

C1 23462 <small>(THIS NUMBER IS TO BE PUNCHED IN COLS. 3-6 ON ALL CARDS)</small>	SEQUENCE NO. (MDE USE ONLY)	STATE OF MARYLAND WELL COMPLETION REPORT FILL IN THIS FORM COMPLETELY PLEASE TYPE	THIS REPORT MUST BE SUBMITTED WITHIN 45 DAYS AFTER WELL IS COMPLETED. COUNTY NUMBER
ST/CO USE ONLY DATE RECEIVED MM DO YY 8 13	DATE WELL COMPLETED MM DO YY 1-14-15	Depth of Well 22 600 26 (TO NEAREST FOOT)	PERMIT NO. FROM "PERMIT TO DRILL WELL" 2126/15SC 14-14-0007

OWNER MUNRO, DONALD
 WELL SITE ADDRESS RESERVOIR RD TOWN FULTON
 SUBDIVISION MUNRO PROPERTY SECTION LOT 3

WELL LOG		
Not required for driven wells		
STATE THE KIND OF FORMATIONS PENETRATED, THEIR COLOR, DEPTH, THICKNESS AND IF WATER BEARING		
DESCRIPTION (Use additional sheets if needed)	FEET	check if water bearing
	FROM TO	
Top Soil	0 2	
Brown Shale	2 10	
Brown mica	10 45	
Gray mica	45 600	
14 bags cement = 3.5 bags ✓ 4 10 ft		
Yield: 2 gal ✓ 120 mins min 2 hrs 240 gal		
Storage: 110. 570' - 70' = 520' × 0.05 = 336 gal + 240 gal ✓ 576 gal		

GROUTING RECORD	
WELL HAS BEEN GROUTED (Circle appropriate box)	
YES <input checked="" type="checkbox"/> Y	NO <input type="checkbox"/> N
TYPE OF GROUTING MATERIAL (Circle one)	
CEMENT <input checked="" type="checkbox"/> CM	BENTONITE CLAY <input type="checkbox"/> BC
NO. OF BAGS <u>14</u>	NO. OF POUNDS <u>1400</u>
GALLONS OF WATER <u>84</u>	
DEPTH OF GROUT SEAL (to nearest foot)	
from <u>0</u> TOP	ft. to <u>40</u> BOTTOM
(enter 0 if from surface)	

CASING RECORD	
casing types insert appropriate code below	<input checked="" type="checkbox"/> ST STEEL <input type="checkbox"/> CO CONCRETE <input type="checkbox"/> PL PLASTIC <input type="checkbox"/> OT OTHER
	MAIN CASING TYPE <u>ST</u>
	Nominal diameter top (main) casing (nearest inch) <u>6</u>
	Total depth of main casing (nearest foot) <u>60</u>

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

SCREEN RECORD	
screen type or open hole insert appropriate code below	<input checked="" type="checkbox"/> ST STEEL <input type="checkbox"/> BR BRASS <input type="checkbox"/> PL PLASTIC <input type="checkbox"/> HO OPEN HOLE <input type="checkbox"/> OT OTHER

C 2 DEPTH (nearest ft.)	
1 <u>40</u>	58 600
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DRILLERS LIC. NO. <u>MWD 040</u> <u>George F. Shuler</u> DRILLERS SIGNATURE (MUST MATCH SIGNATURE ON APPLICATION) LIC. NO. <u>JS D 038</u> <u>James Chapman</u> SITE SUPERVISOR (sign. of driller or journeyman responsible for sitework if different from permittee)	
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.R.O.S.) W Q	
TELESCOPE CASING LOG INDICATOR OTHER DATA	

C 3 PUMPING TEST	
HOURS PUMPED (nearest hour)	<u>6</u>
PUMPING RATE (gal. per min.)	<u>2</u>
METHOD USED TO MEASURE PUMPING RATE	<u>Bucket</u>
WATER LEVEL (distance from land surface)	
BEFORE PUMPING	<u>70</u> ft.
WHEN PUMPING	<u>167</u> ft.
TYPE OF PUMP USED (for test)	
<input type="checkbox"/> A air	<input type="checkbox"/> P piston
<input type="checkbox"/> C centrifugal	<input type="checkbox"/> R rotary
<input type="checkbox"/> J jet	<input checked="" type="checkbox"/> S submersible
<input type="checkbox"/> T turbine	<input type="checkbox"/> O other (describe below)

PUMP INSTALLED	
DRILLER INSTALLED PUMP (CIRCLE) (YES or NO)	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
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)	
<input checked="" type="checkbox"/> above	LAND SURFACE
<input type="checkbox"/> below	(nearest foot)

LATITUDE 39.133744
 LONGITUDE 76.947035
 (DEFAULT COORD. WGS 84)
 NOTES:

B 1 29210	SEQUENCE NO. (MDE USE ONLY)	STATE OF MARYLAND APPLICATION FOR PERMIT TO DRILL WELL please type	STATE PERMIT NUMBER 40-14-0027 <small>fill in this form completely</small>
Date Received (APA) 12581 B MM DD YY 13 <u>MUNRO</u> 15 Last Name Owner First Name 34 <u>DONALD</u> 36 <u>8601 RESERVOIR ROAD</u> Street or RFD 55 <u>FULTON, MD. 20759</u> 57 Town 70 State 72 Zip 76		B 3 LOCATION OF WELL CC# 8 COUNTY <u>Howard</u> 21 <u>Munro Property</u> 23 SUBDIVISION 42 SECTION <u>44</u> 46 LOT <u>3</u> 48 50 <u>Fulton</u> 52 NEAREST TOWN 71	
DRILLER INFORMATION Driller's Name <u>George F. Easterday</u> MW D 76 License No. 81 Firm Name <u>L. Franklin Easterday, Inc.</u> Address <u>9265 Brown Church Rd., Mt. Airy, Md. 21771</u> Signature <u>George F. Easterday</u> Date <u>5/28/14</u>		B 4 SOURCES OF DRILLING WATER 1. <u>wells</u> 11 STREET ADDRESS 30 2. <u>Reservoir Rd</u> ON WHICH SIDE OF ROAD (CIRCLE APPROPRIATE BOX) NORTH WEST EAST SOUTH 34 325 37 DISTANCE FROM ROAD Ft. ENTER FT OR MI 38 39 TAX MAP: <u>45</u> BLK: <u>12</u> PARCEL <u>9</u>	
B 2 WELL INFORMATION 1 APPROX. PUMPING RATE (GAL. PER MIN.) 5 2 8 12 AVERAGE DAILY QUANTITY NEEDED (GAL. PER DAY) 14 <u>500</u> 20		NOT TO BE FILLED IN BY DRILLER HEALTH DEPARTMENT APPROVAL <u>Howard</u> (13) <u>4537287</u> COUNTY NAME COUNTY NO. STATE SIGNATURE INSERT S → 41 DATE ISSUED <u>5/28/14</u> <u>K. M. Hall</u> <u>5/28/14</u> 43 MM DD YY 48 CO SIGNATURE EXP. DATE	
USE FOR WATER (CIRCLE APPROPRIATE BOX) <input checked="" 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 type="checkbox"/> CLOSED LOOP GEOTHERMAL		APPROXIMATE DEPTH OF WELL <u>300</u> FEET 24 28 APPROXIMATE DIAMETER OF WELL <u>6</u> INCH NEAREST INCH	
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		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 	
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 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) APPROP. PERMIT NUMBER _____ G _____ PERMIT No. <u>40-14-0027</u> 70 71 72 73 74 75 76 77 78 79	
SPECIAL CONDITIONS <small>NOTE: APPROVING AUTHORITIES SHOULD USE SEPARATE SHEET IF NEEDED</small>			

FIELD DATA SHEET
HYDROGEOLOGIC AREA (3) WELL YIELD TEST

Maryland Well Permit No. H0-14-0027 Election District _____

Location of Property (road) Reservoir

Subdivision MUNRO Property # 3 Block _____ Plat _____ Sec. _____

Well Driller EASTERDAY Owner DON MUNRO

Depth of Well 600 1+ gpm
 Distance of Measuring Point (M.P.) above ground 2 ft
 Static Water Level (S.W.L.) below M.P. 70.4

I. High Rate Pumping -- reservoir drawdown

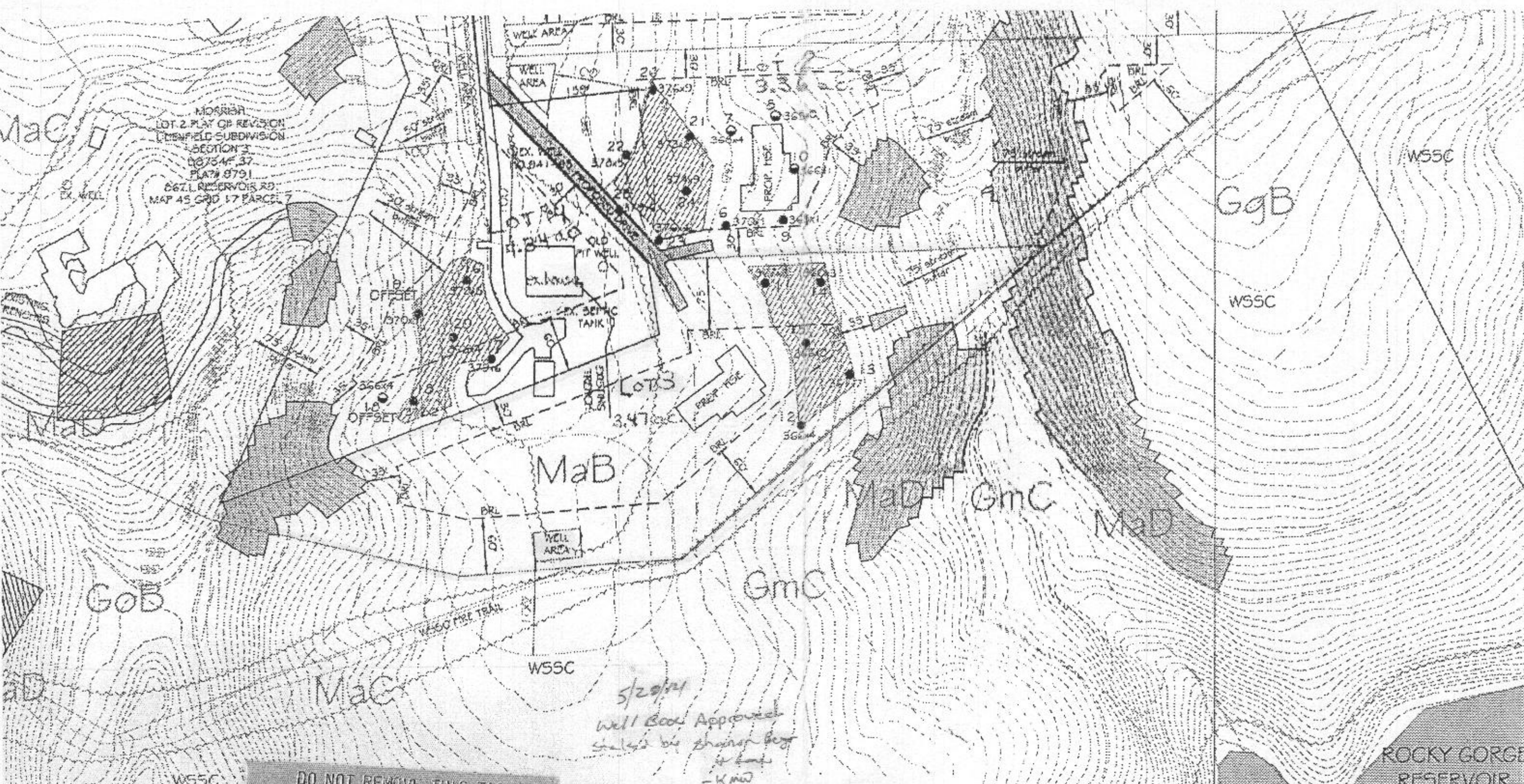
Time pump started 9:15 Pumping rate 20 GPM
 Total time 20 min to reach pumping water level 166 ft. below M.P.

II. Recovery pump test data - observations to be recorded every 15 minutes.

TIME	WATER LEVEL Below M.P.	PUMPING RATE Time to fill <u>1</u> gal. bucket	<u>Pump Set</u> FLOW METER READING (if used)	CALCULATED FLOW (gallons per min.)
9:45 AM	166 ft	30 sec	480 ft	2 GPM
10:00	166 ft	30 sec		2 GPM
10:15	166 ft	30 sec		2 GPM
10:30	166 ft	30 sec		2 GPM
10:45	166 ft	30 sec		2 GPM
11:00	166 ft	30 sec		2 GPM
11:15	166 ft	30 sec		2 GPM
11:30	166 ft	30 sec		2 GPM
11:45	166 ft	30 sec		2 GPM
12:00	166 ft	30 sec		2 GPM
12:15	166 ft	30 sec		2 GPM
12:30	166 ft	30 sec		2 GPM
12:45	166 ft	30 sec		2 GPM
1:00	166 ft	30 sec		2 GPM
1:15	166 ft	30 sec		2 GPM
1:30	166 ft	30 sec		2 GPM
1:45	166 ft	30 sec		2 GPM
2:00	166 ft	30 sec		2 GPM
2:15	167 ft	30 sec		2 GPM
2:30	167 ft	30 sec		2 GPM
2:45	167 ft	30 sec		2 GPM
3:00	167 ft	30 sec		2 GPM
3:15	167 ft	30 sec		2 GPM
3:30	167 ft	30 sec		2 GPM
3:45	167 ft	30 sec		2 GPM

Dickie
 Tested By
 Gafsky

MORRIS
LOT 2, PLAT OF REVISION
LITENFIELD SUBDIVISION
SECTION 3
00734F.37
PLAT 9791
667 L. RESERVOIR RD.
MAP 45 GRID 17 PARCEL 7



5/29/14
Well Book Approved
Shaded by Sharon Berger
-KMD

DO NOT REMOVE THIS TAG
DEPARTMENT OF THE ENVIRONMENT
WELL PERMIT NUMBER

H0-14-0027

INFORMATION: GIVE NUMBER AND WRITE
1800 WASHINGTON BLVD
BALTIMORE MARYLAND. 21230

I HEREBY CERTIFY THAT THE INFORMATION SHOWN
IS FIELD WORK DONE BY ME OR UNDER MY DIRECT
AND IS CORRECT TO THE BEST OF MY PROFESSIONAL
BELIEF.

SHANABERGER & LANE
LAND SURVEYORS
DATE: 5/29/14
LICENSE EXPIRATION DATE 4/2/2017

SHANABERGER & LANE
8726 TOWN & COUNTRY BLVD.
SUITE 201
ELMGOTT CITY, MD 21043
(410) 461-9563
(410) 461-9693 fax
Home@shanaberg.com

PERC CERTIFICATION PLAT
PROPOSED LOTS 1-4
PROPERTY OF DONALD MUNRO
TITLE DEEDS: 3704/323 AND 3835/76
TAX MAP 45, GRID 12, PARCEL 9 & P/O PARCEL 50
5TH ELECTION DISTRICT, HOWARD COUNTY, MD.
SCALE: 1" = 100' DATE: 6/8/2012
REV: 6/29/2012

LOVED: FOR PRIVATE WATER AND
DATE: 5/29/14
HEALTH OFFICER

PC537287

HOWARD COUNTY HEALTH DEPARTMENT
BUREAU OF ENVIRONMENTAL HEALTH
WELL & SEPTIC PROGRAM
TEL: (410)313-1771 FAX: (410)313-2648

Information Form for the Installation of the Well Pump, Pitless Adapter, and Supply Piping

NOTE: The installer is responsible for requesting an inspection prior to 9 am on the day of the desired inspection. No work is to be covered until approved by the Health Department. All installations must comply with the National Standard Plumbing Code (NSPC, as amended locally) and COMAR 26.04.04 (MD Well Construction Regulations). Submission of a complete form is required prior to Use and Occupancy approval.

Company Name: AGAPE PLUMBING Telephone #: 410-490-4846
Address: 112 RAYLIFE RD
GRANOVILLE MD 21638

(Must circle one) Licensed Plumber Licensed Well Driller Licensed Well Pump Installer
License # and name of individual responsible for the field installation:

Name (Print): CHARLES McNICHOLS License# 21958

*A licensed individual must perform the actual installation. Apprentices must be under the supervision of a licensed journeyman or master plumber, pump installer or well driller. Licenses may be subjected to field verification. Unlicensed individuals may be reported to the appropriate licensing agency.

Name of Property Owner: DAVID WOODSON Telephone #: 410-6290
Subdivision: _____ Lot #: _____ Well Tag #: HO-14-0027
Site Address: 8593 RESERVOIR RD
FULTON MD

Submersible Pump Data

Make: FRAMLEN
Model #: FM4E07510305
Pump Capacity: 47 GPM
Well Yield: 2 GPM

Pitless Adapter

Make: APRIL
Model#: APT 800 NL
Depth: 36" (36" min)
NSF/WSC approved: ✓

Well Cap and Electric Conduit

Two piece watertight cap: YES
Screened, vented well cap: YES
Cap secured to casing: YES
Conduit min 18" B.G.: YES

Depth of well encountered at time of pump installation: 600' (feet) Conduit secured to well cap: YES
If pump capacity exceeds well yield, a low water cut off switch is required by NSPC 1990 Section 17.8.4

Torque arrestors, Cable guards, or other acceptable method used- Must circle one

Safety rope, if used, attached to brass rope adapter or other acceptable method inside of well casing

Piping to house

Type: 1" PLASTIC WELL PIPE

PSI: 160 (160 psi min)

Depth of supply line: 36" (36" min)

House Connection

PVC sleeve to undisturbed soil at wall penetration: 5'

Length of sleeve (5' minimum from foundation): 10'

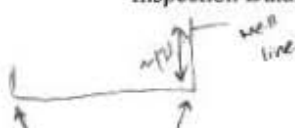
Sleeve sealed properly: YES

The water supply line is required to be at least ten feet from the septic tank, pump chamber, sewage piping, distribution box, drainfields, and sewage reserve area. If this cannot be accomplished, contact this office for approval prior to installation.

Signature of company representative Charles McNichols D.B.A. Agape Plumbing date 2/14/17

For Health Department Use Only - Not to be completed by Installer

Date Insp. Requested: 3/10/17 Date Insp. Approved: 3/10/17 Inspector: SC
Inspection Data: Pitless adapter watertight & water supply line at least 36" below grade ✓
Two piece cap installed and attached to casing securely ✓
Elec. conduit extends at least 18" below grade/attached to cap properly ✓
Safety rope not outside of well cap/casing ✓
Correct well tag attached properly and casing 8" above finished grade ✓
Water supply line sleeved adequately at house connection ✓
Adequate grout observed below pitless adapter ✓



204'
139'
14-0027

INTERIM CERTIFICATE OF POTABILITY

Expiration Date – DECEMBER 6, 2018

June 6, 2018

Homeowner
8593 Reservoir Road
Fulton, MD 20759

**RE: Munro Property, Lot 3
8593 Reservoir Road
Building Permit: B16005094
Well Permit: HO-14-0027**

Dear Homeowner:

This is to advise you that the septic system installation and water well construction for the above referenced property have been inspected and approved. Final approval of the septic system was granted on 3/16/2018. Final approval of the well line connection to the dwelling was granted on 3/10/2017. The well construction was completed on 1/14/2015. Water samples were collected on 5/30/2018.

The water sample results indicate that the water samples submitted for testing were free of coliform and fecal coliform bacteria at the time of sampling and are bacteriologically safe for drinking. This certifies that the initial sampling requirements of COMAR 26.04.04 "Well Regulations" have been met for the water supply system installed under well permit HO-14-0027. Although the submitted sample results are in compliance with COMAR standards, the Health Department does not guarantee water supplies.

This Interim Certificate of Potability will expire **six months** from the date of issuance. Submission of a second bacteriological test indicating the water is free of coliform and fecal coliform bacteria is required prior to the expiration date, after which time a Final Certificate of Potability will be issued. **Failure to submit an additional sample and obtain a Final Certificate of Potability will result in a Notice of Violation and is punishable as a misdemeanor under the Annotated Code of Maryland, Environment Article, 9-1311, subject to a fine of up to \$500 or imprisonment not to exceed three months.**

Please contact (410) 313-1773 to schedule a final water sample appointment or contact a Maryland certified water laboratory to schedule a water sample. A list of laboratories certified by the state of Maryland may be found at the following website:
<http://www.mde.state.md.us/assets/document/WSP-Labs-2010apr16.pdf>



Bureau of Environmental Health
8930 Stanford Blvd | Columbia, MD 21045
410.313.2640 - Voice/Relay
410.313.2648 - Fax
1.866.313.6300 - Toll Free

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

In closing, please refer to our "Homeowner Fact Sheet" which illustrates a better understanding for your Onsite Sewage Disposal System. You will also find a link to Maryland Department of the Environments website which describes in further detail operation and maintenance of your septic system.

Approving Authority,

Kevin M. Wolf, LEHS, R.S./REHS, Supervisor
Groundwater Management Section
Well & Septic Program

cc: Howard County Dept. of Inspections, Licenses, and Permits
Community Hygiene Program
File

FOUNTAIN VALLEY ANALYTICAL LABORATORY, INC.

1413 Old Taneytown Rd. Westminster, MD (410) 848-1014 (410) 876-4554 FAX (410) 848-0298

REPORT OF ANALYSIS

Laboratory ID #: 122207 Account #: 1404
Reference: Greenleaf Builders Company: Carroll Water Systems
Location: 8593 Reservoir Road Requested By: Brian Smith
Fulton, MD 20759 Source: Well Water
Date/ Time Collected: 5/30/2018 1615 Site: Bathroom Sink
Date/Time Rec'd: 5/31/2018 1500 Treatment: None
Chlorine ppm: Free: ND Total: ND pH: 7.7
Collected By: T. Aronhalt 2662TA Well #: HO-14-0027

PARAMETERS	RESULTS	UNITS	REFERENCE	METHOD	DATE/TIME/ANALYST
Bacteria, Coliform, Total, MPN	<1.0	MPN/ 100 ml	<1.0	SM20 9223	6/1/2018 / 1000 / CRS
Bacteria, E. coli, MPN	<1.0	MPN/ 100 ml	<1.0	SM20 9223	6/1/2018 / 1000 / CRS
Nitrate	1.29	mg/L	10	601	5/31/2018 / 1525 / RER
Turbidity	1.52	NTU	<10	SM20 2130B	5/31/2018 / 1510 / RER
Sand	NS	mg/L	5	Visual/Gravimetric	5/31/2018 / 1510 / RER

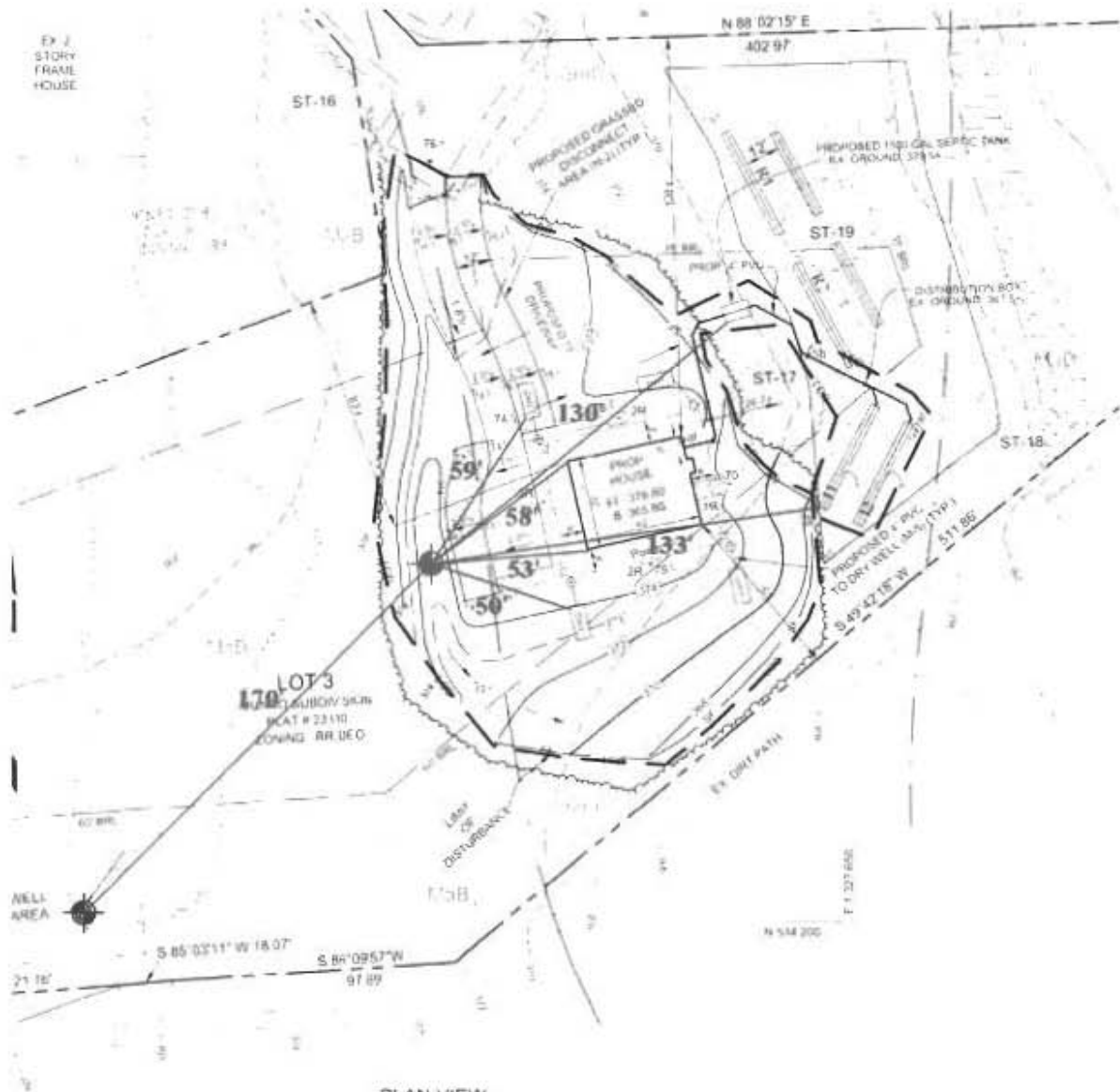
NOTES

- 1 Revised Report to show Building Permit # and Well Tag # for Use & Occupancy Permit. 6/1/18 BCD
- 2 mg/L = milligrams per liter (also, parts per million)
- 3 MPN/ 100 ml = Most Probable Number [of viable bacteria] per 100 ml of sample.
- 4 NS = None Seen (NS indicates less than 5 mg/L)
- 5 NTU = Nephelometric Turbidity Units
- 6 Results less than or within the reference range are considered satisfactory and within potable water limits at the time of sampling.
- 7 ND = None Detected; N/A: Not Available
- 8 pH tested on site; Chlorine level tested in lab
- 9 Sample collected by client, analyzed as received

Reason for Test : Use & Occupancy**Building Permit # :** B16005094

Date Reported: 6/1/2018

EX 2
STORY
FRAME
HOUSE



PLAN VIEW
SCALE 1\"/>

L E G E N D

- PROPOSED GEOTHERMAL WELL LOCATION
- APPROXIMATE DOMESTIC WELL LOCATION
- APPROXIMATE DRY WELL LOCATION

GRAPHICAL SCALE



ConnellyGeothermal
Partnering with Mother Earth

260 Interstate Court (301) 696-8820
Frederick, Maryland 21704 (301) 696-0327 fax

SCHUMAN RESIDENCE
8593 RESERVOIR ROAD, FULTON, MARYLAND

PROPOSED GEOTHERMAL WELL
LOCATION PLAN

Scale:
AS SHOWN

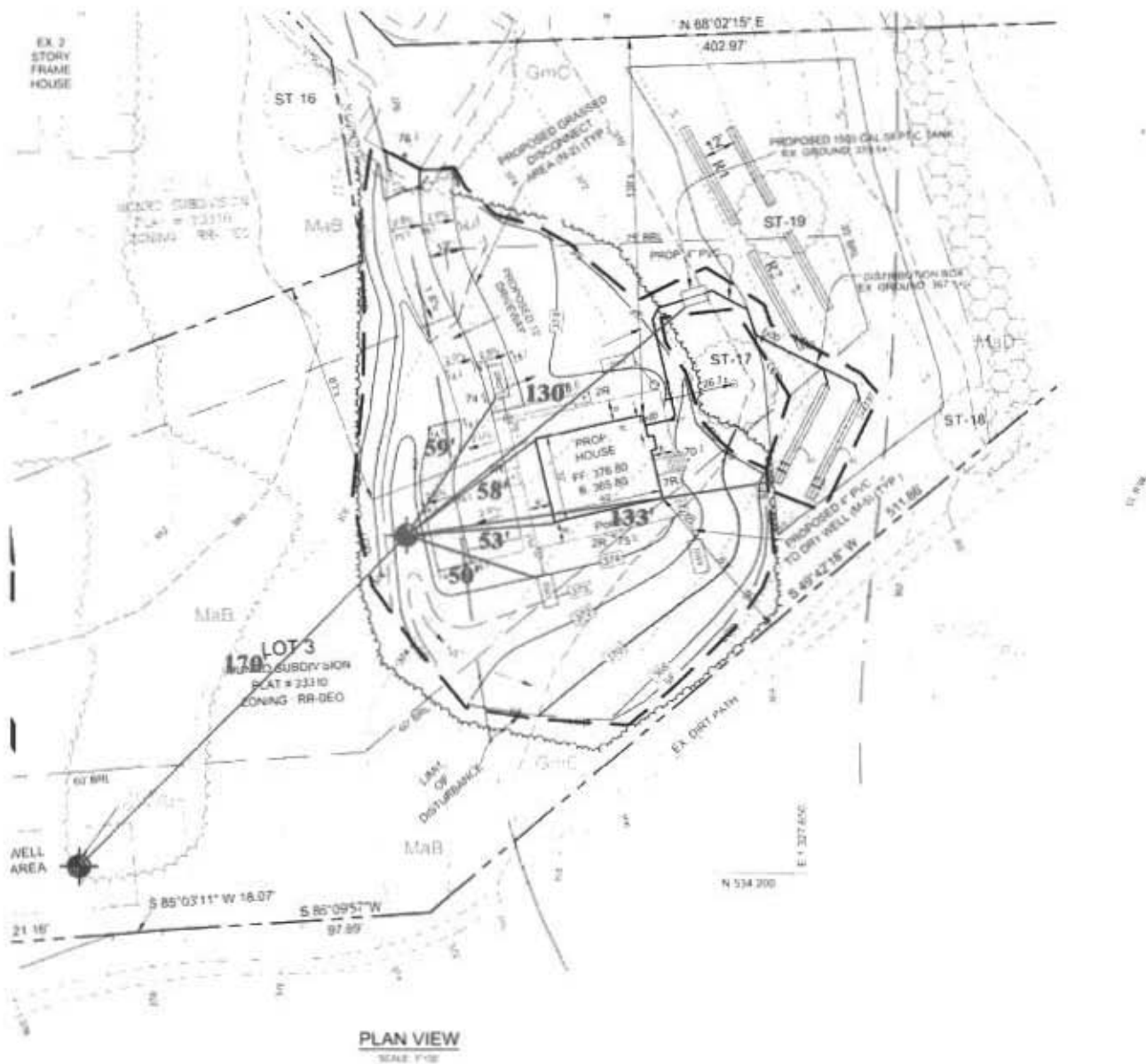
Date:
JAN. 2017

Drawn By:
J.A.

Checked By:
E.S.




Project No.:
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Fig.
1

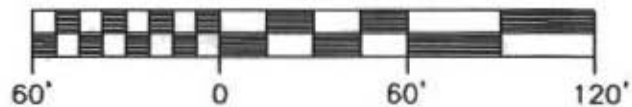


PLAN VIEW
SCALE: 1"=10'

LEGEND

-  PROPOSED GEOTHERMAL WELL LOCATION
-  APPROXIMATE DOMESTIC WELL LOCATION
-  APPROXIMATE DRY WELL LOCATION

GRAPHICAL SCALE



ConnellyGeothermal
Partnering with Mother Earth

260 Interstate Court (301) 696-8820
Frederick, Maryland 21704 (301) 696-0327 fax

SCHUMAN RESIDENCE
8593 RESERVOIR ROAD, FULTON, MARYLAND

PROPOSED GEOTHERMAL WELL
LOCATION PLAN

Scale:
AS SHOWN

Fig.

Date:
JAN. 2017

Drawn By:
J.A.

Checked By:
E.S.

Project No.:
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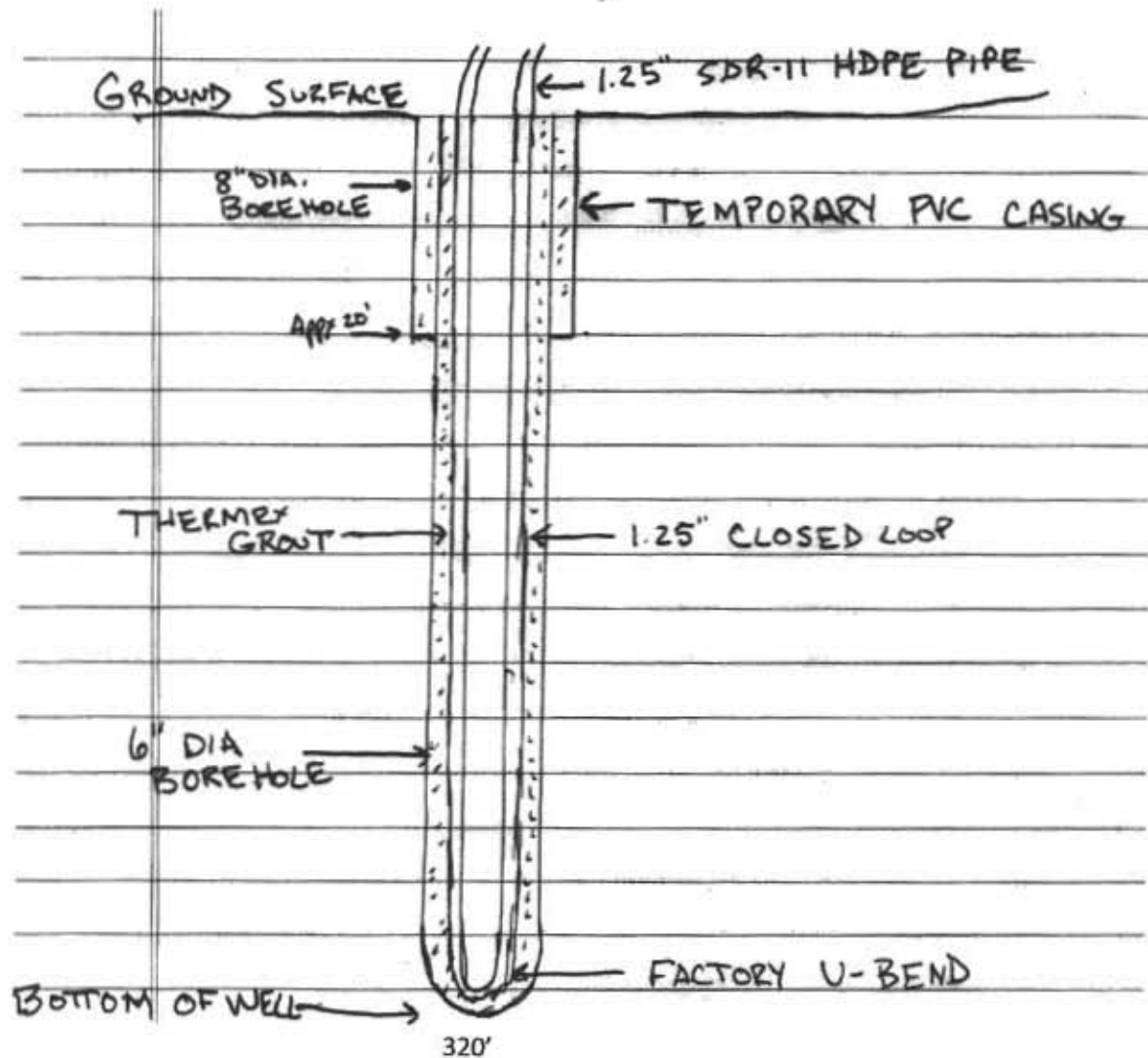
Construction Material
around well location
at site. Drillers will
measure again to verify
well location before drilling.

Thank you,

Josh April
Connelly & Assoc.
301 366 7270



Geothermal Closed Loop – 8593 Reservoir Road, Fulton, Maryland



Grout information for this property is as follows:

Thermex grout mixture of 50 lb. grout to 19 gallons water, placed in the well using the tremie method, from bottom to top.

$$TID =$$

$$Vol = \frac{2315 \text{ cu}'}{9''}$$