Gannett Fleming

Excellence Delivered As Promised

June 12, 2019
File #55929.005

Ms. Hai Xia Shan
5535 Wild Rose Lane
Eau Claire, WI 54701

Re: Laboratory Results for Water Samples Collected from PW-16 in May 2019

Dear Ms. Shan:

On May 22, 2019, Gannett Fleming, Inc. collected a water sample from your home at 5535 Wild Rose Lane. The sample was collected as a follow-up to the water samples collected from your home in September and October 2014; June 2015; and May 2016, 2017, and 2018; and August 2018 in conjunction with on-going groundwater monitoring and remedial activities associated with the WRR Environmental Services facility on Ryder Road. The monitoring and remedial activities at the WRR site are being conducted under the oversight of the Wisconsin Department of Natural Resources (WDNR).

Our designation for your water sample is PW-16. The water sample collected from your home in May was sent to ALS Environmental Laboratory in Holland, Michigan, for analysis of 65 individual volatile organic compounds (VOCs). Only one VOC was detected in the sample: chloroform at 7.8 micrograms per liter (µg/ℓ), which is equivalent to 7.8 parts per billion (ppb). Chloroform is a byproduct of the chlorination of wells and drinking water. The state enforcement water standard for chloroform is 6 ppb, and the state and federal drinking water standard for a group of chemicals chloroform is part of is 100 ppb in chlorinated municipal drinking water supplies. Chloroform was also detected at 0.67 ppb in the trip blank that accompanied the May 2019 sample. The trip blank is prepared in the laboratory using laboratory-grade distilled water and accompanies the sample containers from the lab when they are shipped to the field and then again when the filled sample containers are shipped back to the lab. Chloroform was not measured above the state preventative action limit of 0.6 ppb in any of the groundwater samples collected in May 2019 from off-site monitoring wells located between WRR and your well, so we do not believe the chloroform detected in your well is associated with WRR.

Enclosed is a copy of the laboratory report for the water sample collected from your home (PW-16) in May 2019. A copy of this letter and the lab report are being sent to the WDNR for its records. We thank you for your cooperation. Someone from Gannett Fleming will contact you

Gannett Fleming, Inc.
8040 Excelsior Drive, Ste 303, Madison, WI 53717-1338
t 608.836.1500 • f 608.831.3337
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next spring to schedule a time for us to collect the next sample that's convenient for you. In the meantime, if you have any questions regarding the analytical results of the sample collected in May 2019 please contact Tony Miller at 800-899-337 ext. 6716 or myself at the number listed below.

Sincerely,

GANNETT FLEMING, INC.

Chelsea Payne

Chelsea Payne
Environmental Scientist
cpayne@gfnet.com
Ph: 800-899-3337 ext. 6718

CJP/jec/Enc.

cc: Mae Willkom, Doug Coenen (WDNR)

Ms. Hai Xia Shan
5535 Wild Rose Lane
June 12, 2019

ebcc: Jim Hager, Bob Fuller, & Becky Anderson

05-Jun-2019

Anthony Miller
Gannett Fleming, Inc.
8025 Excelsior Dr.
Madison, WI 53717-1900

Re: **WRR (55929.005)** Work Order: **19051721**

Dear Anthony,

ALS Environmental received 2 samples on 24-May-2019 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 18.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Ehrland Bosworth

Electronically approved by: Ehrland Bosworth

Ehrland Bosworth
Project Manager

Report of Laboratory Analysis

Certificate No: WI: 399084510

ALS Group, USA

Date: 05-Jun-19

Client: Gannett Fleming, Inc.
Project: WRR (55929.005)
Work Order: **19051721**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
19051721-01	PW-16	Water		5/22/2019 18:10	5/24/2019 09:30	☐
19051721-02	Trip Blank	Water		5/22/2019	5/24/2019 09:30	☐

ALS Group, USA

Date: 05-Jun-19

Client: Gannett Fleming, Inc.
Project: WRR (55929.005)
WorkOrder: **19051721**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
µg/L	Micrograms per Liter

ALS Group, USA

Date: 05-Jun-19

Client: Gannett Fleming, Inc.
Project: WRR (55929.005)
Work Order: 19051721

Case Narrative

Samples for the above noted Work Order were received on 05/24/19. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, sample condition, preservation, and temperature compliance.
In order to ensure compliance with NR 149 criteria, please note the following report format:
(1) The Limit of Detection (LOD) is reported as the MDL (Method Detection Limit)
(2) The Limit of Quantitation (LOQ) is reported as the PQL (Practical Quantitation Limit)
(3) All reported concentrations, including those for the LOD and LOQ, are adjusted for any required dilutions
(4) All reported concentrations, including those for the LOD and LOQ, are adjusted for moisture content when samples are reported on a dry weight basis.

Samples were analyzed according to the analytical methodology previously documented in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Detail as to the associated samples can be found at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, acronyms, and units utilized in reporting.

With the following exceptions, all sample analyses achieved analytical criteria.

Volatile Organics:
Batch R261663a, Method WI_VOC_8260_W, Sample VLCSW3-190530: The VOC LCS recovery was above the upper control limit. All the sample results in the batch were non-detect. No qualification is necessary for Bromomethane.

Batch R261787b, Method WI_VOC_8260_W, Sample 19051721-01A: The VOC Continuing Calibration Verification did not meet method acceptance criteria for the following analytes, results are to be considered estimated for Dichlorodifluoromethane.

Batch R261787b, Method WI_VOC_8260_W, Sample 19051721-02A: The VOC Continuing Calibration Verification did not meet method acceptance criteria for the following analytes, results are to be considered estimated for Dichlorodifluoromethane.

ALS Group, USA

Date: *05-Jun-19*

Client: Gannett Fleming, Inc.
Project: WRR (55929.005)
Sample ID: PW-16
Collection Date: 5/22/2019 06:10 PM

Work Order: 19051721
Lab ID: 19051721-01
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS		Method: **SW8260C**					Analyst: **WH**
1,1,1,2-Tetrachloroethane	U		0.38	1.3	µg/L	1	5/31/2019 09:32
1,1,1-Trichloroethane	U		0.46	1.5	µg/L	1	5/31/2019 09:32
1,1,2,2-Tetrachloroethane	U		0.40	1.3	µg/L	1	5/31/2019 09:32
1,1,2-Trichloroethane	U		0.46	1.5	µg/L	1	5/31/2019 09:32
1,1-Dichloroethane	U		0.44	1.5	µg/L	1	5/31/2019 09:32
1,1-Dichloroethene	U		0.40	1.4	µg/L	1	5/31/2019 09:32
1,1-Dichloropropene	U		0.37	1.2	µg/L	1	5/31/2019 09:32
1,2,3-Trichlorobenzene	U		0.42	1.4	µg/L	1	5/31/2019 09:32
1,2,3-Trichloropropane	U		0.40	1.3	µg/L	1	5/31/2019 09:32
1,2,4-Trichlorobenzene	U		0.45	1.5	µg/L	1	5/31/2019 09:32
1,2,4-Trimethylbenzene	U		0.45	1.5	µg/L	1	5/31/2019 09:32
1,2-Dibromo-3-chloropropane	U		0.43	1.4	µg/L	1	5/31/2019 09:32
1,2-Dibromoethane	U		0.41	1.4	µg/L	1	5/31/2019 09:32
1,2-Dichlorobenzene	U		0.32	1.1	µg/L	1	5/31/2019 09:32
1,2-Dichloroethane	U		0.44	1.4	µg/L	1	5/31/2019 09:32
1,2-Dichloropropane	U		0.48	1.6	µg/L	1	5/31/2019 09:32
1,3,5-Trimethylbenzene	U		0.65	2.2	µg/L	1	5/31/2019 09:32
1,3-Dichlorobenzene	U		0.33	1.1	µg/L	1	5/31/2019 09:32
1,3-Dichloropropane	U		0.40	1.3	µg/L	1	5/31/2019 09:32
1,4-Dichlorobenzene	U		0.35	1.2	µg/L	1	5/31/2019 09:32
2,2-Dichloropropane	U		0.52	1.7	µg/L	1	5/31/2019 09:32
2-Butanone	U		0.52	1.7	µg/L	1	5/31/2019 09:32
2-Chlorotoluene	U		0.36	1.2	µg/L	1	5/31/2019 09:32
2-Propanol	U		50	110	µg/L	1	5/31/2019 09:32
4-Chlorotoluene	U		0.31	1.0	µg/L	1	5/31/2019 09:32
4-Methyl-2-pentanone	U		0.52	1.7	µg/L	1	5/31/2019 09:32
Acetone	U		2.6	3.6	µg/L	1	5/31/2019 09:32
Benzene	U		0.46	1.5	µg/L	1	5/31/2019 09:32
Bromobenzene	U		0.38	1.3	µg/L	1	5/31/2019 09:32
Bromochloromethane	U		0.45	1.5	µg/L	1	5/31/2019 09:32
Bromodichloromethane	U		0.49	1.6	µg/L	1	5/31/2019 09:32
Bromoform	U		0.56	1.9	µg/L	1	5/31/2019 09:32
Bromomethane	U		0.90	3.0	µg/L	1	5/31/2019 09:32
Carbon tetrachloride	U		0.40	1.4	µg/L	1	5/31/2019 09:32
Chlorobenzene	U		0.40	1.3	µg/L	1	5/31/2019 09:32
Chloroethane	U		0.68	2.3	µg/L	1	5/31/2019 09:32
Chloroform	**7.8**		**0.46**	**1.5**	**µg/L**	1	5/31/2019 09:32
Chloromethane	U		0.83	2.8	µg/L	1	5/31/2019 09:32

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Gannett Fleming, Inc.
Project: WRR (55929.005)
Sample ID: PW-16
Collection Date: 5/22/2019 06:10 PM

Work Order: 19051721
Lab ID: 19051721-01
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
cis-1,2-Dichloroethene	U		0.42	1.4	µg/L	1	5/31/2019 09:32
cis-1,3-Dichloropropene	U		0.57	1.9	µg/L	1	5/31/2019 09:32
Dibromochloromethane	U		0.40	1.3	µg/L	1	5/31/2019 09:32
Dibromomethane	U		0.65	2.2	µg/L	1	5/31/2019 09:32
Dichlorodifluoromethane	U		0.68	2.3	µg/L	1	5/31/2019 09:32
Diisopropyl ether	U		0.41	1.4	µg/L	1	5/31/2019 09:32
Ethylbenzene	U		0.34	1.1	µg/L	1	5/31/2019 09:32
Hexachlorobutadiene	U		0.56	1.9	µg/L	1	5/31/2019 09:32
Isopropylbenzene	U		0.35	1.2	µg/L	1	5/31/2019 09:32
m,p-Xylene	U		0.81	2.7	µg/L	1	5/31/2019 09:32
Methyl tert-butyl ether	U		0.45	1.5	µg/L	1	5/31/2019 09:32
Methylene chloride	U		0.86	2.9	µg/L	1	5/31/2019 09:32
Naphthalene	U		0.77	2.6	µg/L	1	5/31/2019 09:32
n-Butylbenzene	U		0.34	1.1	µg/L	1	5/31/2019 09:32
n-Propylbenzene	U		0.48	1.6	µg/L	1	5/31/2019 09:32
o-Xylene	U		0.31	1.0	µg/L	1	5/31/2019 09:32
p-Isopropyltoluene	U		0.26	0.88	µg/L	1	5/31/2019 09:32
sec-Butylbenzene	U		0.30	1.0	µg/L	1	5/31/2019 09:32
Styrene	U		0.33	1.1	µg/L	1	5/31/2019 09:32
tert-Butylbenzene	U		0.39	1.3	µg/L	1	5/31/2019 09:32
Tetrachloroethene	U		0.39	1.3	µg/L	1	5/31/2019 09:32
Toluene	U		0.45	1.5	µg/L	1	5/31/2019 09:32
trans-1,2-Dichloroethene	U		0.48	1.6	µg/L	1	5/31/2019 09:32
trans-1,3-Dichloropropene	U		0.38	2.7	µg/L	1	5/31/2019 09:32
Trichloroethene	U		0.43	1.4	µg/L	1	5/31/2019 09:32
Trichlorofluoromethane	U		0.52	1.7	µg/L	1	5/31/2019 09:32
Vinyl chloride	U		0.53	1.8	µg/L	1	5/31/2019 09:32
Xylenes, Total	U		0.81	4.4	µg/L	1	5/31/2019 09:32
Surr: 1,2-Dichloroethane-d4	*103*			*75-120*	*%REC*	1	5/31/2019 09:32
Surr: 4-Bromofluorobenzene	*96.8*			*80-110*	*%REC*	1	5/31/2019 09:32
Surr: Dibromofluoromethane	*101*			*85-115*	*%REC*	1	5/31/2019 09:32
Surr: Toluene-d8	*102*			*85-110*	*%REC*	1	5/31/2019 09:32

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *05-Jun-19*

Client: Gannett Fleming, Inc.
Project: WRR (55929.005)
Sample ID: Trip Blank
Collection Date: 5/22/2019

Work Order: 19051721
Lab ID: 19051721-02
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS		Method: **SW8260C**					Analyst: **WH**
1,1,1,2-Tetrachloroethane	U		0.38	1.3	µg/L	1	5/31/2019 07:20
1,1,1-Trichloroethane	U		0.46	1.5	µg/L	1	5/31/2019 07:20
1,1,2,2-Tetrachloroethane	U		0.40	1.3	µg/L	1	5/31/2019 07:20
1,1,2-Trichloroethane	U		0.46	1.5	µg/L	1	5/31/2019 07:20
1,1-Dichloroethane	U		0.44	1.5	µg/L	1	5/31/2019 07:20
1,1-Dichloroethene	U		0.40	1.4	µg/L	1	5/31/2019 07:20
1,1-Dichloropropene	U		0.37	1.2	µg/L	1	5/31/2019 07:20
1,2,3-Trichlorobenzene	U		0.42	1.4	µg/L	1	5/31/2019 07:20
1,2,3-Trichloropropane	U		0.40	1.3	µg/L	1	5/31/2019 07:20
1,2,4-Trichlorobenzene	U		0.45	1.5	µg/L	1	5/31/2019 07:20
1,2,4-Trimethylbenzene	U		0.45	1.5	µg/L	1	5/31/2019 07:20
1,2-Dibromo-3-chloropropane	U		0.43	1.4	µg/L	1	5/31/2019 07:20
1,2-Dibromoethane	U		0.41	1.4	µg/L	1	5/31/2019 07:20
1,2-Dichlorobenzene	U		0.32	1.1	µg/L	1	5/31/2019 07:20
1,2-Dichloroethane	U		0.44	1.4	µg/L	1	5/31/2019 07:20
1,2-Dichloropropane	U		0.48	1.6	µg/L	1	5/31/2019 07:20
1,3,5-Trimethylbenzene	U		0.65	2.2	µg/L	1	5/31/2019 07:20
1,3-Dichlorobenzene	U		0.33	1.1	µg/L	1	5/31/2019 07:20
1,3-Dichloropropane	U		0.40	1.3	µg/L	1	5/31/2019 07:20
1,4-Dichlorobenzene	U		0.35	1.2	µg/L	1	5/31/2019 07:20
2,2-Dichloropropane	U		0.52	1.7	µg/L	1	5/31/2019 07:20
2-Butanone	U		0.52	1.7	µg/L	1	5/31/2019 07:20
2-Chlorotoluene	U		0.36	1.2	µg/L	1	5/31/2019 07:20
2-Propanol	U		50	110	µg/L	1	5/31/2019 07:20
4-Chlorotoluene	U		0.31	1.0	µg/L	1	5/31/2019 07:20
4-Methyl-2-pentanone	U		0.52	1.7	µg/L	1	5/31/2019 07:20
Acetone	U		2.6	3.6	µg/L	1	5/31/2019 07:20
Benzene	U		0.46	1.5	µg/L	1	5/31/2019 07:20
Bromobenzene	U		0.38	1.3	µg/L	1	5/31/2019 07:20
Bromochloromethane	U		0.45	1.5	µg/L	1	5/31/2019 07:20
Bromodichloromethane	U		0.49	1.6	µg/L	1	5/31/2019 07:20
Bromoform	U		0.56	1.9	µg/L	1	5/31/2019 07:20
Bromomethane	U		0.90	3.0	µg/L	1	5/31/2019 07:20
Carbon tetrachloride	U		0.40	1.4	µg/L	1	5/31/2019 07:20
Chlorobenzene	U		0.40	1.3	µg/L	1	5/31/2019 07:20
Chloroethane	U		0.68	2.3	µg/L	1	5/31/2019 07:20
Chloroform	**0.67**	J	**0.46**	**1.5**	**µg/L**	1	5/31/2019 07:20
Chloromethane	U		0.83	2.8	µg/L	1	5/31/2019 07:20

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *05-Jun-19*

Client: Gannett Fleming, Inc.
Project: WRR (55929.005)
Sample ID: Trip Blank
Collection Date: 5/22/2019

Work Order: 19051721
Lab ID: 19051721-02
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
cis-1,2-Dichloroethene	U		0.42	1.4	µg/L	1	5/31/2019 07:20
cis-1,3-Dichloropropene	U		0.57	1.9	µg/L	1	5/31/2019 07:20
Dibromochloromethane	U		0.40	1.3	µg/L	1	5/31/2019 07:20
Dibromomethane	U		0.65	2.2	µg/L	1	5/31/2019 07:20
Dichlorodifluoromethane	U		0.68	2.3	µg/L	1	5/31/2019 07:20
Diisopropyl ether	U		0.41	1.4	µg/L	1	5/31/2019 07:20
Ethylbenzene	U		0.34	1.1	µg/L	1	5/31/2019 07:20
Hexachlorobutadiene	U		0.56	1.9	µg/L	1	5/31/2019 07:20
Isopropylbenzene	U		0.35	1.2	µg/L	1	5/31/2019 07:20
m,p-Xylene	U		0.81	2.7	µg/L	1	5/31/2019 07:20
Methyl tert-butyl ether	U		0.45	1.5	µg/L	1	5/31/2019 07:20
Methylene chloride	U		0.86	2.9	µg/L	1	5/31/2019 07:20
Naphthalene	U		0.77	2.6	µg/L	1	5/31/2019 07:20
n-Butylbenzene	U		0.34	1.1	µg/L	1	5/31/2019 07:20
n-Propylbenzene	U		0.48	1.6	µg/L	1	5/31/2019 07:20
o-Xylene	U		0.31	1.0	µg/L	1	5/31/2019 07:20
p-Isopropyltoluene	U		0.26	0.88	µg/L	1	5/31/2019 07:20
sec-Butylbenzene	U		0.30	1.0	µg/L	1	5/31/2019 07:20
Styrene	U		0.33	1.1	µg/L	1	5/31/2019 07:20
tert-Butylbenzene	U		0.39	1.3	µg/L	1	5/31/2019 07:20
Tetrachloroethene	U		0.39	1.3	µg/L	1	5/31/2019 07:20
Toluene	U		0.45	1.5	µg/L	1	5/31/2019 07:20
trans-1,2-Dichloroethene	U		0.48	1.6	µg/L	1	5/31/2019 07:20
trans-1,3-Dichloropropene	U		0.38	2.7	µg/L	1	5/31/2019 07:20
Trichloroethene	U		0.43	1.4	µg/L	1	5/31/2019 07:20
Trichlorofluoromethane	U		0.52	1.7	µg/L	1	5/31/2019 07:20
Vinyl chloride	U		0.53	1.8	µg/L	1	5/31/2019 07:20
Xylenes, Total	U		0.81	4.4	µg/L	1	5/31/2019 07:20
Surr: 1,2-Dichloroethane-d4	*98.6*			*75-120*	*%REC*	1	5/31/2019 07:20
Surr: 4-Bromofluorobenzene	*94.8*			*80-110*	*%REC*	1	5/31/2019 07:20
Surr: Dibromofluoromethane	*99.2*			*85-115*	*%REC*	1	5/31/2019 07:20
Surr: Toluene-d8	*98.0*			*85-110*	*%REC*	1	5/31/2019 07:20

Note: See Qualifiers page for a list of qualifiers and their definitions.

QC BATCH REPORT

Batch ID: **R261663a** Instrument ID **VMS8** Method: **SW8260C**

MBLK Sample ID: **VBLKW5-190530-R261663a** Units: **µg/L** Analysis Date: **5/31/2019 06:15 AM**

Client ID: Run ID: **VMS8_190530B** SeqNo: **5688285** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	U	0.38	1.3								
1,1,1-Trichloroethane	U	0.46	1.5								
1,1,2,2-Tetrachloroethane	U	0.4	1.3								
1,1,2-Trichloroethane	U	0.46	1.5								
1,1-Dichloroethane	U	0.44	1.5								
1,1-Dichloroethene	U	0.4	1.4								
1,1-Dichloropropene	U	0.37	1.2								
1,2,3-Trichlorobenzene	U	0.42	1.4								
1,2,3-Trichloropropane	U	0.4	1.3								
1,2,4-Trichlorobenzene	U	0.45	1.5								
1,2,4-Trimethylbenzene	U	0.45	1.5								
1,2-Dibromo-3-chloropropane	U	0.43	1.4								
1,2-Dibromoethane	U	0.41	1.4								
1,2-Dichlorobenzene	U	0.32	1.1								
1,2-Dichloroethane	U	0.44	1.4								
1,2-Dichloropropane	U	0.48	1.6								
1,3,5-Trimethylbenzene	U	0.65	2.2								
1,3-Dichlorobenzene	U	0.33	1.1								
1,3-Dichloropropane	U	0.4	1.3								
1,4-Dichlorobenzene	U	0.35	1.2								
2,2-Dichloropropane	U	0.52	1.7								
2-Butanone	U	0.52	1.7								
2-Chlorotoluene	U	0.36	1.2								
2-Propanol	U	33	110								
4-Chlorotoluene	U	0.31	1.0								
4-Methyl-2-pentanone	U	0.52	1.7								
Acetone	U	1.1	3.6								
Benzene	U	0.46	1.5								
Bromobenzene	U	0.38	1.3								
Bromochloromethane	U	0.45	1.5								
Bromodichloromethane	U	0.49	1.6								
Bromoform	U	0.56	1.9								
Bromomethane	U	0.9	3.0								
Carbon tetrachloride	U	0.4	1.4								
Chlorobenzene	U	0.4	1.3								
Chloroethane	U	0.68	2.3								
Chloroform	U	0.46	1.5								
Chloromethane	U	0.83	2.8								
cis-1,2-Dichloroethene	U	0.42	1.4								
cis-1,3-Dichloropropene	U	0.57	1.9								
Dibromochloromethane	U	0.4	1.3								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Batch ID: **R261663a** Instrument ID **VMS8** Method: **SW8260C**

Dibromomethane	U	0.65	2.2					
Dichlorodifluoromethane	U	0.68	2.3					
Diisopropyl ether	U	0.41	1.4					
Ethylbenzene	U	0.34	1.1					
Hexachlorobutadiene	U	0.56	1.9					
Isopropylbenzene	U	0.35	1.2					
m,p-Xylene	U	0.81	2.7					
Methyl tert-butyl ether	U	0.45	1.5					
Methylene chloride	U	0.86	2.9					
Naphthalene	U	0.77	2.6					
n-Butylbenzene	U	0.34	1.1					
n-Propylbenzene	U	0.48	1.6					
o-Xylene	U	0.31	1.0					
p-Isopropyltoluene	U	0.26	0.88					
sec-Butylbenzene	U	0.3	1.0					
Styrene	U	0.33	1.1					
tert-Butylbenzene	U	0.39	1.3					
Tetrachloroethene	U	0.39	1.3					
Toluene	U	0.45	1.5					
trans-1,2-Dichloroethene	U	0.48	1.6					
trans-1,3-Dichloropropene	U	0.38	2.7					
Trichloroethene	U	0.43	1.4					
Trichlorofluoromethane	U	0.52	1.7					
Vinyl chloride	U	0.53	1.8					
Xylenes, Total	U	0.81	4.4					
Surr: 1,2-Dichloroethane-d4	*18.81*	0	0	*20*	0	*94*	*75-120*	0
Surr: 4-Bromofluorobenzene	*18.56*	0	0	*20*	0	*92.8*	*80-110*	0
Surr: Dibromofluoromethane	*19.56*	0	0	*20*	0	*97.8*	*85-115*	0
Surr: Toluene-d8	*20.09*	0	0	*20*	0	*100*	*85-110*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Gannett Fleming, Inc.
Work Order: 19051721
Project: WRR (55929.005)

QC BATCH REPORT

Batch ID: **R261663a** Instrument ID **VMS8** Method: **SW8260C**

LCS Sample ID: **VLCSW3-190530-R261663a** Units: **µg/L** Analysis Date: **5/31/2019 05:42 AM**
Client ID: Run ID: **VMS8_190530B** SeqNo: **5688284** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.95	0.38	1.3	20	0	105	73-114	0			
1,1,1-Trichloroethane	21.52	0.46	1.5	20	0	108	75-130	0			
1,1,2,2-Tetrachloroethane	23.16	0.4	1.3	20	0	116	75-130	0			
1,1,2-Trichloroethane	22.1	0.46	1.5	20	0	110	75-125	0			
1,1-Dichloroethane	21.38	0.44	1.5	20	0	107	75-133	0			
1,1-Dichloroethene	21.75	0.4	1.4	20	0	109	70-145	0			
1,1-Dichloropropene	19.9	0.37	1.2	20	0	99.5	75-135	0			
1,2,3-Trichlorobenzene	21.39	0.42	1.4	20	0	107	70-140	0			
1,2,3-Trichloropropane	21.5	0.4	1.3	20	0	108	75-125	0			
1,2,4-Trichlorobenzene	21.58	0.45	1.5	20	0	108	70-135	0			
1,2,4-Trimethylbenzene	22.66	0.45	1.5	20	0	113	75-130	0			
1,2-Dibromo-3-chloropropane	21.47	0.43	1.4	20	0	107	60-130	0			
1,2-Dibromoethane	24.59	0.41	1.4	20	0	123	90-195	0			
1,2-Dichlorobenzene	22.35	0.32	1.1	20	0	112	70-130	0			
1,2-Dichloroethane	21.59	0.44	1.4	20	0	108	78-125	0			
1,2-Dichloropropane	21	0.48	1.6	20	0	105	75-125	0			
1,3,5-Trimethylbenzene	23.36	0.65	2.2	20	0	117	75-130	0			
1,3-Dichlorobenzene	22.12	0.33	1.1	20	0	111	75-130	0			
1,3-Dichloropropane	20.88	0.4	1.3	20	0	104	75-125	0			
1,4-Dichlorobenzene	22.12	0.35	1.2	20	0	111	75-130	0			
2,2-Dichloropropane	16.52	0.52	1.7	20	0	82.6	43-150	0			
2-Butanone	24.1	0.52	1.7	20	0	120	55-150	0			
2-Chlorotoluene	22.06	0.36	1.2	20	0	110	76-117	0			
4-Chlorotoluene	22.16	0.31	1.0	20	0	111	80-125	0			
4-Methyl-2-pentanone	32.21	0.52	1.7	20	0	161	77-178	0			
Acetone	24.02	1.1	3.6	20	0	120	60-160	0			
Benzene	21.01	0.46	1.5	20	0	105	85-125	0			
Bromobenzene	21.04	0.38	1.3	20	0	105	80-125	0			
Bromochloromethane	22.9	0.45	1.5	20	0	114	72-141	0			
Bromodichloromethane	20.41	0.49	1.6	20	0	102	75-125	0			
Bromoform	19.7	0.56	1.9	20	0	98.5	60-125	0			
Bromomethane	47.1	0.9	3.0	20	0	236	30-185	0			S
Carbon tetrachloride	18.23	0.4	1.4	20	0	91.2	65-140	0			
Chlorobenzene	21.07	0.4	1.3	20	0	105	80-120	0			
Chloroethane	20.94	0.68	2.3	20	0	105	31-172	0			
Chloroform	20.53	0.46	1.5	20	0	103	80-130	0			
Chloromethane	15.57	0.83	2.8	20	0	77.8	46-148	0			
cis-1,2-Dichloroethene	20.78	0.42	1.4	20	0	104	75-134	0			
cis-1,3-Dichloropropene	19.68	0.57	1.9	20	0	98.4	70-130	0			
Dibromochloromethane	19.37	0.4	1.3	20	0	96.8	60-115	0			
Dibromomethane	21.34	0.65	2.2	20	0	107	79-126	0			
Dichlorodifluoromethane	16.03	0.68	2.3	20	0	80.2	20-120	0			
Ethylbenzene	22.23	0.34	1.1	20	0	111	76-123	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Batch ID: **R261663a** Instrument ID **VMS8** Method: **SW8260C**

Hexachlorobutadiene	21.42	0.56	1.9	20	0	107	70-155	0
Isopropylbenzene	22.97	0.35	1.2	20	0	115	80-127	0
m,p-Xylene	44.52	0.81	2.7	40	0	111	75-130	0
Methyl tert-butyl ether	23.15	0.45	1.5	20	0	116	80-130	0
Methylene chloride	19.34	0.86	2.9	20	0	96.7	72-125	0
Naphthalene	20.29	0.77	2.6	20	0	101	55-160	0
n-Butylbenzene	23.44	0.34	1.1	20	0	117	75-145	0
n-Propylbenzene	20.32	0.48	1.6	20	0	102	83-135	0
o-Xylene	22.93	0.31	1.0	20	0	115	80-125	0
p-Isopropyltoluene	23.75	0.26	0.88	20	0	119	61-164	0
sec-Butylbenzene	23.56	0.3	1.0	20	0	118	80-134	0
Styrene	25.56	0.33	1.1	20	0	128	83-137	0
tert-Butylbenzene	21.21	0.39	1.3	20	0	106	70-130	0
Tetrachloroethene	20.98	0.39	1.3	20	0	105	68-166	0
Toluene	21.98	0.45	1.5	20	0	110	76-125	0
trans-1,2-Dichloroethene	22.39	0.48	1.6	20	0	112	80-140	0
trans-1,3-Dichloropropene	18.93	0.38	2.7	20	0	94.6	56-132	0
Trichloroethene	20.27	0.43	1.4	20	0	101	77-125	0
Trichlorofluoromethane	18.01	0.52	1.7	20	0	90	60-140	0
Vinyl chloride	20.79	0.53	1.8	20	0	104	50-136	0
Xylenes, Total	67.45	0.81	4.4	60	0	112	80-126	0
Surr: 1,2-Dichloroethane-d4	*20.23*	0	0	*20*	0	*101*	*75-120*	0
Surr: 4-Bromofluorobenzene	*20.38*	0	0	*20*	0	*102*	*80-110*	0
Surr: Dibromofluoromethane	*20.69*	0	0	*20*	0	*103*	*85-115*	0
Surr: Toluene-d8	*20.06*	0	0	*20*	0	*100*	*85-110*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Gannett Fleming, Inc.
Work Order: 19051721
Project: WRR (55929.005)

QC BATCH REPORT

Batch ID: **R261663a** Instrument ID **VMS8** Method: **SW8260C**

MS Sample ID: **19051723-03A MS** Units: **µg/L** Analysis Date: **5/31/2019 12:17 PM**
Client ID: Run ID: **VMS8_190530B** SeqNo: **5688306** Prep Date: DF: **20**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	380	7.6	26	400	0	95	73-114	0			
1,1,1-Trichloroethane	410.8	9.2	30	400	0	103	75-130	0			
1,1,2,2-Tetrachloroethane	408.6	8	27	400	0	102	75-130	0			
1,1,2-Trichloroethane	412.4	9.2	31	400	0	103	75-125	0			
1,1-Dichloroethane	402.8	8.8	29	400	0	101	75-133	0			
1,1-Dichloroethene	425.2	8	27	400	0	106	70-145	0			
1,1-Dichloropropene	363.8	7.4	25	400	0	91	75-135	0			
1,2,3-Trichlorobenzene	400.6	8.4	28	400	0	100	70-140	0			
1,2,3-Trichloropropane	363.4	8	26	400	0	90.8	75-125	0			
1,2,4-Trichlorobenzene	381.6	9	30	400	0	95.4	70-135	0			
1,2,4-Trimethylbenzene	386.8	9	30	400	0	96.7	75-130	0			
1,2-Dibromo-3-chloropropane	406.2	8.6	29	400	0	102	60-130	0			
1,2-Dibromoethane	461.8	8.2	27	400	0	115	90-195	0			
1,2-Dichlorobenzene	407.4	6.4	21	400	0	102	70-130	0			
1,2-Dichloroethane	392.4	8.8	29	400	0	98.1	78-125	0			
1,2-Dichloropropane	393	9.6	32	400	0	98.2	75-125	0			
1,3,5-Trimethylbenzene	397.8	13	43	400	0	99.4	75-130	0			
1,3-Dichlorobenzene	407.2	6.6	22	400	0	102	75-130	0			
1,3-Dichloropropane	376.6	8	26	400	0	94.2	75-125	0			
1,4-Dichlorobenzene	405.8	7	23	400	0	101	75-130	0			
2,2-Dichloropropane	253.2	10	34	400	0	63.3	43-150	0			
2-Butanone	438.8	10	35	400	0	110	55-150	0			
2-Chlorotoluene	380.4	7.2	24	400	0	95.1	76-117	0			
4-Chlorotoluene	389.2	6.2	20	400	0	97.3	80-125	0			
4-Methyl-2-pentanone	583.4	10	35	400	0	146	77-178	0			
Acetone	467.8	22	72	400	7.8	115	60-160	0			
Benzene	388.8	9.2	30	400	0	97.2	85-125	0			
Bromobenzene	364.8	7.6	25	400	0	91.2	80-125	0			
Bromochloromethane	484.2	9	30	400	0	121	72-141	0			
Bromodichloromethane	380.4	9.8	33	400	0	95.1	75-125	0			
Bromoform	341.4	11	37	400	0	85.4	60-125	0			
Bromomethane	1606	18	60	400	0	402	30-185	0			S
Carbon tetrachloride	332.8	8	27	400	0	83.2	65-140	0			
Chlorobenzene	394	8	27	400	0	98.5	80-120	0			
Chloroethane	392	14	45	400	0	98	31-172	0			
Chloroform	395.6	9.2	31	400	0	98.9	80-130	0			
Chloromethane	221.8	17	55	400	0	55.4	46-148	0			
cis-1,2-Dichloroethene	389.2	8.4	28	400	7.2	95.5	75-134	0			
cis-1,3-Dichloropropene	362.6	11	38	400	0	90.6	70-130	0			
Dibromochloromethane	347.8	8	26	400	0	87	60-115	0			
Dibromomethane	398.2	13	43	400	0	99.6	79-126	0			
Dichlorodifluoromethane	343.4	14	45	400	0	85.8	20-120	0			
Ethylbenzene	477.8	6.8	22	400	78.8	99.8	76-123	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Batch ID: **R261663a**	Instrument ID **VMS8**			Method: **SW8260C**				
Hexachlorobutadiene	285.6	11	37	400	0	71.4	70-155	0
Isopropylbenzene	412	7	23	400	7	101	80-127	0
m,p-Xylene	928	16	54	800	127.2	100	75-130	0
Methyl tert-butyl ether	437.6	9	30	400	0	109	80-130	0
Methylene chloride	356.8	17	58	400	0	89.2	72-125	0
Naphthalene	372.8	15	51	400	0	93.2	55-160	0
n-Butylbenzene	398.6	6.8	22	400	0	99.6	75-145	0
n-Propylbenzene	347.6	9.6	32	400	0	86.9	83-135	0
o-Xylene	457.8	6.2	21	400	45.2	103	80-125	0
p-Isopropyltoluene	429	5.2	18	400	0	107	61-164	0
sec-Butylbenzene	391	6	20	400	0	97.8	80-134	0
Styrene	462.8	6.6	22	400	0	116	83-137	0
tert-Butylbenzene	370.4	7.8	26	400	0	92.6	70-130	0
Tetrachloroethene	387	7.8	26	400	0	96.8	68-166	0
Toluene	407.8	9	30	400	0	102	76-125	0
trans-1,2-Dichloroethene	429	9.6	32	400	0	107	80-140	0
trans-1,3-Dichloropropene	322.4	7.6	55	400	0	80.6	56-132	0
Trichloroethene	374.2	8.6	29	400	18.2	89	77-125	0
Trichlorofluoromethane	404	10	34	400	0	101	60-140	0
Vinyl chloride	406.2	11	35	400	0	102	50-136	0
Xylenes, Total	1386	16	89	1200	172.4	101	80-126	0
Surr: 1,2-Dichloroethane-d4	*403*	0	0	*400*	0	*101*	*75-120*	0
Surr: 4-Bromofluorobenzene	*377.2*	0	0	*400*	0	*94.3*	*80-110*	0
Surr: Dibromofluoromethane	*411.4*	0	0	*400*	0	*103*	*85-115*	0
Surr: Toluene-d8	*391.8*	0	0	*400*	0	*98*	*85-110*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Gannett Fleming, Inc.
Work Order: 19051721
Project: WRR (55929.005)

QC BATCH REPORT

Batch ID: **R261663a** Instrument ID **VMS8** Method: **SW8260C**

MSD Sample ID: **19051723-03A MSD** Units: **µg/L** Analysis Date: **5/31/2019 12:34 PM**

Client ID: Run ID: **VMS8_190530B** SeqNo: **5688307** Prep Date: DF: **20**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	371.6	7.6	26	400	0	92.9	73-114	380	2.24	30	
1,1,1-Trichloroethane	397.8	9.2	30	400	0	99.4	75-130	410.8	3.22	30	
1,1,2,2-Tetrachloroethane	404.4	8	27	400	0	101	75-130	408.6	1.03	30	
1,1,2-Trichloroethane	412.4	9.2	31	400	0	103	75-125	412.4	0	30	
1,1-Dichloroethane	388.4	8.8	29	400	0	97.1	75-133	402.8	3.64	30	
1,1-Dichloroethene	403.4	8	27	400	0	101	70-145	425.2	5.26	30	
1,1-Dichloropropene	354.8	7.4	25	400	0	88.7	75-135	363.8	2.5	30	
1,2,3-Trichlorobenzene	410.2	8.4	28	400	0	103	70-140	400.6	2.37	30	
1,2,3-Trichloropropane	367.8	8	26	400	0	92	75-125	363.4	1.2	30	
1,2,4-Trichlorobenzene	387.2	9	30	400	0	96.8	70-135	381.6	1.46	30	
1,2,4-Trimethylbenzene	388.2	9	30	400	0	97	75-130	386.8	0.361	30	
1,2-Dibromo-3-chloropropane	402.6	8.6	29	400	0	101	60-130	406.2	0.89	30	
1,2-Dibromoethane	458.2	8.2	27	400	0	115	90-195	461.8	0.783	30	
1,2-Dichlorobenzene	420.2	6.4	21	400	0	105	70-130	407.4	3.09	30	
1,2-Dichloroethane	392.8	8.8	29	400	0	98.2	78-125	392.4	0.102	30	
1,2-Dichloropropane	380.4	9.6	32	400	0	95.1	75-125	393	3.26	30	
1,3,5-Trimethylbenzene	390.6	13	43	400	0	97.6	75-130	397.8	1.83	30	
1,3-Dichlorobenzene	418.2	6.6	22	400	0	105	75-130	407.2	2.67	30	
1,3-Dichloropropane	385	8	26	400	0	96.2	75-125	376.6	2.21	30	
1,4-Dichlorobenzene	404.8	7	23	400	0	101	75-130	405.8	0.247	30	
2,2-Dichloropropane	252.6	10	34	400	0	63.2	43-150	253.2	0.237	30	
2-Butanone	436.6	10	35	400	0	109	55-150	438.8	0.503	30	
2-Chlorotoluene	384.4	7.2	24	400	0	96.1	76-117	380.4	1.05	30	
4-Chlorotoluene	386	6.2	20	400	0	96.5	80-125	389.2	0.826	30	
4-Methyl-2-pentanone	556.6	10	35	400	0	139	77-178	583.4	4.7	30	
Acetone	434.8	22	72	400	7.8	107	60-160	467.8	7.31	30	
Benzene	388.8	9.2	30	400	0	97.2	85-125	388.8	0	30	
Bromobenzene	370.2	7.6	25	400	0	92.6	80-125	364.8	1.47	30	
Bromochloromethane	462.6	9	30	400	0	116	72-141	484.2	4.56	30	
Bromodichloromethane	381.4	9.8	33	400	0	95.4	75-125	380.4	0.263	30	
Bromoform	345	11	37	400	0	86.2	60-125	341.4	1.05	30	
Bromomethane	1533	18	60	400	0	383	30-185	1606	4.68	30	S
Carbon tetrachloride	327.8	8	27	400	0	82	65-140	332.8	1.51	30	
Chlorobenzene	391	8	27	400	0	97.8	80-120	394	0.764	30	
Chloroethane	340.4	14	45	400	0	85.1	31-172	392	14.1	30	
Chloroform	380.8	9.2	31	400	0	95.2	80-130	395.6	3.81	30	
Chloromethane	201.2	17	55	400	0	50.3	46-148	221.8	9.74	30	
cis-1,2-Dichloroethene	376	8.4	28	400	7.2	92.2	75-134	389.2	3.45	30	
cis-1,3-Dichloropropene	350.4	11	38	400	0	87.6	70-130	362.6	3.42	30	
Dibromochloromethane	355.4	8	26	400	0	88.8	60-115	347.8	2.16	30	
Dibromomethane	398.2	13	43	400	0	99.6	79-126	398.2	0	30	
Dichlorodifluoromethane	266	14	45	400	0	66.5	20-120	343.4	25.4	30	
Ethylbenzene	481.8	6.8	22	400	78.8	101	76-123	477.8	0.834	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Gannett Fleming, Inc.
Work Order: 19051721
Project: WRR (55929.005)

QC BATCH REPORT

Batch ID: **R261663a** Instrument ID **VMS8** Method: **SW8260C**

Hexachlorobutadiene	290.4	11	37	400	0	72.6	70-155	285.6	1.67	30
Isopropylbenzene	408.4	7	23	400	7	100	80-127	412	0.878	30
m,p-Xylene	933.8	16	54	800	127.2	101	75-130	928	0.623	30
Methyl tert-butyl ether	415.4	9	30	400	0	104	80-130	437.6	5.21	30
Methylene chloride	338.2	17	58	400	0	84.6	72-125	356.8	5.35	30
Naphthalene	388.2	15	51	400	0	97	55-160	372.8	4.05	30
n-Butylbenzene	392.4	6.8	22	400	0	98.1	75-145	398.6	1.57	30
n-Propylbenzene	353.6	9.6	32	400	0	88.4	83-135	347.6	1.71	30
o-Xylene	461.6	6.2	21	400	45.2	104	80-125	457.8	0.827	30
p-Isopropyltoluene	409.6	5.2	18	400	0	102	61-164	429	4.63	30
sec-Butylbenzene	387.8	6	20	400	0	97	80-134	391	0.822	30
Styrene	466.6	6.6	22	400	0	117	83-137	462.8	0.818	30
tert-Butylbenzene	361.8	7.8	26	400	0	90.4	70-130	370.4	2.35	30
Tetrachloroethene	387.8	7.8	26	400	0	97	68-166	387	0.207	30
Toluene	405.4	9	30	400	0	101	76-125	407.8	0.59	30
trans-1,2-Dichloroethene	398.8	9.6	32	400	0	99.7	80-140	429	7.3	30
trans-1,3-Dichloropropene	325.2	7.6	55	400	0	81.3	56-132	322.4	0.865	30
Trichloroethene	370.4	8.6	29	400	18.2	88	77-125	374.2	1.02	30
Trichlorofluoromethane	399	10	34	400	0	99.8	60-140	404	1.25	30
Vinyl chloride	389.4	11	35	400	0	97.4	50-136	406.2	4.22	30
Xylenes, Total	1395	16	89	1200	172.4	102	80-126	1386	0.69	30
Surr: 1,2-Dichloroethane-d4	*407*	0	0	*400*	0	*102*	*75-120*	403	*0.988*	*30*
Surr: 4-Bromofluorobenzene	*388.6*	0	0	*400*	0	*97.2*	*80-110*	377.2	*2.98*	*30*
Surr: Dibromofluoromethane	*412.2*	0	0	*400*	0	*103*	*85-115*	411.4	*0.194*	*30*
Surr: Toluene-d8	*402.2*	0	0	*400*	0	*101*	*85-110*	391.8	*2.62*	*30*

The following samples were analyzed in this batch:

19051721-01A	19051721-02A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Cincinnati, OH +1 513 733 5336
Fort Collins, CO +1 970 490 1511
Everett, WA +1 425 356 2600
Holland, MI +1 616 399 6070
Houston, TX +1 281 530 5656
Spring City, PA +1 610 948 4903
South Charleston, WV +1 304 356 3168
Middletown, PA +1 717 944 5541
Salt Lake City, UT +1 801 266 7700
York, PA +1 717 505 5280

Chain of Custody Form

Page 1 of 1

COC ID: 189139

ALS Project Manager: EB | ALS Work Order #: 19051721

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	55929.005	Project Name	WRR	A	VOCs
Work Order		Project Number	55929.005	B	
Company Name	Gannett Fleming, Inc.	Bill To Company	Gannett Fleming, Inc.	C	
Send Report To	Anthony Miller	Invoice Attn	Accounts Payable	D	
Address	8025 Excelsior Dr.	Address	8025 Excelsior Dr.	E	
				F	
City/State/Zip	Madison, WI 53717	City/State/Zip	Madison, WI 53717	G	
Phone	(608) 836-1500	Phone	(608) 836-1500	H	
Fax		Fax		I	
e-Mail Address	awmiller@gfnet.com	e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	PW-16	5/22/19	18:10	GW	HCl	3	X										
2	Trip Blank	"		GW	HCl	2	X										
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Chelsea Payne

Shipment Method: FedEx

Required Turnaround Time: (Check Box) ☑ Std 10 WK Days ☐ 5 WK Days ☐ Other ☐ 2 WK Days ☐ 24 Hour

Results Due Date:

Relinquished by:	Date: 5/23/19	Time: 18:00	Received by: FedEx	Notes:
Relinquished by: FedEx	Date: 5/24/19	Time: 0930	Received by (Laboratory):	
Logged by (Laboratory): KeV	Date: 5/24/19	Time: 1355	Checked by (Laboratory): EB	

Cooler ID	Cooler Temp.	QC Package: (Check One Box Below)
SR2	24°C	☐ Level II Std QC ☐ TRRP Checklist ☐ Level III Std QC/Raw Data ☐ TRRP Level IV ☐ Level IV SW846/CLP ☐ Other

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Group, USA

Sample Receipt Checklist

Client Name: **GANNETTFLEMING - WI** Date/Time Received: **24-May-19 09:30**

Work Order: **19051721** Received by: **KRW**

Checklist completed by Keith Wierenga (eSignature) 24-May-19 (Date) Reviewed by: Ehrland Bosworth (eSignature) 24-May-19 (Date)

Matrices: Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.4/2.4 C	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	5/24/2019 1:58:07 PM		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

Gannett Fleming

Excellence Delivered As Promised

June 12, 2019
File #55929.005

Mr. Timothy Hauge
5699 South Lowes Creek Road
Eau Claire, WI 54701

Re: Laboratory Results for Water Samples Collected from PW-11 in May 2019

Dear Mr. Hauge:

On May 22, 2019, Gannett Fleming, Inc. collected a water sample from your home at 5699 South Lowes Creek Road. The sample was collected as a follow-up to the water samples collected from your home in September and October 2014; June 2015; May 2016, 2017, and 2018; and August 2018 in conjunction with on-going groundwater monitoring and remedial activities associated with the WRR Environmental Services facility on Ryder Road. The monitoring and remedial activities at the WRR site are being conducted under the oversight of the Wisconsin Department of Natural Resources (WDNR).

Our designation for your water sample is PW-11. The water sample collected from your home in May was sent to ALS Environmental Laboratory in Holland, Michigan, for analysis of 65 individual volatile organic compounds (VOCs). No VOCs were detected in the water sample collected from your home in May 2019.

The trip blank, which accompanied the May 2019 sample from your home, contained a trace of chloroform at a concentration of 0.62 micrograms per liter (µg/ℓ), which is equivalent to 0.62 parts per billion (ppb), far below its WDNR groundwater enforcement standard of 6 ppb. The chloroform detected in the May trip blank is the result of laboratory contamination and not indicative of the water quality in your well. Enclosed is a copy of the laboratory report for the water sample collected from your home (PW-11) on May 22, 2019.

A copy of this letter and the May 2019 lab report is being sent to the WDNR for its records. We thank you for your cooperation. Someone from Gannett Fleming will contact you next spring to schedule a time for us to collect the next sample that's convenient for you. In the meantime, if

Gannett Fleming, Inc.
8025 Excelsior Drive, Madison, WI 53717-1900
t 608.836.1500 • f 608.831.3337
www.gannettfleming.com

you have any questions regarding the analytical results of the samples collected in May 2019, please contact Tony Miller at 800-899-337 ext. 6716 or myself at the number listed below.

Sincerely,

GANNETT FLEMING, INC.

Chelsea Payne

Chelsea Payne
Environmental Scientist
cpayne@gfnet.com
Ph: 800-899-3337 ext. 6718

CJP/jec/Enc.

cc: Mae Willkom, Doug Coenen (WDNR)

05-Jun-2019

Anthony Miller
Gannett Fleming, Inc.
8025 Excelsior Dr.
Madison, WI 53717-1900

Re: **WRR (55929.005)** Work Order: **19051722**

Dear Anthony,

ALS Environmental received 2 samples on 24-May-2019 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 18.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Ehrland Bosworth

Electronically approved by: Ehrland Bosworth

Ehrland Bosworth
Project Manager

ALS Group, USA

Date: 05-Jun-19

Client: Gannett Fleming, Inc.
Project: WRR (55929.005)
Work Order: **19051722**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
19051722-01	PW-11	Water		5/22/2019 18:20	5/24/2019 09:30	☐
19051722-02	Trip Blank	Water		5/22/2019	5/24/2019 09:30	☐

ALS Group, USA

Date: 05-Jun-19

Client: Gannett Fleming, Inc.
Project: WRR (55929.005)
WorkOrder: **19051722**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
µg/L	Micrograms per Liter

Client: Gannett Fleming, Inc.
Project: WRR (55929.005)
Work Order: 19051722

Case Narrative

Samples for the above noted Work Order were received on 05/24/19. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, sample condition, preservation, and temperature compliance.
In order to ensure compliance with NR 149 criteria, please note the following report format:
(1) The Limit of Detection (LOD) is reported as the MDL (Method Detection Limit)
(2) The Limit of Quantitation (LOQ) is reported as the PQL (Practical Quantitation Limit)
(3) All reported concentrations, including those for the LOD and LOQ, are adjusted for any required dilutions
(4) All reported concentrations, including those for the LOD and LOQ, are adjusted for moisture content when samples are reported on a dry weight basis.

Samples were analyzed according to the analytical methodology previously documented in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Detail as to the associated samples can be found at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, acronyms, and units utilized in reporting.

With the following exceptions, all sample analyses achieved analytical criteria.

Volatile Organics:
Batch R261663a, Method WI_VOC_8260_W, Sample VLCSW3-190530: The VOC LCS recovery was above the upper control limit. All the sample results in the batch were non-detect. No qualification is necessary for Bromomethane.

Batch R261787b, Method WI_VOC_8260_W, Sample 19051722-01A: The VOC Continuing Calibration Verification did not meet method acceptance criteria for the following analytes, results are to be considered estimated for Dichlorodifluoromethane.

Batch R261787b, Method WI_VOC_8260_W, Sample 19051722-02A: The VOC Continuing Calibration Verification did not meet method acceptance criteria for the following analytes, results are to be considered estimated for Dichlorodifluoromethane.

ALS Group, USA

Date: *05-Jun-19*

Client: Gannett Fleming, Inc.
Project: WRR (55929.005)
Sample ID: PW-11
Collection Date: 5/22/2019 06:20 PM

Work Order: 19051722
Lab ID: 19051722-01
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS		Method: **SW8260C**					Analyst: **WH**
1,1,1,2-Tetrachloroethane	U		0.38	1.3	µg/L	1	5/31/2019 09:48
1,1,1-Trichloroethane	U		0.46	1.5	µg/L	1	5/31/2019 09:48
1,1,2,2-Tetrachloroethane	U		0.40	1.3	µg/L	1	5/31/2019 09:48
1,1,2-Trichloroethane	U		0.46	1.5	µg/L	1	5/31/2019 09:48
1,1-Dichloroethane	U		0.44	1.5	µg/L	1	5/31/2019 09:48
1,1-Dichloroethene	U		0.40	1.4	µg/L	1	5/31/2019 09:48
1,1-Dichloropropene	U		0.37	1.2	µg/L	1	5/31/2019 09:48
1,2,3-Trichlorobenzene	U		0.42	1.4	µg/L	1	5/31/2019 09:48
1,2,3-Trichloropropane	U		0.40	1.3	µg/L	1	5/31/2019 09:48
1,2,4-Trichlorobenzene	U		0.45	1.5	µg/L	1	5/31/2019 09:48
1,2,4-Trimethylbenzene	U		0.45	1.5	µg/L	1	5/31/2019 09:48
1,2-Dibromo-3-chloropropane	U		0.43	1.4	µg/L	1	5/31/2019 09:48
1,2-Dibromoethane	U		0.41	1.4	µg/L	1	5/31/2019 09:48
1,2-Dichlorobenzene	U		0.32	1.1	µg/L	1	5/31/2019 09:48
1,2-Dichloroethane	U		0.44	1.4	µg/L	1	5/31/2019 09:48
1,2-Dichloropropane	U		0.48	1.6	µg/L	1	5/31/2019 09:48
1,3,5-Trimethylbenzene	U		0.65	2.2	µg/L	1	5/31/2019 09:48
1,3-Dichlorobenzene	U		0.33	1.1	µg/L	1	5/31/2019 09:48
1,3-Dichloropropane	U		0.40	1.3	µg/L	1	5/31/2019 09:48
1,4-Dichlorobenzene	U		0.35	1.2	µg/L	1	5/31/2019 09:48
2,2-Dichloropropane	U		0.52	1.7	µg/L	1	5/31/2019 09:48
2-Butanone	U		0.52	1.7	µg/L	1	5/31/2019 09:48
2-Chlorotoluene	U		0.36	1.2	µg/L	1	5/31/2019 09:48
2-Propanol	U		33	110	µg/L	1	5/31/2019 09:48
4-Chlorotoluene	U		0.31	1.0	µg/L	1	5/31/2019 09:48
4-Methyl-2-pentanone	U		0.52	1.7	µg/L	1	5/31/2019 09:48
Acetone	U		1.5	3.6	µg/L	1	5/31/2019 09:48
Benzene	U		0.46	1.5	µg/L	1	5/31/2019 09:48
Bromobenzene	U		0.38	1.3	µg/L	1	5/31/2019 09:48
Bromochloromethane	U		0.45	1.5	µg/L	1	5/31/2019 09:48
Bromodichloromethane	U		0.49	1.6	µg/L	1	5/31/2019 09:48
Bromoform	U		0.56	1.9	µg/L	1	5/31/2019 09:48
Bromomethane	U		0.90	3.0	µg/L	1	5/31/2019 09:48
Carbon tetrachloride	U		0.40	1.4	µg/L	1	5/31/2019 09:48
Chlorobenzene	U		0.40	1.3	µg/L	1	5/31/2019 09:48
Chloroethane	U		0.68	2.3	µg/L	1	5/31/2019 09:48
Chloroform	U		0.46	1.5	µg/L	1	5/31/2019 09:48
Chloromethane	U		0.83	2.8	µg/L	1	5/31/2019 09:48

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Gannett Fleming, Inc.
Project: WRR (55929.005)
Sample ID: PW-11
Collection Date: 5/22/2019 06:20 PM

Work Order: 19051722
Lab ID: 19051722-01
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
cis-1,2-Dichloroethene	U		0.42	1.4	µg/L	1	5/31/2019 09:48
cis-1,3-Dichloropropene	U		0.57	1.9	µg/L	1	5/31/2019 09:48
Dibromochloromethane	U		0.40	1.3	µg/L	1	5/31/2019 09:48
Dibromomethane	U		0.65	2.2	µg/L	1	5/31/2019 09:48
Dichlorodifluoromethane	U		0.68	2.3	µg/L	1	5/31/2019 09:48
Diisopropyl ether	U		0.41	1.4	µg/L	1	5/31/2019 09:48
Ethylbenzene	U		0.34	1.1	µg/L	1	5/31/2019 09:48
Hexachlorobutadiene	U		0.56	1.9	µg/L	1	5/31/2019 09:48
Isopropylbenzene	U		0.35	1.2	µg/L	1	5/31/2019 09:48
m,p-Xylene	U		0.81	2.7	µg/L	1	5/31/2019 09:48
Methyl tert-butyl ether	U		0.45	1.5	µg/L	1	5/31/2019 09:48
Methylene chloride	U		0.86	2.9	µg/L	1	5/31/2019 09:48
Naphthalene	U		0.77	2.6	µg/L	1	5/31/2019 09:48
n-Butylbenzene	U		0.34	1.1	µg/L	1	5/31/2019 09:48
n-Propylbenzene	U		0.48	1.6	µg/L	1	5/31/2019 09:48
o-Xylene	U		0.31	1.0	µg/L	1	5/31/2019 09:48
p-Isopropyltoluene	U		0.26	0.88	µg/L	1	5/31/2019 09:48
sec-Butylbenzene	U		0.30	1.0	µg/L	1	5/31/2019 09:48
Styrene	U		0.33	1.1	µg/L	1	5/31/2019 09:48
tert-Butylbenzene	U		0.39	1.3	µg/L	1	5/31/2019 09:48
Tetrachloroethene	U		0.39	1.3	µg/L	1	5/31/2019 09:48
Toluene	U		0.45	1.5	µg/L	1	5/31/2019 09:48
trans-1,2-Dichloroethene	U		0.48	1.6	µg/L	1	5/31/2019 09:48
trans-1,3-Dichloropropene	U		0.38	2.7	µg/L	1	5/31/2019 09:48
Trichloroethene	U		0.43	1.4	µg/L	1	5/31/2019 09:48
Trichlorofluoromethane	U		0.52	1.7	µg/L	1	5/31/2019 09:48
Vinyl chloride	U		0.53	1.8	µg/L	1	5/31/2019 09:48
Xylenes, Total	U		0.81	4.4	µg/L	1	5/31/2019 09:48
Surr: 1,2-Dichloroethane-d4	*101*			*75-120*	*%REC*	1	5/31/2019 09:48
Surr: 4-Bromofluorobenzene	*97.8*			*80-110*	*%REC*	1	5/31/2019 09:48
Surr: Dibromofluoromethane	*100*			*85-115*	*%REC*	1	5/31/2019 09:48
Surr: Toluene-d8	*103*			*85-110*	*%REC*	1	5/31/2019 09:48

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *05-Jun-19*

Client: Gannett Fleming, Inc.
Project: WRR (55929.005)
Sample ID: Trip Blank
Collection Date: 5/22/2019

Work Order: 19051722
Lab ID: 19051722-02
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS		Method: **SW8260C**					Analyst: **WH**
1,1,1,2-Tetrachloroethane	U		0.38	1.3	µg/L	1	5/31/2019 07:37
1,1,1-Trichloroethane	U		0.46	1.5	µg/L	1	5/31/2019 07:37
1,1,2,2-Tetrachloroethane	U		0.40	1.3	µg/L	1	5/31/2019 07:37
1,1,2-Trichloroethane	U		0.46	1.5	µg/L	1	5/31/2019 07:37
1,1-Dichloroethane	U		0.44	1.5	µg/L	1	5/31/2019 07:37
1,1-Dichloroethene	U		0.40	1.4	µg/L	1	5/31/2019 07:37
1,1-Dichloropropene	U		0.37	1.2	µg/L	1	5/31/2019 07:37
1,2,3-Trichlorobenzene	U		0.42	1.4	µg/L	1	5/31/2019 07:37
1,2,3-Trichloropropane	U		0.40	1.3	µg/L	1	5/31/2019 07:37
1,2,4-Trichlorobenzene	U		0.45	1.5	µg/L	1	5/31/2019 07:37
1,2,4-Trimethylbenzene	U		0.45	1.5	µg/L	1	5/31/2019 07:37
1,2-Dibromo-3-chloropropane	U		0.43	1.4	µg/L	1	5/31/2019 07:37
1,2-Dibromoethane	U		0.41	1.4	µg/L	1	5/31/2019 07:37
1,2-Dichlorobenzene	U		0.32	1.1	µg/L	1	5/31/2019 07:37
1,2-Dichloroethane	U		0.44	1.4	µg/L	1	5/31/2019 07:37
1,2-Dichloropropane	U		0.48	1.6	µg/L	1	5/31/2019 07:37
1,3,5-Trimethylbenzene	U		0.65	2.2	µg/L	1	5/31/2019 07:37
1,3-Dichlorobenzene	U		0.33	1.1	µg/L	1	5/31/2019 07:37
1,3-Dichloropropane	U		0.40	1.3	µg/L	1	5/31/2019 07:37
1,4-Dichlorobenzene	U		0.35	1.2	µg/L	1	5/31/2019 07:37
2,2-Dichloropropane	U		0.52	1.7	µg/L	1	5/31/2019 07:37
2-Butanone	U		0.52	1.7	µg/L	1	5/31/2019 07:37
2-Chlorotoluene	U		0.36	1.2	µg/L	1	5/31/2019 07:37
2-Propanol	U		33	110	µg/L	1	5/31/2019 07:37
4-Chlorotoluene	U		0.31	1.0	µg/L	1	5/31/2019 07:37
4-Methyl-2-pentanone	U		0.52	1.7	µg/L	1	5/31/2019 07:37
Acetone	U		1.5	3.6	µg/L	1	5/31/2019 07:37
Benzene	U		0.46	1.5	µg/L	1	5/31/2019 07:37
Bromobenzene	U		0.38	1.3	µg/L	1	5/31/2019 07:37
Bromochloromethane	U		0.45	1.5	µg/L	1	5/31/2019 07:37
Bromodichloromethane	U		0.49	1.6	µg/L	1	5/31/2019 07:37
Bromoform	U		0.56	1.9	µg/L	1	5/31/2019 07:37
Bromomethane	U		0.90	3.0	µg/L	1	5/31/2019 07:37
Carbon tetrachloride	U		0.40	1.4	µg/L	1	5/31/2019 07:37
Chlorobenzene	U		0.40	1.3	µg/L	1	5/31/2019 07:37
Chloroethane	U		0.68	2.3	µg/L	1	5/31/2019 07:37
Chloroform	**0.62**	J	**0.46**	**1.5**	**µg/L**	1	5/31/2019 07:37
Chloromethane	U		0.83	2.8	µg/L	1	5/31/2019 07:37

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *05-Jun-19*

Client: Gannett Fleming, Inc.
Project: WRR (55929.005)
Sample ID: Trip Blank
Collection Date: 5/22/2019

Work Order: 19051722
Lab ID: 19051722-02
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
cis-1,2-Dichloroethene	U		0.42	1.4	µg/L	1	5/31/2019 07:37
cis-1,3-Dichloropropene	U		0.57	1.9	µg/L	1	5/31/2019 07:37
Dibromochloromethane	U		0.40	1.3	µg/L	1	5/31/2019 07:37
Dibromomethane	U		0.65	2.2	µg/L	1	5/31/2019 07:37
Dichlorodifluoromethane	U		0.68	2.3	µg/L	1	5/31/2019 07:37
Diisopropyl ether	U		0.41	1.4	µg/L	1	5/31/2019 07:37
Ethylbenzene	U		0.34	1.1	µg/L	1	5/31/2019 07:37
Hexachlorobutadiene	U		0.56	1.9	µg/L	1	5/31/2019 07:37
Isopropylbenzene	U		0.35	1.2	µg/L	1	5/31/2019 07:37
m,p-Xylene	U		0.81	2.7	µg/L	1	5/31/2019 07:37
Methyl tert-butyl ether	U		0.45	1.5	µg/L	1	5/31/2019 07:37
Methylene chloride	U		0.86	2.9	µg/L	1	5/31/2019 07:37
Naphthalene	U		0.77	2.6	µg/L	1	5/31/2019 07:37
n-Butylbenzene	U		0.34	1.1	µg/L	1	5/31/2019 07:37
n-Propylbenzene	U		0.48	1.6	µg/L	1	5/31/2019 07:37
o-Xylene	U		0.31	1.0	µg/L	1	5/31/2019 07:37
p-Isopropyltoluene	U		0.26	0.88	µg/L	1	5/31/2019 07:37
sec-Butylbenzene	U		0.30	1.0	µg/L	1	5/31/2019 07:37
Styrene	U		0.33	1.1	µg/L	1	5/31/2019 07:37
tert-Butylbenzene	U		0.39	1.3	µg/L	1	5/31/2019 07:37
Tetrachloroethene	U		0.39	1.3	µg/L	1	5/31/2019 07:37
Toluene	U		0.45	1.5	µg/L	1	5/31/2019 07:37
trans-1,2-Dichloroethene	U		0.48	1.6	µg/L	1	5/31/2019 07:37
trans-1,3-Dichloropropene	U		0.38	2.7	µg/L	1	5/31/2019 07:37
Trichloroethene	U		0.43	1.4	µg/L	1	5/31/2019 07:37
Trichlorofluoromethane	U		0.52	1.7	µg/L	1	5/31/2019 07:37
Vinyl chloride	U		0.53	1.8	µg/L	1	5/31/2019 07:37
Xylenes, Total	U		0.81	4.4	µg/L	1	5/31/2019 07:37
Surr: 1,2-Dichloroethane-d4	*99.0*			*75-120*	*%REC*	1	5/31/2019 07:37
Surr: 4-Bromofluorobenzene	*97.2*			*80-110*	*%REC*	1	5/31/2019 07:37
Surr: Dibromofluoromethane	*100*			*85-115*	*%REC*	1	5/31/2019 07:37
Surr: Toluene-d8	*102*			*85-110*	*%REC*	1	5/31/2019 07:37

Note: See Qualifiers page for a list of qualifiers and their definitions.

QC BATCH REPORT

Batch ID: **R261663a** Instrument ID **VMS8** Method: **SW8260C**

MBLK Sample ID: **VBLKW5-190530-R261663a** Units: **µg/L** Analysis Date: **5/31/2019 06:15 AM**

Client ID: Run ID: **VMS8_190530B** SeqNo: **5688285** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	U	0.38	1.3								
1,1,1-Trichloroethane	U	0.46	1.5								
1,1,2,2-Tetrachloroethane	U	0.4	1.3								
1,1,2-Trichloroethane	U	0.46	1.5								
1,1-Dichloroethane	U	0.44	1.5								
1,1-Dichloroethene	U	0.4	1.4								
1,1-Dichloropropene	U	0.37	1.2								
1,2,3-Trichlorobenzene	U	0.42	1.4								
1,2,3-Trichloropropane	U	0.4	1.3								
1,2,4-Trichlorobenzene	U	0.45	1.5								
1,2,4-Trimethylbenzene	U	0.45	1.5								
1,2-Dibromo-3-chloropropane	U	0.43	1.4								
1,2-Dibromoethane	U	0.41	1.4								
1,2-Dichlorobenzene	U	0.32	1.1								
1,2-Dichloroethane	U	0.44	1.4								
1,2-Dichloropropane	U	0.48	1.6								
1,3,5-Trimethylbenzene	U	0.65	2.2								
1,3-Dichlorobenzene	U	0.33	1.1								
1,3-Dichloropropane	U	0.4	1.3								
1,4-Dichlorobenzene	U	0.35	1.2								
2,2-Dichloropropane	U	0.52	1.7								
2-Butanone	U	0.52	1.7								
2-Chlorotoluene	U	0.36	1.2								
2-Propanol	U	33	110								
4-Chlorotoluene	U	0.31	1.0								
4-Methyl-2-pentanone	U	0.52	1.7								
Acetone	U	1.1	3.6								
Benzene	U	0.46	1.5								
Bromobenzene	U	0.38	1.3								
Bromochloromethane	U	0.45	1.5								
Bromodichloromethane	U	0.49	1.6								
Bromoform	U	0.56	1.9								
Bromomethane	U	0.9	3.0								
Carbon tetrachloride	U	0.4	1.4								
Chlorobenzene	U	0.4	1.3								
Chloroethane	U	0.68	2.3								
Chloroform	U	0.46	1.5								
Chloromethane	U	0.83	2.8								
cis-1,2-Dichloroethene	U	0.42	1.4								
cis-1,3-Dichloropropene	U	0.57	1.9								
Dibromochloromethane	U	0.4	1.3								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Batch ID: **R261663a** Instrument ID **VMS8** Method: **SW8260C**

Dibromomethane	U	0.65	2.2					
Dichlorodifluoromethane	U	0.68	2.3					
Diisopropyl ether	U	0.41	1.4					
Ethylbenzene	U	0.34	1.1					
Hexachlorobutadiene	U	0.56	1.9					
Isopropylbenzene	U	0.35	1.2					
m,p-Xylene	U	0.81	2.7					
Methyl tert-butyl ether	U	0.45	1.5					
Methylene chloride	U	0.86	2.9					
Naphthalene	U	0.77	2.6					
n-Butylbenzene	U	0.34	1.1					
n-Propylbenzene	U	0.48	1.6					
o-Xylene	U	0.31	1.0					
p-Isopropyltoluene	U	0.26	0.88					
sec-Butylbenzene	U	0.3	1.0					
Styrene	U	0.33	1.1					
tert-Butylbenzene	U	0.39	1.3					
Tetrachloroethene	U	0.39	1.3					
Toluene	U	0.45	1.5					
trans-1,2-Dichloroethene	U	0.48	1.6					
trans-1,3-Dichloropropene	U	0.38	2.7					
Trichloroethene	U	0.43	1.4					
Trichlorofluoromethane	U	0.52	1.7					
Vinyl chloride	U	0.53	1.8					
Xylenes, Total	U	0.81	4.4					
Surr: 1,2-Dichloroethane-d4	*18.81*	0	0	*20*	0	*94*	*75-120*	0
Surr: 4-Bromofluorobenzene	*18.56*	0	0	*20*	0	*92.8*	*80-110*	0
Surr: Dibromofluoromethane	*19.56*	0	0	*20*	0	*97.8*	*85-115*	0
Surr: Toluene-d8	*20.09*	0	0	*20*	0	*100*	*85-110*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Gannett Fleming, Inc.
Work Order: 19051722
Project: WRR (55929.005)

QC BATCH REPORT

Batch ID: **R261663a** Instrument ID **VMS8** Method: **SW8260C**

LCS Sample ID: **VLCSW3-190530-R261663a** Units: **µg/L** Analysis Date: **5/31/2019 05:42 AM**
Client ID: Run ID: **VMS8_190530B** SeqNo: **5688284** Prep Date: DF: **1**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.95	0.38	1.3	20	0	105	73-114	0			
1,1,1-Trichloroethane	21.52	0.46	1.5	20	0	108	75-130	0			
1,1,2,2-Tetrachloroethane	23.16	0.4	1.3	20	0	116	75-130	0			
1,1,2-Trichloroethane	22.1	0.46	1.5	20	0	110	75-125	0			
1,1-Dichloroethane	21.38	0.44	1.5	20	0	107	75-133	0			
1,1-Dichloroethene	21.75	0.4	1.4	20	0	109	70-145	0			
1,1-Dichloropropene	19.9	0.37	1.2	20	0	99.5	75-135	0			
1,2,3-Trichlorobenzene	21.39	0.42	1.4	20	0	107	70-140	0			
1,2,3-Trichloropropane	21.5	0.4	1.3	20	0	108	75-125	0			
1,2,4-Trichlorobenzene	21.58	0.45	1.5	20	0	108	70-135	0			
1,2,4-Trimethylbenzene	22.66	0.45	1.5	20	0	113	75-130	0			
1,2-Dibromo-3-chloropropane	21.47	0.43	1.4	20	0	107	60-130	0			
1,2-Dibromoethane	24.59	0.41	1.4	20	0	123	90-195	0			
1,2-Dichlorobenzene	22.35	0.32	1.1	20	0	112	70-130	0			
1,2-Dichloroethane	21.59	0.44	1.4	20	0	108	78-125	0			
1,2-Dichloropropane	21	0.48	1.6	20	0	105	75-125	0			
1,3,5-Trimethylbenzene	23.36	0.65	2.2	20	0	117	75-130	0			
1,3-Dichlorobenzene	22.12	0.33	1.1	20	0	111	75-130	0			
1,3-Dichloropropane	20.88	0.4	1.3	20	0	104	75-125	0			
1,4-Dichlorobenzene	22.12	0.35	1.2	20	0	111	75-130	0			
2,2-Dichloropropane	16.52	0.52	1.7	20	0	82.6	43-150	0			
2-Butanone	24.1	0.52	1.7	20	0	120	55-150	0			
2-Chlorotoluene	22.06	0.36	1.2	20	0	110	76-117	0			
4-Chlorotoluene	22.16	0.31	1.0	20	0	111	80-125	0			
4-Methyl-2-pentanone	32.21	0.52	1.7	20	0	161	77-178	0			
Acetone	24.02	1.1	3.6	20	0	120	60-160	0			
Benzene	21.01	0.46	1.5	20	0	105	85-125	0			
Bromobenzene	21.04	0.38	1.3	20	0	105	80-125	0			
Bromochloromethane	22.9	0.45	1.5	20	0	114	72-141	0			
Bromodichloromethane	20.41	0.49	1.6	20	0	102	75-125	0			
Bromoform	19.7	0.56	1.9	20	0	98.5	60-125	0			
Bromomethane	47.1	0.9	3.0	20	0	236	30-185	0			S
Carbon tetrachloride	18.23	0.4	1.4	20	0	91.2	65-140	0			
Chlorobenzene	21.07	0.4	1.3	20	0	105	80-120	0			
Chloroethane	20.94	0.68	2.3	20	0	105	31-172	0			
Chloroform	20.53	0.46	1.5	20	0	103	80-130	0			
Chloromethane	15.57	0.83	2.8	20	0	77.8	46-148	0			
cis-1,2-Dichloroethene	20.78	0.42	1.4	20	0	104	75-134	0			
cis-1,3-Dichloropropene	19.68	0.57	1.9	20	0	98.4	70-130	0			
Dibromochloromethane	19.37	0.4	1.3	20	0	96.8	60-115	0			
Dibromomethane	21.34	0.65	2.2	20	0	107	79-126	0			
Dichlorodifluoromethane	16.03	0.68	2.3	20	0	80.2	20-120	0			
Ethylbenzene	22.23	0.34	1.1	20	0	111	76-123	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Batch ID: **R261663a** Instrument ID **VMS8** Method: **SW8260C**

Hexachlorobutadiene	21.42	0.56	1.9	20	0	107	70-155	0
Isopropylbenzene	22.97	0.35	1.2	20	0	115	80-127	0
m,p-Xylene	44.52	0.81	2.7	40	0	111	75-130	0
Methyl tert-butyl ether	23.15	0.45	1.5	20	0	116	80-130	0
Methylene chloride	19.34	0.86	2.9	20	0	96.7	72-125	0
Naphthalene	20.29	0.77	2.6	20	0	101	55-160	0
n-Butylbenzene	23.44	0.34	1.1	20	0	117	75-145	0
n-Propylbenzene	20.32	0.48	1.6	20	0	102	83-135	0
o-Xylene	22.93	0.31	1.0	20	0	115	80-125	0
p-Isopropyltoluene	23.75	0.26	0.88	20	0	119	61-164	0
sec-Butylbenzene	23.56	0.3	1.0	20	0	118	80-134	0
Styrene	25.56	0.33	1.1	20	0	128	83-137	0
tert-Butylbenzene	21.21	0.39	1.3	20	0	106	70-130	0
Tetrachloroethene	20.98	0.39	1.3	20	0	105	68-166	0
Toluene	21.98	0.45	1.5	20	0	110	76-125	0
trans-1,2-Dichloroethene	22.39	0.48	1.6	20	0	112	80-140	0
trans-1,3-Dichloropropene	18.93	0.38	2.7	20	0	94.6	56-132	0
Trichloroethene	20.27	0.43	1.4	20	0	101	77-125	0
Trichlorofluoromethane	18.01	0.52	1.7	20	0	90	60-140	0
Vinyl chloride	20.79	0.53	1.8	20	0	104	50-136	0
Xylenes, Total	67.45	0.81	4.4	60	0	112	80-126	0
Surr: 1,2-Dichloroethane-d4	*20.23*	0	0	*20*	0	*101*	*75-120*	0
Surr: 4-Bromofluorobenzene	*20.38*	0	0	*20*	0	*102*	*80-110*	0
Surr: Dibromofluoromethane	*20.69*	0	0	*20*	0	*103*	*85-115*	0
Surr: Toluene-d8	*20.06*	0	0	*20*	0	*100*	*85-110*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Gannett Fleming, Inc.
Work Order: 19051722
Project: WRR (55929.005)

QC BATCH REPORT

Batch ID: **R261663a** Instrument ID **VMS8** Method: **SW8260C**

MS Sample ID: **19051723-03A MS** Units: **µg/L** Analysis Date: **5/31/2019 12:17 PM**
Client ID: Run ID: **VMS8_190530B** SeqNo: **5688306** Prep Date: DF: **20**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	380	7.6	26	400	0	95	73-114	0			
1,1,1-Trichloroethane	410.8	9.2	30	400	0	103	75-130	0			
1,1,2,2-Tetrachloroethane	408.6	8	27	400	0	102	75-130	0			
1,1,2-Trichloroethane	412.4	9.2	31	400	0	103	75-125	0			
1,1-Dichloroethane	402.8	8.8	29	400	0	101	75-133	0			
1,1-Dichloroethene	425.2	8	27	400	0	106	70-145	0			
1,1-Dichloropropene	363.8	7.4	25	400	0	91	75-135	0			
1,2,3-Trichlorobenzene	400.6	8.4	28	400	0	100	70-140	0			
1,2,3-Trichloropropane	363.4	8	26	400	0	90.8	75-125	0			
1,2,4-Trichlorobenzene	381.6	9	30	400	0	95.4	70-135	0			
1,2,4-Trimethylbenzene	386.8	9	30	400	0	96.7	75-130	0			
1,2-Dibromo-3-chloropropane	406.2	8.6	29	400	0	102	60-130	0			
1,2-Dibromoethane	461.8	8.2	27	400	0	115	90-195	0			
1,2-Dichlorobenzene	407.4	6.4	21	400	0	102	70-130	0			
1,2-Dichloroethane	392.4	8.8	29	400	0	98.1	78-125	0			
1,2-Dichloropropane	393	9.6	32	400	0	98.2	75-125	0			
1,3,5-Trimethylbenzene	397.8	13	43	400	0	99.4	75-130	0			
1,3-Dichlorobenzene	407.2	6.6	22	400	0	102	75-130	0			
1,3-Dichloropropane	376.6	8	26	400	0	94.2	75-125	0			
1,4-Dichlorobenzene	405.8	7	23	400	0	101	75-130	0			
2,2-Dichloropropane	253.2	10	34	400	0	63.3	43-150	0			
2-Butanone	438.8	10	35	400	0	110	55-150	0			
2-Chlorotoluene	380.4	7.2	24	400	0	95.1	76-117	0			
4-Chlorotoluene	389.2	6.2	20	400	0	97.3	80-125	0			
4-Methyl-2-pentanone	583.4	10	35	400	0	146	77-178	0			
Acetone	467.8	22	72	400	7.8	115	60-160	0			
Benzene	388.8	9.2	30	400	0	97.2	85-125	0			
Bromobenzene	364.8	7.6	25	400	0	91.2	80-125	0			
Bromochloromethane	484.2	9	30	400	0	121	72-141	0			
Bromodichloromethane	380.4	9.8	33	400	0	95.1	75-125	0			
Bromoform	341.4	11	37	400	0	85.4	60-125	0			
Bromomethane	1606	18	60	400	0	402	30-185	0			S
Carbon tetrachloride	332.8	8	27	400	0	83.2	65-140	0			
Chlorobenzene	394	8	27	400	0	98.5	80-120	0			
Chloroethane	392	14	45	400	0	98	31-172	0			
Chloroform	395.6	9.2	31	400	0	98.9	80-130	0			
Chloromethane	221.8	17	55	400	0	55.4	46-148	0			
cis-1,2-Dichloroethene	389.2	8.4	28	400	7.2	95.5	75-134	0			
cis-1,3-Dichloropropene	362.6	11	38	400	0	90.6	70-130	0			
Dibromochloromethane	347.8	8	26	400	0	87	60-115	0			
Dibromomethane	398.2	13	43	400	0	99.6	79-126	0			
Dichlorodifluoromethane	343.4	14	45	400	0	85.8	20-120	0			
Ethylbenzene	477.8	6.8	22	400	78.8	99.8	76-123	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Batch ID: **R261663a**	Instrument ID **VMS8**			Method: **SW8260C**				
Hexachlorobutadiene	285.6	11	37	400	0	71.4	70-155	0
Isopropylbenzene	412	7	23	400	7	101	80-127	0
m,p-Xylene	928	16	54	800	127.2	100	75-130	0
Methyl tert-butyl ether	437.6	9	30	400	0	109	80-130	0
Methylene chloride	356.8	17	58	400	0	89.2	72-125	0
Naphthalene	372.8	15	51	400	0	93.2	55-160	0
n-Butylbenzene	398.6	6.8	22	400	0	99.6	75-145	0
n-Propylbenzene	347.6	9.6	32	400	0	86.9	83-135	0
o-Xylene	457.8	6.2	21	400	45.2	103	80-125	0
p-Isopropyltoluene	429	5.2	18	400	0	107	61-164	0
sec-Butylbenzene	391	6	20	400	0	97.8	80-134	0
Styrene	462.8	6.6	22	400	0	116	83-137	0
tert-Butylbenzene	370.4	7.8	26	400	0	92.6	70-130	0
Tetrachloroethene	387	7.8	26	400	0	96.8	68-166	0
Toluene	407.8	9	30	400	0	102	76-125	0
trans-1,2-Dichloroethene	429	9.6	32	400	0	107	80-140	0
trans-1,3-Dichloropropene	322.4	7.6	55	400	0	80.6	56-132	0
Trichloroethene	374.2	8.6	29	400	18.2	89	77-125	0
Trichlorofluoromethane	404	10	34	400	0	101	60-140	0
Vinyl chloride	406.2	11	35	400	0	102	50-136	0
Xylenes, Total	1386	16	89	1200	172.4	101	80-126	0
Surr: 1,2-Dichloroethane-d4	*403*	0	0	*400*	0	*101*	*75-120*	0
Surr: 4-Bromofluorobenzene	*377.2*	0	0	*400*	0	*94.3*	*80-110*	0
Surr: Dibromofluoromethane	*411.4*	0	0	*400*	0	*103*	*85-115*	0
Surr: Toluene-d8	*391.8*	0	0	*400*	0	*98*	*85-110*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Gannett Fleming, Inc.
Work Order: 19051722
Project: WRR (55929.005)

QC BATCH REPORT

Batch ID: **R261663a** Instrument ID **VMS8** Method: **SW8260C**

MSD Sample ID: **19051723-03A MSD** Units: **µg/L** Analysis Date: **5/31/2019 12:34 PM**

Client ID: Run ID: **VMS8_190530B** SeqNo: **5688307** Prep Date: DF: **20**

Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	371.6	7.6	26	400	0	92.9	73-114	380	2.24	30	
1,1,1-Trichloroethane	397.8	9.2	30	400	0	99.4	75-130	410.8	3.22	30	
1,1,2,2-Tetrachloroethane	404.4	8	27	400	0	101	75-130	408.6	1.03	30	
1,1,2-Trichloroethane	412.4	9.2	31	400	0	103	75-125	412.4	0	30	
1,1-Dichloroethane	388.4	8.8	29	400	0	97.1	75-133	402.8	3.64	30	
1,1-Dichloroethene	403.4	8	27	400	0	101	70-145	425.2	5.26	30	
1,1-Dichloropropene	354.8	7.4	25	400	0	88.7	75-135	363.8	2.5	30	
1,2,3-Trichlorobenzene	410.2	8.4	28	400	0	103	70-140	400.6	2.37	30	
1,2,3-Trichloropropane	367.8	8	26	400	0	92	75-125	363.4	1.2	30	
1,2,4-Trichlorobenzene	387.2	9	30	400	0	96.8	70-135	381.6	1.46	30	
1,2,4-Trimethylbenzene	388.2	9	30	400	0	97	75-130	386.8	0.361	30	
1,2-Dibromo-3-chloropropane	402.6	8.6	29	400	0	101	60-130	406.2	0.89	30	
1,2-Dibromoethane	458.2	8.2	27	400	0	115	90-195	461.8	0.783	30	
1,2-Dichlorobenzene	420.2	6.4	21	400	0	105	70-130	407.4	3.09	30	
1,2-Dichloroethane	392.8	8.8	29	400	0	98.2	78-125	392.4	0.102	30	
1,2-Dichloropropane	380.4	9.6	32	400	0	95.1	75-125	393	3.26	30	
1,3,5-Trimethylbenzene	390.6	13	43	400	0	97.6	75-130	397.8	1.83	30	
1,3-Dichlorobenzene	418.2	6.6	22	400	0	105	75-130	407.2	2.67	30	
1,3-Dichloropropane	385	8	26	400	0	96.2	75-125	376.6	2.21	30	
1,4-Dichlorobenzene	404.8	7	23	400	0	101	75-130	405.8	0.247	30	
2,2-Dichloropropane	252.6	10	34	400	0	63.2	43-150	253.2	0.237	30	
2-Butanone	436.6	10	35	400	0	109	55-150	438.8	0.503	30	
2-Chlorotoluene	384.4	7.2	24	400	0	96.1	76-117	380.4	1.05	30	
4-Chlorotoluene	386	6.2	20	400	0	96.5	80-125	389.2	0.826	30	
4-Methyl-2-pentanone	556.6	10	35	400	0	139	77-178	583.4	4.7	30	
Acetone	434.8	22	72	400	7.8	107	60-160	467.8	7.31	30	
Benzene	388.8	9.2	30	400	0	97.2	85-125	388.8	0	30	
Bromobenzene	370.2	7.6	25	400	0	92.6	80-125	364.8	1.47	30	
Bromochloromethane	462.6	9	30	400	0	116	72-141	484.2	4.56	30	
Bromodichloromethane	381.4	9.8	33	400	0	95.4	75-125	380.4	0.263	30	
Bromoform	345	11	37	400	0	86.2	60-125	341.4	1.05	30	
Bromomethane	1533	18	60	400	0	383	30-185	1606	4.68	30	S
Carbon tetrachloride	327.8	8	27	400	0	82	65-140	332.8	1.51	30	
Chlorobenzene	391	8	27	400	0	97.8	80-120	394	0.764	30	
Chloroethane	340.4	14	45	400	0	85.1	31-172	392	14.1	30	
Chloroform	380.8	9.2	31	400	0	95.2	80-130	395.6	3.81	30	
Chloromethane	201.2	17	55	400	0	50.3	46-148	221.8	9.74	30	
cis-1,2-Dichloroethene	376	8.4	28	400	7.2	92.2	75-134	389.2	3.45	30	
cis-1,3-Dichloropropene	350.4	11	38	400	0	87.6	70-130	362.6	3.42	30	
Dibromochloromethane	355.4	8	26	400	0	88.8	60-115	347.8	2.16	30	
Dibromomethane	398.2	13	43	400	0	99.6	79-126	398.2	0	30	
Dichlorodifluoromethane	266	14	45	400	0	66.5	20-120	343.4	25.4	30	
Ethylbenzene	481.8	6.8	22	400	78.8	101	76-123	477.8	0.834	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Gannett Fleming, Inc.
Work Order: 19051722
Project: WRR (55929.005)

QC BATCH REPORT

Batch ID: **R261663a**	Instrument ID **VMS8**			Method: **SW8260C**						
Hexachlorobutadiene	290.4	11	37	400	0	72.6	70-155	285.6	1.67	30
Isopropylbenzene	408.4	7	23	400	7	100	80-127	412	0.878	30
m,p-Xylene	933.8	16	54	800	127.2	101	75-130	928	0.623	30
Methyl tert-butyl ether	415.4	9	30	400	0	104	80-130	437.6	5.21	30
Methylene chloride	338.2	17	58	400	0	84.6	72-125	356.8	5.35	30
Naphthalene	388.2	15	51	400	0	97	55-160	372.8	4.05	30
n-Butylbenzene	392.4	6.8	22	400	0	98.1	75-145	398.6	1.57	30
n-Propylbenzene	353.6	9.6	32	400	0	88.4	83-135	347.6	1.71	30
o-Xylene	461.6	6.2	21	400	45.2	104	80-125	457.8	0.827	30
p-Isopropyltoluene	409.6	5.2	18	400	0	102	61-164	429	4.63	30
sec-Butylbenzene	387.8	6	20	400	0	97	80-134	391	0.822	30
Styrene	466.6	6.6	22	400	0	117	83-137	462.8	0.818	30
tert-Butylbenzene	361.8	7.8	26	400	0	90.4	70-130	370.4	2.35	30
Tetrachloroethene	387.8	7.8	26	400	0	97	68-166	387	0.207	30
Toluene	405.4	9	30	400	0	101	76-125	407.8	0.59	30
trans-1,2-Dichloroethene	398.8	9.6	32	400	0	99.7	80-140	429	7.3	30
trans-1,3-Dichloropropene	325.2	7.6	55	400	0	81.3	56-132	322.4	0.865	30
Trichloroethene	370.4	8.6	29	400	18.2	88	77-125	374.2	1.02	30
Trichlorofluoromethane	399	10	34	400	0	99.8	60-140	404	1.25	30
Vinyl chloride	389.4	11	35	400	0	97.4	50-136	406.2	4.22	30
Xylenes, Total	1395	16	89	1200	172.4	102	80-126	1386	0.69	30
Surr: 1,2-Dichloroethane-d4	*407*	0	0	*400*	0	*102*	*75-120*	403	*0.988*	*30*
Surr: 4-Bromofluorobenzene	*388.6*	0	0	*400*	0	*97.2*	*80-110*	377.2	*2.98*	*30*
Surr: Dibromofluoromethane	*412.2*	0	0	*400*	0	*103*	*85-115*	411.4	*0.194*	*30*
Surr: Toluene-d8	*402.2*	0	0	*400*	0	*101*	*85-110*	391.8	*2.62*	*30*

The following samples were analyzed in this batch:

19051722-01A	19051722-02A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Cincinnati, OH +1 513 733 5336
Fort Collins, CO +1 970 490 1511
Everett, WA +1 425 356 2600
Holland, MI +1 616 399 6070
Houston, TX +1 281 530 5656
Spring City, PA +1 610 948 4903
South Charleston, WV +1 304 356 3168
Middletown, PA +1 717 944 5541
Salt Lake City, UT +1 801 266 7700
York, PA +1 717 505 5280

Chain of Custody Form

Page 1 of 1

COC ID: 189140

ALS Project Manager: EB | ALS Work Order #: 19051722

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	55929.005	Project Name	WRR	A	VOCs
Work Order		Project Number	55929.005	B	
Company Name	Gannett Fleming, Inc.	Bill To Company	Gannett Fleming, Inc	C	
Send Report To	Anthony Miller	Invoice Attn	Accounts Payable	D	
Address	8025 Excelsior Dr.	Address	8025 Excelsior Dr.	E	
				F	
City/State/Zip	Madison, WI 53717	City/State/Zip	Madison, WI 53717	G	
Phone	(608) 836-1500	Phone	(608) 836-1500	H	
Fax		Fax		I	
e-Mail Address	awmiller@gfnet.com	e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	PW-11	5/22/19	18:20	GW	HCl	3	X										
2	Trip Blank	"		GW	"	2	X										
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Chelsea Payne

Shipment Method: FedEx

Required Turnaround Time: (Check Box) ☑ Std 10 WK Days ☐ 5 WK Days ☐ Other ☐ 2 WK Days ☐ 24 Hour

Results Due Date:

Relinquished by:	Date: 5/23/19	Time: 18:00	Received by: FedEx	
Relinquished by: FedEx	Date: 5/24/19	Time: 0930	Received by (Laboratory):	
Logged by (Laboratory): KLV	Date: 5/24/19	Time: 1355	Checked by (Laboratory): EB	

Notes:

Cooler ID	Cooler Temp.
SRL	2.4°C

QC Package: (Check One Box Below)
☐ Level II Std QC ☐ TRRP Checklist
☐ Level III Std QC/Raw Data ☐ TRRP Level IV
☐ Level IV SW846/CLP
☐ Other

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Group, USA

Sample Receipt Checklist

Client Name: **GANNETTFLEMING - WI** Date/Time Received: **24-May-19 09:30**

Work Order: **19051722** Received by: **KRW**

Checklist completed by Keith Wierenga (eSignature) 24-May-19 (Date) Reviewed by: Ehrland Bosworth (eSignature) 24-May-19 (Date)

Matrices: Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.4/2.4 C	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	5/24/2019 1:57:44 PM		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction: