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Model reactions and natural occurrence of furans from hypersaline environments

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Table 1. Parameters of Australian sediments of 2011.

Samplesite	Layer (cm)	Geographical position		Iron (w%)	pH	Organic carbon (w%)
Lake Magic I	0-2	S32.432488°	E118.905544°	1.0	5.0	0.9
Lake Magic II	14-22	S32.432970°	E118.905360°	1.6	5.0	0.1
Lake Springfield*	0-2	S32.461780°	E119.166200°	1.5	5.1	2.2
	2-4			2.1	5.8	2.8
	4-6			2.0	6.4	1.3
Lake Tay	0-0.5	S33.031390°	E120.740700°	0.5	6.4	0.9
Lake Orr* I	0-4	S33.148681°	E119.163755°	1.0	5.9	0.5
	4-6			0.7	5.4	0.5
	6-10			1.3	5.4	0.4
Lake Orr* II	0-0.5	S33.150270°	E119.160960°	1.2	5.7	0.4
	0.5-2			1.9	5.8	1.5
	2-4			2.0	6.3	1.4
	4-6			1.7	6.6	1.2
	6-8			1.0	6.6	0.2
Lake Hatter Hill*	0-2	S33.099221°	E119.839868°	1.1	7.6	4.7
	2-4			1.3	8.4	2.0
	4-6			1.6	8.4	0.5
Lake King I	0-0.5	S33.089010°	E119.618810°	0.5	7.1	0.6
	0.5-2			0.8	7.9	0.8
	2-4			0.9	8.0	0.6
	4-6			0.8	7.9	0.3
	26-28			0.8	7.9	0.2
Lake King II	0-2	S33.090780°	E119.617690°	0.6	7.6	0.5
	2-4			0.5	7.9	0.2
	4-6			0.6	7.6	0.3
Lake Dune*	0-0.5	S33.082940°	E119.638370°	2.1	7.9	0.8
	0.5-1.5			0.8	7.4	0.2
	1.5-3.5			2.5	6.0	1.3
	3.5-6			2.4	5.6	2.1
Lake Strawbridge*	0-2	S32.844030°	E119.397990°	1.4	8.1	1.3
	2-4			1.6	8.1	1.4
	4-6			1.6	8.1	2.1
	6-8			1.2	8.3	0.7
Lake Golf*	0-2	S32.810020°	E119.519620°	3.6	7.5	2.0
	2-4			1.9	7.5	0.6
	4-6			3.1	6.7	0.2
Lake Stubbs I	0-0.5	S33.060340°	E118.996750°	0.8	7.3	0.6
	0.5-10			1.5	8.0	1.0
	>10			3.0	8.2	1.1
Lake Stubbs II	0-20	S33.060360°	E119.000350°	1.6	8.2	0.8
Lake Stubbs III	0-2	S33.060250°	E118.996610°	1.1	8.1	0.7
	2-4			1.1	8.3	0.5
	4-6			1.0	8.2	1.1
	6-8			1.6	8.2	0.6
Lake Whurr*	0-1	S33.043120°	E119.008820°	2.4	4.8	0.8
	1-2			2.0	5.2	1.4
	2-6			1.7	5.8	1.6
	6-7			0.8	5.9	0.5
	>7			2.4	5.4	0.5

* No official sample site name.

Table 2. Parameters of Australian sediments of 2012.

Samplesite	Layer (cm)	Geographical position		Iron (w%)	pH	Organic carbon (w%)
Lake Emu*	0-2	S33.160990°	E119.655110°	1.2	6.9	1.7
	2-4			0.8	7.8	1.5
Stennets Lake	0-2	S33.202230°	E119.979520°	0.8	7.3	2.7
Lake Strawbridge*	0-4	S32.844550°	E119.397750°	1.6	7.6	1.5
	4-6			1.3	7.9	0.1
Lake Gulson I	0-2	S32.772020°	E119.399680°	0.7	7.8	0.7
	2-4			0.6	8.2	0.2
	4-6			0.6	7.8	0.2
Lake Gulson II	0-0.5	S32.7685°	E119.39834°	0.5	7.6	0.5
Lake Boats Claypan*	0-2	S33.06899°	E119.63868°	2.5	4.3	5.9
	2-4			2.7	4.5	4.0
	4-6			2.6	4.5	3.7
Lake Boats*	0-2	S33.069214°	E119.637771°	1.0	4.7	1.0
	2-4			1.2	4.2	3.2
	4-6			0.9	4.6	0.9
Lake Whurr*	0-1	S33.041650°	E119.010200°	1.9	6.9	0.7
	1-4			2.1	6.2	1.6
	4-6			2.0	5.6	1.6
Lake Orr*	crust	S33.148180°	E119.165160°	1.0	5.0	0.2
	0-2			1.5	5.9	0.5
	2-4			1.6	5.2	0.7
	4-6			1.5	4.9	0.8
Lake Dune*	0-2	S33.083720°	E119.639450°	0.7	4.8	0.1
	2-4			0.8	5.4	0.2
	4-6			0.7	5.6	0.5
Lake Newton I	0-2	S32.960670°	E119.611770°	0.6	7.5	0.5
	2-4			0.5	7.6	0.3
	4-6			0.8	7.6	0.2
Lake Newton II	0-0.5	S32.960486°	E119.611766°	0.5	6.8	1.1
	0.5-2			0.5	7.7	0.5

* No official sample site name.

Table 3. Parameters of Dead Sea sediments of 2012.

Samplesite	Layer (cm)	Geographical position		Iron (w%)	pH	Organic carbon (w%)
Sodom* I	crust	N30.96472°	E35.36380°	1.3	7.9	0.0
	0-2			1.5	7.9	0.2
	2-4			1.6	8.0	0.5
	4-6			1.7	8.0	0.6
	6-8			1.8	8.1	0.4
Sodom* II	crust	N30.96456°	E35.36388°	1.4	7.7	0.4
	0-2			1.2	8.0	0.4
	2-4			1.3	7.9	0.4
	4-6			1.6	7.9	0.3
Sodom* Plant	crust	N30.96424°	E35.36335°	1.3	7.9	0.6
	0-2			1.5	7.8	0.5
	2-4			1.5	7.8	0.4
	4-6			1.5	7.9	0.4

* No official sample site name.

Table 4. Emissions of furan and monoalkyl furans from Australian sediments of 2011.

Samplesite	Layer	Furan	2-Methyl-furan	3-Methyl-furan	2-Ethyl-furan	2-Propyl-furan	2-Butyl-furan	2-Pentyl-furan
	(cm)	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g
Lake Magic I	0-2	-	-	-	-	-	-	1.39
Lake Magic II	14-22	3.40	30.83	21.38	6.85	1.36	2.85	1.66
Lake Springfield*	0-2	15.92	7.90	8.54	24.20	2.21	4.01	4.91
	2-4	42.36	39.20	25.69	49.10	4.54	10.72	11.08
	4-6	1.72	3.95	4.82	4.17	1.56	5.46	8.16
Lake Tay	0-0.5	0.30	3.47	1.58	-	-	1.27	4.62
Lake Orr* I	0-4	0.86	0.66	0.43	0.36	-	0.68	1.07
	4-6	0.78	0.61	0.40	0.37	-	0.67	0.82
	6-10	0.23	0.21	0.20	-	-	-	-
Lake Orr* II	0-0.5	1.01	1.15	0.73	0.55	-	1.11	2.01
	0.5-2	6.21	2.66	2.93	1.62	1.00	2.35	2.68
	2-4	9.21	2.83	3.17	1.29	1.11	2.14	2.07
	4-6	7.94	3.65	3.19	1.24	1.09	2.89	2.67
	6-8	0.67	0.54	0.44	0.23	-	0.39	0.57
Lake Hatter Hill*	0-2	6.02	58.37	80.69	27.15	5.53	5.70	1.24
	2-4	3.40	30.83	21.38	6.85	1.36	2.85	1.66
	4-6	0.91	1.90	1.55	0.50	-	0.71	1.24
Lake King I	0-0.5	0.86	4.57	5.24	3.89	1.82	1.37	1.53
	0.5-2	1.14	7.94	5.18	2.42	1.09	1.19	0.74
	2-4	1.77	6.44	3.00	0.63	-	0.45	-
	4-6	0.56	2.13	1.08	0.26	-	-	-
	26-28	3.48	4.29	2.44	1.16	0.83	1.23	1.93
Lake King II	0-2	0.78	4.11	2.77	0.81	0.46	0.49	0.38
	2-4	0.39	1.30	0.79	0.12	-	0.12	-
	4-6	0.23	0.21	0.20	-	-	-	-
Lake Dune* III	0-0.5	0.99	3.17	1.04	0.61	-	0.78	-
	0.5-1.5	-	0.57	0.15	-	-	0.20	-
	1.5-3.5	4.37	1.89	1.72	0.72	-	1.79	2.81
	3.5-6	5.46	1.25	1.83	0.70	-	1.95	3.23
Lake Strawbridge*	0-2	2.30	13.08	12.23	5.61	-	4.31	4.12
	2-4	4.19	20.70	14.14	3.35	1.93	5.41	4.81
	4-6	3.90	25.23	19.63	5.00	1.80	3.63	-
	6-8	1.34	2.11	2.07	2.08	0.58	1.93	9.62
Lake Golf*	0-2	9.45	26.56	17.95	9.55	3.46	5.05	4.11
	2-4	3.48	4.29	2.44	1.16	0.83	1.23	1.93
	4-6	1.77	0.43	0.38	0.14	-	0.52	-
Lake Stubbs I	0-0.5	0.44	4.39	3.50	1.99	-	1.72	4.85
	0.5-10	3.86	1.70	1.63	1.73	0.92	2.13	3.89
	>10	4.62	3.89	2.81	2.94	0.93	1.68	2.27
Lake Stubbs II	0-20	4.05	3.16	2.43	2.15	0.83	1.88	1.64
Lake Stubbs III	0-2	0.73	3.30	1.80	0.59	-	0.42	-
	2-4	0.97	1.17	0.58	0.44	-	0.28	-
	4-6	2.07	10.46	7.06	2.82	-	0.79	-
	6-8	0.40	1.16	0.72	0.92	-	0.60	-
Lake Whurr*	0-1	3.86	1.70	1.63	1.73	0.92	2.13	3.89
	1-2	4.62	3.89	2.81	2.94	0.93	1.68	2.27
	2-6	4.05	3.16	2.43	2.15	0.83	1.88	1.64
	6-7	2.71	-	0.22	-	-	-	-
	>7	5.58	-	0.62	-	-	-	-

* No official sample site name. – Concentration below lowest calibration standard of 0.05 ng/g.

Table 5. Emissions of furan and monoalkyl furans from Australian sediments of 2012.

Samplesite	Layer	Furan	2-Methyl-furan	3-Methyl-furan	2-Ethyl-furan	2-Propyl-furan	2-Butyl-furan	2-Pentyl-furan
	(cm)	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g
Lake Emu*	0-2	-	16.38	10.62	3.68	1.14	4.75	6.03
	2-4	0.37	0.61	0.35	0.16	-	-	0.46
Stennets Lake	0-2	7.40	2.11	1.49	2.02	0.69	1.29	2.06
Lake Strawbridge*	0-4	4.64	25.63	23.30	10.91	2.37	6.48	10.45
	4-6	1.21	0.69	0.55	0.33	0.13	0.33	2.31
Lake Gulson I	0-2	0.50	2.73	2.32	0.65	0.22	0.56	1.83
	2-4	0.43	0.33	0.34	0.77	0.13	0.43	1.77
	4-6	0.30	0.45	0.32	0.09	0.07	0.08	0.17
Lake Gulson II	0-0.5	0.25	0.78	0.87	0.45	-	0.85	8.41
Lake Boats Claypan*	0-2	4.96	0.57	0.73	0.20	-	0.45	-
	2-4	4.27	0.86	0.52	0.09	-	-	-
	4-6	3.02	0.58	0.37	-	-	-	-
Lake Boats*	0-2	3.77	0.61	0.39	0.10	-	-	2.23
	2-4	7.98	0.61	0.40	0.07	-	-	-
	4-6	4.07	0.84	0.45	0.07	-	-	-
Lake Whurr*	0-1	2.22	2.21	0.92	0.58	0.30	1.01	1.69
	1-4	9.94	2.69	2.76	2.27	0.71	1.49	1.35
	4-6	6.81	0.95	1.05	0.36	-	0.60	-
Lake Orr*	crust	1.15	0.92	0.47	0.24	-	0.30	-
	0-2	4.19	1.26	0.98	0.36	-	0.65	-
	2-4	5.16	0.95	0.96	0.51	-	1.33	-
	4-6	7.06	1.69	1.34	1.04	-	1.16	-
Lake Dune*	0-2	1.01	0.22	0.21	0.08	-	0.28	-
	2-4	2.52	1.10	0.41	0.09	-	-	-
	4-6	2.22	1.55	0.31	-	-	-	-
Lake Newton I	0-2	0.40	1.59	1.33	0.41	0.14	0.29	1.19
	2-4	0.30	0.31	0.28	-	-	-	0.06
	4-6	0.41	0.42	0.32	0.06	-	-	0.08
Lake Newton II	0-0.5	-	3.71	1.57	0.81	0.36	1.20	3.31
	0.5-2	0.40	0.14	0.19	-	-	-	0.13

* No official sample site name. – Concentration below lowest calibration standard of 0.05 ng/g.

Table 6. Emissions of furan and monoalkyl furans from Dead Sea sediments of 2012.

Samplesite	Layer	Furan	2-Methyl-furan	3-Methyl-furan	2-Ethyl-furan	2-Propyl-furan	2-Butyl-furan	2-Pentyl-furan
	(cm)	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g
Sodom* I	crust	0.31	0.34	0.45	0.14	0.20	0.18	0.35
	0-2	0.22	0.24	0.24	0.05	-	0.08	-
	2-4	0.16	0.18	0.13	-	-	-	-
	4-6	0.14	0.22	0.19	-	-	0.08	-
	6-8	0.16	0.24	0.28	0.04	-	0.08	-
Sodom* II	crust	0.35	0.34	0.44	0.14	-	-	0.65
	0-2	0.13	0.22	0.26	0.06	-	-	-
	2-4	0.19	0.24	0.21	0.04	-	0.10	0.18
	4-6	0.21	0.13	0.11	-	-	0.08	-
Sodom* Plant	crust	0.35	0.49	0.67	0.17	0.22	0.69	0.62
	0-2	0.41	0.71	0.75	0.24	0.18	-	-
	2-4	0.22	0.26	0.21	0.05	-	0.11	0.37
	4-6	0.24	0.14	0.10	-	-	0.08	0.37

* No official sample site name. – Concentration below lowest calibration standard of 0.05 ng/g.

Table 7. Emissions of dimethyl- and halofurans from Australian sediments of 2011.

Samplesite	Layer	2,3-Dimethyl-furan	2,4-Dimethyl-furan	2,5-Dimethyl-furan	3-Chlorofuran	3-Bromofuran
	(cm)	ng/g	ng/g	ng/g	ng/g	ng/g
Lake Magic I	0-2	-	-	-	-	-
Lake Magic II	14-22	0.35	1.12	1.14	-	-
Lake Springfield*	0-2	0.40	0.48	2.57	0.25	-
	2-4	1.05	0.87	9.25	0.13	-
	4-6	0.16	0.20	3.90	-	-
Lake Tay	0-0.5	-	-	-	-	-
Lake Orr* I	0-4	-	-	0.13	-	-
	4-6	-	-	0.10	-	-
	6-10	-	-	-	-	-
Lake Orr* II	0-0.5	-	0.07	0.21	-	-
	0.5-2	0.12	0.28	0.57	-	-
	2-4	0.13	0.36	0.62	-	-
	4-6	0.12	0.49	0.59	-	-
	6-8	-	-	0.15	-	-
Lake Hatter Hill*	0-2	1.53	3.26	2.61	-	-
	2-4	0.35	1.12	1.14	-	-
	4-6	0.68	0.15	0.45	-	-
Lake King I	0-0.5	0.08	-	0.16	-	-
	0.5-2	0.28	0.33	-	-	-
	2-4	0.40	0.25	0.21	-	-
	4-6	-	-	-	-	-
	26-28	0.30	0.41	0.46	-	-
Lake King II	0-2	-	-	-	-	-
	2-4	-	-	-	-	-
	4-6	-	-	-	-	-
Lake Dune* III	0-0.5	0.62	0.25	0.29	-	-
	0.5-1.5	-	-	0.11	-	-
	1.5-3.5	-	-	1.03	-	-
	3.5-6	-	0.33	1.69	-	-
Lake Strawbridge*	0-2	0.54	0.47	0.49	-	-
	2-4	0.29	0.25	0.39	-	-
	4-6	0.26	0.38	0.65	-	-
	6-8	0.43	0.12	0.17	-	-
Lake Golf*	0-2	0.81	1.65	1.31	-	-
	2-4	0.30	0.41	0.46	-	-
	4-6	0.09	0.14	0.16	-	-
Lake Stubbs I	0-0.5	0.28	0.17	-	-	-
	0.5-10	0.10	0.16	0.43	-	-
	>10	0.14	0.17	1.01	-	-
Lake Stubbs II	0-20	-	0.13	1.38	-	-
Lake Stubbs III	0-2	0.14	0.24	0.11	-	-
	2-4	0.04	-	0.04	-	-
	4-6	0.11	0.41	0.46	-	-
	6-8	0.54	0.16	0.14	-	-
Lake Whurr*	0-1	0.10	0.16	0.43	-	-
	1-2	0.14	0.17	1.01	-	-
	2-6	-	0.13	1.38	-	-
	6-7	-	-	0.11	-	-
	>7	-	-	0.25	0.37	-

* No official sample site name. – Concentration below lowest calibration standard of 0.05 ng/g.

Table 8. Emissions of dimethyl- and halofurans from Australian sediments of 2012.

Samplesite	Layer	2,3-Dimethyl-furan	2,4-Dimethyl-furan	2,5-Dimethyl-furan	3-Chlorofuran	3-Bromofuran
	(cm)	ng/g	ng/g	ng/g	ng/g	ng/g
Lake Emu*	0-2	1.25	0.60	0.59	-	-
	2-4	0.55	-	0.07	-	-
Stennets Lake	0-2	0.07	0.05	0.16	-	-
Lake Strawbridge*	0-4	0.67	1.31	1.26	-	-
	4-6	0.38	0.12	0.20	-	-
Lake Gulson I	0-2	0.26	0.10	0.12	-	-
	2-4	0.11	-	0.07	-	-
	4-6	0.19	-	0.08	-	-
Lake Gulson II	0-0.5	0.10	-	-	-	-
Lake Boats Claypan*	0-2	-	-	0.52	-	-
	2-4	-	-	0.28	-	-
	4-6	-	-	0.19	-	-
Lake Boats*	0-2	-	-	0.35	-	-
	2-4	-	-	0.63	-	-
	4-6	-	-	0.31	-	-
Lake Whurr*	0-1	0.09	0.10	0.24	-	-
	1-4	-	0.16	0.86	-	-
	4-6	-	0.04	0.85	-	-
Lake Orr*	crust	-	-	0.12	-	-
	0-2	-	0.11	0.22	-	-
	2-4	-	0.13	0.28	-	-
	4-6	-	0.07	0.30	-	-
Lake Dune*	0-2	-	-	0.05	-	-
	2-4	-	-	0.07	-	-
	4-6	-	-	0.05	-	-
Lake Newton I	0-2	0.11	0.07	0.20	-	-
	2-4	0.07	-	0.13	-	-
	4-6	0.20	-	0.16	-	-
Lake Newton II	0-0.5	-	-	-	-	-
	0.5-2	0.07	-	0.04	-	-

* No official sample site name. – Concentration below lowest calibration standard of 0.05 ng/g.

Table 9. Emissions of dimethyl- and halofurans from Dead Sea sediments of 2012.

Samplesite	Layer	2,3-Dimethyl-furan	2,4-Dimethyl-furan	2,5-Dimethyl-furan	3-Chlorofuran	3-Bromofuran
	(cm)	ng/g	ng/g	ng/g	ng/g	ng/g
Sodom* I	crust	0.10	-	0.06	-	-
	0-2	-	-	-	-	-
	2-4	-	-	-	-	-
	4-6	-	0.05	0.04	-	-
	6-8	0.05	-	0.04	-	-
Sodom* II	crust	0.13	0.05	0.09	-	-
	0-2	-	-	0.04	-	-
	2-4	-	-	0.04	-	-
	4-6	-	-	-	-	-
Sodom* Plant	crust	0.13	0.06	0.10	-	-
	0-2	-	-	0.07	-	-
	2-4	-	-	-	-	-
	4-6	-	-	-	-	-

* No official sample site name. – Concentration below lowest calibration standard of 0.05 ng/g.

Table 10. Emissions of different VOC from Australian sediments of 2011.

Samplesite	Layer	Isoprene	Benzene	Toluene	Ethylbenzene	Thiophene	2-Methyl-thiophene	3-Methyl-thiophene
	(cm)	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g
Lake Magic I	0-2	-	-	0.75	-	-	-	-
Lake Magic II	14-22	5.78	-	4.27	1.04	0.61	1.88	3.19
Lake Springfield*	0-2	1.01	0.70	4.85	2.12	1.81	1.74	0.63
	2-4	-	1.66	6.97	2.89	3.45	5.56	1.56
	4-6	-	0.79	4.53	2.03	1.65	2.48	0.66
Lake Tay	0-0.5	30.53	0.10	0.38	0.52	-	0.09	-
Lake Orr* I	0-4	-	-	0.51	-	-	-	-
	4-6	-	-	0.53	-	-	-	-
	6-10	0.18	-	0.07	0.09	-	0.05	-
Lake Orr* II	0-0.5	2.28	0.41	1.36	0.50	0.04	0.13	0.05
	0.5-2	-	0.80	6.99	3.28	0.43	0.72	0.33
	2-4	-	0.98	6.61	2.67	0.55	1.05	0.35
	4-6	-	1.42	6.83	2.29	0.60	1.09	0.36
	6-8	-	0.24	0.69	0.86	0.07	0.17	0.06
Lake Hatter Hill*	0-2	110.64	-	6.39	0.83	1.19	5.69	5.03
	2-4	5.78	-	4.27	1.04	0.61	1.88	3.19
	4-6	1.21	-	2.19	0.79	0.17	0.40	0.25
Lake King I	0-0.5	13.61	-	0.14	0.08	0.07	0.10	0.10
	0.5-2	49.49	-	0.74	0.18	0.11	0.28	0.22
	2-4	3.10	-	0.65	0.36	0.12	0.19	0.14
	4-6	1.15	-	0.15	0.10	0.04	0.07	0.05
	26-28	2.30	1.02	9.49	2.99	0.09	0.23	0.23
Lake King II	0-2	9.18	-	0.10	0.06	0.08	0.16	0.18
	2-4	0.18	-	0.09	0.08	-	0.08	0.06
	4-6	0.18	-	0.07	0.09	-	0.05	-
Lake Dune* III	0-0.5	1.10	0.62	5.92	3.64	0.05	0.09	0.12
	0.5-1.5	-	0.05	0.39	0.09	-	-	-
	1.5-3.5	0.07	0.97	16.26	1.77	0.21	0.37	0.26
	3.5-6	-	2.31	14.48	3.24	0.72	1.13	0.67
Lake Strawbridge*	0-2	19.45	-	1.95	1.38	0.33	1.04	0.46
	2-4	7.34	0.14	2.10	2.00	0.55	0.70	0.32
	4-6	9.17	0.30	2.72	2.50	0.89	1.02	0.47
	6-8	1.77	0.31	1.00	1.34	0.18	0.24	0.11
Lake Golf*	0-2	29.64	1.37	13.41	2.60	0.31	0.71	0.63
	2-4	2.30	1.02	9.49	2.99	0.09	0.23	0.23
	4-6	0.20	0.75	6.87	4.04	-	0.07	0.10
Lake Stubbs I	0-0.5	29.28	0.16	0.67	0.44	-	0.18	0.18
	0.5-10	0.06	0.22	1.86	0.65	0.14	0.24	0.12
	>10	0.47	0.24	3.05	1.04	0.61	0.78	0.34
Lake Stubbs II	0-20	0.43	0.24	3.06	1.15	0.50	1.16	0.38
Lake Stubbs III	0-2	10.48	0.23	0.27	0.23	-	0.07	0.09
	2-4	0.63	0.08	0.43	0.46	-	0.04	-
	4-6	10.12	0.25	1.26	1.23	0.41	1.13	0.41
	6-8	0.74	-	1.66	1.61	-	0.07	0.06
Lake Whurr*	0-1	0.06	0.22	1.86	0.65	0.14	0.24	0.12
	1-2	0.47	0.24	3.05	1.04	0.61	0.78	0.34
	2-6	0.43	0.24	3.06	1.15	0.50	1.16	0.38
	6-7	0.12	0.07	0.19	-	0.15	0.20	0.08
	>7	0.04	0.64	5.43	1.40	0.21	0.31	0.13

* No official sample site name. – Concentration below lowest calibration standard of 0.05 ng/g.

Table 11. Emissions of different VOC from Australian sediments of 2011.

Samplesite	Layer	Isoprene	Benzene	Toluene	Ethylbenzene	Thiophene	2-Methyl-thiophene	3-Methyl-thiophene
	(cm)	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g
Lake Emu*	0-2	97.50	-	2.27	0.44	0.13	1.24	0.67
	2-4	0.22	0.06	-	-	0.04	0.07	-
Stennets Lake	0-2	5.03	0.86	1.85	0.48	0.10	0.14	0.10
Lake Strawbridge*	0-4	14.66	0.56	4.03	2.28	0.72	2.47	1.43
	4-6	0.34	0.19	0.68	0.55	0.11	0.19	0.07
Lake Gulson I	0-2	5.28	0.23	0.89	0.12	-	0.12	0.11
	2-4	2.02	0.17	-	0.04	-	-	-
	4-6	0.56	0.20	0.19	0.08	-	-	0.06
Lake Gulson II	0-0.5	13.47	0.13	-	-	-	-	-
Lake Boats Claypan*	0-2	0.27	1.33	18.25	2.17	-	-	-
	2-4	0.52	2.26	20.73	2.78	-	-	-
	4-6	0.19	1.52	10.30	1.43	-	-	-
Lake Boats*	0-2	0.22	0.14	3.90	0.24	0.07	0.08	0.06
	2-4	0.14	0.54	7.84	0.40	0.23	0.23	0.26
	4-6	-	0.23	2.28	0.47	0.19	0.19	0.18
Lake Whurr*	0-1	0.93	0.14	0.62	0.45	0.14	0.20	0.17
	1-4	-	0.55	2.34	0.56	0.53	1.14	0.41
	4-6	-	0.30	2.68	1.19	0.54	1.24	0.43
Lake Orr*	crust	0.05	0.15	0.28	0.11	-	0.07	0.05
	0-2	-	0.37	2.29	0.92	0.17	0.22	0.30
	2-4	-	0.59	2.98	1.16	0.22	0.23	0.33
	4-6	-	0.48	3.63	1.38	0.29	0.26	0.29
Lake Dune*	0-2	0.06	0.22	-	-	-	-	-
	2-4	0.10	0.16	0.13	0.12	0.05	-	0.04
	4-6	0.04	0.29	0.42	0.38	0.09	-	0.06
Lake Newton I	0-2	6.27	0.28	1.02	0.06	-	0.14	0.13
	2-4	0.06	0.34	0.20	-	0.04	0.06	0.04
	4-6	0.16	0.29	0.22	0.05	-	0.06	0.04
Lake Newton II	0-0.5	100.51	0.73	1.37	0.26	-	0.12	0.04
	0.5-2	2.21	0.48	0.34	0.10	-	-	-

* No official sample site name. – Concentration below lowest calibration standard of 0.05 ng/g.

Table 12. Emissions of different VOC from Australian sediments of 2011.

Samplesite	Layer	Isoprene	Benzene	Toluene	Ethylbenzene	Thiophene	2-Methyl-thiophene	3-Methyl-thiophene
	(cm)	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g	ng/g
Sodom* I	crust	3.52	0.04	0.05	0.43	-	-	-
	0.5-2	1.48	0.06	0.05	0.67	-	-	0.04
	2-4	0.64	-	0.11	0.46	-	-	-
	4-6	2.01	-	0.47	0.38	-	-	-
	6-8	2.82	-	0.66	0.45	-	-	-
Sodom* II	crust	3.61	-	0.09	0.42	-	-	-
	0.5-2	1.14	0.05	0.07	-	-	-	0.04
	2-4	0.10	0.07	0.08	0.42	-	-	0.04
	4-6	-	0.13	0.38	0.76	-	-	0.05
Sodom* Plant	crust	4.28	0.08	0.21	0.61	-	0.04	0.06
	0-2	3.62	0.06	0.22	0.85	-	0.05	0.06
	2-4	0.11	-	0.14	0.41	-	-	0.04
	4-6	-	0.09	0.44	0.79	-	0.04	0.05

* No official sample site name. – Concentration below lowest calibration standard of 0.05 ng/g.

Table 13. Properties of the Australian water samples of 2011.

Samplesite		Geographical position		Iron	pH	Organic carbon
				mg/L		mg/L
Lake Orr*	ground water	S33.148681°	E119.163755°	13.6	3.1	53
Lake Springfield*	surface water	S32.461780°	E119.166200°	84.0	3.4	89
Lake Dune*	surface water	S33.083083°	E119.639139°	24.0	2.6	55
Lake Golf*	ground water	S32.810390°	E119.518654°	18.0	5.1	39
Lake Strawbridge*	ground water	S32.844030°	E119.397990°	0.64	7.1	107
Lake Hatter Hill*	ground water	S33.099221°	E119.839868°	0.22	7.2	1266
Lake King	surface water	S33.089010°	E119.618810°	0.66	7.4	104
Lake Stubbs	ground water	S33.060340°	E118.996750°	2.26	7.2	26

* No official sample site names.

Table 14. Properties of the Australian water samples of 2012.

Samplesite		Geographical position		Iron	pH	Organic carbon
				mg/L		Mg/L
Lake Newton	ground water	S32.960670°	E119.611770°	2.88	6.3	86
Lake Strawbridge*	surface water	S32.844550°	E119.397750°	0.47	7.4	280
Lake Boats*	surface water	S33.069214°	E119.637771°	173	2.4	101
Stennets Lake	surface water	S33.202230°	E119.979520°	-	8.7	44
Lake Dune*	surface water	S33.085950°	E119.637450°	1.77	3.5	26
Lake Orr*	surface water	S33.148180°	E119.165160°	7.41	3.1	34
Lake Emu*	surface water	S33.160990°	E119.655110°	-	5.7	65
Lake Whurr*	surface water	S33.041650°	E119.010200°	65.5	3.1	37

* No official sample site names.

Table 15. Properties of the Dead Sea water samples of 2012.

Samplesite		Geographical position		Iron	pH	Organic carbon
				Mg/L		Mg/L
South End* I	surface water	N30.965436°	E35.366744°	-	5.1	-
South End* II	surface water	N30.965436°	E35.366744°	-	5.1	-
Sodom* I	ground water	N30.964397°	E35.363672°	-	6.5	-
Sodom* II	ground water	N30.964583°	E35.363028°	-	6.5	-
Sodom* Plant	ground water	N30.964553°	E35.362258°	-	6.5	-
En Gedi	surface water	N31.467156°	E35.398942°	-	6.0	-
En Bokek	surface water	N31.201047°	E35.366775°	-	6.0	-

* No official sample site names.

Table 16. Emissions of furan and monoalkyl furans from Australian water samples of 2011.

Samplesite	Furan	2-Methylfuran	3-Methylfuran	2-Ethylfuran	2-Propylfuran	2-Butylfuran	2-Pentylfuran
	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL
Lake Orr*	0.118	0.104	0.589	0.034	0.016	0.028	0.046
Lake Springfield*	0.854	0.377	2.306	0.134	0.041	0.015	0.031
Lake Dune*	0.170	0.064	0.312	0.017	0.008	0.008	-
Lake Golf*	0.028	0.011	0.008	-	-	-	-
Lake Strawbridge*	0.123	0.879	0.355	0.034	-	0.048	-
Lake Hatter Hill*	0.066	0.285	0.148	-	-	0.012	-
Lake King	0.070	0.112	0.029	-	-	-	-
Lake Stubbs	-	-	-	-	-	-	-

* No official sample site name. – Concentration below lowest calibration standard of 0.005 ng/mL.

Table 17. Emissions of furan and monoalkyl furans from Australian water samples of 2012.

Samplesite	Furan	2-Methylfuran	3-Methylfuran	2-Ethylfuran	2-Propylfuran	2-Butylfuran	2-Pentylfuran
	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL
Lake Newton	0.066	0.703	0.421	0.044	-	-	-
Lake Strawbridge*	0.052	1.111	0.830	0.078	-	0.018	-
Lake Boats*	0.915	0.185	2.879	0.162	0.031	0.038	-
Stennets Lake	-	0.016	0.018	-	-	-	-
Lake Dune*	0.101	0.138	0.157	-	-	-	-
Lake Orr*	0.131	0.113	0.382	-	0.011	-	-
Lake Emu*	0.337	0.650	0.047	0.010	-	-	-
Lake Whurr*	0.417	0.123	0.953	0.056	0.024	0.019	-

* No official sample site name. – Concentration below lowest calibration standard of 0.005 ng/mL.

Table 18. Emissions of furan and monoalkyl furans from Dead Sea water samples of 2012.

Samplesite	Furan	2-Methylfuran	3-Methylfuran	2-Ethylfuran	2-Propylfuran	2-Butylfuran	2-Pentylfuran
	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL
South End* I	0.043	0.044	0.011	0.024	-	-	-
South End* II	0.021	0.006	0.007	-	-	-	-
Sodom* I	0.040	0.018	0.018	-	-	-	-
Sodom* II	0.027	0.016	0.025	-	-	-	-
Sodom* Plant	0.032	0.013	0.030	-	-	0.013	-
En Gedi	0.013	-	0.005	-	-	-	-
En Bokek	0.042	0.013	0.017	0.009	-	-	-

* No official sample site name. – Concentration below lowest calibration standard of 0.005 ng/mL.

Table 19. Emissions of dimethyl- and halofurans from Australian water samples of 2011.

Samplesite	2,3-Dimethylfuran	2,4-Dimethylfuran	2,5-Dimethylfuran	3-Chlorofuran	3-Bromofuran
	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL
Lake Orr*	0.010	0.012	0.042	-	-
Lake Springfield*	0.034	0.037	0.461	-	-
Lake Dune*	0.004	0.007	0.062	-	-
Lake Golf*	-	-	0.004	-	-
Lake Strawbridge*	0.016	0.027	0.022	-	-
Lake Hatter Hill*	0.012	0.029	0.024	-	-
Lake King	-	-	0.005	-	-
Lake Stubbs	-	-	-	-	-

* No official sample site name. – Concentration below lowest calibration standard of 0.005 ng/mL.

Table 20. Emissions of dimethyl- and halofurans from Australian water samples of 2012.

Samplesite	2,3-Dimethyl-furan	2,4-Dimethyl-furan	2,5-Dimethyl-furan	3-Chlorofuran	3-Bromofuran
	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL
Lake Newton	0.014	0.027	0.030	-	-
Lake Strawbridge*	0.026	0.081	0.065	-	-
Lake Boats*	0.013	0.038	0.536	0.348	0.032
Stennets Lake	-	-	0.004	-	-
Lake Dune*	-	0.015	0.059	0.017	0.015
Lake Orr*	-	0.010	0.096	0.032	0.020
Lake Emu*	-	0.023	0.014	-	-
Lake Whurr*	0.029	0.022	0.764	0.009	-

* No official sample site name. – Concentration below lowest calibration standard of 0.005 ng/mL.

Table 21. Emissions of dimethyl- and halofurans from Dead Sea water samples of 2012.

Samplesite	2,3-Dimethyl-furan	2,4-Dimethyl-furan	2,5-Dimethyl-furan	3-Chlorofuran	3-Bromofuran
	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL
South End* I	-	-	-	-	-
South End* II	-	-	-	-	-
Sodom* I	-	-	0.004	-	-
Sodom* II	-	-	0.007	-	-
Sodom* Plant	0.004	-	0.006	-	-
En Gedi	-	-	-	-	-
En Bokek	-	-	-	-	-

* No official sample site name. – Concentration below lowest calibration standard of 0.005 ng/mL.

Table 22. Emissions of different VOC from Australian water samples of 2011.

Samplesite	Isoprene	Benzene	Toluene	Ethylbenzene	Thiophene	2-Methyl-thiophene
	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL
Lake Orr*	0.006	0.004	-	0.016	-	-
Lake Springfield*	0.004	-	-	0.010	0.016	0.006
Lake Dune*	0.006	-	-	-	-	-
Lake Golf*	0.011	-	0.024	0.024	-	-
Lake Strawbridge*	0.029	-	0.021	-	0.007	0.015
Lake Hatter Hill*	0.013	-	0.037	0.037	0.028	0.007
Lake King	-	-	0.047	0.024	0.005	-
Lake Stubbs	-	-	0.036	0.026	-	-

* No official sample site name. – Concentration below lowest calibration standard of 0.005 ng/mL.

Table 23. Emissions of different VOC from Australian water samples of 2012.

Samplesite	Isoprene	Benzene	Toluene	Ethylbenzene	Thiophene	2-Methyl-thiophene
	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL
Lake Newton	0.016	0.004	0.075	0.104	0.014	0.021
Lake Strawbridge*	0.018	-	0.091	0.097	0.011	0.025
Lake Boats*	0.008	-	0.031	-	0.008	0.005
Stennets Lake	0.036	-	0.033	0.047	-	-
Lake Dune*	-	-	-	-	-	-
Lake Orr*	-	-	-	0.037	-	-
Lake Emu*	0.006	-	-	0.078	-	-
Lake Whurr*	0.006	-	-	0.061	0.004	-

* No official sample site name. – Concentration below lowest calibration standard of 0.005 ng/mL.

Table 24. Emissions of different VOC from Dead Sea water samples of 2012.

Samplesite	Isoprene	Benzene	Toluene	Ethylbenzene	Thiophene	2-Methyl-thiophene
	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL	ng/mL
South End* I	-	-	0.172	0.038	-	-
South End* II	0.004	-	1.965	0.025	-	-
Sodom* I	0.008	0.058	12.245	0.173	-	-
Sodom* II	0.008	0.018	12.564	0.158	-	-
Sodom* Plant	0.008	0.019	27.037	0.136	-	-
En Gedi	0.008	-	0.163	0.027	-	-
En Bokek	0.010	-	0.224	0.049	0.017	0.020

* No official sample site name. – Concentration below lowest calibration standard of 0.005 ng/mL.