

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF CONSERVATION AND ECONOMIC DEVELOPMENT

W# 4972
C# 166

MAILING ADDRESS:
Box 3667
Charlottesville, VA 22903

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

OFFICE ADDRESS:
McCormick Road
Charlottesville, Virginia

OWNER: Gordon Evans Mailing Address: 157 Berrywood Drive

TENANT: KOA Campground Mailing Address: Severna Park, Md. 21146

DRILLER: Douglas Drilling Co., Inc. Mailing Address: Box 498, Warsaw, Va. 22572

WELL LOCATION: County Northumberland Approx. 0.4 feet miles NE (direction) of
Route 644 and Route 650 and 300 feet from end of 650 (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: _____ DATE COMPLETED: September 24, 1976

TYPE OF DRILL RIG USED: Rotary TOTAL DEPTH 682 feet

WATER LEVEL: Stands 16 feet below surface OR
has NATURAL flow of _____ gallons per minute.

YIELD TEST: Method air/test pump HOLE SIZE: 6 3/4 inches from 0 to 145 feet
Drawdown 44/38 feet 3 7/8 inches from 145 to 682 feet
Rate 50/30 gal. per min. _____ inches from _____ to _____ feet
Duration _____ hrs.; _____ min. SCREEN SIZE: _____ inches from _____ to _____ feet

WATER ZONES: from _____ to _____ feet
from _____ to _____ feet
from 655 to 675 feet
#20G 2 inches from 655 to 675 feet
_____ inches from _____ to _____ feet

WATER: Color _____ Taste _____ CASE SIZE: 4 inches from 0 to 147 feet
Odor _____ Temp. _____ °F STANDARD SCHEDULE 2 inches from 147 to 655 feet
40 galvanized 2 inches from 675 to 682 feet

WELL TO SUPPLY: (check one) Home _____ GROUTING: Method _____
Farm _____ Town _____ School _____ Material _____ Depth _____ feet
Industry _____ Other Campground

WATER ANALYSIS AVAILABLE: Yes _____ No X PUMP: Type Submersible
Capacity 30 gal per min
DRILL CUTTINGS SAVED: Yes X No _____ Depth of intake 87 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: This is a Class II Type A Well of materials and construction as per specifications of Virginia Health Department publication "Drilled Wells for Public Water Supply" dated 9 Feb. 70
Drill Cutting Samples delivered to VSWCB. Copies of this report delivered to VSWCB, Virginia Health Dept. Bureau of Sanitary Engineering, and to Owner.

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'	approx. 10'	tan/orange	fine sand with clay binder,	lens of white sand
10'	approx. 60'	grey	fine sand with clay binder	
60'	approx. 250'	blue/grey	fine sand with varying % clay binder,	shell, and sand
250'	approx. 330'	green/olive	fine sand with varying % clay binder,	shell, and sand
330'	approx. 410'	green	fine sand, green rocky shellbed with varying % sand	
410'	approx. 510'	blue/grey	fine sand with varying % black sandy clay binder,	black sand, and shell
510'	approx. 615'	black/green	fine sand, black sand with varying % black sandy clay binder	
615'	approx. 645'	green/white	fine sand, medium and coarse sand with green/white clay binder	
645'	approx. 675'	white	fine sand, medium and coarse sands.	SCREEN.
675'	approx. 682'	grey	fine sand with clay binder	
TOTAL DEPTH 682'				
Drill Cuttings delivered to VSWCB Richmond office with this report.				
Copy of this report delivered to Owner and Virginia Health Department's Bureau of Sanitary Engineering, Richmond Office.				
NOTE:	<p>This is a Class II Type A Well of materials and construction as per specifications of Virginia Health Department publication "Drilled Wells for Public Water Supply" dated 9 February 1970.</p> <p>The well is drilled and cased to a depth of more than 100 feet, with the drill hole passing through more than 100 feet of unconsolidated formations of less pervious material than fine sand.</p> <p>All formation samples from 0 to 145 feet (the 6 3/4 inch drill hole) contained a clay binder and were less pervious than fine sand. The 147 feet of 4 inch casing was driven approximately 2 feet into the clay bottom for a positive seal. The 3 7/8 inch drill hole from 145 to 682 feet was then drilled and cased entirely from INSIDE the positively sealed 4 inch casing, which was left undisturbed as part of the well. The 4 inch and 2 inch casings also have another positive seal joining them where they overlap at approximately 147 feet.</p>			

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

INTERVAL SHEET

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Well Repository No.: W- 4972
C- 166

Date rec'd: 11/18/77 Date Processed: 2/6/78

Sample Interval: from 0 to: 682

PROPERTY: Gordon Evans (K.O.A. Campground)

Number of samples: 62

COMPANY: Douglas Drilling Co.

Total Depth: 682'

COUNTY: Northumberland (Sunnybank)

Oil or Gas: Water: X Exploratory:

From-To	From-To	From-To	From-To	From-To
0-10	314-324	660-670	-	-
10-21	324-335	670-682	-	-
21-31	335-345	-	-	-
31-42	345-356	-	-	-
42-52	356-366	-	-	-
		washed and unwashed samples.		
52-63	366-377	-	-	-
63-73	377-387	-	-	-
73-84	387-398	-	-	-
84-94	398-408	-	-	-
94-105	408-419	-	-	-
105-115	419-430	-	-	-
115-126	430-442	-	-	-
126-136	442-453	-	-	-
136-147	453-465	-	-	-
147-157	465-476	-	-	-
157-168	476-488	-	-	-
168-178	488-499	-	-	-
178-189	499-510	-	-	-
189-199	510-520	-	-	-
199-210	520-530	-	-	-
210-220	530-540	-	-	-
220-231	540-560	-	-	-
231-241	560-580	-	-	-
241-252	580-600	-	-	-
252-262	600-610	-	-	-
262-273	610-620	-	-	-
273-283	620-630	-	-	-
283-294	630-640	-	-	-
294-304	640-650	-	-	-
304-314	650-660	-	-	-

OWNER: Gordon Evans (KOA Campground)
DRILLER: Douglas
COUNTY: Northumberland (Sunnybank)

W# 4972
C# 166
Total Depth: 682'
Quad: Burgess
Elev: 10'

Depth
(feet)

Well Log

- 0-10 Clay - pale yellow brown (10yr 6/3); abundant sand; medium to very coarse, subangular, poorly sorted.
- 10-20 Sand - pale yellowish brown (10yr 6/3); sparse clay; medium to granule, subangular to rounded, poorly sorted; few glauconite grains.
- 21-52 Clay - pale yellow brown (10yr 6/2); abundant sand; fine to medium, subangular, well sorted; mica.
- 52-73 Clay - dark yellowish brown (10yr 4/2); abundant sand; fine to medium, subangular, well sorted; mica.
- 73-84 Sand - light olive gray (5y 5/2); moderate clay; fine to medium, subangular, well sorted.
- 84-126 Clay - light olive gray (5y 4/2); abundant sand; fine to medium with some granules, subangular, well sorted; few shell fragments at 84-94', 1% at 94-105', very few from 105-126'; mica.
- 126-147 Sand - light olive gray (5y 5/2); abundant clay; fine to very coarse, subangular, moderate sorting; very rare glauconite; 3% shell fragments.
- 147-199 Clay - light olive gray (5y 5/2 and 5/1 at 189-199'); abundant sand; fine to very coarse, subangular, moderate sorting; very rare glauconite and 3% to very rare shell fragments from 126-178'.
- 199-294 Clay - light olive gray (5y 6/1 and 5/2 at 283-294'); clay in pellets; abundant sand; fine with some larger grains, subangular, well sorted; Diatoms; Forams at 283-294' - Siphogenerina, Robulus, Nonion, Quinqueloculina.
- 294-304 Sand, Glauconitic - light and dark gray; 50% large shell fragments; moderate clay; fine to very coarse, subangular, moderate sorting; 3% glauconite; Echinoderm spines.
- 304-314 Sand, Glauconitic - light and dark gray; 50% large shell fragments; abundant clay; fine to very coarse, subangular, moderate sorting; 3% Glauconite; Echinoderm spines.

OWNER: Gordon Evans (KOA Campground) -2-

W# 4972
C# 166
Total Depth: 682'
Quad: Burgess
Elev: 10'

Depth
(feet)

- 314-335 Sand - light and dark gray, abundant to moderate clay; fine to granule, subangular with some rounded, poorly sorted; 5% glauconite; 10% shell fragments; Forams.
- 335-345 Limestone - light olive gray (5y 6/1); Bioclastic limestone with 0-3% glauconite; some shell molds/casts; ~~and~~ some sand, quartz, grains of mixed sizes.
- 345-356 Sand - light olive gray (5y 6/1); abundant crushed limestone; fine to granule, subangular to rounded, poorly sorted; 3% glauconite; very rare shell fragment.
- 356-366 Limestone - light olive gray (5y 6/1); Bioclastic with glauconite and mixed sizes of quartz sand.
- 366-376 Limestone, Crushed - light and dark gray; abundant sand of which 50% is glauconite; fine to granule, subangular to rounded, poorly sorted.
- 376-408 Gravel, Shell - yellowish gray (5y 6/2); 95% shell fragments; some very fine, fine to granule and to medium at 398-408', subangular and rounded, poorly sorted until 398-408', then moderate sorting; calcium (sparse) carbonate coated glauconite, 10% at 398-408.
- 398 -
408-419 Gravel, Shell - light and dark brown; 70% shell fragments; abundant clay; 30+% glauconite, fine green and brown; moderate sand; fine to granule with 10% pebbles, subangular and rounded, poorly sorted; calcium coating on all grains.
- 419-442 Gravel, Shell - light and dark brown; 50% shell fragments; 50% glauconite at 419-30' and 40% at 430-442'; sparse clay; fine to granule, subangular and rounded, poorly sorted.
- 442-465 Sand, Glauconitic - olive green (5y 3/2); 90% glauconite; sparse clay; fine to small pebble, subangular to rounded, poorly sorted; 8% fine shell fragments; Forams; Ostracods.
- 465-488 Sand, Glauconitic - olive black (5y 2/1); 90% glauconite; very sparse clay; fine to small pebble, mostly fine, subangular to rounded, well sorted; Forams, Ostracods.

OWNER: Gordon Evans (KOA Campground) -3-

W# 4972

C# 166

Total Depth: 682'

Quad: Burgess

Elev: 10'

Depth
(feet)

- 488-510 Clay - light olive gray (5y 6/1); sparse to abundant sand; fine to medium with a few pebbles at 488-499' and granules at 499-510'; subangular and rounded, moderately well sorted; 30% glauconite - loose and in clasts; Forams - Pyrulina(?); mica - ~~1%~~ 1% at 499-510'.
- 510-560 Clay - light olive gray (5y 6/1 and 5/1 at 530-60); abundant sand; fine to granule, subangular, poorly sorted; 5% glauconite until 530-40', then 25% ~~and~~ 40% at 540-60'; mica.
- 560-600 Sand, Glauconitic - light and dark gray; 90% glauconite; moderate sand; fine to granule, subangular, poorly sorted, 20% shell fragments; Bryozoa; Pyrite.
- 600-620 Sand, Glauconitic - light and dark gray; 80 to 70% glauconite; moderate sand; sparse to moderate clay; fine to granule, subangular, poorly sorted; 3% to very rare shell fragments; Forams at 600-10'.
- 620-630 Sand - light olive gray (5y 6/1); moderate clay; medium to coarse, subangular and angular, well sorted; 20% glauconite; feldspar; mica.
- 630-660 Sand - light olive gray (5y 6/1); sparse clay at 630-40'; medium to granule, mostly very coarse at 630-40' and mostly granules at 640-60'; subangular, moderate sorting; 10% to very rare glauconite; feldspar; mica; rose quartz.
- 660-670 Sand - light olive gray (5y 6/1); coarse to granule, subangular to rounded, moderate sorting; very rare glauconite; feldspar; large clay clasts with pyrite.
- 670-682 Sand - light olive gray (5y 6/1); very sparse clay; fine to coarse, mostly coarse, subangular, moderate sorting; very rare glauconite; feldspar.

Logged by: J. K. Polzin
Sept. 28, 1980