

INTERVAL SHEET

WWCR 133

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VDMR WELL NO.: Well No. 1184

Date 11/16/64

Sample Interval: from 0 to 640

PROP: Ditchley Water Works

Total Depth 640

COMP: Fedderoff Bros.

Oil Gas Water X Exploratory

COUNTY: Northumberland

Cuttings X Core Other

VDMR WELL NO: W-1184

From-To	From-To	From-To	From-To	From-To
0 - 10	320 - 330	620 - 630	-	-
10 - 20	330 - 340	630 - 640	-	-
20 - 30	340 - 350	-	-	-
30 - 40	350 - 360	-	-	-
40 - 50	360 - 370	-	-	-
			No washed samples	
50 - 60	370 - 380	-	-	-
60 - 70	380 - 390	-	-	-
70 - 80	390 - 400	-	-	-
80 - 90	400 - 410	-	-	-
90 - 100	410 - 420	-	-	-
100 - 110	420 - 430	-	-	-
110 - 120	430 - 440	-	-	-
120 - 130	440 - 450	-	-	-
130 - 140	450 - 460	-	-	-
140 - 150	460 - 470	-	-	-
150 - 160	470 - 480	-	-	-
160 - 170	480 - 490	-	-	-
170 - 180	490 - 500	-	-	-
180 - 190	500 - 510	-	-	-
190 - 200	510 - 520	-	-	-
200 - 210	520 - 530	-	-	-
210 - 220	530 - 540	-	-	-
220 - 230	540 - 550	-	-	-
230 - 240	550 - 560	-	-	-
240 - 250	560 - 570	-	-	-
250 - 260	570 - 580	-	-	-
260 - 270	580 - 590	-	-	-
270 - 300	590 - 600	-	-	-
300 - 310	600 - 610	-	-	-
310 - 320	610 - 620	-	-	-

OWNER: Mrs. Alfred I. duPont
DRILLER: Fedderoff Brothers
COUNTY: Northumberland

VDMR: 1184
WWCR: 133
TOTAL DEPTH: 640'

GEOLOGIC LOG

Depth in feet

COLUMBIA GROUP (0-40')

- 0-10 Sand - gray, medium to coarse grained, clean, very well sorted, subangular to subrounded with small amount of frosted, well-rounded grains, slightly silty, trace of clay, very slightly glauconitic, small amounts garnet, epidote, phosphate, magnetite, and feldspar
- 10-20 Sand - buff, fine to medium grained, clean, well sorted, subangular, with small amount of well-rounded grains, slightly silty, trace of clay, very slightly glauconitic, small amounts of magnetite, garnet, phosphate and feldspar
- 20-30 Sand - buff with yellow cast, fine to medium grained, very well sorted, angular to subangular, trace of silt, trace of feldspar, much of quartz is iron-stained, small amounts phosphate, magnetite, glauconite, and garnet
- 30-40 Sand - gray, fine grained, well sorted, angular to subangular, moderately silty, slightly argillaceous, small amount phosphate, magnetite abundant, lesser amounts of garnet and weathered mica, trace of glauconite

YORKTOWN FORMATION (40-100')

- 40-50 Sand - gray, fine grained, clean, very well sorted, angular to subangular, slightly silty, glauconitic, small amounts of magnetite, muscovite and decomposed (kaolinitized) feldspar, trace of garnet, much quartz is stained green (ferrous iron?)
- 50-60 Sand - gray, very fine to medium grained, fairly well sorted, subangular, moderately argillaceous, moderately glauconitic, slightly ferruginous-limonite, a few hematite-magnetite nodules, small amounts of magnetite and muscovite, trace of pyrite, abundant comminuted shell material and echinoid spines

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- 60-70 Sand - gray, fine grained, very well sorted, angular to subangular, slightly silty, moderately glauconitic, magnetite, garnet, muscovite in small amounts, moderate amount comminuted shell material and a few echinoid spines
- 70-80 Sand - gray, very fine grained, very well sorted, subangular, slightly silty, moderately glauconitic, small amount magnetite, trace of garnet, scattered shell fragments
- 80-90 Clay - gray, with purple cast, moderate amount coarse to very coarse grained sand, some chitino-phosphatic material, very slightly ferruginous, large amount of shell material - pelecypods, gastropods, scaphopods
- 90-100 Shell - with very coarse sand and granules

CALVERT FORMATION (100-360')

- 100-110 Clay - greenish-gray, sandy, silty, fossiliferous, abundant very fine grained, very well sorted sand, moderately micaceous (muscovite), abundant shell fragments - pelecypods, scaphopods
- 110-120 "
- 120-130 Clay - greenish-gray, sandy and silty - moderate amount very fine grained, moderately glauconitic, sand, and very coarse grained silt, very well sorted, moderate amount muscovite, magnetite, small amount shell fragments
- 130-140 "
- 140-150 "
- 150-160 Clay - greenish-gray, very small amount of fine grained glauconitic sand, slightly micaceous, very small amount shell material
- 160-170 "
- 170-180 "
- 180-190 Clay - greenish-gray, extremely small amount of fine grained sand, moderate amount shell material, chitino-phosphatic in part

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- 190-200 Clay - greenish-gray, small amount very fine grained, slightly glauconitic, slightly micaceous sand, small amount shell material
- 200-210 Clay - gray, sandy-moderate amount very fine to fine grained well sorted sand, small amount shell material, small amount coarse sand
- 210-220 Sand - gray, very fine grained, very well sorted, subangular, extremely argillaceous, very small amount glauconite, slightly micaceous (muscovite), shell material including echinoid spines
- 220-230 Clay - gray, very slightly sandy, micaceous
- 230-240 Clay - greenish-gray, sandy-abundant, very fine grained, well sorted quartz sand, slightly micaceous (Muscovite), phosphate abundant as granules, plates, and as sand size grains larger than the quartz mode, scattered shell fragments
- 240-250 Clay - gray, sandy-moderate amount of very fine grained, well sorted sand, small amount phosphate, slightly micaceous
- 250-260 "
- 260-270 Clay - gray, very small amount fine grained sand
- 270-300 Clay - gray, virtually sand-free
- 300-310 Clay - gray, slightly sandy, very fine grained, well sorted sand
- 310-320 "
- 320-330 Clay - gray, virtually sand-free
- 330-340 "
- 340-350 Clay - gray with greenish cast, virtually sand-free
- 350-360 "

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CHICKAHOMINY FORMATION (360-420')

- 360-370 Clay - brown, sandy-medium to very-coarse grained, moderately well sorted, subangular quartz sand, moderate amount of phosphate, trace of glauconite, granules and plates, shell fragments abundant; foraminifers abundant
- 370-380 Clay - gray, sandy-medium to very coarse grained, moderately well sorted, subangular quartz sand, moderate amount shell material, moderate amount of phosphate-rounded, sand-size grains and plates
- 380-390 Sand - light gray, medium to coarse grained, well sorted, angular to subangular, very slightly argillaceous, moderate amount of phosphate (collophane?), trace of garnet, abundant shell fragments
- 390-400 Sand - gray, medium to coarse grained, fairly well sorted, angular to subangular, slightly argillaceous, moderate amount of phosphate, small amount of garnet, abundant shell fragments
- 400-410 Sand - gray, medium to coarse grained, fairly well sorted, angular to subangular, slightly argillaceous, moderate amount of phosphate, small amount of garnet, abundant shell fragments
- 410-420 Clay - gray, calcareous, slightly sandy-sand is poorly sorted, bioclastic, small amount coarse shell material, slightly glauconitic, very small amount of phosphate - mostly shell fragments; abundant micro-fauna

NANJEMOY FORMATION (420-480')

- 420-430 Sand - green, poorly sorted, extremely glauconitic, quartz sand very coarse grained, subangular to rounded, subordinate to glauconite, small amounts of finer sand grades, slightly argillaceous, moderate amount of phosphate, small amount muscovite, abundant shell material-pelecypods-mostly finely divided
- 430-440 Sand - grayish-green, fine to very coarse grained, poorly sorted, subangular to rounded quartz sand, very glauconitic, very argillaceous, abundant phosphate fragments and nodules, abundant shell fragments - pelecypods; some fish teeth and bone fragments

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- 440-450 Silt - grayish-green, well-sorted, slightly to moderately sandy, extremely glauconitic, very argillaceous, many occurrences of glauconite grains bound together by calcareous clay, (limestone fragments), small amount of phosphate, abundant, finely divided shell fragments
- 450-460 Sand - buff, very coarse grained, well sorted, subangular to subrounded quartz sand, very glauconitic - most of glauconite is highly oxidized (to limonite?), argillaceous - small amount gray, calcareous clay-white, highly calcareous clay very abundant, occurring as binder for groups of glauconite grains, moderate amount shell material-pelecypods and ramose bryozoa
- 460-470 Sand - black with greenish cast, medium to coarse grained, well sorted glauconite (85-90%), admixture of coarse to very coarse grained, subrounded quartz sand (10-15%), slightly argillaceous, a few shell fragments
- 470-480 Sand - black with greenish cast, medium grained, well sorted glauconite (65-75%), admixture of coarse to very coarse grained, subangular to subrounded quartz sand (25-35%), slightly argillaceous, a few shell fragments

MATTAPONI FORMATION (480-580')

- 480-490 Sand - black with greenish cast, fine to very coarse grained, poorly sorted glauconite (about 95%), small amount of quartz granules and very coarse grained, subrounded to rounded quartz sand, small amount of calcareous clay and finely divided shell material, traces of phosphate and muscovite
- 490-500 Sand - black, very coarse grained, well sorted, glauconite (95+%), small amount of very coarse grained, subrounded to rounded quartz sand, small amount of calcareous clay
- 500-510 Sand - black, medium to coarse grained, fairly well sorted glauconite (90%), small amount of coarse to very coarse grained, subrounded to rounded quartz sand, small amount calcareous-glauconitic silty clay, trace of shell material

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- 510-520 Sand - black, medium to coarse grained, fairly well sorted, glauconite (65-75%), quartz sand (25-35%), considerable amount of yellow and green, staining, ranges from medium grained, angular to subangular through very coarse grained, subrounded to rounded, small amount granules, slightly argillaceous, small amount shell material
- 520-530 Clay - light gray, calcareous, moderately sandy-sand is poorly sorted, angular to subangular, and micaceous (muscovite), small amount of glauconite, very slightly ferruginous, abundant shell fragments, some chitino-phosphatic; foraminifers abundant
- 530-540 Clay - greenish-gray, very sandy-most of sand fraction is fine to medium grained glauconite, moderate amount of coarse to very coarse grained, subrounded to rounded quartz sand, moderate amount rounded granules, small amounts pyrite muscovite, phosphate and shell fragments
- 540-550 " "
- 550-560 Sand - dark gray, very argillaceous, glauconite greater than quartz in subequal amounts, poorly sorted, moderate amount fresh green feldspar, phosphate nodules abundant, small amounts pyrite, muscovite, trace of garnet, shell material very abundant-ramose and encrusting bryozoans, uniserial foraminifera, echinoid spines, pelecypods, gastropods, shark teeth
- 560-570 " "
- 570-580 Sand - dark gray, very argillaceous, sand is poorly sorted, dominantly glauconite with subordinate amount of quartz and a small amount of green feldspar, small amount small gravel (granules), gray clay dominates, pink clay in subordinate amount, small amount shell material - bryozoans, trace of muscovite

PATUXENT FORMATION (580-640')

- 580-590 Sand - buff, very fine to very coarse grained, poorly sorted, subangular to subrounded, argillaceous-gray clay greater than pink clay, glauconitic, arkosic-including small amount green microcline, ferruginous, micaceous (muscovite), small amount shell material-uniserial foraminifera and bryozoans, small amount phosphate

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- 590-600 Sand - buff, medium to coarse grained, well sorted, sub-angular, very slightly silty and argillaceous, moderately glauconitic (about 5%), very arkosic, moderately micaceous (muscovite), small amount garnet, less of epidote, tourmaline
- 600-610 " "
- 610-620 Sand - gray, very coarse grained, well sorted, subangular to subrounded, moderately glauconitic (about 10%), moderately arkosic, moderately micaceous (muscovite), garnet relatively abundant, small amount epidote
- 620-630 Sand - dark gray, very argillaceous, sand is poorly sorted glauconite with a small amount of very coarse grained quartz sand and granules, moderately micaceous (muscovite), small amount phosphate, small amount shell material-uniserial foraminifera and pelecypods
- 630-640 Clay - gray, moderately sandy-sand is predominantly glauconite, moderately micaceous (muscovite), small amount shell material-uniserial foraminifera and pelecypods

GEOLOGIC SUMMARY

	<u>Rock Unit</u>	<u>Age</u>
0-40 [±]	Columbia Group	Pleistocene
40-100 [±]	Yorktown Formation	Late Miocene
100-360 [±]	Calvert Formation	Middle Miocene
360-420 [±]	Chickahominy Formation	Late Eocene
420-480 [±]	Nanjemoy Formation	Middle Eocene
480-580 [±]	Mattaponi Formation	Paleocene
580-640 [±]	Patuxent Formation	Early Cretaceous

Virginia Division of Mineral Resources
 Robert H. Teifke, Geologist
 November 24, 1964