

COMMONWEALTH OF VIRGINIA  
DEPARTMENT OF CONSERVATION AND ECONOMIC DEVELOPMENT

MAILING ADDRESS:

DIVISION OF MINERAL RESOURCES

OFFICE ADDRESS:

Box 3667

JAMES L. CALVER, COMMISSIONER

McCormick Road

Charlottesville, VA 22903

WATER WELL COMPLETION REPORT

Charlottesville, Virginia

OWNER: NABISCO, INC. Mailing Address: 425 Park Ave. New York, N. Y.

TENANT: Daniel Construction Company of Va. Mailing Address: P. O. Box 6737, Richmond, Va 23230

DRILLER: Atlantic Pump and Equipment Co. Inc. Mailing Address: P. O. Box 4009, Richmond, Va 23224

WELL LOCATION: County Henrico Approx. .7 <sup>feet</sup> miles South (direction) of  
Charles City Rd. (Richmond) and Adjacent ~~to~~ Laburnum Ave. (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: December 14, 1971 DATE COMPLETED: January 23, 1972

TYPE OF DRILL RIG USED: Hydraulic Rotary TOTAL DEPTH 345 feet

WATER LEVEL: Stands 60 feet below surface OR  
has NATURAL flow of \_\_\_\_\_ gallons per minute.

YIELD TEST: Method Submersible

Drawdown 108 feet

Rate 12 gal. per min.

Duration 8 hrs., 0 min.

WATER ZONES: from 150 to 160 feet

from 200 to 209 feet

from \_\_\_\_\_ to \_\_\_\_\_ feet

WATER: Color None Taste None

Odor None Temp. \_\_\_\_\_ °F

WELL TO SUPPLY: (check one) Home \_\_\_\_\_

Farm \_\_\_\_\_ Town \_\_\_\_\_ School \_\_\_\_\_

Industry  Other \_\_\_\_\_

WATER ANALYSIS AVAILABLE: Yes  No \_\_\_\_\_

DRILL CUTTINGS SAVED: Yes 32 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: E L by USGS

HOLE SIZE: 10 inches from 0 to 345 feet

\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ feet

\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ feet

SCREEN SIZE: 6 inches from 149 to 159 feet

6 inches from 199 to 209 feet

\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ feet

CASE SIZE: 6 inches from 0 to 149 feet

6 inches from 159 to 199 feet

Gravel # 2 inches from 51 to 345 feet

GROUTING: Method Pressure

Material Cement Depth 51 feet

PUMP: Type Submersible

Capacity 10 GPM gal. per min

Depth of intake 168 feet

# LOG

FURNISHED BY: Atlantic Pump & Equipment Co., Inc. DATE: January 28, 1972

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	Fill Dirt	
2	4	Top Soil	
4	22	Yellow Clay	
22	45	Brown Sand	
45	105	Blue Mall	
105	108	Black Sand	
108	120	Blue Mall	
120	125	Gray Sandy Clay W/Gravel	
125	150	Coarse Gravel	
150	168	Brown Sand	
168	172	Gray Clay	
172	197	Sand & Clay	
197	228	Fine Sand	
228	245	Red Clay	

(Use additional forms if necessary)

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

INTERVAL SHEET

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Well Repository No: 3443

Date rec'd: 3/20/72 Date Processed: 4/7/72

Sample Interval: from 0 to: 340

PROPERTY: Daniel Construction Co.  
(Nabisco, Inc.)

Number of samples: 32

COMPANY: Atlantic P & E Co.

Total Depth: 345'

COUNTY: Henrico (Richmond)

Oil or Gas: Water: x Exploratory:

From-To	From-To	From-To	From-To
0 - 10	-	-	-
10 - 20	260 - 70	-	-
20 - 30	270 - 80	-	-
30 - 40	280 - 90	-	-
40 - 50	290 - 300	-	-
50 - 60	300 - 10	-	-
60 - 70	310 - 20	-	-
70 - 80	320 - 30	-	-
80 - 90	330 - 40	-	-
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	-	-	-

All intervals have both washed and unwashed samples

OWNER: Daniel Const. Co. (Nabisco, Inc.)  
DRILLER: Atlantic Pump & Equipment Co., Inc.  
COUNTY: Henrico (Richmond)

W-3443  
C-206  
TOTAL DEPTH: 345'

GEOLOGIC LOG

Depth  
(feet)

COLUMBIA GROUP (0-40')

- 0-10 Clay - pale orange-brown aspect, variegated; very silty and sandy
- 10-20 Sand - tan, sparse clay binder; fine- to coarse-grained, fairly well sorted (negatively skewed), angular to subangular; chalky-white decomposed feldspar cleavage fragments fairly common (up to 10 percent); magnetite an abundant accessory; trace of garnet; all grains are more-or-less iron-stained
- 20-30 Sand - brown, trace of clay; coarse-grained sand grading into abundant granule gravel, fairly well sorted, subangular to subrounded; slightly feldspathic and lithic; a few fragments of ferricrete; iron-stained
- 30-40 Sand - brown, trace of clay, scattered rounded pebbles up to 15 mm; fine- to very coarse-grained, poorly sorted, angular to rounded; slightly feldspathic and lithic; a few fragments of ferricrete; traces of magnetite, muscovite, garnet; iron-stained; small amount of gray clay described below

CALVERT FORMATION (40-80')

- 40-50 Clay - gray, fairly compact, locally mottled orange-brown
- 50-60 Sand - gray, clayey; very fine-grained, very well sorted, angular; clear quartz with trace of glauconite
- 60-70 "
- 70-80 " except: locally light-gray, sand-free, very slightly diatomaceous

## MATTAPONI FORMATION (80-100')

80-90 Sand - dark brownish-gray, slightly clayey; fine- to very fine-grained, well sorted; 60 to 70 percent clear to green-tinted angular quartz, and 30 to 40 percent dark green glauconite; trace of muscovite

90-100 " except: with abundant matrix of dark brownish-gray clay, numerous soft chalky fragments of pelecypods and Turritella, and a trace of the glauconite-permeated fine-grained quartz-feldspar-phosphorite-gastropod cast gravel that characterizes the base of the Mattaponi in this area

This sample also contains numerous small rock fragments of Patuxent aspect -- medium-grained, well sorted, slightly micaceous quartz sand bound by white (kaolinitic ?) clay; mainly these are free fragments, some of them mottled bright orange-brown; others, however, are embedded in the clayey glauconitic lithology described above with the textural relationships indicating a natural association. The kaolinitic fragments, therefore, are thought to be Patuxent intraclasts incorporated in the overlying glauconitic strata of the Mattaponi Formation by natural processes

Gamma log is consistent with placement of Patuxent-Mattaponi contact at 100'

## PATUXENT FORMATION (100-220')

100-110 " (consists mainly of glauconitic sand from higher in the section.)

110-120 Sand and Gravel - sparse matrix of white to yellowish-white clay; sand (90 percent) is medium- to very coarse-grained, moderately sorted, subangular to subrounded; clear and yellowish quartz with about 15 percent fresh gray feldspar, accessory muscovite, and rare garnet; gravel (about 10 percent) consists of rounded pebbles of quartz

(5 to 20 mm) and feldspar (2 to 6mm); a few fragments of glauconite-bearing brightly variegated clay also occur

- 120-130 Gravel - shards and rounded pebbles, mainly 10 to 20 mm in diameter, of quartz, feldspar, quartzite, kaolinite, and bedded chert (?); very subordinate amount of coarse, poorly sorted sand of similar composition
- 130-140 Gravel - rounded pebbles and broken rounds, 2 to 20 mm in diameter, of quartz, quartzite, feldspar, and firmly cemented, white, kaolinitic (?) sandstone; grades into coarse, poorly sorted sand of similar composition
- 140-150 " except: finer (2 to 10 mm), more feldspathic, with about 15 percent sand
- 150-160 Sand-Gravel - brownish-gray, trace of clay (as coatings on grains); medium-grained sand to granule gravel, sorting is fair, subangular to rounded; very feldspathic (25 to 40 percent); minor constituents are rock fragments (about 5 percent), muscovite, and phosphorite; trace of garnet
- 160-170 " except: sand ranges to fine-grained and gravel to 6 mm
- 170-180 Sand and Gravel - sparse matrix of light-gray to white clay; bimodal; sand (80 percent) is fine- to very coarse-grained, rather poorly sorted, angular to rounded, feldspathic (fresh gray and decomposed white grains); gravel (20 percent) is fine-grained (4 to 8 mm), well sorted, rounded
- 180-190 Sand and Gravel - matrix of light-gray to white clay; sand (50 to 60 percent) is coarse- to very coarse-grained grading into granule gravel, moderately sorted, subrounded to rounded; sand fraction is very feldspathic (fresh and decomposed feldspars) with accessory garnet; gravel (40 to 50 percent) consists mainly of rounded pebbles and broken rounds, 5 to 20 mm in diameter, of quartz, feldspar, quartzite, kaolinite, kaolinitic sandstone, and dark-gray aphanitic crystalline rock

- 190-200            "
- 200-210        "        except: gravel is finer-grained (mainly 2-5 mm)  
                          and gradational with the sand fraction
- 210-220        No sample
- NEWARK GROUP (220-340')   (Gamma log indicates contact at 215')
- 220-230        Sand - binder of multi-colored clay, mainly brick-red  
                          and pale-green small scale intercalations with  
                          pockets of bright-yellow; sand is coarse- to  
                          very coarse-grained and grades into about 15  
                          percent granule gravel; fairly well sorted,  
                          subangular to subrounded; clear quartz and  
                          gray, dull-white, and yellowish feldspar  
                          (vacuolized and kaolinized perthite and micro-  
                          cline); fine-grained muscovite and chloritized  
                          biotite are common accessories
- 230-240        Sand - gray with reddish-cast, sparse clay binder; very  
                          fine- to very coarse-grained, rather poorly sorted,  
                          positively skewed, angular to subangular; quartz,  
                          fresh and decomposed feldspar, muscovite,  
                          biotite, fine-grained glauconite; traces of garnet  
                          and black shell fragments; grains commonly  
                          stained red
- 240-250        "        except: coarser
- 250-260        No sample
- 260-270        Sand and Clay - finely and irregularly interlaminated  
                          brick-red (predominant), pale grayish-green,  
                          and bright-yellow (subordinate) clays (40 to  
                          50 percent) occur as irregularly distributed  
                          matrix and sand-free micaceous lenses; non-clay  
                          fraction (50 to 60 percent) ranges from very  
                          fine-grained sand to granule gravel, poorly sorted,  
                          very feldspathic, moderately micaceous (muscovite  
                          and chloritized biotite); fine-grained glauconite  
                          common, plant remains and carbonaceous fragments  
                          rare.

270-280	"	
280-290	"	except: with about 5 percent quartz gravel up to 10 mm, and with lenses of fairly well-indurated sand-free, brick-red clay
290-300	Clay and Sand -	mottled to thinly and irregularly inter-laminated -- mainly bright-yellow, white, and dark-gray sand-free clays (about 50 percent); sand laminae are coarse, poorly sorted, arkosic, with moderately abundant matrix of dull reddish-brown clay
300-310	Clay -	brick-red, incipiently fissile, with abundant white mottles; 10 percent rounded gravel, mainly quartz, up to 15 mm; coarse feldspathic sand is irregularly distributed throughout the interval, but the dominant brick-red clay is largely sand-free
310-320	Sand -	abundant matrix and lenses of multi-colored silty clay with brick-red aspect (up to 40 percent); 5 to 10 percent small pebbles; sand is fine- to very coarse-grained, very poorly sorted, feldspathic
320-330	"	
330-340	"	

#### GEOLOGIC SUMMARY

<u>Depth</u> <u>(feet)</u>	<u>Rock Unit</u>	<u>Age</u>
0-40	Columbia Group	post-Miocene
40-80	Calvert Formation	Miocene
80-100	Mattaponi Formation	Paleocene-Late Cretaceous
100-220	Patuxent Formation	Early Cretaceous
220-340	Newark Group	Triassic

Virginia Division of Mineral Resources  
Robert H. Teifke - Geologist  
April 21, 1972