

INTERVAL SHEET

WWCR 176

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VDMR Well No.: Well No. 1291

Date 4-6-65

Sample Interval: from 0 to 340

PROP: Co. of Henrico
San. District #3

Total depth 340

COMP: Sydnor Pump & Well Co.

Oil Gas Water Exploratory

COUNTY: Henrico

Cuttings Core Other

VDMR Well No: W-1291

From-To	From-To	From-To	From-To	From-To
0 - 10	300 - 310	-	-	-
10 - 20	310 - 320	-	-	-
20 - 30	320 - 330	-	-	-
30 - 40	330 - 340	-	-	-
40 - 50	-	-	-	-
50 - 60	-	-	-	-
60 - 70	-	-	-	-
70 - 80	-	-	-	-
80 - 90	-	-	-	-
90 - 100	-	-	-	-
100 - 110	-	-	-	-
110 - 120	-	-	-	-
120 - 130	-	-	-	-
130 - 140	-	-	-	-
140 - 150	-	-	-	-
150 - 160	-	-	-	-
160 - 170	-	-	-	-
170 - 180	-	-	-	-
180 - 190	-	-	-	-
190 - 200	-	-	-	-
200 - 210	-	-	-	-
210 - 220	-	-	-	-
220 - 230	-	-	-	-
230 - 240	-	-	-	-
240 - 250	-	-	-	-
250 - 260	-	-	-	-
260 - 270	-	-	-	-
270 - 280	-	-	-	-
280 - 290	-	-	-	-
290 - 300	-	-	-	-

OWNER: County of Henrico
Sanitary District - Well # 3
DRILLER: Sydnor Pump & Well Co., Inc.
COUNTY: Henrico

VDMR: 1291
WWCR: 176
TOTAL DEPTH: 340'

GEOLOGIC LOG

Depth in
feet

COLUMBIA GROUP (0-10')

0-10 Clay - brownish-yellow, mottled light gray; very sandy; slightly pebbly; sand is fine- to coarse-grained, poorly sorted, angular to subrounded quartz (some amethystine) and light colored chert with small amounts of muscovite, magnetite and scattered grains of earthy hematite; gravel consists of subangular to subrounded pebbles of quartz (2 - 10 mm) and an occasional subrounded to rounded pebble of quartz (up to 20 mm); abundant waxy remains of plant material

CALVERT FORMATION (10-70')

10-20 Sand - yellowish-brown; coarse- to very coarse-grained, well-sorted, subangular; quartz (some amethystine, some smoky) and a small amount of dull white, relatively fresh microcline; scattered grains of magnetite, muscovite, fresh, brown epidote crowded with globular opaque inclusions, rounded zircon, fresh, brownish-red rutile, worn, bladed kyanite, and pseudomorphs after pyrite

20-30 Sand - gray; moderately silty and argillaceous; two well-sorted modes, (1) very coarse-grained, yellowish-brown sand and granules, angular to subrounded, (may be from 10-20 interval), and (2) very fine- to fine-grained sand, angular to subangular; small amounts of dull white, partially decomposed feldspar, and earthy limonite; accessory minerals includes muscovite, magnetite, kyanite, rutile, and epidote

30-40 As above

40-50 As above

50-60 As above - but with scattered small (up to 10 mm) rounded pebbles of quartz

60-70 Sand - gray; moderately silty and argillaceous; two modes, (1) gray, very fine- to fine-grained, well-sorted, angular to subangular sand (principal mode), (may be from 10-20 interval), and (2) yellowish-brown, coarse, subangular to subrounded sand (subordinate mode); small amounts of dull white feldspar (plagioclase and microcline), yellow-brown phosphorite, glauconite, and earthy limonite; accessory minerals includes epidote, magnetite, muscovite, zircon and a trace of kyanite; probable fish teeth

NANJEMOY FORMATION (70-112')

70-80 Sand - dark-green; slightly silty and argillaceous (gray clay); medium-grained, well sorted, fresh to slightly oxidized glauconite (70-75 percent of sand fraction), and very fine- to fine-grained, well-sorted, angular to subangular quartz (25-30 percent of sand fraction); small amount of coarser quartz sand; silt predominantly quartz with very little glauconite; trace amounts of muscovite, yellow-brown phosphorite, brown epidote and pink garnet; scattered, chalky pelecypod shell fragments

80-90 As above - but with scattered echinoid spines, a trace of pyrite

90-100 Clay - gray; sandy, pebbly; sand poorly sorted, glauconitic (softer and not as fresh as overlying green sand; slightly micaceous (muscovite); abundant rounded pebbles (5-15 mm) of quartz and ferruginous sandstone; scattered, platy to columnar phosphorite

100-110 As above - but more sandy

MATTAPONI FORMATION (112-163') Top of formation defined on basis of other information.

110-120 Sand - brownish-gray; silty and argillaceous; pebbly; sand very fine- to very coarse-grained, poorly sorted, subangular to subrounded, glauconitic, slightly micaceous (muscovite); clay gray to yellow-brown (limonitic); small amount of platy, black phosphorite; abundant subrounded to rounded pebbles (up to 10 mm) of quartz; scattered chalky, pelecypod shell fragments; a few seed pods

120-130 Sand - gray; silty and argillaceous (gray clay); slightly pebbly; sand very fine- to medium-grained, fairly well-sorted, subangular, glauconitic, slightly micaceous (muscovite); small amount of platy to columnar, black to brown phosphorite, and a few pebbles of black phosphorite; some fish teeth

- 130-140 Sand - gray; silty and argillaceous; a few pebbles; fine-grained, moderately well-sorted, angular to subangular; glauconitic and micaceous (muscovite); some platy to nodular black phosphorite; small fossil content includes chalky pelecypod shell fragments, ostracods, and foraminifera (mostly Robulus, but some strongly costate, uniserial forms)
- 140-150 As above
- 150-160 Sand - gray; silty and argillaceous; fine-grained, moderately well-sorted, angular to subangular; abundant greenish quartz, glauconitic and moderately micaceous (greenish muscovite), moderate amount of sand size grains of phosphorite, trace of garnet; silty fraction contains much glauconite and comminuted chalky shell material; fossil content includes very abundant chalky pelecypod shell fragments, and a few ostracods and foraminifera (Robulus)
- PATUXENT FORMATION (163-340') Top of formation defined on basis of other information.
- 160-170 Sand - gray; moderately silty and argillaceous; very fine- to very coarse-grained with a paucity of material in the medium and coarse grades (somewhat bimodal), moderately well-sorted modes, angular to subangular finer fraction, subangular to subrounded coarser fraction; glauconitic, micaceous (muscovite), small amount of phosphorite, trace of garnet; abundant chalky shell fragments of pelecypods and a few gastropods; a few foraminifera (Robulus)
- 170-180 Sand - gray; slightly silty and argillaceous; very fine- to very coarse-grained, poorly sorted, angular to subrounded with roundness increasing as grain size; moderately glauconitic in finer grades; moderate amount of yellow, limonitic clay; minor muscovite and phosphorite; trace of garnet; scattered, chalky shell fragments and pelecypods and a few gastropods
- 180-190 As above - but coarser grained
- 190-200 Sand - greenish-gray; silty and very argillaceous; moderate amount subrounded granules and small pebbles of quartz (up to 5 mm); sand fine- to very coarse-grained, poorly sorted, angular to subrounded; micaceous (muscovite, and some chloritized biotite), slightly glauconitic, traces of pyrite, garnet, and phosphorite; scattered chalky pelecypod shell fragments

- 200-210 Sand - gray; moderately argillaceous; fine- to coarse-grained, rather poorly sorted, angular to subangular; small amounts glauconite, white microcline, muscovite; trace garnet; scattered chalky pelecypod shell fragments
- 210-220 As above
- 220-230 As above
- 230-240 As above
- 240-250 As above
- 250-260 Sand - gray; slightly argillaceous; fine- to very coarse-grained, poorly sorted, subangular; moderate amount subrounded white microcline, small amounts glauconite and muscovite, traces of garnet and brown epidote
- 260-270 As above - but more feldspathic and garnetiferous; both minerals subrounded whereas quartz is subangular
- 270-280 Sand - gray; slightly argillaceous; fine- to very coarse-grained, poorly sorted, subangular; moderate amount white microcline, small amount muscovite, very small amount glauconite, traces of garnet, vivianite
- 280-290 As above
- 290-300 As above
- 300-310 As above
- 310-320 As above
- 320-330 As above
- 330-340 As above

GEOLOGIC SUMMARY

	<u>Rock Name</u>	<u>Age</u>
0-10	Columbia Group	post-Miocene
10-70	Calvert Formation	Miocene
70-112	Nanjemoy Formation	Eocene
112-163	Mattaponi Formation	Paleocene - Late Cretaceous
163-340	Patuxent Formation	Early Cretaceous

Virginia Division of Mineral Resources
 Robert H. Teifke, Geologist
 April 12, 1965

Robert H. Teifke
 March 1, 1972