Table S2 Continuous monitoring data of S13 major ions and isotopes

Time	T (℃)	pH	Na^+ mg/L	Cl^- mg/L	SO_4^{2-} mg/L	$\delta^{18}O_{V\text{-}SMOW}$ ‰	$\delta D_{V\text{-}SMOW}$ ‰	$\delta^{13}C$ DIC ‰
2023/2/4	28.5	-	468.27	144.31	152.53	-9.87	-64.24	-3.86
2023/2/7	28.4	-	473.12	141.18	149.15	-10.11	-64.27	-3.69
2023/2/10	27.6	-	462.82	141.60	147.63	-9.78	-63.45	-3.78
2023/2/13	27.8	-	473.19	145.87	153.49	-9.82	-63.58	-3.66
2023/2/16	27.7	-	477.67	148.67	155.23	-9.79	-63.67	-4.23
2023/2/19	26.3	-	490.87	143.04	152.23	-9.83	-63.74	-4.16
2023/2/22	25.4	-	500.39	148.88	155.58	-9.85	-63.99	-3.18
2023/2/25	27.9	-	483.45	146.08	163.10	-10.04	-64.50	-3.69
2023/2/28	32.1	-	499.11	145.99	155.25	-10.02	-64.68	-3.81
2023/3/3	31.6	-	499.71	145.17	152.81	-9.91	-63.88	-3.70
2023/3/6	32.4	-	498.56	145.90	159.72	-10.18	-66.22	-3.87
2023/3/9	33.4	-	491.95	144.00	155.48	-10.05	-64.44	-3.88
2023/3/11	34.3	-	496.95	146.83	160.97	-10.07	-64.48	-4.25
2023/3/14	35.6	-	493.24	144.83	158.88	-10.07	-64.33	-3.96
2023/3/17	36.6	-	493.43	148.32	160.91	-9.98	-63.98	-4.15
2023/3/20	37.1	-	483.30	138.73	158.51	-	-	-3.88
2023/3/23	37.1	-	480.93	140.79	157.78	-10.09	-64.21	-4.08
2023/3/26	36.9	-	486.74	141.52	154.68	-	-	-4.04
2023/3/29	37.4	-	483.81	140.26	158.43	-	-	-
2023/4/1	37.7	-	483.96	140.26	158.43	-	-	-3.86
2023/4/3	37.3	-	461.93	129.25	151.77	-10.02	-64.09	-4.39
2023/4/6	37.2	-	466.34	133.24	150.81	-9.94	-64.79	-4.05
2023/4/9	37.5	-	468.79	131.96	155.82	-9.76	-63.88	-3.93
2023/4/12	37.6	-	464.84	130.02	153.42	-9.82	-63.89	-3.62
2023/4/15	37.5	8.07	468.21	129.20	156.84	-9.86	-63.89	-3.87
2023/4/18	36.7	-	467.47	130.39	151.96	-9.96	-64.48	-3.63
2023/4/21	37.3	-	468.89	131.57	155.66	-9.85	-63.84	-3.84
2023/4/24	36.8	-	466.69	130.15	155.15	-9.97	-64.23	-3.64
2023/4/27	36.9	-	470.54	130.88	158.97	-9.99	-65.13	-3.59
2023/4/30	36.9	-	464.08	128.76	155.35	-9.82	-63.80	-3.50
2023/5/3	36.8	-	467.20	130.32	153.70	-9.87	-63.86	-3.80
2023/5/6	36.8	-	457.87	127.90	153.19	-9.96	-64.24	-3.57
2023/5/9	36.8	-	453.67	126.60	152.72	-9.91	-64.52	-3.87
2023/5/12	37	-	465.99	129.69	156.64	-9.87	-64.07	-3.50
2023/5/15	37	7.96	462.87	128.52	153.43	-9.95	-63.96	-3.64
2023/5/17	37	-	480.78	134.16	159.85	-9.87	-63.84	-3.60
2023/5/20	36.4	-	480.91	134.66	156.34	-9.87	-63.77	-
2023/5/23	36.7	-	487.57	136.21	166.04	-9.90	-63.82	-3.41
2023/5/26	36.9	-	466.90	130.67	159.97	-10.11	-65.61	-3.61
2023/5/29	36.9	-	524.28	145.73	169.44	-10.33	-65.98	-4.28

2023/6/1	36.1	-	528.87	148.60	177.94	-9.94	-63.83	-3.78
2023/6/4	37.7	-	527.34	147.85	179.10	-10.00	-63.92	-3.93
2023/6/7	37.5	-	539.75	150.68	183.65	-9.98	-63.77	-3.94
2023/6/10	37.4	-	515.84	144.98	169.14	-9.95	-63.70	-3.63
2023/6/13	36.8	-	514.15	144.29	171.57	-10.19	-64.87	-3.79
2023/6/16	37.4	8.09	501.47	138.53	168.22	-9.98	-63.71	-3.73
2023/6/19	37.8	-	451.44	128.96	157.67	-10.16	-64.27	-3.44
2023/6/22	37.3	-	491.71	137.47	154.55	-10.74	-67.19	-3.70
2023/6/25	38.4	-	506.81	143.04	157.40	-10.53	-65.75	-3.64
2023/6/28	37.6	-	495.48	139.64	154.93	-10.63	-65.95	-3.63
2023/7/1	37.4	-	501.99	140.99	155.88	-10.44	-65.56	-3.59
2023/7/4	37.5	-	497.61	140.12	155.84	-10.60	-66.27	-3.63
2023/7/7	37.5	-	493.90	138.29	154.59	-10.66	-66.20	-2.76
2023/7/10	37.6	-	502.66	141.47	157.30	-10.27	-65.11	-3.45
2023/7/13	37.8	-	481.43	145.28	153.95	-10.33	-64.58	-3.55
2023/7/16	38.5	7.13	488.33	145.29	163.08	-10.65	-66.25	-3.67
2023/7/19	37.5	-	486.94	143.79	156.95	-10.55	-65.10	-4.91
2023/7/22	37.5	-	482.12	143.36	151.73	-10.63	-65.11	-3.75
2023/7/25	37.6	-	468.07	140.24	147.74	-10.48	-64.80	-3.34
2023/7/28	37.5	-	487.09	146.89	151.62	-10.23	-65.25	-3.85
2023/7/31	37.1	-	492.09	146.75	154.96	-10.35	-64.89	-3.88
2023/8/3	37.3	-	494.82	145.62	155.52	-10.28	-65.69	-3.34
2023/8/6	37.4	-	483.25	144.11	155.72	-10.18	-65.49	-3.65
2023/8/9	38.4	-	496.25	148.41	154.10	-10.30	-65.08	-3.69
2023/8/12	37.7	-	503.31	150.49	156.59	-10.26	-64.16	-
2023/8/15	37.5	-	464.90	136.37	153.69	-10.34	-65.08	-3.39
2023/8/18	37.4	-	467.85	137.65	155.51	-10.30	-64.83	-3.81
2023/8/21	37.8	-	465.55	135.69	154.84	-10.24	-64.47	-3.59
2023/8/24	37.8	-	464.17	136.26	153.98	-10.38	-64.84	-3.40
2023/8/27	37.9	-	466.03	137.55	157.32	-10.30	-64.59	-3.45
2023/9/2	37.3	-	468.27	136.95	157.36	-10.28	-64.32	-3.26
2023/9/5	38.4	-	467.92	137.22	155.77	-10.34	-64.68	-3.42
2023/9/8	37.4	-	468.28	137.37	156.38	-10.43	-65.78	-3.16
2023/9/11	37.7	-	468.08	137.71	155.76	-10.45	-64.79	-3.41
2023/9/13	37.4	-	468.81	137.34	156.33	-10.29	-64.32	-3.39
2023/9/16	37.8	7.27	467.01	137.64	159.01	-10.42	-65.39	-3.40
2023/9/20	37.5	-	470.02	137.15	156.27	-10.39	-65.05	-3.66
2023/9/22	37.3	-	463.44	137.92	154.74	-10.40	-66.72	-3.53
2023/9/25	37.4	-	439.90	138.56	158.76	-10.18	-65.44	-3.42
2023/9/28	37.4	-	468.10	138.16	155.29	-10.63	-66.60	-3.45
2023/10/1	37.3	-	465.50	137.44	154.43	-10.16	-64.65	-3.46
2023/10/4	37.8	-	439.97	137.44	156.81	-10.13	-64.51	-3.52
2023/10/7	37.4	-	464.16	136.38	154.94	-10.36	-65.77	-3.35
2023/10/10	37.8	-	469.30	138.94	154.80	-10.30	-65.73	-3.40

2023/10/13	37.7	-	462.24	137.37	152.43	-10.38	-65.39	-3.29
2023/10/16	37.5	7.59	462.98	136.84	152.04	-10.33	-65.14	-3.65
2023/10/19	38.4	-	469.49	138.80	156.66	-10.49	-66.10	-3.42
2023/10/22	37.8	-	465.43	138.13	154.48	-10.40	-65.90	-3.55
2023/10/25	37.4	-	469.59	138.73	154.32	-9.92	-63.81	-3.45
2023/10/28	37.7	-	469.18	139.04	155.23	-10.33	-65.39	-3.56
2023/10/31	37.4	-	468.40	138.12	153.07	-10.45	-66.45	-3.36
2023/11/3	37.4	-	469.18	139.46	154.94	-10.28	-64.99	-3.53
2023/11/6	37.3	-	472.37	140.10	155.48	-10.57	-66.47	-3.67
2023/12/1	33.4	-	480.95	142.31	156.64	-10.32	-66.17	-
2023/12/4	34	-	479.81	142.83	155.20	-10.51	-66.57	-3.29
2023/12/7	34.5	-	491.86	145.30	157.13	-10.50	-65.04	-3.43
2023/12/10	34.1	-	493.22	146.72	160.46	-10.38	-64.56	-3.34
2023/12/12	34.5	-	494.16	146.81	158.44	-10.39	-64.26	-0.78
2023/12/16	33.9	7.29	442.83	136.40	149.32	-10.78	-64.40	-3.59
2023/12/18	-	-	486.47	136.13	147.34	-10.54	-64.43	-3.26
2023/12/21	34	-	491.70	148.63	159.07	-9.40	-63.25	-3.32
2023/12/25	34	-	494.46	146.01	157.76	-9.80	-64.02	-3.12
2023/12/28	34.1	-	497.57	147.38	159.55	-10.24	-65.01	-3.18
2023/12/31	33.9	-	480.17	142.50	156.42	-10.42	-64.62	-3.34
2024/1/3	34.4	-	486.57	143.28	155.28	-10.09	-64.58	-3.33
2024/1/6	34	-	487.10	144.62	157.66	-10.71	-65.42	-6.43
2024/1/9	33.9	-	434.88	131.90	138.71	-10.93	-64.44	-3.43
2024/1/11	36.1	-	481.96	142.44	158.45	-10.57	-66.02	-3.14
2024/1/14	36.4	7.46	485.97	138.46	157.69	-10.27	-64.67	-3.33
2024/1/17	36.5	-	487.56	143.70	158.11	-10.25	-64.46	-2.96
2024/1/20	36.3	-	485.54	140.43	156.48	-10.21	-64.16	-2.76
2024/1/23	36.5	-	483.16	138.97	157.27	-9.86	-63.52	-3.10
2024/1/26	36.5	-	485.38	141.01	158.00	-10.28	-64.27	-3.09
2024/1/29	36.3	-	485.97	139.73	155.55	-9.77	-63.25	-3.02
2024/1/30	36.3	-	486.76	140.93	159.21	-10.49	-64.66	-3.08
2024/2/1	36.4	-	483.66	140.26	158.57	-10.46	-64.75	-3.03
2024/2/7	36.4	-	486.91	139.71	157.26	-10.08	-65.16	-3.11
2024/2/10	36.5	-	485.80	141.43	153.06	-9.97	-64.29	-3.06
2024/2/13	36.1	-	488.03	137.99	164.14	-9.90	-64.05	-3.17
2024/2/16	36.3	7.33	31.28	41.58	90.95	-9.85	-60.99	-8.13
2024/2/19	36.4	-	29.06	38.82	83.84	-9.88	-61.06	-6.36
2024/2/22	36.1	-	31.30	41.54	89.35	-9.71	-60.53	-6.67
2024/2/26	36.3	-	31.59	41.67	90.56	-9.83	-60.58	-6.77
2024/3/1	35.80	-	492.70	142.17	157.18	-10.28	-65.61	-3.17
2024/3/4	36.10	-	486.31	139.25	157.71	-10.33	-65.49	-3.13
2024/3/7	36.20	-	495.97	141.36	157.04	-10.19	-65.64	-3.01
2024/3/10	36.20	-	493.59	140.99	158.12	-10.55	-66.00	-3.23
2024/3/13	36.10	-	494.50	145.62	156.82	-10.28	-65.68	-3.33

2024/3/16	36.20	6.27	491.68	138.99	153.55	-10.20	-64.09	-3.14
2024/3/19	36.10	-	491.86	142.97	161.99	-10.34	-67.35	-3.00
2024/3/22	36.20	-	491.55	140.91	163.21	-10.43	-65.77	-3.20
2024/3/25	36.20	-	493.64	141.09	158.15	-10.39	-66.18	-2.89
2024/3/28	36.30	-	497.42	146.03	163.51	-10.47	-64.53	-3.21
2024/3/31	36.20	-	493.66	141.28	159.84	-10.19	-64.04	-3.19
2024/4/9	36.8	-	448.68	144.67	155.33	-	-	-2.95
2024/4/12	37	-	456.51	144.99	159.72	-	-	-2.94
2024/4/18	36.9	6.36	454.61	142.66	159.47	-	-	-3.02
2024/4/21	37	-	453.46	142.82	159.97	-	-	-2.97
2024/4/24	37	-	453.58	144.98	159.72	-	-	-
2024/4/25	37.1	-	452.66	142.99	163.44	-	-	-3.39
2024/4/27	37.2	-	452.41	142.79	157.54	-	-	-3.37
2024/4/30	37.2	-	452.16	142.25	163.16	-	-	-2.67
2024/5/3	37.1	-	453.30	144.99	163.66	-	-	-3.16
2024/5/6	37.1	-	452.84	144.07	158.55	-	-	-3.40
2024/5/9	37.2	-	453.92	146.07	162.85	-	-	-3.61
2024/5/12	37.1	-	457.59	144.53	158.49	-	-	-3.38
2024/5/18	36.9	6.37	456.90	146.16	162.74	-	-	-3.45

‘-’represent No data.