

付録S4 蛍光X線分析装置 (XRF) の検量線法による猪苗代湖湖底堆積物の主成分・微量元素組成

Appendix S4 Major and trace element compositions of lacustrine sediment core samples from Lake Inawashiro-ko measured by XRF (calibration line method)

Hole-Section	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09
Sample ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
SiO <sub>2</sub> (wt.%)	59.78	60.70	61.89	61.13	61.24	60.73	61.30	61.25	61.25	61.21	61.08	59.23	61.92	60.81	59.91	60.05	55.86	57.87	60.20	57.88	61.36	61.69	61.76	62.64
TiO <sub>2</sub>	0.76	0.79	0.81	0.78	0.79	0.75	0.78	0.76	0.77	0.76	0.80	0.70	0.79	0.74	0.67	0.71	0.63	0.65	0.81	0.70	0.75	0.78	0.77	0.79
Al <sub>2</sub> O <sub>3</sub>	19.79	19.48	18.12	18.81	18.01	18.38	18.10	19.04	17.33	18.17	17.63	18.88	17.86	18.74	19.09	18.98	17.40	18.62	17.34	18.57	19.69	19.66	19.91	19.82
Fe <sub>2</sub> O <sub>3</sub>	8.79	8.43	8.41	8.36	8.28	7.84	8.22	7.79	9.14	7.86	8.42	10.32	7.60	7.70	9.09	8.31	12.85	11.31	9.67	11.47	7.96	7.63	7.36	6.43
MnO	0.06	0.06	0.05	0.06	0.05	0.06	0.05	0.06	0.05	0.05	0.04	0.05	0.04	0.06	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06
MgO	2.37	2.38	2.24	2.40	2.08	2.25	2.08	2.37	1.91	2.16	1.91	2.16	1.95	2.33	2.20	2.26	2.04	2.14	2.03	2.10	2.32	2.34	2.26	2.26
CaO	1.18	1.14	1.03	1.00	1.11	1.07	1.12	1.03	1.08	1.04	1.00	1.06	1.02	1.03	1.02	1.04	0.91	0.93	1.04	1.20	1.03	1.06	1.06	1.09
Na <sub>2</sub> O	1.31	1.32	1.29	1.35	1.36	1.37	1.41	1.36	1.39	1.41	1.39	1.26	1.45	1.31	1.25	1.32	1.18	1.19	1.35	1.25	1.27	1.35	1.30	1.34
K <sub>2</sub> O	2.26	2.29	2.30	2.38	2.28	2.32	2.31	2.36	2.32	2.36	2.40	2.07	2.45	2.31	2.10	2.19	1.91	1.99	2.30	1.93	2.13	2.20	2.18	2.19
P <sub>2</sub> O <sub>5</sub>	0.14	0.13	0.12	0.12	0.14	0.14	0.14	0.13	0.14	0.14	0.16	0.13	0.11	0.13	0.21	0.18	0.20	0.15	0.23	0.16	0.12	0.09	0.12	0.11
SO <sub>3</sub>	0.70	0.76	1.33	1.17	1.39	1.06	1.35	0.87	2.69	2.24	1.84	3.98	2.49	1.79	4.00	2.25	12.76	7.87	1.98	5.77	1.89	1.55	1.69	1.41
total	97.15	97.46	97.58	97.55	96.74	95.97	96.86	96.99	98.07	97.37	96.66	99.83	97.68	96.93	99.59	97.33	105.79	102.77	96.99	101.07	98.58	98.39	98.45	98.12

Hole-Section	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09
Sample ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
SiO <sub>2</sub> (wt.%)	61.54	62.28	63.42	62.67	63.31	63.28	63.28	63.15	62.46	62.86	63.18	59.33	63.38	62.73	60.16	61.70	52.81	56.31	62.06	57.26	62.25	62.69	62.73	63.84
TiO <sub>2</sub>	0.79	0.81	0.83	0.80	0.81	0.78	0.80	0.78	0.79	0.78	0.83	0.70	0.81	0.76	0.68	0.73	0.59	0.63	0.83	0.69	0.76	0.79	0.78	0.81
Al <sub>2</sub> O <sub>3</sub>	20.37	19.98	18.56	19.28	18.62	19.16	18.69	19.63	17.67	18.66	18.24	18.91	18.28	19.33	19.17	19.50	16.45	18.12	17.88	18.38	19.97	19.98	20.22	20.20
Fe <sub>2</sub> O <sub>3</sub>	9.05	8.65	8.61	8.57	8.56	8.17	8.48	8.03	9.32	8.07	8.71	10.34	7.78	7.94	9.13	8.53	12.15	11.01	9.97	11.34	8.08	7.75	7.47	6.55
MnO	0.06	0.06	0.05	0.06	0.05	0.06	0.05	0.06	0.05	0.05	0.05	0.05	0.04	0.06	0.05	0.06	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06
MgO	2.44	2.44	2.30	2.46	2.15	2.35	2.15	2.44	1.94	2.22	1.98	2.16	2.00	2.41	2.21	2.32	1.92	2.08	2.10	2.08	2.36	2.38	2.30	2.30
CaO	1.21	1.17	1.05	1.03	1.14	1.12	1.15	1.06	1.10	1.06	1.04	1.06	1.05	1.06	1.02	1.07	0.86	0.90	1.08	1.18	1.04	1.08	1.08	1.11
Na <sub>2</sub> O	1.35	1.35	1.32	1.38	1.41	1.43	1.45	1.40	1.42	1.45	1.44	1.26	1.49	1.35	1.26	1.35	1.12	1.16	1.39	1.23	1.29	1.37	1.32	1.37
K <sub>2</sub> O	2.32	2.35	2.36	2.44	2.36	2.42	2.39	2.43	2.36	2.42	2.48	2.07	2.51	2.38	2.11	2.25	1.80	1.93	2.37	1.91	2.16	2.24	2.21	2.23
P <sub>2</sub> O <sub>5</sub>	0.15	0.13	0.12	0.13	0.14	0.14	0.15	0.13	0.14	0.14	0.17	0.13	0.12	0.13	0.21	0.19	0.19	0.14	0.23	0.16	0.12	0.09	0.12	0.11
SO <sub>3</sub>	0.72	0.78	1.36	1.20	1.44	1.10	1.39	0.89	2.74	2.30	1.90	3.99	2.55	1.84	4.02	2.31	12.06	7.66	2.04	5.71	1.91	1.57	1.72	1.43
total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Hole-Section	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09	IN2.5-09
Sample ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
As (ppm)	62	65	116	107	196	274	350	184	180	333	381	210	546	316	346	327	496	321	248	243	88	103	116	114
Ba	492	522	510	509	497	504	498	497	502	480	539	485	531	474	468	455	437	456	484	416	472	500	466	488
Co	11	10	9	9	8	7	8	7	9	7	8	10	7	8	10	7	13	11	10	11	9	10	9	10
Cr	64	58	58	66	57	61	56	58	56	56	63	65	59	57	61	58	76	68	62	70	56	58	56	56
Cu	35	33	32	31	29	30	29	32	32	32	31	32	31	31	30	29	31	31	31	35	33	34	31	32
Nb	13	13	13	12	13	12	13	12	13	13	14	12	13	13	12	12	11	11	13	11	12	13	12	12
Ni	20	18	19	17	17	19	19	18	18	19	17	22	16	18	20	18	25	23	17	21	19	21	19	19
Pb	54	57	71	71	74	70	75	66	71	78	87	65	88	64	61	59	58	52	88	62	54	55	57	65
Sr	162	162	159	157	168	159	165	158	164	159	158	152	161	155	146	151	142	143	160	156	159	162	163	169
V	230	253	281	267	301	285	303	269	314	284	361	279	313	270	230	263	239	244	387	278	242	238	237	216
Zn	133	130	113	105	93	105	112	100	98	90	75	120	77	109	126	129	167	120	84	146	138	107	125	100

付録S4 (続き)

Appendix S4 (continued)

Hole-Section	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	mean	s.d.	
Sample ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
SiO <sub>2</sub> (wt.%)	56.96	56.75	56.96	56.43	57.82	58.16	58.80	58.53	57.86	57.27	56.24	57.04	58.11	57.19	57.47	57.18	57.67	57.49	57.47	56.95			
TiO <sub>2</sub>	0.63	0.64	0.65	0.64	0.65	0.67	0.70	0.73	0.68	0.66	0.64	0.65	0.67	0.67	0.68	0.68	0.70	0.69	0.66	0.67			
Al <sub>2</sub> O <sub>3</sub>	23.13	21.21	20.20	19.65	19.72	19.55	19.90	20.16	21.48	22.66	21.82	21.99	22.01	21.22	20.89	19.78	19.74	19.84	20.62	20.76			
Fe <sub>2</sub> O <sub>3</sub>	6.81	10.16	15.33	19.84	16.19	18.34	15.03	12.26	8.68	7.43	7.96	7.87	7.52	8.74	9.02	11.36	10.33	11.39	10.36	10.18			
MnO	0.09	0.10	0.14	0.19	0.16	0.18	0.15	0.11	0.09	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.07		
MgO	2.15	2.24	2.31	2.21	2.15	2.18	2.22	2.31	2.18	2.23	2.04	2.02	2.07	2.02	2.05	2.04	2.11	2.14	2.14	2.17			
CaO	1.25	1.20	1.19	1.29	1.26	1.28	1.24	1.14	1.18	1.21	1.19	1.18	1.17	1.14	1.13	1.07	1.05	1.03	1.07	1.10			
Na <sub>2</sub> O	0.98	0.99	1.07	1.09	1.11	1.13	1.13	1.10	1.04	1.03	0.93	0.98	1.06	1.05	1.04	1.06	1.07	1.08	1.09	1.06			
K <sub>2</sub> O	1.91	1.98	2.07	1.95	1.93	1.92	1.99	2.07	1.98	1.93	1.83	1.86	1.90	1.90	1.93	1.92	1.96	1.95	1.95	1.97			
P <sub>2</sub> O <sub>5</sub>	0.36	0.25	0.15	0.15	0.16	0.14	0.12	0.13	0.25	0.34	0.34	0.31	0.28	0.26	0.23	0.16	0.17	0.18	0.21	0.21			
SO <sub>3</sub>	0.77	1.80	1.40	0.76	0.76	0.63	0.84	1.31	1.06	0.70	0.93	1.06	1.06	1.42	1.43	2.54	2.37	3.71	3.50	2.42			
total	95.03	97.32	101.45	104.19	101.91	104.19	102.12	99.83	96.47	95.53	94.00	95.01	95.91	95.68	95.94	97.86	97.24	99.55	99.12	97.56			

Hole-Section	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	mean	s.d.
Sample ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
SiO <sub>2</sub> (wt.%)	59.94	58.32	56.15	54.16	56.74	55.82	57.58	58.63	59.98	59.95	59.83	60.03	60.59	59.77	59.91	58.43	59.31	57.75	57.98	58.38	60.18	2.76
TiO <sub>2</sub>	0.66	0.66	0.64	0.62	0.64	0.64	0.69	0.73	0.71	0.69	0.68	0.68	0.70	0.70	0.71	0.70	0.72	0.69	0.66	0.69	0.73	0.07
Al <sub>2</sub> O <sub>3</sub>	24.34	21.79	19.92	18.86	19.35	18.76	19.48	20.19	22.26	23.72	23.22	23.14	22.95	22.18	21.78	20.21	20.30	19.92	20.80	21.28	19.99	1.74
Fe <sub>2</sub> O <sub>3</sub>	7.16	10.44	15.11	19.04	15.89	17.60	14.72	12.28	9.00	7.78	8.47	8.28	7.84	9.14	9.40	11.61	10.62	11.45	10.45	10.43	9.98	2.77
MnO	0.09	0.10	0.14	0.18	0.16	0.18	0.15	0.11	0.09	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.07	0.07	0.03
MgO	2.26	2.30	2.27	2.12	2.11	2.09	2.17	2.32	2.26	2.33	2.17	2.13	2.15	2.11	2.14	2.08	2.17	2.15	2.16	2.22	2.21	0.14
CaO	1.31	1.24	1.17	1.24	1.24	1.23	1.22	1.14	1.22	1.27	1.27	1.24	1.22	1.19	1.18	1.10	1.08	1.04	1.08	1.12	1.12	0.10
Na <sub>2</sub> O	1.03	1.01	1.05	1.05	1.09	1.09	1.11	1.10	1.08	1.08	0.98	1.03	1.10	1.09	1.09	1.08	1.10	1.09	1.10	1.09	1.22	0.16
K <sub>2</sub> O	2.01	2.03	2.04	1.87	1.90	1.85	1.95	2.07	2.05	2.02	1.94	1.95	1.98	1.99	2.01	1.97	2.01	1.96	1.96	2.02	2.14	0.21
P <sub>2</sub> O <sub>5</sub>	0.38	0.26	0.14	0.15	0.16	0.13	0.12	0.13	0.25	0.36	0.36	0.32	0.29	0.27	0.24	0.16	0.18	0.18	0.21	0.22	0.18	0.07
SO <sub>3</sub>	0.81	1.85	1.38	0.72	0.74	0.60	0.82	1.31	1.10	0.73	0.99	1.12	1.10	1.49	1.49	2.59	2.44	3.72	3.53	2.48	2.17	2.06
total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	

Hole-Section	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	IN2.5-11	mean	s.d.
Sample ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
As (ppm)	45	49	37	31	27	23	25	36	40	45	43	44	42	50	50	70	61	83	95	63	152	137
Ba	481	475	431	451	465	488	488	473	455	468	487	510	514	502	502	478	485	483	489	455	483	25
Co	10	34	27	20	13	15	26	39	13	10	8	9	10	11	15	20	11	14	12	9	12	7
Cr	52	52	64	69	67	64	61	61	60	62	56	48	49	55	55	69	63	65	62	62	60	6
Cu	37	35	33	34	37	37	38	36	37	39	39	39	39	40	38	38	38	36	39	39	34	3
Nb	11	11	10	10	10	10	11	11	11	11	10	11	11	11	11	11	11	11	11	11	12	1
Ni	16	20	22	27	24	24	26	26	22	17	15	14	18	19	16	17	17	18	20	17	19	3
Pb	28	28	29	25	27	26	29	29	29	32	30	29	33	34	35	37	39	37	35	36	51	20
Sr	134	132	130	126	135	132	145	146	144	138	139	143	150	147	148	144	146	144	141	139	150	11
V	143	167	209	221	205	217	211	201	162	156	158	164	158	178	182	208	202	205	185	189	234	56
Zn	146	173	168	169	169	146	138	154	169	175	154	144	140	137	117	123	114	128	138	131	128	27