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The sampling information and detail levels of individual SVOCs along the Arctic Expedition Cruises in the Northern Hemisphere and Antarctic Expedition Cruise in the Southern Cruise

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Table S1 Detailed information on surface seawater sampling from the East China Sea to the high Arctic Ocean during the 7th Chinese National Arctic Research Cruise (2016).

Station	Volume (L)	Date (mm/dd/y)	Time (hh:mm)	Longitude [degrees_ east]	Latitude [degrees_ north]	Bot. Depth [m]	Temperature [°C]	Salinity
A01	200	7/12/2016	17:25	128.22	33.88	/	24.00	32.20
A02	200	7/13/2016	9:25	131.84	36.83	/	23.30	33.60
A03	200	7/13/2016	18:44	134.03	38.59	/	19.50	33.60
A04	200	7/13/2016	21:40	134.61	39.24	/	18.50	33.40
A05	200	7/14/2016	14:45	137.99	42.88	/	17.20	33.70
A06	200	7/15/2016	9:30	142.73	45.79	/	12.90	32.10
A07	200	7/15/2016	22:20	146.92	47.21	/	10.40	32.60
A08	200	7/16/2016	21:20	154.75	49.93	/	7.90	31.70
A09	200	7/17/2016	20:00	162.58	52.01	/	10.50	32.80
A10	200	7/18/2016	17:45	169.62	52.94	/	10.20	32.70
A11	200	7/19/2016	15:45	175.01	56.65	/	10.50	33.00
A12	200	7/22/2016	13:45	178.76	58.84	/	11.00	32.70
A13	200	7/23/2016	21:57	183.62	61.76	102.44	10.54	31.33
A14	200	7/25/2016	5:00	191.13	68.63	51.95	7.44	31.67
A15	200	7/25/2016	21:36	195.15	72.40	48.27	1.17	24.07
A16	200	7/26/2016	12:43	200.18	73.54	2051.10	0.26	26.72
A17	200	7/27/2016	10:32	204.00	74.51	3785.70	0.40	27.05
A18	200	7/28/2016	20:44	203.60	75.59	1570.90	-0.32	26.73
A19	200	7/30/2016	5:43	196.67	76.50	921.30	0.14	26.58
A20	200	7/31/2016	18:59	209.14	76.66	3770.20	-0.47	26.61
A21	200	8/1/2016	19:9	203.16	77.66	1685.20	-0.35	26.66
A22	200	8/4/2016	15:5	191.22	79.70	3177.10	-0.88	28.03
A23	200	8/5/2016	4:00	191.24	80.11	3260.20	-0.99	28.93
A24	200	8/6/2016	6:57	192.43	81.55	3274.00	-0.99	28.23
A25	200	8/6/2016	23:44	191.85	82.30	3447.80	-0.99	28.10
A26	200	8/7/2016	21:44	193.06	82.68	3658.10	-0.99	28.42
A27	200	8/19/2016	5:51	180.43	77.82	1611.80	-1.17	28.84
A28	200	8/20/2016	9:9	179.69	75.98	1155.90	-1.04	28.79
A29	200	8/21/2016	7:55	185.03	76.36	2152.10	-0.98	28.45
A30	200	8/22/2016	8:4	190.82	77.11	1918.00	-0.95	27.00
A31	200	8/23/2016	00:38	191.10	76.26	1963.20	-0.92	27.01
A32	200	8/23/2016	11:5	190.86	75.45	280.93	/	/
A33	200	8/24/2016	9:35	191.22	73.86	163.29	-0.39	26.75
A34	200	8/25/2016	2:42	197.44	74.20	990.53	0.17	26.36
A35	200	8/25/2016	12:43	200.04	74.62	1413.60	-0.25	26.47
A36	200	8/26/2016	5:25	201.54	74.47	889.89	0.74	26.50
A37	200	8/26/2016	12:39	204.06	73.94	3783.90	1.56	26.86

A38	200	8/27/2016	11:00	203.37	74.73	3785.20	0.80	26.54
A39	200	8/28/2016	4:21	215.37	75.27	3710.40	0.83	26.67
A40	200	8/28/2016	10:32	220.40	75.34	3618.00	-0.08	26.88
A41	200	8/28/2016	22:22	217.45	75.78	3693.40	0.04	26.72
A42	200	8/30/2016	1:57	206.36	75.46	3781.70	0.22	26.40
A43	200	8/30/2016	22:40	201.00	73.26	1492.50	3.34	27.34
A44	200	8/31/2016	10:38	198.55	72.37	42.77	1.80	28.59
A45	200	9/1/2016	5:41	194.29	72.45	49.70	4.36	28.90
A46	200	9/1/2016	22:35	191.21	71.42	47.67	5.53	30.38
A47	200	9/2/2016	11:52	191.06	69.55	52.01	7.28	31.70
A48	200	9/3/2016	7:32	192.91	68.13	47.71	10.32	30.00
A49	200	9/3/2016	23:20	191.14	67.68	47.14	8.07	31.41
A50	200	9/7/2016	2:33	194.74	64.20	19.90	12.97	24.15
A51	200	9/8/2016	9:50	189.79	64.33	39.59	7.37	31.66
A52	200	9/9/2016	8:2	184.52	62.03	85.47	10.86	30.97
A53	200	9/10/2016	7:44	180.20	59.87	2531.00	11.30	32.80
A54	200	9/11/2016	6:28	171.83	57.59	2344.80	11.91	32.82
A55	200	9/12/2016	5:3	162.63	54.84	/	9.92	32.31
A56	200	9/13/2016	6:25	158.97	52.02	3232.00	10.11	32.23
A57	200	9/14/2016	6:21	155.45	48.55	1760.30	12.20	32.34
A58	200	9/14/2016	23:22	153.30	45.40	2438.40	12.47	32.50
A59	200	9/15/2016	13:59	151.63	42.75	/	18.47	32.86
A60	200	9/17/2016	00:48	150.57	42.00	4969.30	18.49	32.84
A61	200	9/17/2016	12:49	147.45	41.78	5241.60	19.71	34.02
A62	200	9/18/2016	11:3	141.82	41.64	922.49	20.22	33.13
A63	200	9/19/2016	1:5	138.71	40.83	922.49	20.22	33.13
A64	200	9/19/2016	8:40	136.83	40.41	2563.40	22.34	33.31
A65	200	9/19/2016	13:6	135.66	40.25	1293.10	22.16	33.20
A66	200	9/20/2016	2:37	134.80	40.01	1347.20	22.44	32.90
A67	200	9/20/2016	8:43	134.61	40.10	681.05	22.33	32.92
A68	200	9/20/2016	21:1	134.32	39.25	1337.80	22.90	32.66
A69	200	9/21/2016	3:59	133.02	38.14	1258.30	22.99	33.23
A70	200	9/21/2016	10:24	132.44	37.14	899.84	23.03	32.45
A71	200	9/21/2016	23:34	130.18	35.41	135.48	23.63	32.75
A72	200	9/22/2016	6:9	129.12	34.56	151.30	24.98	33.82
A73	200	9/22/2016	11:38	128.38	33.88	106.19	25.84	34.15
A74	200	9/23/2016	1:2	124.95	32.84	/	/	/

Table S2 Detailed information on surface seawater sampling from the high Arctic Ocean to the East China Sea during the 8th Chinese National Arctic Research Cruise (2017).

Station	Volume(L)	Date(mm/ dd/yy)	Time(hh: mm)	Longitude [degrees_ east]	Latitude [degrees_ north]	Bot. Depth [m]	Temperature [°C]	Salinity
B01	200	9/12/2017	22:00	187.19	75.49	1285.4	0.5	28.7
B02	200	9/14/2017	2:00	187.95	75.57	1413	0.25	28.78
B03	200	9/18/2017	9:13	189.05	75.32	587.1	1.8	28.2
B04	200	9/20/2017	13:00	191.14	73.75	144	2.9	28.8
B05	200	9/21/2017	3:55	191.13	71.18	41.6	5.3	32.1
B06	200	9/22/2017	3:50	191.17	68.73	55	6.06	31.11
B07	200	9/25/2017	10:30	181.79	61.35	154.63	9.37	31.85
B08	200	9/26/2017	15:20	169.61	57.46	1902.1	10.93	32.58
B09	200	9/29/2017	7:10	150.62	47.59	3366	-0.3	6.4
B10	200	10/1/2017	1:00	149.95	40.81	5295.4	17.45	32.26
B11	200	10/2/2017	1:25	150.57	40.60	5441.3	19.44	33.47
B12	200	10/3/2017	6:42	148.81	40.83	5427.9	19.43	33.47
B13	200	10/4/2017	4:10	141.65	41.65	555.7	18.4	33.5
B14	200	10/5/2017	10:10	133.53	38.19	983.05	22.13	33.3
B15	200	10/6/2017	8:19	129.33	33.99	110.4	25.5	33.6
B16	200	10/6/2017	16:15	127.33	32.85	126.57	25.77	33.56

Table S3 Detailed information on atmosphere sampling during the 8th Chinese National Arctic Research Cruise (2017).

Station	Volume (m ³)	Stop Date (mm/dd/ yy)	Stop Time (hh:mm)	Longitu de [degrees _east]	Latitude [degrees _north]	Tempera ture (°C)	Air Humidit y (%)	Baromet ric Pressur e (Pha)	Relative Wind speed (m/s)
C01	927	7/27/2017	8:03	171.47	54.30	10.53	99.95	1020	13.82
C02	1091	7/31/2017	7:35	192.16	68.06	7.43	99.93	1012	8.34
C03	851	8/3/2017	18:10	189.97	77.99	-4.58	99.93	1011	3.54
C04	856	8/6/2017	8:44	173.69	80.93	-1.90	94.70	1002	9.26
C05	1346	8/11/2017	7:31	123.34	84.20	-0.15	99.88	1013	12.82
C06	1562	8/17/2017	15:20	21.98	81.71	-2.38	100.00	1005	8.15
C07	835	8/21/2017	17:00	7.00	71.63	7.58	85.90	1019	4.22
C08	707	8/25/2017	20:23	27.99	60.63	10.68	99.88	1004	11.04
C09	468	9/11/2017	21:25	335.12	61.88	-0.18	99.95	1005	6.27
C10	793	9/15/2017	21:25	191.21	76.31	0.23	99.95	1006	6.85
C11	662	9/19/2017	0:31	190.35	75.86	-1.48	75.08	1008	8.60
C12	621	9/23/2017	14:24	194.34	64.28	6.18	75.55	1004	8.02
C13	385	9/27/2017	4:40	164.62	55.72	10.73	87.10	1017	12.48
C14	510	10/02/2017	1:00	150.56	40.60	18.43	70.30	1021	12.63
C15	140	10/05/2017	10:10	133.53	38.19	17.28	58.95	1024	7.87
C16	600	10/07/2017	11:12	122.84	31.02	22.40	79.25	1018	7.20

Table S4 Detailed information on the surface seawater sampling during the 33rd Chinese National Antarctica Research Cruise (2016-2017).

Station	Longitude [degrees_e ast]	Latitude [degrees_n orth]	mon/day/yr	Volume	Bot. Depth [m]	Temperatur e [°C]	Salinity
D01	119.46	0.60	11/8/2016	190.00	2375.80		33.47
D02	113.96	-16.10	11/11/2016	170.00	4320.40	27.37	34.90
D03	112.51	-22.85	11/12/2016	180.00	1623.10	23.60	35.05
D04	112.53	-26.86	11/17/2016	190.00			
D05	114.56	-32.33	11/18/2016	160.00	883.00		
D06	114.49	-37.96	11/19/2016	150.00	4656.00		
D07	113.88	-42.76	11/20/2016	150.00			
D08	107.37	-45.22	11/22/2016	180.00	4307.00	13.26	34.95
D09	103.21	-46.67	11/23/2016	180.00		12.00	
D10	97.95	-48.11	11/24/2016	170.00	3658.70	6.36	34.10
D11	96.29	-54.77	11/25/2016	160.00	4097.00	3.30	33.89
D12	89.56	-58.71	11/26/2016	170.00	3779.00	1.48	33.96
D13	79.39	-69.17	11/27/2016	170.00	2672.00	-0.40	33.40
D14	63.18	-63.85	12/14/2016	170.00	962.00	-1.30	34.50
D15	21.59	-62.00	12/18/2016	170.00	5133.40	-1.80	33.30
D16	338.94	-64.68	12/21/2016	180.00	4973.00	-0.90	34.10
D17	274.04	-66.56	1/25/2017	200.00	4408.50	-1.49	34.12
D18	247.69	-70.00	1/27/2017	180.00	3524.80	-1.10	33.90
D19	209.65	-73.56	1/29/2017	170.00	4138.00	-3.00	33.40
D21	163.96	-74.95	2/19/2017	180.00	507.30	-0.43	34.95
D22	123.77	-64.32	3/28/2017	200.00	3168.70	0.10	32.60
D23	112.50	-22.42	3/29/2017	200.00	3149.50		
D24	113.77	-16.88	3/30/2017	200.00			
D25	114.13	-15.42	3/30/2017	190.00			
D26	115.13	-11.21	3/31/2017	190.00			
D27	116.48	-7.27	4/1/2017	200.00		29.63	32.89
D28	119.32	0.09	4/2/2017	200.00	2348.05	29.81	33.48
D29	122.26	3.06	4/3/2017	200.00	5113.74	28.51	34.72
D30	123.15	3.61	4/3/2017	200.00	5027.00	28.45	34.80
D31	126.93	6.89	4/4/2017	200.00	5496.24	28.80	34.82
D32	127.13	8.07	4/4/2017	200.00	6982.22	28.92	34.82
D33	126.97	10.87	4/5/2017	200.00		28.66	34.87
D34	126.82	13.42	4/5/2017	200.00	5000.00	27.82	35.19

Table S5 Detailed information on the atmospheric sampling during the 33rd Chinese National Antarctica Research Cruise (2016-2017).

Station	Longitude [degrees_east]	Latitude [degrees_north]	Date	stop time	volume(m ³)	hpa	Wind speed (m/s)	Temperature [°C]
E01	112.51	-22.69	20161112	7:00	88.586	1011	13.57	21.7
E02	115.75	-32.04	20161115	6:30	112.371	1005	3.62	21.4
E03	114.5	-32.5	20161118	6:25	132.832	1018	3.44	18
E04	110.38	-44.36	20161121	6:50	118.633	1012	4.96	11.3
E05	78.58	-62.47	20161127	9:30	273.719	977	8.99	-1.7
E06	76.13	-69.1	20161130	11:37	129.128	992	3.27	-1
E07	76.14	-69.1	20161209	12:15	464.223	991	1.19	-0.8
E08	76.15	-69.01	20161212	14:00	149.753	984	3.85	0.8
E09	55.57	-64.07	20161215	14:20	131.965	993	6.88	-0.3
E10	18.54	-62.02	20161218	14:45	152.48	983	9.18	-1.5
E11	338.78	-64.67	20161221	16:43	132.041	996	10.25	-2.8
E12	317.55	-60.88	20161225	0:49	194.18	995	8.83	-1
E13	311.45	-61.47	20161228	18:10	195.032	990	8.65	-1.3
E14	309.68	-60.23	20161231	18:20	136.477	1000	2.61	-1
E15	308.33	-63.21	20170103	18:38	131.552	997	4.18	-0.3
E16	301.6	-62.36	20170113	21:38	477.975	995	0.46	-0.4
E17	292.63	-53.1	20170116	18:07	128.711	985	20.96	11
E18	290.73	-52.36	20170121	18:07	194.704	1006	3.24	11.9
E19	281.46	-63.54	20170124	20:38	135.286	988	7.83	2.8
E20	225.69	-71.48	20170128	23:25	174.061	989	9.02	-1
E21	179.34	-77.33	20170201	20:03	204.042	996	8.84	-7.3
E22	164.56	-74.76	20170205	4:53	192.855	992	11.65	-0.5
E23	165.89	-77.67	20170209	23:34	276.625	995	12.95	-9.6
E24	164.25	-74.97	20170214	4:17	288.403	996	3.62	-5.3
E25	152.5	-65.02	20170217	4:00	174.542	985	8.21	2.4
E26	108.57	-63.71	20170220	7:15	154.774	991	6.89	0.8
E27	70.56	-68.34	20170224	9:23	249.339	982	17.26	-10
E28	76.47	-69.36	20170227	12:43	191.304	991	4.42	-3.7
E29	74.15	-68.55	20170302	10:21	170.659	1003	11.58	-5.2
E30	76.47	-69.35	20170305	9:02	185.644	995	6.19	-3.7
E31	72.98	-66.75	20170308	10:52	182.493	982	12.66	-3.9
E32	74.31	-53.23	20170311	9:02	166.717	1005	16.78	4.3
E33	74.33	-36.23	20170314	10:53	154.85	1025	7.21	21.2
E34	80.04	-34.46	20170317	9:46	135.631	1031	4.86	18.2
E35	101.56	-32.83	20170320	7:16	92.408	1016	14.67	16.2
E36	115.67	-32.04	20170327	6:10	295.905	1020	7.49	18.9
E37	114.18	-15.23	20170330	7:01	122.22	1010	2.2	29

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E38	124.72	4.57	20170403	13:07	142.207	1012	2.3	27.9
E39	126.41	20.27	20170406	12:48	166.493	1016	6.73	25
E40	121.68	31.35	20170409	6:30	140.894	1011	2.07	11.7

Table S6 Concentrations of 23 SVOCs in the surface seawaters in the Northern Hemisphere in the 7th Arctic Cruise (2016, ng/L).

Station	A01	A02	A03	A04	A05	A06	A07	A08	A09	A10	A11	A12	A13	A14	A15	A16	A17	A18
Acy	1.81	0.90	0.72	0.93	0.66	0.73	1.21	1.14	0.77	0.89	0.87	0.75	0.81	0.54	0.47	0.60	0.43	0.51
Ace	68.38	60.40	36.17	25.04	20.96	27.00	27.16	34.96	20.68	29.16	18.50	22.30	16.59	18.50	24.78	28.38	24.58	28.50
Fle	31.71	25.55	16.40	12.79	10.85	12.59	15.33	20.01	11.41	14.98	10.65	11.38	9.52	8.66	10.51	12.79	10.08	13.05
Phe	11.18	18.65	16.60	10.28	10.72	10.10	11.95	8.11	8.79	7.96	8.51	8.98	7.12	6.07	6.10	4.33	6.15	5.28
Ant	0.84	0.78	0.54	0.54	0.48	0.54	0.71	0.77	0.64	0.66	0.53	0.52	0.45	0.35	0.23	0.26	0.21	0.23
Flu	6.78	1.02	0.73	0.40	0.38	0.46	0.45	0.72	0.46	0.40	0.36	0.36	0.36	0.49	0.44	0.58	0.31	0.85
Pyr	6.10	5.08	4.32	2.23	2.15	2.19	2.23	1.92	1.02	1.17	1.93	1.77	1.72	2.07	1.92	2.46	1.52	3.43
BaA	0.25	0.18	0.19	ND	ND	0.07	ND	0.08	0.07	ND	0.07	0.08	0.09	0.10	0.05	0.05	ND	0.05
Chy	0.74	0.69	0.45	0.24	0.16	0.14	0.14	0.23	0.25	0.13	0.26	0.29	0.26	0.43	0.12	0.15	0.07	0.10
BbF	0.15	0.21	0.14	0.11	0.07	0.07	0.05	0.09	0.08	0.10	0.06	ND	0.06	0.09	0.06	0.07	0.07	0.08
BkF	1.76	0.88	0.91	0.41	0.40	0.41	0.21	0.39	0.36	0.27	0.36	0.32	0.31	0.34	0.31	0.43	0.25	0.36
IDP	2.20	1.14	1.21	0.56	0.45	0.74	0.36	0.44	0.42	0.38	0.58	0.38	0.57	0.69	0.57	0.70	0.32	0.39
DBahA	4.44	1.96	1.69	0.96	0.83	1.19	0.82	0.57	0.89	0.61	0.90	0.69	0.91	1.07	0.97	1.31	0.53	0.71
BghiP	1.11	0.47	0.47	0.23	0.18	0.27	0.20	0.23	0.23	0.15	0.20	0.14	0.20	0.24	0.20	0.24	0.12	0.15
Alpha-Chlordane	0.27	0.07	0.08	0.03	0.03	0.03	0.04	0.03	0.06	0.05	0.05	0.04	0.04	0.03	0.03	0.03	0.04	0.06
Beta-Chlordane	0.13	0.08	0.07	0.05	0.05	0.06	0.07	0.10	0.07	0.10	0.03	0.06	0.08	0.07	0.03	0.05	0.06	0.06
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	0.84	16.40	9.05	3.90	3.90	5.48	6.09	6.57	5.31	4.61	6.81	4.48	5.30	4.85	4.12	8.71	5.85	8.56
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Aldehyde	0.10	0.11	0.07	0.03	ND	0.03	0.03	0.03	0.03	0.03	ND	ND	0.03	0.03	ND	ND	ND	ND

Station	A19	A20	A21	A22	A23	A24	A25	A26	A27	A28	A29	A30	A31	A32	A33	A34	A35	A36
Acy	0.41	0.05	0.04	0.03	0.06	0.06	0.20	0.22	0.04	0.08	0.04	0.05	0.03	ND	0.03	0.12	0.05	0.03
Ace	19.47	1.13	0.91	0.61	0.70	0.88	3.84	6.87	1.10	4.26	0.62	2.72	0.75	0.10	0.59	4.26	1.65	0.64
Flc	8.69	0.66	0.49	0.35	0.51	0.61	2.68	4.01	0.66	2.39	0.43	1.43	0.44	0.06	0.37	2.68	1.06	0.33
Phe	4.96	0.37	0.30	0.23	0.63	0.62	2.45	3.50	0.42	1.48	0.47	0.84	0.40	0.07	0.37	2.85	0.94	0.17
Ant	0.29	ND	ND	0.05	ND	0.13	0.07	0.10	0.10	0.04	ND	0.03	ND	ND	ND	0.10	0.03	ND
Flu	0.42	0.08	0.05	0.04	0.12	0.08	0.15	0.17	0.07	0.15	0.07	0.13	0.08	ND	0.08	0.16	0.16	0.04
Pyr	2.10	0.14	0.11	0.07	0.51	0.34	0.76	1.02	0.23	0.52	0.28	0.28	0.35	0.04	0.35	0.87	0.75	0.09
BaA	0.15	ND	ND	ND	ND	ND	0.04	0.07	ND	0.03	ND	ND	ND	ND	ND	0.06	0.03	ND
Chy	0.54	ND	ND	ND	0.11	0.04	0.15	0.19	0.03	0.09	0.07	ND	0.06	ND	0.06	0.25	0.11	ND
BbF	0.11	ND	ND	ND	0.03	0.03	0.04	0.04	ND	0.03	0.03	ND	ND	ND	ND	0.04	0.03	ND
BkF	0.36	ND	ND	ND	0.03	0.03	0.13	0.14	0.03	0.12	0.03	0.06	0.03	ND	ND	0.16	0.06	ND
IDP	0.49	ND	0.03	0.03	0.03	0.04	0.13	0.18	0.03	0.13	0.03	0.07	0.04	ND	0.03	0.19	0.10	ND
DBahA	0.81	ND	0.03	0.03	0.06	0.04	0.20	0.23	0.03	0.17	0.03	0.08	0.04	ND	0.03	0.28	0.10	ND
BghiP	0.16	ND	0.03	0.03	0.03	0.03	0.07	0.09	0.03	0.06	ND	0.03	ND	ND	ND	0.07	0.04	ND
Alpha-Chlordane	0.07	ND	ND	ND	0.01	0.01	0.04	0.06	0.01	0.02	0.01	ND	0.01	ND	ND	0.05	0.01	ND
Beta-Chlordane	0.06	ND	ND	ND	0.01	0.01	0.04	0.05	0.01	0.02	0.01	ND	0.01	ND	ND	0.03	0.01	ND
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	ND	ND	ND	ND	ND	ND	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	9.33	0.31	0.18	0.16	0.26	0.40	1.27	1.33	0.36	0.62	0.24	0.31	0.24	0.03	0.16	1.09	0.46	0.12
Aldrin	ND	ND	ND	ND	ND	ND	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	ND	ND	ND	ND	ND	ND	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Aldehyde	ND	ND	ND	ND	ND	ND	ND	ND	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND

Station	A37	A38	A39	A40	A41	A42	A43	A44	A45	A46	A47	A48	A49	A50	A51	A52	A53	A54
Acy	ND	0.12	0.03	0.03	0.16	0.16	0.15	0.18	0.08	0.19	0.28	0.11	0.22	0.20	0.20	0.21	0.23	0.21
Ace	0.12	4.82	0.46	0.74	5.99	9.76	11.40	14.07	1.96	11.01	14.98	3.33	4.63	8.54	7.07	10.98	12.82	10.92
Fle	0.08	2.87	0.22	0.46	4.07	5.04	5.51	6.62	1.45	5.94	8.08	2.12	4.66	5.56	6.07	5.91	6.71	6.30
Phe	0.08	2.90	0.14	0.36	4.86	4.62	5.14	5.48	1.36	5.88	6.99	6.05	12.86	5.77	6.29	5.11	6.24	5.16
Ant	ND	0.08	ND	ND	0.17	0.13	0.14	0.17	0.03	0.21	0.28	0.06	0.21	0.20	0.19	0.23	0.30	0.27
Flu	ND	0.17	0.03	0.07	0.23	0.23	0.26	0.25	0.15	0.22	0.27	0.13	0.15	0.20	0.23	0.20	0.22	0.18
Pyr	0.04	1.01	0.06	0.24	1.28	0.97	1.11	1.27	0.67	1.10	1.59	0.40	0.83	0.81	1.14	0.98	1.14	0.81
BaA	ND	0.04	ND	ND	0.06	ND	ND	0.04	0.03	0.03	0.03	ND	0.05	0.03	0.04	0.03	0.03	ND
Chy	ND	0.20	ND	0.05	0.33	0.03	0.05	0.08	0.10	0.09	0.09	ND	0.14	0.09	0.15	0.07	0.09	0.07
BbF	ND	0.04	ND	ND	0.04	0.05	0.04	0.05	0.03	0.04	0.04	0.04	0.05	0.06	0.05	0.04	0.03	0.04
BkF	ND	0.15	ND	ND	0.18	0.19	0.21	0.21	0.08	0.20	0.21	0.13	0.15	0.16	0.12	0.21	0.21	0.17
IDP	ND	0.16	ND	0.03	0.22	0.17	0.18	0.20	0.10	0.17	0.18	0.13	0.17	0.18	0.14	0.17	0.17	0.12
DBahA	ND	0.22	ND	0.03	0.32	0.28	0.28	0.30	0.12	0.27	0.30	0.15	0.23	0.31	0.22	0.27	0.28	0.18
BghiP	ND	0.08	ND	ND	0.10	0.07	0.09	0.09	0.04	0.08	0.10	0.04	0.06	0.08	0.08	0.08	0.09	0.06
Alpha-Chlordanne	ND	0.04	ND	ND	0.06	0.04	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.02	0.03	0.02	0.02
Beta-Chlordane	ND	0.02	ND	ND	0.04	0.03	0.04	0.05	0.02	0.05	0.04	0.01	0.02	0.02	0.03	0.04	0.05	0.02
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	ND	ND	ND	ND	ND	ND	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.01	ND
Dieldrin	0.05	1.16	0.07	0.24	0.45	4.04	4.68	4.60	0.46	3.30	3.54	1.49	0.62	1.36	0.97	2.83	4.64	2.88
Aldrin	ND	ND	ND	ND	ND	ND	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.01	ND
Endrin	ND	ND	ND	ND	ND	ND	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.01	ND
Endrin Aldehyde	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Station	A55	A56	A57	A58	A59	A60	A61	A62	A63	A64	A65	A66	A67	A68	A69	A70	A71	A72	A73
Acy	0.07	0.07	0.03	0.07	0.03	0.03	0.06	0.05	0.04	0.03	0.14	0.07	0.03	0.16	0.08	0.07	0.09	0.06	0.04
Ace	1.38	2.02	0.89	6.88	1.28	0.64	1.94	2.07	0.77	0.63	6.78	2.71	0.71	5.05	1.38	0.29	2.53	1.86	0.61
Fle	1.18	1.53	0.60	2.92	0.89	0.57	1.33	1.44	0.69	0.39	3.64	1.70	0.50	3.38	1.26	0.74	1.85	1.30	0.55
Phe	1.68	2.16	0.92	4.95	1.46	0.78	1.55	1.70	0.95	0.55	12.06	4.62	0.72	3.99	1.63	2.23	2.64	2.94	0.84
Ant	0.03	0.03	0.06	0.21	ND	0.03	0.04	0.04	0.05	ND	0.12	0.04	ND	0.12	0.03	0.03	0.04	0.03	0.05
Flu	0.10	0.14	0.06	0.47	0.11	0.07	0.10	0.10	0.07	0.04	0.15	0.14	0.06	0.16	0.11	0.16	0.16	0.13	0.10
Pyr	0.29	0.51	0.23	0.42	0.25	0.18	0.34	0.41	0.22	0.09	0.56	0.36	0.10	0.69	0.43	0.63	0.59	0.46	0.24
BaA	ND	ND	ND	0.04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.03	ND	ND	ND
Chy	0.02	0.09	0.09	0.36	0.05	0.03	0.03	0.05	0.03	ND	0.07	0.03	0.01	0.05	0.03	0.05	0.05	0.04	0.02
BbF	0.03	0.03	0.04	0.06	0.03	ND	0.03	0.03	ND	ND	0.06	0.04	0.03	0.03	0.04	0.03	0.03	0.05	ND
BkF	0.04	0.07	ND	0.07	0.03	0.03	0.04	0.08	ND	ND	0.10	0.09	ND	0.15	0.05	ND	0.08	0.06	ND
IDP	0.04	0.11	ND	0.11	0.04	0.05	0.04	0.08	ND	ND	0.08	0.09	ND	0.11	0.06	ND	0.10	0.06	ND
DBahA	0.04	0.13	ND	0.10	0.03	0.05	0.04	0.09	ND	ND	0.08	0.08	ND	0.17	0.06	ND	0.10	0.04	ND
BghiP	0.03	0.04	ND	0.03	ND	0.03	ND	0.04	ND	ND	0.03	0.03	ND	0.05	0.03	ND	0.04	0.03	ND
Alpha-Chlordanne	ND	ND	ND	0.01	ND	ND	ND	0.01	0.01	ND	ND	0.01	ND	ND	ND	ND	ND	ND	ND
Beta-Chlordane	ND	ND	ND	0.01	ND	ND	ND	0.01	0.01	ND	ND	0.01	ND	ND	ND	ND	ND	ND	ND
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	1.15	0.34	0.12	0.38	0.28	0.19	0.18	0.49	0.18	0.09	ND	0.46	0.20	0.63	0.23	0.13	0.27	0.14	0.17
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Aldehyde	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.01	ND	ND	ND	ND	ND	ND	ND

Table S7 Concentrations of the 23 SVOCs in the surface seawater in the Northern Hemisphere in the 8th Arctic Cruise (2017, ng/L).

Station	B01	B02	B03	B04	B05	B06	B07	B08	B09	B10	B11	B12	B13	B14	B15	B16
Ace	17.3	12	6.82	12.6	14.5	0.56	0.67	0.41	1.88	0.47	0.35	0.74	1.33	2.52	6.53	2.91
Acy	0.18	0.84	0.22	0.23	0.26	ND	0.03	0.03	0.04	ND	ND	0.05	0.04	0.11	0.13	0.08
Flu	7.7	8.9	2.8	5.9	8.1	0.3	0.4	0.2	1.1	0.2	0.2	0.5	0.7	1.2	3.6	1.3
Ant	0.09	0.13	0.06	0.09	0.11	ND	ND	ND	ND	ND	ND	ND	ND	0.03	0.14	0.03
Flu	0.74	0.94	0.64	0.55	0.87	0.03	0.04	0.02	0.08	0.03	ND	0.05	0.07	0.08	0.14	0.1
Phe	8.09	8.56	10.7	8.71	8.31	0.22	0.38	0.22	1	0.22	0.18	0.64	0.9	1.51	7.35	1.97
Pyr	0.94	1.81	1.01	0.78	1.28	0.04	0.05	0.04	0.15	0.04	0.04	0.11	0.16	0.23	0.42	0.3
BbF	0.05	0.07	0.07	0.04	0.06	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.03	0.03
BkF	0.12	0.14	0.15	0.12	0.14	ND	ND	ND	0.06	ND	ND	ND	0.03	0.07	0.17	0.06
BaA	0.03	0.03	ND	ND	0.03	ND	ND	ND	ND	ND	ND	ND	ND	0.03	0.03	0.03
Chy	0.05	0.06	0.07	0.04	0.06	ND	ND	ND	ND	ND	ND	ND	0.03	0.03	0.06	0.03
DBahA	0.14	0.14	0.2	0.12	0.2	ND	ND	ND	0.06	ND	ND	ND	0.03	0.09	0.23	0.06
IDP	0.11	0.11	0.17	0.12	0.17	ND	ND	ND	0.05	ND	ND	ND	0.05	0.13	0.2	0.1
BaP	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BghiP	0.05	0.05	0.06	0.04	0.07	ND	ND	ND	0.03	ND	ND	ND	0.03	0.04	0.06	0.03
Alpha-Chlordanne	ND	0.01	ND	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Beta-Chlordane	ND	0.01	ND	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	9.32	15.7	11.7	1.54	19.41	0.16	0.16	0.1	0.21	0.05	0.1	0.4	0.24	0.67	1.09	0.17
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Aldehyde	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table S8 Concentrations of the 23 SVOCs in the atmospheric samples in the Northern Hemisphere in the 8th Arctic Cruise (2017, ng/m³).

Station	C01	C02	C03	C04	C05	C06	C07	C08	C09	C10	C11	C12	C13	C14	C15	C16
Ace	0.53	0.99	0.56	0.28	0.25	0.13	0.20	0.25	0.17	0.21	0.21	0.24	1.25	0.27	1.09	0.50
Acy	0.19	0.28	0.05	0.12	0.05	0.03	0.04	0.05	0.02	0.05	0.04	0.08	0.28	0.07	0.22	ND
Flu	2.66	4.21	1.76	1.07	0.75	0.75	0.80	0.80	0.42	0.64	0.74	0.84	4.63	1.34	2.63	1.42
Ant	0.12	0.32	0.05	0.06	0.03	0.02	0.02	0.03	ND	0.02	0.02	0.03	0.08	0.03	ND	ND
Flu	0.24	0.21	0.16	0.12	0.09	0.07	0.11	0.22	0.15	0.10	0.11	0.13	0.57	0.31	0.60	1.73
Phe	7.09	6.74	6.42	3.97	3.77	2.39	3.22	2.60	0.99	2.17	5.25	2.97	15.22	6.46	15.59	8.07
Pyr	0.69	1.10	0.41	0.64	0.25	0.22	0.26	0.29	0.16	0.36	0.38	0.54	1.63	0.60	1.49	2.62
BbF	ND	ND	ND	ND	0.01	0.01	0.02	0.01	0.01	0.01	0.02	0.03	ND	0.03	0.09	0.18
BkF	ND	ND	ND	ND	ND	ND	0.06	0.03	0.04	0.03	0.09	0.05	0.21	0.12	0.63	0.31
BaA	ND	ND	ND	ND	ND	ND	ND	0.01	ND	ND	ND	ND	ND	ND	ND	ND
Chy	0.02	0.03	0.02	ND	0.01	0.01	0.01	0.02	0.01	0.02	0.02	0.02	0.05	0.03	0.07	0.20
DBahA	0.37	0.30	0.33	0.34	0.19	0.10	0.18	0.05	0.07	0.07	0.24	0.18	0.83	0.34	0.93	0.37
IDP	0.31	0.22	0.28	0.32	0.15	0.09	0.11	0.08	0.08	0.07	0.28	0.20	0.85	0.21	0.90	0.78
BaP	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BghiP	0.08	0.05	0.08	0.08	0.04	0.02	0.02	0.02	0.02	0.02	0.05	0.03	0.17	0.05	0.14	0.18
Alpha-Chlordanne	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Beta-Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	0.70	0.63	0.52	0.54	0.32	0.17	0.14	0.12	0.11	0.19	0.51	0.14	1.66	0.47	2.15	1.60
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Aldehyde	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.04	ND

Table S9 Concentrations of the SVOCs in the surface seawater in the Southern Hemisphere during the 33rd Antarctica Cruise (ng/L, 2016-2017).

Station	Ace	Acy	Fle	Ant	Flu	Phe	Pyr	BbF	BkF	BaA	Chy	DBah A	IDP	BaP	BghiP	Alpha -HCH	Beta- HCH	Gama -HCH	Delta- HCH	p,p'- DDT
D01	18.46	0.48	12.49	7.91	0.59	12.90	6.79	0.20	0.00	0.27	0.04	1.80	1.33	0.00	0.35	0.07	0.00	0.50	0.49	5.28
D02	23.81	1.21	19.04	10.90	2.06	25.17	9.85	0.20	0.00	0.29	0.03	1.84	1.53	0.00	0.35	0.13	0.00	0.52	0.83	3.29
D03	22.83	1.07	15.58	13.02	1.29	16.07	8.35	0.20	0.01	0.09	0.17	1.50	1.20	0.00	0.24	0.11	0.00	0.26	0.25	0.00
D04	20.44	0.97	14.54	0.11	1.27	26.15	8.87	0.14	0.00	0.08	0.13	1.14	1.01	0.00	0.20	0.05	0.00	0.48	0.26	0.00
D05	17.07	0.98	14.54	0.12	0.84	26.50	7.93	0.15	0.00	0.08	0.10	0.89	1.04	0.00	0.21	0.08	0.00	0.44	0.31	0.71
D06	14.46	0.67	11.24	0.07	1.04	18.71	7.11	0.14	0.00	0.05	0.12	0.97	1.10	0.00	0.20	0.07	0.00	0.21	0.12	4.87
D07	10.33	0.65	9.20	0.23	0.92	10.14	5.11	0.13	0.00	0.09	0.08	1.00	0.95	0.00	0.16	0.08	0.00	0.14	0.12	3.32
D08	9.81	0.77	10.51	0.22	0.86	12.42	5.79	0.08	0.00	0.06	0.10	0.78	0.95	0.00	0.13	0.07	0.00	0.08	0.15	0.75
D09	12.21	0.50	9.78	5.74	0.18	8.87	4.94	0.12	0.00	0.07	0.09	0.67	0.67	0.00	0.10	0.09	0.00	0.09	0.14	5.17
D10	13.34	0.49	9.69	5.46	0.90	9.73	5.16	0.13	0.00	0.08	0.08	0.69	0.68	0.00	0.11	0.09	0.00	0.11	0.30	6.03
D11	14.52	0.42	11.02	0.07	1.03	14.07	7.31	0.11	0.00	0.07	0.12	0.68	0.63	0.00	0.12	0.08	0.00	0.08	0.20	3.59
D12	11.13	0.32	8.07	4.21	0.74	6.14	4.97	0.10	0.00	0.07	0.06	0.43	0.50	0.00	0.08	0.08	0.00	0.08	0.09	4.78
D13	14.74	0.34	10.00	5.17	0.78	5.84	5.52	0.13	0.00	0.08	0.06	0.69	0.60	0.00	0.09	0.11	0.00	0.12	0.10	5.87
D14	16.20	0.27	9.87	9.44	0.33	5.98	5.39	0.13	0.00	0.06	0.06	0.33	0.51	0.00	0.05	0.10	0.00	0.06	0.22	4.42
D15	10.79	0.40	9.89	0.14	0.61	8.22	6.07	0.05	0.00	0.07	0.03	0.33	0.60	0.00	0.08	0.98	0.00	0.16	0.09	0.52
D16	0.61	0.01	0.60	0.02	0.05	0.27	0.18	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.08	0.33
D17	18.73	0.90	14.75	2.99	0.98	13.64	8.81	0.11	0.00	0.04	0.08	0.31	0.53	0.00	0.07	0.24	0.00	0.00	0.07	1.82
D18	4.78	0.31	4.21	0.14	0.55	4.02	2.22	0.04	0.00	0.08	0.07	0.24	0.12	0.00	0.01	0.03	0.00	0.00	0.06	0.59
D19	0.95	0.07	1.05	0.05	0.14	1.02	0.67	0.02	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
D21	1.99	0.08	2.01	0.10	0.27	2.16	1.12	0.05	0.00	0.04	0.03	0.08	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.79
D22	1.53	0.09	1.83	0.17	0.29	2.84	1.01	0.06	0.00	0.05	0.04	0.02	0.00	0.00	0.00	0.04	0.00	0.00	0.08	0.97
D23	1.59	0.11	2.09	0.17	0.37	3.81	1.15	0.07	0.00	0.05	0.04	0.06	0.00	0.00	0.00	0.04	0.00	0.26	0.20	2.89
D24	11.11	0.50	6.15	0.61	2.61	13.67	1.03	0.04	0.29	0.05	0.00	0.68	0.94	0.00	0.17	0.00	0.00	0.00	0.00	0.00
D25	1.84	0.16	1.50	0.42	0.77	1.83	0.01	0.00	0.00	0.04	0.00	0.05	0.04	0.00	0.00	0.17	0.00	0.00	0.03	0.63
D26	2.98	0.28	2.54	0.60	1.38	3.63	0.15	0.11	0.00	0.06	0.01	0.00	0.00	0.00	0.00	1.06	0.00	0.00	0.12	1.10

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D27	5.29	0.44	4.60	0.77	1.90	7.06	0.26	0.00	0.00	0.06	0.01	0.42	0.52	0.00	0.09	0.05	0.00	0.00	0.13	1.65
D28	0.54	0.31	0.91	0.52	1.02	1.69	0.00	0.07	0.00	0.05	0.01	0.08	0.06	0.00	0.00	0.03	0.00	0.00	0.04	0.49
D29	15.05	0.69	7.64	0.20	2.44	20.76	1.30	0.00	0.92	0.11	0.02	0.74	1.14	0.00	0.20	0.10	0.00	0.25	0.32	3.71
D30	14.20	0.71	8.01	0.25	1.98	23.29	1.64	0.00	0.92	0.09	0.02	0.70	1.17	0.00	0.22	0.08	0.00	0.24	0.42	3.16
D31	13.75	0.88	8.71	0.61	2.49	20.42	1.91	0.00	0.70	0.06	0.02	0.60	0.96	0.00	0.17	0.10	0.00	0.20	0.38	3.46
D32	5.80	0.47	4.35	0.78	1.83	6.55	0.61	0.08	0.00	0.07	0.03	0.04	0.02	0.00	0.00	2.17	0.00	0.10	0.10	3.91
D33	14.16	1.03	9.80	0.38	1.80	29.75	1.50	0.10	0.90	0.09	0.02	0.70	1.12	0.00	0.20	0.11	0.00	0.31	0.61	3.95
D34	33.78	1.39	15.77	0.68	2.43	27.94	3.98	0.00	0.00	0.23	0.09	0.55	0.90	0.00	0.22	0.41	0.00	0.47	0.56	3.08

Station	p,p'-DDE	p,p'-DDD	Alpha-Chlor-dane	Beta-Chlor-dane	Hepta-chlor	Hepta-chlor-epoxide	Dieldrin	Aldrin	Endrin	Endrin-Aldehyde	Simazine	Atrazine	Chlorobenzene	Alachlor	Dacthal	Methoxychlor	cis-permethrin	trans-permethrin	Chlorobenzilate
D01	0.04	0.04	0.00	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.43	0.86	20.69	1.08	0.00	0.14	0.14	0.08	0.00
D02	0.04	0.00	0.00	0.00	0.63	0.00	0.00	0.00	0.00	0.00	0.00	1.16	26.90	1.01	0.00	0.00	0.00	0.00	0.00
D03	0.04	0.00	0.00	0.00	1.31	0.00	0.00	0.00	0.00	0.00	0.00	0.51	23.94	0.98	0.00	0.00	0.06	0.06	0.00
D04	0.04	0.00	0.00	0.00	1.34	0.00	0.00	0.00	0.00	0.00	0.00	0.58	32.48	1.17	0.00	0.00	0.14	0.04	0.00
D05	0.03	0.00	0.00	0.00	0.96	0.00	0.09	0.00	0.00	0.00	0.00	0.72	21.35	1.02	0.00	0.07	0.00	0.00	0.00
D06	0.04	0.05	0.00	0.00	0.81	0.00	0.09	0.00	0.00	0.00	0.23	0.42	21.38	2.37	0.00	0.13	0.06	0.04	0.00
D07	0.03	0.06	0.00	0.00	0.56	0.00	0.00	0.00	0.00	0.00	0.22	0.28	22.94	1.01	0.00	0.09	0.10	0.04	0.29
D08	0.03	0.05	0.00	0.00	0.51	0.00	0.19	0.00	0.00	0.00	0.25	0.28	16.09	0.43	0.00	0.09	0.07	0.05	0.42
D09	0.03	0.06	0.00	0.00	0.73	0.00	0.17	0.00	0.00	0.00	0.32	0.52	20.73	0.65	0.00	0.12	0.08	0.07	0.22
D10	0.04	0.06	0.00	0.00	0.67	0.00	0.00	0.00	0.00	0.00	0.32	0.30	19.17	0.79	0.00	0.14	0.09	0.06	0.26
D11	0.04	0.07	0.00	0.00	0.68	0.00	0.05	0.00	0.00	0.00	0.24	0.17	19.22	0.60	0.00	0.10	0.10	0.04	0.46
D12	0.04	0.07	0.00	0.00	0.63	0.00	0.10	0.00	0.00	0.00	0.22	0.31	20.19	0.69	0.00	0.11	0.11	0.05	0.24
D13	0.05	0.08	0.00	0.00	0.71	0.00	0.00	0.00	0.00	0.00	0.23	0.09	13.47	0.76	0.00	0.13	0.06	0.03	0.19
D14	0.04	0.07	0.00	0.00	0.80	0.00	0.15	0.00	0.00	0.00	0.33	0.31	18.41	0.63	0.00	0.13	0.06	0.00	0.20
D15	0.05	0.08	0.00	0.00	0.59	0.00	0.00	0.00	0.00	0.00	0.24	0.27	19.93	0.73	0.00	0.08	0.10	0.05	0.79
D16	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.02	0.05	9.20	0.02	0.00	0.00	0.04	0.04	0.00

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D17	0.03	0.03	0.00	0.00	0.20	0.00	0.15	0.00	0.00	0.00	0.29	0.24	23.30	0.99	0.00	0.09	0.06	0.04	0.52
D18	0.05	0.00	0.00	0.00	0.08	0.00	0.28	0.00	0.00	0.00	0.16	0.39	10.26	0.70	0.00	0.03	0.03	0.04	0.10
D19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.11	6.15	0.11	0.00	0.00	0.00	0.00	0.00
D21	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.10	0.29	7.73	0.41	0.00	0.03	0.03	0.03	0.00
D22	0.00	0.03	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.17	0.62	7.89	0.34	0.00	0.00	0.04	0.04	0.00
D23	0.03	0.06	0.00	0.00	0.45	0.00	0.00	0.00	0.00	0.00	0.20	0.64	7.26	0.35	0.00	0.03	0.05	0.05	0.00
D24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	1.14	12.04	0.36	0.00	0.11	0.00	0.00	0.13
D25	0.00	0.01	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.05	0.10	9.13	0.12	0.00	0.03	0.05	0.04	0.00
D26	0.10	0.06	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.10	0.25	14.73	0.36	0.00	0.07	0.00	0.00	0.07
D27	0.03	0.04	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.00	0.31	0.45	17.56	0.57	0.00	0.07	0.06	0.04	0.11
D28	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.24	4.33	0.23	0.00	0.02	0.02	0.03	0.05
D29	0.04	0.12	0.00	0.00	0.83	0.00	0.16	0.00	0.00	0.00	0.86	2.67	17.23	0.38	0.00	0.12	0.14	0.06	0.28
D30	0.03	0.07	0.00	0.00	1.01	0.00	0.00	0.00	0.00	0.00	1.00	3.18	16.07	0.98	0.00	0.11	0.15	0.07	0.28
D31	0.04	0.08	0.00	0.00	0.93	0.00	0.00	0.00	0.00	0.00	1.17	4.04	13.19	0.80	0.00	0.08	0.11	0.06	0.34
D32	0.21	0.12	0.00	0.00	0.26	0.00	0.00	0.00	0.00	0.00	0.48	1.37	18.80	0.70	0.00	0.20	0.06	0.05	0.16
D33	0.04	0.12	0.00	0.00	0.94	0.00	0.00	0.00	0.00	0.00	1.99	6.95	8.24	0.70	0.00	0.09	0.13	0.07	0.33
D34	0.08	0.07	0.00	0.00	1.19	0.00	0.25	0.00	0.00	0.00	1.65	1.59	26.75	0.49	0.00	0.08	0.20	0.08	0.45

Table S10 Concentrations of the SVOCs in the atmosphere in the Southern Hemisphere during the 33rd Antarctica Cruise (ng/m³, 2016-2017).

Station	Ace	Acy	Fle	Ant	Flu	Phe	Pyr	BbF	BkF	BaA	Chy	DBah A	IDP	BaP	BghiP	Alpha -HCH	Beta- HCH	Gama -HCH	Delta- HCH	p,p'- DDT	p,p'- DDE
E01	19.6	12.6	71.6	29.3	50.7	177	26.4	ND	ND	11.1	2.76	0.44	1.13	ND	0.24	0.16	ND	0.22	1.78	2.79	0.06
E02	12.9	4.57	46.3	15.5	40.2	150	17.5	1.39	1.05	5.91	2.08	0.86	1.39	ND	0.62	0.07	ND	0.11	0.31	0.62	0.06
E03	18.1	5.82	73.3	13	61.1	372	48.3	1.41	5.41	1.18	3.5	13.5	15	ND	5.74	0.09	ND	0.3	1.17	1.89	0.06
E04	24.4	5.71	104	11.7	31.9	170	73.9	1.29	4.84	0.8	1.95	1.85	11.7	ND	4.11	0.07	ND	0.2	0.59	ND	0.1
E05	2.71	0.24	10.7	1.26	4.8	26.7	9.64	0.44	1.95	0.53	0.05	0.43	4.05	ND	2.16	0.01	ND	0.07	0.22	1.91	0.03
E06	0.63	0.08	2.16	0.41	1.16	9.48	3.22	0.34	0.71	0.27	0.11	0.32	0.98	ND	0.65	0.02	ND	0.05	0.25	2.12	0.02
E07	3.34	0.33	14.3	0.62	5.19	27.6	18.6	0.31	2.5	0.42	0.2	5.51	3.97	ND	1.31	0.02	ND	0.07	0.2	5.52	0.02
E08	3.12	0.67	11.8	2.23	6.25	39	16.9	0.77	3.78	0.88	ND	9.77	10.9	ND	3.23	0.05	ND	0.11	0.49	4.5	0.04
E09	2.81	0.49	9.73	1.92	4.8	36.5	16.8	0.79	3.45	0.66	0.33	7.16	8.89	ND	2.78	ND	ND	0.13	0.46	10.9	0.05
E10	1.97	0.24	7.56	1.01	2.55	28.3	22	0.58	2.65	0.43	0.22	8.11	2.73	ND	1.6	ND	ND	0.06	0.39	9.33	0.03
E11	3.2	0.4	9.9	1.13	5.3	51	36.3	1.35	7.52	0.83	0.51	22.1	14.5	ND	3.68	0.12	ND	0.05	0.44	9.76	0.11
E12	1.44	0.48	4.22	0.69	2.27	30.9	12.3	0.87	2.54	0.77	0.19	10.5	4.58	ND	1.67	0.05	ND	0.02	0.56	4.31	0.05
E13	2.58	0.45	9.77	0.95	3.9	37.5	23.6	0.81	4.19	0.5	0.23	15.6	8.84	ND	2.47	0.07	ND	0.03	0.31	5.08	0.07
E14	4.5	1.11	16.1	1.71	8.22	50.3	57.7	1.42	8	1.03	0.55	31.7	14	ND	4.28	0.11	ND	0.09	0.69	ND	0.12
E15	5.32	1.71	19	2.03	8.69	65.6	45.5	1.37	3.82	0.96	0.46	25.1	14.7	ND	3.77	0.13	ND	0.05	0.5	7.94	0.08
E16	1.35	0.2	5.03	0.75	2.53	18.1	2.27	0.24	0.46	0.42	0.07	1.45	0.94	ND	0.25	0.05	ND	0.01	0.09	0.81	0.01
E17	5.25	0.97	22.2	2.74	8.38	66.9	45.7	1.18	5.38	1	0.68	23.3	16.3	ND	4.96	0.07	ND	0.07	0.55	12.9	0.1
E18	6.67	2.03	30.9	4.06	13.6	104	20.9	0.83	3.25	0.89	0.32	17.1	11	ND	2.52	0.05	ND	0.16	0.25	4.08	0.04
E19	5.45	1.14	22.9	2.8	7.99	66.3	39.8	1.23	7.04	0.86	0.51	25.8	14.1	ND	4.31	0.08	ND	0.05	0.51	3.95	0.1
E20	3.57	0.42	14.4	1.08	4.54	41.8	34.6	0.89	4.75	0.48	0.38	14.1	9.85	ND	2.69	0.07	ND	0.06	0.35	3.85	0.05
E21	1.42	0.24	5.27	0.37	2.67	29	25.4	0.78	4.55	0.47	0.28	16.6	8.68	ND	2.21	0.06	ND	0.04	0.27	5.09	0.06
E22	1.33	0.33	7.33	0.49	2.9	21.9	29.7	0.57	4.42	0.52	0.32	18	9.26	ND	3.03	0.02	ND	0.08	0.49	3.37	0.03
E23	1.06	0.32	6.49	0.56	2.41	20.6	14.7	0.4	0.82	0.39	0.24	10.3	5.12	ND	1.36	0.09	ND	0.06	0.29	3.8	0.14
E24	0.7	0.19	4.26	0.32	2.05	15.6	18	0.47	0.58	0.35	0.36	11	6.08	ND	2.5	0.13	ND	0.04	0.24	5.78	0.13
E25	1.58	0.3	8.43	0.5	4.09	24.6	41.9	1.06	5.66	0.62	0.47	22.3	11.1	ND	3.88	0.03	ND	0.13	0.5	3.53	0.09

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E26	3	0.45	12.3	0.95	4.6	33.7	34	1.15	5.05	0.62	0.4	27.2	12.3	ND	5.52	0.16	ND	0.12	0.62	2.66	0.12
E27	1.2	0.38	6.58	0.58	1.99	18.2	15.7	0.23	0.8	0.4	0.34	14.5	8.93	ND	3.3	0.52	ND	0.1	0.33	1.6	0.08
E28	0.81	0.22	3.54	0.41	2.12	16.1	11	0.59	1.72	0.51	0.17	8.16	5.01	ND	1.56	0.63	ND	0.09	0.34	1.6	0.03
E29	0.56	0.08	1.74	0.14	0.84	14.1	2.74	0.44	0.54	0.28	0.08	1.38	0.79	ND	0.19	0.02	ND	0.02	0.26	0.46	0.01
E30	1.07	0.25	6.11	0.36	1.97	18.4	15.7	0.31	3.32	0.49	0.32	14.7	7.93	ND	2.72	0.74	ND	0.08	0.33	1.98	0.02
E31	0.68	0.11	2.29	0.23	1.7	20.9	0.21	0.39	1.42	0.58	0.15	6.37	4.11	ND	0.86	0.11	ND	0.02	0.37	1.66	0.06
E32	4.8	0.19	3.52	0.48	2.83	20.5	29	0.64	4.46	0.63	0.4	16.1	8.9	ND	2.89	1.52	ND	0.1	0.52	1.06	0.03
E33	0.87	0.12	3.83	0.7	2.21	14.7	8.79	0.26	1.2	0.36	0.09	3.17	1.68	ND	0.55	0.58	ND	0.06	0.31	2.8	0.03
E34	11.2	2.51	54.1	5.69	22.2	153	96.5	1.98	5.76	1.26	0.72	24	9.13	ND	3.96	0.28	ND	0.21	1.67	15.7	0.07
E35	4.14	0.72	18.8	3.14	11.2	47.7	64.9	0.61	2.84	0.22	0.46	8.76	4.74	ND	2.32	11.5	ND	0.25	0.71	9.75	0.05
E36	4.92	0.96	33.1	3.28	21.8	227	22.8	0.46	1.42	1.14	0.29	10.6	5.55	ND	2.1	0.03	ND	0.07	0.48	8.31	0.04
E37	15	4.45	109	10.2	31.7	498	122	2.11	6.29	2.59	1.06	37.7	14.5	ND	5.23	0.47	ND	0.33	1.57	6.04	0.13
E38	20	8.69	158	10.6	13.3	848	236	1.19	6.35	5.32	1.31	29.3	14.9	ND	4.64	0.54	ND	0.51	1.35	5.52	0.14
E39	9.9	2.29	75.2	6.16	21.6	315	68.2	0.91	4.2	1.45	0.51	21.6	10.3	ND	3.55	0.25	ND	0.12	0.47	5.1	0.1
E40	4.41	0.79	26.1	1.75	16.1	96.5	66.3	1.58	3.13	1	0.6	25.7	9.82	ND	4.44	0.23	ND	0.18	1.31	5.62	0.13

Station	p,p'-DDD	Alpha-Chlordane	Beta-Chlordane	Alpha-Endosulfan	Beta-Endosulfan	Endosulfan sulfate	Heptachlor	Heptachlor epoxide	Dieldrin	Aldrin	Endrin	Endrin Aldehyde	Simazine	Atrazine	Chlorobenzene	Alachlor	Dacthal	Methoxychlor	cis-permethrin	trans-permethrin	Chlorobenzilate
E01	0.06	ND	ND	ND	0.07	0.59	0.07	ND	0.82	ND	ND	0.08	0.08	0.42	5.12	ND	ND	0.45	0.07	0.21	0.08
E02	0.02	ND	ND	ND	0.18	0.4	ND	ND	0.15	ND	ND	0.04	0.04	0.13	3.54	0.12	ND	0.98	0.12	0.4	0.08
E03	0.06	ND	ND	ND	0.24	1.58	ND	ND	ND	ND	ND	0.07	0.06	0.16	4.67	0.22	ND	0.52	0.17	0.41	0.08
E04	0.06	ND	ND	ND	0.12	0.61	ND	ND	0.46	ND	ND	0.1	0.04	0.14	5.66	0.36	ND	1.46	0.24	0.28	0.06
E05	0.01	ND	ND	ND	0.03	0.44	ND	ND	0.57	ND	ND	ND	0.01	0.03	1.46	0.05	ND	0.25	0.07	0.19	ND
E06	0.02	ND	ND	ND	ND	0.19	ND	ND	0.39	ND	ND	ND	0.01	0.03	2.75	0.03	ND	0.09	0.13	0.09	ND
E07	0.01	ND	ND	ND	0.02	0.34	ND	ND	0.52	ND	ND	0.03	0.08	0.06	1.82	0.16	ND	0.31	0.07	0.07	ND
E08	0.07	ND	ND	ND	ND	0.94	ND	ND	0.69	ND	ND	0.03	0.1	0.17	3.64	0.13	ND	0.67	0.15	0.75	0.17
E09	0.04	ND	ND	ND	0.25	1.69	ND	ND	0.71	ND	ND	0.02	0.09	0.14	3.02	0.13	ND	1.38	0.32	0.41	0.26
E10	1.23	ND	ND	ND	ND	1.23	ND	ND	0.66	ND	ND	ND	0.07	0.09	3.01	0.14	ND	1.07	0.17	0.28	0.11
E11	0.11	ND	ND	ND	0.21	4.62	ND	ND	0.87	ND	ND	0.03	0.14	0.16	4.84	0.29	ND	2.19	0.22	0.27	0.19
E12	0.02	ND	ND	ND	ND	1.45	0.04	ND	0.77	ND	ND	ND	0.1	0.13	3.17	0.1	ND	0.27	0.12	0.26	0.12
E13	0.05	ND	ND	ND	0.08	2.55	ND	ND	0.69	ND	ND	0.02	0.09	0.13	4.2	0.19	ND	1.37	0.16	0.34	0.09
E14	0.05	ND	ND	ND	0.22	1.22	ND	ND	ND	ND	ND	0.05	0.19	0.21	5.32	0.51	ND	2.37	0.33	0.57	1.02
E15	0.28	ND	ND	ND	0.2	4.16	ND	ND	1.3	ND	ND	0.05	0.2	0.23	4.5	0.44	ND	0.92	0.32	2.21	0.43
E16	0.01	ND	ND	ND	ND	0.23	ND	ND	0.24	ND	ND	ND	0.03	0.02	0.81	0.03	ND	0.04	0.04	0.15	0.02
E17	0.04	ND	ND	ND	0.25	1.06	ND	ND	3.08	ND	ND	0.03	0.45	0.22	5.09	0.38	ND	1.03	0.38	0.97	0.07
E18	0.02	ND	ND	ND	ND	1.92	ND	ND	0.58	ND	ND	0.03	0.02	0.07	3.46	0.23	ND	0.37	0.15	0.29	0.02
E19	0.05	ND	ND	ND	0.07	3.26	ND	ND	1	ND	ND	0.03	0.4	0.19	4.43	0.32	ND	0.87	0.3	0.96	0.05
E20	0.06	ND	ND	ND	0.1	1.07	0.05	ND	0.35	ND	ND	0.01	0.33	0.12	3.27	0.28	ND	0.65	0.44	2.16	0.04
E21	0.03	ND	ND	ND	0.05	2.66	ND	ND	0.7	ND	ND	0.02	0.31	0.13	3.46	0.16	ND	1.28	0.16	0.28	0.04
E22	0.03	ND	ND	ND	0.09	0.72	ND	ND	0.31	ND	ND	0.03	0.21	0.16	4.13	0.22	ND	1.39	0.18	0.21	0.65
E23	0.04	ND	ND	ND	0.06	1.26	0.03	ND	0.53	ND	ND	ND	0.13	0.08	7.69	0.12	ND	0.3	0.1	0.17	0.23
E24	0.01	ND	ND	ND	0.25	0.38	0.02	ND	0.41	ND	ND	0.01	0.15	0.14	7.01	0.13	ND	0.85	0.12	3.73	0.56

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E25	0.03	ND	ND	ND	ND	0.53	ND	ND	1.26	ND	ND	0.03	0.2	0.1	3.78	0.34	ND	0.82	0.33	0.77	0.95
E26	0.04	ND	ND	ND	0.13	0.49	ND	ND	1.69	ND	ND	0.04	0.04	0.17	6.8	0.29	ND	0.94	0.18	27.41	1.04
E27	0.02	ND	ND	ND	0.3	0.36	ND	ND	1.28	ND	ND	0.01	0.11	0.1	5.9	0.07	ND	0.32	0.1	0.09	0.62
E28	0.03	ND	ND	ND	0.02	0.29	0.04	ND	0.27	ND	ND	ND	0.12	0.09	4.52	0.08	ND	0.2	0.27	0.22	0.08
E29	0.01	ND	ND	ND	0.11	0.07	0.02	ND	2.59	ND	ND	ND	0.04	0.04	1.53	0.02	ND	0.06	0.07	0.35	0.03
E30	0.02	ND	ND	ND	ND	0.56	0.03	ND	0.41	ND	ND	0.02	0.14	0.1	3.48	0.07	ND	0.61	0.1	4.09	0.42
E31	0.01	ND	ND	ND	0.1	0.21	ND	ND	1.45	ND	ND	ND	0.09	0.1	2.13	0.04	ND	0.13	0.13	0.54	0.04
E32	0.03	ND	ND	ND	0.03	0.46	ND	ND	0.48	ND	ND	ND	0.2	0.17	2.72	0.16	ND	0.58	0.27	1.26	0.27
E33	0.05	ND	ND	ND	0.03	0.15	ND	ND	0.39	ND	ND	ND	0.07	0.1	2.17	0.05	ND	0.19	0.06	26.3	0.05
E34	0.08	ND	ND	ND	0.08	1.1	0.06	ND	3.67	ND	ND	0.08	2.41	0.23	6.79	0.78	ND	0.82	0.85	10.4	0.91
E35	1.33	ND	ND	ND	ND	0.93	ND	ND	2.5	ND	ND	ND	0.21	0.1	13.1	0.6	ND	1.13	45.7	106	0.45
E36	1.02	ND	ND	0.01	0.14	0.52	0.02	ND	2	ND	ND	0.03	0.08	0.06	2.37	0.11	ND	0.33	6.2	35.2	0.19
E37	3.65	ND	ND	ND	0.36	ND	0.06	ND	2.18	ND	ND	0.12	0.38	0.46	8.7	0.28	ND	1.14	0.38	1.26	1.23
E38	0.15	ND	ND	ND	0.32	ND	0.13	ND	1.51	ND	ND	0.2	0.32	0.36	17.1	0.67	ND	0.91	0.59	1.09	1.08
E39	0.12	ND	ND	ND	0.22	ND	ND	ND	2.11	ND	ND	0.05	0.23	0.18	11.2	0.32	ND	0.63	0.19	0.16	0.95
E40	0.11	ND	ND	ND	0.12	1.51	0.12	ND	4.64	ND	ND	0.06	0.05	0.23	13.4	0.58	ND	1.05	0.59	0.36	1.07