Unraveling the contamination, source and health risk of per- and polyfluoroalkyl substances in $PM_{2.5}$ during winter from a southwestern city in China

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Table S1. Meteorological data sets were collected during the sampling campaign

Sampling Date	Temperature (°C)	Wind speed(m/s)	Relative Humidity(%)	$PM_{2.5}$ (μg/m^3)	AQI
2022, 12, 02	8-16	2	92	53	73
2022, 12, 03	7-17	0	92	63	85
2022, 12,05	11-17	2	90	87	115
2022, 12, 06	10-18	1	87	78	104
2022, 12, 07	11-14	1	86	93	123
2022, 12, 08	11-12	2	72	53	73
2022, 12, 09	11-14	1	88	81	103
2022, 12,10	11-13	2	72	89	118
2022, 12, 11	10-12	1	93	59	80
2022, 12, 12	9-12	2	86	20	29
2022, 12, 13	9-15	2	82	30	44
2022, 12, 15	11-14	2	82	45	63
2022, 12, 16	11-13	2	76	61	83
2022, 12, 17	9-12	3	74	27	44
2022, 12, 18	8-10	0	92	35	50
2022, 12, 19	6-12	2	79	40	57
2022, 12, 20	7-13	2	80	51	70
2022, 12, 21	7-13	3	92	56	77
2022, 12, 22	8-15	1	94	55	75
2022, 12, 23	7-12	2	83	77	103
2023, 01, 03	8-10	2	76	43	75
2023, 01, 04	7-12	2	81	96	127
2023, 01, 05	6-13	2	89	85	113
2023, 01, 06	9-11	0	82	67	90
2023, 01, 07	8-10	1	71	58	79
2023, 01, 08	7-12	1	80	37	53

2023, 01, 09	6-14	2	92	40	58
2023, 01, 10	8-13	1	75	44	62
2023, 01, 11	9-15	1	83	57	78
2023, 01, 12	9-11	0	73	58	79
2023, 01, 13	8-10	1	84	94	124
2023, 01, 14	7-12	1	74	45	63
2023, 01, 15	8-12	1	74	50	69
2023, 01, 16	8-13	0	79	66	89
2023, 01, 19	6-17	1	71	72	97
2023, 02, 17	8-12	1	61	15	25
2023, 02, 18	9-12	0	72	15	25
2023, 02, 19	7-8	1	90	20	32
2023, 02, 20	5-8	1	80	25	36
2023, 02, 21	4-10	0	64	23	40
2023, 02, 22	3-9	1	75	25	37
2023, 02, 23	3-12	0	52	28	44
2023, 02, 25	7-14	3	63	43	63
2023, 02, 26	8-15	2	55	61	83

Table S2. Basic information of all target compounds and isotope-labeled standards

PFASs	Perfluoroalkyl substances	Abbreviation	Molecular formula	Molecular weight	CAS number
C4-14,16,18 PFCAs	Perfluorobutanoic acid	PFBA	$C_4HF_7O_2$	214.04	375-22-4
	Perfluoropentanoic acid	PFPeA	$C_5HF_9O_2$	264.05	2706-90-3
	Perfluorohexanoic acid	PFHxA	$C_6HF_{11}O_2$	314.05	307-24-4
	Perfluoroheptanoic acid	PFHpA	$C_7HF_{13}O_2$	364.06	375-85-9
	Perfluorooctanoic acid	PFOA	$C_8HF_{15}O_2$	414.07	335-67-1
	Perfluorononanoic acid	PFNA	$C_9HF_{17}O_2$	464.08	375-95-1

	Perfluorodecanoic acid	PFDA	$C_{10}HF_{19}O_2$	514.08	335-76-2
	Perfluoroundecanoic acid	PFUdA	$C_{11}HF_{21}O_2$	564.09	2058-94-8
	Perfluorododecanoic acid	PFDoA	$C_{12}HF_{23}O_2$	614.10	307-55-1
	Perfluorotridecanoic acid	PFTrDA	$C_{13}HF_{25}O_2$	664.11	72629-94-8
	Perfluorotetradecanoic acid	PFTeDA	$C_{14}HF_{27}O_2$	714.11	376-06-7
	Perfluorohexadecanoic acid	PFHxDA	$C_{16}HF_{31}O_2$	814.13	67905-19-5
	Perfluorooctadecanoic acid	PFODA	$C_{18}HF_{35}O_2$	914.14	16517-11-6
C4,6,8,10 PFSAs	Perfluorobutane sulfonate	PFBS	$C_4HF_9SO_3$	300.10	375-73-5
	Perfluorohexane sulfonate	PFHxS	$C_6HF_{13}SO_3$	400.11	355-46-4
	Perfluorooctane sulfonate	PFOS	$C_8HF_{17}SO_3$	500.13	1763-23-1
	Perfluorodecane sulfonate	PFDS	$C_{10}HF_{21}SO_3$	600.14	335-77-3
FTCAs	2-perfluorohexyl ethanoic acid	FHEA (6:2 FTCA)	$C_8H_3F_{13}O_2$	378	53826-12-3
	2-perfluorooctyl ethanoic acid	FOEA (8:2 FTCA)	$C_{10}H_3F_{17}O_2$	478	27854-31-5
	2-perfluorodecyl ethanoic acid	FDEA (10:2 FTCA)	$C_{12}H_3F_{21}O_2$	578	53826-13-4
Surrogate Standard	Perfluoro-n-[1,2,3,4-$^{13}C_4$] butanoic acid	MPFBA	$^{13}C_4HF_7O_2$	218.01	
	Perfluoro-n-[1,2-$^{13}C_2$] hexanoic acid	MPFHxA	$^{13}C_2{}^{12}C_4HF_{11}O_2$	316.04	
	Perfluoro-n-[1,2,3,4-$^{13}C_4$] octanoic acid	MPFOA	$^{13}C_4{}^{12}C_4HF_{15}O_2$	418.04	
	Perfluoro-n-[1,2,3,4,5-$^{13}C_5$]nonanoic acid	MPFNA	$^{13}C_5{}^{12}C_4HF_{17}O_2$	469.04	
	Perfluoro-n-[1,2-$^{13}C_2$] decanoic acid	MPFDA	$^{13}C_2{}^{12}C_8HF_{19}O_2$	516.07	

	Perfluoro-n-[1,2-$^{13}C_2$] undecanoic acid	MPFUdA	$^{13}C_2{}^{12}C_9HF_{21}O_2$	566.08
	Perfluoro-n-[1,2-$^{13}C_2$] dodecanoic acid	MPFDoA	$^{13}C_2{}^{12}C_{10}HF_{23}O_2$	616.09
	Sodium perfluoro-1-hexane [$^{18}O_2$] sulfonate	MNaPFHxS	$C_6F_{13}S^{18}O_2{}^{16}ONa$	426.10
	Sodium perfluoro-1-[1,2,3,4-$^{13}C_4$] octane sulfonate	MNaPFOS	$^{13}C_4{}^{12}C_4F_{17}SO_3Na$	526.08
	2-Perfluorohexyl [1,2-$^{13}C_2$] ethanoic acid (6:2)	MFHEA	$^{13}C_2{}^{12}C_8H_3F_{13}O_2$	402.11
	2-Perfluorooctyl [1,2-$^{13}C_2$] ethanoic acid (8:2)	MFOEA	$^{13}C_2{}^{12}C_{10}H_3F_{17}O_2$	502.12
	2-Perfluorodecyl [1,2-$^{13}C_2$] ethanoic acid (10:2)	MFDEA	$^{13}C_2{}^{12}C_{12}H_3F_{21}O_2$	602.14
Internal standard	Perfluoro-n-[$^{13}C_8$] octanoic acid	M8PFOA	$^{13}C_8HF_{15}O_2$	422.01

Table S3. MRM acquisition parameters, quality control parameters and recovery surrogate for the studied PFAS

Compound	Precursor (m/z)	Product (m/z)	Retention time (min)	LODs (pg/m^3)	LOQs (pg/m^3)	R^2 of calibration curve	Recovery Surrogate
			PFAC-MXA				**MPFAC-MXB**
PFBA	213	169.05	3.59	0.068	0.227	0.9935	$^{13}C_4$-PFBA
PFPeA	262.9	219.1	6.086	0.125	0.418	0.9990	$^{13}C_2$-PFHxA
PFHxA	312.9	269.05	7.565	0.082	0.275	0.9912	$^{13}C_2$-PFHxA
PFHpA	362.9	319.1	8.519	0.117	0.391	0.9945	$^{13}C_2$-PFHxA
PFOA	412.9	369	9.235	0.084	0.281	0.9946	$^{13}C_4$-PFOA
PFNA	462.9	418.95	9.814	0.081	0.27	0.9967	$^{13}C_5$-PFNA
PFDA	513	469.05	10.314	0.053	0.176	0.9963	$^{13}C_2$-PFDA
PFUdA	563	519	10.779	0.058	0.192	0.9916	$^{13}C_2$-PFUdA
PFDoA	612.9	568.9	11.394	0.064	0.214	0.9976	$^{13}C_2$-PFDoA
PFTrDA	663	619	12.206	0.040	0.132	0.9945	$^{13}C_2$-PFDoA
PFTeDA	712.9	668.95	13.268	0.046	0.154	0.9945	$^{13}C_2$-PFDoA
PFHxDA	812.7	769	14.449	0.078	0.26	0.9990	$^{13}C_2$-PFDoA
PFODA	912.9	868.7	14.858	0.040	0.134	0.9925	$^{13}C_2$-PFDoA
PFBS	298.8	80	6.563	0.011	0.092	0.9966	$^{18}O_2$-PFHxS
PFHxS	299	79.9	6.565	0.011	0.037	0.9902	$^{18}O_2$-PFHxS
PFOS	498.9	80	9.829	0.005	0.015	0.9989	$^{13}C_4$-PFOS
PFDS	598.8	80	10.768	0.006	0.019	0.9940	$^{13}C_4$-PFOS
			FTA-MXA				**MFTA-MXA**
FHEA	377	293.1	9.75	0.147	0.49	0.9912	$^{13}C_2$-FHEA
FOEA	477	393.1	10.3	0.144	0.481	0.9923	$^{13}C_2$-FOEA
FDEA	577	493.1	11.5	0.053	0.176	0.9957	$^{13}C_2$-FDEA
			Internal standard				
M8PFOA	421	172.05	9.233	-	-	-	-

Table S4. Recoveries of the target PFAS in the $PM_{2.5}$ samples

Mass labelled compounds	$PM_{2.5}$			
	mean	min	max	SD
MPFOA	88.78%	80.33%	94.27%	5.23%
MPFHxA	84.35%	75.09%	81.26%	3.66%
MPFNA	82.73%	73.15%	93.27%	2.36%
MPFDA	84.25%	69.27%	90.29%	3.27%
MPFUdA	78.39%	65.23%	84.22%	3.38%
MPFDoA	81.46%	64.23%	90.72%	5.92%
MNaPFHxS	83.08%	69.89%	87.26%	4.26%
MNaPFOS	91.67%	83.28%	97.43%	3.73%
MFHEA	64.56%	53.98%	88.38%	2.04%
MFOEA	49.87%	42.23%	52.73%	5.38%
MFDEA	46.70%	40.57%	54.48%	4.03%

Table S5. Parameters used in the determination of estimated daily intake (EDI)

Parameters	**0-6 years**	**7-12 years**	**13-15 years**	**16-18 years**	**>18 years**
intake rate （IR, m^3/day）	6.3	11.3	13.6	13.7	15.2
body weight （BW, kg）	12.3	29.2	43.5	53.3	58.1

Table S6. TDI values for different PFAS

Target substance	**PFBA**	**PFPeA**	**PFHxA**	**PFHpA**	**PFOA**	**PFNA**	**PFDA**
TDI （ng/kg/day）	0.03	0.156374	1	0.022155	0.00002	0.00045	0.0003
Target substance	**PFUdA**	**PFDoA**	**PFTrDA**	**PFTeDA**	**PFHxDA**	**PFODA**	**PFBS**
TDI （ng/kg/day）	0.044843	0.005	0.038423	0.041316	0.00002	0.00002	0.02
Target substance	**PFHxS**	**PFOS**	**PFDS**	**6:2FTCA**	**8:2FTCA**	**10:2FTCA**	-
TDI （ng/kg/day）	0.003	0.00002	0.032541	0.00002	0.00002	0.00002	-

Table S7. The individual concentration of 20 PFAS in the $PM_{2.5}$ (pg/m^3) over three months

PM_{25}	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUdA	PFDoA	PFTrDA	PFTeDA	PFHxDA	PFODA	PFBS	PFHxS	PFOS	PFDS	6:2FTCA	8:2FTCA	10:2FTCA
2022, 12, 02	37.25	6.75	13.11	3.04	45.56	1.39	1.28	0.65	0.31	0.34	1.11	0.00	0.00	9.87	0.00	4.74	0.00	17.19	11.48	0.00
2022, 12, 03	45.46	7.80	7.12	9.39	220.00	2.92	3.57	2.52	1.79	2.41	1.59	0.48	0.00	7.23	2.78	15.60	0.00	30.78	18.18	0.00
2022, 12,05	48.75	5.19	15.86	5.11	152.68	2.89	3.26	2.21	1.96	0.60	0.00	0.00	0.00	6.98	1.53	6.27	0.00	16.34	11.80	0.00
2022, 12, 06	36.67	4.88	21.22	5.33	38.27	1.96	1.22	2.89	1.33	1.73	0.71	0.60	0.00	2.84	1.67	0.65	0.00	8.94	8.51	0.00
2022, 12, 07	23.77	1.90	1.59	2.92	17.62	0.68	1.08	0.40	0.40	1.08	0.00	1.30	0.14	0.65	0.82	4.94	0.00	28.09	11.77	0.00
2022, 12, 08	42.71	4.71	14.07	3.83	15.21	0.77	0.74	2.18	0.51	0.99	0.62	0.00	0.00	3.97	2.24	6.38	0.00	15.66	17.05	4.44
2022, 12, 09	39.26	6.72	6.84	5.05	17.70	1.08	0.91	1.59	0.99	0.48	0.96	1.30	0.00	7.04	0.99	3.15	0.00	13.39	11.90	2.74
2022, 12, 10	41.42	2.61	5.56	5.82	22.84	0.51	1.28	0.96	1.28	0.71	2.92	1.90	0.00	6.84	0.43	5.62	0.00	7.43	9.33	5.76
2022, 12, 11	36.27	5.16	9.42	2.67	17.30	0.62	1.45	1.30	0.88	0.79	0.00	0.00	0.00	5.36	1.67	3.94	0.00	18.10	15.52	0.75
2022, 12, 12	22.21	2.30	1.93	2.33	8.74	0.74	0.28	1.25	0.28	0.40	0.00	1.90	0.00	1.25	0.79	1.48	0.06	19.23	5.16	0.00
2022, 12, 13	18.95	10.75	7.60	2.24	23.01	0.88	1.11	0.54	0.88	0.00	3.57	1.99	0.00	1.13	0.43	2.10	0.00	13.16	4.85	0.00
2022, 12, 15	25.01	4.48	9.48	2.92	32.62	1.13	0.45	1.11	0.71	0.88	0.00	1.96	0.00	1.82	0.48	2.01	0.00	10.92	4.45	1.02
2022, 12, 16	15.23	4.48	1.62	2.92	32.62	0.23	0.43	0.14	0.71	0.74	0.77	1.96	0.74	1.82	0.48	2.01	0.23	10.92	3.94	1.02
2022, 12, 17	35.06	3.18	11.94	3.01	11.86	2.30	1.56	0.40	0.71	1.13	1.02	1.93	0.00	1.22	0.68	2.64	0.00	29.82	9.70	0.00
2022, 12, 18	30.00	3.18	20.91	8.34	86.67	2.04	2.92	1.93	0.79	0.06	1.67	2.27	0.00	1.82	2.78	3.32	0.00	16.88	6.84	0.00
2022, 12, 19	27.70	3.49	10.92	3.94	25.05	0.99	1.30	1.22	0.45	0.45	0.00	2.18	0.00	3.32	0.00	2.55	0.00	16.88	6.27	1.65
2022, 12, 20	31.29	4.77	16.45	3.66	27.49	1.73	2.41	1.22	0.99	0.79	0.00	0.00	0.00	3.89	0.51	3.15	0.00	21.05	6.75	5.40
2022, 12, 21	52.27	2.72	20.06	4.65	23.46	2.10	1.59	1.22	0.00	0.96	0.00	0.00	0.00	3.74	1.02	4.37	0.00	24.82	16.20	0.00
2022, 12, 22	49.45	5.65	18.24	4.65	36.60	2.27	1.45	2.47	1.33	1.28	2.61	0.00	0.00	4.20	1.70	2.75	0.00	21.26	12.58	3.36
2022, 12, 23	27.70	4.17	10.84	4.17	106.04	1.87	1.22	1.02	1.02	0.37	1.02	1.67	0.00	1.87	2.13	2.41	0.00	9.56	11.60	0.00
2023, 01, 03	71.35	4.03	14.61	3.94	45.73	1.13	0.82	1.11	1.08	0.48	0.23	0.77	0.00	1.36	0.96	2.70	0.00	20.14	10.75	0.00
2023, 01, 04	96.20	5.93	24.00	4.17	90.75	1.84	1.96	2.78	1.11	0.74	0.00	1.08	0.00	3.21	2.64	5.36	0.00	8.26	15.97	7.63
2023, 01, 05	105.11	16.45	35.18	9.59	95.01	4.85	5.62	4.96	2.18	1.76	1.02	0.00	0.14	4.45	9.11	2.35	0.00	16.09	18.61	0.00
2023, 01, 06	134.16	7.66	33.30	8.31	76.00	3.60	5.16	0.88	2.41	1.87	1.59	0.99	0.28	7.80	9.53	5.76	0.00	24.26	19.91	0.00
2023, 01, 07	62.10	9.33	20.23	6.24	77.87	3.15	3.46	2.84	2.18	1.82	0.48	1.56	0.00	3.06	6.13	3.18	0.00	15.32	16.28	8.62
2023, 01, 08	90.61	6.24	23.60	2.72	40.45	1.02	2.72	1.87	1.11	0.57	0.00	0.45	0.00	1.90	6.98	6.75	0.00	13.33	13.65	0.00
2023, 01, 09	64.57	3.29	37.59	5.53	62.16	2.24	1.96	2.81	1.36	1.93	2.04	0.51	0.88	5.79	1.30	3.46	0.00	18.38	13.93	0.00
2023, 01, 10	85.08	4.88	38.84	10.64	103.40	5.65	1.19	1.22	4.17	0.68	5.59	1.93	0.00	8.54	8.06	8.68	0.00	30.44	23.74	0.00
2023, 01, 11	141.76	4.03	29.30	8.37	69.76	2.18	3.60	1.96	1.50	1.76	1.45	1.33	0.00	5.45	3.43	2.44	0.00	10.35	12.26	7.23
2023, 01, 12	81.11	8.57	7.89	4.17	52.31	1.76	2.50	1.36	0.85	1.50	3.46	0.00	0.17	2.35	0.85	4.62	0.00	17.28	10.41	4.85

2023, 01, 13	104.88	17.02	4.74	3.57	58.30	2.78	2.72	0.74	0.23	0.34	0.00	0.91	0.00	11.74	1.22	2.24	0.00	22.89	22.13	0.00
2023, 01, 14	133.76	25.16	28.71	5.79	114.38	1.33	1.50	1.33	0.88	1.19	0.00	0.00	0.43	8.37	2.58	4.54	0.00	29.84	18.27	26.84
2023, 01, 15	113.84	7.94	27.97	5.25	133.76	3.38	1.22	3.18	1.42	2.01	0.00	0.00	0.09	10.04	3.26	4.60	0.00	30.55	22.72	0.00
2023, 01, 16	106.27	20.23	25.59	5.25	61.08	3.09	1.67	3.91	1.82	0.43	1.05	0.00	0.00	7.21	3.80	2.67	0.00	32.77	19.69	0.00
2023, 01, 19	86.70	18.81	2.61	4.57	69.56	1.53	1.53	1.19	0.62	0.77	0.74	0.31	0.00	1.93	4.06	2.24	0.00	18.81	7.80	0.00
2023, 02, 17	24.11	7.74	6.18	1.50	14.04	0.74	0.45	0.91	0.43	0.00	2.33	0.00	0.00	1.65	1.08	2.33	0.00	4.26	4.00	0.00
2023, 02, 18	76.96	10.89	38.10	3.29	15.12	1.36	1.53	0.60	0.28	3.46	0.85	0.85	0.00	0.82	5.53	1.51	0.00	13.28	8.51	4.31
2023, 02, 19	85.36	6.33	9.50	2.30	17.90	0.99	1.65	0.31	5.02	0.62	0.51	0.51	0.00	1.45	0.94	1.65	0.23	7.49	2.72	8.68
2023, 02, 20	15.66	6.38	10.55	2.30	16.09	1.53	1.96	0.79	3.69	3.52	1.36	0.00	0.00	1.33	1.99	0.82	0.00	6.35	12.65	0.00
2023, 02, 21	50.75	7.86	11.06	3.52	15.86	1.22	1.90	0.26	3.21	0.54	0.79	1.02	0.00	1.05	0.57	3.12	0.00	37.25	30.89	0.00
2023, 02, 22	102.67	5.96	14.55	1.59	16.85	0.79	0.99	0.40	0.40	2.04	1.11	0.94	0.00	0.74	0.57	1.67	0.00	18.38	9.56	0.00
2023, 02, 23	64.82	6.72	11.43	2.92	32.11	1.08	0.54	0.57	0.34	0.45	0.62	0.71	0.00	1.28	1.70	1.22	0.00	22.84	5.93	0.00
2023, 02, 25	109.96	4.71	8.79	1.93	37.05	0.54	0.60	0.99	0.14	0.96	1.13	0.00	0.00	3.89	1.08	1.59	0.00	11.77	7.60	0.00
2023, 02, 26	102.16	18.27	24.17	7.94	40.09	2.41	1.37	2.18	5.62	1.73	3.55	0.74	0.00	4.79	2.95	3.09	0.00	12.11	14.01	0.00

Table S8. Estimated daily intakes (ng/kg/day) and hazard quotient (HQ, unitless) via inhalation of $PM_{2.5}$ for adults and children

□	0-6		7-12		13-15		16-18		>18	
PFAS	EDI	HQ	EDI	HQ	EDI	HQ	EDI	HQ	EDI	HQ
PFBA	1.73E-02	5.78E-07	1.31E-02	4.37E-07	1.06E-02	3.53E-07	8.70E-03	2.9E-07	7.63E-03	2.54E-07
PFPeA	2.02E-03	1.29E-08	1.53E-03	9.78E-09	1.24E-03	7.9E-09	1.02E-03	6.49E-09	8.90E-04	5.69E-09
PFHxA	4.25E-03	4.25E-09	3.21E-03	3.21E-09	2.59E-03	2.59E-09	2.13E-03	2.13E-09	1.87E-03	1.87E-09
PFHpA	1.13E-03	5.09E-08	8.52E-04	3.84E-08	6.88E-04	3.11E-08	5.66E-04	2.55E-08	4.96E-04	2.24E-08
PFOA	1.26E-02	6.30E-04	9.52E-03	4.76E-04	7.69E-03	3.84E-04	6.32E-03	3.16E-04	5.54E-03	2.77E-04
PFNA	4.50E-04	1.00E-06	3.40E-04	7.56E-07	2.75E-04	6.11E-07	2.26E-04	5.02E-07	1.98E-04	4.4E-07
PFDA	4.44E-04	1.48E-06	3.36E-04	1.12E-06	2.71E-04	9.04E-07	2.23E-04	7.43E-07	1.96E-04	6.52E-07
PFUdA	3.66E-04	8.15E-09	2.76E-04	6.16E-09	2.23E-04	4.98E-09	1.83E-04	4.09E-09	1.61E-04	3.59E-09
PFDoA	3.86E-04	7.72E-08	2.91E-04	5.83E-08	2.35E-04	4.71E-08	1.94E-04	3.87E-08	1.70E-04	3.4E-08
PFTrDA	2.97E-04	7.73E-09	2.25E-04	5.84E-09	1.81E-04	4.72E-09	1.49E-04	3.88E-09	1.31E-04	3.4E-09
PFTeDA	2.96E-04	7.16E-09	2.24E-04	5.41E-09	1.81E-04	4.37E-09	1.49E-04	3.59E-09	1.30E-04	3.15E-09
PFBS	9.63E-04	4.81E-08	7.27E-04	3.64E-08	5.88E-04	2.94E-08	4.83E-04	2.42E-08	4.24E-04	2.12E-08
PFHxS	6.18E-04	2.06E-07	4.67E-04	1.56E-07	3.77E-04	1.26E-07	3.10E-04	1.03E-07	2.72E-04	9.07E-08
PFOS	8.54E-04	4.27E-05	6.45E-04	3.22E-05	5.21E-04	2.61E-05	4.28E-04	2.14E-05	3.76E-04	1.88E-05
PFDS	3.36E-06	1.03E-10	2.54E-06	7.81E-11	2.05E-06	6.31E-11	1.69E-06	5.19E-11	1.48E-06	4.55E-11

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