

<b>C 1</b> <span style="font-size: 24pt; font-weight: bold;">42567</span>		SEQUENCE NO. (MDE USE ONLY)		<b>STATE OF MARYLAND</b> <b>WELL COMPLETION REPORT</b> FILL IN THIS FORM COMPLETELY PLEASE TYPE		THIS REPORT MUST BE SUBMITTED WITHIN 45 DAYS AFTER WELL IS COMPLETED.																																																																																																																																																																																																																																								
1 2 3 6 (THIS NUMBER IS TO BE PUNCHED IN COLS. 3-6 ON ALL CARDS)						COUNTY NUMBER																																																																																																																																																																																																																																								
ST/CO USE ONLY DATE RECEIVED MM <u>08</u> DD <u>03</u> YY <u>16</u>		DATE WELL COMPLETED MM <u>08</u> DD <u>29</u> YY <u>16</u>		Depth of Well 22 <u>350</u> 26 <u>00</u> (TO NEAREST FOOT)		PERMIT NO. FROM "PERMIT TO DRILL WELL" <u>71151640-15 0235</u>																																																																																																																																																																																																																																								
OWNER <u>Meisky, Barry &amp; Trexler, Elizabeth</u>		last name first name		TOWN <u>Hickory MD</u>		LOT <u>Par 2</u>																																																																																																																																																																																																																																								
WELL SITE ADDRESS		SUBDIVISION		SECTION		LOT																																																																																																																																																																																																																																								
<b>WELL LOG</b> Not required for driven wells				<b>GROUTING RECORD</b>																																																																																																																																																																																																																																										
<b>STATE THE KIND OF FORMATIONS PENETRATED, THEIR COLOR, DEPTH, THICKNESS AND IF WATER BEARING</b>				WELL HAS BEEN GROUTED (Circle Appropriate Box) <div style="display: flex; justify-content: space-around;"><div>yes <b>Y</b> 44</div><div>no <b>N</b> 44</div></div>																																																																																																																																																																																																																																										
				TYPE OF GROUTING MATERIAL (Circle one) CEMENT <b>CM</b> 45 BENTONITE CLAY <b>BC</b> 46																																																																																																																																																																																																																																										
				NO. OF BAGS <u>36</u> NO. OF POUNDS <u>1800</u>																																																																																																																																																																																																																																										
				GALLONS OF WATER <u>900</u>																																																																																																																																																																																																																																										
				DEPTH OF GROUT SEAL (to nearest foot) from <u>0</u> TOP 48 52 ft. to <u>350</u> BOTTOM 54 58 ft. (enter 0 if from surface)																																																																																																																																																																																																																																										
<table border="1" style="width:100%; border-collapse: collapse;"><thead><tr><th rowspan="2">DESCRIPTION (Use additional sheets if needed)</th><th colspan="2">FEET</th><th rowspan="2">check if water bearing</th></tr><tr><th>FROM</th><th>TO</th></tr></thead><tbody><tr><td>Red Brn Clay</td><td>0</td><td>20</td><td></td></tr><tr><td>Red Clay</td><td>20</td><td>30</td><td></td></tr><tr><td>Weathered Rock</td><td>30</td><td>35</td><td></td></tr><tr><td>Med Gray Rock</td><td>35</td><td>160</td><td></td></tr><tr><td>Hard Gray Rock</td><td>160</td><td>350</td><td></td></tr></tbody></table>				DESCRIPTION (Use additional sheets if needed)	FEET		check if water bearing	FROM	TO	Red Brn Clay	0	20		Red Clay	20	30		Weathered Rock	30	35		Med Gray Rock	35	160		Hard Gray Rock	160	350		<b>CASING RECORD</b>																																																																																																																																																																																																																
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					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20																																																																																																																																																																																																																						
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<b>MDE USE ONLY (NOT TO BE FILLED IN BY DRILLER)</b> T _____ (E.R.O.S.) W Q _____ 70 _____ 72 _____ 74 75 76 _____ TELESCOPE CASING LOG INDICATOR OTHER DATA				<b>PUMPING TEST</b> HOURS PUMPED (nearest hour) _____ PUMPING RATE (gal. per min.) _____ METHOD USED TO MEASURE PUMPING RATE _____ WATER LEVEL (distance from land surface) BEFORE PUMPING _____ ft. WHEN PUMPING _____ ft. TYPE OF PUMP USED (for test) <div style="display: flex; justify-content: space-around;"><div><b>A</b> 27 air</div><div><b>P</b> 27 piston</div><div><b>T</b> 27 turbine</div></div> <div style="display: flex; justify-content: space-around;"><div><b>C</b> 27 centrifugal</div><div><b>R</b> 27 rotary</div><div><b>O</b> 27 other (describe below)</div></div> <div style="display: flex; justify-content: space-around;"><div><b>J</b> 27 jet</div><div><b>S</b> 27 submersible</div></div>																																																																																																																																																																																																																																										
<b>PUMP INSTALLED</b> DRILLER INSTALLED PUMP (CIRCLE) (YES or NO) YES NO IF DRILLER INSTALLS PUMP, THIS SECTION MUST BE COMPLETED FOR ALL WELLS. TYPE OF PUMP INSTALLED PLACE (A,C,J,P,R,S,T,O) IN BOX 29 _____ 29 CAPACITY: GALLONS PER MINUTE (to nearest gallon) _____ 31 _____ 35 PUMP HORSE POWER _____ 37 _____ 41 PUMP COLUMN LENGTH (nearest ft.) _____ 43 _____ 47 CASING HEIGHT (circle appropriate box and enter casing height) <div style="display: flex; justify-content: space-around;"><div><b>+</b> 49 above</div><div><b>-</b> 49 below</div></div> <div style="display: flex; justify-content: space-between;"><div>LAND SURFACE</div><div>(nearest foot)</div></div>																																																																																																																																																																																																																																														
<b>LATITUDE</b> <u>39.16810</u> <b>LONGITUDE</b> <u>76.78319</u> (DEFAULT COORD. WGS 84) <small>Pursuant to §10-624 of the State Govt. Article of the Maryland Code personal info. requested on this form is used in processing this form pursuant to COMAR 26.04.04. Failure to provide the info. may result in this form not being processed. You have the right to inspect, amend, or correct this form. The Maryland Department of the Environment is subject to the Maryland Public Information Act. This form may be made available on the Internet via MDE's website and is subject to inspection or copying, in whole or in part, by the public and other governmental agencies, if not protected by federal or state law.</small>																																																																																																																																																																																																																																														
<b>DRILLERS L.C. NO.</b> <u>M W D 553</u>																																																																																																																																																																																																																																														
<b>DRILLERS SIGNATURE</b> (MUST MATCH SIGNATURE ON APPLICATION) <u>[Signature]</u>																																																																																																																																																																																																																																														
<b>L.C. NO.</b> <u>W R D 697</u>																																																																																																																																																																																																																																														
<b>SITE SUPERVISOR</b> (sign. of driller or journeyman responsible for sitework if different from permittee) <u>[Signature]</u>																																																																																																																																																																																																																																														

<b>B 1</b> <div style="border: 1px solid black; padding: 5px; font-size: 24px; font-weight: bold;">43874</div>	SEQUENCE NO. (MDE USE ONLY)	<div style="text-align: center;"> <b>STATE OF MARYLAND</b>  <b>APPLICATION FOR PERMIT TO DRILL WELL</b>  <div style="font-size: 24px; font-weight: bold;">558058</div>         please type       </div>	STATE PERMIT NUMBER <div style="font-size: 24px; font-weight: bold;">HD - 15 - 0235</div> <div style="font-size: 10px;">70 fill in this form completely 79</div>
Date Received (APA) <div style="font-size: 24px; font-weight: bold;">03/29/16</div>		<b>B 3</b> LOCATION OF WELL	
<b>OWNER INFORMATION</b> <div style="font-size: 24px; font-weight: bold;">Mersky Barry + Traxler Elizabeth</div> <div style="font-size: 24px; font-weight: bold;">13001 Wainwright Rd</div> <div style="font-size: 24px; font-weight: bold;">Highland MD 20884</div>		<div style="font-size: 24px; font-weight: bold;">Howard</div> <div style="font-size: 24px; font-weight: bold;">PAR 2</div> <div style="font-size: 24px; font-weight: bold;">Highland</div>	
<b>DRILLER INFORMATION</b> <div style="font-size: 24px; font-weight: bold;">C. John Hoss</div> <div style="font-size: 24px; font-weight: bold;">MWD 553</div> <div style="font-size: 24px; font-weight: bold;">Allied Environmental SVCS</div> <div style="font-size: 24px; font-weight: bold;">PO Box 129 Annapolis Junction MD 20701</div> <div style="font-size: 24px; font-weight: bold;">C. John Hoss</div> <div style="font-size: 24px; font-weight: bold;">03/28/16</div>		<b>B 4</b> SOURCES OF DRILLING WATER 1. Public 2. 3.	
<b>B 2</b> WELL INFORMATION APPROX. PUMPING RATE (GAL. PER MIN.) <div style="font-size: 24px; font-weight: bold;">8</div> <div style="font-size: 24px; font-weight: bold;">12</div> AVERAGE DAILY QUANTITY NEEDED (GAL. PER DAY) <div style="font-size: 24px; font-weight: bold;">14</div> <div style="font-size: 24px; font-weight: bold;">20</div>		<div style="font-size: 24px; font-weight: bold;">13001 Wainwright Rd</div> <div style="font-size: 24px; font-weight: bold;">ON WHICH SIDE OF ROAD (CIRCLE APPROPRIATE BOX)</div> <div style="text-align: center;"> <div style="display: inline-block; text-align: center;"> <div style="border: 1px solid black; padding: 2px;">N</div>  <div style="border: 1px solid black; padding: 2px;">W</div>  <div style="border: 1px solid black; padding: 2px;">S</div>  <div style="border: 1px solid black; padding: 2px;">E</div> </div> <div style="display: inline-block; text-align: center;"> <div style="border: 1px solid black; padding: 2px;">N</div>  <div style="border: 1px solid black; padding: 2px;">W</div>  <div style="border: 1px solid black; padding: 2px;">S</div>  <div style="border: 1px solid black; padding: 2px;">E</div> </div> </div> <div style="font-size: 24px; font-weight: bold;">DISTANCE FROM ROAD</div> <div style="font-size: 24px; font-weight: bold;">ENTER FT OR MI</div> <div style="font-size: 24px; font-weight: bold;">39</div> <div style="font-size: 24px; font-weight: bold;">TAX MAP: 0040 BLK: 0000 PARCEL 0398</div>	
<b>USE FOR WATER</b> (CIRCLE APPROPRIATE BOX) <input type="checkbox"/> DOMESTIC POTABLE SUPPLY & RESIDENTIAL IRRIGATION <input type="checkbox"/> FARMING (LIVESTOCK WATERING & AGRICULTURAL IRRIGATION) <input type="checkbox"/> INDUSTRIAL, COMMERCIAL, DEWATERING <input type="checkbox"/> PUBLIC WATER SUPPLY WELL <input type="checkbox"/> TEST, OBSERVATION, MONITORING <input type="checkbox"/> OPEN LOOP GEOTHERMAL <input checked="" type="checkbox"/> CLOSED LOOP GEOTHERMAL		<b>NOT TO BE FILLED IN BY DRILLER HEALTH DEPARTMENT APPROVAL</b> <div style="font-size: 24px; font-weight: bold;">Howard</div> <div style="font-size: 24px; font-weight: bold;">13</div> <div style="font-size: 24px; font-weight: bold;">COUNTY NAME</div> <div style="font-size: 24px; font-weight: bold;">COUNTY NO.</div> <div style="font-size: 24px; font-weight: bold;">STATE SIGNATURE</div> <div style="font-size: 24px; font-weight: bold;">INSERT S</div> <div style="font-size: 24px; font-weight: bold;">41</div> <div style="font-size: 24px; font-weight: bold;">DATE ISSUED</div> <div style="font-size: 24px; font-weight: bold;">4/14/16</div> <div style="font-size: 24px; font-weight: bold;">4/14/17</div> <div style="font-size: 24px; font-weight: bold;">43</div> <div style="font-size: 24px; font-weight: bold;">MM</div> <div style="font-size: 24px; font-weight: bold;">DD</div> <div style="font-size: 24px; font-weight: bold;">YY</div> <div style="font-size: 24px; font-weight: bold;">48</div> <div style="font-size: 24px; font-weight: bold;">CO SIGNATURE</div> <div style="font-size: 24px; font-weight: bold;">EXP. DATE</div>	
APPROXIMATE DEPTH OF WELL <div style="font-size: 24px; font-weight: bold;">300</div> FEET APPROXIMATE DIAMETER OF WELL <div style="font-size: 24px; font-weight: bold;">6</div> INCH		<b>PROPOSED LOCATION OF WELL ON LOT</b> SHOW PERMANENT STRUCTURES SUCH AS BUILDINGS, SEPTIC SYSTEM, ROADS AND/OR LANDMARKS AND INDICATE NOT LESS THAN TWO DISTANCE MEASUREMENTS TO WELL <div style="font-size: 24px; font-weight: bold;">Wainwright Road</div> <div style="font-size: 24px; font-weight: bold;">4 Proposed Loops</div> <div style="font-size: 24px; font-weight: bold;">Garage</div> <div style="font-size: 24px; font-weight: bold;">House</div>	
<b>METHOD OF DRILLING</b> (circle one) <div style="font-size: 24px; font-weight: bold;">BORED (or Augered)</div> <div style="font-size: 24px; font-weight: bold;">JETTED</div> <div style="font-size: 24px; font-weight: bold;">Jetted &amp; DRIVEN</div> <div style="font-size: 24px; font-weight: bold;">AIR-ROTary</div> <div style="font-size: 24px; font-weight: bold;">AIR-PERCussion</div> <div style="font-size: 24px; font-weight: bold;">ROTARY (Hydraulic Rotary)</div> <div style="font-size: 24px; font-weight: bold;">CABLE</div> <div style="font-size: 24px; font-weight: bold;">REVerse-ROTary</div> <div style="font-size: 24px; font-weight: bold;">DRIVE-POINT</div> other		<b>REPLACEMENT OR DEEPEMED WELLS</b> (CIRCLE APPROPRIATE BOX) <input checked="" type="checkbox"/> THIS WELL WILL NOT REPLACE AN EXISTING WELL <input type="checkbox"/> THIS WELL WILL REPLACE A WELL THAT WILL BE ABANDONED AND SEALED <input type="checkbox"/> THIS WELL WILL REPLACE A WELL THAT WILL BE USED AS A STANDBY-CONTACT LOCAL APPROVING AUTHORITY FOR POLICY ON STANDBY WELLS <input type="checkbox"/> THIS WELL WILL DEEPEM AN EXISTING WELL PERMIT NUMBER OF WELL TO BE REPLACED OR DEEPEMED (IF AVAILABLE) <div style="font-size: 24px; font-weight: bold;">41</div> <div style="font-size: 24px; font-weight: bold;">52</div>	
<b>Not to be filled in by driller (MDE OR COUNTY USE ONLY)</b> APPROP. PERMIT NUMBER <div style="font-size: 24px; font-weight: bold;">G</div> PERMIT No. <div style="font-size: 24px; font-weight: bold;">HD - 15 - 0235</div>			
<b>SPECIAL CONDITIONS</b> NOTE: APPROVING AUTHORITIES SHOULD USE SEPARATE SHEET IF NEEDED. <div style="font-size: 24px; font-weight: bold;">All wells must be grouted from bottom to top.</div>			



Scale: 1"=30'

● = Geo well

# WAINWRIGHT ROAD

N 31°25'11"E 190.25'

EXISTING GRAVEL DRIVEWAY

Existing well

Well sites ok  
4/21/16

EX. DRIVEWAY

EX. GAR.

EX. HOUSE  
FF: 399.92

EX. DECK

4" PVC

PROPOSED 30'  
TION GRASS  
L SPREADER

RECEIVED

APR 21 2016

HOWARD COUNTY HEALTH DEPT.  
COMMUNITY HYGIENE PROGRAM

GRADE

EACH BORE HOLE (TYP.)

MINIMUM  
HORIZONTAL BURY  
DEPTH 4 FT

FOR CONT.  
SEE PLANS

HORIZONTAL  
PIPING

GROUT ENTIRE ANNULAR  
SPACE AND VERTICAL  
U-TUBE WITH (BENTANITE)  
GROUT.

BORE DEPTH

TAPE

5' TO 10' FOOT SECTION OF  
REBAR TO GUIDE TUBE  
INTO BORE DURING  
INSTALLATION

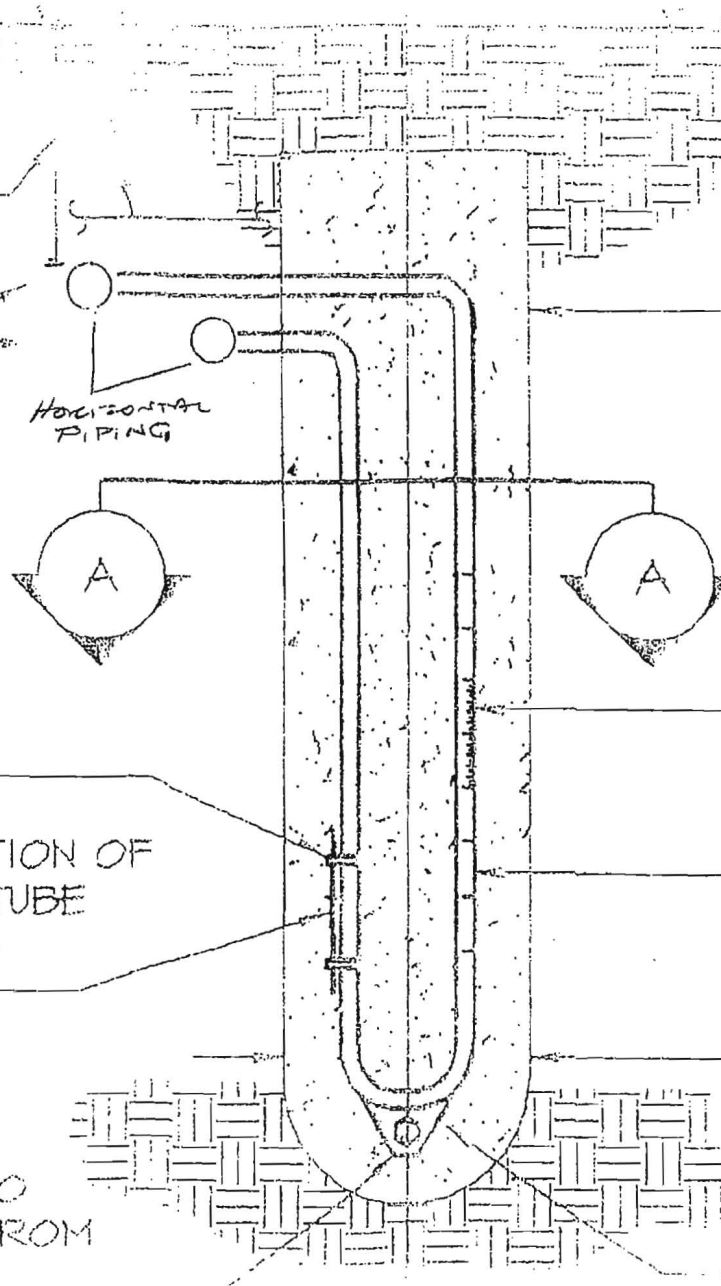
DEPTH MARKINGS IN FEET TO  
INDICATE DEPTH OF INSERTION

TYPICAL VERTICAL U TUBE  
1.5" INCHES

TYPICAL BORE DIAMETER  
6.0 INCHES

ANCHOR FITTING TO  
PREVENT U-TUBE FROM  
SURFACING AFTER  
INSTALLATION

TYPICAL SOCKET U-BEND



## **HOWARD COUNTY GROUTING PROCEDURE**

Boreholes will be grouted from the bottom to the top via a tremie pipe and positive displacement pump. Bentonite grout, known as Quik-Grout will be used according to the manufacturer's specifications to achieve a consistency of at least 20% solids (24 gallons potable water/50 lb. sack of grout) and a permeability no more than  $2.5 \times 10^{-8}$  cm/sec. Grouting will be completed immediately after installing the geothermal loop and no later than twenty-four (24) hours after installing the geothermal loop. Open boreholes/annular space will be protected as necessary to prevent the entry of surface water or pollutants.





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