

<b>C1</b> <span style="font-size: 24pt; font-weight: bold;">52404</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)																																	
ST/CO USE ONLY DATE Received MM <u>06</u> DD <u>21</u> YY <u>17</u> 8 13	DATE WELL COMPLETED MM <u>05</u> DD <u>04</u> YY <u>17</u> 15 20	Depth of Well 22 <u>400</u> 26 (TO NEAREST FOOT)	PERMIT NO. FROM "PERMIT TO DRILL WELL" OK <u>6/22/17 SC</u> <u>HO-17-0121</u> 28 29 30 31 32 33 34 35 36 37																														
OWNER <u>FATH</u> WELL SITE ADDRESS <u>13606 Sheephead Rd</u> TOWN <u>CLARKSVILLE</u> SUBDIVISION <u>HEDGEROW</u> SECTION <u>7</u> LOT <u>7</u>																																	
<b>WELL LOG</b> Not required for driven wells STATE THE KIND OF FORMATIONS PENETRATED, THEIR COLOR, DEPTH, THICKNESS AND IF WATER BEARING <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>SOIL</td> <td>0</td> <td>5</td> <td></td> </tr> <tr> <td>Red Clay</td> <td>5</td> <td>17</td> <td></td> </tr> <tr> <td>Brown/Tan Shale</td> <td>17</td> <td>64</td> <td></td> </tr> <tr> <td>Limestone</td> <td>64</td> <td>150</td> <td></td> </tr> <tr> <td>Med Gray Rock</td> <td>150</td> <td>400</td> <td></td> </tr> <tr> <td></td> <td></td> <td>151</td> <td></td> </tr> </tbody> </table>		DESCRIPTION (Use additional sheets if needed)	FEET		check if water bearing	FROM	TO	SOIL	0	5		Red Clay	5	17		Brown/Tan Shale	17	64		Limestone	64	150		Med Gray Rock	150	400				151		<b>GROUTING RECORD</b> yes no WELL HAS BEEN GROUTED (Circle Appropriate Box) <u>Y</u> <u>N</u> TYPE OF GROUTING MATERIAL (Circle one) CEMENT <u>CM</u> BENTONITE CLAY <u>BC</u> NO. OF BAGS <u>30</u> NO. OF POUNDS <u>2250</u> GALLONS OF WATER <u>150</u> DEPTH OF GROUT SEAL (to nearest foot) from <u>0</u> ft. to <u>67</u> ft. 48 TOP 52 54 BOTTOM 58 (enter 0 if from surface)	
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WELL HYDROFRACTURED yes <u>Y</u> no <u>N</u>		<b>DEPTH (nearest ft.)</b> <table style="width:100%;"> <tr> <td>1 2</td> <td>3 4</td> <td>5 6</td> <td>7 8</td> <td>9 10</td> <td>11 12</td> <td>13 14</td> <td>15 16</td> <td>17 18</td> <td>19 20</td> <td>21 22</td> </tr> <tr> <td><u>HO</u></td> <td><u>67</u></td> <td><u>400</u></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		1 2	3 4	5 6	7 8	9 10	11 12	13 14	15 16	17 18	19 20	21 22	<u>HO</u>	<u>67</u>	<u>400</u>																
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CIRCLE APPROPRIATE LETTER <b>A</b> A WELL WAS ABANDONED AND SEALED WHEN THIS WELL WAS COMPLETED <b>E</b> ELECTRIC LOG OBTAINED <b>P</b> TEST WELL CONVERTED TO PRODUCTION WELL		<b>C 2</b> CASING HEIGHT (circle appropriate box and enter casing height) <u>+</u> above } LAND SURFACE <u>-</u> below } <u>1</u> (nearest foot) 49 50 51																															
I HEREBY CERTIFY THAT THIS WELL HAS BEEN CONSTRUCTED IN ACCORDANCE WITH COMAR 26.04.04 "WELL CONSTRUCTION" AND IN CONFORMANCE WITH ALL CONDITIONS STATED IN THE ABOVE CAPTIONED PERMIT, AND THAT THE INFORMATION PRESENTED HEREIN IS ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.		LATITUDE <u>39.22562</u> LONGITUDE <u>76.98713</u> (DEFAULT COORD. WGS 84)																															
DRILLERS LIC. NO. <u>M D 355</u> DRILLERS SIGNATURE (MUST MATCH SIGNATURE ON APPLICATION) <u>Chadley</u> LIC. NO. <u>AW D 920</u>		GRAVEL PACK IF WELL DRILLED WAS FLOWING WELL INSERT F IN BOX 68 <u>68</u> MDE USE ONLY (NOT TO BE FILLED IN BY DRILLER) T (E.R.O.S.) W Q 70 72 74 75 76 TELESCOPE LOG OTHER DATA CASING INDICATOR																															
SITE SUPERVISOR (sign. of driller or journeyman responsible for sitework if different from permittee)		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.																															

<b>B 1</b> <div style="border: 1px solid black; padding: 5px; font-size: 24px; text-align: center;">58627</div>	SEQUENCE NO. (MDE USE ONLY)	<b>STATE OF MARYLAND</b> <b>APPLICATION FOR PERMIT TO DRILL WELL</b> please type <div style="font-size: 24px; text-align: center;">560547</div>	STATE PERMIT NUMBER <div style="font-size: 24px; text-align: center;">H0-17-0121</div> fill in this form completely
<b>Date Received (APA)</b> 02/21/17 8 MM DD YY 13		<b>B 3 LOCATION OF WELL</b> 8 COUNTY <u>Howard</u> 21 23 SUBDIVISION <u>Hedgerow</u> 42 SECTION <u>44</u> <u>46</u> LOT <u>7</u> <u>48</u> <u>50</u> <u>Clarksville</u> 52 NEAREST TOWN 71	
<b>OWNER INFORMATION</b> 15 Last Name <u>Fath</u> Owner First Name <u>Joe</u> 34 36 Street or RFD <u>13606 Sheephead Court</u> 55 57 Town <u>Clarksville</u> 70 State <u>MD</u> 72 Zip <u>21029</u> 76		<b>B 4 SOURCES OF DRILLING WATER</b> 1. <u>Well</u> 2. <u>Ac HD</u> 3. <u>4/12/2017</u> <u>67' casing</u> <u>8" casing</u> <u>4/18/2017</u>	
<b>DRILLER INFORMATION</b> Driller's Name <u>Michael Barlow</u> MWD <u>355</u> 76 License No. 81 Firm Name <u>Barlow Well Drilling</u> Address <u>522 Underwood Lane</u> <u>21014</u> Signature <u>[Signature]</u> Date <u>2-16-17</u>		11 STREET ADDRESS <u>13606 Sheephead Ct</u> 30 ON WHICH SIDE OF ROAD (CIRCLE APPROPRIATE BOX) NORTH <input checked="" type="checkbox"/> WEST <input type="checkbox"/> EAST <input type="checkbox"/> SOUTH <input type="checkbox"/> 34 <u>150</u> 37 DISTANCE FROM ROAD ENTER FT OR MI <u>FT</u> 38 39 TAX MAP: <u>28</u> BLK: <u>20</u> PARCEL <u>30</u>	
<b>B 2 WELL INFORMATION</b> 1 APPROX. PUMPING RATE (GAL. PER MIN.) <u>5</u> 8 12 AVERAGE DAILY QUANTITY NEEDED (GAL. PER DAY) <u>750</u> 14 20		<b>NOT TO BE FILLED IN BY DRILLER HEALTH DEPARTMENT APPROVAL</b> COUNTY NAME <u>Howard</u> COUNTY NO. <u>13</u> STATE SIGNATURE _____ INSERT S → 41 DATE ISSUED <u>3/13/17</u> <u>SAL G. M.</u> <u>3/13/18</u> 43 MM DD YY 48 CO SIGNATURE EXP. DATE	
<b>USE FOR WATER (CIRCLE APPROPRIATE BOX)</b> <input checked="" type="checkbox"/> DOMESTIC POTABLE SUPPLY & RESIDENTIAL IRRIGATION <input checked="" type="checkbox"/> FARMING (LIVESTOCK WATERING & AGRICULTURAL IRRIGATION) 22 <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>8</u> INCH NEAREST INCH	
<b>METHOD OF DRILLING (circle one)</b> 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 	
<b>REPLACEMENT OR DEEPEMED WELLS (CIRCLE APPROPRIATE BOX)</b> <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 39 <input checked="" 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 DEEPEMED AN EXISTING WELL PERMIT NUMBER OF WELL TO BE REPLACED OR DEEPEMED (IF AVAILABLE) 41 _____ 52		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.	
<b>Not to be filled in by driller (MDE OR COUNTY USE ONLY)</b> APPROP. PERMIT NUMBER _____ G _____ PERMIT No. <u>H0-17-0121</u> 70 71 72 73 74 75 76 77 78 79			
<b>SPECIAL CONDITIONS</b> NOTE: APPROVING AUTHORITIES SHOULD USE SEPARATE SHEET IF NEEDED.			



**MICHAEL BARLOW WELL DRILLING & SERVICE, INC.**  
**522 Underwood Lane** **Bel Air, Maryland 21014**  
**(410) 838-6910** **Fax (410) 838-3582**

### WELL YIELD REPORT

Date Test Completed: April 24, 2017

Well Depth: 400 feet

Customer	Joe Fath	Permit #	HO-17-0121
Road	13606 Sheepshead Court	Subdivision	Hedgerow
City	Clarksville	Section	
State	Maryland	Lot #	7

Time	Water Level feet	Time to Fill 1-gallon bucket seconds	G.P.M.
9:45 AM	30	6	10.00
10:00 AM	70	8	7.50
10:15 AM	96	18	3.33
10:30 AM	98	18	3.33
10:45 AM	100	20	3.00
11:00 AM	100	20	3.00
11:15 AM	100	20	3.00
11:30 AM	100	20	3.00
11:45 AM	100	20	3.00
12:00 PM	100	20	3.00
12:15 PM	100	20	3.00
12:30 PM	100	20	3.00
12:45 PM	100	20	3.00
1:00 PM	100	20	3.00
1:15 PM	100	20	3.00
1:30 PM	108	15	4.00
1:45 PM	128	15	4.00
2:00 PM	130	15	4.00
2:15 PM	130	15	4.00
2:30 PM	130	15	4.00
2:45 PM	140	15	4.00
3:00 PM	140	15	4.00
3:15 PM	140	15	4.00
3:30 PM	140	15	4.00
This yield test report is for informational purposes only. Please note the yield may increase or decrease over time and the GPM indicated above is not a guarantee.			



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: Barlow Well Drilling Telephone #: 410-838-6910  
Address: 522 Underwood Lane  
Bel Air, MD 21014

(Must circle one) Licensed Plumber Licensed Well Driller Licensed Well Pump Installer  
License # and name of individual responsible for the field installation:  
Name (Print): Michael Barlow License# MWD355  
\*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: Joe Fath Telephone #: 410-480-9260  
Subdivision: Hedge Row Lot #: 7 Well Tag #: HO-17-0121  
Site Address: 1364 Sheephead Ct  
Clarksville, MD 21029

<u>Submersible Pump Data</u>	<u>Pitless Adapter</u>	<u>Well Cap and Electric Conduit</u>
Make: <u>Grundfos - Speed</u>	Make: <u>Boshart</u>	Two piece watertight cap: <u>Yes</u>
Model #: <u>10SDE15-330</u>	Model#: <u>P-125-SS</u>	Screened, vented well cap: <u>Yes</u>
Pump Capacity <u>10</u> GPM	Depth: <u>42"</u> (36" min)	Cap secured to casing: <u>Yes</u>
Well Yield: <u>4</u> GPM	NSF/WSC approved: <u>Y</u>	Conduit min 18" B.G.: <u>Yes</u>
Depth of well encountered at time of pump installation: <u>400</u> (feet)		Conduit secured to well cap: <u>Yes</u>

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

<u>Piping to house</u>	<u>House Connection</u>
Type: <u>1 1/4 Pdy</u>	PVC sleeve to undisturbed soil at wall penetration: <u>Yes</u>
PSI: <u>200</u> (160 psi min)	Length of sleeve (5' minimum from foundation): <u>6 Ft</u>
Depth of supply line: <u>42"</u> (36" min)	Sleeve sealed properly: <u>Yes</u>

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 \_\_\_\_\_ date \_\_\_\_\_

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

Date Insp. Requested: 6/8/17 Date Insp. Approved: \_\_\_\_\_ Inspector: \_\_\_\_\_  
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 \_\_\_\_\_

*well line backfilled*

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

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Company Name: Barlow Well Drilling Telephone #: 410-838-6910  
Address: 522 UNDERWOOD LANE  
BELAIR, MD 21014

(Must circle one) Licensed Plumber Licensed Well Driller Licensed Well Pump Installer

License # and name of individual responsible for the field installation:

Name (Print): Michael Barlow

License# MWD355

**\*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: Joe Fath Telephone #: 410-480-9260  
Subdivision: Hedge Row Lot #: 7 Well Tag #: HO-17-0121  
Site Address: 13646 Sheephead Ct  
CLARKSVILLE, MD 21029

**Submersible Pump Data**

Make: Grundfos - Speed

Model #: 10 SQE15-330

Pump Capacity 10 GPM

Well Yield: 4 GPM

Depth of well encountered at time of pump installation: 400 (feet)

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

**Pitless Adapter**

Make: Boshart

Model#: P-125-SS

Depth: 42" (36" min)

NSF/WSC approved: Y

**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

Conduit secured to well cap: yes

**Piping to house**

Type: 1 1/4" PEX

PSI: 200 (160 psi min)

Depth of supply line: 42" (36" min)

**House Connection**

PVC sleeve to undisturbed soil at wall penetration: yes

Length of sleeve (5' minimum from foundation): 6 Ft

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 responsible for installation

date

6/7/17

**For Health Department Use Only – Not to be completed by Installer**

Date Insp. Requested: \_\_\_\_\_ Date Insp. Approved: \_\_\_\_\_ Inspector: \_\_\_\_\_

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 \_\_\_\_\_

# FILE INQUIRY NOTES

DATE	RESULTS OF REVIEW FOR FILE
4/18/2017	Gratings:
	* Jet hole for collapse - Drill cuttings?
	30' Tremie to - 30 down the annular space
	York Building
	20816 Well - Grout 875
	15 bags / 40-50 gal? - Rough estimates from
	Driller.
	→ Pumped grout m-blended
	w/ water almost n - <del>to</del> Grout
	Well site was covered in drillings. Annular space
	not noticeably protected. Contractor dig cuttings away
	from casing directly touching the casing.
	<u>Baroid</u> - also on truck
	3/8" Hole plug
	Quick grout @
4/24/2017	Grout specs sent from driller. Further correspondence
	w/ driller. See Email
6/6/17	Owner wants to convert well from irrigation to potable well.
	Barlow took bacteria samples and will forward results @



By Quality Grout, LLC

## Technical Data Sheet

### WELL GROUT™ Pre-Blended Grout

#### Description

Well Grout™ is a special pre-blended cementitious formulation designed for use in grouting boreholes containing ground source heat loops. Well Grout™, when combined with water at the prescribed dosage rate, yields a cohesive grout with excellent workability and grouting annular space in water well, etc..

The use of Well Grout™ guarantees consistent permeability and conductivity over the life of the well. Well Grout™ improves heat transfer efficiency by matching the thermal conductivity of the surrounding soil. It also allows for superior handling capability, batch control and QC/QA on the job site.

#### Application

Sealing/grouting of plastic ground source heat loops; sealing / grouting of annular spaces in wells and boreholes; creation of a low permeability, low shrinkage seal to prevent down-hole cross-contamination of aquifers; and to prevent entry of surface water into a borehole and/or well abandonment.

#### Properties

##### Well Grout™ Powder

Appearance: Black/gray, free-flowing powder  
Specific gravity: 2.596  
Bulk Density: 2.380  
Particle Size (max): 1.18mm  
Moisture: <0.5%

##### Mixed Well Grout™

Grout density: 40 to 50 lb/ft<sup>3</sup>  
Compressive Strength: Min. 400 psi  
Permeability:  $3 \times 10^{-7}$

#### Recommended Mixing Proportions

The recommended mix proportions are as follows:

Weight of Well Grout:	75lbs.
Water per 75lb bag:	5 gallons
Yield:	6.75 gallons

#### Packaging and Availability

Standard packaging: 75lb. bags, 56 bags per pallet, 40 x 48 pallet, shrink-wrapped.

The product is not susceptible to freezing, but must be protected from exposure to moisture.

Whole Grout Products can be purchased by contacting:

Quality Grout, LLC  
950 Smile Way  
York, PA 17404  
Phone: 717.771.3545

**Disclaimer:** The statements in this bulletin are based upon data which is believed to be reliable, and is offered in good faith to be applied accordingly to the user's best judgment. Since operating conditions at project sites are beyond our control, Quality Grout, LLC will not assume responsibility for the accuracy of this data, or liability which may result from the use of its products.

**Health Hazard Warning:** Prolonged inhalation of dust associated with the unmixed powder described in this data sheet can cause respiratory distress. Avoid creating dust when handling, using or storing. Follow OSHA safety and Health Standards for fugitive dust.

## Cabahug, Joseph

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**From:** Cabahug, Joseph  
**Sent:** Monday, April 24, 2017 4:29 PM  
**To:** 'Mike Isom'  
**Subject:** RE: Fwd: Fwd: Well Grout Data Sheet

Thanks for the spec sheet Mike!

To follow up with the grouting from 13606 Sheepshead Ct (HO-17-0121), I have a few questions.

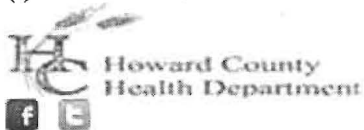
The spec sheet mentions a black/grey powder. The grout observed was tuna/pink in colour. The driller on site mentioned that the manufacturer specializes in coloured grout. Please confirm that the [20816 Well-Grout 875] bagged on site is the same type of grout from the Spec sheet.

The driller reported mixing proportion for the grout was 40 – 50 gallons of water for 15 bags. This makes about 2.6 – 3.3 gallon per 75lb bag. The spec sheet specifies 5 gallons of water per 75lb bag to achieve the permeability spec of  $[3 \times 10^{-7}]$ . Please confirm that the mixing ratio used in field maintains a permeability that does not fall below  $[1 \times 10^{-7}]$ .

We appreciate the use of proprietary grouting and look forward to working together to ensure any deviation from the manufacturers mixing recommendations meet the requirements of the regulations.

Thank you!

Joseph C. Cabahug  
Environmental Health Specialist - Trainee  
Well & Septic Program  
Bureau of Environmental Health  
8930 Stanford Blvd.  
Columbia, MD 21045  
(o) 410-313-2643  
(f) 410-313-2648



[jcabahug@howardcountymd.gov](mailto:jcabahug@howardcountymd.gov)

### CONFIDENTIALITY NOTICE

This message and the accompanying documents are intended only for the use of the individual or entity to which they are addressed and may contain information that is privileged, confidential, or exempt from disclosure under applicable law. If the reader of this email is not the intended recipient, you are hereby notified that you are strictly prohibited from reading, disseminating, distributing, or copying this communication. If you have received this email in error, please notify the sender immediately and destroy the original transmission.

---

**From:** Mike Isom [<mailto:misom@mbwd.us>]  
**Sent:** Monday, April 24, 2017 11:26 AM



**To:** Cabahug, Joseph  
**Subject:** Fwd: Fwd: Fwd: Well Grout Data Sheet

Here is a copy of the spec sheet that was provided to John Boris at MDE.

Sincerely,

Michael Isom  
Project Manager  
Michael Barlow Well Drilling Service  
Phone: (410) 838-6910  
Fax: (410) 838-3582  
522 Underwood Lane  
Bel Air, MD 21014  
[www.michaelbarlowwelldrilling.com](http://www.michaelbarlowwelldrilling.com)  
[www.thermalloopcorp.com](http://www.thermalloopcorp.com)  
[Click HERE to like us on Facebook!](#)

----- Forwarded Message -----

**Subject:** Fwd: Fwd: Well Grout Data Sheet  
**Date:** Thu, 20 Apr 2017 09:30:34 -0400  
**From:** Mike Barlow <[mb@mbwd.us](mailto:mb@mbwd.us)>  
**To:** Mike Isom <[misom@mbwd.us](mailto:misom@mbwd.us)>

Sincerely,

Michael Barlow,  
President  
Michael Barlow Well Drilling Service: Phone (410) 838-6910  
Thermal Loop Corporation: Phone (410) 879-3588  
522 Underwood Lane, Bel Air, MD 21014  
Fax: (410) 838-3582  
[www.michaelbarlowwelldrilling.com](http://www.michaelbarlowwelldrilling.com)  
[www.thermalloopcorp.com](http://www.thermalloopcorp.com)  
[Click HERE to like us on Facebook!](#)

----- Forwarded Message -----

**Subject:** Fwd: Well Grout Data Sheet  
**Date:** Mon, 03 Nov 2014 09:51:32 -0500  
**From:** Mike Barlow <[mb@mbwd.us](mailto:mb@mbwd.us)>  
**To:** [jboris@mde.state.md.us](mailto:jboris@mde.state.md.us)

Michael Barlow

President

Michael Barlow Well Drilling Service; Phone: (410) 838-6910

Thermal Loop Corporation; Phone: (410) 879-3588

522 Underwood Lane

Bel Air, MD 21014

[www.michaelbarlowwelldrilling.com](http://www.michaelbarlowwelldrilling.com)

[www.thermalloopcorp.com](http://www.thermalloopcorp.com)



By Quality Grout, LLC

## Technical Data Sheet

### WELL GROUT™ Pre-Blended Grout

#### Description

Well Grout™ is a special pre-blended cementitious formulation designed for use in grouting boreholes containing ground source heat loops. Well Grout™, when combined with water at the prescribed dosage rate, yields a cohesive grout with excellent workability and grouting annular space in water well, etc..

The use of Well Grout™ guarantees consistent permeability and conductivity over the life of the well. Well Grout™ improves heat transfer efficiency by matching the thermal conductivity of the surrounding soil. It also allows for superior handling capability, batch control and QC/QA on the job site.

#### Application

Sealing/grouting of plastic ground source heat loops; sealing / grouting of annular spaces in wells and boreholes; creation of a low permeability, low shrinkage seal to prevent down-hole cross-contamination of aquifers; and to prevent entry of surface water into a borehole and/or well abandonment.

#### Properties

##### Well Grout™ Powder

Appearance: Black/gray, free-flowing powder  
Specific gravity: 2.596  
Bulk Density: 2.380  
Particle Size (max): 1.18mm  
Moisture: <0.5%

##### Mixed Well Grout™

Grout density: 40 to 50 lb/ft<sup>3</sup>  
Compressive Strength: Min. 400 psi  
Permeability:  $3 \times 10^{-7}$

#### Recommended Mixing Proportions

The recommended mix proportions are as follows:

Weight of Well Grout:	75lbs.
Water per 75lb bag:	5 gallons
Yield:	6.75 gallons

#### Packaging and Availability

Standard packaging: 75lb. bags, 56 bags per pallet, 40 x 48 pallet, shrink-wrapped.

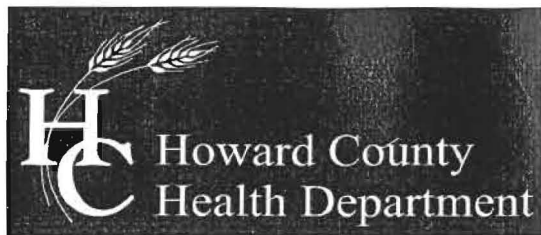
The product is not susceptible to freezing, but must be protected from exposure to moisture.

Whole Grout Products can be purchased by contacting:

Quality Grout, LLC  
950 Smile Way  
York, PA 17404  
Phone: 717.771.3545

**Disclaimer:** The statements in this bulletin are based upon data which is believed to be reliable, and is offered in good faith to be applied accordingly to the user's best judgment. Since operating conditions at project sites are beyond our control, Quality Grout, LLC will not assume responsibility for the accuracy of this data, or liability which may result from the use of its products.

**Health Hazard Warning:** Prolonged inhalation of dust associated with the unmixed powder described in this data sheet can cause respiratory distress. Avoid creating dust when handling, using or storing. Follow OSHA safety and Health Standards for fugitive dust.



Bureau of Environmental Health

8930 Stanford Blvd, Columbia, MD 21045  
Main: 410-313-2640 | Fax: 410-313-2648  
TDD 410-313-2323 | Toll Free 1-866-313-6300  
[www.hchealth.org](http://www.hchealth.org)

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

June 8, 2017

Homeowner  
13606 Sheepshead Court  
Clarksville, MD 21029

RE: **New Potable Well Sampling**  
13606 Sheepshead Court  
#HO-17-0121

Dear Homeowner,

According to our records, your replacement well has been connected to the dwelling. We request that you contact the Community Hygiene Program at **(410) 313-1773** to schedule initial water sampling for the above referenced replacement well, as required by the Maryland Well Construction Regulation (*COMAR 26.04.04*). This sampling includes testing for bacteria, nitrates, turbidity, and sand. There is currently **no charge** for the sampling and it is to your benefit to have it tested.

Michael Barlow Well Drilling recently submitted passing water test results for bacteria and nitrate; the Health Department would like to collect a repeat sample for bacteria as well as turbidity and sand samples.

Sampling of the new well should be collected from the primary indoor drinking tap, but if suitable scheduling is not possible, the sample may be taken from an outside tap to complete your sampling obligation. However, the potential for unsuccessful sample results increases when samples are collected from taps exposed to the outside environment.

Feel free to contact me with any questions.

Sincerely,

Sarah Collins, L.E.H.S.  
Howard County Health Department  
[SCollins@howardcountymd.gov](mailto:SCollins@howardcountymd.gov)  
410-313-6287

Cc: Community Hygiene Program  
File



SEND REPORT TO: Bert Nixon

Howard Co. Health Dept.

Bureau of Environmental Health

8930 Stanford Blvd / Columbia 21045

PHONE NO: 410-313-1773

State of Maryland  
DHMH - Laboratories Administration

DIVISION OF ENVIRONMENTAL SCIENCES

1770 Ashland Avenue, Baltimore, MD 21205

Robert A. Myers, Ph.D. Director

**MICROBIOLOGICAL ANALYSIS OF DRINKING WATER**

011354

Category Code: 4F

Invoice No.:

Lab No.:

**FIELD RECORD**

**Sample Type:**

- ☐ Community  
☐ Transient  
☐ Non-Transient  
☒ Private  
☐ Repeat Sample  
☒ C.O.P.  
☐ Bottled Water  
☐ OTHER:

Source Address: 13606 Sheepshead Ct.

Sampling Site: Pressure tank

Bottle No.: H0-17-0121

Ice: Yes ☒ No ☐ Treated: Yes ☐ No ☒

County: Howard

Date Collected: 6/15/17

Time Collected: 11:30 ☒ am ☐ pm

Collector Name: S. Collins

Collector ID No.: 3406 SC

Collector Tel. No: 410-313-6287

PWS ID No.:

**Test Requested:**

- ☒ Quantitative: Colilert-QT ☐ P/A: Colilert  
☐ Heterotrophic Plate Count ☐ SimPlate  
☐ Multiple Tube Fermentation: MTF  
☐ Quantitative: Enterolert  
☐ Other:

Remarks: No sand

County

Plant No.

Sampling Station

pH

Res.Cl:

Free

Total

**LABORATORY RECORD (DHMH Use Only)**

**Test Method(s):** (check all that apply)

- ☐ SM 9223 Colilert ☐ SM 9223 Colilert-QT ☒ SM 9223 Colilert-18  
☐ SM 9221B (MTF) ☐ SM 9221B, F (MTF) ☐ SM 9223 Colisure  
☐ SM 9215B (HPC) ☐ Enterolert ASTM D6503-99 ☐ SimPlate  
☐ Other:

Temperature Control:

0.5 °C

**Thiosulfate:**

- ☒ Present  
☐ Absent  
☐ Undetermined

**P/A Test**

100 mL Sample	(+/-)
Total Coliforms	
<i>E. coli</i>	
Enterococci	

**Quantitative Test**

Dilution: ☐ 1:10 ☐ 1:100 ☐ 1:1000

100 mL Sample	# Positive wells	MPN/100 mL
Total Coliforms	0	<1
<i>E. coli</i>	0	<1
Enterococci		

**Heterotrophic Plate Count**

Incubated 24, 48, 72hr @ 35°C

Plate A:

Plate B:

Average:

CFU/mL  
MPN/mL

**Presumptive MTF Test**

mL of Sample	10 mL
Gas/24h	
Gas/48h	

**Confirmed MTF Test**

mL of Sample	10 mL
Total Coliforms	
<i>E. coli</i>	

**MTF Results**

No. of Positive (+)	MPN/100 mL	Recorded Value

**Specialized Testing Results:**

JUN 16 '17 AM 8:30

Received

JUN 16 '17 PM 1:57

Placed in Incubator

JUN 17 '17 AM 8:05

Results Read/Reported

RECEIVED

JUN 20 2017

HOWARD COUNTY HEALTH DEPT.  
COMMUNITY HYGIENE PROGRAM

Analyst:

Reviewed by/Date:

K. Jones 6/19/17

Remarks:

☐ Fax ☐ Email ☐ Phone

Laboratory:

☐ Central Lab (443) 681-3960 ☐ ESRL (410) 219-9005 ☐ WMRL (301) 759-5115

SEND REPORT TO: Bert Nixon  
Howard Co. Health Dept.  
Bureau of Environmental Health  
8930 Stamford Blvd. / Columbia 21046

PHONE NO: 410-313-1773

State of Maryland  
DHMH - Laboratories Administration  
DIVISION OF ENVIRONMENTAL SCIENCES  
1770 Ashland Avenue, Baltimore, MD 21205  
Robert A. Myers, Ph.D. Director

**MICROBIOLOGICAL ANALYSIS OF DRINKING WATER**

011353

Category Code: 4F

Invoice No.:

Lab No.:

**FIELD RECORD**

**Sample Type:**

- ☐ Community  
☐ Transient  
☐ Non-Transient  
☒ Private  
☐ Repeat Sample  
☐ C.O.P.  
☐ Bottled Water  
☐ OTHER:

Source Address: 13606 Sheephead Ct. Dayton

Sampling Site: Bathroom sink

Bottle No.: H0-94-0324

Ice: Yes ☒ No ☐

Treated: Yes ☒ No ☐

County: Howard

Date Collected: 6/15/17

Time Collected: 11:20 ☒ am ☐ pm

Collector Name: S. Collins

Collector ID No.: 3406 SC

Collector Tel. No: 410-313-6287

PWS ID No.:

**Test Requested:**

- ☒ Quantitative: Colilert-QT ☐ P/A: Colilert  
☐ Heterotrophic Plate Count ☐ SimPlate  
☐ Multiple Tube Fermentation: MTF  
☐ Quantitative: Enterolert  
☐ Other: water softener

13

County

Plant No.

Sampling Station

65

pH

0

Res.Cl:

0

Free

0

Total

Remarks:

**LABORATORY RECORD (DHMH Use Only)**

**Test Method(s):** (check all that apply)

- ☐ SM 9223 Colilert ☐ SM 9223 Colilert-QT ☒ SM 9223 Colilert-18  
☐ SM 9221B (MTF) ☐ SM 9221B, F (MTF) ☐ SM 9223 Colisure  
☐ SM 9215B (HPC) ☐ Enterolert ASTM D6503-99 ☐ SimPlate  
☐ Other: TC

Temperature Control:

0.5 °C

Thiosulfate:

- ☒ Present  
☐ Absent  
☐ Undetermined

**P/A Test**

100 mL Sample	(+/-)
Total Coliforms	
E. coli	
Enterococci	

**Quantitative Test**

Dilution: ☐ 1:10 ☐ 1:100 ☐ 1:1000

100 mL Sample	# Positive wells	MPN/100 mL
Total Coliforms	0	<1
E. coli	0	<1
Enterococci		

**Heterotrophic Plate Count**

Incubated 24, 48, 72hr @ 35°C

Plate A:

Plate B:

Average:

CFU/mL  
MPN/mL

**Presumptive MTF Test**

mL of Sample	10 mL
Gas/24h	
Gas/48h	

**Confirmed MTF Test**

mL of Sample	10 mL
Total Coliforms	
E. coli	

**MTF Results**

No. of Positive (+)	MPN/100 mL	Recorded Value

**Specialized Testing Results:**

JUN 16 '17 AM 8:30

Received

JUN 16 '17 PM 1:57

Placed in Incubator

JUN 17 '17 AM 8:05

Results Read/Reported

Analyst: Reviewed by/Date: K. Jones 6/19/17

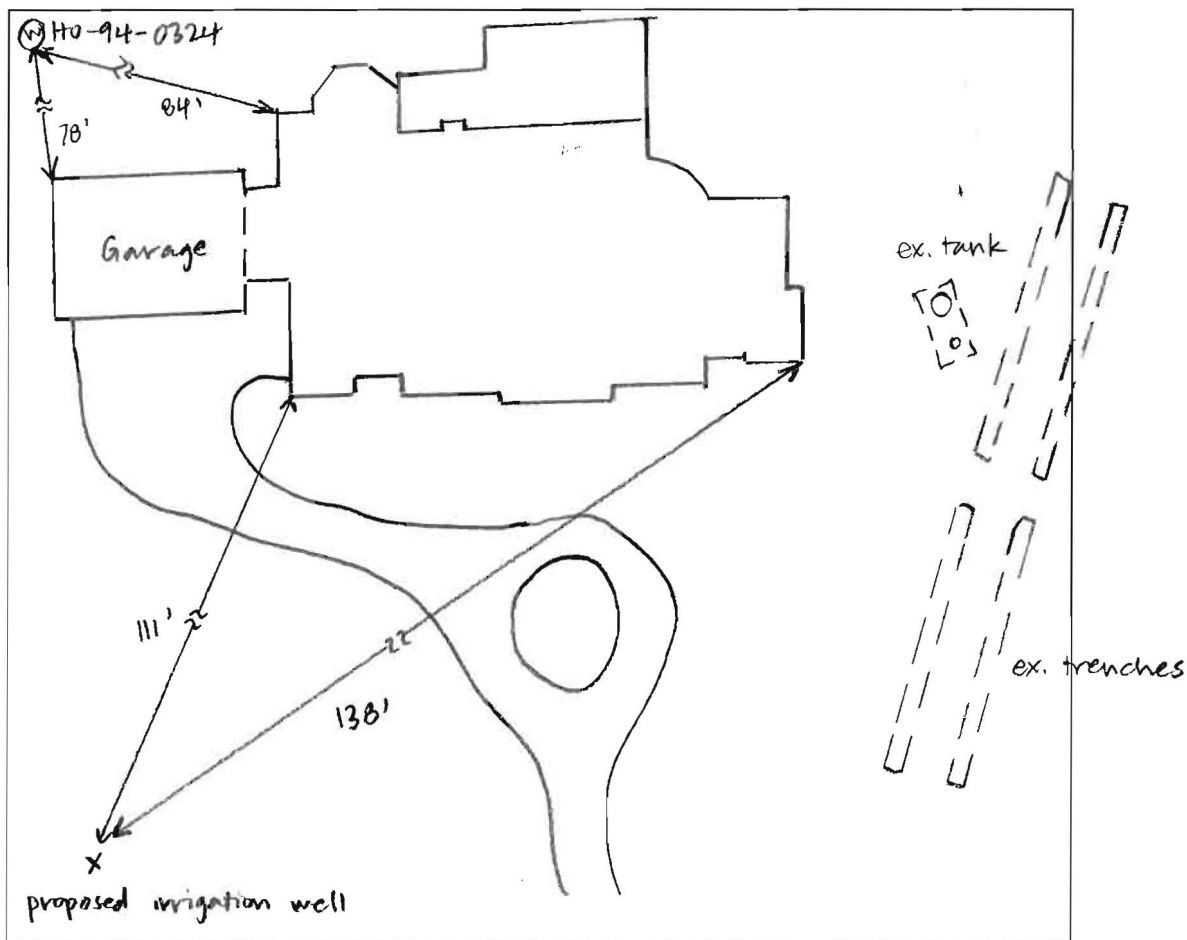
Remarks: ☐ Fax ☐ Email ☐ Phone

Laboratory: ☐ Central Lab (443) 681-3960 ☐ ESRL (410) 219-9005 ☐ WMRL (301) 759-5115

SITE INSPECTION SHEET

OWNER: Fath PHONE #: \_\_\_\_\_  
ADDRESS: 13606 Sheephead Ct. CONTRACTOR: Barlow  
WELL TAG #: \_\_\_\_\_  
SUBDIVISION: \_\_\_\_\_ LOT: \_\_\_\_\_ COUNTY #: \_\_\_\_\_  
PROPOSAL: Drill a new irrigation well.

LOCATION DIAGRAM



COMMENTS: Met Mike Isom from Barlow on site pulled 100' off  
existing trench end (no observation pipes present) and approved a  
site outside 100' arc.

DATE: 3/2/17 INSPECTOR: Sarah Collins