con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

February 26, 2020

Joe Laughton
Massachusetts DEP - Worcester
8 New Bond Street
Worcester, MA 01606

Project Location: Princeton, MA
Client Job Number:
Project Number: 101979.00
Laboratory Work Order Number: 20B0848

Enclosed are results of analyses for samples received by the laboratory on February 19, 2020. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kaitlyn A. Feliciano
Project Manager

Table of Contents

Sample Summary 3

Case Narrative 4

Sample Results 5

20B0848-01 5

Sample Preparation Information 6

QC Data 7

Semivolatile Organic Compounds by - LC/MS-MS 7

B252638 7

Flag/Qualifier Summary 8

Certifications 9

Chain of Custody/Sample Receipt 10

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Massachusetts DEP - Worcester
8 New Bond Street
Worcester, MA 01606
ATTN: Joe Laughton

REPORT DATE: 2/26/2020

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 101979.00

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 20B0848

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Princeton, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
12 Allen Hill Rd	20B0848-01	Drinking Water		EPA 537.1	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

EPA 537.1

Qualifications:

V-20

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

Hexafluoropropylene oxide dimer a

S046006-CCV1, S046006-CCV2, S046006-CCV3

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Lisa A. Worthington
Technical Representative

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Project Location: Princeton, MA | Sample Description: | Work Order: 20B0848

Date Received: 2/19/2020

Field Sample #: 12 Allen Hill Rd

Sample ID: 20B0848-01 | Start Date/Time: 2/19/2020 12:00:00AM

Sample Matrix: Drinking Water | Stop Date/Time: 2/19/2020 1:40:00PM

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	MCL/SMCL MA ORSG	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	2.0		ng/L	1		EPA 537.1	2/20/20	2/25/20 7:24	BLM
Perfluorohexanoic acid (PFHxA)	ND	2.0		ng/L	1		EPA 537.1	2/20/20	2/25/20 7:24	BLM
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0		ng/L	1		EPA 537.1	2/20/20	2/25/20 7:24	BLM
Perfluoroheptanoic acid (PFHpA)	2.2	2.0		ng/L	1		EPA 537.1	2/20/20	2/25/20 7:24	BLM
Perfluorooctanoic acid (PFOA)	5.8	2.0		ng/L	1		EPA 537.1	2/20/20	2/25/20 7:24	BLM
Perfluorooctanesulfonic acid (PFOS)	4.2	2.0		ng/L	1		EPA 537.1	2/20/20	2/25/20 7:24	BLM
Perfluorononanoic acid (PFNA)	ND	2.0		ng/L	1		EPA 537.1	2/20/20	2/25/20 7:24	BLM
Perfluorodecanoic acid (PFDA)	ND	2.0		ng/L	1		EPA 537.1	2/20/20	2/25/20 7:24	BLM
N-EtFOSAA	ND	2.0		ng/L	1		EPA 537.1	2/20/20	2/25/20 7:24	BLM
Perfluoroundecanoic acid (PFUnA)	ND	2.0		ng/L	1		EPA 537.1	2/20/20	2/25/20 7:24	BLM
N-MeFOSAA	ND	2.0		ng/L	1		EPA 537.1	2/20/20	2/25/20 7:24	BLM
Perfluorododecanoic acid (PFDoA)	ND	2.0		ng/L	1		EPA 537.1	2/20/20	2/25/20 7:24	BLM
Perfluorotridecanoic acid (PFTrDA)	ND	2.0		ng/L	1		EPA 537.1	2/20/20	2/25/20 7:24	BLM
Perfluorotetradecanoic acid (PFTA)	ND	2.0		ng/L	1		EPA 537.1	2/20/20	2/25/20 7:24	BLM
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0		ng/L	1		EPA 537.1	2/20/20	2/25/20 7:24	BLM
11Cl-PF3OUdS (F53B Major)	ND	2.0		ng/L	1		EPA 537.1	2/20/20	2/25/20 7:24	BLM
9Cl-PF3ONS (F53B Minor)	ND	2.0		ng/L	1		EPA 537.1	2/20/20	2/25/20 7:24	BLM
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0		ng/L	1		EPA 537.1	2/20/20	2/25/20 7:24	BLM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	94.4	70-130		2/25/20 7:24
M3HFPO-DA	93.1	70-130		2/25/20 7:24
13C-PFDA	111	70-130		2/25/20 7:24
d5-NEtFOSAA	92.9	70-130		2/25/20 7:24

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Sample Extraction Data

Prep Method: EPA 537.1-EPA 537.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20B0848-01 [12 Allen Hill Rd]	B252638	250	1.00	02/20/20

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QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B252638 - EPA 537.1										
Blank (B252638-BLK1)				Prepared: 02/20/20 Analyzed: 02/25/20						
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	2.0	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L							
Perfluorooctanoic acid (PFOA)	ND	2.0	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L							
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L							
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L							
N-EtFOSAA	ND	2.0	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L							
N-MeFOSAA	ND	2.0	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L							
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	ng/L							
11Cl-PF3OUdS (F53B Major)	ND	2.0	ng/L							
9Cl-PF3ONS (F53B Minor)	ND	2.0	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	ng/L							
Surrogate: 13C-PFHxA	*35.7*		ng/L	40.0		89.2	70-130			
Surrogate: M3HFPO-DA	*33.7*		ng/L	40.0		84.2	70-130			
Surrogate: 13C-PFDA	*45.9*		ng/L	40.0		115	70-130			
Surrogate: d5-NEtFOSAA	*152*		ng/L	160		94.8	70-130			
LCS (B252638-BS1)				Prepared: 02/20/20 Analyzed: 02/25/20						
Perfluorobutanesulfonic acid (PFBS)	16.8	2.0	ng/L	17.7		95.1	70-130			
Perfluorohexanoic acid (PFHxA)	18.7	2.0	ng/L	20.0		93.7	70-130			
Perfluorohexanesulfonic acid (PFHxS)	17.7	2.0	ng/L	18.2		97.5	70-130			
Perfluoroheptanoic acid (PFHpA)	16.6	2.0	ng/L	20.0		83.1	70-130			
Perfluorooctanoic acid (PFOA)	20.2	2.0	ng/L	20.0		101	70-130			
Perfluorooctanesulfonic acid (PFOS)	18.3	2.0	ng/L	18.5		98.9	70-130			
Perfluorononanoic acid (PFNA)	20.8	2.0	ng/L	20.0		104	70-130			
Perfluorodecanoic acid (PFDA)	22.1	2.0	ng/L	20.0		110	70-130			
N-EtFOSAA	24.0	2.0	ng/L	20.0		120	70-130			
Perfluoroundecanoic acid (PFUnA)	20.8	2.0	ng/L	20.0		104	70-130			
N-MeFOSAA	23.0	2.0	ng/L	20.0		115	70-130			
Perfluorododecanoic acid (PFDoA)	16.6	2.0	ng/L	20.0		82.9	70-130			
Perfluorotridecanoic acid (PFTrDA)	16.1	2.0	ng/L	20.0		80.7	70-130			
Perfluorotetradecanoic acid (PFTA)	14.7	2.0	ng/L	20.0		73.4	70-130			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	26.0	2.0	ng/L	20.0		130	70-130			
11Cl-PF3OUdS (F53B Major)	15.3	2.0	ng/L	18.8		81.1	70-130			
9Cl-PF3ONS (F53B Minor)	19.0	2.0	ng/L	18.6		102	70-130			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	18.4	2.0	ng/L	20.0		92.0	70-130			
Surrogate: 13C-PFHxA	*35.1*		ng/L	40.0		87.9	70-130			
Surrogate: M3HFPO-DA	*31.1*		ng/L	40.0		77.7	70-130			
Surrogate: 13C-PFDA	*44.0*		ng/L	40.0		110	70-130			
Surrogate: d5-NEtFOSAA	*150*		ng/L	160		94.1	70-130			

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
V-20	Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 537.1 in Drinking Water	
Perfluorobutanesulfonic acid (PFBS)	NH-P,VT-DW,NJ,CT,ME,PA
Perfluorohexanoic acid (PFHxA)	NH-P,VT-DW,NJ,CT,ME,PA
Perfluorohexanesulfonic acid (PFHxS)	NH-P,VT-DW,NJ,CT,ME,PA
Perfluoroheptanoic acid (PFHpA)	NH-P,VT-DW,NJ,CT,ME,PA
Perfluorooctanoic acid (PFOA)	VT-DW,NJ,CT,ME,NY,NH,PA
Perfluorooctanesulfonic acid (PFOS)	VT-DW,NJ,CT,ME,NY,NH,PA
Perfluorononanoic acid (PFNA)	NH-P,VT-DW,NJ,CT,ME,PA
Perfluorodecanoic acid (PFDA)	NH-P,VT-DW,NJ,CT,ME,PA
N-EtFOSAA	NH-P,VT-DW,NJ,CT,ME,PA
Perfluoroundecanoic acid (PFUnA)	NH-P,VT-DW,NJ,CT,ME,PA
N-MeFOSAA	NH-P,VT-DW,NJ,CT,ME,PA
Perfluorododecanoic acid (PFDoA)	NH-P,VT-DW,NJ,CT,ME,PA
Perfluorotridecanoic acid (PFTrDA)	NH-P,VT-DW,NJ,CT,ME,PA
Perfluorotetradecanoic acid (PFTA)	NH-P,VT-DW,NJ,CT,ME,PA
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P,VT-DW,NJ,CT,ME,PA
11Cl-PF3OUdS (F53B Major)	NH-P,VT-DW,NJ,CT,ME,PA
9Cl-PF3ONS (F53B Minor)	NH-P,VT-DW,NJ,CT,ME,PA
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NH-P,VT-DW,NJ,CT,ME,PA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2020
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2021
NY	New York State Department of Health	10899 NELAP	04/1/2020
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2021
RI	Rhode Island Department of Health	LAO00112	12/30/2020
NC	North Carolina Div. of Water Quality	652	12/31/2020
NJ	New Jersey DEP	MA007 NELAP	06/30/2020
FL	Florida Department of Health	E871027 NELAP	06/30/2020
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2020
ME	State of Maine	2011028	06/9/2021
VA	Commonwealth of Virginia	460217	12/14/2020
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2020
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2020
NC-DW	North Carolina Department of Health	25703	07/31/2020
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2020

KAF 20B0878

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http://www.contestlabs.com

Doc # 381 Rev 2_06262019

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com

Page 1 of 1

Company Name:	MassDEP
Address:	8 New Bond Street, Worcester MA 01606
Phone:	508-849-4018 (John Laughton)
Project Name:	Princeton Residential Well Sampling
Project Location:	Princeton, MA
Project Number:	DEP Project No. 101979
Project Manager:	Joseph Laughton and Rebecca Buswell
Con-Test Quote Name/Number:	
Invoice Recipient:	MassDEP
Sampled By:	Tighe & Bond

Requested Turnaround Time

7-Day ☐ 10-Day ☑
PFAS 10-Day (std) ☐ Due Date:

Rush-Approval Required

1-Day ☐ 3-Day ☐
2-Day ☐ 4-Day ☐

Dissolved Metals Samples

○ Field Filtered
○ Lab to Filter

Orthophosphate Samples

○ Field Filtered
○ Lab to Filter

Data Delivery

Format: PDF ☑ EXCEL ☑
Other: EDD
CLP Like Data Pkg Required: ☐
Email To: Joseph.Laughton@mass.gov; Rebecca.Buswell@mass.gov
Fax To #:

ANALYSIS REQUESTED

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	[1]Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	PFOS/PFOA 537.1
1	12 Alen Hill Rd	2/14/20	1340	GRAB	DW	U			2			X

Relinquished by: (signature) Date/Time: 2/19/20 1700
Received by: (signature) Fridge Date/Time: 2/19/20 1700
Relinquished by: (signature) Fridge Date/Time: 2/19/20 8:20
Received by: (signature) Date/Time: 2/19/20 8:20
Relinquished by: (signature) Date/Time: 2/19/20 4:22
Received by: (signature) 30 Date/Time: 2/19/20 1622
Relinquished by: (signature) Date/Time:
Received by: (signature) Date/Time:

Client Comments:

Please bill MASSDEP direct using project number 101979

Detection Limit Requirements

MA
CT
Other

Special Requirements

☑ MA MCP Required
MCP Certification Form Required
☐ CT RCP Required
RCP Certification Form Required
☐ MA State DW Required
PWSID #

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Project Entity

Government ☐ Municipality ☐ MWRA ☐ WRTA ☐
Federal ☐ 21 J ☐ School ☐
City ☐ Brownfield ☐ MBTA ☐

Other
☐ Chromatogram
☐ AIHA-LAP,LLC

PCB ONLY
☐ Soxhlet
☐ Non Soxhlet

Lab Comments:

Disclaimer: Con-Test Labs is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Con-Test values your partnership on each project and will try to assist with missing information, but will not be held accountable.

[2] Preservation Code

Courier Use Only

Total Number Of:
VIALS
GLASS
PLASTIC
BACTERIA
ENCORE

Glassware in the fridge? Y / N
Glassware in freezer? Y / N
Prepackaged Cooler? Y / N

*Contest is not responsible for missing samples from prepacked coolers

[1] Matrix Codes:
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

[2] Preservation Codes:
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

Table of Contents

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples_____

con-test® ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client MassDEP

Received By _____ Date 2/19/20 Time 1622

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____

Direct from Sampling _____ Ambient _____ Melted Ice _____

By Gun # 2 Actual Temp - 3.0

Were samples within Temperature? 2-6°C T By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? n/a Were Samples Tampered with? n/a

Was COC Relinquished ? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T

Did COC include all pertinent Information? Client T Analysis T Sampler Name T

Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F Who was notified? _____

Are there Rushes? F Who was notified? _____

Are there Short Holds? F Who was notified? _____

Is there enough Volume? T

Is there Headspace where applicable? n/a MS/MSD? F

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? F On COC? F

Do all samples have the proper pH? Acid n/a Base n/a

Vial	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	2	4oz Amb/Clear	
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear	
DI-		Other Glass		Other Plastic		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Unused Media

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear	
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear	
DI-		Other Plastic		Other Glass		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Comments: