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February 22, 2023

Brad Rokus
Oshkosh Water Filtration Dept
425 Lakeshore Drive
Oshkosh, WI 54901

RE: Quarterly PFAS Testing
Work Order: CB01178
Received: 02/08/23
PWS ID: 47104574

Enclosed are the results of analyses for samples received by our laboratory on 2/8/2023. If you have any questions concerning this report, please feel free to contact a client service representative at clientservices@nlslab.com.

Sincerely,

A handwritten signature in black ink, appearing to read "Tom Priebe".

Tom Priebe For Client Services
Northern Lake Service, Inc.



Oshkosh Water Filtration Dept
425 Lakeshore Drive
Oshkosh, WI 54901

Project: Quarterly PFAS Testing
Project Number: 2023 WDNR Drinking Water Requirements
Project Manager: Brad Rokus

Reported:
2/22/23 13:37

Work Order:
CB01178

Sample Summary

Descriptions of all qualifiers listed throughout this report can be found on the Qualifiers and Definitions Page.

Lab ID	Sample	Matrix	Sample Type	Qualifiers	Date Sampled	Date Received
CB01178-01	EP81 (PFAS)	DW			2/7/23 10:00	2/8/23 9:00
CB01178-02	EP81 Field Blank	DW			2/7/23 0:00	2/8/23 9:00



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Sample Results

Sample: EP81 (PFAS)

CB01178-01 (DW) Sampled: 02/07/23 10:00

Analyte	Result	Qualifier	Dilution	LOD	LOQ	MCL	Units	Date Prepared	Date Analyzed	Analyst	Method	Lab Cert Code
Semi-Volatiles												
11-chloroeicosfluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		1	0.32	1.0		ng/L	2/14/23 5:32	2/14/23 14:46	RAW	EPA 537.1, Rev 2.0	2
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	ND		1	0.35	1.1		ng/L	2/14/23 5:32	2/14/23 14:46	RAW	EPA 537.1, Rev 2.0	2
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND		1	0.39	1.2		ng/L	2/14/23 5:32	2/14/23 14:46	RAW	EPA 537.1, Rev 2.0	2
hexafluoropropylene oxide dimer acid (HFPO DA)	ND		1	0.43	1.5		ng/L	2/14/23 5:32	2/14/23 14:46	RAW	EPA 537.1, Rev 2.0	2
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		1	0.49	1.7		ng/L	2/14/23 5:32	2/14/23 14:46	RAW	EPA 537.1, Rev 2.0	2
n-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1	0.42	1.4		ng/L	2/14/23 5:32	2/14/23 14:46	RAW	EPA 537.1, Rev 2.0	2
perfluorobutanesulfonic acid (PFBS)	0.67	J	1	0.31	1.0		ng/L	2/14/23 5:32	2/14/23 14:46	RAW	EPA 537.1, Rev 2.0	2
perfluorodecanoic acid (PFDA)	ND		1	0.34	1.1		ng/L	2/14/23 5:32	2/14/23 14:46	RAW	EPA 537.1, Rev 2.0	2
perfluorododecanoic acid (PFDoA)	ND		1	0.24	0.80		ng/L	2/14/23 5:32	2/14/23 14:46	RAW	EPA 537.1, Rev 2.0	2
perfluoroheptanoic acid (PFHpA)	0.69	J	1	0.46	1.6		ng/L	2/14/23 5:32	2/14/23 14:46	RAW	EPA 537.1, Rev 2.0	2
perfluorohexanoic acid (PFHxA)	1.1	J	1	0.49	1.7		ng/L	2/14/23 5:32	2/14/23 14:46	RAW	EPA 537.1, Rev 2.0	2
perfluorohexanesulfonic acid (PFHxS)	0.47	J	1	0.35	1.1		ng/L	2/14/23 5:32	2/14/23 14:46	RAW	EPA 537.1, Rev 2.0	2
perfluorononanoic acid (PFNA)	ND		1	0.48	1.6		ng/L	2/14/23 5:32	2/14/23 14:46	RAW	EPA 537.1, Rev 2.0	2
perfluorooctanoic acid (PFOA)	0.97	J	1	0.51	1.7		ng/L	2/14/23 5:32	2/14/23 14:46	RAW	EPA 537.1, Rev 2.0	2
perfluorooctanesulfonic acid (PFOS)	1.0		1	0.32	1.0		ng/L	2/14/23 5:32	2/14/23 14:46	RAW	EPA 537.1, Rev 2.0	2
perfluorotetradecanoic acid (PFTA)	ND		1	0.35	1.1		ng/L	2/14/23 5:32	2/14/23 14:46	RAW	EPA 537.1, Rev 2.0	2
perfluorotridecanoic acid (PFTrDA)	ND		1	0.45	1.5		ng/L	2/14/23 5:32	2/14/23 14:46	RAW	EPA 537.1, Rev 2.0	2
perfluoroundecanoic acid (PFUnA)	ND		1	0.31	1.0		ng/L	2/14/23 5:32	2/14/23 14:46	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURRE) C13-PFHxA	97%			Limits: 70-130%				2/14/23 5:32	2/14/23 14:46	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURRE) C13-HFPODA	93%			Limits: 70-130%				2/14/23 5:32	2/14/23 14:46	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURRE) C13-PFDA	95%			Limits: 70-130%				2/14/23 5:32	2/14/23 14:46	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURRE) d5-NEtFOSAA	87%			Limits: 70-130%				2/14/23 5:32	2/14/23 14:46	RAW	EPA 537.1, Rev 2.0	2

Sample: EP81 Field Blank

CB01178-02 (DW) Sampled: 02/07/23 00:00

Analyte	Result	Qualifier	Dilution	LOD	LOQ	MCL	Units	Date Prepared	Date Analyzed	Analyst	Method	Lab Cert Code
Semi-Volatiles												



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Sample Results (Continued)

Sample: EP81 Field Blank (Continued)

CB01178-02 (DW) Sampled: 02/07/23 00:00

Analyte	Result	Qualifier	Dilution	LOD	LOQ	MCL	Units	Date Prepared	Date Analyzed	Analyst	Method	Lab Cert Code
Semi-Volatiles (Continued)												
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		1	0.32	1.0		ng/L	2/16/23 7:25	2/17/23 10:09	RAW	EPA 537.1, Rev 2.0	2
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	ND		1	0.35	1.1		ng/L	2/16/23 7:25	2/17/23 10:09	RAW	EPA 537.1, Rev 2.0	2
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND		1	0.38	1.2		ng/L	2/16/23 7:25	2/17/23 10:09	RAW	EPA 537.1, Rev 2.0	2
hexafluoropropylene oxide dimer acid (HFPO DA)	ND		1	0.42	1.4		ng/L	2/16/23 7:25	2/17/23 10:09	RAW	EPA 537.1, Rev 2.0	2
N-ethyl perfluorooctanesulfonamidoacetic acid (NETFOSAA)	ND		1	0.48	1.6		ng/L	2/16/23 7:25	2/17/23 10:09	RAW	EPA 537.1, Rev 2.0	2
n-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		1	0.41	1.3		ng/L	2/16/23 7:25	2/17/23 10:09	RAW	EPA 537.1, Rev 2.0	2
perfluorobutanesulfonic acid (PFBS)	ND		1	0.31	1.0		ng/L	2/16/23 7:25	2/17/23 10:09	RAW	EPA 537.1, Rev 2.0	2
perfluorodecanoic acid (PFDA)	ND		1	0.34	1.1		ng/L	2/16/23 7:25	2/17/23 10:09	RAW	EPA 537.1, Rev 2.0	2
perfluorododecanoic acid (PFDoA)	ND		1	0.23	0.79		ng/L	2/16/23 7:25	2/17/23 10:09	RAW	EPA 537.1, Rev 2.0	2
perfluoroheptanoic acid (PFHpA)	ND		1	0.45	1.5		ng/L	2/16/23 7:25	2/17/23 10:09	RAW	EPA 537.1, Rev 2.0	2
perfluorohexanoic acid (PFHxA)	ND		1	0.48	1.6		ng/L	2/16/23 7:25	2/17/23 10:09	RAW	EPA 537.1, Rev 2.0	2
perfluorohexanesulfonic acid (PFHxS)	ND		1	0.35	1.1		ng/L	2/16/23 7:25	2/17/23 10:09	RAW	EPA 537.1, Rev 2.0	2
perfluorononanoic acid (PFNA)	ND		1	0.47	1.5		ng/L	2/16/23 7:25	2/17/23 10:09	RAW	EPA 537.1, Rev 2.0	2
perfluorooctanoic acid (PFOA)	ND		1	0.50	1.6		ng/L	2/16/23 7:25	2/17/23 10:09	RAW	EPA 537.1, Rev 2.0	2
perfluorooctanesulfonic acid (PFOS)	ND		1	0.32	1.0		ng/L	2/16/23 7:25	2/17/23 10:09	RAW	EPA 537.1, Rev 2.0	2
perfluorotetradecanoic acid (PFTA)	ND		1	0.35	1.1		ng/L	2/16/23 7:25	2/17/23 10:09	RAW	EPA 537.1, Rev 2.0	2
perfluorotridecanoic acid (PFTrDA)	ND		1	0.44	1.4		ng/L	2/16/23 7:25	2/17/23 10:09	RAW	EPA 537.1, Rev 2.0	2
perfluoroundecanoic acid (PFUnA)	ND		1	0.31	1.0		ng/L	2/16/23 7:25	2/17/23 10:09	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURR) C13-PFHxA	89%			Limits: 70-130%				2/16/23 7:25	2/17/23 10:09	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURR) C13-HFPODA	87%			Limits: 70-130%				2/16/23 7:25	2/17/23 10:09	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURR) C13-PFDA	90%			Limits: 70-130%				2/16/23 7:25	2/17/23 10:09	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURR) d5-NETFOSAA	87%			Limits: 70-130%				2/16/23 7:25	2/17/23 10:09	RAW	EPA 537.1, Rev 2.0	2



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List of Certifications

Code	Description	Number	Expires
2	NLS (Crandon) WDNR Laboratory ID No.	721026460	8/31/23



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Qualifiers and Definitions

Item	Definition
J	Result is between LOD and LOQ and considered to be within a region of less-certain quantitation.
ND	Analyte NOT DETECTED at or above the LOD or MRL.
LOD	Limit of Detection.
LOQ	Limit of Quantitation.
NA	Not Applicable.
Dry	Dry Weight Basis.
Wet	Wet Weight Basis.
% Dry	Equal to: (mg/kg dry) / 10000.
1000 ug/L	Equal to: 1 mg/L.
MCL	Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.
RPD	Relative Percent Difference.
%REC	Percent Recovery.
Source	Sample that was matrix spiked or duplicated.

All LOD/LOQs adjusted to reflect preparation volumes, dilutions, and/or solids content.