

INTERVAL SHEET

WWCR - 97

Page 1 of 1

VDMR Well No: 1861

Date rec'd: 4/19/67

Sample Interval: from 0 to 681

PROP: Tides Inn Country Club

Number of samples: 65

COMP: Douglas & Dickinson

Total Depth: 681

COUNTY: Lancaster (Irvington)

Oil or Gas: Water: ^X Exploratory:

From-To	From-To	From-To	From-To
0 - 10	315 - 326	630 - 641	-
10 - 21	326 - 337	641 - 651	-
21 - 31	337 - 347	651 - 661	-
31 - 42	347 - 357	661 - 671	-
42 - 52	357 - 368	671 - 681	-
52 - 63	368 - 378	-	-
63 - 73	378 - 389	-	-
73 - 84	389 - 399	-	-
84 - 94	399 - 410	-	-
94 - 105	410 - 420	-	-
105 - 115	420 - 431	-	-
115 - 126	431 - 441	-	-
126 - 136	441 - 452	-	-
136 - 147	452 - 462	-	-
147 - 157	462 - 473	-	-
157 - 168	473 - 483	-	-
168 - 178	483 - 494	-	-
178 - 189	494 - 504	-	-
189 - 199	504 - 515	-	-
199 - 210	515 - 525	-	-
210 - 220	525 - 536	-	-
220 - 231	536 - 546	-	-
231 - 241	546 - 557	-	-
241 - 252	557 - 567	-	-
252 - 262	567 - 578	-	-
262 - 273	578 - 588	-	-
273 - 283	588 - 599	-	-
283 - 294	599 - 609	-	-
294 - 305	609 - 620	-	-
305 - 315	620 - 630	-	-

No washed samples

OWNER: Tides Inn Country Club (Carter)
DRILLER: Douglas and Dickinson, Inc.
COUNTY: Lancaster (Irvington)

VDMR: 1861
WWCR: 97
TOTAL DEPTH: 681'

GEOLOGIC LOG

Depth
in feet

COLUMBIA GROUP (0-31')

- 0-10 Clay — gray, locally yellow (limonitic), abundant silt and fine sand; traces of glauconite and muscovite; a few plant fragments and fragments of carbonaceous matter
- 10-21 Clay — mottled gray and yellowish-brown, moderately silty, very slightly sandy; moderately micaceous (muscovite); a few plant fragments; trace of glauconite
- 21-31 Sand — grayish-brown, moderately silty and clayey; fine- to coarse-grained, moderately sorted, subangular to subrounded; traces of muscovite, glauconite and biotite; a few plant fragments

YORKTOWN FORMATION (31-73')

- 31-42 Shell — pelecypod shells and shell fragments, subordinate amounts of corals, bryozons, echinoid spines, and gastropods (Turritella); sparse matrix of silt, sand, and brown and gray clays; traces of glauconite and phosphatic bone and shell fragments
- 42-52 " Turritella common
- 52-63 Shell — pelecypod shells and shell fragments, subordinate amounts of bryozoans, corals, echinoid spines, scaphopods and gastropods; matrix of fine-grained, well-sorted quartz sand; traces of glauconite and muscovite
- 63-73 " abundant matrix of very fine-grained, very well-sorted quartz sand with sparse binder of greenish-gray clay

CALVERT FORMATION (73-273')

- 73-84 Clay — gray, with pronounced purple cast, locally greenish-gray and silty; a few shell fragments
- 84-94 " a few plant fragments

OWNER: Tides Inn Country Club (Carter)

#1861

- 94-105 Silt and Clay — 50% greenish-gray, clayey silt; 50% purplish-gray sand and silt-free clay; a very few plant and shell fragments
- 105-115 " 60-70% greenish-gray, clayey silt; with a few zones of yellow, clayey silt, and a few zones of pure, pink clay
- 115-126 Silt — dark-gray, with greenish cast; clayey; well-sorted, angular
- 126-136 Clay — light-gray; a few shell fragments, plant fragments, and fragments of yellow-brown phosphorite
- 136-147 Sand — dark-gray, with greenish cast, moderately clayey; very fine-grained, very well-sorted, angular; a very few plant and shell fragments
- 147-157 Sand — medium-gray, moderately silty, clayey (calcareous in part); very fine- to very coarse-grained, poorly sorted, variably rounded; about 25% fossiliferous, arenaceous, and glauconitic limestone, including abundant coarse pelecypod shell fragments; small amount phosphatic fragments
- 157-168 Clay — dark-gray, with greenish cast; a few grains of glauconite, plant fragments, and shell fragments; a very few foraminifers (Nonion) and ostracods; limestone fragments
- 168-178 Clay — medium-gray, with greenish-cast, moderately silty, very slightly sandy; plant fragments and carbonaceous matter common; trace of shell material; slightly diatomaceous
- 178-189 Clay — light-gray, with greenish cast, slightly to moderately silty; plant fragments common; diatomaceous
- 189-199 Clay — light-gray, with greenish cast, uniformly moderately silty; diatomaceous
- 199-210 " very diatomaceous
- 210-220 " "
- 220-231 " "

OWNER: Tides Inn Country Club (Carter)

#1861

- 231-241 Clay — light-gray, with greenish cast, uniformly moderately silty; plant fragments common; extremely diatomaceous (Diatomaceous earth ?)
- 241-252 Clay — light-gray, with greenish cast, moderately silty, trace of sand; very diatomaceous; foraminifers common (mostly Siphogenerina); a few plant and shell fragments, and fragments of platey, yellow-brown phosphorite
- 252-262 Clay — light-gray, with greenish cast, very sandy, 10% coarse pelecypod shell fragments; sand is medium-grained, moderately sorted and rounded; plant fragments moderately abundant; fragments of brown phosphorite common; foraminifers common (Siphogenerina and a few Dentalina); slightly to moderately diatomaceous
- 262-273 " 20% coarse shell fragments, a few foraminifers (mostly Siphogenerina)
- CHICKAHOMINY FORMATION (273-337')
- 273-283 Clay — dark-brown, silty, very sandy, 15-20% coarse pelecypod shell fragments; sand is fine- to coarse-grained, moderately sorted, subangular to subrounded; quartz; very slightly glauconitic; echinoid spines fairly abundant; a few plant and bone fragments; foraminifers (small forms) moderately abundant
- 283-294 "
- 294-305 Clay — gray, calcareous; moderate amount clear quartz sand; small amount coarse-grained glauconite; a few ostracods; 5% coarse shell; foraminifers abundant
- 305-315 Clay — brownish-gray, silty, calcareous, very slightly sandy; a few fragments of fossiliferous and arenaceous (glauconitic) light-gray limestone; small amounts glauconite, phosphorite, muscovite; plant and shell fragments common; foraminifers and ostracods abundant
- 315-326 Sand — light brownish-gray, moderately clayey; fine- to very coarse-grained; poorly sorted, angular to subrounded; very slightly glauconitic, trace of phosphorite; small amount of fossiliferous and arenaceous (glauconitic) light-gray limestone; about 5% pelecypod shell fragments and a very few foraminifers

OWNER: Tides Inn Country Club (Carter)

#1861

326-337 Sand — light brownish-gray, moderately clayey; fine- to very coarse-grained, poorly sorted, angular to subrounded; very slightly glauconitic, trace of phosphorite; small amount of fossiliferous and arenaceous (glauconitic) light-gray limestone; about 5% pelecypod shell fragments and a very few foraminifers

NANJEMOY FORMATION (337-399')

337-347 Sand — brownish-gray, moderately clayey; fine- to coarse-grained, rather poorly-sorted; 60-70% clear to yellow- and brown-stained, angular to well-rounded quartz, and 30-40% glauconite and brown goethite after glauconite; traces of phosphorite, and plant and shell debris; a few fragments of arenaceous (glauconitic) limestone; a very few foraminifers

347-357 "

357-368 "

368-378 "

378-389 "

389-399 Sand — dark-gray, moderately clayey; medium-grained, fairly well-sorted; 50-60% glauconite and goethite after glauconite, and 40-50% clear to yellow- and brown-stained quartz; a few limestone, shell, and plant fragments

MATTAPONI FORMATION (399-494')

399-410 Sand — dark-gray, moderately silty and clayey (green clay); medium- to coarse-grained, moderately sorted; about 80% dominately fresh glauconite, 20% quartz; traces of phosphorite and muscovite; a few plant fragments and fragments of light-yellow, sand-free clay

410-420 " 20% medium greenish-gray, sand-free clay

420-431 Clay — medium greenish-gray; slightly to moderately glauconitic; a very few shell and plant fragments

431-441 " moderately sandy; sand is predominately fresh glauconite

OWNER: Tides Inn Country Club (Carter)

#1861

- 441-452 Clay — medium-gray, moderately sandy; sand is predominately fresh glauconite; plant fragments abundant
- 452-462 Sand and Clay — medium greenish-gray; sand (50%) is medium- to coarse-grained, moderately sorted; 50% glauconite, 50% quartz; abundant plant fragments; a few shell fragments; echinoid spines, foraminifers
- 462-473 "
- 473-483 " a few plant fragments and ostracods
- 483-494 Clay and Sand — dark-gray; sand (50%) is coarse, rather poorly-sorted, very glauconitic; a few shell and plant fragments; foraminifers (Pseudopolymorphina dumblei, Marginulina fragaria) common but not abundant; a few ostracods

*CALVERT FORMATION (494-546')

- 494-504 Clay — light-gray to pinkish sand-free, and medium greenish-gray and silty-sandy; sand is fine-grained, well-sorted angular; non-glauconitic; traces of shell and plant fragments
- 504-515 "
- 515-525 "
- 525-536 Sand — medium-gray, subordinately yellow, clayey (gray and yellow clays); medium- to coarse-grained, moderately sorted; 60-65% subrounded clear quartz, and 35-40% glauconite; a few plant fragments
- 536-546 Clay — greenish-gray and very silty (70%), and pinkish-gray and silt- and sand-free; non-glauconitic; a few plant and shell fragments

MATTAPONI FORMATION (546-609')

- 546-557 Sand — dark greenish-gray, clayey; fine- to coarse-grained, poorly sorted; 60% glauconite, 40% subrounded brown-stained quartz; a few shell and plant fragments and echinoid spines; a very few foraminifers

OWNER: Tides Inn Country Club (Carter)

#1861

557-567 Sand — dark greenish-gray, clayey; fine- to coarse-grained, poorly sorted; 60% glauconite, 40% sub-rounded brown-stained quartz; a few shell and plant fragments and echinoid spines; a very few foraminifers

567-578 " 65% quartz, 35% glauconite and goethite after glauconite

578-588 " 65% quartz, 35% glauconite and goethite after glauconite

588-599 Sand — dark greenish-gray, clayey (greenish-gray clay); medium- to coarse-grained, well-sorted; 85-90% fresh glauconite, 10-15% quartz; traces of muscovite, plant fragments, and shell fragments

599-609 " less clayey; 75% fresh glauconite, 25% quartz; a very few foraminifers

*NANJEMOY FORMATION (609-620')

609-620 Sand — greenish-brown, moderately clayey, a few small quartz pebbles and fragments of arenaceous (glauconitic) limestone; fine- to coarse-grained, poorly sorted; 70% quartz, 30% glauconite and goethite after glauconite; a few shell and plant fragments

*CHICKAHOMINY FORMATION (620-630')

620-630 Sand — brownish-gray, clayey; coarse- to very fine-grained, poorly sorted; clear quartz; traces of glauconite and shell fragments; a very few foraminifers

MATTAPONI FORMATION (630-641')

630-641 Clay — greenish-gray, very sandy; sand is coarse, very glauconitic; a few plant fragments; trace of foraminifers

*NANJEMOY FORMATION (641-651')

641-651 Sand — dark brownish-gray, moderately clayey; medium-grained, fairly well-sorted; very glauconitic; abundant goethite after glauconite, and brown- and yellow-stained quartz

OWNER: Tides Inn Country Club (Carter)

#1861

*CHICKAHOMINY FORMATION (651-661')

651-661 Sand — brownish-gray, very clayey; coarse, moderately sorted, subrounded clear quartz; traces of glauconite, phosphorite and biotite; a few shell fragments, echinoid spines, and foraminifers

PATUXENT FORMATION (661-681')

661-671 Sand — speckled, clean, a few granules; 25-30% medium- to coarse-grained fresh glauconite, 60-65% medium- to very coarse-grained, subrounded to rounded quartz, 5-15% fresh feldspar; trace of pyrite; a few shell fragments and Nodosaria

671-681 "

GEOLOGIC SUMMARY

	<u>ROCK UNIT</u>	<u>AGE</u>
0-31	Columbia Group	Pleistocene
31-73	Yorktown Formation	Late Miocene
73-273	Calvert Formation	Middle Miocene
273-337	Chickahominy Formation	Late Eocene
337-399	Nanjemoy Formation	Middle Eocene
399-494	Mattaponi Formation	Paleocene
494-546	Calvert Formation *	Middle Miocene
546-609	Mattaponi Formation	Paleocene
609-620	Nanjemoy Formation *	Middle Eocene
620-630	Chickahominy Formation *	Late Eocene
630-641	Mattaponi Formation	Paleocene
641-651	Nanjemoy Formation *	Middle Eocene
651-661	Chickahominy Formation *	Late Eocene
661-681	Patuxent Formation	Early Cretaceous

* As samples from nearby wells substantiate a normal stratigraphic sequence in this area, the repetition and occurrence of samples in this well from younger sediments below relatively older strata indicates some of the samples must have been inadvertently mislabeled at the time of collection.

Virginia Division of Mineral Resources
Robert H. Teifke, Geologist
June 20, 1967