

OWNER: City of Franklin, Well # 7
DRILLER: Layne-Atlantic Company
COUNTY: Southampton (Franklin)

VDMR: 1952
WWCR: 397
TOTAL DEPTH: 760'

GEOLOGIC LOG

Depth in feet

COLUMBIA GROUP (0-30')

- 0-2 No sample
- 2-10 Sand - pale orange-brown, moderately clayey; fine- to coarse-grained, poorly sorted, angular to subrounded; abundant white feldspar in coarse fraction
- 10-12 Sand - tan, clean; coarse- to very coarse-grained, well-sorted, subrounded; feldspathic
- 12-30 Sand - sparse binder of bright, mottled clay; medium- to very coarse-grained, well-sorted (skewed coarse) and grades into granule gravel, subangular to subrounded; feldspathic; trace of muscovite

YORKTOWN AND MATTAPONI FORMATIONS (30-174')

- 30-100 Shells and Clay - 60% valves, and fragments of valves, of a single species of pelecypod with a length of 10-20 mm; 40% moderately-sandy gray clay; sand is fine-grained, well-sorted, angular; trace of glauconite; echinoid spines common; a few foraminifers and ostracods
- 100-143 Sand - black, sparse clay binder, 10% shell fragments, mostly pelecypods, and a few gastropods, scaphopods, bryozoans, worm borings, fish teeth and bone fragments; medium-grained, moderately sorted; 50% angular to subangular limpid quartz; 50% dark- and light-green autochthonous glauconite; pyrite common as aggregates of minute crystals, and as partial replacement of glauconite grains; phosphorite common as sand-size pellets, small nodules, and bone and shell fragments
- 143-145 No sample
- 145-174 Sand - black, sparse clay binder, 10% shell fragments, mostly pelecypods, and a few gastropods, worm borings, echinoid spines, bone fragments and fish teeth; medium-grained, fairly well-sorted; 40-50% angular to subangular limpid quartz; 50% dark- to light-green autochthonous glauconite; 10% fragments of white- to dark-greenish-gray calcitic, glauconitic sandstone; slightly pyritic; some replacement of glauconite by pyrite; small amount of pelletal and fragmental phosphorite; rare foraminifers (Textularia)

TRANSITIONAL BEDS (174-305')

- 174-179 Sand - tan, fairly clean, a very few shell fragments; medium- to very coarse-grained, moderately sorted (skewed coarse), subangular to subrounded; slightly to moderately feldspathic (white, weathered feldspar); minor garnet; medium-sand fraction is very glauconitic (caving?)
- 179-204 Clay - mottled-gray and orange-brown, 2-5% shell fragments, very sandy; sand is very fine- to medium-grained, moderately sorted, angular to subangular; 15% glauconite, 5% muscovite; a very few foraminifers and echinoid spines
- 204-260 Clay - dark-gray, sand-free to very silty and sandy, 10% pelecypod shell fragments, 10% fragments of fine-grained, well-sorted, calcitic, glauconitic sandstone; sand is fine, fairly well-sorted, and angular, with 5% each of glauconite and muscovite; slightly pyritic; a few foraminifers and echinoid spines
- 260-305 Clay - Bright, variegated, sandy, a few shell fragments; sand is fine-grained, fairly well-sorted, angular; 20% glauconite, 5% muscovite; traces of pyrite and phosphorite

PATUXENT FORMATION (305-760')

- 305-388 Sand - slightly clayey; coarse- to very coarse-grained sand, with 10-20% granule gravel; fairly well-sorted, subangular to subrounded; clear quartz and abundant fresh feldspar
- 388-420 Sand - sparse matrix of gray clay; coarse- to very coarse-grained sand, with 10% granule gravel; fairly well-sorted, subangular to rounded; feldspathic; trace of garnet
- 420-455 " "
- 455-470 Sand - abundant matrix of variegated clay, 10% granule gravel; fine- to very coarse-grained, poorly sorted, angular to rounded; coarse fractions are feldspathic; fine fractions are slightly glauconitic; minor garnet and pyrite; muscovite common; a few shell fragments
- 470-490 Sand - sparse binder of brown clay; coarse- to very coarse-grained, with 10% granule gravel; well-sorted, subrounded; very feldspathic; minor garnet and glauconite
- 490-510 " "
- 510-550 Sand - abundant matrix of variegated clay, 20% granule gravel; fine- to very coarse-grained, poorly-sorted, angular to rounded; coarse fractions are feldspathic; fine fractions are slightly glauconitic; micaceous
- 550-560 Sand - binder of brown and gray clays; medium- to very coarse-grained, with 25% granule gravel; fairly well-sorted, subrounded; feldspathic; minor garnet; locally cemented by pyrite
- 560-610 " "

- 610-620 Sand - moderately-abundant matrix of tan clay, 15% granule gravel; fine- to coarse-grained, rather poorly sorted, angular to subrounded; feldspathic in coarser fractions; slightly glauconitic in fine fraction; minor muscovite and garnet
- 620-666 " "
- 666-720 " "
- 720-750 Sand - sparse binder of brown clay, trace of granule gravel; coarse- to very coarse-grained, fairly well- sorted, subangular to subrounded; feldspathic; traces of garnet and glauconite
- 750-760 Clay - mottled reddish-brown and greenish-gray, compact, sandy, 15% small pebbles (5-10 mm); sand is fine- to very coarse-grained, poorly -sorted, variably rounded; feldspathic; minor fine-grained glauconite

GEOLOGIC SUMMARY

	<u>Rock Unit</u>	<u>Age</u>
0-30	Columbia Group	Pleistocene
30-174	Yorktown and Mattaponi Formations	Miocene - Late Cretaceous
174-305	Transitional beds	Late Cretaceous
305-760	Patuxent Formation	Early Cretaceous

Virginia Division of Mineral Resources
 Robert H. Teifke, Geologist
 November 15, 1967
 Robert H. Teifke
 March 3, 1972

COMMONWEALTH OF VIRGINIA

DEPARTMENT OF CONSERVATION AND ECONOMIC DEVELOPMENT

MAILING ADDRESS:

DIVISION OF MINERAL RESOURCES

OFFICE ADDRESS:

3667

JAMES L. CALVER, COMMISSIONER

McCormick Road

Charlottesville, VA 22903

WATER WELL COMPLETION REPORT

Charlottesville, Virginia

OWNER: City of Franklin Mailing Address: Franklin, Virginia

TENANT: Well #7 Mailing Address:

DRILLER: Layne-Atlantic Company Mailing Address: P.O. Box 7095, Norfolk, Va. 23509

WELL LOCATION: County Southampton XXXX NW of XXXX feet Franklin in the (direction) of Hunterdale and miles (direction) of

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

DATE STARTED: 5/11/67 DATE COMPLETED: 6/15/67

TYPE OF DRILL RIG USED: Rotary TOTAL DEPTH 617'4" feet (Pilot hole to 760')

WATER LEVEL: Stands 190 feet below surface OR has NATURAL flow of gallons per minute

YIELD TEST: Method HOLE SIZE: 24 inches from 0 to 350 feet see remarks Drawdown feet inches from feet Rate gal. per min. inches from feet Duration hrs., min. SCREEN SIZE: inches from feet see remarks

WATER ZONES: from see remarks to feet from feet from feet CASE SIZE: 20 inches from 0 to 350 feet see remarks

WATER: Color clear Taste good Odor none Temp. °F inches from feet

WELL TO SUPPLY: (check one) Home Farm Town X School Industry Other GRROUTING: Method Pressure pumped Material Cement Depth 350 feet PUMP: Type Turbine

WATER ANALYSIS AVAILABLE: Yes X No Capacity gal. per min DRILL CUTTINGS SAVED: Yes X 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: Water zones: 355-360', 380-390', 410-420', 450-460', 480-490', 575-595', 605-610', 10" Armco Screen set each water zone. Total of 70' of screen. 10" casing at 300±355', 360±380', 390±410', 420±450', 460±480', 490±575', 595±605', 610±617'4".

FURNISHED BY: Layne-Atlantic Company

DATE: August 16, 1967

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	Yellow clay	
10	11	Coarse sand	
11	30	Yellow clay	
30	100	Blue marl or clay, some shell	
100	135	Blue clay, shell, fine sand	
135	145	Tight packed sand, shell, some blue clay	
145	147	Hard sandstone	
147	166	Black sand	
166	168	Hard streak	
168	170	Black sand	
170	171	Hard streak	
171	174	Black sand	
174	176	Medium hard	
176	179	Gray sand, fine to coarse	
179	204	Gray clay, tight and sticky	
204	206	Medium hard streak	
206	260	Marl, shell, gravel, granite and some sand	
260	305	Multi-colored clay	
305	388	Sand and brown clay mixed, fine to coarse cut good, lot of sand	
388	420	Brown clay, small amount of sand	
420	455	Some clay, mostly fine to coarse sand	
455	470	Blue and black clay	
470	490	Fine to coarse sand	
490	510	Fine to coarse sand, some clay	
510	550	Hard slow drilling, brown and blue clay	
550	560	Sandy clay	
560	610	Fine to coarse sand, small amount of clay	
610	620	Hard sandstone, sand and clay	
620	635	Fine to coarse sand, small gravel with small amount of clay	
635	666	Fine to coarse sand, small gravel, good bit of clay, about 1/2 @ 1/2	
666	720	Hard dry clay and sandstone	
720	750	Sand, hard packed, fine to coarse, some hard streaks	
750	760	Drilled hard sand and clay	

INTERVAL SHEET

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VDMR Well No: 1952

Date rec'd: 8/31/67

Sample Interval: from 2' to: 760'

PROP: Town of Franklin #7

Number of samples: 24

COMP: Layne-Atlantic Co.

Total Depth: 760'

COUNTY: Southampton (Franklin)

Oil or Gas: Water^X Exploratory:

From-To	From-To	From-To	From-To
2 - 10	-	-	-
10 - 12	-	-	-
12 - 30	-	-	-
30 - 100	-	-	-
100 - 143	-	-	-
-	-	-	-
145 - 174	-	-	-
174 - 179	-	-	-
179 - 204	-	-	-
204 - 260	-	-	-
260 - 305	-	-	-
305 - 388	-	-	-
388 - 420	-	-	-
420 - 455	-	-	-
455 - 470	-	-	-
470 - 490	-	-	-
490 - 510	-	-	-
510 - 550	-	-	-
550 - 560	-	-	-
560 - 610	-	-	-
610 - 635	-	-	-
635 - 666	-	-	-
666 - 720	-	-	-
720 - 750	-	-	-
750 - 760	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

All intervals have both washed and unwashed samples.