OWNER: Camp A. P. Hill (Rappahannock Site) VDMR: 1694
DRILLER: Sydnor Hydrodynamics, Inc. WWCR: 78
COUNTY: Caroline (Port Royal) TOTAL DEPTH: 473'

## GEOLOGIC LOG

Depth in feet

COLUMBIA GROUP (0-50')

| | |
|---|---|
| 0-10 | Sand — orange-brown, moderately argillaceous; poorly sorted; slightly feldspathic. |
| 10-20 | Sand and Gravel — brown, slightly argillaceous; gravel is well-sorted (granules), sand is poorly-sorted; both fractions arkosic with abundant blue quartz. |
| 20-30 | " |
| 30-40 | Sand — brown, slightly argillaceous; medium- to coarse-grained, well sorted; moderate amount of decomposed feldspar. |
| 40-50 | " medium- to very coarse-grained, moderately sorted. |

CALVERT FORMATION (50-150')

| | |
|---|---|
| 50-60 | Gravel and Silt — gray, very argillaceous; gravel (50-60%) is well-sorted (granules); silt (40-50%) has gray clay matrix with some sand; iron oxide coatings and gragments of ferricrete common in gravel fraction. |
| 60-70 | Silt — gray, very argillaceous, slightly sandy; trace of diatoms. |
| 70-80 | Clay — gray, very slightly silty and sandy, slightly diatomaceous. |
| 80-90 | " slightly silty and sandy. |
| 90-100 | Silt and Sand — gray, very argillaceous; very well-sorted coarse-grained silt and very fine-grained sand (1/32-1/8 mm); scattered grains and fragments of phosphorite; very slightly diatomaceous. |
| 100-110 | " trace of diatoms. |
| 110-120 | Clay — gray, moderately and uniformly silty; trace of diatoms. |
| 120-130 | " very slightly diatomaceous. |

130-140 Clay — gray, silty and sandy; very slightly diafomaceous; scattered grains and fragments of phosphorite and a trace of carbonaceous material.

140-150 "

PAMUNKEY GROUP (150-310')

150-160 Silt and Sand — dark gray, argillaceous; well sorted; 50-60% coarse-grained quartz silt and very fine-grained sand (1/32-1/8 mm), and 40-50% medium- to coarse-grained sand consisting of 50% fresh glauconite and 50% subrounded quartz; moderately micaceous (muscovite); small amount phosphorite (brown and gray); traces of carbonaceous material and pyrite; scattered molluscan shell fragments.

160-170 " 1-2% molluscan shell fragments, and a few small pebbles.

170-180 Sand — gray, argillaceous, about 5% well-sorted gravel (2-6 mm); very fine- to medium-grained, well sorted (skewed fine); 45% clear to greenish, angular quartz, and 45% fresh glauconite; glauconite is coarser-grained than quartz; scattered nodules, plates, and casts of phosphorite; small amounts muscovite and pyrite; about 5% shell fragments, and a very few foraminifers.

180-190 " less glauconite, slightly feldspathic.

190-200 Clay — gray, very silty and sandy; glauconitic; small amounts pyrite and phosphorite; about 5% molluscan shell fragments and a few foraminifers.

200-210 "

210-220 Sand — very dark gray, very argillaceous and silty, a few small pebbles; fine- to very fine-grained, very well sorted; 75% clear to greenish angular quartz, and 25% glauconite; minor amounts of phosphorite and muscovite; scattered molluscan shell fragments.

220-230 Sand — very dark gray, argillaceous; very fine-grained, well sorted, angular; 85% quartz, 15% glauconite; small amounts phosphorite and muscovite; a few molluscan (Turritella) and bryozoan shell fragments, and a very few vertebrate, fish teeth, and foraminifers.

230-240 Sand and Limestone — dark gray, argillaceous, a few small pebbles; very fine- to coarse-grained, fairly well sorted (skewed fine); about 30% glauconite; about 10% shell fragments (including Turritella), vertebrate, fish teeth, and a few large lenticulinid foraminifers; sand is locally cemented by carbonate (green, sandy limestone).

240-250 "

250-260 Sand — dark gray, silty and argillaceous; fine grained, well sorted; 65% angular quartz, 30% glauconite; small amounts phosphorite, pyrite, muscovite; 5% shell fragments, and a few fish teeth; locally cemented by carbonate.

260-270 "

270-280 "

280-290 "

290-300 "

300-310 " clay matrix is locally limonitic.

POTOMAC GROUP (310-470')

310-320 Sand — medium- to light-gray, argillaceous; a very few granules and very small pebbles; fine- to coarse-grained, rather poorly-sorted; slightly glauconitic (5-10%); moderately arkosic (white potassic feldspar); abundant blue quartz; small amounts of muscovite, phosphorite, and shell fragments.

320-330 " slightly- to moderately-argillaceous; about 2% glauconite.

330-340 " "

340-350 " about 5% granule gravel.

350-360 Sand — grayish-brown, slightly argillaceous; medium- to coarse-grained, well sorted; moderately arkosic; abundant blue quartz; slightly glauconitic; a few molluscan shell fragments.

360-370 " fine- to coarse-grained, moderately sorted.

370-380 " "

| | |
|---|---|
| 380-390 | Sand — grayish-brown, slightly argillaceous; fine- to coarse-grained, moderately sorted; moderately arkosic, abundant blue quartz; slightly glauconitic; a few molluscan shell fragments. |
| 390-400 | " |
| 400-410 | " |
| 410-420 | " |
| 420-430 | " |
| 430-440 | Sand — brown, argillaceous; fine- to coarse-grained, moderately sorted; moderately arkosic, very slightly glauconitic; trace of shell material. |
| 440-450 | Sand — brownish-gray, slightly argillaceous; medium- to very coarse-grained, moderately sorted; arkosic; slightly glauconitic. |
| 450-460 | " medium-grained to granules, moderately sorted. |
| 460-470 | Sand — gray, clean; medium-to very coarse-grained, fairly well sorted; moderately arkosic; abundant blue quartz; very slightly glauconitic. |

## GEOLOGIC SUMMARY

| | Rock Unit | Age |
|---|---|---|
| 0- 50 | Columbia Group | Pliocene-Pleistocene |
| 50-150 | Calvert Formation | Miocene |
| 150-310 | Pamunkey Group | Eocene |
| 310-470 | Potomac Group | Early Cretaceous |

Virginia Division of Mineral Resources
Robert H. Teifke - Geologist
October 5, 1966