INTERVAL SHEET

WWCR 174

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VDMR WELL NO.: Well No. 1177

Date 11/6/64

Sample Interval: from 10 to 326

PROP: Robinwood Subdivision #2

Total Depth 326

COMP: Mitchell's Well & Pump Company

Oil ____ Gas ____ Water X Exploratory ____

COUNTY: Henrico (Richmond)

Cuttings X Core ____ Other ____

VDMR WELL NO: W-1177

From-To	From-To	From-To	From-To	From-To
-	0 - 10 No sample	300 - 310	-	-
-	10 - 20	310 - 326	-	-
-	20 - 30 No sample	-	-	-
-	30 - 40	-	-	-
-	40 - 50	-	-	-
			No washed samples	
-	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: F. D. Robins (Robinwood #2) VDMR #1177
DRILLER: Mitchell's Well & Pump Company WWCR #174
COUNTY: Henrico (Richmond) TOTAL DEPTH: 326'

GEOLOGIC LOG

0-10	No sample.
10-20	Clay - orange, very slightly sandy.
20-30	No sample.
30-40	Clay - yellow, mottled light grey, trace of sand.
40-50	Clay - grey, slightly sandy.
50-60	Clay - grey, slightly to moderately sandy, trace of magnetite.
60-70	Clay - grey, slightly sandy, slightly ferruginous.
70-80	Sand - grey, very fine grained, very well sorted, subangular, very argillaceous.
80-90	Sand - black, very fine grained, very well sorted, angular to subangular, argillaceous and silty, very glauconitic, slightly ferruginous, micaceous (muscovite).
90-100	Sand - dark grey, very fine to fine grained, well sorted, subangular, glauconitic, argillaceous, slightly ferruginous, moderately micaceous (muscovite), small amounts of coarse to very coarse grained sand, and chitino-phosphotic shell material, some foraminifera casts.
100-110	Sand - grey, very fine to very coarse grained, poorly sorted, subangular to subrounded, moderately glauconitic, very argillaceous, very slightly ferruginous, micaceous, (abundant large muscovite plates), small amount of garnet and plant material.
110-120	Sand - grey, fine to coarse grained, bimodal with good sorting within each size range, subangular, argillaceous, moderately micaceous (muscovite), notable amounts of garnet and carbonaceous matter.

120-130	Clay - black, very sandy (sand only slightly subordinate to clay), very fine to fine grained, well sorted, angular to subangular, very micaceous (muscovite), pyritic nodules (2-4 mm) composed of intergrowths of rod-shaped pyrite and carbonaceous matter, other forms of pyrite also present, trace of garnet, very abundant fibrous carbonaceous matter with woody texture.
130-140	Sand - grey, very poorly sorted, angular to subangular, moderately argillaceous, slightly glauconitic, slightly micaceous (muscovite), small amounts of garnet and fibrous carbonaceous matter.
140-150	Sand - buff, very poorly sorted, angular to subrounded, abundant granules, argillaceous, small amounts of muscovite and garnet, traces of pyrite and feldspar, very slightly glauconitic and ferruginous.
150-160	Sand - grey, very poorly sorted, subangular to subrounded, small amount of granules, moderately argillaceous, small amounts of muscovite and garnet, trace of pyrite.
160-170	As above.
170-180	Clay - greenish grey, very coherent, very sandy, (much is very coarse grained but the sorting is very poor), subangular to subrounded, moderate amount small gravel (mostly granules), moderately arkosic (most of feldspar is fresh, grey microcline), small amounts muscovite and reddish garnet, traces of pyrite, magnetite, and epidote.
180-190	As above.
190-200	Sand - grey, poorly sorted, subangular to subrounded, small amount of granules, argillaceous, moderately arkosic, (white partially decomposed feldspar), small amounts muscovite, garnet, carbonaceous matter, traces of iron oxides and epidote.
200-210	As above.
210-220	As above.
220-230	Sand - buff, poorly sorted, subangular to subrounded, moderate amount of small gravel, (mostly granules), argillaceous, very arkosic (pink and white feldspar, partially decomposed), small amount of muscovite, trace of epidote and iron oxides.

230-240	Sand - light grey to white, medium to coarse grained, well sorted, subangular to subrounded, very arkosic (microcline and plagioclase), abundant biotite, inclusions in quartz and feldspar, moderate amounts of coarse muscovite and epidote, traces of garnet and iron oxides.
240-250	As above.
250-260	Sand - buff, very poorly sorted, subangular to subrounded, moderate amount of granules, moderately argillaceous and arkosic, small amount of coarse muscovite and iron oxide, trace of epidote.
260-270	Sand - grey, poorly sorted, subangular, moderate amount of small gravel, argillaceous, moderately arkosic, small amounts of muscovite and epidote.
270-280	Sand - brown, fine to very coarse grained, poorly sorted, subangular, very argillaceous, abundant, muscovite, slightly to moderately arkosic, small amounts epidote and iron oxides.
280-290	Sand - reddish brown, poorly sorted, subangular, argillaceous, slightly silty, very ferruginous,(limonite), micaceous (muscovite),and arkosic.
290-300	Sand - sand and red clay in subequal amounts, moderate amount of light green clay, sand is poorly sorted, subangular, arkosic, micaceous (muscovite), with small amount of biotite and trace of pyrite.
300-310	As above.
310-326	Sand - purplish red, medium to coarse grained, fairly well sorted, subangular to subrounded, argillaceous, slightly silty, and arkosic, very micaceous (muscovite and weathered biotite), ferruginous, abundant magnetite, small amount of garnet.

GEOLOGIC SUMMARY

	ROCK UNIT	AGE
0-20	Columbia group	Pleistocene
20-80	Chesapeake group	Miocene
80-190	Pamunkey group	Eocene
190-326	Potomac group	Lower Cretaceous

Virginia Division of Mineral Resources
Robert H. Teifke, Geologist
November 12, 1964

OWNER: F. D. Robins (Robinwood #2) VDMR #1177
DRILLER: Mitchell's Well & Pump Company WWCR #174
COUNTY: Henrico (Richmond) TOTAL DEPTH: 326'

GEOLOGIC LOG

+162 COLUMBIA Group (0-30')

0-10	No sample.
10-20	Clay - orange, very slightly sandy.
20-30	No sample.

CALVERT Formation (30-80')

+132

30-40	Clay - yellow, mottled light grey, trace of sand.
40-50	Clay - grey, slightly sandy.
50-60	Clay - grey, slightly to moderately sandy, trace of magnetite.
60-70	Clay - grey, slightly sandy, slightly ferruginous.
70-80	Sand - grey, very fine grained, very well sorted, subangular, very argillaceous.

NANJEMOY AND MATTAPONI FORMATIONS UNDIFFERENTIATED (80-90')

+82

80-90	Sand - black, very fine grained, very well sorted, angular to subangular, argillaceous and silty, very glauconitic, slightly ferruginous, micaceous (muscovite).
90-100	Sand - dark grey, very fine to fine grained, well sorted, subangular, glauconitic, argillaceous, slightly ferruginous, moderately micaceous (muscovite), small amounts of coarse to very coarse grained sand, and chitino-phosphatic shell material, some foraminifera casts.
100-110	Sand - grey, very fine to very coarse grained, poorly sorted, subangular to subrounded, moderately glauconitic, very argillaceous, very slightly ferruginous, micaceous, (abundant large muscovite plates), small amount of garnet and plant material.
110-120	Sand - grey, fine to coarse grained, bimodal with good sorting within each size range, subangular, argillaceous, moderately micaceous (muscovite), notable amounts of garnet and carbonaceous matter.

OWNER: F. D. Robins (Robinwood #2) (Continued)

120-130	Clay - black, very sandy (sand only slightly subordinate to clay), very fine to fine grained, well sorted, angular to subangular, very micaceous (muscovite), pyritic nodules (2-4 mm) composed of intergrowths of rod-shaped pyrite and carbonaceous matter, other forms of pyrite also present, trace of garnet, very abundant fibrous carbonaceous matter with woody texture.
130-140	Sand - grey, very poorly sorted, angular to subangular, moderately argillaceous, slightly glauconitic, slightly micaceous (muscovite), small amounts of garnet and fibrous carbonaceous matter.
140-150	Sand - buff, very poorly sorted, angular to subrounded, abundant granules, argillaceous, small amounts of muscovite and garnet, traces of pyrite and feldspar, very slightly glauconitic and ferruginous.
150-160	Sand - grey, very poorly sorted, subangular to subrounded, small amount of granules, moderately argillaceous, small amounts of muscovite and garnet, trace of pyrite.
160-170	As above.
170-180	Clay - greenish grey, very coherent, very sandy, (much is very coarse grained but the sorting is very poor), subangular to subrounded, moderate amount small gravel (mostly granules), moderately arkosic (most of feldspar is fresh, grey microcline), small amounts muscovite and reddish garnet, traces of pyrite, magnetite, and epidote.
180-190	As above.
	PATUXENT FORMATION (190-326')
190-200	Sand - grey, poorly sorted, subangular to subrounded, small amount of granules, argillaceous, moderately arkosic, (white partially decomposed feldspar), small amounts muscovite, garnet, carbonaceous matter, traces of iron oxides and epidote.
200-210	As above.
210-220	As above.
220-230	Sand - buff, poorly sorted, subangular to subrounded, moderate amount of small gravel, (mostly granules), argillaceous, very arkosic (pink and white feldspar, partially decomposed), small amount of muscovite, trace of epidote and iron oxides.

OWNER: F. D. Robins (Robinwood #2) (Continued)

230-240	Sand - light grey to white, medium to coarse grained, well sorted, subangular to subrounded, very arkosic (microcline and plagioclase), abundant biotite, inclusions in quartz and feldspar, moderate amounts of coarse muscovite and epidote, traces of garnet and iron oxides.
240-250	As above.
250-260	Sand - buff, very poorly sorted, subangular to subrounded, moderate amount of granules, moderately argillaceous and arkosic, small amount of coarse muscovite and iron oxide, trace of epidote.
260-270	Sand - grey, poorly sorted, subangular, moderate amount of small gravel, argillaceous, moderately arkosic, small amounts of muscovite and epidote.
270-280	Sand - brown, fine to very coarse grained, poorly sorted, subangular, very argillaceous, abundant, muscovite, slightly to moderately arkosic, small amounts epidote and iron oxides.
280-290	Sand - reddish brown, poorly sorted, subangular, argillaceous, slightly silty, very ferruginous,(limonite), micaceous (muscovite),and arkosic.
290-300	Sand - sand and red clay in subequal amounts, moderate amount of light green clay, sand is poorly sorted, subangular, arkosic, micaceous (muscovite), with small amount of biotite and trace of pyrite.
300-310	As above.
310-326	Sand - purplish red, medium to coarse grained, fairly well sorted, subangular to subrounded, argillaceous, slightly silty, and arkosic, very micaceous (muscovite and weathered biotite), ferruginous, abundant magnetite, small amount of garnet.

GEOLOGIC SUMMARY

	ROCK UNIT	AGE
0-20	Columbia group	Pleistocene post-Miocene
20-80	~~Chesapeake group~~ Tc	Miocene
80-190	Pamunkey group	Eocene
190-326	Potomac group	Lower Cretaceous

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