



**Groundwater
& Environmental Services, Inc.**

1350 Blair Drive • Suite A • Odenton, Maryland 21113 • (800) 220-3606 • FAX (410) 721-3733

November 18, 2016

Christine Avig
3914 Madonna Rd
Jarrettsville, MD 21084

Re: Water Filtration System Sampling Information
3914 Madonna Rd, Jarrettsville, MD 21084

Groundwater & Environmental Services, Inc. (GES), on behalf of High's of Baltimore, would like to thank you for your cooperation in allowing us to conduct sampling of your water filtration system on October 18, 2016. The sampling was conducted to evaluate the effectiveness of the granular activated carbon (GAC) filtration system that was installed to treat the water coming into your home.

To help better understand the results, the following information is supplied:

- **Pre-carbon filtration** – water sample of the first, untreated water coming directly into your home; referred to as influent and denoted as “INF” on the laboratory report.
- **Mid-carbon filtration** – water sample collected between the carbon vessels, on the two-train carbon system that was installed; referred to as mid-fluent and denoted as “MID” on the laboratory report.
- **Post-carbon filtration** – water sample of the finished treated water; referred to as effluent and denoted as “EFF” on the laboratory report.

Water samples were collected pre-, mid- and post-carbon filtration and were tested in accordance to USEPA standards for the presence of several petroleum related compounds, including methyl tertiary butyl ether (MTBE). The results from the most recent sampling event demonstrate a detection of MTBE in the influent water of your GAC system at a concentration of 12 micrograms per liter ($\mu\text{g/L}$). For reference, the Maryland Department of the Environment (MDE) action level for MTBE is 20 $\mu\text{g/L}$. There were no petroleum-related compounds, including MTBE, detected in the mid-fluent or effluent water sample from this sampling event. A copy of the laboratory analysis report is attached to this correspondence.

The tests conducted on your drinking water well are part of an ongoing groundwater investigation being conducted in cooperation with the MDE and the Harford County Health Department (HCHD). Therefore we would like to continue sampling the water from your drinking water well on a periodic basis while the groundwater investigation is being conducted. We will notify you in advance of the next scheduled sampling event.

If you have any questions concerning this sampling event, please feel free to contact me at 800-220-3606, Ext. 3726. You may also contact Ms. Jeannette DeBartolomeo of the MDE at 410-537-3427.

Sincerely,
GROUNDWATER & ENVIRONMENTAL SERVICES, INC.

Peter Reichardt
Project Hydrogeologist

Attachment

c: Jeannette DeBartolomeo, MDE (3 copies & CD)
Peter Smith, HCHD
Herb Meade, CIFC (e-copy)
Todd Passmore, Apex

Sample Description: 3914 MADONNA-EFF Grab Potable Water
4101 Norrisville Rd, Jarrettsville, MD
Carroll Madonna

LL Sample # PW 8652021
LL Group # 1722869
Account # 08390

Project Name: Carroll Madonna

Collected: 10/18/2016 08:50 by JP

GES, Inc.

440 Creamery Way, Suite 500
Exton PA 19341

Submitted: 10/19/2016 17:55

Reported: 10/31/2016 14:37

CMAEF

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	EPA 524.2	ug/l	ug/l	
03648	t-Amyl Methyl Ether	994-05-8	N.D.	0.1	1
03648	Benzene	71-43-2	N.D.	0.1	1
03648	t-Butyl Alcohol	75-65-0	N.D.	2.5	1
03648	Carbon Tetrachloride	56-23-5	N.D.	0.1	1
03648	Chlorobenzene	108-90-7	N.D.	0.1	1
03648	1,2-Dichlorobenzene	95-50-1	N.D.	0.1	1
03648	1,3-Dichlorobenzene	541-73-1	N.D.	0.1	1
03648	1,2-Dichloroethane	107-06-2	N.D.	0.1	1
03648	1,1-Dichloroethene	75-35-4	N.D.	0.1	1
03648	cis-1,2-Dichloroethene	156-59-2	N.D.	0.1	1
03648	trans-1,2-Dichloroethene	156-60-5	N.D.	0.1	1
03648	1,2-Dichloropropane	78-87-5	N.D.	0.1	1
03648	Ethyl t-Butyl Ether	637-92-3	N.D.	0.1	1
03648	Ethylbenzene	100-41-4	N.D.	0.1	1
03648	di-Isopropyl Ether	108-20-3	N.D.	0.1	1
03648	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.1	1
03648	Methylene Chloride	75-09-2	N.D.	0.3	1
03648	Naphthalene	91-20-3	N.D.	0.2	1
03648	Styrene	100-42-5	N.D.	0.1	1
03648	Tetrachloroethene	127-18-4	N.D.	0.1	1
03648	Toluene	108-88-3	N.D.	0.1	1
03648	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.2	1
03648	1,1,1-Trichloroethane	71-55-6	N.D.	0.1	1
03648	1,1,2-Trichloroethane	79-00-5	N.D.	0.1	1
03648	Trichloroethene	79-01-6	N.D.	0.1	1
03648	Vinyl Chloride	75-01-4	N.D.	0.1	1
03648	Xylene (Total)	1330-20-7	N.D.	0.1	1

Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
03648	VOCs- 25ml Water by 524.2	EPA 524.2	1	S163041AA	10/30/2016 15:53	Jason M Long	1

Sample Description: 3914 MADONNA-MID Grab Potable Water
4101 Norrisville Rd, Jarrettsville, MD
Carroll Madonna

LL Sample # PW 8652022
LL Group # 1722869
Account # 08390

Project Name: Carroll Madonna

Collected: 10/18/2016 08:55 by JP

GES, Inc.

440 Creamery Way, Suite 500
Exton PA 19341

Submitted: 10/19/2016 17:55

Reported: 10/31/2016 14:37

CMAMI

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	EPA 524.2	ug/l	ug/l	
03648	t-Amyl Methyl Ether	994-05-8	N.D.	0.1	1
03648	Benzene	71-43-2	N.D.	0.1	1
03648	t-Butyl Alcohol	75-65-0	N.D.	2.5	1
03648	Carbon Tetrachloride	56-23-5	N.D.	0.1	1
03648	Chlorobenzene	108-90-7	N.D.	0.1	1
03648	1,2-Dichlorobenzene	95-50-1	N.D.	0.1	1
03648	1,3-Dichlorobenzene	541-73-1	N.D.	0.1	1
03648	1,2-Dichloroethane	107-06-2	N.D.	0.1	1
03648	1,1-Dichloroethene	75-35-4	N.D.	0.1	1
03648	cis-1,2-Dichloroethene	156-59-2	N.D.	0.1	1
03648	trans-1,2-Dichloroethene	156-60-5	N.D.	0.1	1
03648	1,2-Dichloropropane	78-87-5	N.D.	0.1	1
03648	Ethyl t-Butyl Ether	637-92-3	N.D.	0.1	1
03648	Ethylbenzene	100-41-4	N.D.	0.1	1
03648	di-Isopropyl Ether	108-20-3	N.D.	0.1	1
03648	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.1	1
03648	Methylene Chloride	75-09-2	N.D.	0.3	1
03648	Naphthalene	91-20-3	N.D.	0.2	1
03648	Styrene	100-42-5	N.D.	0.1	1
03648	Tetrachloroethene	127-18-4	N.D.	0.1	1
03648	Toluene	108-88-3	N.D.	0.1	1
03648	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.2	1
03648	1,1,1-Trichloroethane	71-55-6	N.D.	0.1	1
03648	1,1,2-Trichloroethane	79-00-5	N.D.	0.1	1
03648	Trichloroethene	79-01-6	N.D.	0.1	1
03648	Vinyl Chloride	75-01-4	N.D.	0.1	1
03648	Xylene (Total)	1330-20-7	N.D.	0.1	1

Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
03648	VOCs- 25ml Water by 524.2	EPA 524.2	1	S163041AA	10/30/2016 16:20	Jason M Long	1

Sample Description: 3914 MADONNA-INF Grab Potable Water
4101 Norrisville Rd, Jarrettsville, MD
Carroll Madonna

LL Sample # PW 8652023
LL Group # 1722869
Account # 08390

Project Name: Carroll Madonna

Collected: 10/18/2016 09:00 by JP

GES, Inc.

440 Creamery Way, Suite 500
Exton PA 19341

Submitted: 10/19/2016 17:55

Reported: 10/31/2016 14:37

CMAIN

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS	Volatiles	EPA 524.2	ug/l	ug/l	
03648	t-Amyl Methyl Ether	994-05-8	N.D.	0.1	1
03648	Benzene	71-43-2	N.D.	0.1	1
03648	t-Butyl Alcohol	75-65-0	N.D.	2.5	1
03648	Carbon Tetrachloride	56-23-5	N.D.	0.1	1
03648	Chlorobenzene	108-90-7	N.D.	0.1	1
03648	1,2-Dichlorobenzene	95-50-1	N.D.	0.1	1
03648	1,3-Dichlorobenzene	541-73-1	N.D.	0.1	1
03648	1,2-Dichloroethane	107-06-2	N.D.	0.1	1
03648	1,1-Dichloroethene	75-35-4	N.D.	0.1	1
03648	cis-1,2-Dichloroethene	156-59-2	N.D.	0.1	1
03648	trans-1,2-Dichloroethene	156-60-5	N.D.	0.1	1
03648	1,2-Dichloropropane	78-87-5	N.D.	0.1	1
03648	Ethyl t-Butyl Ether	637-92-3	N.D.	0.1	1
03648	Ethylbenzene	100-41-4	N.D.	0.1	1
03648	di-Isopropyl Ether	108-20-3	N.D.	0.1	1
03648	Methyl Tertiary Butyl Ether	1634-04-4	12	0.1	1
03648	Methylene Chloride	75-09-2	N.D.	0.3	1
03648	Naphthalene	91-20-3	N.D.	0.2	1
03648	Styrene	100-42-5	N.D.	0.1	1
03648	Tetrachloroethene	127-18-4	N.D.	0.1	1
03648	Toluene	108-88-3	N.D.	0.1	1
03648	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.2	1
03648	1,1,1-Trichloroethane	71-55-6	N.D.	0.1	1
03648	1,1,2-Trichloroethane	79-00-5	N.D.	0.1	1
03648	Trichloroethene	79-01-6	N.D.	0.1	1
03648	Vinyl Chloride	75-01-4	N.D.	0.1	1
03648	Xylene (Total)	1330-20-7	N.D.	0.1	1

Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
03648	VOCs- 25ml Water by 524.2	EPA 524.2	1	S163041AA	10/30/2016 16:47	Jason M Long	1

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mg	milligram(s)
C	degrees Celsius	mL	milliliter(s)
cfu	colony forming units	MPN	Most Probable Number
CP Units	cobalt-chloroplatinate units	N.D.	none detected
F	degrees Fahrenheit	ng	nanogram(s)
g	gram(s)	NTU	nephelometric turbidity units
IU	International Units	pg/L	picogram/liter
kg	kilogram(s)	RL	Reporting Limit
L	liter(s)	TNTC	Too Numerous To Count
lb.	pound(s)	µg	microgram(s)
m3	cubic meter(s)	µL	microliter(s)
meq	milliequivalents	umhos/cm	micromhos/cm
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Laboratory Data Qualifiers:

- B - Analyte detected in the blank
- C - Result confirmed by reanalysis
- E - Concentration exceeds the calibration range
- J (or G, I, X) - estimated value \geq the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)
- P - Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
- U - Analyte was not detected at the value indicated
- V - Concentration difference between the primary and confirmation column $>100\%$. The reporting limit is raised due to this disparity and evident interference...
- W - The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

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