

Well to

remain

C1 56795

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

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

ST/CO USE ONLY DATE RECEIVED 02/04/19

DATE WELL COMPLETED 06 08 18

Depth of Well 500 (TO NEAREST FOOT)

PERMIT NO. FROM "PERMIT TO DRILL WELL" H0-17-0238

OWNER Land Design + Development WELL SITE ADDRESS Triadelphia Mill Rd TOWN Clarksville SUBDIVISION Jacks Landing SECTION LOT 6

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 FROM TO check if water bearing. Soil Light Brown Shale 5 30 Brown Shale 30 58 Med Gray Rock 58 500 ✓ 316 ✓

GROUTING RECORD WELL HAS BEEN GROUTED well (Circle Appropriate Box) GROUT 44 44 TYPE OF GROUTING MATERIAL (Circle one) CEMENT CM 45 46 BENTONITE CLAY BC 45 46 NO. OF BAGS 30 NO. OF POUNDS 2250 GALLONS OF WATER 150 DEPTH OF GROUT SEAL (to nearest foot) from 0 48 TOP 52 ft. to 63 54 BOTTOM 58 ft. (enter 0 if from surface)

CASING RECORD casing types insert appropriate code below. MAIN CASING TYPE Nominal diameter top (main) casing (nearest inch)! Total depth of main casing (nearest foot). ST 60 61 6 63 64 63 66 70

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

SCREEN RECORD screen type or open hole insert appropriate code below. ST 60 61 BR 63 64 HO 65 66 PL 67 68 OT 69 70

NUMBER OF UNSUCCESSFUL WELLS: WELL HYDROFRACTURED YES NO Y N CIRCLE APPROPRIATE LETTER A WELL WAS ABANDONED AND SEALED WHEN THIS WELL WAS COMPLETED E ELECTRIC LOG OBTAINED P TEST WELL CONVERTED TO PRODUCTION WELL

DEPTH (nearest ft.) 1 H0 63 500 2 3 4 5 6 7 8 9 11 15 17 21 23 24 26 30 32 36 38 39 41 45 47 51 SLOT SIZE 1 2 3 DIAMETER OF SCREEN (NEAREST INCH) from to

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. DRILLERS LIC. NO. 1 M WD 355 DRILLERS SIGNATURE (MUST MATCH SIGNATURE ON APPLICATION) LIC. NO. 1 WRB 113 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 70 72 74 75 76 TELESCOPE CASING LOG INDICATOR OTHER DATA

C 3 PUMPING TEST HOURS PUMPED (nearest hour) 6 PUMPING RATE (gal. per min.) 3.0 METHOD USED TO MEASURE PUMPING RATE Water/Buret WATER LEVEL (distance from land surface) BEFORE PUMPING 45 17 20 ft. WHEN PUMPING 228 22 25 ft. TYPE OF PUMP USED (for test) A air 27 P piston 27 T turbine 27 C centrifugal 27 R rotary 27 O other (describe below) 27 J jet 27 S submersible 27

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 (-) below (nearest foot) 49 51

LATITUDE 39.21558 LONGITUDE 76.97550 (DEFAULT COORD. WGS 84) 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 1** SEQUENCE NO. (MDE USE ONLY) **55283** STATE OF MARYLAND APPLICATION FOR PERMIT TO DRILL WELL **562362** please type STATE PERMIT NUMBER **HO-17-0238** fill in this form completely

**OWNER INFORMATION**  
 Date Received (APA) **12/17/17**  
 8 MM DD YY 13  
**Land Design + Development**  
 15 Last Name Owner First Name 34  
**8318 Forrest Street, Suite 200**  
 36 Street or RFD 55  
**Ellicott City MD**  
 57 Town 70 State 72 Zip 76

**B 3 LOCATION OF WELL**  
**Howard**  
 8 COUNTY 21  
**JACKS LANDING**  
 23 SUBDIVISION 42  
 SECTION **6** LOT **6**  
 44 46 48 50  
**CLARKSVILLE**  
 52 NEAREST TOWN 71

**DRILLER INFORMATION**  
**Michael Barlow MW 0355**  
 76 Driller's Name License No. 81  
**Barlow Well Drilling**  
 Firm Name  
**522 Underwood Lane 21014**  
 Address  
**12-7-17**  
 Signature Date

**B 4 SOURCES OF DRILLING WATER**  
 1. **Well**  
 2. **3/26** - collected  
 Na, Cl, TDS, Vol%  
 - simultaneous yield w/ lot 7  
 - well A = north, farther from rd, 3/4 gpm  
 - well B = S, closer to rd, 1/2 gpm  
**Triadelphia Mill Rd**  
 11 STREET ADDRESS 30  
 ON WHICH SIDE OF ROAD (CIRCLE APPROPRIATE BOX)  
 NORTH [X] WEST [ ] EAST [ ] SOUTH [ ]  
 DISTANCE FROM ROAD ENTER FT OR MI 34 50 37 38 39  
 TAX MAP: **34** BLK: **3** PARCEL **414**

**B 2 WELL INFORMATION**  
 1 2 APPROX. PUMPING RATE (GAL. PER MIN.) **5**  
 8 12  
 AVERAGE DAILY QUANTITY NEEDED (GAL. PER DAY) **750**  
 14 20

**USE FOR WATER (CIRCLE APPROPRIATE BOX)**  
 DOMESTIC POTABLE SUPPLY & RESIDENTIAL IRRIGATION  
 FARMING (LIVESTOCK WATERING & AGRICULTURAL IRRIGATION)  
 INDUSTRIAL, COMMERCIAL, DEWATERING  
 PUBLIC WATER SUPPLY WELL  
 TEST, OBSERVATION, MONITORING  
 OPEN LOOP GEOTHERMAL  
 CLOSED LOOP GEOTHERMAL

*Both wells GDS 3/9*  
*517 - drilling well #3*  
*@ 340' - 344 gpm w/ @ 35'*  
*- 63' steel casing, bedrock @ 50'*

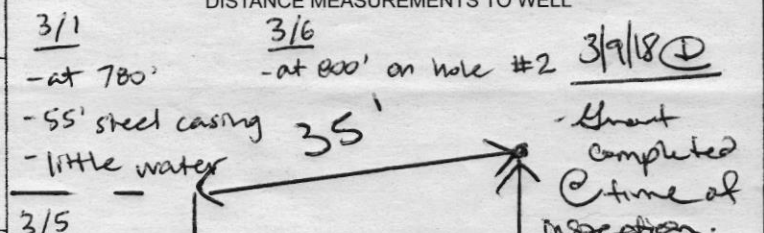
**NOT TO BE FILLED IN BY DRILLER HEALTH DEPARTMENT APPROVAL**  
**Howard** COUNTY NAME **(13)** COUNTY NO.  
 STATE SIGNATURE INSERT S → 41  
 DATE ISSUED **2/9/18** CO SIGNATURE **M. Walt** EXP. DATE **2/9/19**  
 43 MM DD YY 48  
**DON: 2/28/18 (SC) DGS: 3/9/18 (SC) DOV: 3/26/18 (SC)**

APPROXIMATE DEPTH OF WELL **300** FEET  
 24 28

**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

APPROXIMATE DIAMETER OF WELL **6** 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



**REPLACEMENT OR DEEPEMED WELLS (CIRCLE APPROPRIATE BOX)**  
 THIS WELL WILL NOT REPLACE AN EXISTING WELL  
 THIS WELL WILL REPLACE A WELL THAT WILL BE ABANDONED AND SEALED  
 THIS WELL WILL REPLACE A WELL THAT WILL BE USED AS A STANDBY-CONTACT LOCAL APPROVING AUTHORITY FOR POLICY ON STANDBY WELLS  
 THIS WELL WILL DEEPEN 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 this 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.

**Not to be filled in by driller (MDE OR COUNTY USE ONLY)**  
 APPROP. PERMIT NUMBER \_\_\_\_\_ **G** \_\_\_\_\_  
 PERMIT No. **HO-17-0238**  
 70 71 72 73 74 75 76 77 78 79

**SPECIAL CONDITIONS** *see attached memo...*

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

**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: Liberty Pure Solutions Telephone #: 410-527-1024  
 Address: 2024 Paper Mill Rd  
Phoenix MD 21131

**Must circle one:** Licensed Plumber / Licensed Well Driller / Licensed Well Pump Installer

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

Name (Print): Kevin Oaster License# MD 81996

**\*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: Adimoolam, V. Jay Telephone #: 410-527-1044  
 Subdivision: Jacks Landing Lot #: 6 Well Tag #: HO-17-0238  
 Site Address: 5517 Jacks Landing Way  
Clarksville MD 21029

**Submersible Pump Data**

Make: Sta-site  
 Model #: SSP4MS10221-02  
 Pump Capacity: 5 gpm  
 Well Yield: unknown

**Pitless Adapter**

Make: Boschart+  
 Model#: PA-100-R12  
 GPM Depth: \_\_\_\_\_ (36" min)  
 GPM 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  
 Conduit secured to well cap: yes

Depth of well encountered at time of pump installation: 490 (feet)  
 If pump capacity exceeds well yield, a low water cut off switch is required by NSPC 1990 Section 17.8.4

**Must circle one:** Torque arrestors / Cable guards / Other acceptable method used

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

**Piping to house**

Type: 1" poly  
 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): 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.

Kevin Oaster 5/12/2022  
 Signature of company representative responsible for installation date

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

Date Insp. Requested: 5/12/22 Date Insp. Approved: 5/12/22 Inspector: (Signature)  
 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

38"  
29"  
24"  
10"

(Revised form 10/24/2018)

**INTERIM CERTIFICATE OF POTABILITY**  
**Expiration Date – MAY 22, 2023**

November 22, 2022

Homeowner  
5517 Jacks Landing Way  
Clarksville, MD 21029

**RE: Jacks Landing, Lot 6**  
**5517 Jacks Landing Way**  
**Building Permit: B21002944**  
**Well Permit: HO-17-0238**

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 **11/18/2022**. Final approval of the well line connection to the dwelling was granted on **5/12/2022**. The well construction was completed on **6/8/2018**. Water samples were collected on **10/19/2022**.

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-17-0238. 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.**

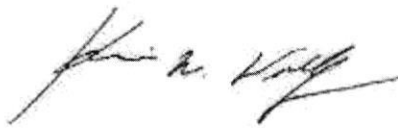
Please contact (410) 313-1773 to schedule a final water sample appointment or contact a Maryland certified water laboratory to schedule a water sample. A list of laboratories certified by the state of Maryland may be found at the following website:  
<http://www.mde.state.md.us/assets/document/WSP-Labs-2010apr16.pdf>

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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

# HOME LAND LABS

1220 East Joppa Road #C505  
Towson, MD 21286  
Phone 443.505.8375  
lab@homelandhealthyhomes.com  
State Certified Water Quality Lab 365

108 Old Solomons Island Road, Suite I2  
Annapolis, MD 21401  
Phone 443.505.8375  
lab@homelandhealthyhomes.com  
State Certified Water Quality Lab 106

3430 Rockefeller Court  
Waldorf, MD 20602  
Phone 443.505.8375  
lab@homelandhealthyhomes.com  
State Certified Water Quality Lab 139

## Certificate of Analysis

Report Date: 10/24/2022

Client: Well Water Solutions, Inc.

Property Address: 5517 Jacks Landing Rd Permit B21002944  
Clarksville, MD 21029

Report No: 229942

Sample Time: 10/19/2022 12:15

Date & Time Received: 10/20/2022 12:10

Sampled By: John Moseman - 2674JM

Field Preservation: Ice

Sample Point(s): Raw/Pressure Tank Post Chlorination (10/1/22)

Water Conditioning Appears to be: Raw

Field Chlorine: 0.00

Field pH: 4.80

Well Type: Drilled

Well Height: 2'

Cap Type: 2-piece

Casing: Steel

Conduit: PVC

Clarity: Clear

Sand: Absent

Well Tag Number: HO-17-0238

This report is the sole property of Well Water Solutions, Inc.. Any questions about the report MUST be directed to Well Water Solutions, Inc. at (410) 935-7185. Home Land Labs is not at liberty to discuss this report without written consent from Well Water Solutions, Inc..

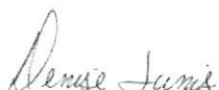
### Primary Contaminants

Parameter	Method	Result	Pass/Fail	Units	MCL	RL	Analyst	Date of Analysis
Bacteria-Total Coliform	Colilert Test	Absent	Pass	Per/100ml	Present	1	A D - 365	10/21/2022
Bacteria-E.coli	Colilert Test	Absent	Pass	Per/100ml	Present	1	A D - 365	10/21/2022
Nitrate + Nitrite as N	EPA 353.2	3.5	Pass	mg/L	10	0.5	M K - 365	10/20/2022
Turbidity	EPA 180.1	2.6	Pass	NTU	10	0.5	A D - 365	10/20/2022

### Secondary Contaminants

Parameter	Method	Result	Acceptable/High	Units	SMCL	RL	Analyst	Date of Analysis
Chlorides	SM4500 Cl-B	299.2	High	mg/L	250.0	10	A D - 365	10/20/2022
Total Dissolved Solids	EPA 160.1	1106.0	High	mg/L	500	10	M K - 365	10/20/2022

Approved By:



Denise Junis, Lab Director

# HOME LAND LABS

229942 Due Date: 10/24/2022  
Client: Well Water

Phone: (443) 505-8375 Email: [lab@homelandhealthyhomes.com](mailto:lab@homelandhealthyhomes.com)

1220 E Joppa Rd. Ste C505 Towson, MD 21286 MD Lab # 365  
108 Old Solomons Island Road, Ste L2 Annapolis, MD 21401 MD Lab # 106  
3430 Rockefeller Court Waldorf, MD 20602 MD Lab # 139  
2216 Commerce Road, Ste 2 Forest Hill, MD 21050

Please provide completed form with samples. Highlighted fields are required.

Client Name: <b>Well Water Solutions, Inc.</b>	Property Address: <b>5517 JACKS LANDING CLARKSVILLE MD 21029</b>
Email Address: jemoseman@wellwatersolutions.net & jbieber@wellwatersolutions.net	
Phone Number: 410-935-7185	

### Field Collection Information

**PERMIT B21002944**

Sampler Name: John Moseman	Field pH: <b>RAW 4.8</b>
Sampler ID #: 2674JM	Field Chlorine (mg/L): Present / <b>Absent</b>
Date Sampled: <b>10/19</b>	Time Sampled: <b>12:15</b>
Well Tag Number: <b>HO-<del>21-3223</del> 17-0238</b>	Sand Present / <b>Absent</b>
Compliance sample for public water system? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	Clarity: <b>Clear</b> / Un-Clear
If yes, PWS ID #:	

### Well Casing and Cap Condition

Well Type:  Drilled  Well Pit  Below Grade  Artesian  Hand Dug  N/A  Other: \_\_\_\_\_

Height Above Grade: <b>2 FT</b>	Cap Type: <b>2 piece</b>	Casing: <b>Steel</b>	Conduit: <b>PVC</b>
Sample Point: <b>RAW / PRESSURE TANK POST CHLORINATION</b>	Water Conditioning: <b>RAW</b>		

### Requested Testing: (Please check all that apply)

- Potability (Bacteria, Nitrate + Nitrite, Turbidity)
- FHA/VA (Bacteria, Nitrate + Nitrite, Turbidity, Lead, Iron)
- Bacteria
- Lead
- Nitrate + Nitrite
- Iron
- Turbidity
- Chlorides
- Hardness
- Arsenic
- Cadmium
- Gross Alpha
- Total Dissolved Solids
- Copper
- VOCs
- Other:  TDS  Sodium  Radium Long Term 226 & 228

List rush samples below  
\*Refer to table for rush turnaround times and fees\*

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### Release Signatures

Released By: John Moseman Date/Time: **10/19 12:15**  
 Released By: [Signature] Date/Time: **10/20 9:00**  
 Released By: [Signature] Date/Time: **10/20 12:10**  
 Received in lab by: [Signature] Date/Time: **10/20/22 12:10pm**

# HOME LAND LABS

1220 East Joppa Road #C505  
Towson, MD 21286  
Phone 443.505.8375  
lab@homelandhealthyhomes.com  
State Certified Water Quality Lab 365

108 Old Solomons Island Road, Suite I2  
Annapolis, MD 21401  
Phone 443.505.8375  
lab@homelandhealthyhomes.com  
State Certified Water Quality Lab 106

3430 Rockefeller Court  
Waldorf, MD 20602  
Phone 443.505.8375  
lab@homelandhealthyhomes.com  
State Certified Water Quality Lab 139

## Certificate of Analysis

Report Date: 10/21/2022

Client: Well Water Solutions, Inc.

Property Address: 5517 Jacks Landing Dr Lot 6  
Clarksville, MD 21029

Report No: 229935

Sample Time: 10/19/2022 12:00

Date & Time Received: 10/20/2022 12:10

Sampled By: John Moseman - 2674JM

Field Preservation: Ice

Sample Point(s): Kitchen post treatment

Water Conditioning Appears to be: Reverse Osmosis System – Whole House,  
Water Softener, Acid Neutralizer

Field Chlorine: 0.00

Field pH: 7.00

Well Type: Drilled

Well Height: 2'

Cap Type: 2-piece

Casing: Steel

Conduit: PVC

Clarity: Clear

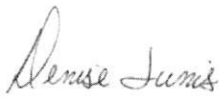
Sand: Absent

Well Tag Number: HO-17-0238

This report is the sole property of Well Water Solutions, Inc.. Any questions about the report MUST be directed to Well Water Solutions, Inc. at (410) 935-7185. Home Land Labs is not at liberty to discuss this report without written consent from Well Water Solutions, Inc..

Secondary Contaminants								
Parameter	Method	Result	Acceptable/High	Units	SMCL	RL	Analyst	Date of Analysis
Chlorides	SM4500 Cl-B	14.2	Acceptable	mg/L	250.0	10	A D - 365	10/20/2022
Total Dissolved Solids	EPA 160.1	55.9	Acceptable	mg/L	500	10	M K - 365	10/20/2022

Approved By:



Denise Junis, Lab Director

# HOME LAND

## LABS

229935 Due Date: 10/24/2022  
Client: Well Water

Phone: (443) 505-8375 Email: [lab@homelandhealthyhomes.com](mailto:lab@homelandhealthyhomes.com)

1220 E Joppa Rd. Ste C505 108 Old Solomons Island Road, Ste L2 3430 Rockefeller Court 2216 Commerce Road, Ste 2  
Towson, MD 21286 Annapolis, MD 21401 Waldorf, MD 20602 Forest Hill, MD 21050  
MD Lab # 365 MD Lab # 106 MD Lab # 139

Please provide completed form with samples. Highlighted fields are required.

<b>Client Name:</b> Well Water Solutions, Inc.	<b>Property Address:</b>
<b>Email Address:</b> jemoesman@wellwatersolutions.net & jbieber@wellwatersolutions.net	5517 JACKS LANDING OK
<b>Phone Number:</b> 410-935-7185	CLANKSVILLE MD 21029

### Field Collection Information

LOT 6

<b>Sampler Name:</b> John Moseman	<b>Field pH:</b> <del>4.5</del> 7
<b>Sampler ID #:</b> 2674JM	<b>Field Chlorine (mg/L):</b> Present / <u>Absent</u>
<b>Date Sampled:</b> 10/19	<b>Time Sampled:</b> 12:00
<b>Well Tag Number:</b> 4017-038 <del>4091-5213</del>	<b>Sand Present /</b> <u>Absent</u>
<b>Compliance sample for public water system?</b> <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	<b>Clarity:</b> <u>Clear</u> / Un-Clear
<small>Well Water Testing</small>	<b>If yes, PWS ID #:</b>

### Well Casing and Cap Condition

PERMIT B21002944

Well Type:  Drilled  Well Pit  Below Grade  Artesian  Hand Dug  N/A  Other: \_\_\_\_\_

<b>Height Above Grade:</b> 2 FT	<b>Cap Type:</b> 2 piece	<b>Casing:</b> Steel	<b>Conduit:</b> PVC
<b>Sample Point:</b> Ketchum POST TREATMENT		<b>Water Conditioning:</b> HOUSE NO SOFT/NEUT	

### Requested Testing: (Please check all that apply)

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Potability (Bacteria, Nitrate + Nitrite, Turbidity)         | <input checked="" type="checkbox"/> Chlorides | <input checked="" type="checkbox"/> Total Dissolved Solids                                   |
| <input type="checkbox"/> FHA/VA (Bacteria, Nitrate + Nitrite, Turbidity, Lead, Iron) | <input type="checkbox"/> Hardness             | <input type="checkbox"/> Copper  |
| <input type="checkbox"/> Bacteria  | <input type="checkbox"/> Arsenic              | <input type="checkbox"/> VOCs  |
| <input type="checkbox"/> Lead  | <input type="checkbox"/> Cadmium              | <input type="checkbox"/> Other: <input type="checkbox"/> TDS <input type="checkbox"/> Sodium |
| <input type="checkbox"/> Nitrate + Nitrite   | <input type="checkbox"/> Gross Alpha          | <input type="checkbox"/> Other: <input type="checkbox"/> Radium Long Term                    |
| <input type="checkbox"/> Iron  |   | <input type="checkbox"/> Other: 226 & 228  |
| <input type="checkbox"/> Turbidity   |   |  |

List rush samples below

\*Refer to table for rush turnaround times and fees\*

### Release Signatures

Released By: [Signature]  
John Moseman  
Released By: [Signature]  
Released By: [Signature]  
Received in lab by: [Signature]

Date/Time: 10/19 12:00  
Date/Time: 10/20 9:00  
Date/Time: 10/20 12:10  
Date/Time: 10/20/22 12:10PM

Send Report To: Bert Nixon

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

State of Maryland  
MDH-Laboratories Administration  
Division of Environmental Sciences  
INORGANICS ANALYTICAL LABORATORY  
1770 Ashland Avenue  
Baltimore, Maryland 21205  
**WATER ANALYSIS**



E18004432001

Received: 06/11/2018

Inorganic

HO-17-0238B

Do not write above this line.

S A M P L E  I D	Bottle Number	HO-17-0238 B	Name	Jack's Landing - Lot 6	County	Howard	County Code	13
	Location	Triadelphia Mill Rd.	Dayton	Data Category Code	4F			
	Collected: Date	6/8/18	Time	11:15 am	Collector & Phone	S. Collins 410-313-6287	Submitter Code	
	CHECK (one per box)							
	Drinking Water	<input checked="" type="checkbox"/>	Community	<input type="checkbox"/>	Source (raw water)	<input checked="" type="checkbox"/>	Emergency	<input type="checkbox"/>
	Landfill	<input type="checkbox"/>	Non-community	<input type="checkbox"/>	Distribution (treated)	<input type="checkbox"/>	Routine	<input checked="" type="checkbox"/>
	Stream	<input type="checkbox"/>	Private	<input checked="" type="checkbox"/>	MCL	<input type="checkbox"/>	Recheck	<input type="checkbox"/>
	Other	<input type="checkbox"/>	Other	<input type="checkbox"/>			Special	<input type="checkbox"/>
							Federal Project	S

F I E L D	Plant No.		Sampling Station		Preservation: Iced	<input checked="" type="checkbox"/>	Acid	<input type="checkbox"/>	Type of Acid	
	pH	6.5	Chlorine: Free	0.0	Total		Specific Conductance			
	Notes to Lab/Remarks: Sample collected during yield test.									

CHECK TESTS	TESTS	Error Code	RESULTS
<input type="checkbox"/>	Alkalinity (Total)		
<input type="checkbox"/>	Ammonia - N		
<input checked="" type="checkbox"/>	Chloride		
<input type="checkbox"/>	Conductance*, Spec.		
<input checked="" type="checkbox"/>	Dissolved Solids (Total)		
<input type="checkbox"/>	Hardness		
<input type="checkbox"/>	Fluoride		
<input type="checkbox"/>	Nitrite, N		
<input type="checkbox"/>	Nitrate - Nitrite, N		
<input type="checkbox"/>	Sulfate		
<input type="checkbox"/>	Total Solids		
<input type="checkbox"/>	Turbidity*		
<input type="checkbox"/>	Other:		
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>			

\* Results reported in Units, all others in milligrams per liter (ppm)

Number of Tests Requested

Section Chief \_\_\_\_\_

Date Reported \_\_\_\_\_



State of Maryland  
Department of Health  
Laboratories Administration  
Division of Environmental Sciences  
**INORGANICS ANALYTICAL LABORATORY**  
1770 Ashland Avenue, Baltimore, Maryland 21205  
Robert Myers, Ph.D., Director



## Certificate of Analysis

HOWARD CO ENVIRONMENTAL HLTH  
8930 STANFORD BLVD  
COLUMBIA, MD 21045

Lab Project NoE18004432 Date Coll. 06/08/2018 Date Received 06/11/2018 Submitted By:Collins

Field ID: HO-17-0238B  
Lab No.: E18004432001

<u>Analyte</u>	<u>Method</u>	<u>Result</u>	<u>Units</u>	<u>Date Analyzed</u>
Chloride	SM 4500-Cl E	202	mg/L	06/15/2018
Total Dissolved Solids	SM 2540C	548	mg/L	06/15/2018

### Comments:

Approved by:

Approval date: 06/19/2018

\*The following methods are included in our A2LA Scope of Accreditation: EPA150.1, EPA 353.2, EPA 375.2, SM4500F C, SM 4500-CN G & QCM-CN, QCM-CN. Samples are tested as received.

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## Certificate of Analysis

HOWARD CO ENVIRONMENTAL HLTH  
 8930 STANFORD BLVD  
 COLUMBIA, MD 21045

Lab. No: E18004433001

Method: EPA 524.2 VOCs and THMs

Date Received: 06/11/2018  
 Field ID: HO170238B-A/B

Date Collected: 06/08/2018  
 Submitted By: S. Collins

Date Analyzed: 06/14/2018

<u>Contaminant</u>	<u>RL</u>	<u>MCL</u>	<u>Result</u>	<u>Contaminant</u>	<u>RL</u>	<u>MCL</u>	<u>Result</u>
<b>REGULATED</b>							
1,1,1-Trichloroethane	0.5	200	ND	2-Chlorotoluene	0.5		ND
1,1,2-Trichloroethane	0.5	5	ND	4-Chlorotoluene	0.5		ND
1,1-Dichloroethene	0.5	7	ND	Bromobenzene	0.5		ND
1,2,4-Trichlorobenzene	0.5	70	ND	Bromochloromethane	0.5		ND
1,2-Dichlorobenzene	0.5	600	ND	Bromomethane	0.5		ND
1,2-Dichloroethane	0.5	5	ND	Chloroethane	0.5		ND
1,2-Dichloropropane	0.5	5	ND	Chloromethane	0.5		ND
1,4-Dichlorobenzene	0.5	75	ND	cis-1,3-Dichloropropene	0.5		ND
Benzene	0.5	5	ND	Dibromomethane	0.5		ND
Carbon Tetrachloride	0.5	5	ND	Dichlorodifluoromethane	0.5		ND
Chlorobenzene	0.5	100	ND	Ethyl-tert-Butyl Ether (ETBE)	0.5		ND
cis-1,2-Dichloroethene	0.5	70	ND	Hexachlorobutadiene	0.5		ND
Ethylbenzene	0.5	700	ND	Isopropylbenzene	0.5		ND
m+p-Xylene	1.0		ND	Methyl-tert-Butyl Ether (MTBE)	0.5		5.15
Methylene Chloride	0.5	5	ND	Naphthalene	0.5		ND
o-Xylene	0.5		ND	n-Butylbenzene	0.5		ND
Styrene	0.5	100	ND	n-Propylbenzene	0.5		ND
Tetrachloroethene	0.5	5	ND	p-Isopropyltoluene	0.5		ND
Toluene	0.5	1000	ND	sec-Butylbenzene	0.5		ND
Total Xylenes	1.5	10000	ND	tert-Amyl Methyl Ether (TAME)	0.5		0.65
trans-1,2-Dichloroethene	0.5	100	ND	tert-Butylbenzene	0.5		ND
Trichloroethene	0.5	5	ND	trans-1,3-Dichloropropene	0.5		ND
Vinyl Chloride	0.5	2	ND	Trichlorofluoromethane	0.5		ND
<b>TRihalOMETHANES</b>							
Bromodichloromethane	0.5		ND				
Bromoform	0.5		ND				
Chloroform	0.5		ND				
Dibromochloromethane	0.5		ND				
TOTAL THMs		80	0.00				
<b>UNREGULATED</b>							
1,1,1,2-Tetrachloroethane	0.5		ND				
1,1,1,2-Tetrachloroethane	0.5		ND				
1,1-Dichloroethane	0.5		ND				
1,1-Dichloropropene	0.5		ND				
1,2,3-Trichlorobenzene	0.5		ND				
1,2,3-Trichloropropane	0.5		ND				
1,2,4-Trimethylbenzene	0.5		ND				
1,2-Dibromo-3-Chloropropane	0.5		ND				
1,2-Dibromoethane	0.5		ND				
1,3,5-Trimethylbenzene	0.5		ND				
1,3-Dichlorobenzene	0.5		ND				
1,3-Dichloropropane	0.5		ND				
2,2-Dichloropropane	0.5		ND				

**Comments:**

Approved by:

Approval date:

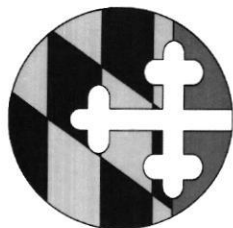
*Sadia Muneer*

06/20/2018

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Telephone: (443) 681-3853 Fax: (443) 681-4507



## Certificate of Analysis

HOWARD CO ENVIRONMENTAL HLTH  
8930 STANFORD BLVD  
COLUMBIA, MD 21045

Lab. No: E18004433002

Method: EPA 524.2 VOCs and THMs

Date Received: 06/11/2018  
Field ID: FBHO170238B FE

Date Collected: 06/08/2018  
Submitted By: S. Collins

Date Analyzed: 06/14/2018

Contaminant	RL	MCL	Result	Contaminant	RL	MCL	Result
<b>REGULATED</b>				2-Chlorotoluene	0.5		ND
1,1,1-Trichloroethane	0.5	200	ND	4-Chlorotoluene	0.5		ND
1,1,2-Trichloroethane	0.5	5	ND	Bromobenzene	0.5		ND
1,1-Dichloroethene	0.5	7	ND	Bromochloromethane	0.5		ND
1,2,4-Trichlorobenzene	0.5	70	ND	Bromomethane	0.5		ND
1,2-Dichlorobenzene	0.5	600	ND	Chloroethane	0.5		ND
1,2-Dichloroethane	0.5	5	ND	Chloromethane	0.5		ND
1,2-Dichloropropane	0.5	5	ND	cis-1,3-Dichloropropene	0.5		ND
1,4-Dichlorobenzene	0.5	75	ND	Dibromomethane	0.5		ND
Benzene	0.5	5	ND	Dichlorodifluoromethane	0.5		ND
Carbon Tetrachloride	0.5	5	ND	Ethyl-tert-Butyl Ether (ETBE)	0.5		ND
Chlorobenzene	0.5	100	ND	Hexachlorobutadiene	0.5		ND
cis-1,2-Dichloroethene	0.5	70	ND	Isopropylbenzene	0.5		ND
Ethylbenzene	0.5	700	ND	Methyl-tert-Butyl Ether (MTBE)	0.5		ND
m+p-Xylene	1.0		ND	Naphthalene	0.5		ND
Methylene Chloride	0.5	5	ND	n-Butylbenzene	0.5		ND
o-Xylene	0.5		ND	n-Propylbenzene	0.5		ND
Styrene	0.5	100	ND	p-Isopropyltoluene	0.5		ND
Tetrachloroethene	0.5	5	ND	sec-Butylbenzene	0.5		ND
Toluene	0.5	1000	ND	tert-Amyl Methyl Ether (TAME)	0.5		ND
Total Xylenes	1.5	10000	ND	tert-Butylbenzene	0.5		ND
trans-1,2-Dichloroethene	0.5	100	ND	trans-1,3-Dichloropropene	0.5		ND
Trichloroethene	0.5	5	ND	Trichlorofluoromethane	0.5		ND
Vinyl Chloride	0.5	2	ND				
<b>TRIHALOMETHANES</b>							
Bromodichloromethane	0.5		ND				
Bromoform	0.5		ND				
Chloroform	0.5		ND				
Dibromochloromethane	0.5		ND				
TOTAL THMs		80	0.00				
<b>UNREGULATED</b>							
1,1,1,2-Tetrachloroethane	0.5		ND				
1,1,1,2,2-Tetrachloroethane	0.5		ND				
1,1-Dichloroethane	0.5		ND				
1,1-Dichloropropene	0.5		ND				
1,2,3-Trichlorobenzene	0.5		ND				
1,2,3-Trichloropropane	0.5		ND				
1,2,4-Trimethylbenzene	0.5		ND				
1,2-Dibromo-3-Chloropropane	0.5		ND				
1,2-Dibromoethane	0.5		ND				
1,3,5-Trimethylbenzene	0.5		ND				
1,3-Dichlorobenzene	0.5		ND				
1,3-Dichloropropane	0.5		ND				
2,2-Dichloropropane	0.5		ND				

**Comments:**

Approved by:

Approval date:

*Sadia Muneer*

06/20/2018

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## Certificate of Analysis

HOWARD CO ENVIRONMENTAL HLTH  
 8930 STANFORD BLVD  
 COLUMBIA, MD 21045

Lab. No: E18004433003

Method: EPA 524.2 VOCs and THMs

Date Received: 06/11/2018  
 Field ID: TBHO170238B T

Date Collected: 06/08/2018  
 Submitted By: S. Collins

Date Analyzed: 06/14/2018

<u>Contaminant</u>	<u>RL</u>	<u>MCL</u>	<u>Result</u>	<u>Contaminant</u>	<u>RL</u>	<u>MCL</u>	<u>Result</u>
<b>REGULATED</b>				2-Chlorotoluene			
1,1,1-Trichloroethane	0.5	200	ND	4-Chlorotoluene	0.5		ND
1,1,2-Trichloroethane	0.5	5	ND	Bromobenzene	0.5		ND
1,1-Dichloroethene	0.5	7	ND	Bromochloromethane	0.5		ND
1,2,4-Trichlorobenzene	0.5	70	ND	Bromomethane	0.5		ND
1,2-Dichlorobenzene	0.5	600	ND	Chloroethane	0.5		ND
1,2-Dichloroethane	0.5	5	ND	Chloromethane	0.5		ND
1,2-Dichloropropane	0.5	5	ND	cis-1,3-Dichloropropene	0.5		ND
1,4-Dichlorobenzene	0.5	75	ND	Dibromomethane	0.5		ND
Benzene	0.5	5	ND	Dichlorodifluoromethane	0.5		ND
Carbon Tetrachloride	0.5	5	ND	Ethyl-tert-Butyl Ether (ETBE)	0.5		ND
Chlorobenzene	0.5	100	ND	Hexachlorobutadiene	0.5		ND
cis-1,2-Dichloroethene	0.5	70	ND	Isopropylbenzene	0.5		ND
Ethylbenzene	0.5	700	ND	Methyl-tert-Butyl Ether (MTBE)	0.5		ND
m+p-Xylene	1.0		ND	Naphthalene	0.5		ND
Methylene Chloride	0.5	5	ND	n-Butylbenzene	0.5		ND
o-Xylene	0.5		ND	n-Propylbenzene	0.5		ND
Styrene	0.5	100	ND	p-Isopropyltoluene	0.5		ND
Tetrachloroethene	0.5	5	ND	sec-Butylbenzene	0.5		ND
Toluene	0.5	1000	ND	tert-Amyl Methyl Ether (TAME)	0.5		ND
Total Xylenes	1.5	10000	ND	tert-Butylbenzene	0.5		ND
trans-1,2-Dichloroethene	0.5	100	ND	trans-1,3-Dichloropropene	0.5		ND
Trichloroethene	0.5	5	ND	Trichlorofluoromethane	0.5		ND
Vinyl Chloride	0.5	2	ND				
<b>TRihalOMETHANES</b>							
Bromodichloromethane	0.5		ND				
Bromoform	0.5		ND				
Chloroform	0.5		ND				
Dibromochloromethane	0.5		ND				
TOTAL THMs		80	0.00				
<b>UNREGULATED</b>							
1,1,1,2-Tetrachloroethane	0.5		ND				
1,1,1,2,2-Tetrachloroethane	0.5		ND				
1,1-Dichloroethane	0.5		ND				
1,1-Dichloropropane	0.5		ND				
1,2,3-Trichlorobenzene	0.5		ND				
1,2,3-Trichloropropane	0.5		ND				
1,2,4-Trimethylbenzene	0.5		ND				
1,2-Dibromo-3-Chloropropane	0.5		ND				
1,2-Dibromoethane	0.5		ND				
1,3,5-Trimethylbenzene	0.5		ND				
1,3-Dichlorobenzene	0.5		ND				
1,3-Dichloropropane	0.5		ND				
2,2-Dichloropropane	0.5		ND				

**Comments:**

Approved by:

Approval date:

*Sadia Muneer*

06/20/2018

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## Certificate of Analysis

HOWARD CO ENVIRONMENTAL HLTH  
8930 STANFORD BLVD  
COLUMBIA, MD 21045

Lab. No: E18004433001

Method: EPA 524.2 VOCs and THMs

Date Received: 06/11/2018  
Field ID: HO170238B-A/B

Date Collected: 06/08/2018  
Submitted By: S. Collins

Date Analyzed: 06/14/2018

<u>Contaminant</u>	<u>RL</u>	<u>MCL</u>	<u>Result</u>	<u>Contaminant</u>	<u>RL</u>	<u>MCL</u>	<u>Result</u>
<b>REGULATED</b>				2-Chlorotoluene	0.5		ND
1,1,1-Trichloroethane	0.5	200	ND	4-Chlorotoluene	0.5		ND
1,1,2-Trichloroethane	0.5	5	ND	Bromobenzene	0.5		ND
1,1-Dichloroethene	0.5	7	ND	Bromochloromethane	0.5		ND
1,2,4-Trichlorobenzene	0.5	70	ND	Bromomethane	0.5		ND
1,2-Dichlorobenzene	0.5	600	ND	Chloroethane	0.5		ND
1,2-Dichloroethane	0.5	5	ND	Chloromethane	0.5		ND
1,2-Dichloropropane	0.5	5	ND	cis-1,3-Dichloropropene	0.5		ND
1,4-Dichlorobenzene	0.5	75	ND	Dibromomethane	0.5		ND
Benzene	0.5	5	ND	Dichlorodifluoromethane	0.5		ND
Carbon Tetrachloride	0.5	5	ND	Ethyl-tert-Butyl Ether (ETBE)	0.5		ND
Chlorobenzene	0.5	100	ND	Hexachlorobutadiene	0.5		ND
cis-1,2-Dichloroethene	0.5	70	ND	Isopropylbenzene	0.5		ND
Ethylbenzene	0.5	700	ND	Methyl-tert-Butyl Ether (MTBE)	0.5		5.15
m+p-Xylene	1.0		ND	Naphthalene	0.5		ND
Methylene Chloride	0.5	5	ND	n-Butylbenzene	0.5		ND
o-Xylene	0.5		ND	n-Propylbenzene	0.5		ND
Styrene	0.5	100	ND	p-Isopropyltoluene	0.5		ND
Tetrachloroethene	0.5	5	ND	sec-Butylbenzene	0.5		ND
Toluene	0.5	1000	ND	tert-Amyl Methyl Ether (TAME)	0.5		0.65
Total Xylenes	1.5	10000	ND	tert-Butylbenzene	0.5		ND
trans-1,2-Dichloroethene	0.5	100	ND	trans-1,3-Dichloropropene	0.5		ND
Trichloroethene	0.5	5	ND	Trichlorofluoromethane	0.5		ND
Vinyl Chloride	0.5	2	ND				
<b>TRihalOMETHANES</b>							
Bromodichloromethane	0.5		ND				
Bromoform	0.5		ND				
Chloroform	0.5		ND				
Dibromochloromethane	0.5		ND				
TOTAL THMs		80	0.00				
<b>UNREGULATED</b>							
1,1,1,2-Tetrachloroethane	0.5		ND				
1,1,1,2,2-Tetrachloroethane	0.5		ND				
1,1-Dichloroethane	0.5		ND				
1,1-Dichloropropene	0.5		ND				
1,2,3-Trichlorobenzene	0.5		ND				
1,2,3-Trichloropropane	0.5		ND				
1,2,4-Trimethylbenzene	0.5		ND				
1,2-Dibromo-3-Chloropropane	0.5		ND				
1,2-Dibromoethane	0.5		ND				
1,3,5-Trimethylbenzene	0.5		ND				
1,3-Dichlorobenzene	0.5		ND				
1,3-Dichloropropane	0.5		ND				
2,2-Dichloropropane	0.5		ND				

**Comments:**

Approved by:

Approval date:

*Sadia Muneer*

06/20/2018

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## Certificate of Analysis

HOWARD CO ENVIRONMENTAL HLTH  
8930 STANFORD BLVD  
COLUMBIA, MD 21045

Lab. No: E18004433002

Method: EPA 524.2 VOCs and THMs

Date Received: 06/11/2018  
Field ID: FBHO170238B FE

Date Collected: 06/08/2018  
Submitted By: S. Collins

Date Analyzed: 06/14/2018

<u>Contaminant</u>	<u>RL</u>	<u>MCL</u>	<u>Result</u>	<u>Contaminant</u>	<u>RL</u>	<u>MCL</u>	<u>Result</u>
<b>REGULATED</b>				2-Chlorotoluene	0.5		ND
1,1,1-Trichloroethane	0.5	200	ND	4-Chlorotoluene	0.5		ND
1,1,2-Trichloroethane	0.5	5	ND	Bromobenzene	0.5		ND
1,1-Dichloroethene	0.5	7	ND	Bromochloromethane	0.5		ND
1,2,4-Trichlorobenzene	0.5	70	ND	Bromomethane	0.5		ND
1,2-Dichlorobenzene	0.5	600	ND	Chloroethane	0.5		ND
1,2-Dichloroethane	0.5	5	ND	Chloromethane	0.5		ND
1,2-Dichloropropane	0.5	5	ND	cis-1,3-Dichloropropene	0.5		ND
1,4-Dichlorobenzene	0.5	75	ND	Dibromomethane	0.5		ND
Benzene	0.5	5	ND	Dichlorodifluoromethane	0.5		ND
Carbon Tetrachloride	0.5	5	ND	Ethyl-tert-Butyl Ether (ETBE)	0.5		ND
Chlorobenzene	0.5	100	ND	Hexachlorobutadiene	0.5		ND
cis-1,2-Dichloroethene	0.5	70	ND	Isopropylbenzene	0.5		ND
Ethylbenzene	0.5	700	ND	Methyl-tert-Butyl Ether (MTBE)	0.5		ND
m+p-Xylene	1.0		ND	Naphthalene	0.5		ND
Methylene Chloride	0.5	5	ND	n-Butylbenzene	0.5		ND
o-Xylene	0.5		ND	n-Propylbenzene	0.5		ND
Styrene	0.5	100	ND	p-Isopropyltoluene	0.5		ND
Tetrachloroethene	0.5	5	ND	sec-Butylbenzene	0.5		ND
Toluene	0.5	1000	ND	tert-Amyl Methyl Ether (TAME)	0.5		ND
Total Xylenes	1.5	10000	ND	tert-Butylbenzene	0.5		ND
trans-1,2-Dichloroethene	0.5	100	ND	trans-1,3-Dichloropropene	0.5		ND
Trichloroethene	0.5	5	ND	Trichlorofluoromethane	0.5		ND
Vinyl Chloride	0.5	2	ND				
<b>TRihalOMETHANES</b>							
Bromodichloromethane	0.5		ND				
Bromoform	0.5		ND				
Chloroform	0.5		ND				
Dibromochloromethane	0.5		ND				
TOTAL THMs		80	0.00				
<b>UNREGULATED</b>							
1,1,1,2-Tetrachloroethane	0.5		ND				
1,1,1,2,2-Tetrachloroethane	0.5		ND				
1,1-Dichloroethane	0.5		ND				
1,1-Dichloropropene	0.5		ND				
1,2,3-Trichlorobenzene	0.5		ND				
1,2,3-Trichloropropane	0.5		ND				
1,2,4-Trimethylbenzene	0.5		ND				
1,2-Dibromo-3-Chloropropane	0.5		ND				
1,2-Dibromoethane	0.5		ND				
1,3,5-Trimethylbenzene	0.5		ND				
1,3-Dichlorobenzene	0.5		ND				
1,3-Dichloropropane	0.5		ND				
2,2-Dichloropropane	0.5		ND				

**Comments:**

Approved by:

Approval date:

*Sadia Muneer*

06/20/2018

\*All results are in parts per billion (ppb); ND = Less than the detection level; na = not applicable; e = estimated value. Samples are tested as received.

This document contains confidential health information that is privileged, confidential and exempt from disclosure under law. If you have received this information in error, please call (410) 767-6648 and arrange for return or destruction.

Telephone: (443) 681 -3853 Fax: (443) 681-4507



## Certificate of Analysis

HOWARD CO ENVIRONMENTAL HLTH  
 8930 STANFORD BLVD  
 COLUMBIA, MD 21045

Lab. No: E18004433003

Method: EPA 524.2 VOCs and THMs

Date Received: 06/11/2018  
 Field ID: TBHO170238B T

Date Collected: 06/08/2018  
 Submitted By: S. Collins

Date Analyzed: 06/14/2018

<u>Contaminant</u>	<u>RL</u>	<u>MCL</u>	<u>Result</u>	<u>Contaminant</u>	<u>RL</u>	<u>MCL</u>	<u>Result</u>
<b>REGULATED</b>				2-Chlorotoluene	0.5		ND
1,1,1-Trichloroethane	0.5	200	ND	4-Chlorotoluene	0.5		ND
1,1,2-Trichloroethane	0.5	5	ND	Bromobenzene	0.5		ND
1,1-Dichloroethane	0.5	7	ND	Bromochloromethane	0.5		ND
1,2,4-Trichlorobenzene	0.5	70	ND	Bromomethane	0.5		ND
1,2-Dichlorobenzene	0.5	600	ND	Chloroethane	0.5		ND
1,2-Dichloroethane	0.5	5	ND	Chloromethane	0.5		ND
1,2-Dichloropropane	0.5	5	ND	cis-1,3-Dichloropropene	0.5		ND
1,4-Dichlorobenzene	0.5	75	ND	Dibromomethane	0.5		ND
Benzene	0.5	5	ND	Dichlorodifluoromethane	0.5		ND
Carbon Tetrachloride	0.5	5	ND	Ethyl-tert-Butyl Ether (ETBE)	0.5		ND
Chlorobenzene	0.5	100	ND	Hexachlorobutadiene	0.5		ND
cis-1,2-Dichloroethane	0.5	70	ND	Isopropylbenzene	0.5		ND
Ethylbenzene	0.5	700	ND	Methyl-tert-Butyl Ether (MTBE)	0.5		ND
m+p-Xylene	1.0		ND	Naphthalene	0.5		ND
Methylene Chloride	0.5	5	ND	n-Butylbenzene	0.5		ND
o-Xylene	0.5		ND	n-Propylbenzene	0.5		ND
Styrene	0.5	100	ND	p-Isopropyltoluene	0.5		ND
Tetrachloroethane	0.5	5	ND	sec-Butylbenzene	0.5		ND
Toluene	0.5	1000	ND	tert-Amyl Methyl Ether (TAME)	0.5		ND
Total Xylenes	1.5	10000	ND	tert-Butylbenzene	0.5		ND
trans-1,2-Dichloroethane	0.5	100	ND	trans-1,3-Dichloropropene	0.5		ND
Trichloroethane	0.5	5	ND	Trichlorofluoromethane	0.5		ND
Vinyl Chloride	0.5	2	ND				
<b>TRIHALOMETHANES</b>							
Bromodichloromethane	0.5		ND				
Bromoform	0.5		ND				
Chloroform	0.5		ND				
Dibromochloromethane	0.5		ND				
TOTAL THMs		80	0.00				
<b>UNREGULATED</b>							
1,1,1,2-Tetrachloroethane	0.5		ND				
1,1,1,2,2-Tetrachloroethane	0.5		ND				
1,1-Dichloroethane	0.5		ND				
1,1-Dichloropropane	0.5		ND				
1,2,3-Trichlorobenzene	0.5		ND				
1,2,3-Trichloropropane	0.5		ND				
1,2,4-Trimethylbenzene	0.5		ND				
1,2-Dibromo-3-Chloropropane	0.5		ND				
1,2-Dibromoethane	0.5		ND				
1,3,5-Trimethylbenzene	0.5		ND				
1,3-Dichlorobenzene	0.5		ND				
1,3-Dichloropropane	0.5		ND				
2,2-Dichloropropane	0.5		ND				

**Comments:**

Approved by:

Approval date:

*Sadia Muneer*

06/20/2018

\*All results are in parts per billion (ppb); ND = Less than the detection level; na = not applicable; e = estimated value. Samples are tested as received.

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Telephone: (443) 681-3853 Fax: (443) 681-4507

Send Report to: Bert Nixon

Temperature Blank: 1.0 °C

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

State of Maryland  
DHMH - Laboratories Administration  
Division of Environmental Chemistry  
ORGANICS ANALYTICAL LABORATORY  
1770 Ashland Avenue  
BALTIMORE, MARYLAND 21205

LABORATORY ANALYSIS REQUEST FORM

Please write legibly

Bottle No.: H0170238B-A  
H0170238B-B Plant/Site Name: Jack's Landing - Lot 6 County: Howard

Location: H0-17-0238 Well #3 Sample Source: Triadelphia Mill Rd. Dayton  
Street Town or City

Collector/ID: S. Collins / 3406 SC Phone No.: 410-313-6287

County: 013 System No. PWSID Plant No. Date Collected: 6/8/2018 Time Collected: 11:15 am

Field Data: pH 6.5 Free Cl: 0 Total Cl:

Sample Type:  Drinking water  Landfill  Source (water)  Oil  
 Private  Stream  Distribution (treated)  Solid  
 Community  Soil/Sediment  Water Treatment Plant POE  Other  
 Non-Community

Specify Program:  SDWA  NPDES  RCRA  CWA  CERCLA  Consumer Products  
 Other

Table with 4 columns: Test Requested, Field & Trip Blank, Preservative Used, Comment. Rows include EPA Methods 504.1, 508, 515.3, 515.4, 525.2, 531.2, 552.2, 8270, 524.2, and 8260.

Barcode E18004433001  
Received: 06/11/2018 EPA 524.2  
Trace Organics HO170238B-A

Barcode E18004433002  
Received: 06/11/2018 EPA 524.2  
Trace Organics FBHO170238B

Barcode E18004433003  
Received: 06/11/2018 EPA 524.2  
Trace Organics TBHO170238B

Remarks: Sample H0170238B-A...  
Lab Supervisor: \_\_\_\_\_ Date Reported: \_\_\_\_/\_\_\_\_/\_\_\_\_

Phone: (443) 681-3857 Fax: (443) 681-4507

SUBMITTER'S COPY

# ENVIRO-CHEM LABORATORIES, INC.



47 Loveton Circle, Suite K • Sparks, Maryland 21152

410-472-1112

## FINAL REPORT OF ANALYSIS

Michael Barlow Well Drilling  
522 Underwood Lane  
Bel Air, MD 21014

Report Date: 06/25/2018  
Report Number: 180625102331

LAB#- E054291-01      SAMPLE ID- Jacks Landing Lot 6 Well 3      WELL #  
LOCATION- Well Head      SAMPLER- 8315JW  
DATE SAMPLED- 06/11/2018      TIME SAMPLED- 16:00      Residual Chlorine-  
DATE RECEIVED- 06/11/2018      TIME RECEIVED- 16:50  
DELIVERED BY- B Johnston      RECEIVED BY- Ginny Shelley  
COMMENTS-

COMMENTS-

ANALYSIS	METHOD	ANALYSIS DATE/TIME	BY	RESULT	DATA FLAG
<b>Total Metals by EPA 200.7 by Enviro-Chem</b>					
\$ Sodium	EPA 200.7	06/13/18 12:45	RAS	16.3	mg/L
<b>Wet Chemistry by Enviro-Chem</b>					
\$ Chloride	EPA 300.0	06/12/18 22:20	SES	133	mg/L
\$ Dissolved Solids	SM 2540C	06/13/18 22:40	SES	591	mg/L

Stephen Shelley  
Laboratory Director

### Certifications

# - State of Maryland Certification #192  
Virginia Drinking Water 8634  
# Indicates a MD certified Analyte  
! Indicates a MD, VA certified Analyte  
\$ Not a certified Analyte

**Analytical Results**

**Project: Jacks Landing**

Project Number: E054291  
Project Manager: Stephen Shelley

Reported:  
06/18/18 11:57

**E054291-01 (Lot 6 )**  
**Jacks Landing**  
**8061301-01 (Drinking Water)**  
**Sample Date: 06/11/18**

Analyte	Result	Units	Reporting			Prepared	Analyzed	Analyst	Notes
			Limit	Dilution					
<b>VOLATILE ORGANICS BY EPA METHOD 524.2 (GC/MS)</b>									
tert-Amyl alcohol (TAA)	ND	ug/L	10.0	1	06/14/18	06/14/18 13:30	WB		
tert-Amyl methyl ether (TAME)	0.70	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
Benzene	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
Bromobenzene	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
Bromochloromethane	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
Bromodichloromethane	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
Bromoform	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
Bromomethane	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
tert-Butanol (TBA)	ND	ug/L	10.0	1	06/14/18	06/14/18 13:30	WB		
n-Butylbenzene	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
sec-Butylbenzene	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
tert-Butylbenzene	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
Carbon tetrachloride	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
Chlorobenzene	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
Chloroethane	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
Chloroform	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
Chloromethane	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
2-Chlorotoluene	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
4-Chlorotoluene	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
Dibromochloromethane	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
1,2-Dibromoethane (EDB)	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
Dibromomethane	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
1,2-Dichlorobenzene	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
1,3-Dichlorobenzene	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
1,4-Dichlorobenzene	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
Dichlorodifluoromethane	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
1,1-Dichloroethane	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
1,2-Dichloroethane	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
1,1-Dichloroethene	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
cis-1,2-Dichloroethene	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
1,2-Dichloropropane	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
1,3-Dichloropropane	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		
2,2-Dichloropropane	ND	ug/L	0.50	1	06/14/18	06/14/18 13:30	WB		

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Rabecka Koons, Quality Assurance Officer

**Analytical Results**

**Project: Jacks Landing**

Project Number: E054291  
Project Manager: Stephen Shelley

Reported:  
06/18/18 11:57

**E054291-01 (Lot 6 )  
Jacks Landing  
8061301-01 (Drinking Water)  
Sample Date: 06/11/18**

Analyte	Result	Units	Reporting		Dilution	Prepared	Analyzed	Analyst	Notes
			Limit						
<b>VOLATILE ORGANICS BY EPA METHOD 524.2 (GC/MS) (continued)</b>									
1,1-Dichloropropene	ND	ug/L	0.50		1	06/14/18	06/14/18 13:30	WB	
cis-1,3-Dichloropropene	ND	ug/L	0.50		1	06/14/18	06/14/18 13:30	WB	
trans-1,3-Dichloropropene	ND	ug/L	0.50		1	06/14/18	06/14/18 13:30	WB	
Diisopropyl ether (DIPE)	ND	ug/L	0.50		1	06/14/18	06/14/18 13:30	WB	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	0.50		1	06/14/18	06/14/18 13:30	WB	
Ethylbenzene	ND	ug/L	0.50		1	06/14/18	06/14/18 13:30	WB	
Hexachlorobutadiene	ND	ug/L	0.50		1	06/14/18	06/14/18 13:30	WB	
Isopropylbenzene (Cumene)	ND	ug/L	0.50		1	06/14/18	06/14/18 13:30	WB	
4-Isopropyltoluene	ND	ug/L	0.50		1	06/14/18	06/14/18 13:30	WB	
<b>Methyl tert-butyl ether (MTBE)</b>	<b>5.23</b>	ug/L	0.50		1	06/14/18	06/14/18 13:30	WB	
Methylene chloride	ND	ug/L	0.50		1	06/14/18	06/14/18 13:30	WB	
Naphthalene	ND	ug/L	0.50		1	06/14/18	06/14/18 13:30	WB	
n-Propylbenzene	ND	ug/L	0.50		1	06/14/18	06/14/18 13:30	WB	
Styrene	ND	ug/L	0.50		1	06/14/18	06/14/18 13:30	WB	
1,1,1,2-Tetrachloroethane	ND	ug/L	0.50		1	06/14/18	06/14/18 13:30	WB	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50		1	06/14/18	06/14/18 13:30	WB	
Tetrachloroethene	ND	ug/L	0.50		1	06/14/18	06/14/18 13:30	WB	
Toluene	ND	ug/L	0.50		1	06/14/18	06/14/18 13:30	WB	
1,2,3-Trichlorobenzene	ND	ug/L	0.50		1	06/14/18	06/14/18 13:30	WB	
1,2,4-Trichlorobenzene	ND	ug/L	0.50		1	06/14/18	06/14/18 13:30	WB	
1,1,1-Trichloroethane	ND	ug/L	0.50		1	06/14/18	06/14/18 13:30	WB	
1,1,2-Trichloroethane	ND	ug/L	0.50		1	06/14/18	06/14/18 13:30	WB	
Trichloroethene	ND	ug/L	0.50		1	06/14/18	06/14/18 13:30	WB	
Trichlorofluoromethane (Freon 11)	ND	ug/L	0.50		1	06/14/18	06/14/18 13:30	WB	
1,2,3-Trichloropropane	ND	ug/L	0.50		1	06/14/18	06/14/18 13:30	WB	
1,2,4-Trimethylbenzene	ND	ug/L	0.50		1	06/14/18	06/14/18 13:30	WB	
1,3,5-Trimethylbenzene	ND	ug/L	0.50		1	06/14/18	06/14/18 13:30	WB	
Vinyl chloride	ND	ug/L	0.50		1	06/14/18	06/14/18 13:30	WB	
o-Xylene	ND	ug/L	0.50		1	06/14/18	06/14/18 13:30	WB	
m- & p-Xylenes	ND	ug/L	0.50		1	06/14/18	06/14/18 13:30	WB	
Surrogate: 4-Bromofluorobenzene		80-120	104 %			06/14/18	06/14/18 13:30		
Surrogate: 1,2-Dichlorobenzene-d4		80-120	105 %			06/14/18	06/14/18 13:30		

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*Rabecka Koons*

Rabecka Koons, Quality Assurance Officer

## Analytical Results

**Project: Jacks Landing**

Project Number: E054291  
Project Manager: Stephen Shelley

**Reported:**  
06/18/18 11:57

### Notes and Definitions

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference

Send Report To: Bert Nixon

Howard County Health Dept  
~~Bureau of Environmental Health~~  
8930 Stanford Blvd  
Columbia, MD 21045

State of Maryland  
DHMH - Laboratories Administration  
Division of Environmental Sciences  
**TRACE METALS LABORATORY**  
1770 Ashland Avenue  
Baltimore, Maryland 21205



**E18004435001**

Received: 06/11/2018

Metals

HO-17-0238 B

### LABORATORY ANALYSIS REQUEST

Do not write above this line

Please Print

Sample ID No: HO-17-0238 B Site Name: Jack's Landing - Lot 6 County: Howard

Sample Source: Triadelphia Mill Rd. Dayton Collector: S. Collins  
Street Town or City Name

Date Collected: 6/8/2018 Time Collected: 11:15 a.m. / p.m. Phone #: 410-313-6287

Sample Preserved By:  Field  ESRL  WMRL  Central Lab  
Preservative Used:  HNO<sub>3</sub> \_\_\_\_\_ mL pH: 6.5

Sample Type:  Drinking Water  Landfill  Source (Raw Water)  Liquid  
Data Category:  Community  Stream  Distribution (Treated)  Solid  
Code   Non-Community  Sediment  Other \_\_\_\_\_  
4F  Private

Specify Program:  SDWA  NPDES  CWA  RCRA  Consumer Products  Other \_\_\_\_\_

Type of Sample Preparation:  Total Metals  Total Metals TCLP  Dissolved Metals  
(field preparation required)

Remarks: Sample collected during yield test.

✓	Element	Lab Use	✓	Element	Lab Use	✓	Element	Lab Use
	Antimony (Sb)			Aluminum (Al)			Uranium (U)	
	Arsenic (As)			Calcium (Ca)			Vanadium (V)	
	Barium (Ba)			Cobalt (Co)			Zinc (Zn)	
	Beryllium (Be)			Copper (Cu)				
	Cadmium (Cd)		✓	Iron (Fe)	<u>SHS</u>			
	Chromium (Cr)			Lead (Pb)				
	Mercury (Hg)			Magnesium (Mg)				
	Nickel (Ni)			Manganese (Mn)				
	Selenium (Se)			Molybdenum (Mo)				
✓	Sodium (Na)	<u>SHS</u>		Potassium (K)				
	Thallium (Tl)			Silver (Ag)				

**RECEIVED**  
JUN 21 2018  
HOWARD COUNTY HEALTH DEPT.  
COMMUNITY HYGIENE PROGRAM

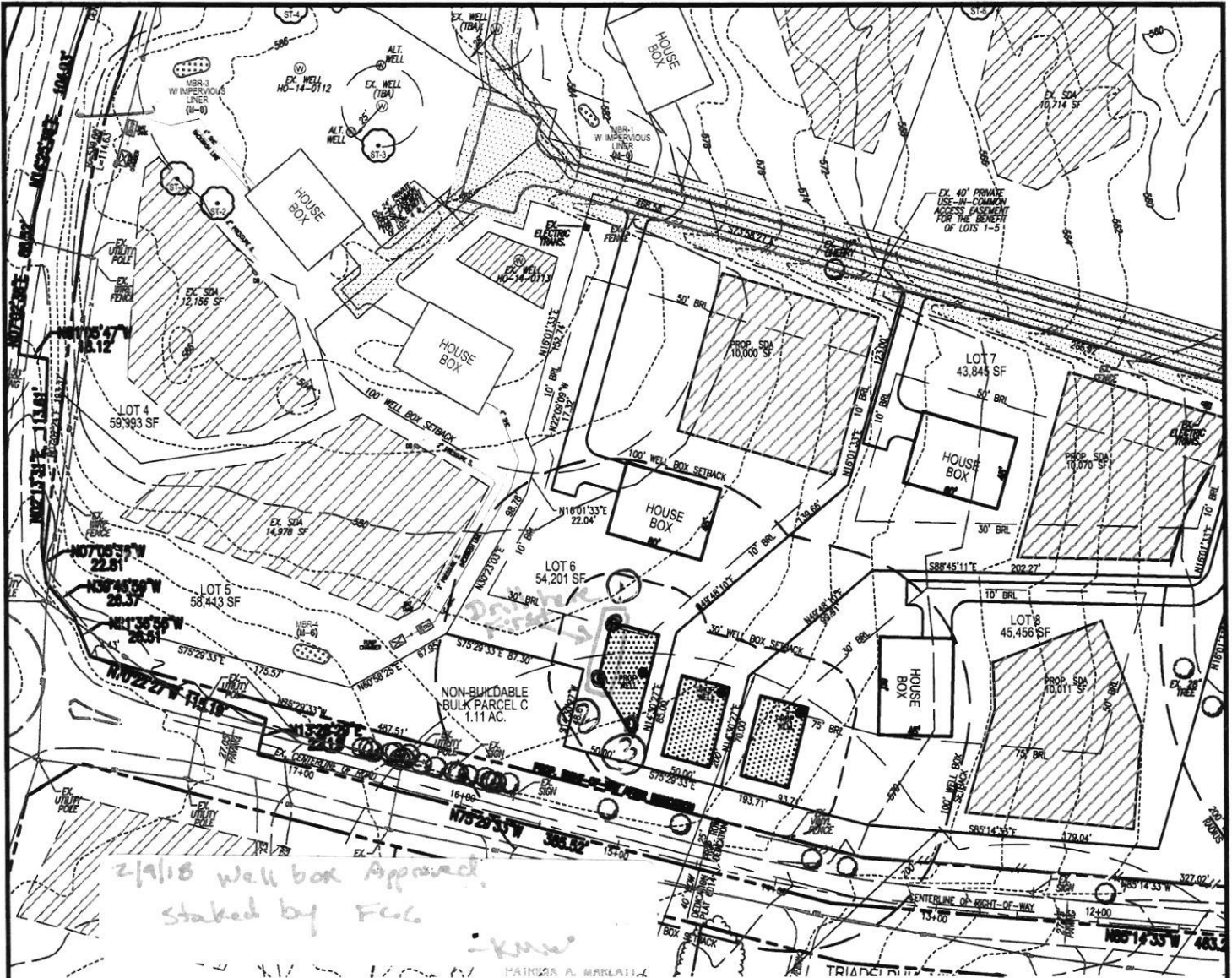
Lab Supervisor: \_\_\_\_\_

Date Reported: JUN 21 2018

•Phone: (443) 681 - 4596

•Fax: (443) 681 - 4507





**LOT 6 - WELL EXHIBIT**  
SCALE: 1"=100'

**LEGEND:**

- |  |                            |  |  |  |
|--|----------------------------|--|--|--|
|  | PROPERTY LINE              |  | PROPOSED TREELINE                            |  |
|  | EXISTING RIGHT-OF-WAY LINE |  | PROPOSED USE-IN-COMMON ACCESS EASEMENT PLAT: |  |
|  | PROPOSED RIGHT-OF-WAY LINE |  | PROPOSED SEWAGE DISPOSAL AREA                |  |
|  | ADJACENT PROPERTY LINE     |  | PROPOSED WELL BOX                            |  |
|  | EXISTING CURB AND GUTTER   |  | EXISTING UTILITY POLE                        |  |
|  | EXISTING EDGE OF PAVING    |  | EXISTING UTILITY POLE                        |  |
|  | EXISTING TREELINE          |  | PROPOSED STORMDRAIN                          |  |
|  | EXISTING TREES             |  | PROPOSED WELL LOCATION                       |  |
|  | EXISTING WOOD FENCE        |  |  |  |
|  | EXISTING METAL FENCE       |  |  |  |

**ROBERT H. VOGEL ENGINEERING, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
2407 MAIN STREET, ELICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8961

SCALE: \_\_\_\_\_ 1"=100'  
DRAWN BY: \_\_\_\_\_ JMR  
CHECKED BY: \_\_\_\_\_ RHV  
DATE: \_\_\_\_\_ 1/27/18  
W. O. #: \_\_\_\_\_ 13-31  
SHEET # \_\_\_\_\_ 1 OF 1

**WELL EXHIBIT - LOT 6**  
**JACK'S LANDING**  
LOTS 1-8, BUILDABLE PRESERVATION PARCEL "A"  
AND NON-BUILDABLE PARCEL "B"  
A SUBDIVISION OF TAX MAP 34  
PARCEL 414 (L. 3172 / F. 336)  
PARCEL: 414  
ZONED: RR-DEO  
HOWARD COUNTY, MARYLAND

TAX MAP: 34 GRID: 03  
5TH ELECTION DISTRICT

\*\*\*\*\*  
 WATER WELL ABANDONMENT-SEALING REPORT FORM  
 \*\*\*\*\*

SUBMIT COPIES OF COMPLETED FORM TO:

- \* COUNTY ENVIRONMENTAL AGENCY (contact MDE, WMA if address needed)
- \* WELL OWNER
- \* MDE, WATER MANAGEMENT ADMINISTRATION, WELL PROGRAM

DATE WELL ABANDONED: 9/26/16 (month/day/year)

\* PERMIT NUMBER OF ABANDONED WELL (if any)

Ho - 14 - 0114

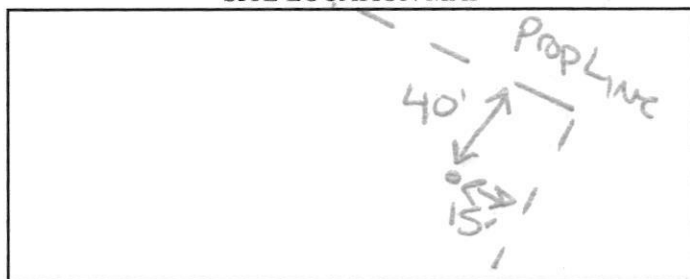
\* PERMIT NUMBER OF REPLACEMENT WELL:

\* PERSON ABANDONING WELL: Michael Barlow WELL DRILLER'S LICENSE NUMBER: 355

CIRCLE: MWD / MSD / MGD

\* OWNER'S NAME: Land Design + Development

SITE LOCATION MAP



\* WELL LOCATION:  
 COUNTY: Howard  
 NEAREST TOWN: Highland  
 TAX MAP 34 BLOCK PARCEL 414  
 SUBDIVISION: JACKS LANDING  
 SECTION: \_\_\_\_\_ LOT: 6  
 STREET ADDRESS: Triadelphia Mill Road

LATITUDE 3 9.24612

LONGITUDE 7 6.07547

LOG OF SEALING MATERIAL

MATERIAL	FEET	
	FROM	TO
Bentonite Clay	250	50
Cement	50	0
VOLUME OF MATERIAL USED		

\* TYPE OF WELL BEING ABANDONED:  
 DRILLED \_\_\_\_\_ JETTED  
 BORED \_\_\_\_\_ HAND DUG  
 OTHER (specify) \_\_\_\_\_

\* USE CODE:  
 DOMESTIC \_\_\_\_\_ MUNICIPAL/PUBLIC  
 IRRIGATION \_\_\_\_\_ INDUSTRIAL  
 TEST/OBSERVATION \_\_\_\_\_ GEOTHERMAL

\* TYPE OF CASING:  
 STEEL \_\_\_\_\_  
 PLASTIC  
 CONCRETE \_\_\_\_\_ OTHER (specify) \_\_\_\_\_

SIZE OF CASING: 6 INCHES IN DIAMETER

DEPTH OF WELL: 250 FEET DEEP

WAS ANY CASING REMOVED?  YES  NO  
 If yes, length removed, in feet: \_\_\_\_\_

WAS CASING RIPPED OR PERFORATED?  YES  NO

NATURE-MASTER WELL DRILLER OR SUPERVISING SANITARIAN LICENSE#

355

MWD / MSD / MGS  
 CIRCLE ONE

9/27/16 DATE

COUNTY

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**C 1** 34934 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

1 2 3 6  
(THIS NUMBER IS TO BE PUNCHED IN COLS. 3-6 ON ALL CARDS)

ST/CO USE ONLY DATE Received MM DD YY 10 29 15

DATE WELL COMPLETED MM DD YY 10 26 15

Depth of Well 22 250 26 (TO NEAREST FOOT) Revised

PERMIT NO. FROM "PERMIT TO DRILL WELL" HO-14-0114

OWNER Land Design + Development

WELL SITE ADDRESS Philadelphia Mill Rd TOWN Highland

SUBDIVISION Jacks Landing SECTION LOT 6

**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	
Soil	0	5	
Brown shale	5	40	
med GRAY Rock	40	100	
Green Rock	100	130	✓
med GRAY Rock	130	250	✓
		100	✓
		165	✓

Well #1 - 400' dry  
Well #2 - 425' Drilled  
Well #3 - 465' IN New  
Well #4 - 500' well Area  
All Holes backfilled

**GROUTING RECORD** YES NO  
 Y  N

WELL HAS BEEN GROUTED (Circle Appropriate Box)

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

NO. OF BAGS 45 46 15 NO. OF POUNDS 45 46 410

GALLONS OF WATER 90

DEPTH OF GROUT SEAL (to nearest foot)  
from 48 TOP 52 ft. to 54 BOTTOM 58 ft.  
(enter 0 if from surface) 45

**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) 60 61 63 64 66 70 66 Total depth of main casing (nearest foot) 45

**OTHER CASING (if used)**

ACCHASING 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

NUMBER OF UNSUCCESSFUL WELLS: 4

WELL HYDROFRACTURED  Y  N

CIRCLE APPROPRIATE LETTER  
A A WELL WAS ABANDONED AND SEALED WHEN THIS WELL WAS COMPLETED  
E ELECTRIC LOG OBTAINED  
P TEST WELL CONVERTED TO PRODUCTION WELL

**C 2** DEPTH (nearest ft.)

1 2 HO 45 250

1	8	9	11	15	17	21
2	23	24	26	30	32	36
3	38	39	41	45	47	51

SLOT SIZE 1 2 3

DIAMETER OF SCREEN (NEAREST INCH)  
56 60

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

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.

DRILLERS LIC. NO. 1 M LD 355

DRILLERS SIGNATURE (MUST MATCH SIGNATURE ON APPLICATION)  
LIC. NO. 1 MS D 0660

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

**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.) 15.0

METHOD USED TO MEASURE PUMPING RATE Submersible

WATER LEVEL (distance from land surface)  
BEFORE PUMPING 33 ft.  
WHEN PUMPING 60 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

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  
 - below } (nearest foot)

LATITUDE 39.24612  
LONGITUDE 76.07547  
(DEFAULT COORD. WGS 84)

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1-2-3-6 (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 DATE WELL COMPLETED MM DD YY Depth of Well 22 250 26 (TO NEAREST FOOT) PERMIT NO. FROM "PERMIT TO DRILL WELL" Ho-14-0114

OWNER Land Design + Development last name first name WELL SITE ADDRESS Triadelphia Mill Rd TOWN Highland SUBDIVISION Jacks Landing SECTION LOT 6

**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	
Soil	0	5	
Brown shale	5	40	
Med Gray Rock	40	100	
Hard Green Rock	100	130	✓
Med Gray Rock	130	250	✓
Bottom of H <sub>2</sub> O	100	165	✓
905 ÷ 15 = 60.3 H <sub>2</sub> O			
15 ÷ 4.5 = 3.3 H <sub>2</sub> O			

**GROUTING RECORD** yes no    
WELL HAS BEEN GROUTED (Circle Appropriate Box) 44 44

TYPE OF GROUTING MATERIAL (Circle one)  
CEMENT  BENTONITE CLAY

NO. OF BAGS 15 NO. OF POUNDS 410  
GALLONS OF WATER 90

DEPTH OF GROUT SEAL (to nearest foot)  
from 0 ft. to 45 ft. (enter 0 if from surface)

**CASING RECORD**  
casing types insert appropriate code below  
STEEL  CONCRETE   
PLASTIC  OTHER

MAIN CASING TYPE PL Nominal diameter top (main) casing (nearest inch)! 6 Total depth of main casing (nearest foot) 45

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

**SCREEN RECORD**  
screen type or open hole insert appropriate code below  
STEEL  BRASS  OPEN HOLE   
BRONZE  PLASTIC  OTHER

**C 3**

**PUMPING TEST** 3  
HOURS PUMPED (nearest hour) 8 9  
PUMPING RATE (gal. per min.) 15.0  
METHOD USED TO MEASURE PUMPING RATE Submersible  
WATER LEVEL (distance from land surface)  
BEFORE PUMPING 33 ft.  
WHEN PUMPING 60 ft.

TYPE OF PUMP USED (for test)  
 air  piston  turbine  
 centrifugal  rotary  other (describe below)  
 jet  submersible

NUMBER OF UNSUCCESSFUL WELLS: 0  
WELL HYDROFRACTURED  yes  no

**C 2** DEPTH (nearest ft.)  
1 HO 45 250  
E 8 9 11 15 17 21  
A 23 24 26 30 32 36  
H 38 39 41 45 47 51  
S  
C 3  
R  
E  
E  
N  
SLOT SIZE 1 2 3  
DIAMETER OF SCREEN (NEAREST INCH) 56 60  
from to

**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. 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 1 (nearest foot)  
 below }

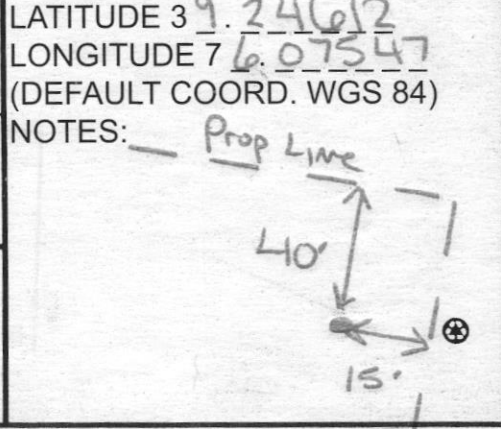
CIRCLE APPROPRIATE LETTER  
A A WELL WAS ABANDONED AND SEALED WHEN THIS WELL WAS COMPLETED  
E ELECTRIC LOG OBTAINED  
P TEST WELL CONVERTED TO PRODUCTION WELL

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.

DRILLERS LIC. NO. 1 M D 355  
DRILLERS SIGNATURE (MUST MATCH SIGNATURE ON APPLICATION)  
LIC. NO. 1 M S D 0666

GRAVEL PACK IF WELL DRILLED WAS FLOWING WELL INSERT F IN BOX 68 68  
MDE USE ONLY (NOT TO BE FILLED IN BY DRILLER)  
T (E.R.O.S.) W Q  
70 72 74 75 76

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



B 1 28749

SEQUENCE NO. (MDE USE ONLY)

STATE OF MARYLAND APPLICATION FOR PERMIT TO DRILL WELL

STATE PERMIT NUMBER

554595-E please type

70 Ho-14-0114 79 fill in this form completely

Date Received (APA) 08-22-14

OWNER INFORMATION

LAND DESIGN & DEVELOPMENT 5300 DORSEY HALL DRIVE, SUITE 102 ELICOTT CITY MD 21043

B 3 LOCATION OF WELL

HOWARD COUNTY JACK'S LANDING SUBDIVISION SECTION 44 LOT 6 HIGHLAND NEAREST TOWN

DRILLER INFORMATION

MICHAEL BARLOW MWD 355 BARLOW WELL DRILLING 522 UNDERWOOD LANE 21014 MD 8/18/14

B 4 SOURCES OF DRILLING WATER

1. WELL

TRIDELPHIA MILL RD 500 FT DISTANCE FROM ROAD ENTER FT OR MI TAX MAP: 34 BLK: PARCEL 414

B 2 WELL INFORMATION

APPROX. PUMPING RATE (GAL. PER MIN.) 750 AVERAGE DAILY QUANTITY NEEDED (GAL. PER DAY)

NOT TO BE FILLED IN BY DRILLER HEALTH DEPARTMENT APPROVAL

Howard COUNTY NAME 13 517922 COUNTY NO. STATE SIGNATURE DATE ISSUED 10/7/14 CO SIGNATURE 10/7/15 EXP. DATE

USE FOR WATER (CIRCLE APPROPRIATE BOX)

- DOMESTIC POTABLE SUPPLY & RESIDENTIAL IRRIGATION FARMING (LIVESTOCK WATERING & AGRICULTURAL IRRIGATION) INDUSTRIAL, COMMERCIAL, DEWATERING PUBLIC WATER SUPPLY WELL TEST, OBSERVATION, MONITORING OPEN LOOP GEOTHERMAL CLOSED LOOP GEOTHERMAL

APPROXIMATE DEPTH OF WELL 250 FEET

APPROXIMATE DIAMETER OF WELL 6 INCH NEAREST

METHOD OF DRILLING (circle one)

BORED (or Augered) AIR-ROTary CABLE other JETTED AIR-PERCussion REVerse-ROTary Jetted & DRIVEN ROTARY (Hydraulic Rotary) Drive-POINT

REPLACEMENT OR DEEPEMED WELLS (CIRCLE APPROPRIATE BOX)

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

PERMIT NUMBER OF WELL TO BE REPLACED OR DEEPEMED (IF AVAILABLE)

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

APPROP. PERMIT NUMBER G

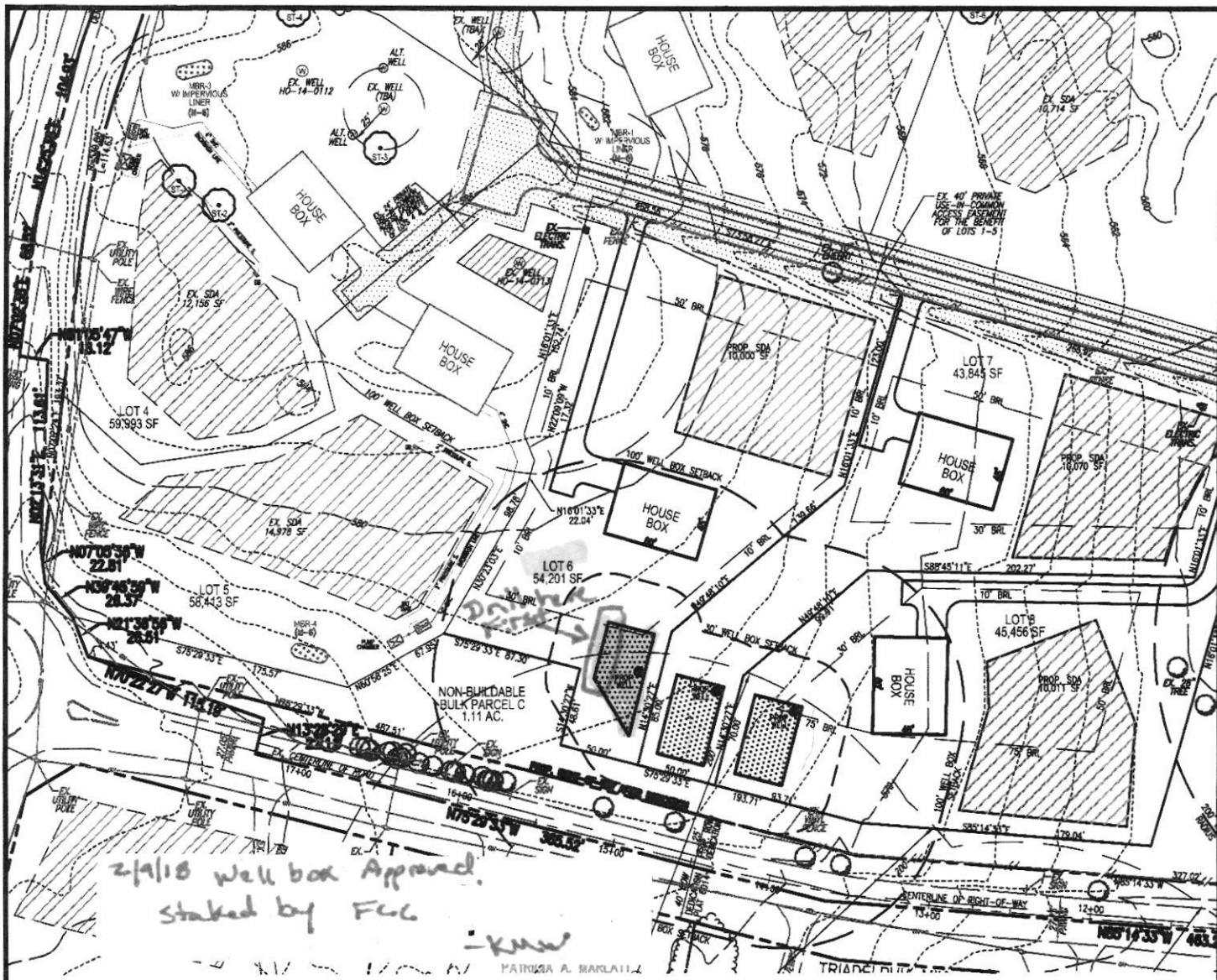
PERMIT No. Ho-14-0114

SPECIAL CONDITIONS

NOTE APPROVING AUTHORITIES SHOULD USE SEPARATE SHEET IF NEEDED

VOC testing required @ yield



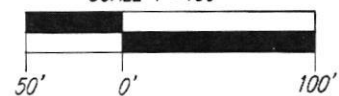


**LOT 6 - WELL EXHIBIT**  
SCALE: 1"=100'

SCALE 1"=100'

**LEGEND:**

	TREELINE
	USE-IN-COMMON EASEMENT
	SEWAGE AREA
	WELL BOX
	UTILITY POLE
	STORMDRAIN
	WELL LOCATION



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

HO-17-0238

INFORMATION GIVE NUMBER AND WRITE  
1800 WASHINGTON BLVD  
BALTIMORE MARYLAND 21230

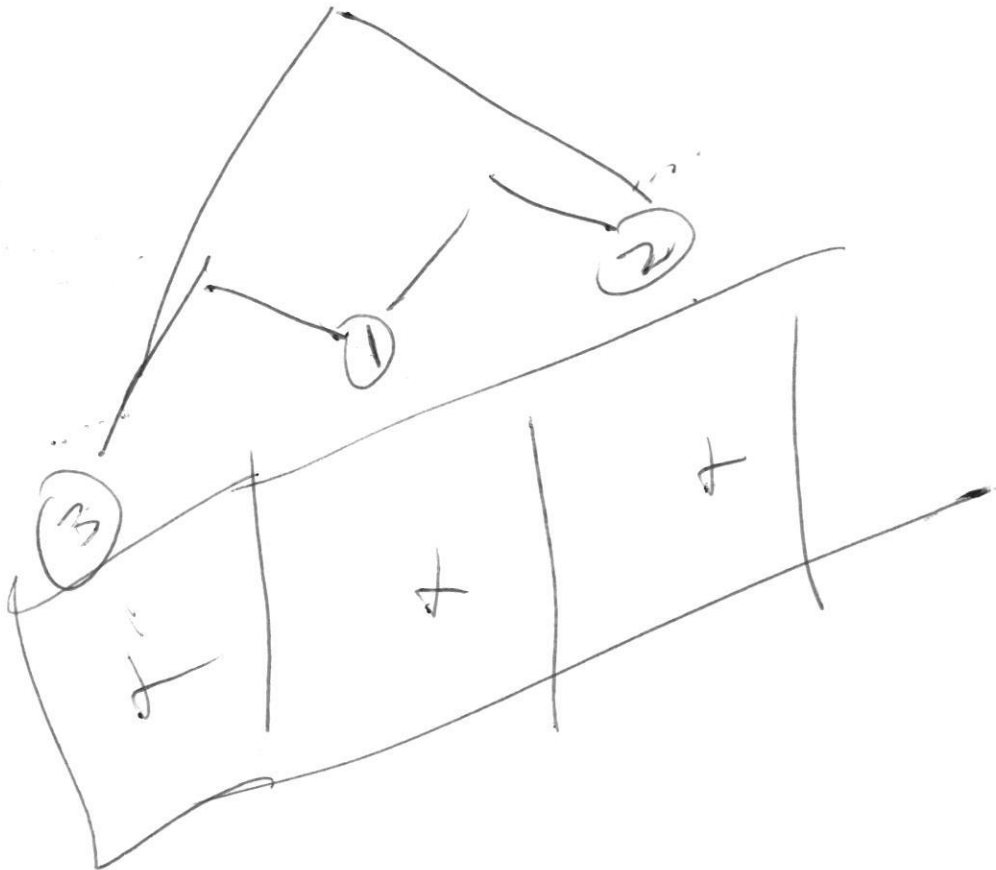
**ROBERT H. VOGEL ENGINEERING, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
8407 MAIN STREET ELIGOTT CITY, MD 21048 TEL: 410.481.7889 FAX: 410.481.7889

SCALE: 1"=100'  
DRAWN BY: JMR  
CHECKED BY: RHV  
DATE: 1/27/18  
W. O. #: 13-31  
SHEET #: 1 OF 1

**WELL EXHIBIT - LOT 6**  
**JACK'S LANDING**  
LOTS 1-8, BUILDABLE PRESERVATION PARCEL "A"  
AND NON-BUILDABLE PARCEL "B"  
A SUBDIVISION OF TAX MAP 34  
PARCEL 414 (L. 3172 / F. 336)

PARCEL: 414  
ZONED: RR-DEO  
HOWARD COUNTY, MARYLAND

TAX MAP: 34 GRID: 03  
5TH ELECTION DISTRICT



**Analytical Results**

**Project: Jacks Landing**

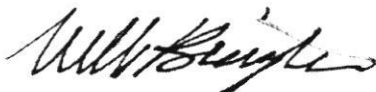
Project Number: E053296  
Project Manager: Stephen Shelley

Reported:  
04/02/18 16:25

**E053296-01 (Lot 6 Well 1 HO 17-0238)**  
**Jacks Landing**  
**8032904-01 (Drinking Water)**  
**Sample Date: 03/26/18**

Analyte	Result	Units	Reporting			Prepared	Analyzed	Analyst	Notes
			Limit	Dilution					
<b>VOLATILE ORGANICS BY EPA METHOD 524.2 (GC/MS)</b>									
tert-Amyl alcohol (TAA)	ND	ug/L	10.0	1		03/29/18	03/29/18 14:40	WB	
tert-Amyl methyl ether (TAME)	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
Benzene	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
Bromobenzene	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
Bromochloromethane	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
Bromodichloromethane	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
Bromoform	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
Bromomethane	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
tert-Butanol (TBA)	ND	ug/L	10.0	1		03/29/18	03/29/18 14:40	WB	
n-Butylbenzene	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
sec-Butylbenzene	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
tert-Butylbenzene	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
Carbon tetrachloride	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
Chlorobenzene	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
Chloroethane	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
Chloroform	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
Chloromethane	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
2-Chlorotoluene	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
4-Chlorotoluene	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
Dibromochloromethane	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
1,2-Dibromoethane (EDB)	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
Dibromomethane	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
1,2-Dichlorobenzene	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
1,3-Dichlorobenzene	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
1,4-Dichlorobenzene	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
Dichlorodifluoromethane	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
1,1-Dichloroethane	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
1,2-Dichloroethane	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
1,1-Dichloroethene	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
cis-1,2-Dichloroethene	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
1,2-Dichloropropane	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
1,3-Dichloropropane	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	
2,2-Dichloropropane	ND	ug/L	0.50	1		03/29/18	03/29/18 14:40	WB	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Will Brewington, President

**Analytical Results**

**Project: Jacks Landing**

Project Number: E053296  
Project Manager: Stephen Shelley

Reported:  
04/02/18 16:25

**E053296-01 (Lot 6 Well 1 HO 17-0238)**  
**Jacks Landing**  
**8032904-01 (Drinking Water)**  
**Sample Date: 03/26/18**

Analyte	Result	Units	Reporting		Prepared	Analyzed	Analyst	Notes
			Limit	Dilution				
<b>VOLATILE ORGANICS BY EPA METHOD 524.2 (GC/MS) (continued)</b>								
1,1-Dichloropropene	ND	ug/L	0.50	1	03/29/18	03/29/18 14:40	WB	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	03/29/18	03/29/18 14:40	WB	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	03/29/18	03/29/18 14:40	WB	
Diisopropyl ether (DIPE)	ND	ug/L	0.50	1	03/29/18	03/29/18 14:40	WB	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	0.50	1	03/29/18	03/29/18 14:40	WB	
Ethylbenzene	ND	ug/L	0.50	1	03/29/18	03/29/18 14:40	WB	
Hexachlorobutadiene	ND	ug/L	0.50	1	03/29/18	03/29/18 14:40	WB	
Isopropylbenzene (Cumene)	ND	ug/L	0.50	1	03/29/18	03/29/18 14:40	WB	
4-Isopropyltoluene	ND	ug/L	0.50	1	03/29/18	03/29/18 14:40	WB	
<b>Methyl tert-butyl ether (MTBE)</b>	<b>3.77</b>	ug/L	0.50	1	03/29/18	03/29/18 14:40	WB	
Methylene chloride	ND	ug/L	0.50	1	03/29/18	03/29/18 14:40	WB	
Naphthalene	ND	ug/L	0.50	1	03/29/18	03/29/18 14:40	WB	
n-Propylbenzene	ND	ug/L	0.50	1	03/29/18	03/29/18 14:40	WB	
Styrene	ND	ug/L	0.50	1	03/29/18	03/29/18 14:40	WB	
1,1,1,2-Tetrachloroethane	ND	ug/L	0.50	1	03/29/18	03/29/18 14:40	WB	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	03/29/18	03/29/18 14:40	WB	
Tetrachloroethene	ND	ug/L	0.50	1	03/29/18	03/29/18 14:40	WB	
<b>Toluene</b>	<b>3.67</b>	ug/L	0.50	1	03/29/18	03/29/18 14:40	WB	
1,2,3-Trichlorobenzene	ND	ug/L	0.50	1	03/29/18	03/29/18 14:40	WB	
1,2,4-Trichlorobenzene	ND	ug/L	0.50	1	03/29/18	03/29/18 14:40	WB	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	03/29/18	03/29/18 14:40	WB	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	03/29/18	03/29/18 14:40	WB	
Trichloroethene	ND	ug/L	0.50	1	03/29/18	03/29/18 14:40	WB	
Trichlorofluoromethane (Freon 11)	ND	ug/L	0.50	1	03/29/18	03/29/18 14:40	WB	
1,2,3-Trichloropropane	ND	ug/L	0.50	1	03/29/18	03/29/18 14:40	WB	
1,2,4-Trimethylbenzene	ND	ug/L	0.50	1	03/29/18	03/29/18 14:40	WB	
1,3,5-Trimethylbenzene	ND	ug/L	0.50	1	03/29/18	03/29/18 14:40	WB	
Vinyl chloride	ND	ug/L	0.50	1	03/29/18	03/29/18 14:40	WB	
o-Xylene	ND	ug/L	0.50	1	03/29/18	03/29/18 14:40	WB	
m- & p-Xylenes	ND	ug/L	0.50	1	03/29/18	03/29/18 14:40	WB	
Surrogate: 4-Bromofluorobenzene		80-120	89 %		03/29/18	03/29/18 14:40		
Surrogate: 1,2-Dichlorobenzene-d4		80-120	95 %		03/29/18	03/29/18 14:40		



Will Brewington, President

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**Analytical Results**

**Project: Jacks Landing**

Project Number: E053296  
Project Manager: Stephen Shelley

Reported:  
04/02/18 16:25

**E053296-02 (Lot 6 Well 2 )**  
**Jacks Landing**  
**8032904-02 (Water)**  
**Sample Date: 03/26/18**

Analyte	Result	Units	Reporting			Prepared	Analyzed	Analyst	Notes
			Limit	Dilution					
<b>VOLATILE ORGANICS BY EPA METHOD 524.2 (GC/MS)</b>									
tert-Amyl alcohol (TAA)	ND	ug/L	10.0	1	03/29/18	03/29/18 15:03	WB		
tert-Amyl methyl ether (TAME)	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
Benzene	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
Bromobenzene	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
Bromochloromethane	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
Bromodichloromethane	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
Bromoform	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
Bromomethane	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
tert-Butanol (TBA)	ND	ug/L	10.0	1	03/29/18	03/29/18 15:03	WB		
n-Butylbenzene	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
sec-Butylbenzene	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
tert-Butylbenzene	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
Carbon tetrachloride	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
Chlorobenzene	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
Chloroethane	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
Chloroform	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
Chloromethane	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
2-Chlorotoluene	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
4-Chlorotoluene	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
Dibromochloromethane	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
1,2-Dibromoethane (EDB)	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
Dibromomethane	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
1,2-Dichlorobenzene	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
1,3-Dichlorobenzene	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
1,4-Dichlorobenzene	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
Dichlorodifluoromethane	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
1,1-Dichloroethane	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
1,2-Dichloroethane	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
1,1-Dichloroethene	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
cis-1,2-Dichloroethene	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
1,2-Dichloropropane	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
1,3-Dichloropropane	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
2,2-Dichloropropane	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
1,1-Dichloropropene	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	03/29/18	03/29/18 15:03	WB		

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Will Brewington, President

**Analytical Results**

**Project: Jacks Landing**

Project Number: E053296

Project Manager: Stephen Shelley

**E053296-02 (Lot 6 Well 2 )**

**Jacks Landing**

**8032904-02 (Water)**

**Sample Date: 03/26/18**

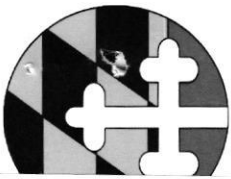
Analyte	Result	Units	Reporting			Prepared	Analyzed	Analyst	Notes
			Limit	Dilution					
<b>VOLATILE ORGANICS BY EPA METHOD 524.2 (GC/MS) (continued)</b>									
Diisopropyl ether (DIPE)	ND	ug/L	0.50	1		03/29/18	03/29/18 15:03	WB	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	0.50	1		03/29/18	03/29/18 15:03	WB	
Ethylbenzene	ND	ug/L	0.50	1		03/29/18	03/29/18 15:03	WB	
Hexachlorobutadiene	ND	ug/L	0.50	1		03/29/18	03/29/18 15:03	WB	
Isopropylbenzene (Cumene)	ND	ug/L	0.50	1		03/29/18	03/29/18 15:03	WB	
4-Isopropyltoluene	ND	ug/L	0.50	1		03/29/18	03/29/18 15:03	WB	
<b>Methyl tert-butyl ether (MTBE)</b>	<b>4.11</b>	ug/L	0.50	1		03/29/18	03/29/18 15:03	WB	
Methylene chloride	ND	ug/L	0.50	1		03/29/18	03/29/18 15:03	WB	
Naphthalene	ND	ug/L	0.50	1		03/29/18	03/29/18 15:03	WB	
n-Propylbenzene	ND	ug/L	0.50	1		03/29/18	03/29/18 15:03	WB	
Styrene	ND	ug/L	0.50	1		03/29/18	03/29/18 15:03	WB	
1,1,1,2-Tetrachloroethane	ND	ug/L	0.50	1		03/29/18	03/29/18 15:03	WB	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		03/29/18	03/29/18 15:03	WB	
Tetrachloroethene	ND	ug/L	0.50	1		03/29/18	03/29/18 15:03	WB	
Toluene	ND	ug/L	0.50	1		03/29/18	03/29/18 15:03	WB	
1,2,3-Trichlorobenzene	ND	ug/L	0.50	1		03/29/18	03/29/18 15:03	WB	
1,2,4-Trichlorobenzene	ND	ug/L	0.50	1		03/29/18	03/29/18 15:03	WB	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		03/29/18	03/29/18 15:03	WB	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		03/29/18	03/29/18 15:03	WB	
Trichloroethene	ND	ug/L	0.50	1		03/29/18	03/29/18 15:03	WB	
Trichlorofluoromethane (Freon 11)	ND	ug/L	0.50	1		03/29/18	03/29/18 15:03	WB	
1,2,3-Trichloropropane	ND	ug/L	0.50	1		03/29/18	03/29/18 15:03	WB	
1,2,4-Trimethylbenzene	ND	ug/L	0.50	1		03/29/18	03/29/18 15:03	WB	
1,3,5-Trimethylbenzene	ND	ug/L	0.50	1		03/29/18	03/29/18 15:03	WB	
Vinyl chloride	ND	ug/L	0.50	1		03/29/18	03/29/18 15:03	WB	
o-Xylene	ND	ug/L	0.50	1		03/29/18	03/29/18 15:03	WB	
m- & p-Xylenes	ND	ug/L	0.50	1		03/29/18	03/29/18 15:03	WB	
Surrogate: 4-Bromofluorobenzene		80-120	92 %			03/29/18	03/29/18 15:03		
Surrogate: 1,2-Dichlorobenzene-d4		80-120	97 %			03/29/18	03/29/18 15:03		



Will Brewington, President

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Howard County  
 Environmental Health  
 8930 Stanford Blvd  
 Columbia, MD 21045

## Certificate of Analysis

Lab. No: E18003467001

Method: EPA 524.2 VOCs and THMs

Date Received: 03/27/2018  
 Field ID: HO170238

Date Collected: 03/26/2018  
 Submitted By: Collins

Date Analyzed: 04/04/2018

<u>Contaminant</u>	<u>RL</u>	<u>MCL</u>	<u>Result</u>	<u>Contaminant</u>	<u>RL</u>	<u>MCL</u>	<u>Result</u>
<b>REGULATED</b>				2-Chlorotoluene	0.5		ND
1,1,1-Trichloroethane	0.5	200	ND	4-Chlorotoluene	0.5		ND
1,1,2-Trichloroethane	0.5	5	ND	Bromobenzene	0.5		ND
1,1-Dichloroethene	0.5	7	ND	Bromochloromethane	0.5		ND
1,2,4-Trichlorobenzene	0.5	70	ND	Bromomethane	0.5		ND
1,2-Dichlorobenzene	0.5	600	ND	Chloroethane	0.5		ND
1,2-Dichloroethane	0.5	5	ND	Chloromethane	0.5		ND
1,2-Dichloropropane	0.5	5	ND	cis-1,3-Dichloropropene	0.5		ND
1,4-Dichlorobenzene	0.5	75	ND	Dibromomethane	0.5		ND
Benzene	0.5	5	ND	Dichlorodifluoromethane	0.5		ND
Carbon Tetrachloride	0.5	5	ND	Ethyl-tert-Butyl Ether (ETBE)	0.5		ND
Chlorobenzene	0.5	100	ND	Hexachlorobutadiene	0.5		ND
cis-1,2-Dichloroethene	0.5	70	ND	Isopropylbenzene	0.5		ND
Ethylbenzene	0.5	700	ND	Methyl-tert-Butyl Ether (MTBE)	0.5		4.50
m+p-Xylene	1.0		ND	Naphthalene	0.5		ND
Methylene Chloride	0.5	5	ND	n-Butylbenzene	0.5		ND
o-Xylene	0.5		ND	n-Propylbenzene	0.5		ND
Styrene	0.5	100	ND	p-Isopropyltoluene	0.5		ND
Tetrachloroethene	0.5	5	ND	sec-Butylbenzene	0.5		ND
Toluene	0.5	1000	ND	tert-Amyl Methyl Ether (TAME)	0.5		ND
Total Xylenes	1.5	10000	ND	tert-Butylbenzene	0.5		ND
trans-1,2-Dichloroethene	0.5	100	ND	trans-1,3-Dichloropropene	0.5		ND
Trichloroethene	0.5	5	ND	Trichlorofluoromethane	0.5		ND
Vinyl Chloride	0.5	2	ND				
<b>TRIHALOMETHANES</b>							
Bromodichloromethane	0.5		ND				
Bromoform	0.5		ND				
Chloroform	0.5		ND				
Dibromochloromethane	0.5		ND				
TOTAL THMs		80	0.00				
<b>UNREGULATED</b>							
1,1,1,2-Tetrachloroethane	0.5		ND				
1,1,1,2,2-Tetrachloroethane	0.5		ND				
1,1-Dichloroethane	0.5		ND				
1,1-Dichloropropene	0.5		ND				
1,2,3-Trichlorobenzene	0.5		ND				
1,2,3-Trichloropropane	0.5		ND				
1,2,4-Trimethylbenzene	0.5		ND				
1,2-Dibromo-3-Chloropropane	0.5		ND				
1,2-Dibromoethane	0.5		ND				
1,3,5-Trimethylbenzene	0.5		ND				
1,3-Dichlorobenzene	0.5		ND				
1,3-Dichloropropane	0.5		ND				
2,2-Dichloropropane	0.5		ND				

**Comments:**

Approved by:

Approval date:

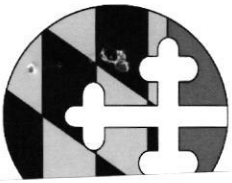
*Sadia Muneer*

04/10/2018

\*All results are in parts per billion (ppb); ND = Less than the detection level; na = not applicable; e = estimate

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Howard County  
 Environmental Health  
 8930 Stanford Blvd  
 Columbia, MD 21045

## Certificate of Analysis

Lab. No: E18003467002

Method: EPA 524.2 VOCs and THMs

Date Received: 03/27/2018  
 Field ID: HO170238FB-1

Date Collected: 03/26/2018  
 Submitted By: Collins

Date Analyzed: 04/04/2018

<u>Contaminant</u>	<u>RL</u>	<u>MCL</u>	<u>Result</u>	<u>Contaminant</u>	<u>RL</u>	<u>MCL</u>	<u>Result</u>
<b>REGULATED</b>				2-Chlorotoluene	0.5		ND
1,1,1-Trichloroethane	0.5	200	ND	4-Chlorotoluene	0.5		ND
1,1,2-Trichloroethane	0.5	5	ND	Bromobenzene	0.5		ND
1,1-Dichloroethene	0.5	7	ND	Bromochloromethane	0.5		ND
1,2,4-Trichlorobenzene	0.5	70	ND	Bromomethane	0.5		ND
1,2-Dichlorobenzene	0.5	600	ND	Chloroethane	0.5		ND
1,2-Dichloroethane	0.5	5	ND	Chloromethane	0.5		ND
1,2-Dichloropropane	0.5	5	ND	cis-1,3-Dichloropropene	0.5		ND
1,4-Dichlorobenzene	0.5	75	ND	Dibromomethane	0.5		ND
Benzene	0.5	5	ND	Dichlorodifluoromethane	0.5		ND
Carbon Tetrachloride	0.5	5	ND	Ethyl-tert-Butyl Ether (ETBE)	0.5		ND
Chlorobenzene	0.5	100	ND	Hexachlorobutadiene	0.5		ND
cis-1,2-Dichloroethene	0.5	70	ND	Isopropylbenzene	0.5		ND
Ethylbenzene	0.5	700	ND	Methyl-tert-Butyl Ether (MTBE)	0.5		ND
m+p-Xylene	1.0		ND	Naphthalene	0.5		ND
Methylene Chloride	0.5	5	0.71	n-Butylbenzene	0.5		ND
o-Xylene	0.5		ND	n-Propylbenzene	0.5		ND
Styrene	0.5	100	ND	p-Isopropyltoluene	0.5		ND
Tetrachloroethene	0.5	5	ND	sec-Butylbenzene	0.5		ND
Toluene	0.5	1000	ND	tert-Amyl Methyl Ether (TAME)	0.5		ND
Total Xylenes	1.5	10000	ND	tert-Butylbenzene	0.5		ND
trans-1,2-Dichloroethene	0.5	100	ND	trans-1,3-Dichloropropene	0.5		ND
Trichloroethene	0.5	5	ND	Trichlorofluoromethane	0.5		ND
Vinyl Chloride	0.5	2	ND				
<b>TRIHALOMETHANES</b>							
Bromodichloromethane	0.5		ND				
Bromoform	0.5		ND				
Chloroform	0.5		ND				
Dibromochloromethane	0.5		ND				
TOTAL THMs		80	0.00				
<b>UNREGULATED</b>							
1,1,1,2-Tetrachloroethane	0.5		ND				
1,1,1,2,2-Tetrachloroethane	0.5		ND				
1,1-Dichloroethane	0.5		ND				
1,1-Dichloropropene	0.5		ND				
1,2,3-Trichlorobenzene	0.5		ND				
1,2,3-Trichloropropane	0.5		ND				
1,2,4-Trimethylbenzene	0.5		ND				
1,2-Dibromo-3-Chloropropane	0.5		ND				
1,2-Dibromoethane	0.5		ND				
1,3,5-Trimethylbenzene	0.5		ND				
1,3-Dichlorobenzene	0.5		ND				
1,3-Dichloropropane	0.5		ND				
2,2-Dichloropropane	0.5		ND				

**Comments:**

Approved by:

Approval date:

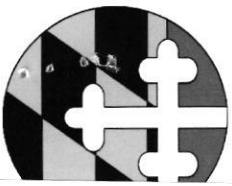
*Sadia Muneer*

04/10/2018

\*All results are in parts per billion (ppb); ND = Less than the detection level; na = not applicable; e = estimate

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Howard County  
 Environmental Health  
 8930 Stanford Blvd  
 Columbia, MD 21045

## Certificate of Analysis

Lab. No: E18003467003

Method: EPA 524.2 VOCs and THMs

Date Received: 03/27/2018  
 Field ID: HO170238TB

Date Collected: 03/26/2018  
 Submitted By: Collins

Date Analyzed: 04/04/2018

<u>Contaminant</u>	<u>RL</u>	<u>MCL</u>	<u>Result</u>	<u>Contaminant</u>	<u>RL</u>	<u>MCL</u>	<u>Result</u>
<b>REGULATED</b>				2-Chlorotoluene	0.5		ND
1,1,1-Trichloroethane	0.5	200	ND	4-Chlorotoluene	0.5		ND
1,1,2-Trichloroethane	0.5	5	ND	Bromobenzene	0.5		ND
1,1-Dichloroethene	0.5	7	ND	Bromochloromethane	0.5		ND
1,2,4-Trichlorobenzene	0.5	70	ND	Bromomethane	0.5		ND
1,2-Dichlorobenzene	0.5	600	ND	Chloroethane	0.5		ND
1,2-Dichloroethane	0.5	5	ND	Chloromethane	0.5		ND
1,2-Dichloropropane	0.5	5	ND	cis-1,3-Dichloropropene	0.5		ND
1,4-Dichlorobenzene	0.5	75	ND	Dibromomethane	0.5		ND
Benzene	0.5	5	ND	Dichlorodifluoromethane	0.5		ND
Carbon Tetrachloride	0.5	5	ND	Ethyl-tert-Butyl Ether (ETBE)	0.5		ND
Chlorobenzene	0.5	100	ND	Hexachlorobutadiene	0.5		ND
cis-1,2-Dichloroethene	0.5	70	ND	Isopropylbenzene	0.5		ND
Ethylbenzene	0.5	700	ND	Methyl-tert-Butyl Ether (MTBE)	0.5		ND
m+p-Xylene	1.0		ND	Naphthalene	0.5		ND
Methylene Chloride	0.5	5	1.22	n-Butylbenzene	0.5		ND
o-Xylene	0.5		ND	n-Propylbenzene	0.5		ND
Styrene	0.5	100	ND	p-Isopropyltoluene	0.5		ND
Tetrachloroethene	0.5	5	ND	sec-Butylbenzene	0.5		ND
Toluene	0.5	1000	ND	tert-Amyl Methyl Ether (TAME)	0.5		ND
Total Xylenes	1.5	10000	ND	tert-Butylbenzene	0.5		ND
trans-1,2-Dichloroethene	0.5	100	ND	trans-1,3-Dichloropropene	0.5		ND
Trichloroethene	0.5	5	ND	Trichlorofluoromethane	0.5		ND
Vinyl Chloride	0.5	2	ND				
<b>TRihalOMETHANES</b>							
Bromodichloromethane	0.5		ND				
Bromoform	0.5		0.52				
Chloroform	0.5		ND				
Dibromochloromethane	0.5		ND				
TOTAL THMs		80	0.52				
<b>UNREGULATED</b>							
1,1,1,2-Tetrachloroethane	0.5		ND				
1,1,1,2,2-Tetrachloroethane	0.5		ND				
1,1-Dichloroethane	0.5		ND				
1,1-Dichloropropene	0.5		ND				
1,2,3-Trichlorobenzene	0.5		ND				
1,2,3-Trichloropropane	0.5		ND				
1,2,4-Trimethylbenzene	0.5		ND				
1,2-Dibromo-3-Chloropropane	0.5		ND				
1,2-Dibromoethane	0.5		ND				
1,3,5-Trimethylbenzene	0.5		ND				
1,3-Dichlorobenzene	0.5		ND				
1,3-Dichloropropane	0.5		ND				
2,2-Dichloropropane	0.5		ND				

**Comments:**

Approved by:

Approval date:

*Sadia Muneeb*

04/10/2018

\*All results are in parts per billion ppb; ND = Less than the detection level; na = not applicable; e = estimate

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Telephone: (443) 681 -3853 Fax: (443) 681-4507

**MICHAEL BARLOW WELL DRILLING  
522 UNDERWOOD LANE  
BEL AIR, MD 21014  
410-838-6910**

Howard County Health Department  
7178 Columbia Gateway Drive  
Columbia, MD 21046  
Attn: Kevin Wolf

April 6, 2018

Re: Jacks Landing lot 6

Two drilling attempts were made in the revised well area for lot 6 of Jacks Landing. On March 26<sup>th</sup>, both of the new wells on lot were tested simultaneously with the new well on lot 7 that show a yield of .4 gpm in the one of the wells and .75 gpm in the other. Due to the COMAR regulation requiring at least .5 gpm in each well used in tandem, we would like to request permission to hydrofracture the .4 gpm well which is located on the front left corner of the approved well area. Based on the site plan, the well on lot 6 is approximately 70' from the well drilled on lot 7.

Michael Barlow  
MWD355

---



**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:		March 26, 2018	
Well Depth:		850	feet
		<i>static?</i>	
Customer	Land Design & Development	Permit #	H0-17-0238
Road	Triadelphia Mill Rd	Subdivision	Jacks Landing
City	Highland	Section	Well #1
State	Maryland	Lot #	6

Time	Water Level feet	Time to Fill 1-gallon bucket seconds	G.P.M.
9:30 AM	43		
9:45 AM	43	5	12.00
10:00 AM	122	8	7.50
10:15 AM	190	80	0.75
10:30 AM	189	80	0.75
10:45 AM	189	80	0.75
11:00 AM	189	80	0.75
11:15 AM	188	80	0.75
11:30 AM	188	80	0.75
11:45 AM	188	80	0.75
12:00 PM	188	80	0.75
12:15 PM	188	80	0.75
12:30 PM	188	80	0.75
12:45 PM	188	80	0.75
1:00 PM	188	80	0.75
1:15 PM	188	80	0.75
1:30 PM	188	80	0.75
1:45 PM	188	80	0.75
2:00 PM	188	80	0.75
2:15 PM	188	80	0.75
2:30 PM	188	80	0.75
2:45 PM	187	80	0.75
3:00 PM	187	80	0.75
3:15 PM	187	80	0.75
3:30 PM	187	80	0.75
3:45 PM	187	80	0.75
4:00 PM	187	80	0.75
4:15 PM	187	80	0.75

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.



**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:		March 26, 2018	
Well Depth:		850	feet
Customer	Land Design & Development	Permit #	
Road	Triadelphia Mill Rd	Subdivision	Jacks Landing
City	Highland	Section	Well #2
State	Maryland	Lot #	6

Time	Water Level feet	Time to Fill 1-gallon bucket seconds	G.P.M.
9:30 AM	46		
9:45 AM	46	4	15.00
10:00 AM	150	9	6.67
10:15 AM	190	150	0.40
10:30 AM	190	150	0.40
10:45 AM	190	150	0.40
11:00 AM	190	150	0.40
11:15 AM	190	150	0.40
11:30 AM	190	150	0.40
11:45 AM	190	150	0.40
12:00 PM	190	150	0.40
12:15 PM	190	150	0.40
12:30 PM	190	150	0.40
12:45 PM	190	150	0.40
1:00 PM	190	150	0.40
1:15 PM	190	150	0.40
1:30 PM	190	150	0.40
1:45 PM	189	150	0.40
2:00 PM	189	150	0.40
2:15 PM	189	150	0.40
2:30 PM	189	150	0.40
2:45 PM	189	150	0.40
3:00 PM	189	150	0.40
3:15 PM	189	150	0.40
3:30 PM	189	150	0.40
3:45 PM	189	150	0.40
4:00 PM	189	150	0.40
4:15 PM	189	150	0.40

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.

# ENVIRO-CHEM LABORATORIES, INC.



47 Loveton Circle, Suite K • Sparks, Maryland 21152

410-472-1112

## FINAL REPORT OF ANALYSIS

Michael Barlow Well Drilling  
522 Underwood Lane  
Bel Air, MD 21014

Report Date: 04/10/2018  
Report Number: 180410103233

LAB#- E053296-02      SAMPLE ID- Lot 6 Well 2      WELL #      HO 17-0238  
LOCATION- Well Head      SAMPLER- 8862 MI  
DATE SAMPLED- 03/26/2018      TIME SAMPLED- 16:00      Residual Chlorine- <0.05 mg/L  
DATE RECEIVED- 03/27/2018      TIME RECEIVED- 13:45  
DELIVERED BY- S Bangledorf      RECEIVED BY- Ginny Shelley  
COMMENTS-

COMMENTS-

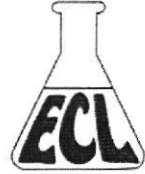
ANALYSIS	METHOD	ANALYSIS DATE/TIME	BY	RESULT	DATA FLAG
<b>Total Metals by EPA 200.7 by Enviro-Chem</b>					
\$ Sodium	EPA 200.7	03/28/18 15:05	RAS	40.6	mg/L
<b>Wet Chemistry by Enviro-Chem</b>					
\$ Chloride	EPA 300.0	03/27/18 19:46	WND	167	mg/L
\$ Dissolved Solids	SM 2540C	04/02/18 12:00	SES	632	mg/L

Stephen Shelley  
Laboratory Director

### Certifications

# - State of Maryland Certification      #192  
Virginia Drinking Water      8634  
# Indicates a MD certified Analyte  
! Indicates a MD, VA certified Analyte  
\$ Not a certified Analyte

# ENVIRO-CHEM LABORATORIES, INC.



47 Loveton Circle, Suite K • Sparks, Maryland 21152

410-472-1112

## FINAL REPORT OF ANALYSIS

Michael Barlow Well Drilling  
522 Underwood Lane  
Bel Air, MD 21014

Report Date: 04/10/2018  
Report Number: 180410103233

LAB#- E053296-01      SAMPLE ID- Lot 6 Well 1 HO 17-0238      WELL #      HO 17-0238  
LOCATION- Well Head      SAMPLER- 8862 MI  
DATE SAMPLED- 03/26/2018      TIME SAMPLED- 16:00      Residual Chlorine- <0.05 mg/L  
DATE RECEIVED- 03/27/2018      TIME RECEIVED- 13:45  
DELIVERED BY- S Bangledorf      RECEIVED BY- Ginny Shelley  
COMMENTS-

COMMENTS-

ANALYSIS	METHOD	ANALYSIS DATE/TIME	BY	RESULT	DATA FLAG
<b>Total Metals by EPA 200.7 by Enviro-Chem</b>					
\$ Sodium	EPA 200.7	03/28/18 15:03	RAS	121	mg/L
<b>Wet Chemistry by Enviro-Chem</b>					
\$ Chloride	EPA 300.0	03/27/18 19:29	WND	469	mg/L
\$ Dissolved Solids	SM 2540C	04/02/18 12:00	SES	1190	mg/L

Send Report to: Bert Nixon  
Howard Co. Health Dept.  
Bureau of Env. Health

8930 Stanford Blvd  
Columbia, MD 21045

State of Maryland  
DHMH - Laboratories Administration  
Division of Environmental Chemistry  
ORGANICS ANALYTICAL LABORATORY  
1770 Ashland Avenue  
BALTIMORE, MARYLAND 21205

Temperature Blank: 2.0 °C  
RH

LABORATORY ANALYSIS REQUEST FORM

Please write legibly

Bottle No.: 0238SC-A  
0238SC-B Plant/Site Name: Jacks Landing - Lot 6 County: Howard

Location: Well B Sample Source: Triadelphia Mill Rd Dayton  
Street Town or City

Collector/ID: S. Collins / 3406 SC Phone No.: 410-313-6237

County: 013 System No.      PWSID      Plant No.       
Date Collected: 3/26/2018 Time Collected: 2:30 am/pm

Field Data: pH 7.0 Free Cl: 0.0 Total Cl: 0.0

Sample Type:  Drinking water  Landfill  Source (water)  Oil  
 Private  Stream  Distribution (treated)  Solid \_\_\_\_\_  
 Community  Soil/Sediment  Water Treatment Plant POE  Other \_\_\_\_\_  
 Non-Community

Specify Program:  SDWA  NPDES  RCRA  CWA  CERCLA  Consumer Products  
 Other \_\_\_\_\_

Test Requested	Field & Trip Blank	Preservative Used	Comment
<input type="checkbox"/> EPA Method 504.1 (EDB/DBCP)	<input type="checkbox"/> Field Blank	<input type="checkbox"/> Sodium thiosulfate	
<input type="checkbox"/> EPA Method 508 [Aroclors (SCAN only) & Toxaphene]	<input type="checkbox"/> Field Blank	<input type="checkbox"/> Sodium thiosulfate	
<input type="checkbox"/> EPA Method 515.3 (Herbicides)	<input type="checkbox"/> Field Blank	<input type="checkbox"/> Sodium thiosulfate	
<input type="checkbox"/> EPA Method 515.4 (Herbicides)	<input type="checkbox"/> Field Blank	<input type="checkbox"/> Sodium sulfite	
<input type="checkbox"/> EPA Method 525.2 (Pesticides)	<input type="checkbox"/> Field Blank	<input type="checkbox"/> HCL (6N) <input type="checkbox"/> Sodium sulfite	
<input type="checkbox"/> EPA Method 531.2 (Carbamates)	<input type="checkbox"/> Field Blank	<input type="checkbox"/> Potassium Citrate monobasic <input type="checkbox"/> Sodium thiosulfate	
<input type="checkbox"/> EPA Method 552.2 (Haloacetic acids)	<input type="checkbox"/> Field Blank	<input type="checkbox"/> Ammonium chloride	
<input type="checkbox"/> EPA Method 8270 (Semi-Volatiles) <input type="checkbox"/> Pesticides <input type="checkbox"/> Aroclors	<input type="checkbox"/> Field Blank	<input type="checkbox"/> Sodium thiosulfate	
<input checked="" type="checkbox"/> EPA Method 524.2 (Volatiles) <input type="checkbox"/> VOCS <input type="checkbox"/> THMs	<input checked="" type="checkbox"/> Field Blank <input checked="" type="checkbox"/> Trip Blank	<input checked="" type="checkbox"/> 1:1 HCL <input type="checkbox"/> 1:1 HCL + Ascorbic acid <input type="checkbox"/> Sodium thiosulfate	<del>FB-2 0238SC FB-2</del> T H0170238T
<input type="checkbox"/> EPA Method 8260 (VOCs)	<input type="checkbox"/> Field Blank	<input type="checkbox"/> 1:1 HCL <input type="checkbox"/> 1:1 HCL + Ascorbic acid	

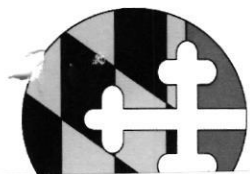
 <b>E18003467004</b> Received: 03/27/2018 EPA 524.2 Trace Organics 0238SC	 <b>E18003467005</b> Received: 03/27/2018 EPA 524.2 Trace Organics 0238SCFB-2	

Remarks: \_\_\_\_\_

Lab Supervisor: \_\_\_\_\_ Date Reported: \_\_\_\_/\_\_\_\_/\_\_\_\_

•Phone: (443) 681-3857 •Fax: (443) 681-4507

SUBMITTER'S COPY



Howard County  
 Environmental Health  
 8930 Stanford Blvd  
 Columbia, MD 21045

## Certificate of Analysis

Lab. No: E18003467004

Method: EPA 524.2 VOCs and THMs

Date Received: 03/27/2018  
 Field ID: 02385C

Date Collected: 03/26/2018  
 Submitted By: Collins

Date Analyzed: 04/04/2018

<u>Contaminant</u>	<u>RL</u>	<u>MCL</u>	<u>Result</u>	<u>Contaminant</u>	<u>RL</u>	<u>MCL</u>	<u>Result</u>
<b>REGULATED</b>				2-Chlorotoluene	0.5		ND
1,1,1-Trichloroethane	0.5	200	ND	4-Chlorotoluene	0.5		ND
1,1,2-Trichloroethane	0.5	5	ND	Bromobenzene	0.5		ND
1,1-Dichloroethene	0.5	7	ND	Bromochloromethane	0.5		ND
1,2,4-Trichlorobenzene	0.5	70	ND	Bromomethane	0.5		ND
1,2-Dichlorobenzene	0.5	600	ND	Chloroethane	0.5		ND
1,2-Dichloroethane	0.5	5	ND	Chloromethane	0.5		ND
1,2-Dichloropropane	0.5	5	ND	cis-1,3-Dichloropropene	0.5		ND
1,4-Dichlorobenzene	0.5	75	ND	Dibromomethane	0.5		ND
Benzene	0.5	5	ND	Dichlorodifluoromethane	0.5		ND
Carbon Tetrachloride	0.5	5	ND	Ethyl-tert-Butyl Ether (ETBE)	0.5		ND
Chlorobenzene	0.5	100	ND	Hexachlorobutadiene	0.5		ND
cis-1,2-Dichloroethene	0.5	70	ND	Isopropylbenzene	0.5		ND
Ethylbenzene	0.5	700	ND	Methyl-tert-Butyl Ether (MTBE)	0.5		4.33
m+p-Xylene	1.0		ND	Naphthalene	0.5		ND
Methylene Chloride	0.5	5	ND	n-Butylbenzene	0.5		ND
o-Xylene	0.5		ND	n-Propylbenzene	0.5		ND
Styrene	0.5	100	ND	p-Isopropyltoluene	0.5		ND
Tetrachloroethene	0.5	5	ND	sec-Butylbenzene	0.5		ND
Toluene	0.5	1000	2.29	tert-Amyl Methyl Ether (TAME)	0.5		ND
Total Xylenes	1.5	10000	ND	tert-Butylbenzene	0.5		ND
trans-1,2-Dichloroethene	0.5	100	ND	trans-1,3-Dichloropropene	0.5		ND
Trichloroethene	0.5	5	ND	Trichlorofluoromethane	0.5		ND
Vinyl Chloride	0.5	2	ND				
<b>TRihalOMETHANES</b>							
Bromodichloromethane	0.5		ND				
Bromoform	0.5		ND				
Chloroform	0.5		ND				
Dibromochloromethane	0.5		ND				
TOTAL THMs		80	0.00				
<b>UNREGULATED</b>							
1,1,1,2-Tetrachloroethane	0.5		ND				
1,1,1,2,2-Tetrachloroethane	0.5		ND				
1,1-Dichloroethane	0.5		ND				
1,1-Dichloropropene	0.5		ND				
1,2,3-Trichlorobenzene	0.5		ND				
1,2,3-Trichloropropane	0.5		ND				
1,2,4-Trimethylbenzene	0.5		ND				
1,2-Dibromo-3-Chloropropane	0.5		ND				
1,2-Dibromoethane	0.5		ND				
1,3,5-Trimethylbenzene	0.5		ND				
1,3-Dichlorobenzene	0.5		ND				
1,3-Dichloropropane	0.5		ND				
2,2-Dichloropropane	0.5		ND				

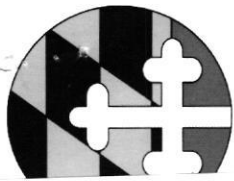
**Comments:**

Approved by: Sadia Muneer Approval date: 04/10/2018

\*All results are in parts per billion (ppb); ND = Less than the detection level; na = not applicable; e = estimate

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Telephone: (443) 681-3853 Fax: (443) 681-4507



Howard County  
 Environmental Health  
 8930 Stanford Blvd  
 Columbia, MD 21045

## Certificate of Analysis

Lab. No: E18003467005

Method: EPA 524.2 VOCs and THMs

Date Received: 03/27/2018  
 Field ID: 0238SCFB-2

Date Collected: 03/26/2018  
 Submitted By: Collins

Date Analyzed: 04/04/2018

<b>Contaminant</b>	<b>RL</b>	<b>MCL</b>	<b>Result</b>	<b>Contaminant</b>	<b>RL</b>	<b>MCL</b>	<b>Result</b>
<b>REGULATED</b>				2-Chlorotoluene	0.5		ND
1,1,1-Trichloroethane	0.5	200	ND	4-Chlorotoluene	0.5		ND
1,1,2-Trichloroethane	0.5	5	ND	Bromobenzene	0.5		ND
1,1-Dichloroethene	0.5	7	ND	Bromochloromethane	0.5		ND
1,2,4-Trichlorobenzene	0.5	70	ND	Bromomethane	0.5		ND
1,2-Dichlorobenzene	0.5	600	ND	Chloroethane	0.5		ND
1,2-Dichloroethane	0.5	5	ND	Chloromethane	0.5		0.61
1,2-Dichloropropane	0.5	5	ND	cis-1,3-Dichloropropene	0.5		ND
1,4-Dichlorobenzene	0.5	75	ND	Dibromomethane	0.5		ND
Benzene	0.5	5	ND	Dichlorodifluoromethane	0.5		ND
Carbon Tetrachloride	0.5	5	ND	Ethyl-tert-Butyl Ether (ETBE)	0.5		ND
Chlorobenzene	0.5	100	ND	Hexachlorobutadiene	0.5		ND
cis-1,2-Dichloroethene	0.5	70	ND	Isopropylbenzene	0.5		ND
Ethylbenzene	0.5	700	ND	Methyl-tert-Butyl Ether (MTBE)	0.5		ND
m+p-Xylene	1.0		ND	Naphthalene	0.5		ND
Methylene Chloride	0.5	5	0.77	n-Butylbenzene	0.5		ND
o-Xylene	0.5		ND	n-Propylbenzene	0.5		ND
Styrene	0.5	100	ND	p-Isopropyltoluene	0.5		ND
Tetrachloroethene	0.5	5	ND	sec-Butylbenzene	0.5		ND
Toluene	0.5	1000	ND	tert-Amyl Methyl Ether (TAME)	0.5		ND
Total Xylenes	1.5	10000	ND	tert-Butylbenzene	0.5		ND
trans-1,2-Dichloroethene	0.5	100	ND	trans-1,3-Dichloropropene	0.5		ND
Trichloroethene	0.5	5	ND	Trichlorofluoromethane	0.5		ND
Vinyl Chloride	0.5	2	ND				
<b>TRIHALOMETHANES</b>							
Bromodichloromethane	0.5		ND				
Bromoform	0.5		ND				
Chloroform	0.5		ND				
Dibromochloromethane	0.5		ND				
TOTAL THMs		80	0.00				
<b>UNREGULATED</b>							
1,1,1,2-Tetrachloroethane	0.5		ND				
1,1,1,2,2-Tetrachloroethane	0.5		ND				
1,1-Dichloroethane	0.5		ND				
1,1-Dichloropropene	0.5		ND				
1,2,3-Trichlorobenzene	0.5		ND				
1,2,3-Trichloropropane	0.5		ND				
1,2,4-Trimethylbenzene	0.5		ND				
1,2-Dibromo-3-Chloropropane	0.5		ND				
1,2-Dibromoethane	0.5		ND				
1,3,5-Trimethylbenzene	0.5		ND				
1,3-Dichlorobenzene	0.5		ND				
1,3-Dichloropropane	0.5		ND				
2,2-Dichloropropane	0.5		ND				

**Comments:**

Approved by: \_\_\_\_\_ Approval date: \_\_\_\_\_

Measured high chloromethane on lab fortified blank

*Sadia Muneer*

04/10/2018

\*All results are in parts per billion (ppb); ND = Less than the detection level; na = not applicable; e = estimate

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Telephone: (443) 681-3853 Fax: (443) 681-4507



State of Maryland  
Department of Health  
Laboratories Administration  
Division of Environmental Sciences  
**TRACE METALS LABORATORY**  
1770 Ashland Avenue, Baltimore, Maryland 21205  
Robert Myers, Ph.D., Director



## Certificate of Analysis

HOWARD CO ENVIRONMENTAL HLTH  
8930 STANFORD BLVD  
COLUMBIA, MD 21045

Lab Project No: E18003472 Date Coll.: 03/26/2018 Date Received: 03/27/2018 Submitted By: Collins

Field ID: HO-17-0238  
Lab No.: E18003472002

<u>Method</u>	<u>Element</u>	<u>Result</u>	<u>Units</u>	<u>Date Analyzed</u>
EPA 200.7	Iron	10.34	ppm	04/02/2018
EPA 200.7	Sodium	91.63	ppm	04/02/2018

well # 1

RECEIVED  
APR 06 2018  
HOWARD COUNTY DEPARTMENT OF HEALTH & ENVIRONMENTAL HEALTH

### Comments:

Approved by: Yungtao Choi

Approval date: 04/05/2018

\*\*The following methods are included in our A2LA Scope of Accreditation: EPA 200.7, EPA 200.8, EPA 245.1.

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State of Maryland  
Department of Health  
Laboratories Administration  
Division of Environmental Sciences  
**INORGANICS ANALYTICAL LABORATORY**  
1770 Ashland Avenue, Baltimore, Maryland 21205  
Robert Myers, Ph.D., Director



## Certificate of Analysis

HOWARD CO ENVIRONMENTAL HLTH  
8930 STANFORD BLVD  
COLUMBIA, MD 21045

Lab Project NoE18003469 Date Coll. 03/26/2018 Date Received 03/27/2018 Submitted By: S. Collins

Field ID: HO-17-0238  
Lab No.: E18003469001

<u>Analyte</u>	<u>Method</u>	<u>Result</u>	<u>Units</u>	<u>Date Analyzed</u>
Chloride	SM 4500-Cl E	390	mg/L	03/30/2018
Total Dissolved Solids	SM 2540C	908	mg/L	03/29/2018

*well # 1*

### Comments:

Approved by: *Shahen Arslan*

Approval date: 04/04/2018

\*The following methods are included in our A2LA Scope of Accreditation: EPA150.1, EPA 353.2, EPA 375.2, SM4500F C, SM 4500-CN G & QCM-CN, QCM-CN.

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State of Maryland  
Department of Health  
Laboratories Administration  
Division of Environmental Sciences  
**TRACE METALS LABORATORY**  
1770 Ashland Avenue, Baltimore, Maryland 21205  
Robert Myers, Ph.D., Director



## Certificate of Analysis

HOWARD CO ENVIRONMENTAL HLTH  
8930 STANFORD BLVD  
COLUMBIA, MD 21045

Lab Project No: E18003472 Date Coll.: 03/26/2018 Date Received: 03/27/2018 Submitted By: Collins

Field ID: 0238 SC  
Lab No.: E18003472003

<u>Method</u>	<u>Element</u>	<u>Result</u>	<u>Units</u>	<u>Date Analyzed</u>
EPA 200.7	Iron	26.40	ppm	04/02/2018
EPA 200.7	Sodium	31.56	ppm	04/02/2018

*well # 2*

### Comments:

Approved by: *Yungsoo Choi*

Approval date: 04/05/2018

\*\*The following methods are included in our A2LA Scope of Accreditation: EPA 200.7, EPA 200.8, EPA 245.1.

This document contains confidential health information that is privileged, confidential and exempt from disclosure under law. If you have received this information in error, please call (410) 767-6944 and arrange for return or destruction.





State of Maryland  
Department of Health  
Laboratories Administration  
Division of Environmental Sciences  
**INORGANICS ANALYTICAL LABORATORY**  
1770 Ashland Avenue, Baltimore, Maryland 21205  
Robert Myers, Ph.D., Director



## Certificate of Analysis

HOWARD CO ENVIRONMENTAL HLTH  
8930 STANFORD BLVD  
COLUMBIA, MD 21045

Lab Project NoE18003469 Date Coll. 03/26/2018 Date Received 03/27/2018 Submitted By: S. Collins

Field ID: 0238SC  
Lab No.: E18003469002

<u>Analyte</u>	<u>Method</u>	<u>Result</u>	<u>Units</u>	<u>Date Analyzed</u>
Chloride	SM 4500-Cl E	181	mg/L	03/30/2018
Total Dissolved Solids	SM 2540C	500	mg/L	03/29/2018

*well # 2*

### Comments:

Approved by:

*Shahin Amini*

Approval date: 04/04/2018

\*The following methods are included in our A2LA Scope of Accreditation: EPA150.1, EPA 353.2, EPA 375.2, SM4500F C, SM 4500-CN G & QCM-CN, QCM-CN.

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Send Report To: Bert Nixon  
Howard Co. Health Dept.  
Bureau of Env. Health

8930 Stanford Blvd.  
Columbia, MD 21045

State of Maryland  
DHMH - Laboratories Administration  
Division of Environmental Sciences  
**TRACE METALS LABORATORY**

1770 Ashland Avenue  
Baltimore, Maryland 21205

Lab No. Date Received



E18003472003

Received: 03/27/2018

Metals

0238 SC

**LABORATORY ANALYSIS REQUEST**

Do not write above this line

Please Print

Digest

Sample ID No: 0238 SC Site Name: Jack's Landing - Lot 6 County: Howard

Sample Source: Triadelphia Mill Rd. Dayton Collector: S. Collins  
Street Town or City Name

Date Collected: 3 / 26 / 2018 Time Collected: 2:30 a.m. / (p.m.) Phone #: 410-313-6287

Sample Preserved By:  Field  ESRL  WMRL  Central Lab  
Preservative Used:  HNO<sub>3</sub> \_\_\_\_\_ mL pH: < 2, SHS 3/27/18

Sample Type:  Drinking Water  Landfill  Source (Raw Water)  Liquid  
Data Category:  Community  Stream  Distribution (Treated)  Solid  
Code   Non-Community  Sediment  Other \_\_\_\_\_  
4F  Private

Specify Program:  SDWA  NPDES  CWA  RCRA  Consumer Products  Other \_\_\_\_\_

Type of Sample Preparation:  Total Metals  Total Metals TCLP  Dissolved Metals  
(field preparation required)

Remarks: Yield test, well B.

✓	Element	Lab Use	✓	Element	Lab Use	✓	Element	Lab Use
	Antimony (Sb)			Aluminum (Al)			Uranium (U)	
	Arsenic (As)			Calcium (Ca)			Vanadium (V)	
	Barium (Ba)			Cobalt (Co)			Zinc (Zn)	
	Beryllium (Be)			Copper (Cu)				
	Cadmium (Cd)		✓	Iron (Fe)	SHS			
	Chromium (Cr)			Lead (Pb)				
	Mercury (Hg)			Magnesium (Mg)				
	Nickel (Ni)			Manganese (Mn)				
	Selenium (Se)			Molybdenum (Mo)				
✓	Sodium (Na)	SHS		Potassium (K)				
	Thallium (Tl)			Silver (Ag)				

Lab Supervisor: \_\_\_\_\_ Date Reported: \_\_\_\_/\_\_\_\_/\_\_\_\_

•Phone: (443) 681 - 4596

•Fax: (443) 681 - 4507

Send Report To: Bert Nixon  
Howard Co. Health Dept.  
Bureau of Env. Health

State of Maryland  
DHMH - Laboratories Administration  
Division of Environmental Sciences  
**TRACE METALS LABORATORY**

1770 Ashland Avenue  
Baltimore, Maryland 21205



E18003472002

Received: 03/27/2018

Metals

HO-17-0238

8930 Stanford Blvd.  
Columbia, MD 21045

**LABORATORY ANALYSIS REQUEST**

Do not write above this line

Please Print

*Digest*

Sample ID No: HO-17-0238 Site Name: Jack's Landing - Lot 6 County: Howard

Sample Source: Triadelphia Mill Rd. Dayton Collector: S. Collins  
Street Town or City Name

Date Collected: 3 / 26 / 20 18 Time Collected: 2:30 a.m. / (p.m.) Phone #: 410-313-6287

Sample Preserved By:  Field  ESRL  WMRL  Central Lab

Preservative Used:  HNO<sub>3</sub> \_\_\_\_\_ mL pH: < 2, SHS, 3/27/18

Sample Type:  Drinking Water  Landfill  Source (Raw Water)  Liquid  
Data Category:  Community  Stream  Distribution (Treated)  Solid  
Code   Non-Community  Sediment  Other \_\_\_\_\_  
4F  Private

Specify Program:  SDWA  NPDES  CWA  RCRA  Consumer Products  Other \_\_\_\_\_

Type of Sample Preparation:  Total Metals  Total Metals TCLP  Dissolved Metals  
(field preparation required)

Remarks: Yield test, well A

✓	Element	Lab Use	✓	Element	Lab Use	✓	Element	Lab Use
	Antimony (Sb)			Aluminum (Al)			Uranium (U)	
	Arsenic (As)			Calcium (Ca)			Vanadium (V)	
	Barium (Ba)			Cobalt (Co)			Zinc (Zn)	
	Beryllium (Be)			Copper (Cu)				
	Cadmium (Cd)		✓	Iron (Fe)	SHS			
	Chromium (Cr)			Lead (Pb)				
	Mercury (Hg)			Magnesium (Mg)				
	Nickel (Ni)			Manganese (Mn)				
	Selenium (Se)			Molybdenum (Mo)				
✓	Sodium (Na)	SHS		Potassium (K)				
	Thallium (Tl)			Silver (Ag)				

Lab Supervisor: \_\_\_\_\_ Date Reported: \_\_\_\_/\_\_\_\_/\_\_\_\_

•Phone: (443) 681 - 4596

•Fax: (443) 681 - 4507

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

**MEMORANDUM**

**TO:** Barlow Well Drilling  
Attn: Mike Isom (MSD 162)

**FROM:** Kevin M. Wolf, L.E.H.S., REHS/RS, Supervisor  
Groundwater Mgmt. Sec.  
Well & Septic Program

**DATE:** February 9, 2018

**RE:** **Jack's Landing Lots 6-8 – Well Permits**  
**Special Condition**

\* Driller notified of special condition via phone + email 2/9/18



The following comments apply to the above referenced Well Permit Applications. Please read through and complete as needed.

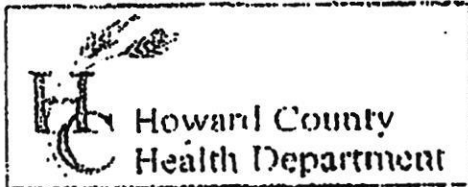
In order to preserve the quality of ground drinking water, a special condition has been set for the above referenced wells. This condition will require the driller to seal off upper strata by placing a minimum of **50 feet** of steel casing OR **10 feet** into competent bedrock (whichever comes first). For example, if you hit a water-bearing fracture or bedrock at 70 feet, then there should be at least 72 feet of casing or enough casing to get below that fracture. **Any deviations to this condition are to be prior approved by the Health Department.**

Both of these wells will also require sampling at the time of the yield test. Sampling will include but not limited to, Volatile Organic Compounds (VOC's), Total Dissolved Solids (TDS), Chlorides, and Sodium. When calling in the yield and grout on a pre-scheduled day, please make a note that a certified water testing lab and/or the Health Department must be present in order to collect the recommended samples. Please allow 24hrs notification when drilling commences and when the yield/grouts take place.

If you have any questions regarding the above mentioned information, please feel free to contact me at 410-313-2645 or email [kwolf@howardcountymd.gov](mailto:kwolf@howardcountymd.gov).

KMW

Cc: Ron Green, Land Design and Development, [rgreen@ldandd.com](mailto:rgreen@ldandd.com)  
file



3525 H Ellicott Mills Drive, Ellicott City, MD 21043  
(410) 313-2640 Fax (410) 313-2648  
TDD (410) 313-2323 Toll Free 1-866-313-6300  
website: www.hchealth.org

Penny E. Borenstein, M.D., M.P.H., Health Officer

TO ALL INTERESTED PARTIES

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

- JACKS LANDING LOTS 6, 7 + 8
- The well site has been staked by Fisher Collins + Carter,  
(professional land surveyor or company employing professional land surveyors)  
on 1/29/2018 (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 6/10/03

# ENVIRO-CHEM LABORATORIES, INC.



47 Loveton Circle, Suite K • Sparks, Maryland 21152

410-472-1112

## FINAL REPORT OF ANALYSIS

Michael Barlow Well Drilling  
522 Underwood Lane  
Bel Air, MD 21014

Report Date: 07/19/2015  
Report Number: 150719114815

LAB#- E040459-01      SAMPLE ID- HO 14-0114      WELL #      HO 14-0114  
LOCATION- Well Head      SAMPLER- 8862MI  
DATE SAMPLED- 07/16/2015      TIME SAMPLED- 12:00      Residual Chlorine-  
DATE RECEIVED- 07/16/2015      TIME RECEIVED- 14:55  
DELIVERED BY- J Williamson      RECEIVED BY- Ginny Shelley  
COMMENTS-

COMMENTS-

ANALYSIS	METHOD	ANALYSIS DATE/TIME	BY	RESULT	DATA FLAG
<b>Total Metals EPA 200.7 by Enviro-Chem</b>					
*! Sodium	EPA 200.7	07/17/15 11:38	CHK	214	mg/L
<b>Wet Chemistry by Enviro-Chem</b>					
\$ Chloride	EPA 300.0	07/17/15 11:05	EJF	669	mg/L
\$ Dissolved Solids	SM 2540C	07/16/15 19:50	SES	1850	mg/L

Stephen Shelley  
Laboratory Director

### Certifications

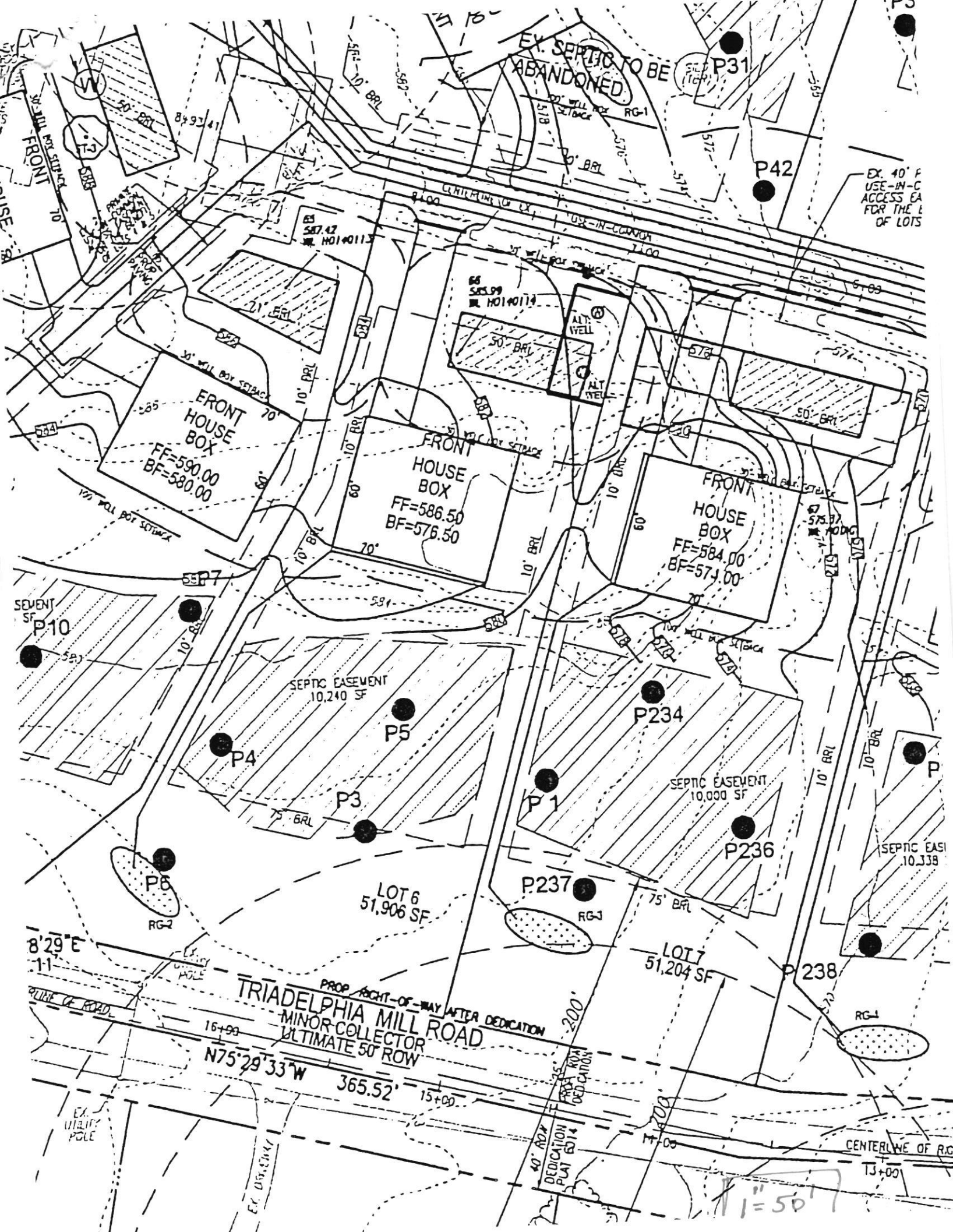
# - State of Maryland Certification      #192  
\* - NELAP Certification      68-04873  
! - VELAP Certification      460255  
\$ - Not a certified Analyte





6/9/15 Revised Well Box loc  
 Approved. Result of successful well  
 may dictate revised SRA on lot 1  
 -Kern

1" = 100'



EX. SEPTIC TO BE ABANDONED

P31

P42

EX. 40' P USE-IN-C ACCESS EA FOR THE L OF LOTS

FRONT HOUSE BOX  
FF=590.00  
BF=580.00

FRONT HOUSE BOX  
FF=586.50  
BF=576.50

FRONT HOUSE BOX  
FF=584.00  
BF=574.00

SEWENT SF P10

SEPTIC EASEMENT 10,240 SF

P234

SEPTIC EASEMENT 10,000 SF

P236

SEPTIC EAST 10,339

LOT 6 51,906 SF

P237

LOT 7 51,204 SF

P238

TRIADELPHIA MILL ROAD  
PROP. RIGHT-OF-WAY AFTER DEDICATION  
MINOR COLLECTOR  
ULTIMATE 50' ROW

N75°29'33"W 365.52'

1"=50'

## Analytical Results

**Project: MTBE/VOC**

Project Number: E037918

Project Manager: Stephen Shelley

Reported:

12/29/14 10:49

**E037918-01 (Lot 6 HO-14-0114)**

**4121912-01 (Water)**

**Sample Date: 12/18/14**

Analyte	Result	Units	Reporting		Prepared	Analyzed	Analyst	Notes
			Limit	Dilution				
<b>VOLATILE ORGANICS BY EPA METHOD 524.2 (GC/MS) (continued)</b>								
1,1-Dichloropropene	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
Diisopropyl ether (DIPE)	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
Ethyl tert-butyl ether (ETBE)	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
Ethylbenzene	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
Hexachlorobutadiene	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
Isopropylbenzene (Cumene)	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
4-Isopropyltoluene	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
<b>Methyl tert-butyl ether (MTBE)</b>	<b>22.8</b>	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
Methylene chloride	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
Naphthalene	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
n-Propylbenzene	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
Styrene	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
1,1,1,2-Tetrachloroethane	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
Tetrachloroethene	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
Toluene	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
1,2,3-Trichlorobenzene	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
1,2,4-Trichlorobenzene	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
Trichloroethene	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
Trichlorofluoromethane (Freon 11)	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
1,2,3-Trichloropropane	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
1,2,4-Trimethylbenzene	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
1,3,5-Trimethylbenzene	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
Vinyl chloride	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
o-Xylene	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
m- & p-Xylenes	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
Surrogate: 4-Bromofluorobenzene		80-120	90 %		12/22/14	12/22/14 13:09		
Surrogate: 1,2-Dichlorobenzene-d4		80-120	92 %		12/22/14	12/22/14 13:09		

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Will Brewington, Staff Chemist

## Analytical Results

**Project: MTBE/VOC**

Project Number E037918  
Project Manager Stephen Shelley

Reported:  
12/29/14 10:49

E037918-01 (Lot 6 HO-14-0114)

4121912-01 (Water)

Sample Date: 12/18/14

Analyte	Result	Units	Reporting			Analyzed	Analyst	Notes
			Limit	Dilution	Prepared			
<b>VOLATILE ORGANICS BY EPA METHOD 524.2 (GC/MS)</b>								
tert-Amyl alcohol (TAA)	ND	ug/L	10.0	1	12/22/14	12/22/14 13:09	WB	
<b>tert-Amyl methyl ether (TAME)</b>	<b>0.63</b>	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
Benzene	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
Bromobenzene	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
Bromochloromethane	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
Bromodichloromethane	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
Bromoform	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
Bromomethane	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
tert-Butanol (TBA)	ND	ug/L	10.0	1	12/22/14	12/22/14 13:09	WB	
n-Butylbenzene	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
sec-Butylbenzene	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
tert-Butylbenzene	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
Carbon tetrachloride	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
Chlorobenzene	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
Chloroethane	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
Chloroform	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
Chloromethane	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
2-Chlorotoluene	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
4-Chlorotoluene	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
Dibromochloromethane	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
1,2-Dibromoethane (EDB)	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
Dibromomethane	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
1,2-Dichlorobenzene	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
1,3-Dichlorobenzene	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
1,4-Dichlorobenzene	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
Dichlorodifluoromethane	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
1,1-Dichloroethane	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
1,2-Dichloroethane	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
1,1-Dichloroethene	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
cis-1,2-Dichloroethene	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
1,2-Dichloropropane	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
1,3-Dichloropropane	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	
2,2-Dichloropropane	ND	ug/L	0.50	1	12/22/14	12/22/14 13:09	WB	



Will Brewington, Staff Chemist

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**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:	December 18, 2014		
Well Depth:	250	feet	
Customer	Land Design & Development	Permit #	HO-14-0114
Road	Triadelphia Mill Rd	Subdivision	Jacks Landing
City	Highland	Section	
State	Maryland	Lot #	6

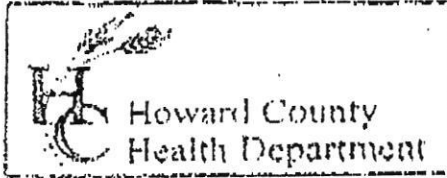
Time	Water Level feet	Time to Fill 1-gallon bucket seconds	G.P.M.
9:30 AM	33	3	20.00
9:45 AM	60	4	15.00
10:00 AM	60	4	15.00
10:15 AM	60	4	15.00
10:30 AM	60	4	15.00
10:45 AM	60	4	15.00
11:00 AM	60	4	15.00
11:15 AM	60	4	15.00
11:30 AM	60	4	15.00
11:45 AM	60	4	15.00
12:00 PM	60	4	15.00
12:15 PM	60	4	15.00
12:30 PM	60	4	15.00
12:45 PM	60	4	15.00
1:00 PM	60	4	15.00
1:15 PM	60	4	15.00
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.			

*15 GPM x 120 = 1800 gal/hr*

*18 r*







3525 H Ellicott Mills Drive, Ellicott City, MD 21043  
 (410) 313-2640 Fax (410) 313-2648  
 TDD (410) 313-2323 Toll Free 1-866-313-6300  
 website: www.hchealth.org

Penny E. Borenstein, M.D., M.P.H., Health Officer

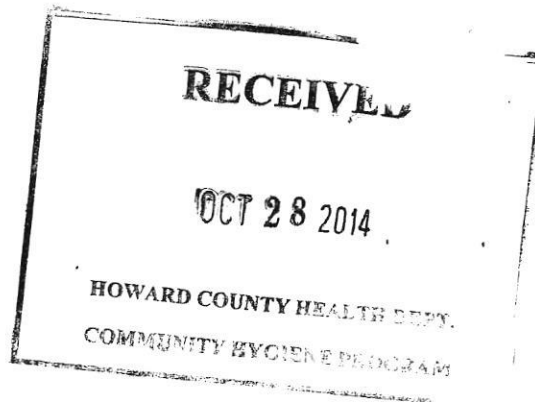
**TO ALL INTERESTED PARTIES**

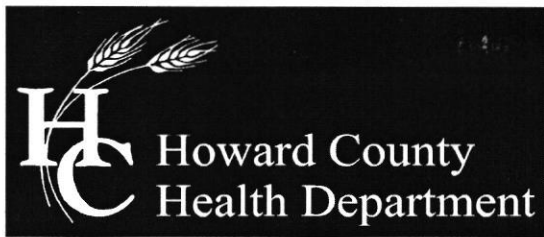
When submitting a well permit application for a proposed well for new construction, please indicate one of the following:

- The well site has been staked by JACKS Landing Lots 1-8 + Parcel A  
Robert Vogel Engineering,  
 (professional land surveyor or company employing professional land surveyors)  
 on 10/29/2014 (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 6/10/03





## Bureau of Environmental Health

7178 Columbia Gateway Drive, Columbia, MD 21046-2147

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)

Facebook: [www.facebook.com/hocohealth](https://www.facebook.com/hocohealth)


Twitter: HowardCoHealthDep

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

---

### MEMORANDUM

TO: Michael Barlow, MWD 355  
Barlow Well Drilling

FROM: Ryan Rappaport, LEHS  
Well & Septic Program 

RE: VOC Testing required of all wells at Jack's Landing Lots 1-8 & Parcel A

DATE: October 20, 2014

---

As per the approved and signed Percolation Certification Plan dated February 6, 2014, general note #13: VOC Testing will be required on all wells prior to health signature of final plat. See special condition on each well permit for specific requirements.



# HOWARD COUNTY HEALTH DEPARTMENT

62362

DATE 1/13/17

Received From

Michael Banta

PHONE # \_\_\_\_\_

For

HLA Permit / Trade Show  
[lots 6, 7, 8]

CASH

CHECK

NO.

29108

over hundred eighty Dollars

\$

480.00

Received By

King