

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF CONSERVATION AND ECONOMIC DEVELOPMENT

MAILING ADDRESS:

B- 3667
C- Charlottesville, VA 22903

DIVISION OF MINERAL RESOURCES

JAMES L. CALVER, COMMISSIONER

OFFICE ADDRESS:

McCormick Road
Charlottesville, Virginia

WATER WELL COMPLETION REPORT

OWNER: James City County Authority Mailing Address: James City Court House Williamsburg, Virginia 23185

TENANT: Long Hill Road Water Works #2 Mailing Address: _____

DRILLER: Sydnor Hydrodynamics, Inc. Mailing Address: P. O. Box 27186, Richmond, Va. 23266

WELL LOCATION: County James City Approx. 1.7 ^{x1000} miles East (direction) of
Route 614 and 3500 ^{feet} ~~x1000~~ North (direction) of Route 612

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

DATE STARTED: 6/8/73 DATE COMPLETED: 7/3/73

TYPE OF DRILL RIG USED: Rotary TOTAL DEPTH 402 feet

WATER LEVEL: Stands 117' 8" feet below surface OR
has NATURAL flow of _____ gallons per minute.

YIELD TEST: Method Submersible

Drawdown 27' 6" feet

Rate 300 gal. per min.

Duration 24 hrs., _____ min.

HOLE SIZE: 22 inches from 0 to 50 feet

17 inches from 50 to 290 feet

9-7/8 inches from 290 to 402 feet

SCREEN SIZE: 6 inches from 225 to 260 feet

6 inches from 264 to 274 feet

WATER ZONES: from 225 to 260 feet

from 264 to 274 feet

from _____ to _____ feet

CASE SIZE: 8 inches from +2 to 225 feet

6 inches from 260 to 264 feet

6 inches from 274 to 280 feet

WATER: Color Clear Taste _____

Odor _____ Temp. _____ °F

WELL TO SUPPLY: (check one) Home _____

Farm _____ Town _____ School _____

Industry _____ Other County

GROUTING: Method Pressure

Material Cement & Water Depth 50 feet

PUMP: Type _____

Capacity _____ gal. per min

Depth of intake _____ feet

WATER ANALYSIS AVAILABLE: Yes No _____

40

DRILL CUTTINGS SAVED: Yes 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 Ran - Well #2

LOG

FURNISHED BY: Sydnor Hydrodynamics, Inc.

DATE: July 3, 1973

DEPTH (feet)		TYPE OF ROCK OR SOIL PENETRATED (gravel, clay, etc., hardness, color, etc.)	REMARKS (water, caving, shot, screen, sample, etc.)
FROM	TO		
0	2	Top Soil	
2	10	Brown Clay	
10	20	Pink Clay	
20	30	Brown and Pink Clay	
30	60	Brown Clay	
60	67	Shells	
67	90	Brown Clay	
90	137	Gray Marl and Shells	
137	220	Gray Marl	
220	257	Brown Sandy Clay and Shells	
257	277	Rock	
277	327	Gray Clay and Shells	
327	342	Gray Clay	
342	350	Brown Clay	
350	370	Gray and Brown Clay	
370	390	Black Sand	
390	402	Gray Clay	

(Use additional forms if necessary)

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

INTERVAL SHEET

Page 1 of 1

Well Repository No.: C- 166
 W- 3977

Date rec'd: 9/27/73 Date Processed: 7/17/74 Sample Interval: from 0 to: 400'

PROPERTY: James City County
 (Long Hill Rd. Water Work #2)

Number of samples: 40

COMPANY: Sydnor Hydrodynamics

Total Depth: 402'

COUNTY: James City (Williamsburg)

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	-	-	-	-
60 - 70	-	-	-	-
70 - 80	-	-	-	-
80 - 90	-	-	-	-
90 - 100	-	-	-	-
100 - 110	-	-	-	-
110 - 120	-	-	-	-
120 - 130	-	-	-	-
130 - 140	-	-	-	-
140 - 150	-	-	-	-
150 - 160	-	-	-	-
160 - 170	-	-	-	-
170 - 180	-	-	-	-
180 - 190	-	-	-	-
190 - 200	-	-	-	-
200 - 210	-	-	-	-
210 - 220	-	-	-	-
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	-	-	-	-

Both washed and unwashed samples

OWNER: James City Co. Service Authority VDMR #3977
(Long Hill Rd. Water Works #2) WWCR # 166
DRILLER: Sydnor Hydrodynamics, Inc. TOTAL DEPTH: 402'
COUNTY: James City

GEOLOGIC LOG

Depth
(feet)

BACONS CASTLE FORMATION (0-60')

- 0-10 Sand - tan with red blebs; slightly silty; fine to medium; moderate sorting; angular to subangular.
- 10-20 Clay - grayish tan to pink; slightly sandy.
- 20-30 Sand - pinkish tan; silty; fine; moderate sorting; subangular to subrounded; trace glauconite; few granule to pebble quartz clasts.
- 30-40 Sand - tan; silty; fine to medium; moderate sorting; well rounded; slightly feldspathic; few granule to pebble quartz clasts.
- 40-50 Sand - tan; clayey; medium; moderate sorting; subrounded to well rounded; slightly feldspathic.
- 50-60 Sand - tan; silty; clay laminae; fine to coarse; poor sorting; subrounded to well rounded; trace glauconite; ferricrete.

YORKTOWN FORMATION (60-190')

- 60-70 Sand - tan; slightly silty and clayey; fine to coarse; poor to moderate; subangular to subrounded; slight glauconite; shell fragments 5% ("Pectin").
- 70-80 Sand - tan; slightly silty; fine to medium; moderate sorting; subrounded; slight glauconite; shell fragments 15-20%; minor gypsum; Isognomen?.
- 80-90 Sand - tan; slightly silty; fine; moderately well sorted; subangular to subrounded; slight glauconite; shell fragments 15-20% Isognomen?.
- 90-100 Sand - gray; slightly clayey; fine; moderately well sorted; subangular to subrounded; slight glauconite; shell fragments 20-30%; Isognomen?.

OWNER: James City Co. Service Authority
(Long Hill Rd. Water Works #2)

#3977

Depth
(feet)

- 100-110 Sand - gray; very slightly clayey; fine; moderate sorting; subangular to subrounded; slight glauconite; shell fragments 30%.
- 110-120 Sand - greenish gray; very slightly clayey; fine to very fine; moderate to moderately well sorted; subangular; slight glauconite; shell fragments 5%.
- 120-130 Sand - greenish gray; very slightly clayey; fine to very fine; moderate to moderately well sorted; subangular; slight glauconite; shell fragments; gypsum; muscovite.
- 130-140 Sand - greenish gray; very slightly clayey; fine to very fine; moderate to moderately well sorted; subangular; slight glauconite; shell fragments; forams (Robulus); muscovite.
- 140-150 Sand - greenish gray; very slightly silty; fine to very fine; moderate to moderately well sorted; subangular; slight glauconite; echinoid spines; forams (Bulimina, Robulus); rare gypsum and muscovite.
- 150-160 Sand - greenish gray; silty; fine to very fine; moderate sorting; subangular to subrounded; slight glauconite; shell fragments; forams; gypsum rare.
- 160-170 Sand - greenish gray; silty; fine; moderate to moderately well sorted; subangular to well rounded; slight glauconite; rare muscovite.
- 170-180 Sand - greenish gray, silty; fine; poor to moderate sorting; subangular to rounded; slight glauconite.
- 180-190 Sand - greenish gray; silty; fine; moderate sorting; subangular to rounded; slight glauconite; shell fragments, echinoid spines; forams (Nonion).
- CALVERT FORMATION (190-270')
- 190-200 Clay - greenish gray; silty; sharks teeth; small amount of very fine quartz sand.

OWNER: James City Co. Service Authority
(Long Hill Rd. Water Works #2)

#3977

Depth
(feet)

- 200-210 Clay - greenish gray; silty; shell fragments; sharks teeth; small amount of very fine quartz sand.
- 210-220 As above
- 220-230 As above
- 230-240 Sand - greenish gray; clayey, silty; very fine to fine; poor to moderate sorting; subangular to subrounded; shell and bone fragments; sharks teeth; forams (Marginulina, Siphogenerina, Robulus, Nonion).
- 240-250 Sand - greenish gray; clayey, silty; fine; to moderate sorting; subangular to subrounded; shell fragments; sharks teeth; forams (Nonion, Robulus, Bolivina).
- 250-260 Sand - greenish gray; silty to clayey; fine to medium; moderate sorting; subrounded; trace glauconite; shell fragments 50%; sharks teeth; echinoid spines; forams (?Buliminella); gypsum.
- 260-270 Sand - greenish gray; silty to clayey; fine to medium; poor sorting; subrounded; trace glauconite; shell fragments of bluish gray limestone with green to black sand size of glauconite grains.
- NANJEMOY FORMATION (270-370')
- 270-280 Limestone - tan; sandy; aphanic, slight glauconite; shell fragments.
- 280-290 Sand - greenish gray; slightly clayey; fine to medium; moderate sorting; subangular to subrounded; common glauconite; shell fragments; forams abundant (Robulus, Textularia, Discorbis); ostroacodes (Clinthrocytheridea).
- 290-300 Sand - dark greenish gray; glauconitic 50-60%; slightly clayey; fine; moderate to moderately well sorted; sub-rounded to rounded; shell fragments; forams rare.

OWNER: James City Co. Service Authority
(Long Hill Rd. Water Works #2

#3977

Depth
(feet)

- 310-320 Sand - dark greenish gray; glauconitic 60-70%; clayey; fine; moderate to moderately well sorted; subrounded to rounded; forams and ostracodes rare.
- 320-330 Sand - dark greenish gray; glauconitic 80 +%; clayey; fine; moderate to moderately well sorted; subrounded to rounded; forams (Entosolenia); brown glauconite decreasing, green abundant.
- 330-340 Sand - dark greenish gray; glauconitic 90%; clayey fine; moderate to moderately well sorted; subrounded to rounded; forams (?Rotalia).
- 340-350 Clay - pink; glauconitic (common)
- 350-360 Clay - pink to gray; glauconitic (abundant); scattered quartz grains.
- 360-370 As above
- MATTAPONI FORMATION (370-400')
- 370-380 Sand - greenish gray; clayey; glauconitic 80-90%; fine; moderate to moderately well sorted; rounded; quartz and clay equal 10 to 20%.
- 380-390 As above with sharks teeth; increasing brown glauconite.
- 390-400 Sand - tan; clayey; glauconitic 50+%; fine; moderate to moderately well sorted; rounded.
- 400-402 No sample.

GEOLOGIC SUMMARY

<u>Thickness (feet)</u>	<u>Rock Unit</u>	<u>Time Rock Unit</u>
60	Bacons Castle Formation	Pleistocene
130	Yorktown Formation	Pliocene - Miocene
80	Calvert Formation	Miocene - Eocene
100	Nanjemoy Formation	Eocene
30	Mattaponi Formation	Eocene - Cretaceous

Virginia Division of Mineral Resources
Eugene K. Rader
May 3, 1978