

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF CONSERVATION AND ECONOMIC DEVELOPMENT

MAILING ADDRESS:

DIVISION OF MINERAL RESOURCES

OFFICE ADDRESS:

B 3667
Charlottesville, VA 22903

JAMES L. CALVER, COMMISSIONER

McCormick Road
Charlottesville, Virginia

WATER WELL COMPLETION REPORT

2100 Pocahontas Trail

OWNER: Busch Properties, Inc. #1

Mailing Address: Williamsburg, Virginia 23185

TENANT: _____

Mailing Address: _____

DRILLER: Syndor Hydrodynamics, Inc.

Mailing Address: P. O. Box 27186, Richmond, VA.

23261

WELL LOCATION: County James City

Approx. 6600 ^{feet} Southwest (direction) of

Route 60

and 7600

^{feet}
~~miles~~

East

(direction) of Colonial Parkway

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

DATE STARTED: 6/11/73

DATE COMPLETED: 7/23/73

TYPE OF DRILL RIG USED: Rotary

TOTAL DEPTH 510 feet

WATER LEVEL: Stands 118 feet below surface OR

has NATURAL flow of _____ gallons per minute.

YIELD TEST: Method Turbine

HOLE SIZE: 22 inches from 0 to 350 feet

Drawdown 89' 9" feet

17 1/2 inches from 350 to 480 feet

Rate 1200 gal. per min.

9-7/8 inches from 480 to 510 feet

Duration 24 hrs., _____ min.

SCREEN SIZE: 8 inches from 347 to 350 feet

Same as Screen Settings

WATER ZONES: from _____ to _____ feet

8 inches from 424 to 438 feet

from _____ to _____ feet

8 inches from 444 to 454 feet

from _____ to _____ feet

CASE SIZE: 8 inches from 457 to 463 feet
18 inches from +2 to 350 feet

WATER: Color _____ Taste _____

8 inches from 300 to 347 feet

Odor _____ Temp. _____ °F

Attach Sketch

WELL TO SUPPLY: (check one) Home _____

GROUTING: Method Pressure

Farm _____ Town _____ School _____

Material Cement-Water Depth 350 feet

Industry _____ Other _____

PUMP: Type _____

WATER ANALYSIS AVAILABLE: Yes No _____

Capacity _____ gal. per min

DRILL CUTTINGS SAVED: 50 Yes No _____

Depth of intake _____ feet

(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: Collected 13 Aug. 73 RF Bowe

E-Log

LOG

FURNISHED BY: _____ DATE: _____

DEPTH (feet)		TYPE OF ROCK OR SOIL PENETRATED (gravel, clay, etc., hardness, color, etc.)	REMARKS (water, caving, shot, screen, sample, etc.)
FROM	TO		
0	15	Yellow Sand, Clay	
15	25	Yellow Clay, some Shells	
25	35	Blue Clay, Shells	
35	50	Shells, White Clay	
50	75	Sand, Shells, some Gray Clay	
75	100	Blue Clay, Shells, some Gray Sand	
100	110	Sand, Shells, small amount of Gray Clay	
110	120	Blue Clay, Shells	
120	210	Blue Clay, some fine Sand	
210	230	Soft Blue Clay and Sand	
230	240	Tough Gray Clay	
240	250	Soft Gray Clay and Sand	
250	270	Green Clay with some Sand and Shells	
270	300	Soft Green Clay with some Sand	
300	335	Gray Sand Clay	
335	350	Tough Gray Clay	
350	360	Tough Green Clay	
360	370	Soft Green Sand Clay	
370	380	Sand, Clay	
380	381	Shell Rock	
381	390	Sand and Green Clay with some Shells	
390	410	Tough Sand Clay	
410	430	Soft Sand and Gray Clay	
430	468	Gray Sand with some Clay	
468	480	Tough Gray Sand, Clay	
480	490	Soft Sand, Clay	
490	510	Tough Gray Sand, Clay	

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

INTERVAL SHEET

Page 1 of 1

Date rec'd: 8/22/73 Date Processed: 6/17/74

PROPERTY: Busch Properties

COMPANY: Sydnor

COUNTY: James City (Williamsburg)

Well Repository No.: ~~RX~~ W-3925
C- 165

Sample Interval: from 0 to: 510

Number of samples: 50

Total Depth: 510

Oil or Gas: Water: X Exploratory:

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

Samples split and washed

OWNER: Busch Properties
DRILLER: Sydnor
COUNTY: James City (Williamsburg)

W#: 3925
C#: 165
TOTAL DEPTH: 510'

GEOLOGIC LOG

Depth
(feet)

WINDSOR FORMATION (0-20)

0-10 Sand and clay - light brown to gray; pure gray clay; sand with abundant light brown clay; silty; very fine to some medium grained; subangular; moderately sorted; quartz; 2% shell fragments (weathered); opaques; weathered glauconite; few forams; spine.

10-20 Sand - cream; abundant clay; medium to coarse grained; subangular to rounded; moderately well sorted; quartz; feldspar; minor ilmenite.

YORKTOWN FORMATION (20-90)

20-30 Sand - gray; abundant clay (some yellow mostly gray); abundant silt; fine to medium grained; subangular to rounded; poorly sorted; quartz; 35% shell fragments; 15% glauconite; spines; few phosphatic grains.

30-40 Coquina - tanish gray; gray clay lenses; medium grained sand; rounded; moderately sorted; 50% shell hash; 20% quartz; 20% glauconitic spines.

40-50 Coquina - light gray; 80% shell fragments; fine to medium grained, moderately sorted quartz and glauconite sand; spines; forams (Discorbis); ostracode (Clithrocytheridea).

50-60 Sand - light gray; medium grained; subangular to subrounded; well sorted; quartz; 15% shell fragments (inc. Mercenaria); some glauconite; some phosphatic material; spines; forams rare.

60-70 Sand - gray; moderate clay; medium; subrounded; well sorted; quartz; 30% shell fragments (inc. gastropods, Mercenaria, Isognomen ?); 10% glauconite; some phosphatic material; spines; forams rare (Textularia).

70-80 Sand - gray; slightly clay; medium grained; subrounded; well sorted; quartz; 40% shell fragments (inc. Isognomen ?); 5% glauconite; some black phosphatic material; spines; ostracode.

Depth
(feet)

80-90 Sand - gray; slightly clayey; fine to medium grained; sub-angular to rounded; moderately well sorted; quartz; 25% shell fragments; some glauconite; some phosphatic material; spines; forams rare (Nonion).

CALVERT FORMATION (90-290)

90-100 Sand - gray; moderately clayey; fine grained; subangular to subrounded; well sorted; quartz; 10% shell fragments (inc. gastropod); 3% spines; 2% glauconite; ostracodes; forams rare.

100-110 Sand - gray; slightly clayey; fine grained; subangular to subrounded; well sorted; quartz; 7% shell fragments; 3% spines; trace of glauconite; some black phosphatic material; forams (Discorbis); ostracodes.

110-120 Sand - gray; abundant clay; fine grained; subangular to subrounded; well sorted; quartz; 15% shell fragments; 6% spines; trace glauconite; some phosphatic material; ostracodes abundant (inc. Actinocytheresis (sp)); forams (inc. Textularia).

120-130 Sand - gray; abundant clay; fine grained; subangular to subrounded; well sorted; quartz; 2% shell fragments; 2% spines; some glauconite; some black phosphatic material; abundant ostracodes (inc. Murrayina howei) and forams (inc. Buccella).

130-140 Clay - gray; scattered angular to subrounded fine quartz sands; few shell fragments; few phosphate grains; few glauconite grains; spines.

140-150 As above.

150-160 As above.

160-170 As above except 7% shell fragments; some phosphatic material inc. teeth; forams common (inc. Nonion and Bulimina); bone fragments inc. fish vertebra.

170-180 Clay - purplish gray; 7% shell fragments (inc. gastropod); some phosphatic material; forams common (inc. Nonion, Bulimina and Lagena (sp)); few spines and bone fragments; ostracode.

Depth
(feet)

- 180-190 Clay - light gray; locally sandy; fine to medium grained; subangular to rounded; moderately sorted; quartz; 10% shell fragments (inc. gastropod); few grains of phosphatic material and glauconite; forams common (inc. Nonion and Bulimina); spines.
- 190-200 Clay - light gray; some quartz; 3% shell fragments; some black phosphatic material and glauconite; forams (inc. Nonion, Bulimina and Textularia); spines; ostracode.
- 200-210 Clay - gray; 4% shell fragments; some grains of quartz and phosphatic material; a few grains of glauconitic; forams (inc. Nonion, Quinqueloculina and Buccella); ostracode (Actinocythereis); spine.
- 210-220 As above except (Nonion only); no ostracode.
- 220-230 As above except moderate amount of quartz sand; (+Bulimina).
- 230-240 As above.
- 240-250 Clay - gray; abundant sand; medium grained; subangular to subrounded; moderately sorted; quartz; some black phosphatic material inc. sharks teeth; some shell fragments; few grains of glauconite; forams common (inc. Siphogenerina, Nonion, Uvigerina, Bulimina, Cibicides cf. americanus, and Textularia); spines; bone fragments.
- 250-260 Sand and clay - gray; clay interlayered with clayey sand; abundant clay; medium to coarse grained; subangular to subrounded; moderately sorted; quartz; 40% shell fragments; 3% black phosphatic material inc. sharks teeth; some clay fecal pellets; forams common (inc. Siphogenerina, Robulus, Marginulina, and Uvigerina); bone fragments inc. vertebra.
- 260-270 Sand - gray; abundant clay; silty; medium to coarse grained; subrounded; moderately sorted; quartz; 25% shell fragments; 2% black phosphatic material inc. teeth; forams common (inc. Robulus, Siphogenerina, Nonion and Marginalina); bone fragments.
- 270-280 As above except subangular to subrounded; plus (Bulimina and Uvigerina); spines.
- 280-290 As (260-270) except subangular to subrounded; (no Nonion, but Cibicides and Uvigerina); few grains of glauconite; spines.

Depth
(feet)

NANJEMOY FORMATION (290' to 370')

- 290-300 Sand and limestone - gray; moderate clay; silty; medium to coarse grained; subangular to subrounded; moderately sorted; quartz; 30% shell and limestone fragments; 5% glauconite; some phosphatic material inc. sharks teeth; forams abundant (inc. Uvigerina, Robulus, Bulimina and Nonion); spines.
- 300-310 Sand - gray; abundant clay; silty; medium to coarse grained; subangular to rounded; moderately sorted; quartz; 9% glauconite; 7% shell and limestone fragments; some phosphatic material; forams abundant (inc. Uvigerina, Robulus, ^{*Montasaria*} Dentalina and Globigerina); pyrite; ostracode.
- 310-320 Sand - gray; abundant clay; medium grained; subangular to rounded; moderately well sorted; quartz; 10% brown, black and green glauconite; 5% shell and limestone fragments; some phosphatic material inc. sharks tooth; forams abundant (sp) (inc. Uvigerina); pyrite, spines.
- 320-330 Sand - brownish gray; moderate clay; fine to coarse grained; rounded; moderately well sorted; quartz; 45% brown some black glauconite; muscovite; some shell fragments; few limestone fragments; pyrite; forams rare; spines.
- 330-340 As above except some forams.
- 340-350 As (320-330) except some forams (inc. Nonion and Siphogenerina).
- 350-360 Clay - gray and pink; slightly sandy; 60% glauconite; 40% rounded quartz; muscovite; some shell fragments; a few forams (inc. Robulus); spines.
- 360-370 Clay and sand - pink and green respectively; pink clay locally slightly sandy; green sand abundantly clayey; medium to coarse grained; subrounded to rounded; moderately well sorted; 80% glauconite (green and black); 20% quartz; few weathered shell fragments; forams rare; spines; sharks tooth fragment.

MATTAPONI FORMATION (370' - 400')

- 370-380 Sand and clay - light green and pink (clay) moderately clayey; medium to coarse grained; rounded; moderately well sorted; 75% glauconite; 20% quartz; 2% shell fragments inc. gastropod; forams common (inc. Uvigerina, Siphogenerina, Nonion, Dentalina and Robulus); spines rare. ^{*Nedocgrita*}

Depth
(feet)

- 380-390 Sand and clay - gray with some pink clay fragments; moderate clay; medium to coarse; rounded; moderately well sorted; 70% glauconite; 20% quartz; 2% shell fragments; some sandy limestone fragments; forams (inc. Uvigerina, Siphogenerina and Dentalina (sp)); spines rare.
- 390-400 Sand - dark gray; moderate clay; medium grained; rounded; well sorted; 80% glauconite; 18% quartz; few shell fragments; forams abundant (inc. Globigerina, Buccella, Bulimina, Robulus, Siphogenerina and Dentalina); spines rare.
- PATUXENT FORMATION (400' - 500')
- 400-410 Sand - dark gray; abundant clay; fine to granular grained; subangular to rounded; poorly sorted; quartz; 35% glauconite; feldspar; muscovite; forams common (inc. Buccella, Nonion, Siphogenerina and Dentalina); garnets; spines.
- 410-420 Sand - salt and pepper gray; moderate clay; fine to granular grained; subangular to rounded; moderately sorted; quartz; feldspar; 25% glauconite; some muscovite; garnet; forams; a few shell fragments; spines; pyrite.
- 420-430 No Sample.
- 430-440 Sand and granules; moderately clayey; medium to granular grained; subangular to rounded; moderately sorted; quartz; feldspar; 7% glauconite; garnet.
- 440-450 As above except slightly clayey; 5% glauconite.
- 450-460 Sand - sand and pepper light gray; slightly clayey; medium to coarse grained; subangular to rounded; well sorted; quartz; feldspar; 7% glauconite; garnet.
- 460-470 Sand and granules - light gray; slightly clayey; medium to granular grained; subangular to rounded; moderately sorted; quartz; feldspar; 3% glauconite; garnet.
- 470-480 Sand - light gray; moderately clayey; fine to medium grained with some granules; subangular to subrounded; moderately sorted; quartz; feldspar; 3% glauconite; muscovite; garnet rare.
- 480-490 As above except slightly clayey.

Depth
(feet)

- 490-500 Sand and pebbles - light gray; moderately clayey; fine sand to pebbles; 40% pebbles; subrounded to rounded; poorly sorted; quartz; feldspar; trace of glauconite; muscovite; garnet; few shell fragments.
- 500-510 Sand and clay - light yellowish brown; abundant clay; silty; angular to subrounded; poorly sorted; quartz; feldspar; 3% glauconite; 2% muscovite; garnet.

Note Sp: Sample taken

GEOLOGIC SUMMARY

<u>Thickness</u> <u>(feet)</u>	<u>Rock Unit</u>	<u>Time Rock Unit</u>
20	Windsor Formation	Pleistocene
70	Yorktown Formation	Pliocene-Miocene
200	Calvert Formation	Miocene-Eocene
80	Nanjemoy Formation	Eocene
30	Mattiponi Formation	Eocene-Cretaceous
60+	Patuxent Formation	Cretaceous

Virginia Division of Mineral Resources
David A. Hubbard, Jr. Geologist
June 5, 1978