

1 2 3 6 (THIS NUMBER IS TO BE PUNCHED IN COLS. 3-6 ON ALL CARDS) COUNTY NUMBER **A 520-385** PERMIT NO. FROM "PERMIT TO DRILL WELL" **140-15-0040**

ST/CO USE ONLY DATE Received **10/15/15** DATE WELL COMPLETED **07/23/15** Depth of Well **225'** (TO NEAREST FOOT) **OK 10/21/15 SC**

OWNER **BASSLER Venturing LLC** WELL SITE ADDRESS **GRAPE MYRTLE CT** TOWN **CLARKSVILLE** SUBDIVISION **WALNUT CREEK PHASE 4** SECTION **156** LOT **156**

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	
Clay	2	8	
Sandy	8	18	
Sand Stone	18	25	✓
MICKA	25	75	
Sand Stone	75	80	✓
MICKA	80	205	

GROUTING RECORD

WELL HAS BEEN GROUTED (Circle Appropriate Box) **Y** **N**

TYPE OF GROUTING MATERIAL (Circle one)
CEMENT **CM** BENTONITE CLAY **BC**

NO. OF BAGS **13** NO. OF POUNDS **1300**

GALLONS OF WATER **18**

DEPTH OF GROUT SEAL (to nearest foot)
from **0** ft. to **28** ft.
(enter 0 if from surface)

CASING RECORD

casing types insert appropriate code below

ST STEEL **CO** CONCRETE
PL PLASTIC **OT** OTHER

MAIN CASING TYPE **PL** Nominal diameter top (main) casing (nearest inch)! **6** Total depth of main casing (nearest foot) **30**

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 **HO** OPEN HOLE
PL PLASTIC **OT** OTHER

C 2 DEPTH (nearest ft.)

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
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

SLOT SIZE 1 _____ 2 _____ 3 _____

DIAMETER OF SCREEN _____ (NEAREST INCH)
from _____ to _____

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

70 _____ 72 _____ 74 75 76

TELESCOPE CASING LOG INDICATOR OTHER DATA

C 3

PUMPING TEST

HOURS PUMPED (nearest hour) **3**

PUMPING RATE (gal. per min.) **8.5**

METHOD USED TO MEASURE PUMPING RATE **Bucket**

WATER LEVEL (distance from land surface)

BEFORE PUMPING **27** ft.

WHEN PUMPING **20** 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 (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**

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 } LAND SURFACE (nearest foot)
- below }

LATITUDE **37.23638**
LONGITUDE **76.94689**
(DEFAULT COORD. WGS 84)

NOTES:
13 bags = 4.6 bags/10'
2.0

DRILLERS LIC. NO. **MS D117**

DRILLERS SIGNATURE **[Signature]**

LIC. NO. **D**

SITE SUPERVISOR (sign. of driller or journeyman responsible for sitework if different from permittee)

B 1 26889

SEQUENCE NO. (MDE USE ONLY)

STATE OF MARYLAND APPLICATION FOR PERMIT TO DRILL WELL

STATE PERMIT NUMBER

HO-15-0040 fill in this form completely

555799-J please type

Date Received (APA) 040815

OWNER INFORMATION

8 MM DD YY 13 BASSLER Venture LLC 15 Last Name Owner First Name 34 PO Box 482 Lisson MD 21765 36 Street or RFD 55 57 Town 70 State 72 Zip 76

B 3 LOCATION OF WELL

8 COUNTY Howard 21 WALANT CREEK PHASE II 23 SUBDIVISION 42 SECTION 44 46 LOT 156 48 50 CLANKSVILLE MD 52 NEAREST TOWN 71

DRILLER INFORMATION

Ralph Mayne MS D 117 76 Driller's Name License No. 81 Ralph Mayne Well Drilling Firm Name 17024 Handy Rd Mt. Airy MD 21001 Address 2008 4/14/15 Signature Date

B 4 SOURCES OF DRILLING WATER

1. well 2. 3.

GRAPE MYRTLE 11 STREET ADDRESS 30

ON WHICH SIDE OF ROAD (CIRCLE APPROPRIATE BOX)



34 200 37 DISTANCE FROM ROAD ENTER FT OR MI 38 39

TAX MAP: 28 BLK: PARCEL 49

B 2 WELL INFORMATION

1 2 APPROX. PUMPING RATE (GAL. PER MIN.) 5 8 12 AVERAGE DAILY QUANTITY NEEDED (GAL. PER DAY) 500 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

NOT TO BE FILLED IN BY DRILLER HEALTH DEPARTMENT APPROVAL

Howard (13) A520385 COUNTY NAME COUNTY NO. STATE SIGNATURE INSERT S 41 DATE ISSUED 4/20/15 CO SIGNATURE S.L. C.M. 4/20/16 EXP. DATE 43 MM DD YY 48

APPROXIMATE DEPTH OF WELL 150 FEET 24 28

APPROXIMATE DIAMETER OF WELL 6" NEAREST INCH

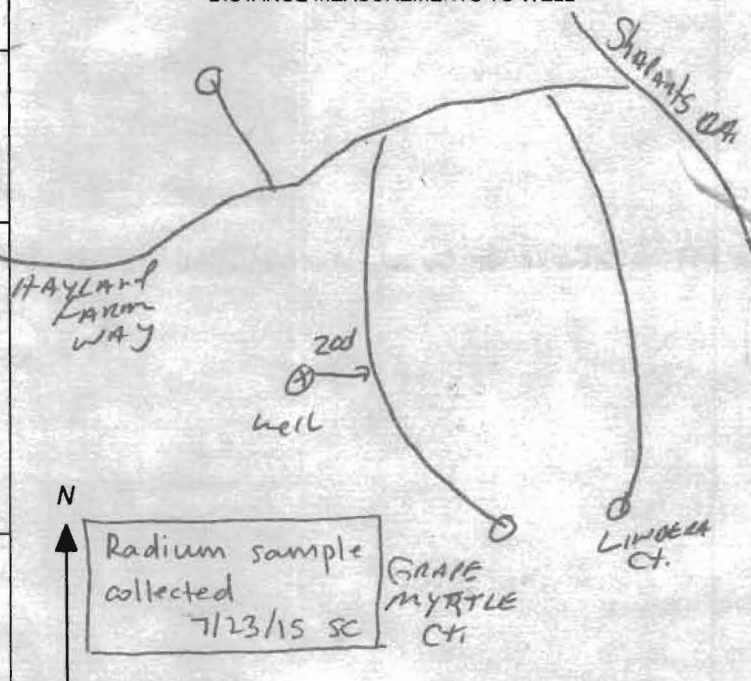
METHOD OF DRILLING (circle one)

BORED (or Augered) JETTED Jetted & DRIVEN AIR-ROTARY AIR-PERCussion ROTARY (Hydraulic Rotary) 30 CABLE REVERSE-ROTARY DRIVE-POINT 37 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 DEEPEMED AN EXISTING WELL
PERMIT NUMBER OF WELL TO BE REPLACED OR DEEPEMED (IF AVAILABLE) 41 52

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



Not to be filled in by driller (MDE OR COUNTY USE ONLY)

APPROP. PERMIT NUMBER HO 2006G020

PERMIT No. HO-15-0040 70 71 72 73 74 75 76 77 78 79

SPECIAL CONDITIONS

NOTE APPROVING AUTHORITIES SHOULD USE SEPARATE SHEET IF NEEDED Wells must be 100' apart and 100' from grinder

© COUNTY pit. Radium sample required at yield

FIELD DATA SHEET
HOWARD COUNTY WELL YIELD TEST

Well Permit No. HO - 15-00401
 Location of property (road) GRAVE MYRTLE CT.
 Subdivision Walnut Creek Phase 4 Lot 156 Block _____ Plat _____ Sec. _____
 Well Driller Ralph Mayne Owner Bassler Venture LLC

Depth of well 205'
 Distance of measuring point (M.P.) above ground 3'
 Static water level (S.W.L.) below M.P. 24'

I. High rate pumping -- reservoir drawdown
 Time pump started 7:45 Pumping rate 12 GPM
 Total time 15 min to reach pumping water level 70 ft. below M.P.

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

TIME (in 15 minute intervals)	WATER LEVEL below M.P.	PUMPING RATE time to fill 5 gallon bucket	FLOW METER READING (if used)	CALCULATED FLOW (gallons per minute)
7:45	24 ft.	5 Sec		12 GPM
			TEST STARTED	
8:00	20 ft	7 Sec		8.5 GPM
8:15	20 ft	7 Sec		8.5 GPM
8:30	20 ft	7 Sec		8.5 GPM
8:45	20 "	7 "		8.5 "
9:00	20 "	7 "		8.5 "
9:15	20 "	7 "		8.5 "
9:30	20 ft	7 Sec		8.5 GPM
9:45	20 ft	7 Sec		8.5 GPM
10:00	20 ft	7 Sec		8.5 GPM
10:15	20 "	7 "		8.5 "
10:30	20 "	7 "		8.5 "
10:45	20 ft	7 Sec		8.5 GPM
11:00	20 ft	7 Sec		8.5 GPM

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: Tri County Telephone #: 301-432-0330
Address: 6711 Old National Pk
Brownstown, Md 21033

(Must circle one) Licensed Plumber Licensed Well Driller Licensed Well Pump Installer
License # and name of individual responsible for the field installation:
Name (Print): William Griffith License# 20135

*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: Craftmark Homes Telephone #: 303-932-0573
Subdivision: Walden Crest Lot #: 154 Well Tag #: HO-15-0040 ✓
Site Address: 5022 Cross Myrtle Ct
Ellicott City, Md 21042

Submersible Pump Data Pitless Adapter Well Cap and Electric Conduit
Make: Sla Bitt Make: Amesbury Two piece watertight cap: Y
Model #: 57A-50522-01 Model#: P1900 Screened, vented well cap: Y
Pump Capacity 7 GPM Depth: 36 (36" min) Cap secured to casing: Y
Well Yield: 10 GPM NSF/WSC approved: Y Conduit min 18" B.G.: Y
Depth of well encountered at time of pump installation: 205 (feet) Conduit secured to well cap: Y
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

Cross Myrtle Ct

Piping to house House Connection
Type: Poly PVC sleeve to undisturbed soil at wall penetration: Y
PSI: 200 (160 psi min) Length of sleeve (3' minimum from foundation): 20'
Depth of supply line: 36" (36" min) Sleeve sealed properly: Y

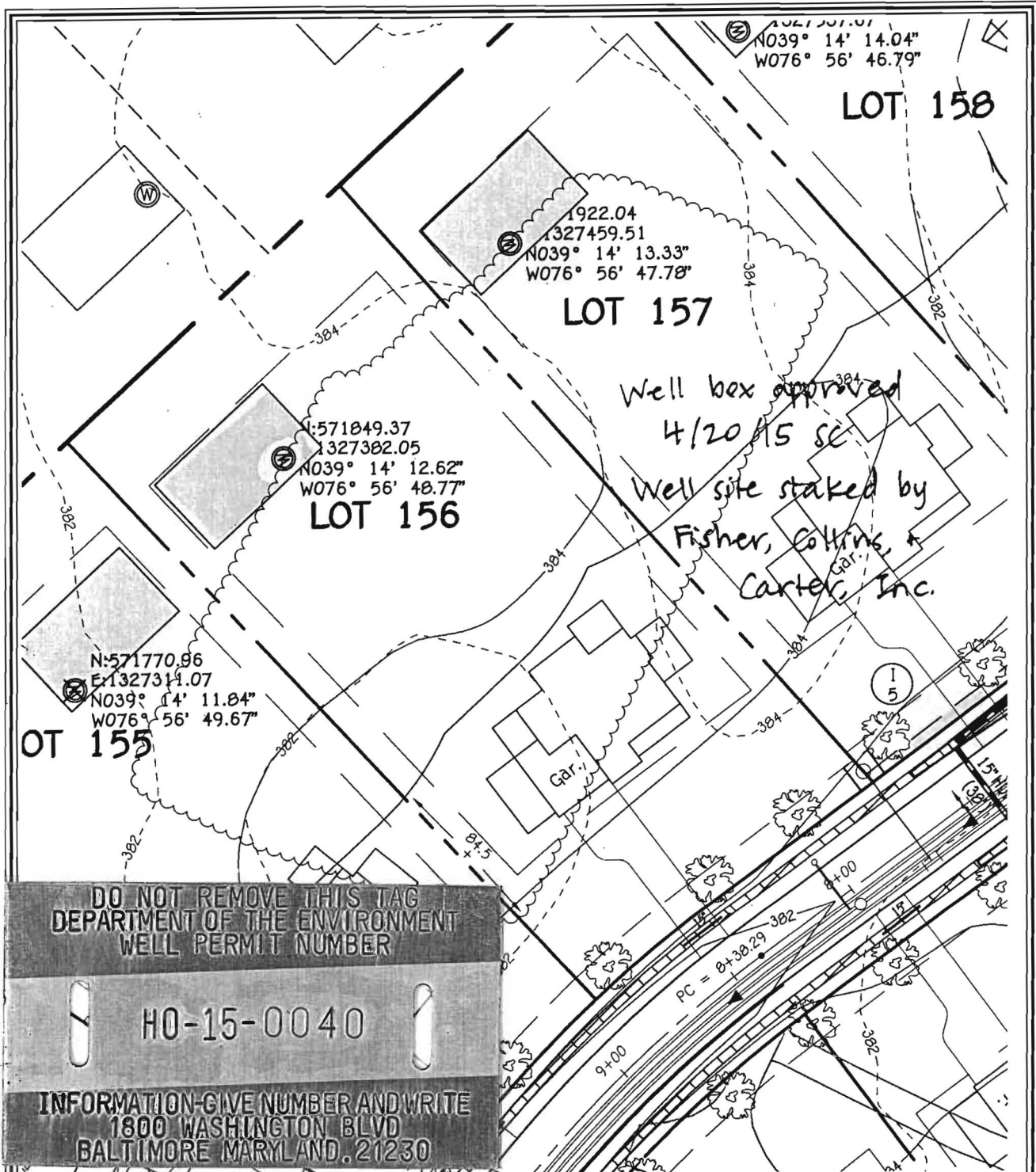


The water supply line is required to be at least ten feet from the septic tank, pump chamber, sewage piping, distribution box, drainfields, and sewage reserve area. If this cannot be accomplished, contact this office for approval prior to installation.

Signature of company representative responsible for installation: William E. Griffith date: 6-5-2017

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

Date Insp. Requested: 06/06/2017 Date Insp. Approved: 06/06/2017 Inspector: [Signature]
Inspection Data: Pitless adapter watertight & water supply line at least 36" below grade ✓ 40"
Two piece cap installed and attached to casing securely ✓
Elec. conduit extends at least 18" below grade/attached to cap properly ✓ 24"
Safety rope not outside of well cap/casing ✓
Correct well tag attached properly and casing 8" above finished grade ✓ 32"
Water supply line sleeved adequately at house connection ✓
Adequate grout observed below pitless adapter ✓



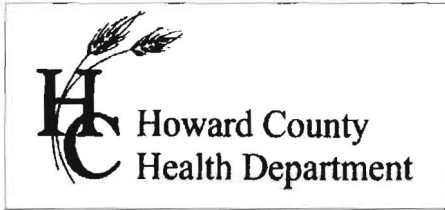
WELL LOCATION INFORMATION:
 NORTHING = 571049.37 EASTING = 1327382.05
 LATITUDE = N 39°14'13" LONGITUDE = W 76°56'49"

LOT 156 WELL MAP
WALNUT CREEK
PHASE FOUR

Lots 23 - 68, Non-Buildable Preservation Parcels
 'C', 'G', 'T', 'K', 'L' And 'M', Buildable Bulk Parcels 'E' And 'H'
 & Non-Buildable Parcel 'J'
 ZONED: RC-DEO & RR-DEO

TAX MAP No. 28 GRID Nos. 4, 5, 10-12, 17, AND 18 PARCEL No. 49
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: FEBRUARY 23, 2015 SCALE: 1"=50'

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 (410) 461 - 2255



7178 Columbia Gateway Dr., Columbia, MD 21046
(410) 313-2640 Fax (410) 313-2648
TDD (410) 313-2323 Toll Free 1-866-313-6300
website: www.hchealth.org

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

TO ALL INTERESTED PARTIES

When submitting a well application for a proposed well for new construction, please indicate one of the following:

Well Site Location:

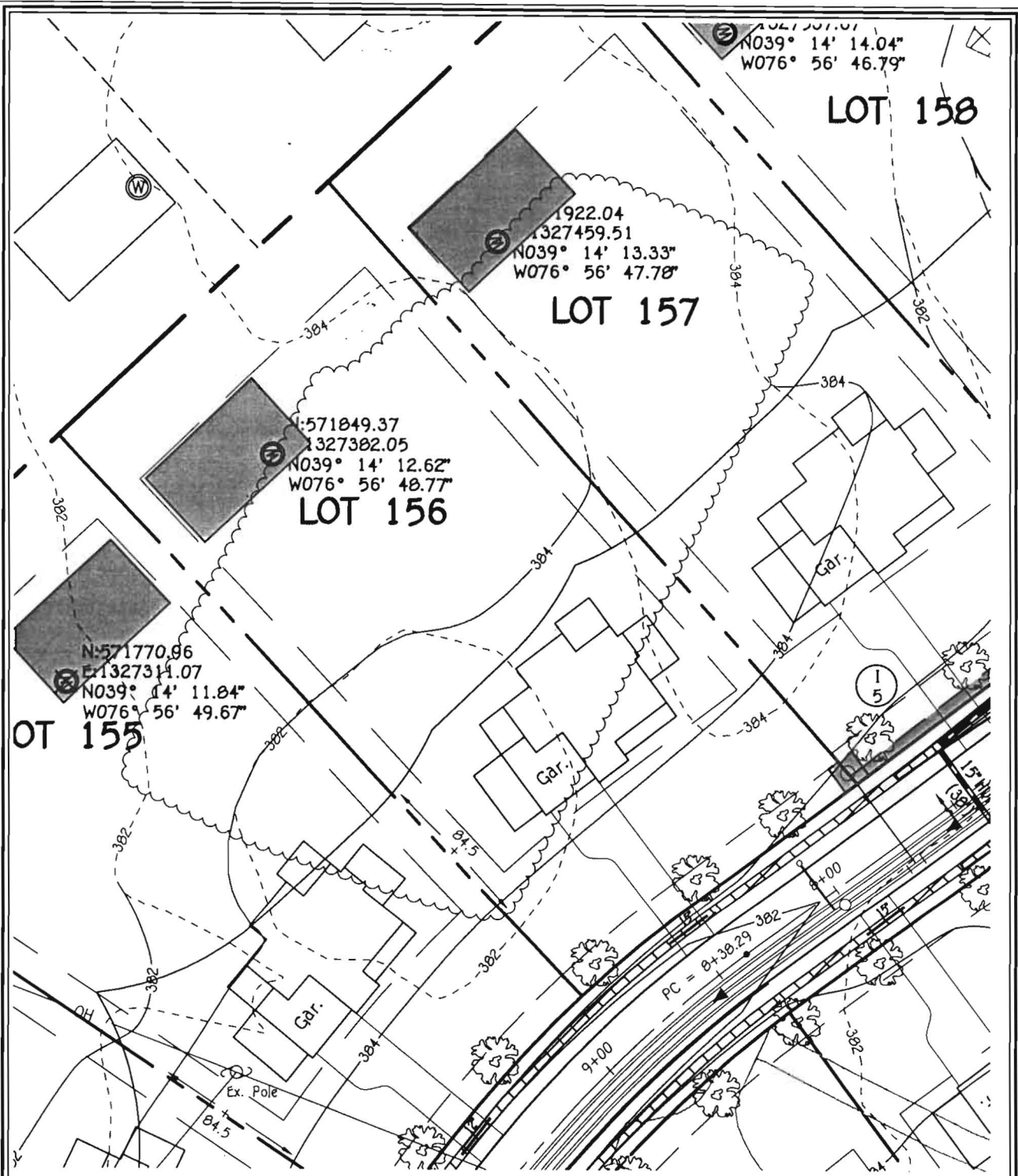
Walnut Creek Phase 4	156	Crape Myrtle Ct.
Subdivision/Property Name	Lot #	Road Name

The well site has been staked by Fisher, Collins and Carter, Inc., (professional land surveyor or company employing professional land surveyors) on 03/11/15 (date) and does not require a site inspection.

The well driller, builder or property owner will call the Health Department to schedule a time to meet in the field to verify the proposed well site location.

This sheet, along with two copies of an acceptable well site plan, must be attached to the green well permit application.

Revised 3/11/07



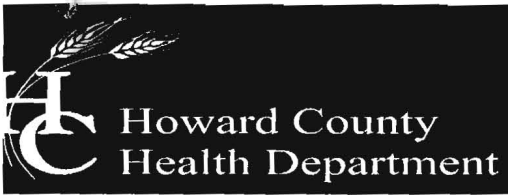
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 & Non-Buildable Parcel 'J'
 ZONED: RC-DEO & RR-DEO

TAX MAP No. 28 GRID Nos. 4, 5, 10-12, 17, AND 18 PARCEL No. 49
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: FEBRUARY 23, 2015 SCALE: 1"=50'

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PKE
 ELICOTT CITY, MARYLAND 21042
 (410) 461 - 2855



Bureau of Environmental Health

8930 Stanford Boulevard, Columbia, MD 21045

Main: 410-313-2640 | Fax: 410-313-2648

TDD 410-313-2323 | Toll Free 1-866-313-6300

www.hchealth.org

Facebook: www.facebook.com/hocohealth

Maura Rossman, M.D., Health Officer

September 1, 2015

Bassler Venture
Attn. Tim Feaga
15950 North Avenue, P.O. Box 482
Lisbon, Maryland 21765

RE: Walnut Creek Lot 156
Crape Myrtle Court
Well Tag: HO - 15 - 0040

Dear Mr. Feaga:

A sample was collected during a yield test on July 23, 2015 and submitted to the Department of Health & Mental Hygiene Laboratories to assess the possible presence of **Gross Alpha** and **Gross Beta** in the future well water supply. **Gross Alpha** and **Gross Beta** measure the total alpha and beta particle activity in a water supply. These naturally occurring radioactive nuclides have been demonstrated to be present in a certain type of geologic formation known as the Baltimore Gneiss which exists in your area of development within the County.

Results from this screening revealed a **Gross Alpha** of $< 2.0 \pm 0.0$ picocuries/liter (pCi/L), while the **Gross Beta** level was $< 4.0 \pm 0.0$ pCi/L. The **Gross Alpha** result was below its **maximum contaminant level (MCL)** of 15 pCi/L, while the **Gross Beta** level was below its targeted value of 50 pCi/L (roughly equivalent to the **annual dose rate** of 4 millirems/year).

At the time of testing and with respect to these parameters, the future well water supply **meets** EPA regulatory standards. Additional testing **for these parameters** will not be required to secure the future Use & Occupancy. **Please note** that other standard testing parameters (bacteria, nitrate, turbidity and sand) will still be required to help secure Use & Occupancy.

A copy of the test results is enclosed for your information. Please call this office at 410-313-1773 if you have any further questions.

Sincerely,

A handwritten signature in black ink that reads 'Bert Nixon'.

Bert Nixon, Director

Bureau of Environmental Health

✓ Enclosure
cc: Property file

SEND REPORT TO: Bert Nixon DEPARTMENT OF HEALTH AND MENTAL HYGIENE

Howard Co. Health Dept.
Bureau of Environmental Health
Columbia, MD 21045

Laboratories Administration
401 W. Preston St., Baltimore, MD 21201
Robert A. Myers, Ph.D., Director

Lab No. 000093 #249

1770 Ashland Ave., Baltimore, MD 21205

RADIATION ANALYSIS REQUEST FORM

Plant/Site Name: Walnut Creek - Lot 156

County: Howard

Sample Source: Grape Myrtle Ct.

Location: 110-15-0040

(Well no., lab sink, sample tap, etc.)

Radon-222 Bottle A _____
Bottle B _____

Radon-222 Field Blank Bottle A _____
Bottle B _____

County 113

Plant No. [] [] [] [] [] [] [] [] [] []

CHECK (one per Box)

Type	
Drinking Water	<input checked="" type="checkbox"/>
Landfill	<input type="checkbox"/>
Stream	<input type="checkbox"/>
Other	<input type="checkbox"/>

Service	
Community	<input type="checkbox"/>
Non-Community	<input type="checkbox"/>
Private	<input checked="" type="checkbox"/>
Other	<input type="checkbox"/>

Point of Collection	
Source (Raw)	<input checked="" type="checkbox"/>
Distribution (treated)	<input type="checkbox"/>
MCL	<input type="checkbox"/>

Testing	
Emergency	<input type="checkbox"/>
Routine	<input checked="" type="checkbox"/>
Recheck	<input type="checkbox"/>
Special	<input type="checkbox"/>

Submitters Code: [] []

Federal Project: 5

Collector: S. Collins

Telephone No.: 410-313-6287

Date Collected: 7/23/15

Time Collected: 10:30 a.m. p.m.

Field pH: _____

Field Chlorine: _____

Nitric Acid Preserved: Yes No

Iced: Yes No

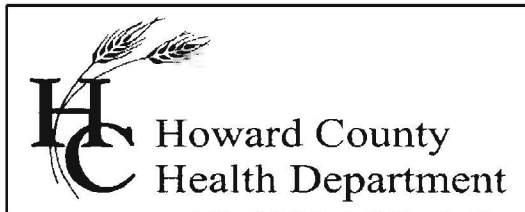
Remarks: Sample taken during yield test

TEST	EPA Code	Lab No.	Method No.	Results (pCi/L)	Date Analyzed	Analyst	Date Reported
<input checked="" type="checkbox"/> Gross Alpha	4000	093	EPA 900.0	< 2.0	7/27/15	WT	7/28/15
<input checked="" type="checkbox"/> Gross Beta	4100	093	EPA 900.0	< 4.0	7/27/15	WT	7/28/15
<input type="checkbox"/> Radium-226	4020						
<input type="checkbox"/> Radium-228	4030						
<input type="checkbox"/> Total Uranium	4006						
<input type="checkbox"/> Radon-222 (Bottle A)	4004						
<input type="checkbox"/> Radon-222 (Bottle B)	4004						
<input type="checkbox"/> Radon Field Blank A	4004						
<input type="checkbox"/> Radon Field Blank B	4004						
<input type="checkbox"/> Tritium							
<input type="checkbox"/>							

Date Received: 07/24/15 Received By: Z. Myers Date: 7/28/15

Lab Use Only	Yes	No	N/A
Sample Intact upon arrival?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample pH < 2.0?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Received within holding time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Tel. No.: (410) 767-5537 Fax No.: (410) 333-5373



Bureau of Environmental Health

8930 Stanford Blvd., Columbia, MD 21046-2147

Main: 410-313-1774 | Fax: 410-313-2648

TDD 410-313-2323 | Toll Free 1-866-313-6300

www.hchealth.org

Facebook: www.facebook.com/hocohealth

Twitter: HowardCoHealthDep

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

INTERIM CERTIFICATE OF POTABILITY

Expiration Date – FEBRUARY 21, 2018

August 21, 2017

Homeowner
5022 Crape Myrtle Court
Ellicott City, MD 21042

**RE: Walnut Creek, Lot 156
5022 Crape Myrtle Court
Building Permit: B17000837
Well Permit: HO-15-0040**

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 **8/21/2017**. Final approval of the well line connection to the dwelling was granted on **6/6/2017**. The well construction was completed on **7/23/2015**. Water samples were collected on **8/7/2017**.

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.

Gross Alpha and Beta samples were also collected on **7/23/2015**. Results showed a Gross Alpha level of **2.0 ± 0.0 pCi/L** and **Gross Beta** level of **4.0 ± 0.0 pCi/L**. The Gross Alpha was below the maximum contaminant level (MCL) of 15 pCi/L and the Gross Beta was below the target level of 50pCi/L (roughly equivalent to the annual dose rate of 4 millirems per year). At the time of testing and with respect to these parameters, the well water is safe for all uses.

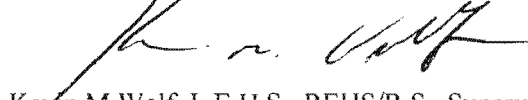
This certifies that the initial sampling requirements of COMAR 26.04.04 "Well Regulations" have been met for the water supply system installed under well permit HO-15-0040. Although the submitted sample results are in compliance with COMAR standards, the Health Department does not guarantee water supplies.

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 certified water quality 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>

Approving Authority,

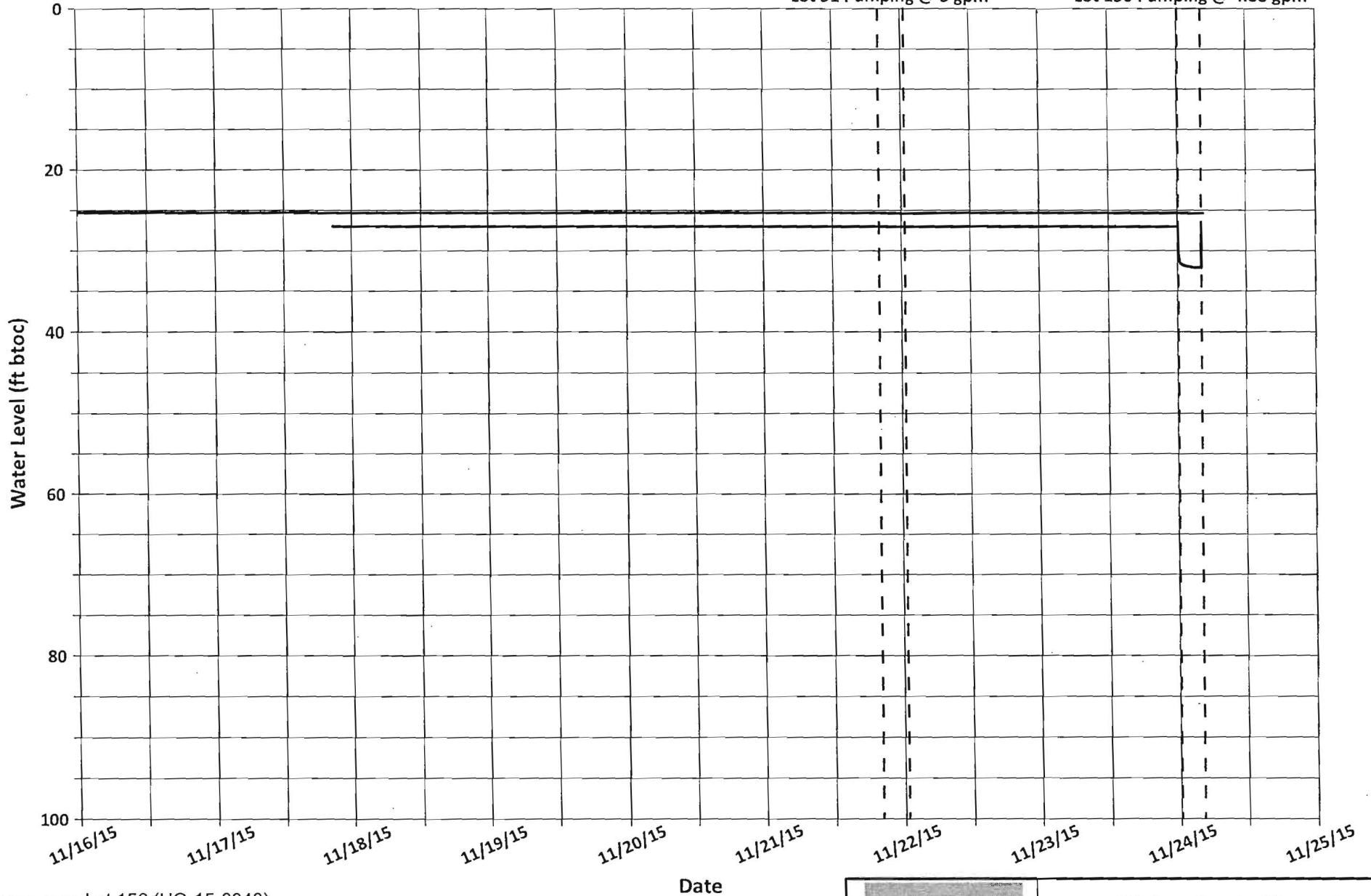
A handwritten signature in black ink, appearing to read "Kevin M. Wolf". The signature is written in a cursive style with a large initial "K" and "W".

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

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

Lot 51 Pumping @ 5 gpm

Lot 156 Pumping @ 4.88 gpm



— Lot 156 (HO-15-0040)
- - Lot 155 (HO-15-0121)

Date



www.hydro-terra.com

Walnut Creek - Phase 4
Clarksville, Maryland

Lot 156 (HO-15-0040)
Water Level Monitoring Record

drawn	JJL	checked	JJL	approved	MDH	Graph
date	11/27/15	date	11/27/15	date	11/27/15	1
project no.		file				

30 November 2015

Mr. Jeff Williams

Bureau of Environmental Health
Howard County Health Department
8930 Stanford Blvd.
Columbia, MD 21045



**Re: Waiver for Simultaneous Testing
Water Appropriation Permit HO2006G020(02)
Residential Wells – Lots 51, 155, and 156
Walnut Creek, Howard County, Maryland**

Dear Mr. Williams:

In response to the emails regarding the above-referenced lot wells, Hydro-Terra Group (HTG) is providing this letter addressing concerns for the potential of well interference.

Work Completed

HTG completed the following, forming the basis for the waiver. This included:

- Installing and calibrating water level loggers in unused wells on Lots 155 and 156, and providing a logger for barometric pressure corrections.
- Water level monitoring every minute to the nearest 1/100th of a foot for approximately six days.
- Coordinating with the Lot 51 homeowner, who ran a garden hose at a 5 gallon per minute (gpm) rate for approximately 4.5 hours starting at 8 AM on 11/22/15 (the family had been home all week).
- Test pumping the Lot 156 well for 4 hours at a 4.88 gpm rate on 11/24/15.
- Demobilizing the equipment, downloading the loggers, and graphing the water level data.

Results and Discussion

The results of the monitoring are presented in the attached graph. As shown, water levels in either well fluctuated very little during the monitoring period. A very slight decline in water level in the Lot 155 well is evident when the Lot 51 well was pumped, although the magnitude was a fraction of a foot (0.06 feet). The Lot 156 well water level dropped approximately 5 feet when pumped; the Lot 155 well showed no response during this time.

Based on review of well logs in the area, casing depths are generally between 40 and 60 feet, wells are drilled to depths of 100 to 300 feet deep, and the drillers testing reported relatively high yields of 10 gpm or more. Given that the water table is less than 30 feet deep, the underlying aquifer is relatively productive and is recharged through a significant saprolite zone. As a result, there is a relative lack of significant water level drawdown in individual wells when

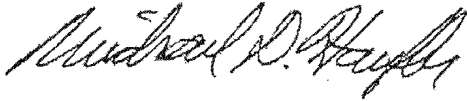
pumped, and well interferences are buffered by the productivity of the aquifer. Given that seasonal water fluctuations in this area and topographic setting are likely to be less than 10 feet, there should be no changes in potential well interferences during drought cycles.

Conclusions

Based on these results, there is no need for additional testing or concern for potential well interferences now or in the future.

Please feel free to call with any questions or comments.

Respectfully submitted,
HYDRO-TERRA GROUP



Michael D. Haufler, PG

Attachment

Copy: Tim Feaga, Jeremy Rutter, Jeff Lindaw, file



Fredericktowne Labs Inc.

ENVIRONMENTAL TESTING

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Certificate of Analysis

REVISED
address

Acct. No. 3948 - 1886-1

Field Record

Site visit performed on: Monday, August 07, 2017 3:00 PM
 by: Justin Hitchcock State ID No. 7148JH
 Affiliation: Tri-County Pump Services
 Property Owner: Craftmark Homes
 Project: Lot 156
 Property Address: Walnut Creek
 5022 Grape Myrtle Court
 Ellicott City, MD 21042
 Sample Source: 1st Floor Powder Room Sink
 Treatment Devices Noted: No Treatment Devices
 Well No.: HO-15-0041
 Field pH: 7.5
 Free Res. Cl.: 0.0 mg/l

OK
- Know

Laboratory Report

Sample Received at laboratory: 8/8/2017 8:07 AM

Bacteriological results:

<u>Total Colif. (/100ml)</u>	<u>E.coli. (/100ml)</u>	<u>Start</u>		<u>End</u>		<u>Method</u>	<u>Analyst</u>
		<u>Date</u>	<u>Time</u>	<u>Date</u>	<u>Time</u>		
<1	<1	08/08/17	12:13	08/09/17	12:57	9223B	JD

Bacteriological analysis of this sample indicates the water is safe for human consumption and meets federal, state and local requirements. Analysis was performed according to the 20th edition of Standard Methods

Inorganic Chemical results:

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>MCL</u>	<u>Date of Analysis</u>	<u>Method</u>	<u>Analyst</u>
Nitrate-Nitrogen	2.0	mg/l	10	8/8/2017	300.0	PH
Sand	<2	mg/l	5	8/9/2017	0.065mmFilter	JD
Turbidity	0.6	NTU'	10	8/8/2017	180.1	KB

Reported by Cristy Phelps 8/17/17
 Name Date

Fredericktowne Labs, Inc. is a State Certified Water Quality Laboratory
 Maryland Cert. No. 116 Virginia Cert. No. 00444
 MDOT WBE Cert. No.: 91-158