

B 1	1566	SEQUENCE NO. (MDE USE ONLY)	STATE OF MARYLAND <b>APPLICATION FOR PERMIT TO DRILL WELL</b> please type <u>5366661</u>	STATE PERMIT NUMBER <u>140-95-2233</u> <small>fill in this form completely</small>
Date Received (APA) <u>12 7 2011</u> <small>8 MM DD YY 13</small>		OWNER INFORMATION		
Last Name <u>ASSENDORF</u>		Owner First Name <u>Richard</u>		
Street or RFD <u>2937 Southview Road</u>		City <u>ELLICOTT</u>		
Town <u>ELLICOTT</u>		State <u>MARYLAND</u>		
Zip <u>21042</u>				
DRILLER INFORMATION				
Driller's Name <u>JACK MILLER</u>		License No. <u>MSD206</u>		
Firm Name <u>NORTHERN VIRGINIA DRILLING</u>				
Address <u>11356 INDUSTRIAL ROAD MANASSAS VA 20109</u>				
Signature <u>[Signature]</u> Date <u>12/7/11</u>				
B 2		WELL INFORMATION		
APPROX. PUMPING RATE (GAL. PER MIN.)		8 12		
AVERAGE DAILY QUANTITY NEEDED (GAL. PER DAY)		14 20		
USE FOR WATER (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 checked="" type="checkbox"/> GEO-THERMAL				
APPROXIMATE DEPTH OF WELL <u>300</u> FEET APPROXIMATE DIAMETER OF WELL <u>6</u> INCH				
METHOD OF DRILLING (circle one)				
<input checked="" type="checkbox"/> BORED (or Augered) <input type="checkbox"/> JETTED <input type="checkbox"/> Jetted & DRIVEN <input type="checkbox"/> AIR-ROTARY <input type="checkbox"/> AIR-PERCUSION <input type="checkbox"/> ROTARY (Hydraulic Rotary) <input type="checkbox"/> CABLE <input type="checkbox"/> REVERSE-ROTARY <input type="checkbox"/> DRIVE-POINT other _____				
REPLACEMENT OR DEEPEMED WELLS (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 DEEPEN AN EXISTING WELL				
PERMIT NUMBER OF WELL TO BE REPLACED OR DEEPEMED (IF AVAILABLE) 41 _____ 52 _____				
Not to be filled in by driller (MDE OR COUNTY USE ONLY)				
APPROP. PERMIT NUMBER _____ G _____				
PERMIT No. <u>140-95-2233</u>				
SPECIAL CONDITIONS <u>See Attached memo</u>				

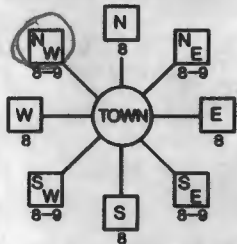
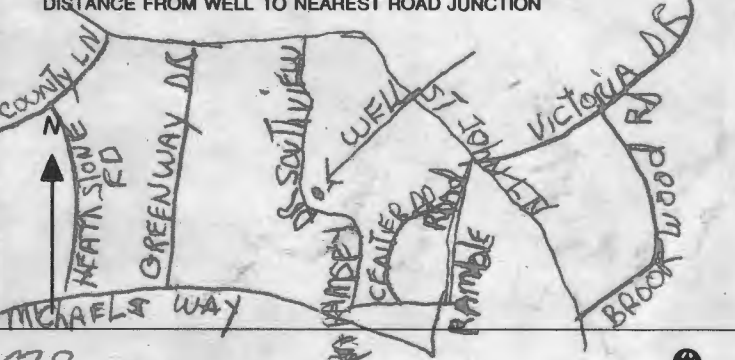
LOCATION OF WELL  
 COUNTY HOWARD  
 SUBDIVISION Howard Heights  
 SECTION 32 LOT 32  
 CITY ELLICOTT CITY  
 MILES FROM TOWN (enter 0 if in town) 3 M I  
 73 76 77 78

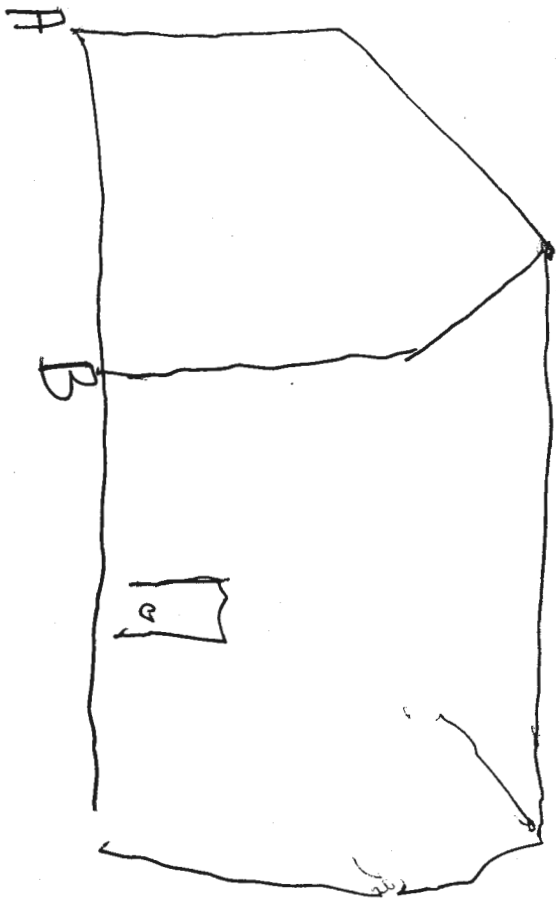
DIRECTION OF WELL FROM TOWN (CIRCLE BOX)  

 ON WHICH SIDE OF ROAD (CIRCLE APPROPRIATE BOX)  
RAMSEY DRIVE  
 NEAR WHAT ROAD  
 ON WHICH SIDE OF ROAD (CIRCLE APPROPRIATE BOX)  
 NORTH N  
 WEST W  
 SOUTH S  
 EAST E  
 DISTANCE FROM ROAD 75 FT  
 ENTER FT OR MI  
 TAX MAP: 0017 BLK: \_\_\_\_\_ PARCELS 0325

NOT TO BE FILLED IN BY DRILLER  
 HEALTH DEPARTMENT APPROVAL  
Howard COUNTY NAME  
13 COUNTY NO.  
 STATE SIGNATURE \_\_\_\_\_ INSERT S →  
 DATE ISSUED 12/14/11  
 CO SIGNATURE [Signature] EXP. DATE 12/14/11  
 NORTH GRID 41A 000 55 EAST GRID 41A 000 63

SHOW MAJOR FEATURES OF BOX & LOCATE WELL WITH AN X  
 SOURCES OF DRILLING WATER  
 1. PUBLIC WATER  
 2. \_\_\_\_\_  
 3. \_\_\_\_\_  
 WRITE THE BOX NUMBER FROM THE MAP HERE  
 E \_\_\_\_\_  
 N \_\_\_\_\_  
 DRAW A SKETCH BELOW SHOWING LOCATION OF WELL IN RELATION TO NEARBY TOWNS AND ROADS AND GIVE DISTANCE FROM WELL TO NEAREST ROAD JUNCTION

B 1 <u>1566</u> <small>1 2 3 6</small>	SEQUENCE NO. (MDE USE ONLY)	STATE OF MARYLAND <b>APPLICATION FOR PERMIT TO DRILL WELL</b> please type <u>5366661</u>	STATE PERMIT NUMBER <u>140-95-2233</u> <small>fill in this form completely</small>
Date Received (APA) <u>12 7 2011</u> <small>8 MM DD YY 13</small> OWNER INFORMATION 15 Last Name <u>ASSENDORF</u> Owner <u>Richard</u> First Name <u>Richard</u> 34 36 <u>2937 Southview Road</u> Street or RFD 55 57 <u>ELLICOTT</u> Town 70 <u>MARYLAND</u> State 72 <u>21042</u> Zip 76		B 3 <u>HOWARD</u> LOCATION OF WELL 8 COUNTY <u>HOWARD HIGHTS</u> 21 23 SUBDIVISION SECTION <u>32</u> LOT <u>32</u> 44 46 48 50 52 <u>ELLICOTT CITY</u> NEAREST TOWN 71 MILES FROM TOWN (enter 0 if in town) <u>3</u> M I 73 76 77 78	
DRILLER INFORMATION 76 <u>JACK MILLER</u> Driller's Name 81 <u>MS0206</u> License No. Firm Name <u>NORTHERN VIRGINIA DRILLING</u> Address <u>11356 INDUSTRIAL ROAD MANASSAS VA 20109</u> Signature <u>[Signature]</u> Date <u>12/7/11</u>		B 4 <u>1</u> 2 DIRECTION OF WELL FROM TOWN (CIRCLE BOX)  11 <u>RAMSEY DRIVE</u> NEAR WHAT ROAD 30 ON WHICH SIDE OF ROAD (CIRCLE APPROPRIATE BOX) NORTH <input type="checkbox"/> NORTH <input checked="" type="checkbox"/> EAST <input type="checkbox"/> WEST <input type="checkbox"/> SOUTH <input type="checkbox"/> 34 <u>75</u> 37 DISTANCE FROM ROAD FT ENTER FT OR MI 38 39 TAX MAP: <u>0017</u> BLK: <u>PARCELO325</u>	
B 2 <u>1</u> 2 WELL INFORMATION APPROX. PUMPING RATE (GAL. PER MIN.) <u>8</u> 12 AVERAGE DAILY QUANTITY NEEDED (GAL. PER DAY) <u>14</u> 20		NOT TO BE FILLED IN BY DRILLER HEALTH DEPARTMENT APPROVAL <u>Howard</u> COUNTY NAME <u>13</u> COUNTY NO. STATE SIGNATURE _____ INSERT S → 41 DATE ISSUED <u>12/14/11</u> CO SIGNATURE <u>[Signature]</u> 12/14/11 43 MM DD YY 48 EXP. DATE NORTH GRID <u>4/A</u> 000 EAST GRID <u>4/A</u> 000 50 55 57 58	
USE FOR WATER (CIRCLE APPROPRIATE BOX) - <input checked="" type="checkbox"/> D DOMESTIC POTABLE SUPPLY & RESIDENTIAL IRRIGATION - <input type="checkbox"/> F FARMING (LIVESTOCK WATERING & AGRICULTURAL IRRIGATION) 22 <input type="checkbox"/> I INDUSTRIAL, COMMERCIAL, DEWATERING <input type="checkbox"/> P PUBLIC WATER SUPPLY WELL <input type="checkbox"/> T TEST, OBSERVATION, MONITORING <input checked="" type="checkbox"/> G GEO-THERMAL		SHOW MAJOR FEATURES OF BOX & LOCATE WELL WITH AN X SOURCES OF DRILLING WATER 1. <u>PUBLIC WATER</u> 2. 3.	
APPROXIMATE DEPTH OF WELL <u>300</u> FEET 24 28 APPROXIMATE DIAMETER OF WELL <u>6</u> INCH NEAREST INCH		WRITE THE BOX NUMBER FROM THE MAP HERE E N 000 000	
METHOD OF DRILLING (circle one) BORED (or Augered) JETTED Jetted & DRIVEN 30 AIR-ROTARY AIR-PERCussion ROTARY (Hydraulic Rotary) 37 CABLE REVERSE-ROTARY DRIVE-POINT other _____		DRAW A SKETCH BELOW SHOWING LOCATION OF WELL IN RELATION TO NEARBY TOWNS AND ROADS AND GIVE DISTANCE FROM WELL TO NEAREST ROAD JUNCTION 	
REPLACEMENT OR DEEPEMED WELLS (CIRCLE APPROPRIATE BOX) <input checked="" type="checkbox"/> N THIS WELL WILL NOT REPLACE AN EXISTING WELL <input type="checkbox"/> Y THIS WELL WILL REPLACE A WELL THAT WILL BE ABANDONED AND SEALED 39 <input type="checkbox"/> S 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"/> D THIS WELL WILL DEEPEMED AN EXISTING WELL PERMIT NUMBER OF WELL TO BE REPLACED OR DEEPEMED (IF AVAILABLE) 41 _____ 52		Not to be filled in by driller (MDE OR COUNTY USE ONLY) APPROP. PERMIT NUMBER _____ G _____ PERMIT No. <u>140-95-2233</u> 70 71 72 73 74 75 76 77 78 79	
SPECIAL CONDITIONS NOTE - APPROVING AUTHORITIES SHOULD USE SEPARATE SHEET IF NEEDED. <u>See attached memo</u>			



300 FT EACH  
CLOSED LOOPS

② ●      ● ①

← well

2937 Southview Road

EAST WAY Road

A1 36" 8  
A2 26" 7

B1 20" 2

B2 30" 6

WELL'S APART 19" 6  
20 FT PROPERTY LINE

ELHCOIT

Public  
H2O &  
sewer

12/14/11  
well sites ok  
spare drillers  
(K3)

## **Wolf, Kevin**

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**From:** Wolf, Kevin  
**Sent:** Monday, December 12, 2011 11:58 AM  
**To:** 'neil.self@nvdinc.com'  
**Subject:** 2937 Southview Rd, 10169 Cape Ann Dr. - Geothermal well permits

Neil,

I have reviewed the above referenced well permits and performed a site inspection to verify location from what you have submitted for approval from our office. Everything seems to be in order except one thing. Please remember that when submitting geothermal well permits applications, along with the green forms, you must submit the following:

- Permit application filled in completely
- Location diagram showing all bore hole locations as staked out on the property along with nominal distances from each bore holes, bore holes to house, bore holes to existing prop. lines, wells and septic (if applicable).
- A cross sectional diagram of the proposed geothermal well construction including a statement of the intended grout mix.

These applications have the first 2 but you need to submit the cross sectional diagram of the well along with the grout mix statement. Until I receive these things, the permits will be placed on hold. Any questions on this, please feel free to call me.

Thanks,

Kevin M. Wolf, R.S., R.E.H.S.  
Howard County Health Department  
Bureau of Environmental Health  
Well & Septic Program  
Groundwater Mgmt. Sec.  
7178 Columbia Gateway Dr.  
Columbia, MD 21046

(o) 410-313-2645  
(f) 410-313-2648

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Peter L. Beilenson, M.D., M.P.H., Health Officer

December 14, 2011

**IMPORTANT**

MEMORANDUM - Geothermal Wells

TO: Northern Virginia Drilling, Inc.  
Attn: Neil Self  
FILE

FROM: Kevin M Wolf, R.S., R.E.H.S.   
Well and Septic Program  
Groundwater Mgmt. Sec.

RE: **Geothermal Wells**  
*10169 Cape Ann Drive, 2937 Southview Road*

The following comments apply the above aforementioned geothermal well application:

When submitting completion reports for geothermal wells, please indicate the type of grout used and the mixture ratios on each report. If you can not fit this information on the completion report(s), please use a separate sheet of paper. Also, all wells must have gps coordinates (lat, long) and these coordinates must be written on the completion reports for that particular well.

Remember, bentonite alone should be mixed at a ratio of 2 lbs or greater per gallon of water. If *thermal-enhanced* grout is to be used, remember to follow manufactures specifications when mixing. Health Department Sanitarians can inspect this type of grout by requesting the well driller to collect a sample of the grout in a bucket. If it the sand settles out within 1 hour, the grout mix is improper. Thermal enhanced bentonite grouts are a mixture of bentonite and quartz sand. The sand stays suspended in the clay for the life of the well. Please refer to the NGWA published article "Guidelines for the Construction of Vertical Boreholes for Closed Loop Heat Pump Systems" (1997)

Geothermal Wells may be permitted by cluster. The size of the cluster shall be determined by the Delegated Approving Authority.

Any questions please feel free to call me. 410-313-1771

