



BSK Associates Laboratory Fresno
 1414 Stanislaus St
 Fresno, CA 93706
 559-497-2888 (Main)

VFE0163
 5/24/2022

Per- and Polyfluoralkyl Substances (PFAS) By EPA Method 533

REPORT OF ANALYSIS

Date Collected: 05/06/22	System Group Type: A
Water System ID Number: 26195	System Name: Four Lakes
Lab -- Sample Number: 218-16301	County: King
Sample Location: PFAS - Well #1 AFF845	Source Number(s): (list all sources if blended or composited) S01
Sample Purpose: (check appropriate box) <input checked="" type="checkbox"/> RC - Routine/Compliance (satisfies monitoring requirements) <input type="checkbox"/> C - Confirmation (confirmation of chemical result*) <input type="checkbox"/> I - Investigative (does not satisfy monitoring requirements) <input type="checkbox"/> O - Other (specify-does not satisfy monitoring requirements)	Date Received: 05/10/22 Date Analyzed: 05/13/22 Date Reported: 05/24/22
Sample Composition: (check appropriate box) <input checked="" type="checkbox"/> S - Single Source <input type="checkbox"/> B - Blended (List source numbers in "Source Numbers" field) <input type="checkbox"/> C - Composite (List source numbers in "Source Numbers" field) <input type="checkbox"/> D - Distribution sample	Sample Type: (check one) <input type="checkbox"/> Pre-Treatment/Untreated (Raw) <input checked="" type="checkbox"/> Post-treatment (Finished) <input type="checkbox"/> Unknown or Other Sample Collected by: Client Phone Number: (360) 236-3030

Send results to:
 Washington State Department of Health
 Derrick Dennis
 PO Box 47823, Olympia, WA 98504

Bill to:
 Washington State Department of Health
 Derrick Dennis
 PO Box 47823, Olympia, WA 98504

REQUIRED ANALYTICAL RESULTS

DOH #	CONSTITUENT	DATA QUALIFIERS	RESULTS	SDRL	SAL	UNITS	EXCEEDS SAL? (X if Yes)	METHOD/ Initials
0434	(PFOA) Perfluorooctanoic acid		ND	2	10	ng/L		EPA 533 / JMM
0433	(PFOS) Perfluorooctanesulfonic acid		ND	2	15	ng/L		EPA 533 / JMM
0431	(PFHxS) Perfluorohexanesulfonic acid		ND	2	65	ng/L		EPA 533 / JMM
0432	(PFNA) Perfluorononanoic acid		ND	2	9	ng/L		EPA 533 / JMM
0429	(PFBS) Perfluorobutanesulfonic acid		ND	2	345	ng/L		EPA 533 / JMM
0430	(PFHpA) Perfluoroheptanoic acid		ND	2	n/a	ng/L		EPA 533 / JMM
0435	(PFHxA) Perfluorohexanoic acid		ND	2	n/a	ng/L		EPA 533 / JMM
0436	(PFDA) Perfluorodecanoic acid		ND	2	n/a	ng/L		EPA 533 / JMM
0437	(PFUnA) Perfluoroundecanoic acid		ND	2	n/a	ng/L		EPA 533 / JMM
0438	(PFDoA) Perfluorododecanoic acid		ND	2	n/a	ng/L		EPA 533 / JMM
0445	(ADONA) 4,8-Dioxa-3H-perfluorononanoic acid		ND	2	n/a	ng/L		EPA 533 / JMM
0446	(9CI-PF3ONS) 9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid		ND	2	n/a	ng/L		EPA 533 / JMM
0447	(HFPO-DA) Hexafluoropropylene oxide dimer acid		ND	2	n/a	ng/L		EPA 533 / JMM
0448	(11CI-PF3OUdS) 11-Chloroicosafafluoro-3-oxaundecanesulfonic acid		ND	2	n/a	ng/L		EPA 533 / JMM
0450	(4:2FTS)1H, 1H, 2H,2H-Perfluorohexane sulfonic acid		ND	2	n/a	ng/L		EPA 533 / JMM
0451	(6:2FTS)1H, 1H, 2H,2H-Perfluorooctane sulfonic acid		ND	2	n/a	ng/L		EPA 533 / JMM

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0452	(8:2FTS)1H, 1H, 2H,2H-Perfluorodecane sulfonic acid		ND	2	n/a	ng/L		EPA 533 / JMM
0453	(NFDHA) Nonfluoro-3,6-dioxahexanoic acid		ND	2	n/a	ng/L		EPA 533 / JMM
0454	(PFBA) Perfluorobutanoic acid		ND	2	n/a	ng/L		EPA 533 / JMM
0455	(PFHpS) Perfluoroheptanesulfonic acid		ND	2	n/a	ng/L		EPA 533 / JMM
0456	(PFMBA) Perfluoro-4-methoxybutanoic acid		ND	2	n/a	ng/L		EPA 533 / JMM
0457	(PFMPA) Perfluoro-3-methoxypropanoic acid		ND	2	n/a	ng/L		EPA 533 / JMM
0458	(PFPeA) Perfluoropentanoic acid		ND	2	n/a	ng/L		EPA 533 / JMM
0459	(PFPeS) Perfluoropentanesulfonic acid		ND	2	n/a	ng/L		EPA 533 / JMM
0460	(PFEESA) Perfluoro(2-ethoxyethane)sulfonic acid		ND	2	n/a	ng/L		EPA 533 / JMM

NOTES:
 *Confirmation: Include the original lab number, sample number, and collection date of original sample in either comment section.
 **To qualify for a monitoring waiver the additional contaminants must be reported to DOH.
DATA QUALIFIER: A symbol or letter to denote additional information about the result.
DOH#: Department assigned contaminant number.
Exceeds SAL: Marked if the contaminant amount exceeds the SAL under chapter 246-290 WAC. If you have questions about this result, please contact the department's drinking water regional office in your area.
METHOD/INITIALS: Analytical method used. / Initials of the analyst that performed the analysis.
ng/L: nanograms per liter or parts per trillion.
SAL (State Action Level) means the concentration of a contaminant or group of contaminants, without an MCL, established to protect public health in accordance with WAC 246-290-315 and which, if exceeded, triggers actions a purveyor takes in accordance with WAC 246-290-320.
SDRL (State Detection Reporting Limit): The minimum reportable detection of a contaminant as established by the department.
ND (Not Detected): In the results column, indicates this compound was analyzed and not detected at a level greater than or equal to the SDRL.

Lab Comments:



BSK Associates Laboratory Fresno
Organics Quality Control Report

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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EPA 533 - Quality Control

Batch: AFE0804

Prepared: 5/12/2022

Prep Method: EPA 533

Analyst: JMM

Blank (AFE0804-BLK1)

11CI-PF3OUdS	ND	2.0	ng/L							05/13/22	
4:2 FTS	ND	2.0	ng/L							05/13/22	
6:2 FTS	ND	2.0	ng/L							05/13/22	
8:2 FTS	ND	2.0	ng/L							05/13/22	
9CI-PF3ONS	ND	2.0	ng/L							05/13/22	
ADONA	ND	2.0	ng/L							05/13/22	
HFPO-DA	ND	2.0	ng/L							05/13/22	
NFDHA	ND	2.0	ng/L							05/13/22	
PFBA	ND	2.0	ng/L							05/13/22	
PFBS	ND	2.0	ng/L							05/13/22	
PFDA	ND	2.0	ng/L							05/13/22	
PFDaA	ND	2.0	ng/L							05/13/22	
PFEESA	ND	2.0	ng/L							05/13/22	
PFHpA	ND	2.0	ng/L							05/13/22	
PFHpS	ND	2.0	ng/L							05/13/22	
PFHxA	ND	2.0	ng/L							05/13/22	
PFHxS	ND	2.0	ng/L							05/13/22	
PFMBA	ND	2.0	ng/L							05/13/22	
PFMPA	ND	2.0	ng/L							05/13/22	
PFNA	ND	2.0	ng/L							05/13/22	
PFOA	ND	2.0	ng/L							05/13/22	
PFOS	ND	2.0	ng/L							05/13/22	
PFPeA	ND	2.0	ng/L							05/13/22	
PFPeS	ND	2.0	ng/L							05/13/22	
PFUnDA	ND	2.0	ng/L							05/13/22	
Surrogate: S-13C2-4:2FTS	160			160		99	50-200			05/13/22	
Surrogate: S-13C2-6:2FTS	150			160		94	50-200			05/13/22	
Surrogate: S-13C2-8:2FTS	150			160		93	50-200			05/13/22	
Surrogate: S-13C2PFDoA	34			40		86	50-200			05/13/22	
Surrogate: S-13C3-HFPO-DA	37			40		93	50-200			05/13/22	
Surrogate: S-13C3-PFBS	37			40		91	50-200			05/13/22	
Surrogate: S-13C3-PFHxS	35			40		88	50-200			05/13/22	
Surrogate: S-13C4-PFBA	37			40		92	50-200			05/13/22	
Surrogate: S-13C4PFHpA	38			40		94	50-200			05/13/22	
Surrogate: S-13C5PFHxA	38			40		95	50-200			05/13/22	
Surrogate: S-13C5PFPeA	37			40		92	50-200			05/13/22	
Surrogate: S-13C6PFDA	34			40		85	50-200			05/13/22	
Surrogate: S-13C7-PFUnDA	35			40		88	50-200			05/13/22	
Surrogate: S-13C8PFOA	34			40		85	50-200			05/13/22	
Surrogate: S-13C8-PFOS	36			40		91	50-200			05/13/22	
Surrogate: S-13C9PFNA	39			40		98	50-200			05/13/22	

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Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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EPA 533 - Quality Control

Batch: AFE0804

Prepared: 5/12/2022

Prep Method: EPA 533

Analyst: JMM

Blank Spike (AFE0804-BS1)

11CI-PF3OUdS	2.2	2.0	ng/L	2.0	ND	108	70-130			05/13/22	
4:2 FTS	2.2	2.0	ng/L	2.0	ND	109	70-130			05/13/22	
6:2 FTS	2.2	2.0	ng/L	2.0	ND	108	70-130			05/13/22	
8:2 FTS	2.2	2.0	ng/L	2.0	ND	112	70-130			05/13/22	
9CI-PF3ONS	2.3	2.0	ng/L	2.0	ND	113	70-130			05/13/22	
ADONA	2.1	2.0	ng/L	2.0	ND	106	70-130			05/13/22	
HFPO-DA	2.1	2.0	ng/L	2.0	ND	103	70-130			05/13/22	
NFDHA	2.1	2.0	ng/L	2.0	ND	107	70-130			05/13/22	
PFBA	2.4	2.0	ng/L	2.0	ND	119	70-130			05/13/22	
PFBS	2.3	2.0	ng/L	2.0	ND	114	70-130			05/13/22	
PFDA	2.2	2.0	ng/L	2.0	ND	108	70-130			05/13/22	
PFDoA	2.2	2.0	ng/L	2.0	ND	108	70-130			05/13/22	
PFEESA	2.2	2.0	ng/L	2.0	ND	108	70-130			05/13/22	
PFHpA	2.2	2.0	ng/L	2.0	ND	109	70-130			05/13/22	
PFHpS	1.9	2.0	ng/L	2.0	ND	97	70-130			05/13/22	
PFHxA	2.2	2.0	ng/L	2.0	ND	110	70-130			05/13/22	
PFHxS	2.1	2.0	ng/L	2.0	ND	106	70-130			05/13/22	
PFMBA	2.2	2.0	ng/L	2.0	ND	109	70-130			05/13/22	
PFMPA	2.2	2.0	ng/L	2.0	ND	108	70-130			05/13/22	
PFNA	2.0	2.0	ng/L	2.0	ND	100	70-130			05/13/22	
PFOA	2.1	2.0	ng/L	2.0	ND	106	70-130			05/13/22	
PFOS	2.1	2.0	ng/L	2.0	ND	106	70-130			05/13/22	
PFPeA	2.2	2.0	ng/L	2.0	ND	108	70-130			05/13/22	
PFPeS	1.9	2.0	ng/L	2.0	ND	95	70-130			05/13/22	
PFUnDA	2.2	2.0	ng/L	2.0	ND	109	50-150			05/13/22	
Surrogate: S-13C2-4:2FTS	150			160		92	50-200			05/13/22	
Surrogate: S-13C2-6:2FTS	150			160		94	50-200			05/13/22	
Surrogate: S-13C2-8:2FTS	140			160		90	50-200			05/13/22	
Surrogate: S-13C2PFDoA	33			40		82	50-200			05/13/22	
Surrogate: S-13C3-HFPO-DA	36			40		91	50-200			05/13/22	
Surrogate: S-13C3-PFBS	37			40		93	50-200			05/13/22	
Surrogate: S-13C3-PFHxS	37			40		93	50-200			05/13/22	
Surrogate: S-13C4-PFBA	38			40		94	50-200			05/13/22	
Surrogate: S-13C4PFHpA	37			40		93	50-200			05/13/22	
Surrogate: S-13C5PFHxA	35			40		87	50-200			05/13/22	
Surrogate: S-13C5PFPeA	38			40		95	50-200			05/13/22	
Surrogate: S-13C6PFDA	35			40		89	50-200			05/13/22	
Surrogate: S-13C7-PFUnDA	33			40		82	50-200			05/13/22	
Surrogate: S-13C8PFOA	37			40		92	50-200			05/13/22	
Surrogate: S-13C8-PFOS	35			40		88	50-200			05/13/22	
Surrogate: S-13C9PFNA	37			40		93	50-200			05/13/22	

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Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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EPA 533 - Quality Control

Batch: AFE0804

Prepared: 5/12/2022

Prep Method: EPA 533

Analyst: JMM

Matrix Spike (AFE0804-MS1), Source: VFD0494-01

11CI-PF3OUdS	30	2.0	ng/L	30	ND	101	70-130			05/13/22	
4:2 FTS	32	2.0	ng/L	30	ND	108	70-130			05/13/22	
6:2 FTS	31	2.0	ng/L	30	ND	104	70-130			05/13/22	
8:2 FTS	30	2.0	ng/L	30	ND	102	70-130			05/13/22	
9CI-PF3ONS	30	2.0	ng/L	30	ND	102	70-130			05/13/22	
ADONA	33	2.0	ng/L	30	ND	110	70-130			05/13/22	
HFPO-DA	32	2.0	ng/L	30	ND	107	70-130			05/13/22	
NFDHA	31	2.0	ng/L	30	ND	104	70-130			05/13/22	
PFBA	32	2.0	ng/L	30	ND	109	70-130			05/13/22	
PFBS	33	2.0	ng/L	30	ND	111	70-130			05/13/22	
PFDA	32	2.0	ng/L	30	ND	109	70-130			05/13/22	
PFDoA	34	2.0	ng/L	30	ND	113	70-130			05/13/22	
PFEESA	31	2.0	ng/L	30	ND	105	70-130			05/13/22	
PFHpA	33	2.0	ng/L	30	ND	112	70-130			05/13/22	
PFHpS	29	2.0	ng/L	30	ND	97	70-130			05/13/22	
PFHxA	33	2.0	ng/L	30	ND	110	70-130			05/13/22	
PFHxS	32	2.0	ng/L	30	ND	107	70-130			05/13/22	
PFMBA	30	2.0	ng/L	30	ND	102	70-130			05/13/22	
PFMPA	31	2.0	ng/L	30	ND	105	70-130			05/13/22	
PFNA	30	2.0	ng/L	30	ND	100	70-130			05/13/22	
PFOA	33	2.0	ng/L	30	ND	112	70-130			05/13/22	
PFOS	30	2.0	ng/L	30	ND	101	70-130			05/13/22	
PFPeA	33	2.0	ng/L	30	ND	111	70-130			05/13/22	
PFPeS	30	2.0	ng/L	30	ND	101	70-130			05/13/22	
PFUnDA	34	2.0	ng/L	30	ND	114	70-130			05/13/22	
Surrogate: S-13C2-4:2FTS	130			160		84	50-200			05/13/22	
Surrogate: S-13C2-6:2FTS	140			160		90	50-200			05/13/22	
Surrogate: S-13C2-8:2FTS	140			160		91	50-200			05/13/22	
Surrogate: S-13C2PFDoA	28			40		69	50-200			05/13/22	
Surrogate: S-13C3-HFPO-DA	33			40		84	50-200			05/13/22	
Surrogate: S-13C3-PFBS	35			40		89	50-200			05/13/22	
Surrogate: S-13C3-PFHxS	35			40		89	50-200			05/13/22	
Surrogate: S-13C4-PFBA	36			40		91	50-200			05/13/22	
Surrogate: S-13C4PFHpA	34			40		85	50-200			05/13/22	
Surrogate: S-13C5PFHxA	32			40		82	50-200			05/13/22	
Surrogate: S-13C5PFPeA	33			40		84	50-200			05/13/22	
Surrogate: S-13C6PFDA	33			40		83	50-200			05/13/22	
Surrogate: S-13C7-PFUnDA	30			40		76	50-200			05/13/22	
Surrogate: S-13C8PFOA	34			40		85	50-200			05/13/22	
Surrogate: S-13C8-PFOS	35			40		89	50-200			05/13/22	
Surrogate: S-13C9PFNA	35			40		88	50-200			05/13/22	

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Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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EPA 533 - Quality Control

Batch: AFE0804

Prepared: 5/12/2022

Prep Method: EPA 533

Analyst: JMM

Matrix Spike Dup (AFE0804-MSD1), Source: VFD0494-01

11CI-PF3OUdS	30	2.0	ng/L	30	ND	100	70-130	0	30	05/13/22	
4:2 FTS	33	2.0	ng/L	30	ND	110	70-130	3	30	05/13/22	
6:2 FTS	33	2.0	ng/L	30	ND	110	70-130	6	30	05/13/22	
8:2 FTS	32	2.0	ng/L	30	ND	106	70-130	4	30	05/13/22	
9CI-PF3ONS	30	2.0	ng/L	30	ND	100	70-130	1	30	05/13/22	
ADONA	33	2.0	ng/L	30	ND	111	70-130	2	30	05/13/22	
HFPO-DA	30	2.0	ng/L	30	ND	99	70-130	7	30	05/13/22	
NFDHA	31	2.0	ng/L	30	ND	103	70-130	1	30	05/13/22	
PFBA	32	2.0	ng/L	30	ND	107	70-130	1	30	05/13/22	
PFBS	33	2.0	ng/L	30	ND	110	70-130	0	30	05/13/22	
PFDA	30	2.0	ng/L	30	ND	100	70-130	7	30	05/13/22	
PFDoA	33	2.0	ng/L	30	ND	109	70-130	3	30	05/13/22	
PFEESA	31	2.0	ng/L	30	ND	103	70-130	0	30	05/13/22	
PFHpA	34	2.0	ng/L	30	ND	114	70-130	3	30	05/13/22	
PFHpS	30	2.0	ng/L	30	ND	99	70-130	3	30	05/13/22	
PFHxA	32	2.0	ng/L	30	ND	108	70-130	2	30	05/13/22	
PFHxS	33	2.0	ng/L	30	ND	108	70-130	2	30	05/13/22	
PFMBA	31	2.0	ng/L	30	ND	104	70-130	3	30	05/13/22	
PFMPA	31	2.0	ng/L	30	ND	103	70-130	2	30	05/13/22	
PFNA	31	2.0	ng/L	30	ND	103	70-130	4	30	05/13/22	
PFOA	33	2.0	ng/L	30	ND	109	70-130	2	30	05/13/22	
PFOS	30	2.0	ng/L	30	ND	99	70-130	2	30	05/13/22	
PFPeA	33	2.0	ng/L	30	ND	110	70-130	0	30	05/13/22	
PFPeS	31	2.0	ng/L	30	ND	104	70-130	4	30	05/13/22	
PFUnDA	32	2.0	ng/L	30	ND	108	70-130	4	30	05/13/22	
Surrogate: S-13C2-4:2FTS	130			160		83	50-200			05/13/22	
Surrogate: S-13C2-6:2FTS	140			160		89	50-200			05/13/22	
Surrogate: S-13C2-8:2FTS	130			160		81	50-200			05/13/22	
Surrogate: S-13C2PFDoA	30			40		76	50-200			05/13/22	
Surrogate: S-13C3-HFPO-DA	36			40		89	50-200			05/13/22	
Surrogate: S-13C3-PFBS	37			40		93	50-200			05/13/22	
Surrogate: S-13C3-PFHxS	35			40		87	50-200			05/13/22	
Surrogate: S-13C4-PFBA	36			40		91	50-200			05/13/22	
Surrogate: S-13C4PFHpA	34			40		84	50-200			05/13/22	
Surrogate: S-13C5PFHxA	33			40		83	50-200			05/13/22	
Surrogate: S-13C5PFPeA	34			40		84	50-200			05/13/22	
Surrogate: S-13C6PFDA	34			40		85	50-200			05/13/22	
Surrogate: S-13C7-PFUnDA	32			40		80	50-200			05/13/22	
Surrogate: S-13C8PFOA	36			40		91	50-200			05/13/22	
Surrogate: S-13C8-PFOS	36			40		90	50-200			05/13/22	
Surrogate: S-13C9PFNA	35			40		88	50-200			05/13/22	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.