

PRODUCTION WELL B-1

HYDROGEOLOGIC BOREHOLE LOG FOR WELL B-1 in BEALETON

Project: Bealeton Service District
Driller: Singhas & Michael, Corp.
Geologist: K. C. Hardcastle, Ph.D.
Date Drilled: July 26, 1993

TEST WELL DATA for Well#: B-1

Static Water Level: 16.05' (7/29/93)
Depth to bedrock: 5'
Well Diameter: 6" **Air-Lift Yield :** 230 gpm
Total Depth: 379'
Casing Length: 21' x 6"

Well #: B-1

PRODUCTION WELL DATA for Well#: B-1

Date of Reaming: 10/22/93
Total Length of 8" Casing: 57' **Final Air-Lift Yield:** 300+ gpm
Depth of 8" Reaming: 260'

DEPTH (feet)	AIR-LIFT YIELD (gpm)	WELL LOG	DESCRIPTION <small>(color/grain size/structure/composition/trace minerals)</small>
0			BEDROCK at 5': Medium gray, poorly bedded, slightly calcareous siltstone.
10			
20			20': Dark reddish brown siltstone to very fine sandstone.
30			30': Trace of fractures at high angles to bedding.
40			
50			
60			
70			
80			
90			
100			
110			106-110': Faster drilling; thinly bedded siltstone.
120	1		120': Less than 1 gpm.
130			130': Grayish red siltstone; 10% gray siltstone.
140	30		140': Roughly 2 gpm. 142': WATER-BEARING ZONE.
150			150': 2% limonite-calcite-coated fractures.
160			160': Less than 1% calcite-coated fractures.
170			
180	188		185': WATER-BEARING ZONE. 3% chlorite-coated fractures.
190			
200			
210			207-211': Grayish-black calcareous siltstone.
220			220': Red-brown micaceous sandstone.
230			
240			251-254': Gray-tan to dark gray sandstone with 1% epidote-calcite-coated fractures and 0-5% fine pyrite.
250			255-256': Dark reddish brown sandstone. 256-265': Black siltstone with 0-5% fine pyrite crystals, <1-3% calcite-epidote-coated fractures. Temporary sulfur smell.
260	205		
270	Limit of 8" Reaming		270': 1% calcite-filled fractures.
280			
290			290': 1% quartz-filled fractures.
300			300': 1% calcite-filled fractures.
310			
320			
330			
340			340': Trace of un-mineralized fractures; trace of calcite-coatings on bedding planes.
350			
360			360': Grayish red sandstone. 361': Medium gray moderately well bedded sandstone. 368-370': Grayish black fine siltstone. 372': Dark gray, non-calcareous siltstone. 375': Dark gray sandstone. 379': Grayish red fine grained sandstone. Bottom of well at 379'.
370			
380	230		

Cuttings of bedrock collected at 10 foot intervals and at changes in lithology.

- SANDSTONE:** Dark reddish brown (10R 3/4) to very dusky red (10R 2/2), fine to medium grained sandstone and siltstone. Bedding is generally moderately developed and wavy, but locally laminar. Carbonate occasionally occurs in the matrix and mica is common and typically concentrated on bedding planes. Often interbedded with siltstone described below.
- SILTSTONE:** Dark reddish brown (10R 3/4) to very dusky red (10R 2/2), siltstone and fine grained sandstone. Bedding is generally poorly developed. Carbonate is common in the matrix but locally is only a minor constituent; mica is rare.
- Medium gray to black (N5 to N1), very fine siltstone to fine sandstone, poorly to moderately wavy to laminar bedded, slightly to moderately calcareous.** Occasionally carbonate is the major constituent as a micritic limestone.
- WATER BEARING ZONE - where yield of well increased.**

COMMONWEALTH OF VIRGINIA
WATER WELL COMPLETION REPORT
(Certification of Completion/County Permit)

BWCM No. _____

State Water Control Board
P.O. Box 11143
1111 North Hamilton St.
Richmond, Va. 23230

County/City Fauquier

County/City Stamp

SWCB Permit _____
County Permit <u>SD-93-225</u>
Certification of inspecting official: This well does _____ does not meet code/low requirements. S. _____ Date _____
For Office Use

Virginia Plane Coordinates
Latitude _____ N
Longitude _____ W
Topographic Map No. _____
Elevation _____ ft.
Formation _____
Lithology _____
River Basin _____
Province _____
Type Logs _____
Cuttings _____
Water Analysis _____
Aquifer Test _____

• Owner Fauquier County (Emery & Garrett job)

• Well Designation or Number # B-1 #1 well drilled
Address P.O. Box 3047
Warrenton, VA 22186
Phone 349-2092 (Emery & Garrett-603-279-4425)

• Drilling Contractor SINGHAS & MICHAEL CORP.
Address RT. 3, BOX 5062
BERRYVILLE, VA 22611
Phone 703-955-3582

Tax Map I.D. No. <u>6899-01</u>
Subdivision _____
Section _____
Block _____
Lot _____
Class Well: I _____, IIA _____, IIB _____, IIIA _____, IIIB <u>yes</u> , IIIC _____, IIID _____, IIIE _____

WELL LOCATION: _____ (feet/miles) _____ direction of _____ and _____ feet/miles _____ (direction) of _____ site is W. of 17728 Int.
(If possible please include map showing location marked)
6" 7/26/93 7/27/93
Date started 10/22/93 • Date completed 10/23/93 8" Type rig air rotary

WELL DATA: New yes Reworked _____ Deepened _____
Total depth 360 original 6" (380) ft.
Depth to bedrock 3 ft.

• Hole size (Also include reamed zones)
• 7 1/2 inches from 0 to 53 ft.
• 8 inches from 53 to 260 ft.
• 6 inches from 260 to 360' ft.

Casing size (I.D.) and material
• 8 inches from 43 to 54' == 57' ft.
Material steel

Wt. per foot 28.55 or wall thickness .322 in.
• _____ inches from _____ to _____ ft.
Material _____

Wt. per foot _____ or wall thickness _____ in.
• _____ inches from _____ to _____ ft.
Material _____

Screen size and mesh for each zone (where applicable)
• _____ inches from _____ to _____ ft.
Mesh size _____ Type _____

• _____ inches from _____ to _____ ft.
Mesh size _____ Type _____

• _____ inches from _____ to _____ ft.
Mesh size _____ Type _____

• _____ inches from _____ to _____ ft.
Mesh size _____ Type _____

• From 0 to 50 ft. Type pressure cement
• From _____ to _____ ft. Type _____

2. WATER DATA • Water temperature 52 _____ OF
• Static water level (unpumped level-measured) 321 ft.
• Stabilized measured pumping water level _____ ft.
• Stabilized yield 300 gpm after 3 hours
Natural Flow: Yes _____ No no, flow rate: _____ gpm
Comment on quality clear

3. WATER ZONES: From 142' To _____
From 185' To _____ From 260' To _____
From 361' To _____ From _____ To _____

4. USE DATA:
Type of use: Drinking yes, Livestock Watering _____
Irrigation _____ Food processing _____ Household _____
Manufacturing _____ Fire safety _____ Cleaning _____
Recreation _____ Aesthetic _____ Cooking or heating _____
Injection _____ Other _____
• Type of facility: Domestic _____, Public water supply yes
Public institution _____ Farm _____, Industry _____
Commercial _____, Other _____

5. PUMP DATA: Type _____ Rated H.P. _____
• Intake depth _____ Capacity _____ at _____ head

6. WELLHEAD: Type well seal _____
Pressure tank _____ gal., Loc. _____
Sample tap _____, Measurement port _____
Well vent _____, Pressure relief valve _____
Gate valve _____, Check valve (when required) _____
Electrical disconnect switch on power supply _____

7. DISINFECTION: Well disinfected _____ yes _____ no
Date _____, Disinfectant used _____
Amount _____, Hours used _____

8. ABANDONMENT (where applicable) • yes _____ no _____
Casing pulled yes _____ no _____ not applicable _____
Plugging grout From _____ to _____ material _____

SD-93-225 6899-01

9. State law requires submitting to the Virginia State Water Control Board information about groundwater and wells for every well made in the State intended for water, or any other non-exempt well. This information must be submitted whether the well is completed, on standby, or abandoned. Information required includes: an accurately and completely prepared water well completion report, full data from any aquifer pumping tests, drill cuttings taken at ten foot intervals (unless exemption is secured), the results of any chemical analyses, and copies of any geophysical logs. Quarterly pumpage and use reports are required from owners of public supply and industrial wells. County or State permits to drill may be required in some parts of the state. Some counties require submission of a water well completion report. The Virginia State Health Department requires a water well completion report for public supply wells.

10. DRILLERS LOG (use additional Sheets if necessary)			11. Drilling Time (Min.)	12. DIAGRAM OF WELL CONSTRUCTION (with dimensions)
DEPTH (feet)		TYPE OF ROCK OR SOIL		
From	To	(color, material, fossils, hardness, etc.)	(water, caving, cavities, broken, core, shot, etc.)	
0'	3'	overburden		
	260'	redrock		
	142'	waterbearing		
	185'	waterbearing		
	260'	waterbearing		
	361'	waterbearing		

13. Well lot dedicated? _____; Size _____ ft. X _____ ft.; Well house? _____
 Distance to nearest pollutant source _____ ft., Type _____
 Distance to nearest property line _____ ft., Building _____ ft.

14. WATER SERVICE PIPE: Checked under _____ p.s.i. for _____ minutes. Pipe size _____ inches, Material _____
 Installer _____
 Date _____

15. I certify that the information contained herein is true and correct and that this well and/or system has been installed and constructed in accordance with the requirements for well construction as specified in compliance with appropriate county or independent city ordinances and the laws and rules of the Commonwealth of Virginia.

State Water Control Board Regional Offices

- Vall Reg. Off.
116 North Main Street
P. O. Box 268
Bridgewater, Va. 22812
703-828-2595
- Sou West Reg. Off.
408 1st Main Street
P. O. Box 476
Abingdon, Va. 24210
703-778-5183
- West Central Reg. Off.
Executive Park
3312 Peters Creek Road
Roanoke, Va. 24019
703-782-7432
- Piedmont Reg. Off.
4010 West Broad Street
P. O. Box 6616
Richmond, Va. 23230
804-257-1006
- Tidewater Reg. Off.
287 Pembroke Office Park
Suite 310 Pembroke No. 2
Va. Beach, Va. 23462
804-499-8742
- Northern Virginia Reg. Off.
5515 Cherokee Avenue
Suite 404
Alexandria, Va. 22312
703-750-9111

Signature Anna Singhay (Seal), Date 10-29-93
 (Well driller or authorized person)
 License No. 142