

 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Brad Puetz
City of Sioux City
PO BOX 447
Sioux City, Iowa 51101
Generated 8/25/2025 8:16:47 AM

JOB DESCRIPTION

533 / IA9778054 - 02/02

JOB NUMBER

810-160206-1

Eurofins Eaton Analytical South Bend

Job Notes

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The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Eaton Analytical, LLC Project Manager.

Authorization



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Definitions/Glossary

Client: City of Sioux City
Project/Site: 533 / IA9778054 - 02/02

Job ID: 810-160206-1

Qualifiers

LCMS

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: City of Sioux City
Project: 533 / IA9778054 - 02/02

Job ID: 810-160206-1

Job ID: 810-160206-1

Eurofins Eaton Analytical South Bend

Job Narrative 810-160206-1

The analytical test results presented in this report meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page, unless otherwise noted. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable. Regulated compliance samples (e.g. SDWA, NPDES) must comply with associated agency requirements/permits.

- Matrix-specific batch QC (e.g., MS, MSD, SD) may not be reported when insufficient sample volume is available or when site-specific QC samples are not submitted. In such cases, a Laboratory Control Sample Duplicate (LCSD) may be analyzed to provide precision data for the batch.
- For samples analyzed using surrogate and/or isotope dilution analytes, any recoveries falling outside of established acceptance criteria are re-prepared and/or re-analyzed to confirm results, unless the deviation is due to sample dilution or otherwise explained in the case narrative.

Receipt

The samples were received on 8/15/2025 9:45 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.4°C.

PFAS

Method 533: The pH of the following sample was adjusted to pH 7.5 in the laboratory: Finished Tap (South Bridge) (810-160206-1)

Method 533: Due to a laboratory error, no DU was extracted for method 533 in Analytical batch 810-156547.

Method 533: The pH of the following sample was adjusted to pH 7.5 in the laboratory: Finished Tap (South Bridge) FTB (810-160206-2)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: City of Sioux City
 Project/Site: 533 / IA9778054 - 02/02

Job ID: 810-160206-1

Client Sample ID: Finished Tap (South Bridge)

Lab Sample ID: 810-160206-1

Date Collected: 08/14/25 10:24

Matrix: Drinking Water

Date Received: 08/15/25 09:45

PWSID Number: IA9778054

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosfluoro-3-oxaundecane e-1-sulfonic acid	<0.83		2.0	0.83 ng/L		08/19/25 09:11	08/20/25 08:58	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.58		2.0	0.58 ng/L		08/19/25 09:11	08/20/25 08:58	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	1.5	J	2.0	0.68 ng/L		08/19/25 09:11	08/20/25 08:58	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	1.6	J	2.0	0.69 ng/L		08/19/25 09:11	08/20/25 08:58	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.61		2.0	0.61 ng/L		08/19/25 09:11	08/20/25 08:58	1
9-Chlorohexadecafluoro-3-oxanonane e-1-sulfonic acid	<0.99		2.0	0.99 ng/L		08/19/25 09:11	08/20/25 08:58	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<0.72		2.0	0.72 ng/L		08/19/25 09:11	08/20/25 08:58	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.95		2.0	0.95 ng/L		08/19/25 09:11	08/20/25 08:58	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.67		2.0	0.67 ng/L		08/19/25 09:11	08/20/25 08:58	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.82		2.0	0.82 ng/L		08/19/25 09:11	08/20/25 08:58	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.66		2.0	0.66 ng/L		08/19/25 09:11	08/20/25 08:58	1
Perfluorobutanesulfonic acid (PFBS)	19		2.0	0.67 ng/L		08/19/25 09:11	08/20/25 08:58	1
Perfluorobutanoic acid (PFBA)	9.0		2.0	0.53 ng/L		08/19/25 09:11	08/20/25 08:58	1
Perfluorodecanoic acid (PFDA)	<0.67		2.0	0.67 ng/L		08/19/25 09:11	08/20/25 08:58	1
Perfluorododecanoic acid (PFDoA)	<0.71		2.0	0.71 ng/L		08/19/25 09:11	08/20/25 08:58	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.61		2.0	0.61 ng/L		08/19/25 09:11	08/20/25 08:58	1
Perfluoroheptanoic acid (PFHpA)	4.4		2.0	0.73 ng/L		08/19/25 09:11	08/20/25 08:58	1
Perfluorohexanesulfonic acid (PFHxS)	33		2.0	0.67 ng/L		08/19/25 09:11	08/20/25 08:58	1
Perfluorohexanoic acid (PFHxA)	30		2.0	0.74 ng/L		08/19/25 09:11	08/20/25 08:58	1
Perfluorononanoic acid (PFNA)	<0.74		2.0	0.74 ng/L		08/19/25 09:11	08/20/25 08:58	1
Perfluorooctanesulfonic acid (PFOS)	4.2		2.0	0.70 ng/L		08/19/25 09:11	08/20/25 08:58	1
Perfluorooctanoic acid (PFOA)	6.5		2.0	0.75 ng/L		08/19/25 09:11	08/20/25 08:58	1
Perfluoropentanesulfonic acid (PFPeS)	11		2.0	0.70 ng/L		08/19/25 09:11	08/20/25 08:58	1
Perfluoropentanoic acid (PFPeA)	19		2.0	0.78 ng/L		08/19/25 09:11	08/20/25 08:58	1
Perfluoroundecanoic acid (PFUnA)	<0.71		2.0	0.71 ng/L		08/19/25 09:11	08/20/25 08:58	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDoA	89		50 - 200	08/19/25 09:11	08/20/25 08:58	1
13C2-4:2-FTS	125		50 - 200	08/19/25 09:11	08/20/25 08:58	1
13C2-6:2-FTS	114		50 - 200	08/19/25 09:11	08/20/25 08:58	1
13C2-8:2-FTS	109		50 - 200	08/19/25 09:11	08/20/25 08:58	1
13C3 HFPO-DA	100		50 - 200	08/19/25 09:11	08/20/25 08:58	1
13C3 PFBS	119		50 - 200	08/19/25 09:11	08/20/25 08:58	1
13C3 PFHxS	107		50 - 200	08/19/25 09:11	08/20/25 08:58	1
13C4 PFBA	108		50 - 200	08/19/25 09:11	08/20/25 08:58	1
13C4 PFHpA	104		50 - 200	08/19/25 09:11	08/20/25 08:58	1
13C5 PFHxA	103		50 - 200	08/19/25 09:11	08/20/25 08:58	1
13C5 PFPeA	116		50 - 200	08/19/25 09:11	08/20/25 08:58	1

Eurofins Eaton Analytical South Bend

Client Sample Results

Client: City of Sioux City
 Project/Site: 533 / IA9778054 - 02/02

Job ID: 810-160206-1

Client Sample ID: Finished Tap (South Bridge)

Lab Sample ID: 810-160206-1

Date Collected: 08/14/25 10:24

Matrix: Drinking Water

Date Received: 08/15/25 09:45

PWSID Number: IA9778054

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C6 PFDA	99		50 - 200	08/19/25 09:11	08/20/25 08:58	1
13C7 PFUnA	94		50 - 200	08/19/25 09:11	08/20/25 08:58	1
13C8 PFOA	106		50 - 200	08/19/25 09:11	08/20/25 08:58	1
13C8 PFOS	107		50 - 200	08/19/25 09:11	08/20/25 08:58	1
13C9 PFNA	103		50 - 200	08/19/25 09:11	08/20/25 08:58	1

Method: TAL SOP Total PFCA-Sum - Total PFCA (Summary)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total PFOA and PFOS	11		2.0	0.20 ng/L			08/20/25 08:58	1

Client Sample ID: Finished Tap (South Bridge) FTB

Lab Sample ID: 810-160206-2

Date Collected: 08/14/25 00:00

Matrix: Drinking Water

Date Received: 08/15/25 09:45

PWSID Number: IA9778054

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
11-Chloroeicosafluoro-3-oxaundecane e-1-sulfonic acid	<0.78		1.9	0.78 ng/L		08/21/25 08:34	08/21/25 22:23	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.54		1.9	0.54 ng/L		08/21/25 08:34	08/21/25 22:23	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.64		1.9	0.64 ng/L		08/21/25 08:34	08/21/25 22:23	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.65		1.9	0.65 ng/L		08/21/25 08:34	08/21/25 22:23	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.57		1.9	0.57 ng/L		08/21/25 08:34	08/21/25 22:23	1
9-Chlorohexadecafluoro-3-oxanonane e-1-sulfonic acid	<0.92		1.9	0.92 ng/L		08/21/25 08:34	08/21/25 22:23	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<0.68		1.9	0.68 ng/L		08/21/25 08:34	08/21/25 22:23	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.89		1.9	0.89 ng/L		08/21/25 08:34	08/21/25 22:23	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.63		1.9	0.63 ng/L		08/21/25 08:34	08/21/25 22:23	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.77		1.9	0.77 ng/L		08/21/25 08:34	08/21/25 22:23	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.62		1.9	0.62 ng/L		08/21/25 08:34	08/21/25 22:23	1
Perfluorobutanesulfonic acid (PFBS)	<0.63		1.9	0.63 ng/L		08/21/25 08:34	08/21/25 22:23	1
Perfluorobutanoic acid (PFBA)	<0.50		1.9	0.50 ng/L		08/21/25 08:34	08/21/25 22:23	1
Perfluorodecanoic acid (PFDA)	<0.63		1.9	0.63 ng/L		08/21/25 08:34	08/21/25 22:23	1
Perfluorododecanoic acid (PFDoA)	<0.67		1.9	0.67 ng/L		08/21/25 08:34	08/21/25 22:23	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.57		1.9	0.57 ng/L		08/21/25 08:34	08/21/25 22:23	1
Perfluoroheptanoic acid (PFHpA)	<0.69		1.9	0.69 ng/L		08/21/25 08:34	08/21/25 22:23	1
Perfluorohexanesulfonic acid (PFHxS)	<0.63		1.9	0.63 ng/L		08/21/25 08:34	08/21/25 22:23	1
Perfluorohexanoic acid (PFHxA)	<0.70		1.9	0.70 ng/L		08/21/25 08:34	08/21/25 22:23	1
Perfluorononanoic acid (PFNA)	<0.70		1.9	0.70 ng/L		08/21/25 08:34	08/21/25 22:23	1
Perfluorooctanesulfonic acid (PFOS)	<0.66		1.9	0.66 ng/L		08/21/25 08:34	08/21/25 22:23	1
Perfluorooctanoic acid (PFOA)	<0.71		1.9	0.71 ng/L		08/21/25 08:34	08/21/25 22:23	1
Perfluoropentanesulfonic acid (PFPeS)	<0.66		1.9	0.66 ng/L		08/21/25 08:34	08/21/25 22:23	1
Perfluoropentanoic acid (PFPeA)	<0.73		1.9	0.73 ng/L		08/21/25 08:34	08/21/25 22:23	1

Eurofins Eaton Analytical South Bend

Client Sample Results

Client: City of Sioux City
 Project/Site: 533 / IA9778054 - 02/02

Job ID: 810-160206-1

Client Sample ID: Finished Tap (South Bridge) FTB

Lab Sample ID: 810-160206-2

Date Collected: 08/14/25 00:00

Matrix: Drinking Water

Date Received: 08/15/25 09:45

PWSID Number: IA9778054

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroundecanoic acid (PFUnA)	<0.67		1.9	0.67 ng/L		08/21/25 08:34	08/21/25 22:23	1
Isotope Dilution								
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
13C2 PFDoA	94		50 - 200			08/21/25 08:34	08/21/25 22:23	1
13C2-4:2-FTS	98		50 - 200			08/21/25 08:34	08/21/25 22:23	1
13C2-6:2-FTS	99		50 - 200			08/21/25 08:34	08/21/25 22:23	1
13C2-8:2-FTS	100		50 - 200			08/21/25 08:34	08/21/25 22:23	1
13C3 HFPO-DA	87		50 - 200			08/21/25 08:34	08/21/25 22:23	1
13C3 PFBS	105		50 - 200			08/21/25 08:34	08/21/25 22:23	1
13C3 PFHxS	102		50 - 200			08/21/25 08:34	08/21/25 22:23	1
13C4 PFBA	94		50 - 200			08/21/25 08:34	08/21/25 22:23	1
13C4 PFHpA	95		50 - 200			08/21/25 08:34	08/21/25 22:23	1
13C5 PFHxA	92		50 - 200			08/21/25 08:34	08/21/25 22:23	1
13C5 PFPeA	95		50 - 200			08/21/25 08:34	08/21/25 22:23	1
13C6 PFDA	95		50 - 200			08/21/25 08:34	08/21/25 22:23	1
13C7 PFUnA	94		50 - 200			08/21/25 08:34	08/21/25 22:23	1
13C8 PFOA	96		50 - 200			08/21/25 08:34	08/21/25 22:23	1
13C8 PFOS	101		50 - 200			08/21/25 08:34	08/21/25 22:23	1
13C9 PFNA	95		50 - 200			08/21/25 08:34	08/21/25 22:23	1

Method: TAL SOP Total PFCA-Sum - Total PFCA (Summary)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total PFOA and PFOS	<0.20		2.0	0.20 ng/L			08/21/25 22:23	1

Lab Chronicle

Client: City of Sioux City
 Project/Site: 533 / IA9778054 - 02/02

Job ID: 810-160206-1

Client Sample ID: Finished Tap (South Bridge)

Lab Sample ID: 810-160206-1

Date Collected: 08/14/25 10:24

Matrix: Drinking Water

Date Received: 08/15/25 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			156458	BAB	EA SB	08/19/25 09:11
Total/NA	Analysis	533		1	156547	PP	EA SB	08/20/25 08:58
Total/NA	Analysis	Total PFCA-Sum		1	157085	JT	EA SB	08/20/25 08:58

Client Sample ID: Finished Tap (South Bridge) FTB

Lab Sample ID: 810-160206-2

Date Collected: 08/14/25 00:00

Matrix: Drinking Water

Date Received: 08/15/25 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			156905	MM	EA SB	08/21/25 08:34
Total/NA	Analysis	533		1	156990	MH	EA SB	08/21/25 22:23
Total/NA	Analysis	Total PFCA-Sum		1	157085	JT	EA SB	08/21/25 22:23

Laboratory References:

EA SB = Eurofins Eaton Analytical South Bend, 110 S Hill Street, South Bend, IN 46617, TEL (574)233-4777

Accreditation/Certification Summary

Client: City of Sioux City
Project/Site: 533 / IA9778054 - 02/02

Job ID: 810-160206-1

Laboratory: Eurofins Eaton Analytical South Bend

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
A2LA	ISO/IEC 17025	5794.01	07-31-26

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Total PFCA-Sum		Drinking Water	Total PFOA and PFOS

Iowa State 098 11-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Total PFCA-Sum		Drinking Water	Total PFOA and PFOS

Method Summary

Client: City of Sioux City
Project/Site: 533 / IA9778054 - 02/02

Job ID: 810-160206-1

Method	Method Description	Protocol	Laboratory
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA SB
Total PFCA-Sum	Total PFCA (Summary)	TAL SOP	EA SB
533	Extraction of Perfluorinated and Polyfluorinated Alkyl Acids	EPA	EA SB

Protocol References:

- EPA = US Environmental Protection Agency
- TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

- EA SB = Eurofins Eaton Analytical South Bend, 110 S Hill Street, South Bend, IN 46617, TEL (574)233-4777



Sample Summary

Client: City of Sioux City
Project/Site: 533 / IA9778054 - 02/02

Job ID: 810-160206-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
810-160206-1	Finished Tap (South Bridge)	Drinking Water	08/14/25 10:24	08/15/25 09:45	IA9778054
810-160206-2	Finished Tap (South Bridge) FTB	Drinking Water	08/14/25 00:00	08/15/25 09:45	IA9778054

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

Login Sample Receipt Checklist

Client: City of Sioux City

Job Number: 810-160206-1

Login Number: 160206

List Source: Eurofins Eaton Analytical South Bend

List Number: 1

Creator: DePriest, Kellie

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Samples do not require splitting or compositing.	True	
Were samples preserved to correct pH upon receipt, if applicable?	True	
Container provided by EEA	True	