

Table S1: PFAS concentrations from all three sampling sites (South Greenland, West Greenland, and Greenland Ice Sheet) in ng/L, major ion concentration in ppb, and water isotope data in ‰.

					PFAS (ng/L)					SMOW	DSMOW	ppb	ppb	ppb	ppb	ppb	ppb	ppb	
Location	Sample ID	Date Collection	Lat	Long	PFBA	PFPeA	PFHpA	PFHxA	PFNA	delO18	delH	Cl-	NO3-	SO42-	Na+	K+	Mg2+	Ca2+	
South Greenland	SGI_W1_2022	Jun-22	60.5290	-44.4630	0.548				0.75				17	1636	4884.4	2430.2	1435	6100.2	
	SGI_W2_2022	Jun-22	60.4177	-44.6401	0.689					-15.8194	-116.315	6066.50	0.00	1024.60	2600.30	125.90	134.60	650.00	
	SGI_W3_2022	Jun-22	60.6734	-44.7993	1.58					-16.7491	-124.543	3809.80	81.80	1973.20	1969.60	608.60	98.40	2289.60	
	SGI_W4_2022	Jun-22	60.5579	-44.8802	0.939					-16.1503	-119.139	2273.80	0.00	757.70	1812.50	222.00	92.00	635.60	
	SGI_W5_2022	Jun-22	60.5691	-45.1799	1.28							2.28	0.00	0.53	1.37	0.14	0.24	1.08	
	SGI_W6_2022	Jun-22	60.5309	-45.2340	1.28							3.86	0.00	1.41	2.03	0.48	0.31	2.24	
	SGI_W7_2022	Jun-22	61.2019	-45.3242		0.517				-14.9584	-115.473	1201.60	0.00	1038.10	1456.00	408.80	444.70	5950.30	
	SGI_W8_2022	Jun-22	61.1544	-45.5170						-13.3905	-106.089	6762.60	1.40	1376.00	4031.90	541.00	2944.30	9709.20	
	SGI_W9_2022	Jun-22	61.1185	-45.5807	0.526					-12.9683	-103.761	10580.00	3.90	1841.30	6415.00	481.90	1735.70	9087.80	
	SGI_W10_2022	Jun-22	61.1303	-45.5500	0.62	0.836				-12.4391	-101.256	13583.80	1.90	2203.40	8342.60	1309.00	6043.10	15449.10	
	SGI_W11_2022	Jun-22	61.1489	-45.6118						-13.1411	-106.018	8014.80	0.00	2287.80	4842.90	936.50	4598.10	12547.40	
	SGI_W12_2022	Jun-22	61.0900	-45.6124															
	SGI_W13_2022	Jun-22	61.0436	-46.7031						-15.4247	-119.137	45.60	0.00	110.50	52.60	18.10	13.50	214.50	
	SGI_W14_2022	Jun-22	60.9875	-46.6742	0.509	1.09				-11.584	-89.0719	2787.90	0.00	719.20	1788.40	285.40	372.80	1958.00	
	SGI_W15_2022	Jun-22	61.2433	-45.5192						-14.7394	-113.794	878.90	0.00	1619.60	882.40	166.20	514.30	4134.00	
	SGI_W16_2022	Jun-22	61.1650	-45.3981						-14.9005	-114.174	1669.10	18.70	914.30	2634.90	300.80	220.60	4763.00	
West Greenland	SGI_W14_2024	Jun-24	60.9528	46.0161	0.968					-14.50	-109.73	5360		1290	8170	400	250	3000	
	SGI_S15_2024	Jun-24	61.1660	45.4005		0				-14.68	-108.67	1000		1070	2670	280	330	6230	
	WGI_W1_2024	May-25	68.7067	-52.8792	2.54	0				-13.80	-100.15	4340	10	800	2740	950	410	5720	
	WGI_W2_2024	May-25	69.2533	-53.5192	2.67	0				-14.51	-108.93	5510		1080	3210	400	440	1540	
	WGI_W3_2024	May-25	69.2581	-53.4989	0	0				-15.44	-113.48	3360	0	1180	5530	90	620	4230	
	WGI_W4_2024	May-25	69.9117	-51.4331	0	0				-14.72	-113.47	7990		2710	6120	1220	710	4010	
	WGI_W5_2024	May-25	69.5269	-51.1964	2.03	0				-15.97	-119.33	4170		1170	3020	470	630	2780	
	WGI_W6_2024	May-25	69.5303	-51.2058	3.21	0				-15.55	-116.34	4570		900	3720	670	820	2100	
	WGI_W7_2024	May-25	69.7611	-50.9400	0	0				-17.23	-130.11	8720	0	3170	5240	640	930	4900	
	WGI_W8_2024	May-25	69.7592	-50.9336		2.87				-16.23	-125.83	9410		3350	5580	690	1010	5280	
	WGI_W9_2024	May-25	69.5878	-50.4183	2.09	0				-17.08	-132.28	1670		1650	1350	580	770	3090	
	WGI_W10_2024	May-25	69.6517	-50.4406	0	0				-16.98	-131.98	2140		830	1740	840	810	3520	
	WGI_W11_2024	May-25	69.2194	-51.0939	3.99	4.11				-14.56	-111.38	0	0	0	0	0	0	0	
	WGI_W12_2024	May-25	69.2239	-51.0769	2.92	3.55				-15.79	-120.22	9040		4450	1850	7260	1440	1480	2340
	WGI_W13_2024	May-25	69.2375	-51.0642	2.29	0						0	0	0	0	0	0	0	
	Greenland Ice Sheet	GIS_S1_2024	May 14, 2024	62.6467	-46.0611	2.37							29.6985	225.0049	98.6422	13.1502	4.242	8.3422	42.945
GIS_S2_2024		May 17, 2024	63.5356	-45.7553	3.52		0.863	0.512	0.602			99.5491	436.349	170.9241	23.8661	5.5603	7.3007	39.801	
GIS_S3_2024		May 21, 2024	64.4017	-46.1203	2.45		0.568					73.0433	145.7898	81.7557	32.1844	5.5357	4.177	16.7627	
GIS_S4_2024		May 21, 2024	65.2067	-45.9308	2.98		0.564												
GIS_S5_2024		May 23, 2024	66.0611	-45.9181	1.96							119.7688	107.8762	93.783	35.906	8.6916	4.3137	21.3751	
GIS_S6_2024		May 23, 2024	66.8556	-45.5717	3.04		0.611	0.532				56.84	191.2809	80.9977	26.2524	9.4478	5.0068	31.7596	
GIS_S7_2024		May 26, 2024	67.8883	-45.4519	1.94							16.48	54.2746	56.1057	5.1036	1.8637	1.0775	4.1262	
GIS_S8_2024		May 26, 2024	68.7319	-44.9039	1.96							48.4303	211.8344	72.6478	11.7738	9.66	1.5512	18.4658	
GIS_S9_2024		May 27, 2024	69.5367	-45.0139	1.3							26.1289	101.8302	20.6961	9.7361	2.9329	1.4424	11.0108	
GIS_S10_2024		May 28, 2024	70.3594	-45.3222	1.55							26.2605	111.0767	37.9862	6.7426	2.6227	1.8934	11.2057	
GIS_S11_2024		May 28, 2024	71.1203	-45.7842	1.21							22.349	126.8931	72.9242	4.6875	2.0113	1.8545	14.6179	
GIS_S12_2024		June 2, 2024	71.8303	-46.7239	1.05														
GIS_S13_2024		June 4, 2024	72.5166	-49.0667	1.48							25.3675	108.8225	56.8416	5.18	2.6986	2.7742	14.0606	
GIS_S14_2024		June 4, 2024	73.2383	-51.4872	1.13							27.8641	55.5404	40.6111	10.946	1.0905	1.6615	4.5939	

Table S2: PFAS concentrations (ng/L), surrogate recoveries (%), and blank values for all surface water and snow samples collected across the three study regions: South Greenland, West Greenland, and the Greenland Ice Sheet. The table also includes method detection limits (MDL = 0.5 ng/L) and practical quantitation limits (PQL = 2.0 ng/L).

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