Supplementary Material for:

Hydrochemical Characteristics and Water Quality Assessment of Irkutsk Reservoir (Baikal Region, Russia)

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Table S1. Characterization of water sampling sites.

Sampling site	Location	Reservoir depth, m	Sampling site	Location	Reservoir depth, m
S1	The Angara river source, Listvyanka settlement (middle part)	2	S7	Kartakoi bay	19
S1-r	The Angara river source, Listvyanka settlement (right shore)	1	S8	Elovyi bay	11
S1-l	The Angara river source, Listvyanka settlement (left shore)	1	S9	Mel'nichnaya Pad' settlement	27
S2	Bolshaya Rechka settlement	15	S10	Ershi bay	15
S3	Burdugus bay	22	S11	Irkutsk city (Irkutsk HPP headwater)	35
S4	Kurma bay	28	S11-r	Irkutsk city (right shore)	6
S5	Uladova bay	9	S11-l	Irkutsk city (left shore)	15
S6	Channel part opposite Kurma bay	28			

Table S2. Spatial characterization of major ions and TDS in water of the Irkutsk reservoir (unit in mg L^{-1}).

Sampling campaign	Parameters	Min	Max	Mean	SD	The Angara river source	Irkutsk HPP headwater	Parameters	Min	Max	Mean	SD	The Angara river source	Irkutsk HPP headwater
		Irkutsk reservoir						Irkutsk reservoir						
2007	HCO_3^-	67.3	73.2	69.7	1.92	69.3	71.4/70.8*	Mg^{2+}	3.1	3.9	3.5	0.19	3.6	3.3/3.4
2012		59.5	65.3	62.9	1.74	64.4	63.9/64.9		2.0	5.7	3.5	0.81	3.3	3.2/3.2
2021(M)**		50.4	69.6	66.4	3.76	67.0	68.1/67.1		3.1	3.4	3.1	0.08	3.1	3.2/3.1
2021(J)		58.4	61.0	59.8	0.73	59.3	59.3/60.6		3.1	3.5	3.2	0.08	3.2	3.2/3.2
2021(S)		60.5	65.7	62.9	1.26	64.1	64.1/63.2		3.0	3.7	3.1	0.13	3.0	3.1/3.1
Total		**50.4**	**73.2**	**64.0**	**3.90**	–	–		**2.0**	**5.7**	**3.3**	**0.36**	–	–
2007	Cl^-	<DL	0.76	0.58	0.08	0.54	0.54/0.65	Na^+	3.0	3.4	3.2	0.11	3.3	3.2/3.0
2012		0.77	1.21	1.03	0.11	1.21	0.88/1.05		3.4	3.6	3.5	0.05	3.4	3.4/3.5
2021(M)		0.83	1.22	1.08	0.08	1.11	1.11/1.05		2.7	3.5	3.1	0.28	3.4	2.9/2.8
2021(J)		0.61	1.27	0.87	0.15	0.66	1.00/0.89		2.9	3.5	3.2	0.16	2.9	3.0/3.0
2021(S)		<DL	0.78	0.70	0.09	0.67	0.65/0.78		2.9	3.4	3.1	0.13	3.0	3.1/3.0
Total		**<DL**	**1.27**	**0.85**	**0.21**	–	–		**2.7**	**3.6**	**3.2**	**0.21**	–	–
2007	SO_4^{2-}	5.6	8.5	6.1	0.70	5.8	5.8/5.6	K^+	0.82	1.16	0.91	0.10	1.13	0.89/0.88
2012		4.0	5.8	5.0	0.49	4.3	4.0/4.7		0.83	1.05	0.95	0.06	0.96	0.95/1.02
2021(M)		4.4	7.5	5.0	0.63	4.3	4.7/4.8		0.71	1.03	0.97	0.06	0.99	0.99/0.99
2021(J)		3.7	4.7	4.1	0.23	4.0	4.2/4.2		0.77	1.01	0.92	0.08	1.00	0.96/0.85
2021(S)		3.9	4.6	4.2	0.19	4.0	4.5/4.3		0.91	1.00	0.96	0.03	0.92	0.97/0.98
Total		**3.7**	**8.5**	**4.8**	**0.83**	–	–		**0.71**	**1.16**	**0.95**	**0.07**	–	–
2007	Ca^{2+}	15.2	16.5	15.6	0.40	15.6	15.6/15.8	TDS	97.2	104.0	99.9	2.01	100.1	101.0/100.6
2012		12.7	17.7	15.3	1.17	15.6	15.7/15.4		89.4	95.0	92.6	1.76	93.6	92.4/94.1
2021(M)		11.7	16.3	15.2	0.84	15.6	15.3/15.2		78.5	100.6	95.5	4.05	96.7	96.9/96.0
2021(J)		14.2	14.8	14.4	0.15	14.5	14.5/14.3		85.9	89.4	87.2	0.96	86.4	86.6/87.4
2021(S)		14.2	14.8	14.5	0.13	14.6	14.7/14.8		87.3	93.9	90.2	1.37	91.0	91.7/90.9
Total		**11.7**	**17.7**	**14.9**	**0.77**	–	–		**78.5**	**104.0**	**92.5**	**4.85**	–	–

* – surface water concentration/bottom water concentration

** – here and further down 2021(M) – May, 2021, 2021 (J) – June, 2021, 2021 (S) – September 2021

Table S3. Comparisons of trace elements in water of channel part and bays of the Irkutsk reservoir (unit in μg L^{-1}).

Sampling campaign	Part of reservoir	Al	Cr	Mn	Fe	Co	Cu	Zn
2007	Channel part	2.44-15.39[a] 5.40	0.08-0.22 0.16	0.39-5.76 1.59	5.07-10.11 6.58	0.008-0.025 0.014	0.25-1.14 0.45	< DL-4.42 1.37
	Bays	3.44-5.38 4.31	0.08-0.23 0.16	0.43-14.81 5.07	6.16-53.22 25.89	0.008-0.016 0.012	0.42-0.67 0.58	< DL-1.89 1.18
2012	Channel part	3.22-11.98 5.71	0.07-0.17 0.11	2.43-12.06 8.08	1.25-16.15 6.54	0.011-0.024 0.016	0.52-0.82 0.66	2.53-5.03 3.39
	Bays	2.91-14.98 5.14	0.05-0.13 0.08	2.68-20.68 6.85	2.34-28.06 7.61	0.005-0.042 0.020	0.20-1.12 0.61	1.99-8.18 3.16
2021(M)	Channel part	1.71-10.64 5.02	0.07-0.16 0.09	1.22-17.95 6.64	4.27-16.11 8.63	<DL-0.055 0.024	0.27-1.98 0.71	2.02-4.48 2.92
	Bays	1.87-7.15 5.00	0.06-0.20 0.09	2.58-21.89 8.70	2.50-27.78 14.65	0.005-0.100 0.039	0.27-1.78 0.61	1.87-7.44 3.25
2021(J)	Channel part	1.13-8.64 3.57	<DL-0.39 0.13	2.08-16.94 5.71	3.37-20.83 8.55	0.006-0.020 0.011	0.20-1.09 0.41	2.59-6.63 4.56
	Bays	1.31-12.49 4.88	<DL-0.16 0.09	2.42-23.12 11.75	5.97-29.32 12.50	0.007-0.035 0.016	0.24-0.80 0.46	3.23-6.41 4.49
2021(S)	Channel part	1.34-7.60 3.26	0.05-0.17 0.09	1.34-11.71 5.01	4.59-20.11 11.32	0.006-0.019 0.010	0.36-0.72 0.56	2.51-10.72 6.66
	Bays	1.52-13.88 4.48	<DL-0.23 0.09	1.36-18.57 8.71	6.78-49.56 21.82	0.008-0.019 0.013	0.25-0.99 0.52	2.51-13.40 7.04
Sampling campaign	**Part of reservoir**	**As**	**Cd**	**Sn**	**Cs**	**Pb**	**Th**	**U**
2007	Channel part	0.39-0.53 0.45	0.004-0.024 0.012	<DL-0.021 0.008	0.0006-0.0020 0.0012	0.03-0.68 0.14	0.0039-0.0202 0.0077	0.27-0.61 0.48
	Bays	0.34-0.40 0.38	0.006-0.012 0.009	<DL	0.0008-0.0036 0.0019	0.02-0.08 0.04	0.0056-0.0190 0.0105	0.33-0.75 0.58
2012	Channel part	0.29-0.36 0.31	0.017-0.032 0.025	0.095-0.195 0.131	<DL-0.0007 0.0005	0.10-0.30 0.17	0.0004-0.0013 0.0008	0.38-0.48 0.43
	Bays	0.27-0.36 0.31	0.016-0.034 0.023	<DL-0.078 0.021	0.0003-0.0010 0.0006	0.06-0.70 0.21	0.0004-0.0020 0.0008	0.38-0.51 0.45

Sampling campaign	Part of reservoir	As	Cd	Sn	Cs	Pb	Th	U
2021(M)	Channel part	0.25-0.44 0.36	0.014-0.037 0.020	0.010-0.067 0.020	0.0005-0.0014 0.0010	<DL-0.15 0.06	<DL-0.0009 0.0006	0.50-0.55 0.52
	Bays	0.26-0.44 0.35	0.014-0.027 0.018	<DL-0.030 0.015	0.0005-0.0012 0.0008	<DL-0.35 0.07	<DL-0.0017 0.0006	0.47-0.56 0.49
2021(J)	Channel part	0.33-0.49 0.41	0.027-0.127 0.053	<DL-0.100 0.026	0.0045-0.0277 0.0126	<DL-0.65 0.24	<DL-0.0019 0.0007	0.46-0.58 0.51
	Bays	0.33-0.44 0.39	0.016-0.042 0.031	<DL-0.023 0.009	0.0012-0.0105 0.0074	0.02-0.29 0.12	<DL-0.0008 0.0004	0.43-0.54 0.48
2021(S)	Channel part	0.28-0.47 0.37	0.013-0.043 0.025	<DL-0.057 0.018	0.0010-0.0066 0.0030	0.30-1.13 0.57	0.0003-0.0011 0.0006	0.48-0.59 0.53
	Bays	0.28-0.44 0.37	0.015-0.026 0.020	<DL-0.083 0.021	0.0010-0.0030 0.0018	0.09-0.93 0.48	0.0003-0.0013 0.0009	0.45-0.60 0.52

[a] – minimum–maximum value in the numerator, mean value in the denominator