Supplementary Materials

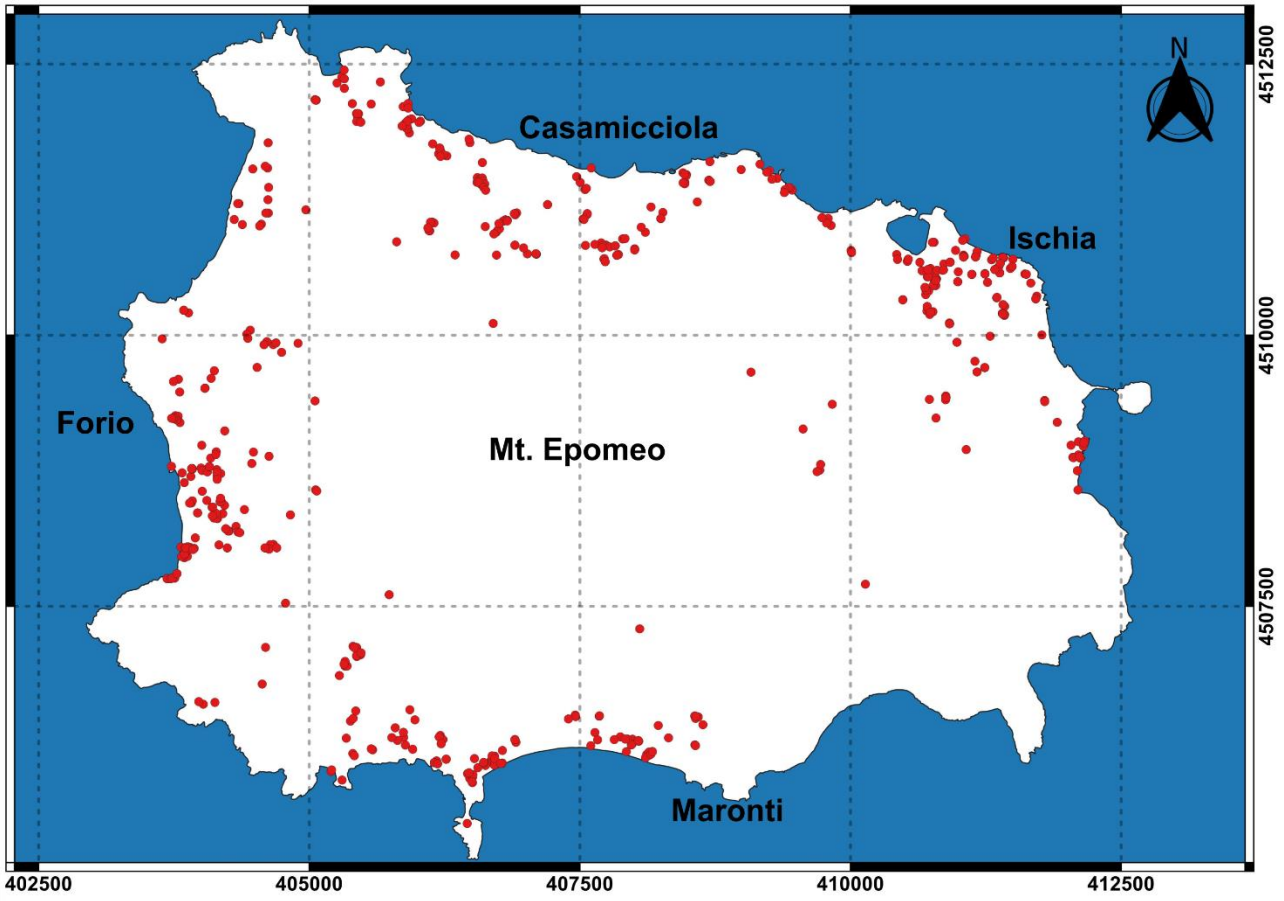

Figure S1. Known location of the wells and springs supplying the island's spas.

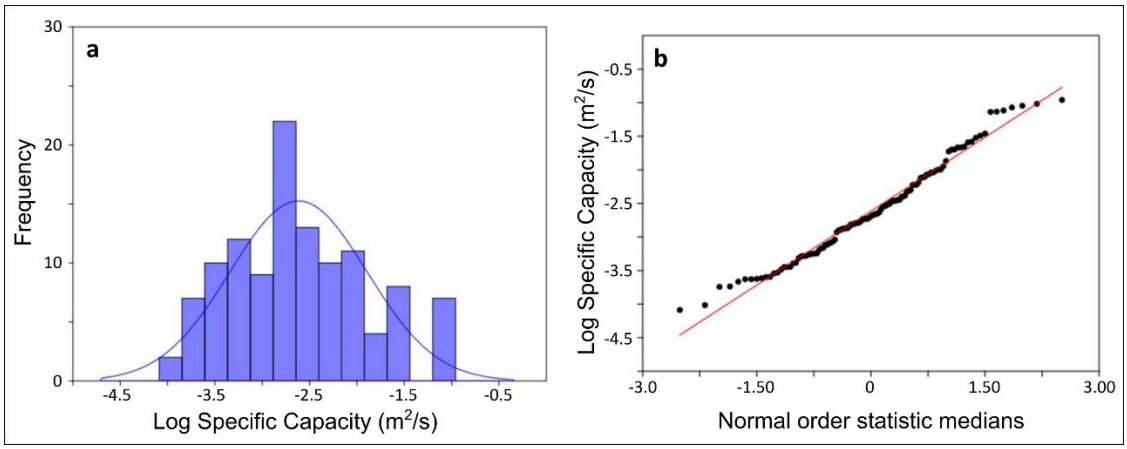

Figure S2. Frequency distribution (**a**) and Q-Q plot of the specific capacity (**b**) expressed as the logarithm of the values.

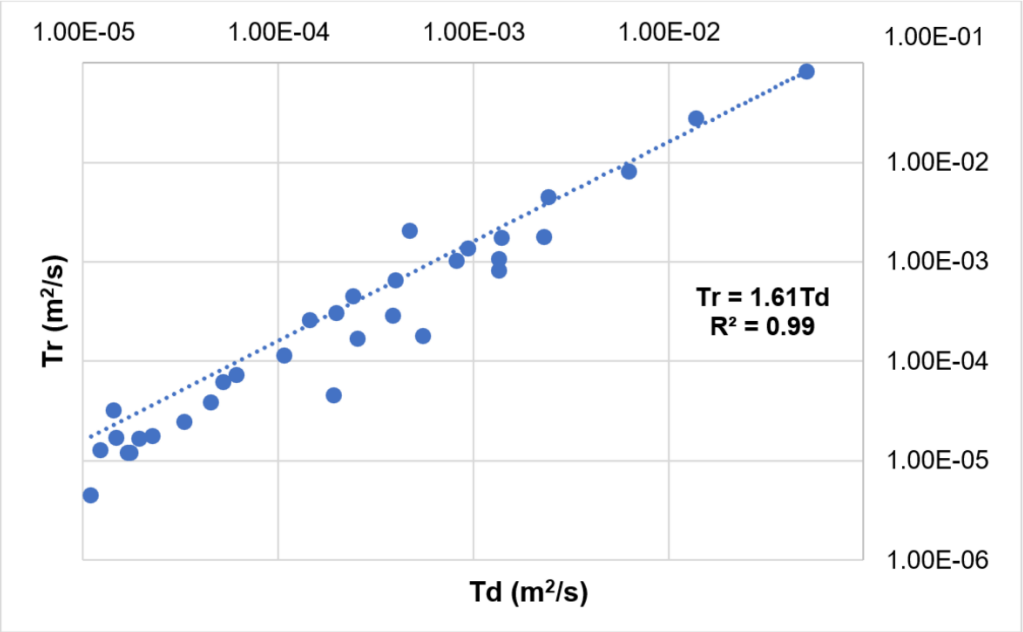

Figure S3. Log-log plot of Td versus Tr for tests that showed unsteady-state condition.

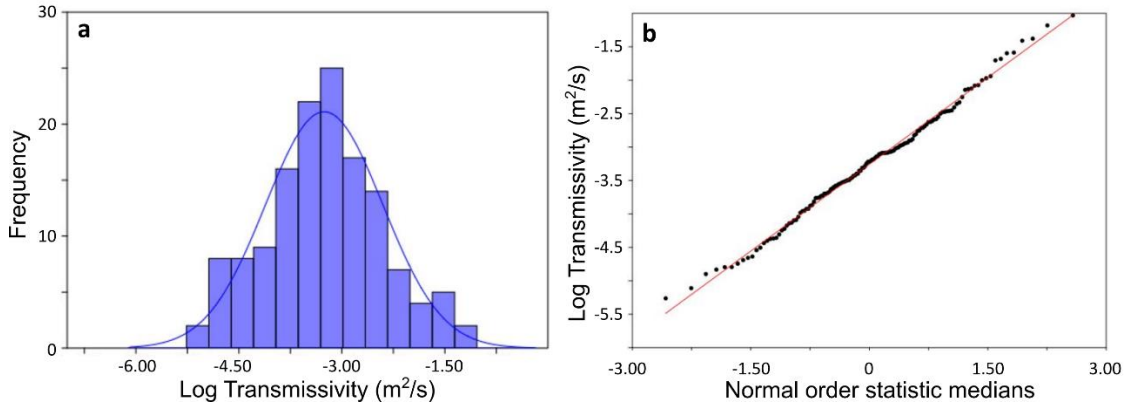

Figure S4. Frequency distribution (**a**) and Q-Q plot of transmissivity (**b**) expressed as logarithm of the values.

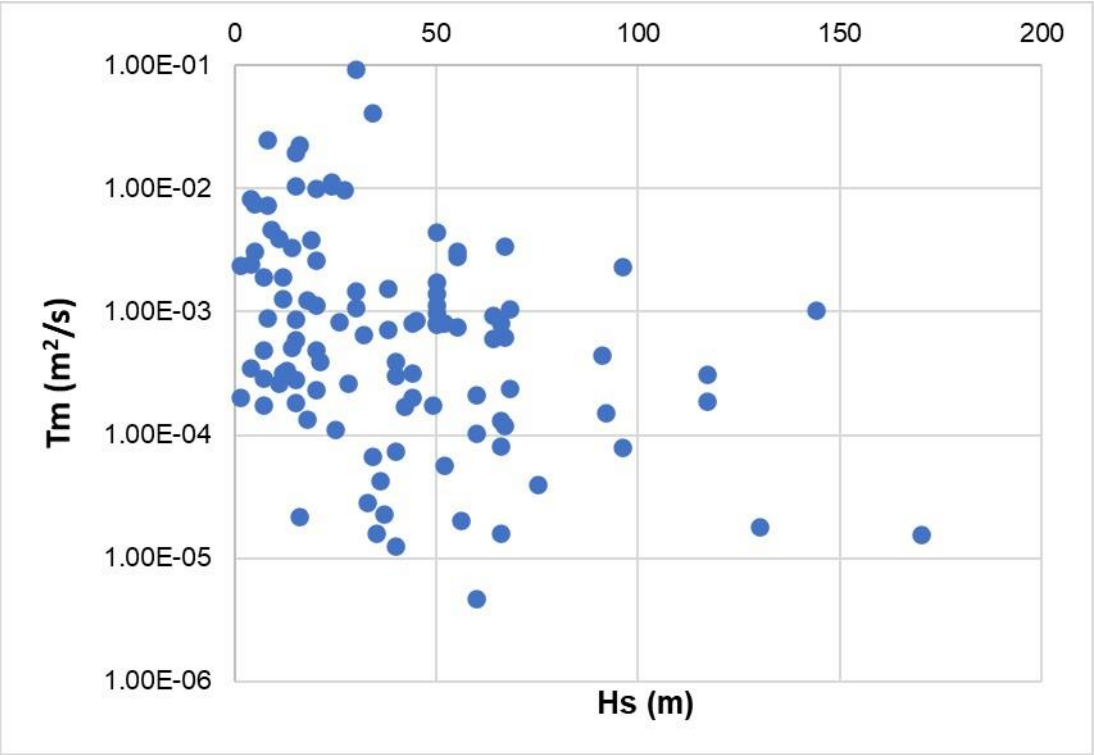

Figure S5. Saturated thickness of the aquifer (Hs) versus transmissivity (Tm).

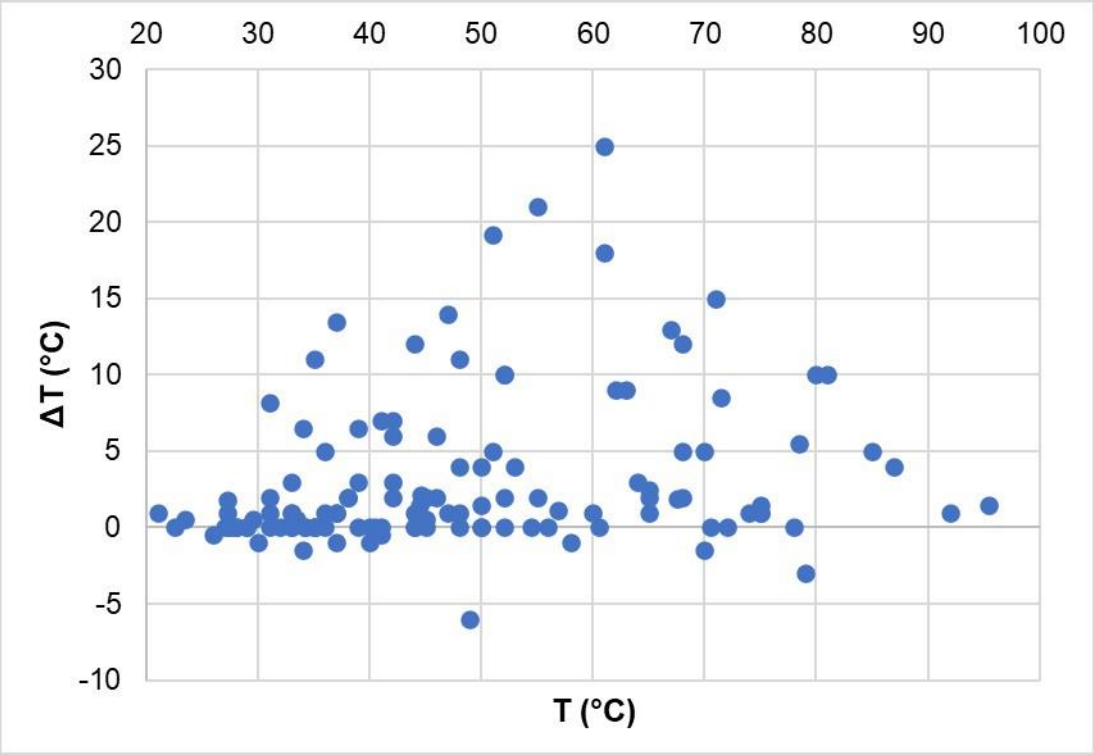

Figure S6. Water temperature at the beginning of the test (T) versus temperature change during pumping (ΔT).

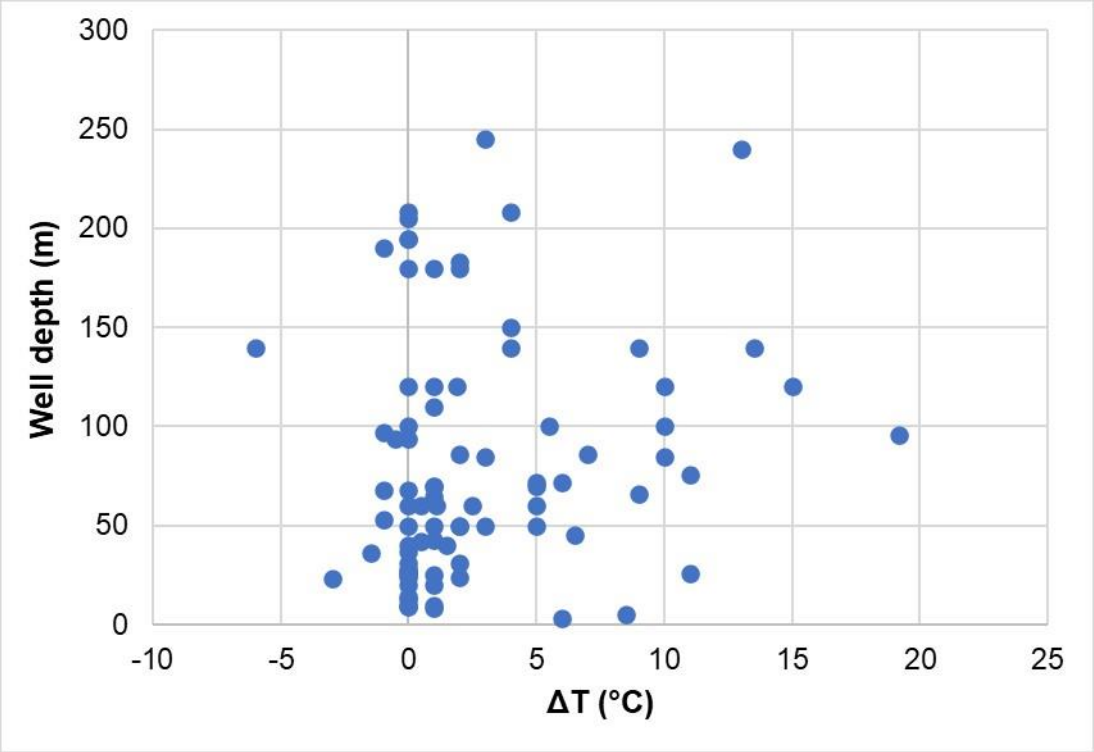

Figure S7. Temperature change during pumping (ΔT) versus well depth.

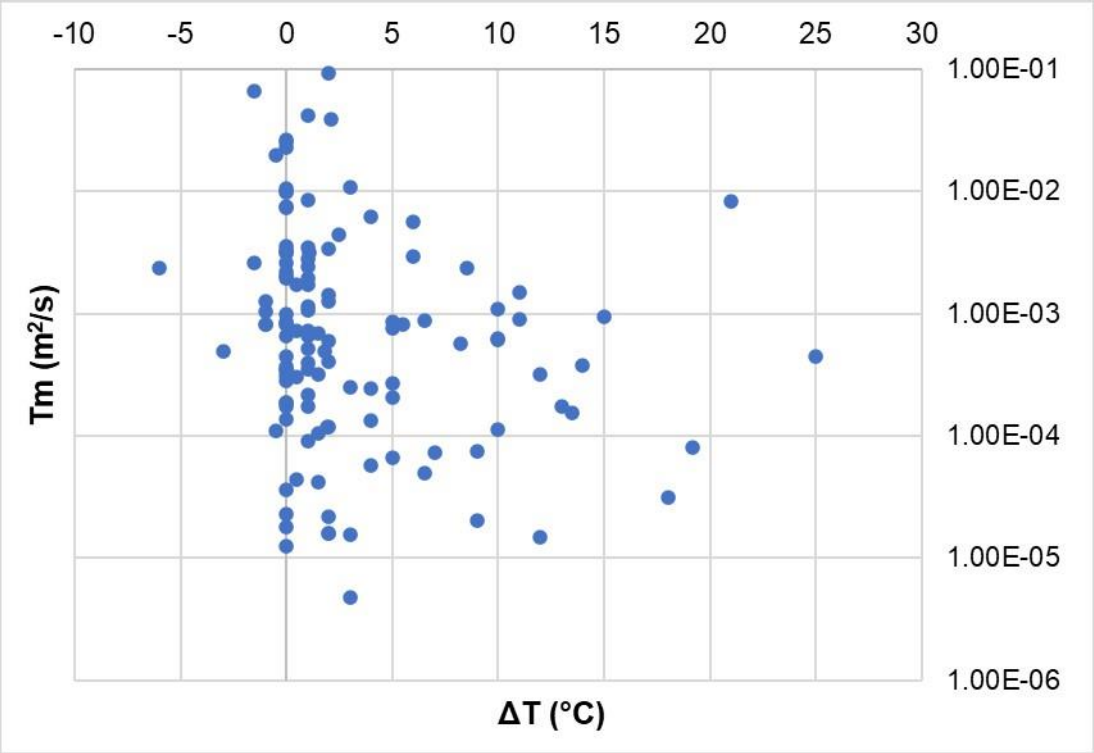

Figure S8. Temperature change during pumping (ΔT) versus transmissivity (Tm).

Table S1 Statistics of specific capacity values in m^2/s.

Min	8.17×10^{-5}
Max	1.10×10^{-1}
Mean	9.91×10^{-3}
Standard error	1.96×10^{-3}
Variance	4.43×10^{-4}
Standard deviation	2.10×10^{-2}
Median	2.04×10^{-3}
25 percentile	6.47×10^{-4}
75 percentile	7.72×10^{-3}
Skewness	3.23
Kurtosis	10.15
Geometric mean	2.42×10^{-3}
Coefficient of variation	212.34

Table S2. Hydrogeological parameters obtained from tests performed with an observation well.

Well	Pumping response	Td (m^2/s)	Tr (m^2/s)	Tob (m^2/s)	S	Aquifer
56	Unsteady	1.70×10^{-5}	1.20×10^{-5}	1.76×10^{-5}	2.55×10^{-3}	GT
71	Unsteady	5.49×10^{-4}	1.83×10^{-4}	9.64×10^{-4}	2.26×10^{-2}	ET
72	Unsteady	3.85×10^{-4}	2.85×10^{-4}	4.60×10^{-4}	5.10×10^{-3}	ET
90	Unsteady	1.36×10^{-3}	1.07×10^{-3}	4.67×10^{-3}	4.02×10^{-3}	TP
91	Unsteady	1.34×10^{-3}	8.05×10^{-4}	1.06×10^{-3}	2.52×10^{-3}	TP
92	Unsteady	8.23×10^{-4}	1.01×10^{-3}	1.29×10^{-3}	5.53×10^{-3}	TP
43	Steady		2.01×10^{-3}	6.29×10^{-4}		PS
78	Steady		5.09×10^{-3}	1.22×10^{-3}		ET
80	Steady		6.78×10^{-3}	2.08×10^{-3}		ET

GT: Green Tuff of central block of Mt. Epomeo, ET: epiclastic deposits, tuffs and ignimbrite, TP: tuffs and Green Tuff, PS: pyroclastic deposits and marine sediments (<15 ka).

Table S3 Statistics of transmissivity values in m^2/s.

Min	5.46×10^{-6}
Max	9.30×10^{-2}
Mean	3.68×10^{-3}
Standard error	9.53×10^{-4}
Variance	1.26×10^{-4}
Standard deviation	1.12×10^{-2}
Median	6.04×10^{-4}
25 percentile	1.73×10^{-4}
75 percentile	1.94×10^{-3}
Skewness	5.60
Kurtosis	36.33
Geometric mean	5.53×10^{-4}
Coefficient of variation	305.20

Table S4 Chemical composition of the waters of selected wells tested.

Well *Date*	T (°C)	TDS (g/L)	pH	Na (mg/L)	K (mg/L)	Ca (mg/L)	Mg (mg/L)	Cl (mg/L)	HCO_3 (mg/L)	SO_4 (mg/L)	Br (mg/L)	NO_3 (mg/L)	SiO_2 (mg/L)
1													
21 May 09	28.0	36.90	6.34	11450	652	675	1335	20540	1650	2410	25.0	15	57
22 May 10	27.0	36.33	6.18	11534	409	844	1315	21369	1880	2479	37.6	1.1	81
24 May 14	27.5	39.91	6.18	11652	519	719	1366	20557	1957	2315	nd	2.6	60
15 Apr 19	26.2	35.12	6.85	11022	484	631	1269	21260	1800	2375	65.8	5.0	106
2													
21 May 09	35.3	5.21	7.52	1765	112	75	57	2645	489	245	3.0	35	95
20 Feb 10	35.5	5.31	7.55	1800	114	77	58	2698	499	250	3.0	35	97
12 Jul 14	35.0	4.52	7.19	1462	120	64	61	2102	607	341	6.8	10	79
12 Jun 18	27.8	4.01	7.27	1506	113	56	59	1850	604	331	1.4	22	15
3													
21 May 09	34.4	5.41	7.58	1807	121	83	69	2712	552	286	2.0	33	95
20 Feb 10	34.8	5.50	7.59	1834	123	84	70	2753	560	290	2.0	28	96
12 Jun 18	29.3	4.60	7.60	1608	111	58	62	2076	596	333	8.7	23	80
4													
21 May 09	27.2	10.06	6.85	3310	240	105	225	5250	915	258	5.0	20	185
20 Feb 10	27.5	10.01	6.88	3293	239	104	224	5224	910	257	6.0	18	184
12 Jul 14	27.5	6.67	6.75	2162	167	83	150	3481	719	216	4.4	32	120
05 Apr 16	28.0	3.77	6.74	1140	118	107	83	1677	599	254	5.8	24	48
12 Jun 18	26.0	3.85	7.10	1122	99	95	78	1600	553	266	6.3	21	50
5													
08 May 08	40.0	4.76	7.49	1120	95	606	67	2155	616	327	0.6	29	67
20 Feb 10	41.8	4.80	7.55	1395	121	238	60	2215	601	357	1.8	19	68
12 Jul 14	41.5	4.63	7.32	1475	122	85	73	2140	678	346	7.0	22	71
14 Jul 16	41.0	4.58	8.00	1699	146	86	75	2279	701	365	7.8	25	66
6													
27 Sept 06	28.0	6.28	6.95	1598	177	118	168	3112	472	217	nd	nd	48
07 Dec 10	26.6	5.97	7.20	1585	168	115	163	2895	448	202	1.5	16	46
14 Mar 13	28.5	6.38	7.40	1695	162	123	174	3095	490	223	1.5	16	51
24 May 14	28.0	6.35	7.70	1678	161	122	173	3064	485	221	1.4	15	51
05 Apr 16	28.0	14.70	7.42	4277	196	211	477	6882	440	989	26	12	37
17 Jul 17	26.9	20.41	7.30	5667	252	229	641	9611	523	1457	19	32	36
10 Jun 19	25.5	22.41	7.08	6588	279	284	734	11278	388	1647	40	28	28
7													
11 Aug 09	nd	6.29	nd	1735	164	105	98	2562	689	398	8.1	22	57
22 May 10	36.0	6.00	6.41	1688	122	165	117	2673	670	404	6.7	22	81
06 May 14	30.2	5.97	6.45	1681	122	165	116	2661	667	403	6.0	22	78
03 Oct 16	33.3	4.85	7.16	1602	129	100	90	2204	650	340	7.7	23	67
8													
21 May 09	50.0	14.20	7.25	4250	325	245	150	6950	850	510	5.0	8	75
20 Feb 10	50.5	14.48	7.26	4335	332	250	153	7089	867	520	5.0	7	77
20 Feb 14	50.0	14.48	7.02	4307	322	248	143	6915	833	585	4.8	2	74

Table S4 (continued).

Well *Date*	T (°C)	TDS (g/L)	pH	Na (mg/L)	K (mg/L)	Ca (mg/L)	Mg (mg/L)	Cl (mg/L)	HCO_3 (mg/L)	SO_4 (mg/L)	Br (mg/L)	NO_3 (mg/L)	SiO_2 (mg/L)
9													
01 Mar 07	43.0	38.69	6.80	10555	490	465	1195	19039	885	2977	nd	28	86
21 May 09	43.0	38.70	6.85	11095	472	485	1250	18250	2910	2750	1.0	27	85
20 Feb 10	44.0	39.28	6.88	11261	479	492	1269	18524	954	2791	1.0	24	86
20 Feb 14	46.0	39.88	6.92	11076	411	479	1145	18348	2397	2318	5.1	7	87
13													
04 Apr 09	28.0	41.08	6.50	12950	435	465	1350	22125	590	3350	15	12	50
04 Mar 10	28.0	37.01	6.50	11650	347	650	1385	21591	622	2901	62	1	56
17 Nov 14	25.5	39.86	6.81	11527	441	482	1392	20582	635	2795	72	1	57
54													
31 Jan 11	54.0	33.39	7.08	13457	559	200	263	19850	757	2358	70	3	40
14 Mar 13	53.0	32.52	7.05	12476	607	105	25	17737	738	2254	62	5	70
29 Jun 16	60.0	12.93	7.04	5166	422	33	11	5754	2110	1251	24	82	58
17 Jul 17	44.3	13.06	7.20	5218	422	34	11	5812	2131	1264	25	85	58
10 Jun 19	51.2	30.10	6.91	11287	577	243	424	16708	583	2312	59	2	59
55													
31 Jan 11	54.0	32.92	7.08	13850	611	80	12	19950	633	2130	77	3	57
14 Mar 13	54.0	31.85	7.06	12485	550	81	15	18121	666	1250	63	2	38
13 Oct 14	60.6	31.53	7.28	12360	545	80	15	17940	660	1238	61	3	38
29 Jun 16	59.5	30.23	7.25	11405	799	218	448	16131	455	2837	30	18	54
17 Jul 17	43.9	30.85	7.30	11638	815	222	464	16460	464	2895	31	18	55
10 Jun 19	43.0	16.49	7.43	5637	297	40	10	7488	806	992	26	60	47
89													
16 Apr 09	82.0	5.74	6.54	1650	140	280	50	2840	850	225	5.0	49	110
01 Feb 10	82.0	4.89	6.40	1450	112	192	28	2085	915	186	2.5	49	103
17 Jun 14	61.5	4.24	6.40	1452	103	182	9	1843	942	162	5.8	44	121
27 Mar 19	51.3	4.27	6.52	1282	102	79	5	1156	1096	143	4.5	54	115
107													
21 May 09	66.0	1.99	6.80	605	26	27	2	570	560	185	1.0	18	145
16 Feb 10	66.0	1.31	6.80	557	19	32	2	472	561	171	0.6	19	175
27 Sept 16	42.0	1.15	7.80	398	19	26	2	149	935	73	0.4	12	125
108													
09 Jun 09	21.0	37.65	7.96	11168	465	452	1345	20250	189	3100	60	2	12
24 Apr 10	21.0	37.03	7.95	11755	322	471	1347	21015	189	2712	60	1	nd
08 May 14	21.0	39.32	7.88	11296	407	395	1357	20514	167	2820	70	4	6
111													
09 Jul 09	44.6	26.45	7.18	7915	246	305	847	14300	232	1826	41	8	40
24 Apr 10	70.0	28.76	7.09	9109	247	377	962	16015	211	2171	45	19	44
08 May 14	70.0	28.00	7.15	8115	314	324	926	14825	203	2016	49	5	60
113													
09 Jun 09	70.0	23.05	6.65	6750	385	344	615	11520	244	1619	32	7	75
24 Apr 10	70.0	25.09	6.69	7909	321	358	642	13650	246	1779	38	5	103
08 May 14	72.0	21.28	6.50	6356	312	277	509	11124	257	1486	36	3	101

Table S4 (continued).

Well *Date*	T (°C)	TDS (g/L)	pH	Na (mg/L)	K (mg/L)	Ca (mg/L)	Mg (mg/L)	Cl (mg/L)	HCO_3 (mg/L)	SO_4 (mg/L)	Br (mg/L)	NO_3 (mg/L)	SiO_2 (mg/L)
114													
10 Apr 09	38.2	30.50	6.95	9600	265	905	855	17950	405	2550	59	4	39
01 Apr 10	43.0	28.94	7.10	9402	193	687	789	16441	427	2258	37	9	35
17 Sept 15	44.3	29.74	7.07	9268	209	462	765	15053	389	2070	60	34	41
03 Apr 19	38.6	29.67	7.08	10005	296	592	903	17039	401	2424	62	2	27
133													
04 Mar 09	38.7	1.92	6.77	667	43	22	8	148	1562	144	0.2	16	111
01 Apr 10	41.0	1.99	7.10	681	38	31	10	170	1558	165	0.2	14	63
17 Jul 15	40.8	1.97	6.87	746	36	40	12	139	1585	158	0.4	13	102
150													
26 Mar 08	75.0	15.50	6.50	5001	216	148	123	8297	408	737	nd	14	159
27 Apr 09	75.1	14.25	6.51	4710	190	135	85	7200	350	695	19	1	115
12 Jul 10	75.2	15.85	6.54	5396	195	166	102	8271	407	683	19	nd	65
153													
27 Apr 09	74.0	8.20	7.55	2750	105	62	45	3650	445	1015	7.8	4	105
12 Jun 10	74.0	9.74	7.56	3277	96	97	31	4364	400	1051	10	8	66
06 Aug 14	76.0	10.72	7.55	3493	121	98	47	5621	447	1072	16	24	100
21 Jul 16	60.0	8.00	7.35	2928	94	54	32	3618	659	971	11	14	84