

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF CONSERVATION AND ECONOMIC DEVELOPMENT

W#: 4838
C#: 197

MAILING ADDRESS:
B 3667
Charlottesville, VA 22903

DIVISION OF MINERAL RESOURCES
JAMES L. CALVER, COMMISSIONER
WATER WELL COMPLETION REPORT

OFFICE ADDRESS:
McCormick Road
Charlottesville, Virginia

OWNER: Westmoreland State Park #3 Mailing Address: Box 465, Montross, VA 22520

TENANT: same Mailing Address: _____

DRILLER: Sydnor Hydrodynamics, Inc. Mailing Address: P.O. Box 27186, Richmond, VA 23261

WELL LOCATION: County Westmoreland Approx. 1 ~~xx~~ miles North (direction) of
St. Rt. 3 and 200 ~~xx~~ feet West (direction) of St. Rt. 347

(GIVE DIRECTION AND DISTANCE IN FEET OR MILES FROM TWO REFERENCE POINTS - ROADS, TOWNS, RIVERS, ETC. - ON COUNTY HIGHWAY OR OTHER MAP.)

DATE STARTED: November 22, 1976 DATE COMPLETED: January 12, 1977

TYPE OF DRILL RIG USED: rotary TOTAL DEPTH 565 feet

WATER LEVEL: Stands 139' 8" feet below surface OR (completed at 490')

has NATURAL flow of - - gallons per minute

YIELD TEST: Method pump

Drawdown 83 feet

Rate 55 gal. per min.

Duration 48 hrs., - min.

HOLE SIZE: 12 inches from 0 to 500 feet

9 7/8 inches from 500 to 565 feet

_____ inches from _____ to _____ feet

SCREEN SIZE: 4 inches from 384 to 404 feet

4 inches from 423 to 438 feet

4 inches from 463 to 478 feet

CASE SIZE: 6 inches from +2 to 300 feet

4 inches from 300 to 565 w/spacer feet

_____ inches from _____ to _____ feet

WATER ZONES: from _____ to _____ feet

from _____ to _____ feet

from _____ to _____ feet

WATER: Color _____ Taste _____

Odor _____ Temp. _____ °F

WELL TO SUPPLY: (check one) Home _____

Farm _____ Town _____ School _____

Industry _____ Other Park

GROUTING: Method _____

Material _____ Depth 50 feet

PUMP: Type _____

Capacity _____ gal. per min

Depth of intake _____ feet

WATER ANALYSIS AVAILABLE: Yes X No _____

DRILL CUTTINGS SAVED: Yes X No _____

(DRILL CUTTINGS SHOULD BE COLLECTED AT 10 FOOT INTERVALS. THESE SAMPLES MAY BE SHIPPED TO THIS OFFICE EXPRESS COLLECT. SAMPLE BAGS ARE FURNISHED FREE OF CHARGE UPON REQUEST.)

REMARKS: Electric Log by driller.

LOG

FURNISHED BY: R. A. Turner

DATE: January 12, 1977

DEPTH (feet)		TYPE OF ROCK OR SOIL PENETRATED (gravel, clay, etc., hardness, color, etc.)	REMARKS (water, caving, shot, screen, sample, etc.)
FROM	TO		
0	10	Red - yellow clay	
10	30	Red sandy clay	
30	60	Blue Clay	
60	140	Green sandy clay	
140	200	Dark green sandy clay	
200	210	Green sandy clay and shells	
210	211	Rock	
211	214	Green sandy clay	
124	214'6"	Rock	
214'6"	230	Soft green sandy clay	
230	230'6"	Rock	
230'1"	251	Soft Green and gray sandy clay	
251	253	Gray clay and rock streaks	
253	300	Gray sandy clay	
300	310	Tough gray clay	
310	345	Gray clay and sand	
345	375	Tough green clay	
375	390	Sand with dark green clay	
390	400	Rock	
400	480	Fine to coarse sand, gray & black with some shells	
480	520	Black sand, shells with clay streaks	
520	540	Tough tan clay	
540	550	Soft green sandy clay	
550	565	Tough clay (tan)	

(Use additional forms if necessary)

VIRGINIA DIVISION OF MINERAL RESOURCES
Box 3667, Charlottesville, VA 22903

INTERVAL SHEET

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Well Repository No.: W#: 4838

Date rec'd: 4-26-77 Date Processed: 8-9-77

C#: 197
Sample Interval: from 0 to:565'

PROPERTY: Westmoreland State Park #3

Number of samples: 57

COMPANY: Sydnor Hydrodynamics

Total Depth: 565'

COUNTY: Westmoreland (Baynesville)

Oil or Gas: Water: Exploratory:

From-To	From-To	From-To	From-To	From-To
0 - 10	350 - 360	-	-	-
10 - 20	360 - 370	-	-	-
20 - 30	370 - 380	-	-	-
30 - 40	380 - 390	-	-	-
40 - 50	390 - 400	-	-	-
50 - 60	400 - 410	-	-	-
60 - 70	410 - 420	-	-	-
70 - 80	420 - 430	-	-	-
80 - 90	430 - 440	-	-	-
90 - 100	440 - 450	-	-	-
100 - 110	450 - 460	-	-	-
110 - 120	460 - 470	-	-	-
120 - 130	470 - 480	-	-	-
130 - 140	480 - 490	-	-	-
140 - 150	490 - 500	-	-	-
150 - 160	500 - 510	-	-	-
160 - 170	510 - 520	-	-	-
170 - 180	520 - 530	-	-	-
180 - 190	530 - 540	-	-	-
190 - 200	540 - 550	-	-	-
200 - 210	550 - 560	-	-	-
210 - 220	560 - 570	-	-	-
220 - 230	-	-	-	-
230 - 240	-	-	-	-
240 - 250	-	-	-	-
250 - 260	-	-	-	-
260 - 270	-	-	-	-
270 - 280	-	-	-	-
280 - 290	-	-	-	-
290 - 300	-	-	-	-
300 - 310	-	-	-	-
310 - 320	-	-	-	-
320 - 330	-	-	-	-
330 - 340	-	-	-	-
340 - 350	-	-	-	-

Washed and unwashed samples.

OWNER: Westmoreland State Park #3
DRILLER: Sydnor Hydrodynamics
COUNTY: Westmoreland
: (Baynesville)

W#: 4838
C#: 197
TOTAL DEPTH: 565'
QUAD: Stratford Hall

GEOLOGIC LOG

Depth
(feet)

- 0 - 10 Sand - very dark yellowish orange; heavily stained; slightly clayey; medium to coarse grained, some fine grains; subangular to subrounded; moderately well sorted; quartz; 10% ferricrete; feldspar; few opaques.
- 10 - 20 Sand - very dark yellowish orange; moderately to heavily stained; medium to coarse grained; subangular to subrounded; moderately well sorted; quartz; some feldspar; few grains of glauconite.
- 20 - 30 As above plus few granules; few pebbles.
- 30 - 40 Clay and sand - light olive gray; abundant clay; moderate sand; fine grained, some medium grains (stained); subangular to subrounded; well sorted; quartz; some ferricrete; some glauconite; few flakes of muscovite.
- 40 - 50 As above.
- 50 - 60 Clay - light olive gray, olive gray; slightly sandy; fine to medium grained; subangular to subrounded; moderately well sorted; quartz; some glauconite.
- 60 - 70 As above except moderate sand; few black phosphatic fragments; no glauconite.
- 70 - 80 Sand - light olive gray; moderate clay; fine grained, some medium grains; subangular to subrounded; well sorted; quartz; some black phosphatic material.
- 80 - 90 Clay - yellowish gray; abundant sand; fine grained, some medium grains; subangular to subrounded; well sorted; quartz; few black phosphatic fragments.
- 90 - 100 As above plus bone fragment.
- 100 - 110 As above except no bone fragment.
- 110 - 120 Sand - yellowish gray; abundant clay; fine grained; subangular to subrounded; well sorted; quartz; few black phosphatic fragments; few shell fragments.
- 120 - 130 As above except no shell fragments.

Depth
(feet)

- 130 - 140 Sand - yellowish gray; moderate clay; fine grained; subangular to subrounded; well sorted; quartz; few black phosphatic fragments; forams scarce (inc. Nonion and Buccella).
- 140 - 150 Sand - olive light gray; abundant clay; very fine to fine grained; subangular to subrounded; well sorted; quartz; few flakes of muscovite; forams (inc. Cibicides and Robulus).
- 150 - 160 As above except forams scarce (inc. Buccella).
- 160 - 170 Sand and clay - light olive gray; moderate clay; abundant sand; fine grained; subangular to subrounded; well sorted; quartz; some diatoms; few grains of glauconite; muscovite.
- 170 - 180 As above plus forams rare (inc. Textularia?)
- 180 - 190 Sand - olive light gray; moderate clay; fine grained; subangular to subrounded; well sorted; quartz; some diatoms; few black phosphatic fragments; few grains of glauconite.
- 190 - 200 As above except clay and sand; abundant clay; moderate sand.
- 200 - 210 Sand - olive light gray; moderate clay; medium to coarse grained, some fine grains, some granules; subangular to subrounded; moderately sorted; quartz; 2% glauconite; some black phosphatic material; some sandy limestone and shell fragments; few echinoid spines; forams rare (inc. Buccella).
- 210 - 220 Sand - olive light gray; moderate clay; medium grained, some fine grains, 10% granules, few pebbles; subangular to rounded; moderately sorted; quartz; 20% glauconite; 15% sandy limestone and shell fragments; 5% black phosphatic material; few flakes of muscovite; foram.
- 220 - 230 Sand - light olive gray; abundant clay; fine to medium grained; subangular to rounded; moderately well sorted; quartz; 30% glauconite; 10% sandy limestone and shell fragments; few flakes of muscovite; few black phosphatic fragments; few echinoid spines; forams (inc. Buccella, Robulus and Cibicides?)
- 230 - 240 As above except 20% glauconite; 2% sandy limestone and shell fragments; no Robulus.
- 240 - 250 Sand - olive light gray; slightly clayey; medium to coarse grained, some fine grains; subangular to subrounded; moderately well sorted; quartz; 3% glauconite; few black phosphatic fragments; forams scarce.
- 250 - 260 Sand - olive light gray; moderate clay; fine to coarse grained, few granules; subangular to subrounded; moderately sorted; quartz; 2% glauconite; some muscovite; some shell fragments; few black phosphatic fragments.

Depth
(feet)

- 260 - 270 Sand - olive light gray; moderate clay; fine to medium grained; some coarse grains; subangular to rounded; moderately well sorted; quartz; 35% glauconite; 5% shell fragments; some muscovite; ostracode.
- 270 - 280 As above except slightly clayey; no Robulus.
- 280 - 290 Sand - olive light gray; slightly clayey; fine to medium grained, some coarse grains; subangular to subrounded; moderately well sorted; 50% glauconite; quartz; 7% shell fragments; few flakes of muscovite; few bone fragments; forams scarce (inc. Buccella); ostracodes.
- 290 - 300 Sand - olive light gray; moderate clay; fine to medium grained; subangular to subrounded; moderately well sorted; quartz; 15% glauconite; 3% shell fragments; some muscovite; forams (inc. Robulus and Globulina); bone fragment; ostracode.
- 300 - 310 Sand - olive light gray; abundant clay; medium grained, some coarse grains; subangular to rounded; well sorted; 70% glauconite; quartz; few shell fragments; muscovite.
- 310 - 320 As above plus some fine grains; moderately well sorted.
- 320 - 330 Sand - olive light gray; slightly clayey; medium to coarse grained, some fine grains; subrounded to rounded; moderately well sorted; 60% glauconite; quartz, few flakes of muscovite; few shell fragments.
- 330 - 340 As above.
- 340 - 350 As above except moderate clay; some shell fragments.
- 350 - 360 Sand - olive light gray; abundant clay; fine to coarse grained; subangular to rounded; moderately sorted; 50% glauconite; quartz; some shell fragments; few flakes of muscovite.
- 360 - 370 Sand - olive light gray; some stained grains; slightly clayey; medium to coarse grained, some fine grains, some granules; subangular to rounded; moderately sorted; 50% glauconite; quartz; few shell fragments; muscovite.
- 370 - 380 As above except moderate clay - olive light gray, light gray, grayish orange pink.
- 380 - 390 Sand - olive light gray; some stained grains; moderate clay; medium to coarse grained, few granules; subangular to rounded; moderately well sorted; 50% glauconite (black, brown); quartz; some sandy limestone and shell fragments; few flakes of muscovite.
- 390 - 400 As above except no clay.

Depth
(feet)

- 400 - 410 Sand - olive light gray; slightly clayey; medium to coarse grained; subangular to subrounded; moderately well sorted; quartz; 40% glauconite (black, brown); few shell fragments; muscovite.
- 410 - 420 As above.
- 420 - 430 Sand - olive light gray; medium to coarse grained; subangular to rounded; moderately well sorted; quartz; 40% glauconite (black, green, brown); few shell fragments; muscovite; forams rare (inc. Nodosaria).
- 430 - 440 As above plus some fine grains; no Nodosaria.
- 440 - 450 As above plus few sandy limestone fragments; forams (inc. Buccella).
- 450 - 460 Sand - olive light gray; medium grained, some coarse grains, few granules; subangular to rounded; well sorted; quartz; 40% glauconite; 2% sandy limestone and shell fragments; few flakes of muscovite; forams (inc. Buccella and Robulus).
- 460 - 470 As above except 50% glauconite; forams scarce (inc. Buccella).
- 470 - 480 As above plus some slightly to heavily stained grains; forams rare (inc. Nodosaria).
- 480 - 490 As above except slightly clayey; forams scarce (inc. Nodosaria and Robulus).
- 490 - 500 Sand - olive light gray; medium to coarse grained; subangular to rounded; moderately well sorted; quartz; 40% glauconite; 5% sandy limestone fragments; few shell fragments; muscovite; forams (inc. Buccella and Robulus).
- 500 - 510 As above except 50% glauconite; few sandy limestone fragments; forams scarce (inc. Robulus and Nodosaria).
- 510 - 520 As above except 2% sandy limestone and shell fragments; forams (inc. Buccella and Dentalina?).
- 520 - 530 Sand - olive light gray; slightly clayey; medium to coarse grained, few granules; subangular to rounded; moderately well sorted; quartz; 40% glauconite; 3% sandy limestone and shell fragments; few flakes of muscovite; forams (inc. Buccella).
- 530 - 540 As above except 25% glauconite.
- 540 - 550 As above except 3% granules; moderately sorted; 10% sandy limestone and shell fragments; forams scarce (inc. Buccella).

Depth
(feet)

- 550 - 560 Sand - olive light gray; moderate clay; coarse grained to granular; subangular to subrounded; moderately sorted; quartz; 20% glauconite; some feldspar; few flakes of muscovite.
- 560 - 565 As above plus some light brown clay; 15% glauconite.

Logged by: Michael T. Currie
May 7, 1979

GEOLOGIC SUMMARY

<u>Depth</u> <u>(feet)</u>	<u>Thickness</u> <u>(feet)</u>	<u>Rock Unit</u>	<u>Time Rock Unit</u>
0- 30	30	Columbia Group	Pleistocene
30- 80	50	Choptank Formation	Miocene
80- 200	120	Calvert Formation	Miocene
200- 370	170	Nanjemoy Formation	Eocene
370- 380	10	Marlboro Clay	Eocene
380- 565	185	Aquia Formation	Eocene-Cretaceous

VIRGINIA DIVISION OF MINERAL RESOURCES
David A. Hubbard, Jr., Geologist
June 28, 1979