residue varies from 10 percent at 2125-2130 feet to 40 percent at 2160 feet, of gray and bluish, smooth chert	40	2160
Dolomite, gray-brown, crystalline. Residue, 65 percent, of gray-brown, mottled chert	10	2170
Dolomite, gray, crystalline. Residue, averages 60 percent, of tan-white, dense chert, which has black specks	48	2218
Dolomite, as above. Residue, 50 percent, of white, smooth chert and some brown shale (asphaltic ?) which burns upon ignition	9	2227
Dolomite, tan, crystalline. Residue, 40 percent, of white, dense, dolocastic chert	8	2135
Dolomite, tan, crystalline. Residue, less than 10 percent, of tan, quartzose chert	73	2308
Decorah formation:		
Dolomite, brown, crystalline. Residue, 20 percent, of sand, chert and brown, porous shale	22	2330
Undetermined interval:		
Sandstone, white, medium and coarse grains.	6	2336

	Thickness, feet	*Depth, feet*
Dolomite, tan, crystalline. Residue, 25 percent, of sand and some white chert	12	2348
St. Peter formation:		
Sandstone, white, grains regenerated	48	2396
Ordovician or Canadian system:		
Jefferson City formation:		
Dolomite, gray and tan, finely crystalline. Residue, 10 to 15 percent of sand plus 10 percent of smooth, oolitic chert	26	2422, T.D.

RECENT DRILLING

in

NORTHWESTERN MISSOURI

By

FRANK C. GREENE

REPORT OF INVESTIGATIONS NO. 1

1945

EDWARD L. CLARK, *Director and State Geologist*

MISSOURI GEOLOGICAL SURVEY AND
WATER RESOURCES

ROLLA, MISSOURI