

C1 29901 SEQUENCE NO. (MDE USE ONLY)

STATE OF MARYLAND WELL COMPLETION REPORT

THIS REPORT MUST BE SUBMITTED WITHIN 45 DAYS AFTER WELL IS COMPLETED.

(THIS NUMBER IS TO BE PUNCHED IN COLS. 3-6 ON ALL CARDS)

FILL IN THIS FORM COMPLETELY PLEASE TYPE

COUNTY NUMBER

ST/CO USE ONLY DATE Received MM DD YY 09 10 14

DATE WELL COMPLETED MM DD YY 09 10 14

Depth of Well 22 400' 26 (TO NEAREST FOOT) 10/24/2014 PERMIT NO. FROM "PERMIT TO DRILL WELL" 140-14-0074

OWNER Tiffany Nichols WELL SITE ADDRESS 5329 Broadwater Ct TOWN Clarksville SUBDIVISION SECTION LOT

WELL LOG Not required for driven wells

STATE THE KIND OF FORMATIONS PENETRATED, THEIR COLOR, DEPTH, THICKNESS AND IF WATER BEARING

Table with columns: DESCRIPTION (Use additional sheets if needed), FEET (FROM, TO), check if water bearing. Rows include: Moist, stiff Reddish Brown m-f Sandy, micaceous silt w/ small boulders; Weathered Rock; Rock; 2x Geothermal.

GROUTING RECORD YES NO

WELL HAS BEEN GROUTED (Circle Appropriate Box) TYPE OF GROUTING MATERIAL (Circle one) CEMENT CM BENTONITE CLAY BC NO. OF BAGS 16 NO. OF POUNDS 800 GALLONS OF WATER 400' DEPTH OF GROUT SEAL (to nearest foot) from 0' TOP 52 ft. to 400' BOTTOM 58 ft.

CASING RECORD

MAIN CASING TYPE Nominal diameter top (main) casing (nearest inch)! Total depth of main casing (nearest foot) 60 61 63 64 66 70

OTHER CASING (if used) diameter inch depth (feet) from to

SCREEN RECORD

screen type or open hole (insert appropriate code below) ST STEEL BR BRASS PL PLASTIC HO OPEN HOLE OT OTHER DEPTH (nearest ft.)

Table with columns: A, C, H, S, C, R, E, E, N. Rows: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76

GRAVEL PACK IF WELL DRILLED WAS FLOWING WELL INSERT F IN BOX 68

MDE USE ONLY (NOT TO BE FILLED IN BY DRILLER) T (E.F.D.S.) W Q

TELESCOPE CASING LOG INDICATOR OTHER DATA

PUMPING TEST

HOURS PUMPED (nearest hour) 8 9 PUMPING RATE (gal. per min.) 11 15 METHOD USED TO MEASURE PUMPING RATE WATER LEVEL (distance from land surface) BEFORE PUMPING 17 20 ft. WHEN PUMPING 22 25 ft. TYPE OF PUMP USED (for test) A air P piston T turbine C centrifugal R rotary O other (describe below) J jet S submersible

PUMP INSTALLED

DRILLER INSTALLED PUMP YES NO (CIRCLE) (YES or 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. 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) + above - below LAND SURFACE (nearest foot) 49 50 51

LATITUDE 39.226150 LONGITUDE 76.964466 (DEFAULT COORD. WGS 84)

NOTES:

B 1 10675

SEQUENCE NO. (MDE USE ONLY)

STATE OF MARYLAND APPLICATION FOR PERMIT TO DRILL WELL

STATE PERMIT NUMBER

40-14-0074

fill in this form completely

554577 please type

Date Received (APA) 08/11/14

OWNER INFORMATION

8 MM DD YY 13

Tiffany Nicholas

5329 Broadwater CN.

Clarksville MD 21029

B 3

LOCATION OF WELL

Howard 8 COUNTY 21

23 SUBDIVISION 42

SECTION 44 46 LOT 48 50

Clarksville 52 NEAREST TOWN 71

DRILLER INFORMATION

Edward Gross MWD 580

Lens Green Drilling 410-409-2260

2109 Emmerton Park Rd. Suite 107

Signature Date 8/10/14

B 4

SOURCES OF DRILLING WATER

- 1. Public

5329 Broadwater CN 11 STREET ADDRESS 30

ON WHICH SIDE OF ROAD (CIRCLE APPROPRIATE BOX)



34 1100 37 DISTANCE FROM ROAD FT

ENTER FT OR MI 38 39

TAX MAP: 28 BLK: 15 PARCEL 180

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)

- D DOMESTIC POTABLE SUPPLY & RESIDENTIAL IRRIGATION
- F FARMING (LIVESTOCK WATERING & AGRICULTURAL IRRIGATION)
- I INDUSTRIAL, COMMERCIAL, DEWATERING
- P PUBLIC WATER SUPPLY WELL
- T TEST, OBSERVATION, MONITORING
- O OPEN LOOP GEOTHERMAL
- C CLOSED LOOP GEOTHERMAL 2x Geothermal

NOT TO BE FILLED IN BY DRILLER HEALTH DEPARTMENT APPROVAL

Howard 13 COUNTY NAME COUNTY NO.

STATE SIGNATURE INSERT S 41

DATE ISSUED 8/28/14 H. Oswald 8/28/15 43 MM DD YY 48 CO SIGNATURE EXP. DATE

APPROXIMATE DEPTH OF WELL 400 FEET

APPROXIMATE DIAMETER OF WELL 6 INCH NEAREST

METHOD OF DRILLING (circle one)

BORED (or Augered) JETTED Jetted & DRIVEN

AIR-ROTary AIR-PERCussion ROTARY (Hydraulic Rotary)

CABLE REVERSE-ROTary Drive-POINT

other

REPLACEMENT OR DEEPEMED WELLS (CIRCLE APPROPRIATE BOX)

- N THIS WELL WILL NOT REPLACE AN EXISTING WELL
- Y THIS WELL WILL REPLACE A WELL THAT WILL BE ABANDONED AND SEALED
- S THIS WELL WILL REPLACE A WELL THAT WILL BE USED AS A STANDBY-CONTACT LOCAL APPROVING AUTHORITY FOR POLICY ON STANDBY WELLS
- D THIS WELL WILL DEEPEM 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)

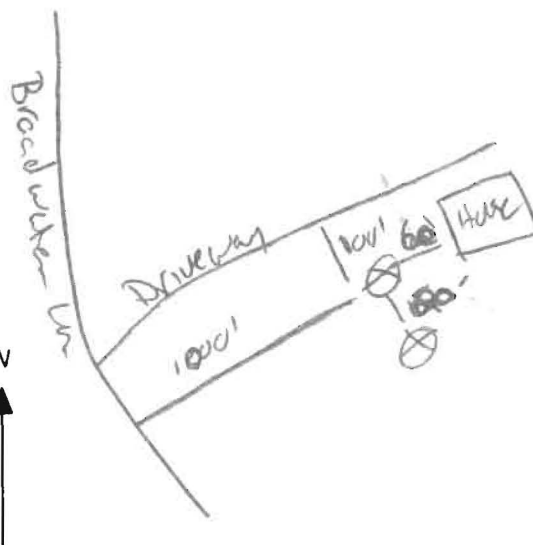
APPROX. PERMIT NUMBER G

PERMIT No. 40-14-0074

SPECIAL CONDITIONS

NOTE APPROVING AUTHORITIES SHOULD USE SEPARATE SHEET IF NEEDED

PROPOSED LOCATION OF WELL ON LOT SHOW PERMANENT STRUCTURES SUCH AS BUILDINGS, SEPTIC SYSTEM, ROADS AND/OR LANDMARKS AND INDICATE NOT LESS THAN TWO DISTANCE MEASUREMENTS TO WELL





Bureau of Environmental Health
7178 Columbia Gateway Drive, Columbia, MD 21046-2147
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Twitter: HowardCoHealthDep

Maura J. Rossman, M.D., Health Officer

TO: All Interested Parties

FROM: Jeff Williams
Program Supervisor
Well and Septic Program

RE: **Acceptable Well Site Plans for Geothermal Wells**

DATE: December 18, 2013

Effective immediately, well permit site plans for geothermal systems must be a copy of an 8 ½" by 11", 1" to 30' to 1" = 100' scaled drawing depicting the following information:

- Topography at 2 foot intervals
- Locations of all wells and onsite sewage disposal system components on the property and on neighboring properties if they are within 100 feet of the proposed geothermal location.
- Locations of the approved Sewage Disposal Area for the property and all neighboring properties if the area is within 100 feet of the proposed geothermal location.
- Locations of all stormwater management devices on the property and on neighboring properties if they are within 100 feet of the proposed geothermal location.
- Locations of all structures and relevant landscape features such as swales, streams, lakes.

Some of the information regarding existing sewage disposal areas and system components may be available in the property file on record at the Howard County Health Department. A request for a copy of that file may be made by submitting a public information request form to the Health Department. A copy of that form is available on our website in the Environmental Health, Well & Septic section.

Be advised that a well site must be professionally staked and is subject to review by the Health Department prior to issuance of the well construction permit.

All closed-loop geothermal well permit applications must be accompanied by a cross section diagram of the well showing the proposed grouting method with grout extending from the bottom of the hole to the top of the casing as well as the proposed grout mixture.

Two copies of this well site plan and the attached paperwork must be submitted for each proposed lot.



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Maura J. Rossman, M.D., Health Officer

MEMORANDUM

TO: Edward Gross, MWD 580
Long Green Drilling

FROM: Ryan Rappaport, *L.E.H.S.*
Well & Septic Program

CC: Jeff Williams, Program Supervisor
Well & Septic Program

RE: Well Permit Application, 6080 Adcock Lane

DATE: November 14, 2013

The Health Department is in receipt of a well permit application for the above listed address. It has been reviewed and is currently on hold. The following requirements are needed in order to issue the permit.

1. A revised well exhibit on an 8 ½" by 11" paper with a 1" to 30' to 1" = 100' scaled drawing of the property showing the location of the home, the property lines, the existing public sewer and water lines on the property, the sewer and water line connection to the dwelling and any existing septic & utility easements on the property.
2. The number of bore holes to be drilled on the site and their locations which meet the required setbacks
3. A cross-sectional diagram of the proposed geothermal well construction including a statement of the intended grout mix.

CC: File

Oswald, Hank

From: Oswald, Hank
Sent: Tuesday, August 26, 2014 2:12 PM
To: 'egross@longgreenenergy.com'
Cc: 'ldziuk@longgreenenergy.com'; Rappaport, Ryan
Subject: 5329 Broadwater Lane (Geothermal Well Permit)
Attachments: A17493_P19006.pdf; Acceptable Well Site Plans for Geothermal Wells.pdf; Memo_6080 AdcockLn_Geo_3_.pdf

Mr. Gross:

The site plan submitted for this project did not include the locations of the existing well and septic components for this property. It also did not include any wells or septic systems on neighboring properties within a 100 feet of the proposed geothermal well sites. Please refer to the attached memo's regarding acceptable well site plans for geothermal wells. In addition, I've attached a copy of the septic record for this property (specifically page 5) for your convenience. Please submit a revised plan to scale meeting all the specifications outlined in the memo's. Please note that I cannot print to scale so a hard copy would have to be mailed or dropped off.

Please contact me with any questions or concerns.

Respectfully,

Hank

Hank Oswald, L.E.H.S.
Howard County Health Department
Well & Septic Program
8930 Stanford BLVD
Columbia, MD 21045
410-313-1786
410-313-2648 (Fax)

Thurs.