

OWNER: Sydnor Hydrodynamics, Inc.
DRILLER: Sydnor Hydrodynamics, Inc.
COUNTY: Hanover (Atlee)

VDMR - 1770
WWCR - 98
TOTAL DEPTH - 370'

GEOLOGIC LOG

Depth in Feet

COLUMBIA GROUP (0-50)

- 0 - 10 Sand — reddish-brown, mottled gray, moderately clayey; very fine- to medium-grained, fairly well-sorted (skewed fine), angular to subangular; slightly feldspathic; a few plant fragments.
- 10 - 20 Sand — orange-brown, clean, a few granules; medium- to coarse-grained, well-sorted, subangular to subrounded; slightly feldspathic; trace of garnet.
- 20 - 30 "
- 30 - 40 " coarse- to very coarse-grained, fairly well-sorted, subangular to rounded.
- 40 - 50 Sand — orange-brown, clean, 10-15% granule-gravel; medium- to very coarse-grained, moderately-sorted, subangular to rounded; slightly feldspathic; trace of magnetite.

CALVERT FORMATION (60-120)

- 50 - 60 Sand — gray, slightly to moderately clayey, about 5% coarse-grained sand and granules; fine-grained, well-sorted, angular to subangular; traces of hornblende, micas, magnetite.
- 60 - 70 " moderately clayey.
- 70 - 80 Sand — gray, moderately clayey to clayey, about 10% shell fragments (gastropods, pelecypods, cephalopods); fine-grained, well-sorted, angular.
- 80 - 90 Clay — dark gray, with greenish cast, very sandy, a few shell fragments; sand is fine-grained, well sorted, angular; traces of muscovite, magnetite.
- 90 - 100 "
- 100 - 110 "
- 110 - 120 Sand — dark gray, with greenish cast, clayey; fine- to very fine-grained, well-sorted, angular; 1-2% platy phosphorite; traces of magnetite, glauconite, kyanite; vertebrae and bone fragments present.

NANJEMOY FORMATION (120-170)

- 120 - 130 Sand — brownish-gray, clayey; fine- to medium-grained, moderately-sorted; subequal amounts of clear quartz and fresh to slightly altered glauconite; small amounts phosphorite, muscovite, pyrite; vertebrae, teeth, and bone fragments account for most of phosphorite.
- 130 - 140 Silt and Clay — laminae of light-gray clay and medium- to dark-gray very coarse-grained silt and very fine-grained sand; silt is angular, micaceous, glauconitic.
- 140 - 150 "
- 150 - 160 Sand — Silt — very dark-gray, moderately clayey; coarse-grained silt to fine-grained sand, well-sorted, angular; clear quartz, with 10% glauconite, and 2-5% platy phosphorite; moderately micaceous (muscovite); trace of pyrite; scattered bone fragments, teeth, and shell fragments; a few very small foraminifers.
- 160 - 170 Sand — dark-gray, clayey; very fine-grained, well sorted, angular; about 2% each of glauconite, muscovite, and platy phosphorite; scattered shell fragments, teeth, bone fragments, very small foraminifers, and ostracods.

AQUIA FORMATION (170-220)

- 170 - 180 Sand — dark-gray, clayey; very fine-grained, well-sorted, angular; clear quartz, with about 10% glauconite; 2-4% platy phosphorite; traces of muscovite and pyrite; about 5% shell material, including pelecypods, gastropods, teeth, bone fragments, ostracods, and *Aquia* foraminifers (Nodosaria, Dentalina, Robulus).
- 180 - 190 " 10-15% glauconite; a few fragments of sandy limestone.
- 190 - 200 Sand — dark-gray, clayey; very fine-grained, well-sorted, angular; clear quartz, with 15-20% glauconite; small amounts of phosphorite and muscovite; about 5% shell fragments; *Aquia* foraminifers and a few teeth, bone fragments, and ostracods.
- 200 - 210 " about 10% shell fragments.
- 210 - 220 Sand — medium-gray, clayey, a few small pebbles and shards; fine- to very coarse-grained, poorly-sorted, angular to rounded; 10-20% glauconite; traces of muscovite and pyrite; about 5% shell fragments and a very few foraminifers.

PATUXENT FORMATION (220 - 370)

- 220 - 230 Sand — gray, clayey, about 5% granules and very small pebbles; medium- to very coarse-grained, moderately-sorted, variably rounded; slightly glauconitic and arkosic; a few shell fragments.
- 230 - 240 Sand and Gravel — gray, very slightly clayey; 60% gravel (2-6mm), and 40% coarse-grained sand; moderately arkosic, traces of glauconite, muscovite, pyrite, phosphorite; a few shell fragments.
- 240 - 250 "
- 250 - 260 "
- 260 - 270 "
- 270 - 280 "
- 280 - 290 "
- 290 - 300 "
- 300 - 310 "
- 310 - 320 "
- 320 - 330 "
- 330 - 340 "
- 340 - 348 "
- 348 - 352 Sand — gray, clayey, a few small rounded pebbles; medium-grained, well-sorted, subrounded; slightly arkosic; trace of muscovite.
- 352 - 360 Sand — light gray, moderately clayey, about 10% small pebbles (up to 10 mm); medium- to very coarse-grained, moderately-sorted, subangular to subrounded; moderately arkosic; a few shell fragments.
- 360 - 370 " slightly clayey, about 20% gravels (up to 15 mm).

PATUXENT FORMATION (220 - 370)

220 - 230	Sand — gray, clayey, about 5% granules and very small pebbles; medium- to very coarse-grained, moderately-sorted, variably rounded; slightly glauconitic and arkosic; a few shell fragments.
230 - 240	Sand and Gravel — gray, very slightly clayey; 60% gravel (2-6mm), and 40% coarse-grained sand; moderately arkosic, traces of glauconite, muscovite, pyrite, phosphorite; a few shell fragments.
240 - 250	"
250 - 260	"
260 - 270	"
270 - 280	"
280 - 290	"
290 - 300	"
300 - 310	"
310 - 320	"
320 - 330	"
330 - 340	"
340 - 348	"
348 - 352	Sand — gray, clayey, a few small rounded pebbles; medium-grained, well-sorted, subrounded; slightly arkosic; trace of muscovite.
352 - 360	Sand — light gray, moderately clayey, about 10% small pebbles (up to 10 mm); medium- to very coarse-grained, moderately-sorted, subangular to subrounded; moderately arkosic; a few shell fragments.
360 - 370	" slightly clayey, about 20% gravels (up to 15 mm). <i>Fragments of biot. granite saprolite.</i>

CHANGE ROLL CHANGE ROLL

GEOLOGIC SUMMARY

	<u>Rock Unit</u>	<u>Age</u>
0 - 50	Columbia Group	Pleistocene
50 - 120	Calvert Formation	Miocene
120 - 170	Nanjemoy Formation	Eocene
170 - 220	Aquia Formation	Eocene
220 - 370	Patuxent Formation	Early Cretaceous

Virginia Division of Mineral Resources
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