

Quarterly Groundwater Monitoring Report Second Quarter 2019

Piper's Wine & Spirit Barn 4127 Hanover Pike Manchester, Maryland 21102

MDE Case No. 18-0496CL Facility I.D. No. 17166

AEC Project No. 14-059

Prepared for:

Chenoweth & Associates, Inc. 4127 Hanover Pike Manchester, Maryland 21102

and

Maryland Department of the Environment Oil Control Program 1800 Washington Boulevard Baltimore, Maryland 21230

Prepared by:

Advantage Environmental Consultants, LLC 8610 Washington Boulevard, Suite 217 Jessup, Maryland 20794 Phone – (301) 776-0500 Fax – (301) 776-1123

July 12, 2019



July 12, 2019

Mr. William A. Chenoweth Chenoweth & Associates, Inc. 4127 Hanover Pike Manchester, Maryland 21102

Subject: Quarterly Groundwater Monitoring Report Piper's Wine & Spirit Barn 4127 Hanover Pike Manchester, Maryland 21102 MDE Case No. 18-0496CL Facility I.D. No. 17166 AEC Project No. 14-059

Dear Mr. Chenoweth:

On June 26, 2019, Advantage Environmental Consultants, LLC (AEC) completed sampling of three onsite groundwater monitoring wells and the on-Site potable drinking water well. This report includes AEC's discussion of the scope of work, methodologies, analytical results, findings and conclusions.

We appreciate the opportunity to be of service to Chenoweth & Associates, Inc. If you should have any questions regarding this report, or if we can be of further assistance, please contact the undersigned at (301) 776-0500.

Sincerely,

ADVANTAGE ENVIRONMENTAL CONSULTANTS, LLC

Jeremy S. Sheidy, P.G. Senior Project Manager

Jeffery **\$**. Stein, P.G. Principal

cc: Mr. Matt Mueller, Maryland Department of the Environment

REGULATORY INFORMATION

Regulatory Agency:	Maryland Department of the Environment
Agency Contact:	Matthew Mueller
Facility I.D. Number:	17166
MDE Case Number:	18-0496CL
Current Case Status:	Quarterly monitoring well, potable well, and tank field monitoring pipe sampling

Reporting Period: 4-1-19 to 6-30-19

GENERAL SITE INFORMATION

Site Contact:	William A. Chenoweth
Consultant Contact:	Jeremy S. Sheidy
Facility Status:	Operating fuel station
Area Property Use:	See Site Vicinity Map and Site Plan
Monitoring Wells:	MW-1, MW-2, MW-3
Tank Field	
Monitoring Pipes:	TFMP-1, TFMP-2, TFMP-3, TFMP-4

ACTIVITIES COMPLETED THIS PERIOD

Sampling Date:	June 26, 2019
Wells Sampled:	MW-1, MW-2, MW-3, and onsite potable well
LNAPL Present:	No

ATTACHMENTS

Attachment A	Figures
Figure 1	Site Vicinity Map
Figure 2	Site Plan
Figure 3	Groundwater Gradient Map
Figure 4	Groundwater Quality Map
Attachment B	Tables
Attachment B Table 1	Tables Historical Groundwater Elevation Data
Attachment B Table 1 Table 2	Tables Historical Groundwater Elevation Data Historical Groundwater Analytical Results

Attachment D Water Sampler Certification

Introduction

Advantage Environmental Consultants, LLC (AEC) has completed sampling of three onsite groundwater monitoring wells, and the on-Site potable well (PW). All samples were collected on June 26, 2019.

Figure 1 in Attachment A illustrates the site vicinity. Figure 2 in Attachment A illustrates the groundwater monitoring wells, tank field monitoring pipes, and onsite potable drinking water well locations. The following is a description of this work and the results of the recent groundwater sampling effort.

Underground storage tank (UST) and fueling equipment replacement were completed during March, 2019. Activities included full replacement of all USTs and piping at the Site. Former tank field monitoring pipes TP-1 through TP-4 were removed during construction activities. Tank field monitoring pipes TFMP-1 through TFMP-4 are associated with the new UST system. AEC submitted an *Underground Storage Tank System Removal Report*, dated April 23, 2019 to the Maryland Department of the Environment (MDE).

Groundwater Gauging, Sampling, and Analysis

Monitoring Wells

Groundwater samples were collected from the monitoring wells by first gauging and then purging at least three well volumes using a polyvinyl chloride (PVC) bailer, which was cleaned prior to use in each well using a Liquinox detergent. After purging, each well was allowed to recharge for a period of at least one hour prior to sampling. The groundwater samples were collected using dedicated disposable high density polyethylene (HDPE) sampling bailers.

The groundwater flow direction for the monitoring wells on the day of the sampling event is depicted in Figure 3 in Attachment A. Table 1 in Attachment B provides current and historical groundwater elevation data.

The samples were transferred directly into the appropriate sample containers. The sample from each location was placed in 40-milliliter glass vials with Teflon-lined septa and/or one-liter amber glass jars. The sample containers were preserved with hydrochloric acid, as appropriate. Once collected, the samples were placed on ice in a cooler to await shipment to the laboratory. The groundwater monitoring well and tank field monitoring pipe samples were analyzed for volatile organic compounds (VOCs) including fuel oxygenates per Environmental Protection Agency (EPA) Analytical Method 8260, total petroleum hydrocarbons (TPH) diesel range organics (DRO) and TPH gasoline range organics (GRO) per EPA Analytical Method 8015B.

The results of laboratory analysis indicated that no analytes were detected above laboratory quantitation limits in samples MW-1, MW-2, and MW-3.

A Groundwater Quality Map is presented as Figure 4 in Attachment A. Table 2 in Attachment B summarizes the current and historical groundwater analytical results. Laboratory analytical reports and chain-of-custody documentation are included as Attachment C.

On-Site Potable Well Treatment System

A sample from the on-Site potable well was collected from an exterior spigot. The sample was obtained after purging the system for 15 minutes. The sample was placed in 40 milliliter glass vials with Teflon-lined septa and preserved with hydrochloric acid, as appropriate. Once collected, the samples were placed on ice in a cooler to await shipment to the laboratory. The samples were analyzed for VOCs including fuel oxygenates per EPA Analytical Method 524.2. The sampling was conducted by MDE certified AEC staff scientist Rohan McLaughlin (sampler ID 5315RM). Water Sampler Certification is included as Attachment D.

Laboratory analytical results for the on-Site potable well show that all analytes were BQL. Laboratory analytical reports and chain-of-custody documentation are included as Attachment C.

Tank Field Monitoring Pipe Evaluation

AEC performed an evaluation of the tank field monitoring pipes by screening each with a photoionization detector (PID) for the presence of petroleum hydrocarbon vapors. A plastic covering was securely fastened over each tank field monitoring pipe and was allowed to sit for a period of fifteen minutes. The plastic barrier was then punctured with the PID nozzle, and a reading was taken. No readings above 0.0 parts per million (ppm) were detected in the tank field monitoring pipes. The tank field monitoring pipes were gauged to determine the depth to water, and the presence of light non-aqueous phase liquid (LNAPL). No LNAPL was detected in any of the tank field monitoring pipes.

Attachment A









Attachment B

Table 1 - Well Gauging Summary Piper's Wine & Spirit Barn 4127 Hanover Pike, Manchester, Maryland

Well ID	Date	Depth to Water	Depth to LPH	TOC Elevation	Water Elevation	LPH Elevation	Corrected Water Elevation	LPH Thickness
MW-1	05/16/2013	6.95	ND	100.00	93.05	NM	NM	0.00
	03/28/2014	6.65	ND	100.00	93.35	NM	NM	0.00
	04/22/2015	6.80	ND	100.00	93.20	NM	NM	0.00
	03/17/2016	6.52	ND	100.00	93.48	NM	NM	0.00
	03/09/2017	7.40	ND	100.00	92.60	NM	NM	0.00
	03/16/2018	6.90	ND	100.00	93.10	NM	NM	0.00
	03/29/2018	6.42	ND	100.00	93.58	NM	NM	0.00
	06/26/2018	6.74	ND	100.00	93.26	NM	NM	0.00
	09/27/2018	5.95	ND	100.00	94.05	NM	NM	0.00
	12/06/2018	6.02	ND	100.00	93.98	NM	NM	0.00
	04/09/2019	7.20	ND	100.00	92.80	INIM		0.00
N414/ O	06/26/2019	6.60	ND	100.00	93.40	INIM	INIM	0.00
10100-2	03/16/2013	5.00		97.53	91.93			0.00
	03/28/2014	0.00 E E E		97.53	91.98	INIVI	INIVI	0.00
	04/22/2015	5.00		97.53	91.97	NIM	NIM	0.00
	03/17/2010	5.29		97.53	92.24			0.00
	03/16/2018	5.05		97.53	91.00	NIM	NIM	0.00
	03/20/2018	5 38	ND	97.53	92.07	NM	NM	0.00
	06/26/2018	5.50	ND	07.53	02.03	NIM	NIM	0.00
	00/20/2018	5.00	ND	97.53	92.03	NM	NM	0.00
	12/06/2018	5.45	ND	97.53	92.13	NM	NM	0.00
	04/09/2019	8.89	ND	97.53	88.64	NM	NM	0.00
	06/26/2019	5.21	ND	97.53	92.32	NM	NM	0.00
MW-3	05/16/2013	7.05	ND	93.84	86 79	NM	NM	0.00
	03/28/2014	6.02	ND	93.84	87.82	NM	NM	0.00
	04/22/2015	6.57	ND	93.84	87.27	NM	NM	0.00
	03/17/2016	5.51	ND	93.84	88.33	NM	NM	0.00
	03/09/2017	9.58	ND	93.84	84.26	NM	NM	0.00
	03/16/2018	7.45	ND	93.84	86.39	NM	NM	0.00
	03/29/2018	6.96	ND	93.84	86.88	NM	NM	0.00
	06/26/2018	6.41	ND	93.84	87.43	NM	NM	0.00
	09/27/2018	3.98	ND	93.84	89.86	NM	NM	0.00
	12/06/2018	4.36	ND	93.84	89.48	NM	NM	0.00
	04/09/2019	4.82	ND	93.84	89.02	NM	NM	0.00
	06/26/2019	6.45	ND	93.84	87.39	NM	NM	0.00
TFMP-1	04/09/2019	7.10	ND	NM	NM	NM	NM	0.00
	06/26/2019	6.37	ND	NM	NM	NM	NM	0.00
TFMP-2	04/09/2019	7.46	ND	NM	NM	NM	NM	0.00
	06/26/2019	5.90	ND	NM	NM	NM	NM	0.00
TFMP-3	04/09/2019	6.05	ND	NM	NM	NM	NM	0.00
	06/26/2019	4.62	ND	NM	NM	NM	NM	0.00
TFMP-4	04/09/2019	5.60	ND	NM	NM	NM	NM	0.00
	06/26/2019	5.73	ND	NM	NM	NM	NM	0.00
TP-1	06/26/2018	5.80	ND	NM	NM	NM	NM	0.00
Abandoned During	09/27/2018	5.76	ND	NM	NM	NM	NM	0.00
UST Replacement	12/06/2018	5.60	ND	NM	NM	NM	NM	0.00
TP-2	06/26/2018	5.75	ND	NM	NM	NM	NM	0.00
Abandoned During	09/27/2018	5.28	ND	NM	NM	NM	NM	0.00
USI Replacement	12/06/2018	5.28	ND	NM	NM	NM	NM	0.00
IP-3	06/26/2018	5.85	ND	NM	NM	NM	NM	0.00
Abandoned During	09/27/2018	5.40	ND	NM	NM	NM	NM	0.00
	12/06/2018	5.41	ND	NM	NM	NM	NM	0.00
IP-4	00/20/2018	5.59		INIVI NINA	INIM NIM	INIM	INM NA	0.00
	12/06/2010	5.41		INIVI NIM	INIVI NIMA	INIVI		0.00
USI Replacement	12/00/2018	0.00	עא ן	INIVI	INIVI	INIVI	INIVI	0.00

All measurements in feet

LPH = Liquid Phase Hydrocarbon

TOC = Top of Casing

ND = None Detected

NA = Not Applicable NG = Not Gauged

NM = Not Measured

Table 2 - Groundwater Analytical ResultsPiper's Wine & Spirit Barn4127 Hanover Pike, Manchester, Maryland

Well No.	Date	В	Т	E	Х	Naphthalene	MTBE	TPH GRO	TPH DRO
MW-1	05/16/2013	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	NS	NS
	03/28/2014	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	NS	NS
	04/22/2015	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	NS	NS
	03/17/2016	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	NS	NS
	03/09/2017	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	NS	NS
	03/16/2018	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	NS	NS
	06/26/2018	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<0.100	<0.19
	09/27/2018	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<0.100	<0.20
	12/06/2018	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<0.100	<0.20
	04/09/2019	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<0.100	<0.20
	06/26/2019	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<0.100	<0.20
MW-2	05/16/2013	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	NS	NS
	03/28/2014	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	NS	NS
	04/22/2015	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	NS	NS
	03/17/2016	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	NS	NS
	03/09/2017	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	NS	NS
	03/16/2018	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	NS	NS
	06/26/2018	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<0.100	<0.19
	09/27/2018	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<0.100	<0.19
	12/06/2018	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<0.100	<0.20
	04/09/2019	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<0.100	<0.20
	06/26/2019	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<0.100	<0.20
MW-3	05/16/2013	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	NS	NS
	03/28/2014	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	NS	NS
	04/22/2015	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	NS	NS
	03/17/2016	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	NS	NS
	03/09/2017	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	NS	NS
	03/16/2018	11.4	<2.0	<2.0	<4.0	<2.0	6.6	NS	NS
	03/29/2018	12.3	<2.0	<2.0	<4.0	<2.0	6.9	NS	NS
	06/26/2018	<2.0	<2.0	<2.0	<4.0	<2.0	2.9	<0.100	<0.19
	09/27/2018	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<0.100	<0.19
	12/06/2018	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<0.100	<0.22
	04/09/2019	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<0.100	<0.22
	06/26/2019	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<0.100	<0.20
IP-1	06/26/2018	5.8	28.1	<2.0	40.0	<2.0	18.1	0.261	0.80
	09/27/2018	<2.0	<2.0	<2.0	6.4	<2.0	2.3	0.249	0.50
TDO	12/06/2018	<2.0	<2.0	<2.0	6.4	<2.0	<2.0	<0.100	0.78
IP-2	06/26/2018	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<0.100	3.16
	09/27/2018	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<0.100	2.19
TD 2	12/06/2018	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<0.100	0.61
17-3	00/20/2018	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<0.100	2.69
	12/06/2018	<2.0	<2.0	<2.0	<4.0	<2.U	<2.0	<0.100	1.52
	12/00/2018	<2.0	<2.0	<2.0	<4.U	<2.0	<2.0	<0.100	<0.19
12-4	00/27/2018	50.4	402	10.1	1/0.5	< <u>2.0</u>	20.8	0.9/	0.49
	12/06/2010	0/.U	92.4	13.1	01.0	3.2	<u> 22.1</u>	0.301	0.53
Type Land II	12/00/2018	5.0	0.3	3.3	21.2	< <u>2.0</u>	~2.0	0.15/	0.33
Type I and II	Aquiters	5	1,000	700	10,000	0.05	20	0.047	0.047

BTEX, MTBE, and naphthalene results in parts per billion or ug/I

TPH DRO/GRO results in parts per million or mg/l

<5.0 = Analyte was not detected above the laboratory limit of quantitation (limit of quantitation shown)

B = Benzene; T = Toluene; E = Ethylbenzene; X = Xylene

MTBE = Methyl tert butyl ether

TPH DRO = total petroleum hydrocarbons diesel range organics

TPH GRO = total petroleum hydrocarbons gasoline range organics

Bold indicates concentrations above MDE Standards

Some compounds may have been detected but are not tabulated on this spreadsheet.

See laboratory analytical results reports for full results.

MDE Standards (Generic Numeric Cleanup Standards for Groundwater and Soil - Interim Final Guidance Update No. 2.1 - June 2008)

Attachment C



1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com VELAP ID 460040

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Analytical Results

Project: PIPER'S WINE & SPIRITS

Project Manager: Jeffery Stein

Project Number: 14-059

Sérvices

02/08/19 11:09 Reported:

Date Received 06/26/19 13:34 06/26/19 13:34 06/26/19 13:34

Date Sampled 06/26/19 11:45 06/26/19 11:50 06/26/19 11:55

> Nonpotable Water Nonpotable Water Nonpotable Water

Matrix

Laboratory ID 9062609-01 9062609-02 9062609-03

Alternate Sample ID

Client Sample ID MW-1 MW-2 MW-3

helad

Analytical Chemistry Services

Maryland

pechal

08 July 2019

8610 Baltimore Washington Blvd, Suite 217 Advantage Environmental Consultants RE: PIPER'S WINE & SPIRITS Jessup, MD 20794 Jeffery Stein

Enclosed are the results of analyses for samples received by the laboratory on 06/26/19 13:34.

at the end of this report. Please visit our website at www.mdspectral.com for a complete listing of our TNI 2009 Standard accreditations. performed at Maryland Spectral Services included in this report are 2009 TNI certified except as indicated Maryland Spectral Services, Inc. is a TNI 2009 Standard accredited laboratory and as such, all analyses

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

MUN Ber

Will Brewington President

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.

WW Burge

All analyses performed at Maryland Spectral Services included in the report are TNI certified except as indicated at the end of the report Will Brewington, President



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Maryland	spectral	Services
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Analytical Results

Project: PIPER'S WINE & SPIRITS Project Number: 14-059 Project Manager: Jeffery Stein

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com 02/08/19 11:09 Reported:

9062609-01 (Nonpotable Water) Sample Date: 06/26/19

I-WM

Quantitation

Reporting

Analyte	Result	Notes Units	Limit (MRL)	Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA M	ETHOD 8	8260B (GC/MS)						
Acetone	QN	ng/L	10.0	10.0	-	61/80/20	07/08/19 00:28	GM
tert-Amyl alcohol (TAA)	ND	ug/L	20.0	20.0	-	07/08/19	07/08/19 00:28	GM
tert-Amyl methyl ether (TAME)	ΟN	ug/L	5.0	2.0	-	61/80/20	07/08/19 00:28	GM
Benzene	QN	ug/L	5.0	2.0	-	61/80/20	07/08/19 00:28	GM
Bromobenzene	ΟN	1/gu	5.0	2.0	1	07/08/19	07/08/19 00:28	GM
Bromochloromethane	ND	1/gu	5.0	2.0	-	07/08/19	07/08/19 00:28	GM
Bromodichloromethane	ND	1/gu	5.0	2.0	-	07/08/19	07/08/19 00:28	GM
Bromoform	ΟN	1/gu	5.0	2.0	г	61/80/20	07/08/19 00:28	GM
Bromomethane	ΟN	1/gu	5.0	5.0	1	07/08/19	07/08/19 00:28	GM
tert-Butanol (TBA)	ΟN	ng/L	15.0	15.0	-	61/80/20	07/08/19 00:28	GM
2-Butanone (MEK)	ND	J/gu	10.0	10.0	1	61/80/20	07/08/19 00:28	GM
n-Butylbenzene	ΟN	ug/L	5.0	2.0	-	61/80/20	07/08/19 00:28	GM
sec-Butylbenzene	QN	ng/L	5.0	2.0	-	61/80/20	07/08/19 00:28	GM
tert-Butylbenzene	QN	ng/L	5.0	2.0	-	61/80/20	07/08/19 00:28	GM
Carbon disulfide	ΟN	ug/L	5.0	2.0	-	61/80/20	07/08/19 00:28	GM
Carbon tetrachloride	ND	ug/L	5.0	2.0	-	61/80/20	07/08/19 00:28	GM
Chlorobenzene	ND	ng/L	5.0	2.0	-	61/80/20	07/08/19 00:28	GM
Chloroethane	QN	ng/L	5.0	5.0	-	61/80/20	07/08/19 00:28	GM
Chloroform	QN	ug/L	5.0	2.0	-	61/80/20	07/08/19 00:28	GM
Chloromethane	ΟN	ug/L	5.0	5.0	-	61/80/20	07/08/19 00:28	GM
2-Chlorotoluene	ŊŊ	ug/L	5.0	2.0	-	61/80/20	07/08/19 00:28	GM
4-Chlorotoluene	QN	ug/L	5.0	2.0	-	61/80/20	07/08/19 00:28	GM
Dibromochloromethane	QN	ug/L	5.0	2.0	-	61/80/20	07/08/19 00:28	GM
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	2.0	-	61/80/20	07/08/19 00:28	GM
1,2-Dibromoethane (EDB)	ND	ug/L	5.0	2.0	-	61/80/20	07/08/19 00:28	GM
Dibromomethane	ND	ug/L	5.0	2.0	-	61/80/20	07/08/19 00:28	GM
1,2-Dichlorobenzene	QN	ug/L	5.0	2.0	-	61/80/20	07/08/19 00:28	GM
1,3-Dichlorobenzene	ND	ug/L	5.0	2.0	-	61/80/20	07/08/19 00:28	GM
1,4-Dichlorobenzene	ND	ng/L	5.0	2.0	-	61/80/20	07/08/19 00:28	GM
Dichlorodifluoromethane	ND	ug/L	5.0	2.0	-	61/80/20	07/08/19 00:28	GM
1,1-Dichloroethane	ΟN	ng/L	5.0	2.0	1	61/80/20	07/08/19 00:28	GΜ
1,2-Dichloroethane	ΟN	ng/L	5.0	2.0	1	61/80/20	07/08/19 00:28	GΜ
1,1-Dichloroethene	ΩN	T/gu	5.0	2.0	-	07/08/19	07/08/19 00:28	GM

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All analyses performed at Maryland Spectral Services included in the report are TNI certified except as indicated at the end of the report

Will Brewington, President

WWW Blengle

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Will Burk

Will Brewington, President

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Page 4 of 13

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Analytical Results

Analytical Chemistry Services

Maryland

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02/08/19 11:09

Project: PIPER'S WINE & SPIRITS

Project Number: 14-059 Project Manager: Jeffery Stein

Sérvices

9062609-01 (Nonpotable Water) Sample Date: 06/26/19

MW-1

Analyst

Analyzed

Prepared

Dilution

Quantitation Limit (LOQ)

Reporting Limit (MRL)

Units

Notes Result

Analyte

GM GM GM

VOLATILE ORGANICS BY EPA M	IETHOD 8260B	(GC/MS) (conti	ned)				
cis-1,2-Dichloroethene	ND	ug/L	5.0	2.0	1	07/08/19	07/08/19 00:28
trans-1,2-Dichloroethene	ND	1/gu	5.0	2.0	-	07/08/19	07/08/19 00:28
Dichlorofluoromethane	ND	J/gu	5.0	2.0	-	07/08/19	07/08/19 00:28
1,2-Dichloropropane	ŊŊ	J/gu	5.0	2.0	-	07/08/19	07/08/19 00:28
1,3-Dichloropropane	QN	1/gu	5.0	2.0	-	07/08/19	07/08/19 00:28
2,2-Dichloropropane	ND	1/gu	5.0	2.0	-	07/08/19	07/08/19 00:28
1,1-Dichloropropene	ND	J/gu	5.0	2.0	-	07/08/19	07/08/19 00:28
cis-1,3-Dichloropropene	ND	J/gu	5.0	2.0	-	07/08/19	07/08/19 00:28
trans-1,3-Dichloropropene	QN	1/gu	5.0	2.0	-	07/08/19	07/08/19 00:28
Diisopropyl ether (DIPE)	ND	1/gu	5.0	2.0	-	07/08/19	07/08/19 00:28
Ethyl tert-butyl ether (ETBE)	ND	ug/L	5.0	2.0	-	07/08/19	07/08/19 00:28
Ethylbenzene	QN	J/gu	5.0	2.0	-	07/08/19	07/08/19 00:28
Hexachlorobutadiene	QN	1/gu	5.0	2.0	-	07/08/19	07/08/19 00:28
2-Hexanone	QN	1/gu	10.0	10.0	-	07/08/19	07/08/19 00:28
Isopropylbenzene (Cumene)	ŊŊ	ng/L	5.0	2.0	-	07/08/19	07/08/19 00:28
4-Isopropyltoluene	ND	J/gu	5.0	2.0	-	07/08/19	07/08/19 00:28
Methyl tert-butyl ether (MTBE)	ND	J/gu	5.0	2.0	-	07/08/19	07/08/19 00:28
4-Methyl-2-pentanone	ŊŊ	1/gu	10.0	10.0	-	07/08/19	07/08/19 00:28
Methylene chloride	ND	1/gu	10.0	10.0	-	07/08/19	07/08/19 00:28
Naphthalene	ND	1/gu	5.0	2.0	-	07/08/19	07/08/19 00:28
n-Propylbenzene	ND	J/gu	5.0	2.0	-	07/08/19	07/08/19 00:28
Styrene	QN	1/gu	5.0	2.0	-	07/08/19	07/08/19 00:28
1,1,1,2-Tetrachloroethane	QN	1/gu	5.0	2.0	-	07/08/19	07/08/19 00:28
1,1,2,2-Tetrachloroethane	ŊŊ	1/gu	5.0	2.0	-	07/08/19	07/08/19 00:28
Tetrachloroethene	ND	J/gu	5.0	2.0	-	07/08/19	07/08/19 00:28
Toluene	ND	J/gu	5.0	2.0	-	07/08/19	07/08/19 00:28
1,2,3-Trichlorobenzene	ŊŊ	1/Bn	5.0	2.0	-	07/08/19	07/08/19 00:28
1,2,4-Trichlorobenzene	ND	1/gu	5.0	2.0	-	07/08/19	07/08/19 00:28
1,1,1.1Trichloroethane	ND	1/gu	5.0	2.0	-	07/08/19	07/08/19 00:28
1,1,2-Trichloroethane	ND	J/gu	5.0	2.0	-	07/08/19	07/08/19 00:28
Trichloroethene	ND	1/gn	5.0	2.0	-	07/08/19	07/08/19 00:28
Trichlorofluoromethane (Freon 11)	QN	J/gu	5.0	2.0	-	07/08/19	07/08/19 00:28
1,2,3-Trichloropropane	ŊŊ	ng/L	5.0	2.0	-	07/08/19	07/08/19 00:28

Maryland	spectral	Services
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Analytical Results

Project: PIPER'S WINE & SPIRITS Project Number: 14-059 Project Manager: Jeffery Stein

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duov)	e Date:
10-609790	Sample
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				Reporting	Quantitation				
Analyte	Result	Notes	Units	Limit (MRL)	Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA MI	ETHOD	8260B (G	C/MS) (co	ntinued)					
1,2,4-Trimethylbenzene	QN		ng/L	5.0	2.0	1	61/08/10	07/08/19 00:28	GM
1,3,5-Trimethylbenzene	QN		ng/L	5.0	2.0	-	61/80/20	07/08/19 00:28	GM
Vinyl chloride	QN		1/gu	5.0	2.0	-	61/80/20	07/08/19 00:28	GM
o-Xylene	QN		1/gu	5.0	2.0	г	61/80/20	07/08/19 00:28	GM
m- & p-Xylenes	QN		ng/L	5.0	2.0	-	61/80/20	07/08/19 00:28	GM
Surrogate: 1,2-Dichloroethane-d4		75.	-120	% 101	01/08/10		07/08/19 00:28		
Surrogate: Toluene-d8		75	-120	% 001	07/08/19		07/08/19 00:28		
Surrogate: 4-Bromofluorobenzene		78	-110	100 %	07/08/19		07/08/19 00:28		
GASOLINE RANGE ORGANICS BY	Y EPA 8	015C							
Gasoline-Range Organics	ND		1/gu	100	100	1	06/27/19	06/27/19 17:05	GM
DIESEL RANGE ORGANICS BY EI	PA 3510/	8015C							
Diesel-Range Organics	ND		mg/L	0.20	0.20	1	06/27/19	07/01/19 16:19	SJA
Surrogate: o-Terphenyl		60	-120	% 011	06/27/19		61:91 61/10/20		

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Maryland spectral Services

Analytical Results

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Reported: 07/08/19 11:09

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Analytical Chemistry Services 📑

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Project: PIPER'S WINE & SPIRITS Project Number: 14-059 Project Manager: Jeffery Stein

MW-2

9062609-02 (Nonpotable Water) Sample Date: 06/26/19

			Gunnadari					
Analyte	Result Notes	Units	Limit (MRL)	Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA	METHOD 8260B ((GC/MS)						
Acetone	ŊŊ	ng/L	10.0	10.0	-	07/08/19	07/08/19 00:51	GM
tert-Amyl alcohol (TAA)	ND	ng/L	20.0	20.0	-	07/08/19	07/08/19 00:51	GM
tert-Amyl methyl ether (TAME)	ND	ng/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
Benzene	QN	ng/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
Bromohenzene	ND	ng/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
Bromochloromethane	ND	ng/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
Bromodichloromethane	ND	ng/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
Bromoform	QN	ng/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
Bromomethane	QN	ng/L	5.0	5.0	-	07/08/19	07/08/19 00:51	GM
tert-Butanol (TBA)	ND	ng/L	15.0	15.0	Т	07/08/19	07/08/19 00:51	GM
2-Butanone (MEK)	ND	J/gu	10.0	10.0	1	07/08/19	07/08/19 00:51	GM
n-Butylbenzene	ND	J/gu	5.0	2.0	1	07/08/19	07/08/19 00:51	GM
sec-Butylbenzene	QN	ng/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
tert-Butylbenzene	QN	ng/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
Carbon disulfide	ND	ng/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
Carbon tetrachloride	ND	1/gn	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
Chlorobenzene	ND	ng/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
Chloroethane	QN	ng/L	5.0	5.0	-	07/08/19	07/08/19 00:51	GM
Chloroform	ND	ng/L	5.0	2.0	1	07/08/19	07/08/19 00:51	GM
Chloromethane	ND	ng/L	5.0	5.0	-	07/08/19	07/08/19 00:51	GM
2-Chlorotoluene	ŊŊ	ng/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
4-Chlorotoluene	QN	ng/L	5.0	2.0	1	07/08/19	07/08/19 00:51	GM
Dibromochloromethane	QN	ng/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
1,2-Dibromo-3-chloropropane	ND	ng/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
1,2-Dibromoethane (EDB)	ND	1/gn	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
Dibromonethane	ND	ng/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
1,2-Dichlorobenzene	ND	ng/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
1,3-Dichlorobenzene	ND	ng/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
1,4-Dichlorobenzene	ND	ng/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
Dichlorodifluoromethane	ND	ng/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
1,1-Dichloroethane	ŊŊ	ng/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
1,2-Dichloroethane	ŊŊ	ng/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
1,1-Dichloroethene	ND	J/gn	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
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Analytical Results

Project: PIPER'S WINE & SPIRITS Project Number: 14-059 Project Manager: Jeffery Stein

02/08/19 11:09 Reported:

MW-2

9062609-02 (Nonpotable Water) Sample Date: 06/26/19

			Reporting	Quantitation				
Analyte	Result Notes	Units	Limit (MRL)	Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA ME	CTHOD 8260B (C	GC/MS) (co	ntinued)					
cis-1,2-Dichloroethene	ND	ng/L	5.0	2.0	1	61/80/20	07/08/19 00:51	GM
trans-1,2-Dichloroethene	ND	ng/L	5.0	2.0	-	61/80/20	07/08/19 00:51	GM
Dichlorofluoromethane	ND	ug/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
1,2-Dichloropropane	ND	ng/L	5.0	2.0	г	07/08/19	07/08/19 00:51	GM
1,3-Dichloropropane	ND	ng/L	5.0	2.0	I	61/80/20	07/08/19 00:51	GM
2,2-Dichloropropane	ND	ng/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
1,1-Dichloropropene	ND	ng/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
cis-1,3-Dichloropropene	ND	ng/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
trans-1,3-Dichloropropene	ND	ng/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
Diisopropyl ether (DIPE)	ND	ng/L	5.0	2.0	1	61/80/20	07/08/19 00:51	GM
Ethyl tert-butyl ether (ETBE)	ND	ng/L	5.0	2.0	-	61/80/20	07/08/19 00:51	GM
Ethylbenzene	ND	ug/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
Hexachlorobutadiene	ND	ng/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
2-Hexanone	ΟN	ng/L	10.0	10.0	г	07/08/19	07/08/19 00:51	GM
Isopropylbenzene (Cumene)	ŊŊ	ng/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
4-Isopropyltoluene	ND	J/gu	5.0	2.0	1	07/08/19	07/08/19 00:51	GM
Methyl tert-butyl ether (MTBE)	ND	1/gu	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
4-Methyl-2-pentanone	ND	ng/L	10.0	10.0	1	61/80/20	07/08/19 00:51	GM
Methylene chloride	ND	ng/L	10.0	10.0	-	61/80/20	07/08/19 00:51	GM
Naphthalene	ND	ng/L	5.0	2.0	-	61/80/20	07/08/19 00:51	GM
n-Propylbenzene	ND	ng/L	5.0	2.0	1	61/80/20	07/08/19 00:51	GM
Styrene	ND	ng/L	5.0	2.0	I	61/80/20	07/08/19 00:51	GM
1,1,1,2-Tetrachloroethane	ŊŊ	ng/L	5.0	2.0	I	61/80/20	07/08/19 00:51	GM
1,1,2,2-Tetrachloroethane	ND	ng/L	5.0	2.0	-	61/80/20	07/08/19 00:51	GM
Tetrachloroethene	ND	ng/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
Toluene	ND	ug/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
1,2,3-Trichlorobenzene	ND	ng/L	5.0	2.0	г	07/08/19	07/08/19 00:51	GM
1,2,4-Trichlorobenzene	ND	ng/L	5.0	2.0	-	61/80/20	07/08/19 00:51	GM
1,1,1-Trichloroethane	ND	1/gu	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
1,1,2-Trichloroethane	ND	1/gu	5.0	2.0	1	07/08/19	07/08/19 00:51	GM
Trichloroethene	ND	ng/L	5.0	2.0	I	61/80/20	07/08/19 00:51	GM
Trichlorofluoromethane (Freon 11)	ND	ng/L	5.0	2.0	1	07/08/19	07/08/19 00:51	GM
1,2,3-Trichloropropane	ΩN	1/gu	5.0	2.0	-	61/80/20	07/08/19 00:51	GM

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Analytical Chemistry Services

Maryland

Analytical Results

Project: PIPER'S WINE & SPIRITS

Project Number: 14-059 Project Manager: Jeffery Stein

Sérvices

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

spectral

MW-2

9062609-02 (Nonpotable Water) Sample Date: 06/26/19

				Reporting	Quantitation				
Analyte	Result	Notes	Units	Limit (MRL)	Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA MI	ETHOD	8260B (C	GC/MS) (ed	ontinued)					
1,2,4-Trimethylbenzene	QN		ng/L	5.0	2.0	-	07/08/19	15:00 61/80/20	GM
1,3,5-Trimethylbenzene	QN		ug/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
Vinyl chloride	QN		ug/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
o-Xylene	QN		ng/L	5.0	2.0	-	07/08/19	07/08/19 00:51	GM
m- & p-Xylenes	QZ		ng/L	5.0	2.0	-	07/08/19	15:00 61/80/20	GM
Surrogate: 1,2-Dichloroethane-d4		75	-120	102 %	01/08/10		07/08/19 00:51		
Surrogate: Toluene-d8		75	-120	% 66	07/08/19		07/08/19 00:51		
Surrogate: 4-Bromofluorobenzene		78	-110	100 %	07/08/19		07/08/19 00:51		
GASOLINE RANGE ORGANICS B	Y EPA 8	015C							
Gasoline-Range Organics	QN		ng/L	100	100	-	06/27/19	06/27/19 17:42	GM
DIESEL RANGE ORGANICS BY EI	PA 3510	(8015C							
Diesel-Range Organics	ND		mg/L	0.19	0.19	1	06/27/19	07/01/19 16:47	SJA
Surrogate: o-Terphenyl		99	-120	113 %	09/22/10		07/01/19 16:47		

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Analytical Results

Project: PIPER'S WINE & SPIRITS Project Number: 14-059 Project Manager: Jeffery Stein

02/08/19 11:09 Reported:

MW-3

9062609-03 (Nonpotable Water) Sample Date: 06/26/19

Quantitation

Reporting

Analyte	Result	Notes UI	nits I	imit (MRL)	Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA MI	THOD	8260B (GC/I	(IS)						
Acetone	ŊŊ	ŝ'n	J.	10.0	10.0	-	61/80/20	07/08/19 01:14	GM
tert-Amyl alcohol (TAA)	ND	ŝn	μ	20.0	20.0	1	07/08/19	07/08/19 01:14	GM
tert-Amyl methyl ether (TAME)	ND	ŝn	γL	5.0	2.0	-	07/08/19	07/08/19 01:14	GM
Benzene	ŊŊ	ŝn	۱L	5.0	2.0	-	07/08/19	07/08/19 01:14	GM
Bromobenzene	ND	ŝ'n	ýL	5.0	2.0	-	07/08/19	07/08/19 01:14	GM
Bromochloromethane	ND	'n	γL	5.0	2.0	-	07/08/19	07/08/19 01:14	GM
Bromodichloromethane	ND	'n	γL	5.0	2.0	-	07/08/19	07/08/19 01:14	GM
Bromoform	QN	ŝ'n	¢۲	5.0	2.0	-	07/08/19	07/08/19 01:14	GM
Bromomethane	ŊŊ	ŝn	γL	5.0	5.0	1	07/08/19	07/08/19 01:14	GM
tert-Butanol (TBA)	ŊŊ	ŝ'n	j.L	15.0	15.0	-	61/80/20	07/08/19 01:14	GM
2-Butanone (MEK)	ND	ŝn	μ	10.0	10.0	1	07/08/19	07/08/19 01:14	GM
n-Butylbenzene	ŊŊ	ŝ'n	γL	5.0	2.0	-	07/08/19	07/08/19 01:14	GM
sec-Butylbenzene	ŊŊ	ŝn	J.	5.0	2.0	-	07/08/19	07/08/19 01:14	GM
tert-Butylbenzene	QN	ŝ'n	¢۲	5.0	2.0	-	61/80/20	07/08/19 01:14	GM
Carbon disulfide	ND	ŝ'n	٥L	5.0	2.0	-	07/08/19	07/08/19 01:14	GM
Carbon tetrachloride	ND	ŝn	٩L	5.0	2.0	-	07/08/19	07/08/19 01:14	GM
Chlorobenzene	ND	ŝ'n	J.	5.0	2.0	-	07/08/19	07/08/19 01:14	GM
Chloroethane	ŊŊ	ŝ'n	J.	5.0	5.0	-	07/08/19	07/08/19 01:14	GM
Chloroform	ŊŊ	ŝ'n	¢۲	5.0	2.0	-	61/80/20	07/08/19 01:14	GM
Chloromethane	ND	ŝ'n	٥L	5.0	5.0	-	07/08/19	07/08/19 01:14	GM
2-Chlorotoluene	ND	ŝn	۱L	5.0	2.0	-	07/08/19	07/08/19 01:14	GM
4-Chlorotoluene	QN	ŝ'n	J.	5.0	2.0	-	07/08/19	07/08/19 01:14	GM
Dibromochloromethane	QN	ŝn	JL	5.0	2.0	1	61/80/20	07/08/19 01:14	Ш
1,2-Dibromo-3-chloropropane	ND	ŝn	٩L	5.0	2.0	-	07/08/19	07/08/19 01:14	GM
1,2-Dibromoethane (EDB)	ND	ŝ'n	٨L	5.0	2.0	-	07/08/19	07/08/19 01:14	GM
Dibromonethane	ND	ŝn	٦L	5.0	2.0	-	07/08/19	07/08/19 01:14	GM
1,2-Dichlorobenzene	QN	ŝ'n	¢۲	5.0	2.0	-	61/80/20	07/08/19 01:14	GM
1,3-Dichlorobenzene	ND	ŝ'n	¢۲	5.0	2.0	1	61/80/L0	07/08/19 01:14	GM
1,4-Dichlorobenzene	ND	'n	γL	5.0	2.0	-	07/08/19	07/08/19 01:14	GM
Dichlorodifluoromethane	ND	ŝn	رال ا	5.0	2.0	1	07/08/19	07/08/19 01:14	GM
1,1-Dichloroethane	QN	ŝn	μ	5.0	2.0	-	07/08/19	07/08/19 01:14	GM
1,2-Dichloroethane	QN	ŝ'n	γL	5.0	2.0	-	07/08/19	07/08/19 01:14	GM
1,1-Dichloroethene	QN	ŝn	JL	5.0	2.0	1	07/08/19	07/08/19 01:14	GM

All analyses performed at Maryland Spectral Services included in the report are TNI certified except as indicated at the end of the report. Will Brewington, President

MW Burgh

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Will Brewington, President

WW Burge

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Page 9 of 13

Page 10 of 13

02/08/19 11:09

Analyst GM GM GM GM

Analyzed

Dilution Prepared

Quantitation Limit (LOQ)

Reporting Limit (MRL)

Units

Notes Result

Analyte

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Analytical Results

Project: PIPER'S WINE & SPIRITS

Project Number: 14-059 Project Manager: Jeffery Stein

Sérvices

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

Reported:

helao

Analytical Chemistry Services 📃

Maryland

upechal

MW-3

9062609-03 (Nonpotable Water) Sample Date: 06/26/19

1ETHOD 8260E	3 (GC/MS) (con	tinued)				
ΟN	ug/L	5.0	2.0	1	07/08/19	07/08/19 01:14
ND	ug/L	5.0	2.0	-	07/08/19	07/08/19 01:14
ND	ug/L	5.0	2.0	-	07/08/19	07/08/19 01:14
ŊŊ	ng/L	5.0	2.0	-	07/08/19	07/08/19 01:14
QN	ng/L	5.0	2.0	-	07/08/19	07/08/19 01:14
ND	ug/L	5.0	2.0	-	07/08/19	07/08/19 01:14
ND	ug/L	5.0	2.0	-	07/08/19	07/08/19 01:14
ND	ug/L	5.0	2.0	-	07/08/19	07/08/19 01:14
QN	ug/L	5.0	2.0	-	07/08/19	07/08/19 01:14
ŊŊ	ug/L	5.0	2.0	-	07/08/19	07/08/19 01:14
ND	ug/L	5.0	2.0	-	07/08/19	07/08/19 01:14
ŊŊ	ug/L	5.0	2.0	-	07/08/19	07/08/19 01:14
QN	ug/L	5.0	2.0	-	07/08/19	07/08/19 01:14
QN	ug/L	10.0	10.0	-	07/08/19	07/08/19 01:14
ŊŊ	ug/L	5.0	2.0	-	07/08/19	07/08/19 01:14
ND	ug/L	5.0	2.0	-	07/08/19	07/08/19 01:14
ND	ug/L	5.0	2.0	-	07/08/19	07/08/19 01:14
ŊŊ	ug/L	10.0	10.0	-	07/08/19	07/08/19 01:14
ND	ug/L	10.0	10.0	-	07/08/19	07/08/19 01:14
ND	ug/L	5.0	2.0	-	07/08/19	07/08/19 01:14
ND	ng/L	5.0	2.0	-	07/08/19	07/08/19 01:14
QN	ug/L	5.0	2.0	-	07/08/19	07/08/19 01:14
QN	ug/L	5.0	2.0	-	07/08/19	07/08/19 01:14
ΩN	ug/L	5.0	2.0	-	07/08/19	07/08/19 01:14
ND	ug/L	5.0	2.0	-	07/08/19	07/08/19 01:14
ND	ug/L	5.0	2.0	-	07/08/19	07/08/19 01:14
ŊŊ	ug/L	5.0	2.0	-	07/08/19	07/08/19 01:14
ND	ug/L	5.0	2.0	-	07/08/19	07/08/19 01:14
ND	ug/L	5.0	2.0	-	07/08/19	07/08/19 01:14
ND	ug/L	5.0	2.0	-	07/08/19	07/08/19 01:14
QN	ng/L	5.0	2.0	-	07/08/19	07/08/19 01:14
QN	ug/L	5.0	2.0	-	07/08/19	07/08/19 01:14
QN	ug/L	5.0	2.0	-	61/80/20	07/08/19 01:14
		ID ND 8008 (CC/NS) (CONS) (CONS) (CONS) ND WE ND WE	IND CCANSA Continued) ND wgr 5.0 ND </td <td>Intromagnetic construction 20 ND $welt$ 5.0 2.0 ND $welt$ 5.0<!--</td--><td>IE ITHOL REGNES (CONTINUED) IE ITHOL REGNES (CONTINUED) ND ugt 5.0 2.0 1 ND ugt 5.0 2.0 1 <td>IE THOD 32008 (CC/MS) (continued) 0708/19 ND upl 5.0 2.0 1 0708/19 ND upl</td></td></td>	Intromagnetic construction 20 ND $welt$ 5.0 2.0 ND $welt$ 5.0 </td <td>IE ITHOL REGNES (CONTINUED) IE ITHOL REGNES (CONTINUED) ND ugt 5.0 2.0 1 ND ugt 5.0 2.0 1 <td>IE THOD 32008 (CC/MS) (continued) 0708/19 ND upl 5.0 2.0 1 0708/19 ND upl</td></td>	IE ITHOL REGNES (CONTINUED) IE ITHOL REGNES (CONTINUED) ND ugt 5.0 2.0 1 ND ugt 5.0 2.0 1 <td>IE THOD 32008 (CC/MS) (continued) 0708/19 ND upl 5.0 2.0 1 0708/19 ND upl</td>	IE THOD 32008 (CC/MS) (continued) 0708/19 ND upl 5.0 2.0 1 0708/19 ND upl

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Analytical Results Services

Project: PIPER'S WINE & SPIRITS

Project Number: 14-059 Project Manager: Jeffery Stein

MW-3

9062609-03 (Nonpotable Water) Sample Date: 06/26/19

				Reporting	Quantitation				
Analyte	Result	Notes	Units	Limit (MRL)	Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA M	ETHOD	8260B (G	C/MS) (co	ntinued)					
1,2,4-Trimethylbenzene	QN		ng/L	5.0	2.0	1	61/80/20	07/08/19 01:14	GM
1,3,5-Trimethylbenzene	QN		ng/L	5.0	2.0	1	07/08/19	07/08/19 01:14	GM
Vinyl chloride	QN		1/gu	5.0	2.0	1	07/08/19	07/08/19 01:14	GM
o-Xylene	QN		1/gu	5.0	2.0	г	07/08/19	07/08/19 01:14	GM
m- & p-Xylenes	QN		ng/L	5.0	2.0	-	61/80/20	07/08/19 01:14	GM
Surrogate: 1,2-Dichloroethane-d4		75.	-120	102 %	07/08/19		07/08/19 01:14		
Surrogate: Toluene-d8		75.	-120	% 66	07/08/19		07/08/19 01:14		
Surrogate: 4-Bromofluorobenzene		78	-110	% 66	07/08/19		07/08/19 01 I4		
GASOLINE RANGE ORGANICS B	Y EPA 8	015C							
Gasoline-Range Organics	ΟN		ng/L	100	100	1	06/27/19	06/27/19 18:19	GM
DIESEL RANGE ORGANICS BY E	PA 3510	8015C							
Diesel-Range Organics	ND		mg/L	0.21	0.21	1	06/27/19	07/01/19 17:14	SJA
Surrogate: o-Terphenyl		60	-120	112 %	06/27/19		<i>\$17.14</i>		





Analytical Results

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com

02/08/19 11:09 Reported:

helao

Analytical Chemistry Services

Project: PIPER'S WINE & SPIRITS

Project Number: 14-059 Project Manager: Jeffery Stein

02/08/19 11:09 Reported:

Notes and Definitions

- Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag). ŗ
- Analyte DETECTED DET
- Analyte NOT DETECTED at or above the reporting limit QN
 - Not Reported ЯK
- Sample results reported on a dry weight basis dry
- Relative Percent Difference RPD

%-Solids

Percent Solids is a supportive test and as such does not require accreditation



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Page 12 of 13

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Page 11 of 13 All analyses performed at Maryland Spectral Services included in the report are TNI certified except as indicated at the end of the report.

Will Brewington, President

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Services spectral

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com MD DW LabID 153

Analytical Chemistry Services

Maryland

Reported: 07/02/19 14:54

06/26/19 13:34 Date Received

Drinking Water Matrix

Laboratory ID 9062612-01

Alternate Sample ID

Client Sample ID ΡW

Project: PIPER'S WINE & SPIRITS

Project Number: 14-059 Project Manager: Jeffery Stein

Date Sampled 06/26/19 09:15

02 July 2019

8610 Baltimore Washington Blvd, Suite 217 Advantage Environmental Consultants RE: PIPER'S WINE & SPIRITS Jessup, MD 20794 Jeffery Stein

Enclosed are the results of analyses for samples received by the laboratory on 06/26/19 13:34.

Please visit our website at www.mdspectral.com for a complete listing of our accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

MUM

Will Brewington President

Page 1 of 7

Milli Buiste Will Brewington, President

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Page 2 of 7

Vlaryland	spectral	Services
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Reported: 07/02/19 14:54

9062612-01 (Drinking Water) Sample Date: 06/26/19

ΡW

Project: PIPER'S WINE & SPIRITS

Project Number: 14-059 Project Manager: Jeffery Stein

			Reporting	Quantitation				
Analyte	Result Notes	Units	Limit (MRL)	Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA M	IETHOD 524.2 ((CC/MS)						
tert-Amyl alcohol (TAA)	ND	1/gu	10.0	10.0	-	06/27/19	06/27/19 14:46	WB
tert-Amyl methyl ether (TAME)	ND	J/gu	0.50	0.50	-	06/27/19	06/27/19 14:46	WB
Benzene	ND	1/gu	0.50	0.50	1	06/27/19	06/27/19 14:46	WB
Bromobenzene	ŊŊ	ng/L	0.50	0.50	1	06/27/19	06/27/19 14:46	WB
Bromochloromethane	ND	ng/L	0.50	0.50	1	06/27/19	06/27/19 14:46	WB
Bromodichloromethane	ND	1/gn	0.50	0.50	1	06/27/19	06/27/19 14:46	WB
Bromoform	ND	1/gu	0.50	0.50	1	06/27/19	06/27/19 14:46	WB
Bromomethane	ND	1/gu	0.50	0.50	1	06/27/19	06/27/19 14:46	WB
tert-Butanol (TBA)	ND	ng/L	10.0	10.0	1	06/27/19	06/27/19 14:46	WB
n-Butylbenzene	ND	T/gu	0.50	0.50	1	06/27/19	06/27/19 14:46	WB
sec-Butylbenzene	ND	1/gu	0.50	0.50	-	06/27/19	06/27/19 14:46	WB
tert-Butylbenzene	ŊŊ	1/gu	0.50	0.50	1	06/27/19	06/27/19 14:46	WB
Carbon tetrachloride	ŊŊ	ng/L	0.50	0.50	-	06/27/19	06/27/19 14:46	WB
Chlorobenzene	ND	1/gn	0.50	0.50	1	06/27/19	06/27/19 14:46	WB
Chloroethane	ND	ng/L	0.50	0.50	-	06/27/19	06/27/19 14:46	WB
Chloroform	ND	J/gu	0.50	0.50	-	06/27/19	06/27/19 14:46	WB
Chloromethane	ND	ng/L	0.50	0.50	-	06/27/19	06/27/19 14:46	WB
2-Chlorotoluene	ND	ng/L	0.50	0.50	-	06/27/19	06/27/19 14:46	WB
4-Chlorotoluene	ND	ng/L	0.50	0.50	-	06/27/19	06/27/19 14:46	WB
Dibromochloromethane	ND	1/gu	0.50	0.50	1	06/27/19	06/27/19 14:46	WB
1,2-Dibromo-3-chloropropane	QN	J/gu	0.50	0.50	-	06/27/19	06/27/19 14:46	WB
1,2-Dibromoethane (EDB)	ŊŊ	J/gu	0.50	0.50	1	06/27/19	06/27/19 14:46	WB
Dibromomethane	ND	ng/L	0.50	0.50	-	06/27/19	06/27/19 14:46	WB
1,2-Dichlorobenzene	ND	T/gu	0.50	0.50	1	06/27/19	06/27/19 14:46	WB
1,3-Dichlorobenzene	ND	ng/L	0.50	0.50	-	06/27/19	06/27/19 14:46	WB
1,4-Dichlorobenzene	ŊŊ	ng/L	0.50	0.50	1	06/27/19	06/27/19 14:46	WB
Dichlorodifluoromethane	ND	ng/L	0.50	0.50	1	06/27/19	06/27/19 14:46	WB
1,1-Dichloroethane	ND	ng/L	0.50	0.50	-	06/27/19	06/27/19 14:46	WB
1,2-Dichloroethane	ND	ng/L	0.50	0.50	-	06/27/19	06/27/19 14:46	WB
1,1-Dichloroethene	ŊŊ	ng/L	0.50	0.50	-	06/27/19	06/27/19 14:46	WB
cis-1,2-Dichloroethene	ND	ng/L	0.50	0.50	-	06/27/19	06/27/19 14:46	WB
trans-1-2-Dichloroethene	CIN	ue/L	0.50	0.50	-	06/27/19	06/27/19 14:46	WB

Will Brewington, President

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Page 3 of 7

Analytical Chemistry Services

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Reported: 07/02/19 14:54

Maryland Services spectral

Project: PIPER'S WINE & SPIRITS

Project Number: 14-059 Project Manager: Jeffery Stein

9062612-01 (Drinking Water) Sample Date: 06/26/19

ΡW

			Reporting	Quantitation					
Analyte	Result Note	s Units	Limit (MRL)	Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst	
VOLATILE ORGANICS BY EPA	METHOD 524.	2 (GC/MS) (c	ontinued)						
1,2-Dichloropropane	ND	1/gu	0.50	0.50	1	06/27/19	06/27/19 14:46	WB	
1,3-Dichloropropane	ΩN	1/gu	0.50	0.50	-	06/27/19	06/27/19 14:46	WB	
2,2-Dichloropropane	QN	1/gu	0.50	0.50	-	06/27/19	06/27/19 14:46	WB	
1,1-Dichloropropene	QN	ng/L	0.50	0.50	1	06/27/19	06/27/19 14:46	WB	
cis-1,3-Dichloropropene	ND	1/gn	0.50	0.50	1	06/27/19	06/27/19 14:46	WB	
rans-1,3-Dichloropropene	ΩN	1/gu	0.50	0.50	-	06/27/19	06/27/19 14:46	WB	
Diisopropyl ether (DIPE)	ΩN	1/gu	0.50	0.50	-	06/27/19	06/27/19 14:46	WB	
Sthyl tert-butyl ether (ETBE)	QN	1/gu	0.50	0.50	П	06/27/19	06/27/19 14:46	WB	
Bthylbenzene	ΩN	1/gu	0.50	0.50	1	06/27/19	06/27/19 14:46	WB	
Hexachlorobutadiene	ND	J/gu	0.50	0.50	1	06/27/19	06/27/19 14:46	WB	
sopropylbenzene (Cumene)	ND	1/gu	0.50	0.50	1	06/27/19	06/27/19 14:46	WB	
4-Isopropyltoluene	QN	ng/L	0.50	0.50	1	06/27/19	06/27/19 14:46	WB	
Methyl tert-butyl ether (MTBE)	QN	J/gu	0.50	0.50	-	06/27/19	06/27/19 14:46	WB	
Methylene chloride	QN	J/gu	1.00	1.00	1	06/27/19	06/27/19 14:46	WB	
Vaphthalene	ND	1/gu	0.50	0.50	1	06/27/19	06/27/19 14:46	WB	
-Propylbenzene	ΩN	1/gu	0.50	0.50	-	06/27/19	06/27/19 14:46	WB	
Styrene	QN	1/gu	0.50	0.50	-	06/27/19	06/27/19 14:46	WB	
1,1,1,2-Tetrachloroethane	ND	1/gu	0.50	0.50	1	06/27/19	06/27/19 14:46	WB	
1,1,2,2-Tetrachloroethane	ŊŊ	1/gu	0.50	0.50	-	06/27/19	06/27/19 14:46	WB	
Tetrachloroethene	ND	1/gn	0.50	0.50	1	06/27/19	06/27/19 14:46	WB	
Toluene	QN	1/gu	0.50	0.50	-	06/27/19	06/27/19 14:46	WB	
1,2,3-Trichlorobenzene	QN	1/gu	0.50	0.50	г	06/27/19	06/27/19 14:46	WB	
1,2,4-Trichlorobenzene	QN	1/gu	0.50	0.50	-	06/27/19	06/27/19 14:46	WB	
1,1,1-Trichloroethane	ΩN	1/gu	0.50	0.50	-	06/27/19	06/27/19 14:46	WB	
1,1,2-Trichloroethane	ΩN	1/gu	0.50	0.50	-	06/27/19	06/27/19 14:46	WB	
[richloroethene	QN	1/gu	0.50	0.50	г	06/27/19	06/27/19 14:46	WB	
Frichlorofluoromethane (Freon 11)	ŊŊ	1/gu	0.50	0.50	-	06/27/19	06/27/19 14:46	WB	
1,2,3-Trichloropropane	ΩN	1/gn	0.50	0.50	г	06/27/19	06/27/19 14:46	WB	
1,2,4-Trimethylbenzene	ŊŊ	1/gu	0.50	0.50	-	06/27/19	06/27/19 14:46	WB	
1,3,5-Trimethylbenzene	ŊŊ	1/gu	0.50	0.50	г	06/27/19	06/27/19 14:46	WB	
Vinyl chloride	QN	1/gu	0.50	0.50	г	06/27/19	06/27/19 14:46	WB	
o-Xylene	QN	ng/L	0.50	0.50	1	06/27/19	06/27/19 14:46	WB	

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Project: PIPER'S WINE & SPIRITS

Project Number: 14-059 Project Manager: Jeffery Stein

Analytical Chemistry Services

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com MD DW LabID 153

Reported: 07/02/19 14:54

ΡW

9062612-01 (Drinking Water) Sample Date: 06/26/19

				Reporting	Quantitation				
Analyte	Result	Notes	Units	Limit (MRL)	Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA M	ETHOD	524.2 (G	C/MS) (con	(tinued)					
m- & p-Xylenes	ND		ug/L	0.50	0.50	1	06/27/19	06/27/19 14:46	WB
Surrogate: 4-Bromofluorobenzene		8(7-120	104 %	06/27/19		06/27/19 14:46		
Surrogate: 1,2-Dichlorobenzene-d4		8(7-120	104 %	06/27/19	~	06/27/19 14:46		

Maryland spectral Services

Project: PIPER'S WINE & SPIRITS

1500 Caton Center Dr Suite G Baltimore MD 21227 410-247-7600 www.mdspectral.com MD DW LabID 153

Analytical Chemistry Services

Reported: 07/02/19 14:54

Project Number: 14-059 Project Manager: Jeffery Stein

Notes and Definitions

Analyte DETECTED

DET

- Analyte NOT DETECTED at or above the reporting limit Ð
- Not Reported NR
- Sample results reported on a dry weight basis Relative Percent Difference RPD dry
- Percent Solids is a supportive test and as such does not require accreditation %-Solids

Williteright Will Brewington, President

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.

Mill Burghes Will Brewington, President

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.

Page 5 of 7

Page 6 of 7

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Attachment D

Water Sampler Certification	ADE
ANDREW CLARK sampler id 0883AC HAS BEEN APPROVED FOR COLLECTION OF DRINKING WATER SAMPLES REQUIRED UNDER THE SAFE DRINKING WATER ACT	ASBEEN APPROVED FOR COLLECTION OF DRINKING WATER SAMPLES REQUIRED UNDER THE SAFE DRINKING WATER ACT AND STATE REGULATIONS 1805-14-670 5/6/2018
certification number expiration date	eruncation number expiration date
	La
Maryland Department of the Environment Water Sampler Certification	Maryland Department of the Environment Water Sampler Certification
BRIAN TAETZSCH sampler id 6403BT HAS BEEN APPROVED FOR COLLECTION OF DRINKING WATER SAMPLES REQUIRED UNDER THE SAFE DRINKING WATER ACT	ROHAN MCLAUGHEIN sampler id 5315RM HAS BEEN APPROVED FOR COLLECTION OF DRINKING WATER SAMPLES REQUIRED UNDER THE SAFE DRINKING WATER ACT
2006-02-020 6/26/2020 certification number expiration date	certification number
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Maryland Department of the Environment Water Sampler Certification	Maryland Department of the Environment Water Sampler Certification
Christopher Ortolani sampler id 2685CO HAS BEEN APPROVED FOR COLLECTION OF DRINKING WATER SAMPLES REQUIRED UNDER THE SAFE DRINKING WATER ACT 2003-17-703 certification number cxpiration date	SIDHARTH GANESAN sampler id 9138SG HAS BEEN APPROVED FOR COLLECTION OF DRINKING WATER SAMPLES REQUIRED UNDER THE SAFE DRINKING WATER ACT 2006-02-982 certification number
Maryland Department of the Environment Water Sampler Certification	Maryland Department of the Environment Water Sampler Certification
COLLEEN MCMULLEN sampler id 8929CM HAS BEEN APPROVED FOR COLLECTION OF DRINKING WATER SAMPLES REQUIRED UNDER THE SAFE DRINKING WATER ACT 2005-00-879 6/6/2020	STEPHEN DESSEL Bampler id 7845SD HAS BEEN APPROVED FOR COLLECTION-OF DRINKING WATER SAMPLES REQUIRED UNDER THE SAFE DRINKING WATER ACT
certification number expiration date	certification number cxpiration date
Maryland Department of the Environment Water Sampler Certification	Maryland Department of the Environment Water Sampler Certification
WATER SAMPLES REQUIRED UNDER THE SAFE	CHARLIE KILER sampler id 7961CK
2009-02-234 9/26/2020 certification number	HARLER APPROVED FOR COLLECTION OF DRINKING
certification number expiration date	WATER SAMPLES REGULED ONDER THE DATE DRINKING WATER ACT 2111-00-301
	certification number explication date