

Supplement material

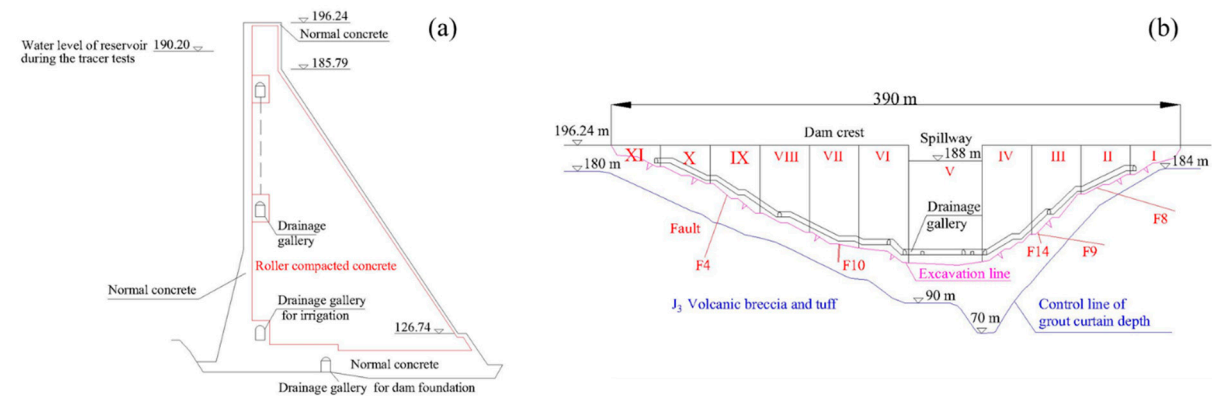


Figure S1 dam structure sketch: (a) profile of dam wall structure; (b) SW-NE cross section of dam structure.

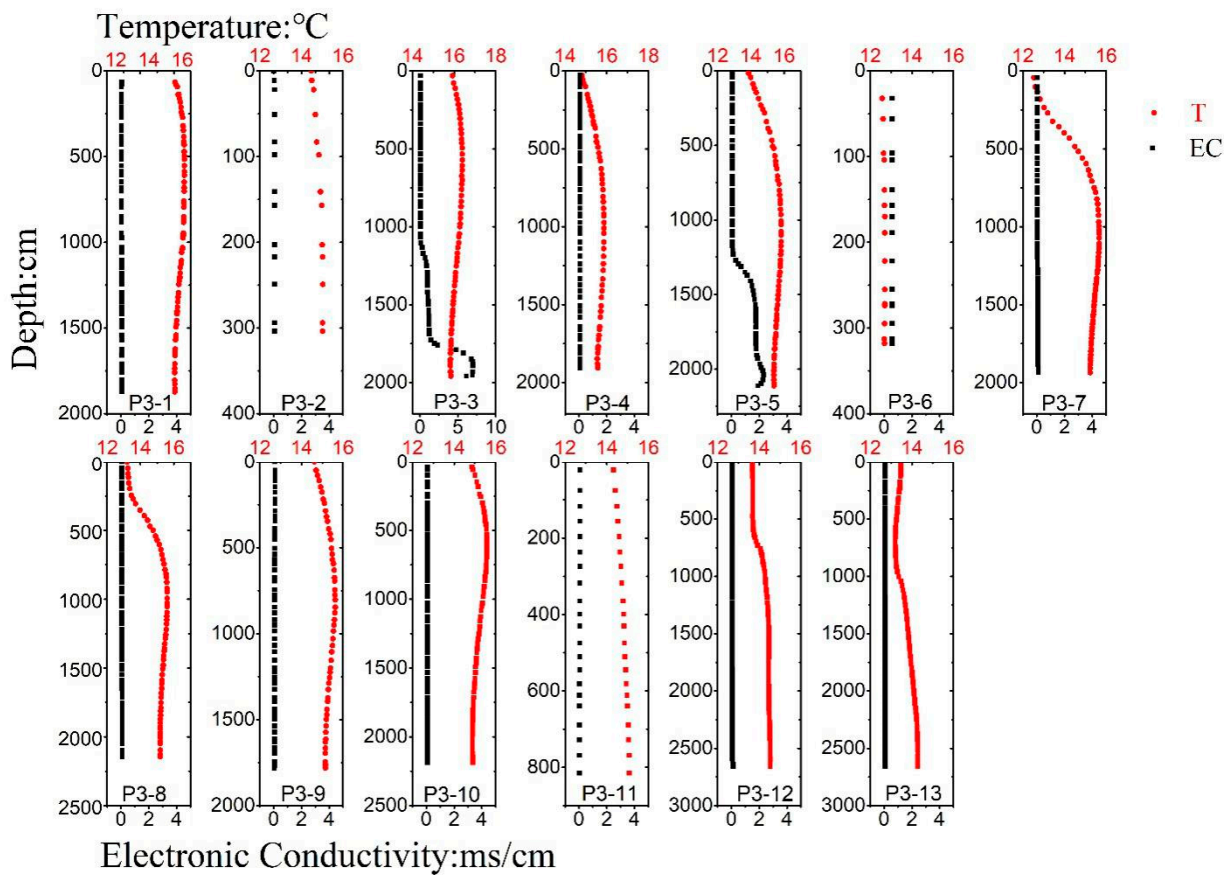


Figure S2 temperature profiles of dam section III

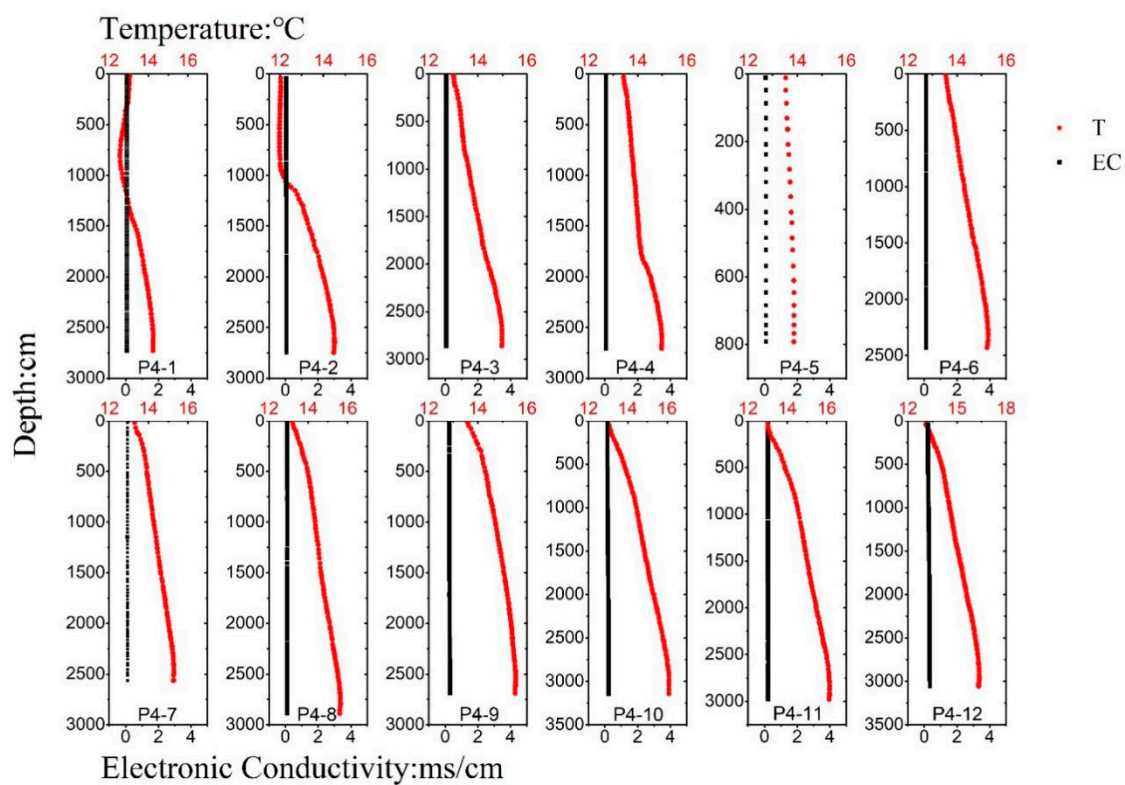


Figure S3 temperature profiles of dam section IV

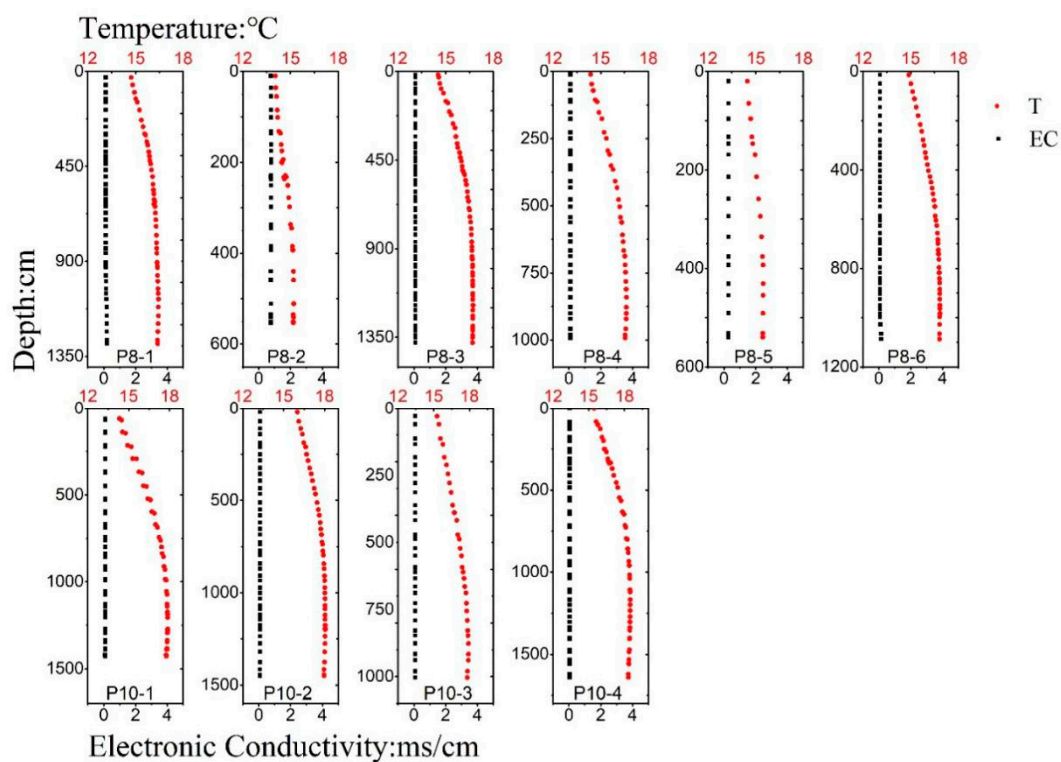


Figure S4 temperature profiles of dam section VIII and X

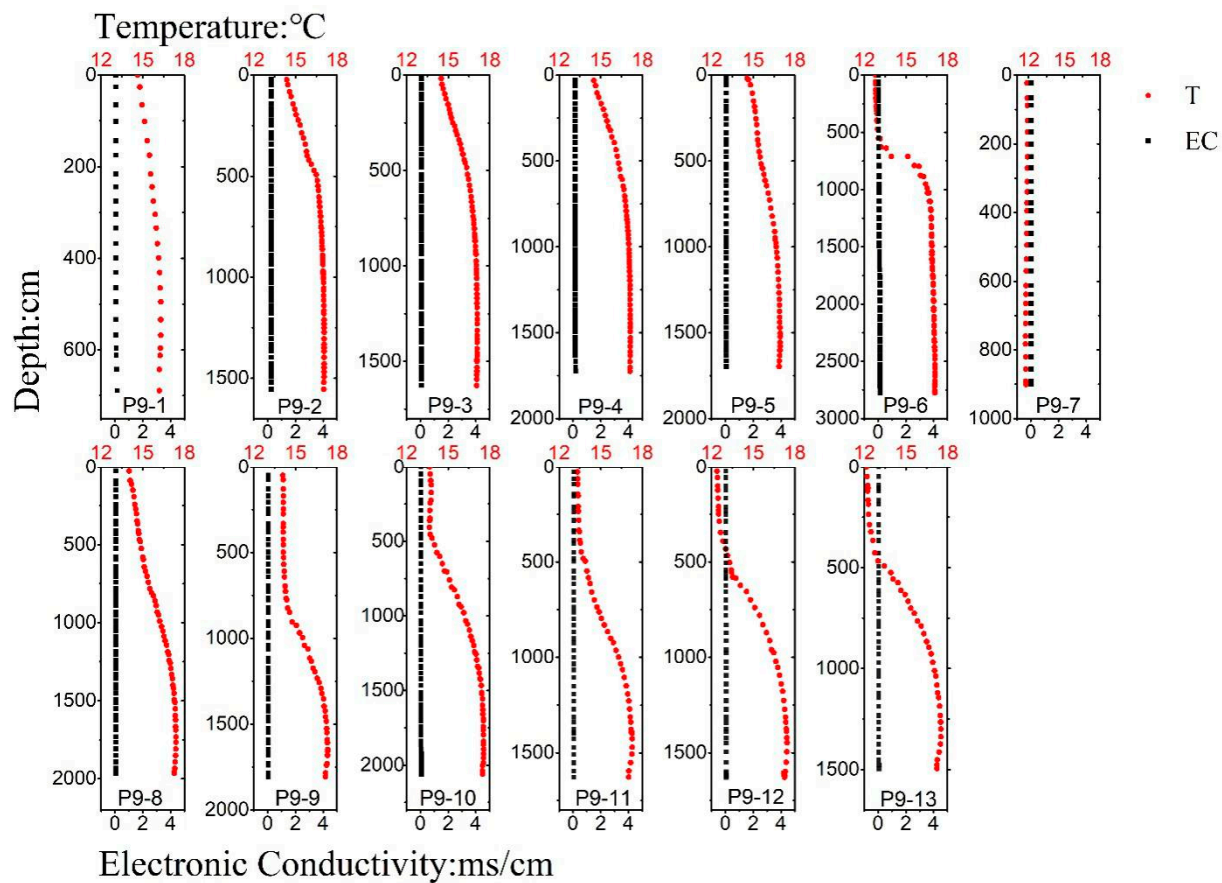


Figure S5 temperature profiles of dam section IX

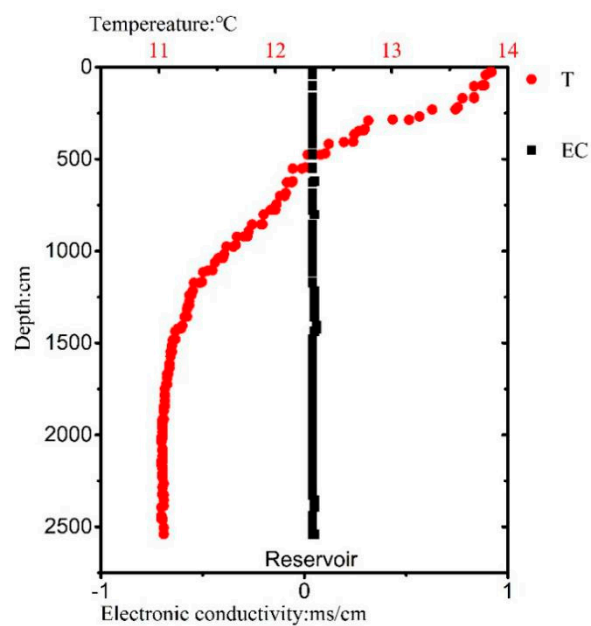


Figure S6 Temperature and electronic conductivity profile of reservoir which is in front of

dam.

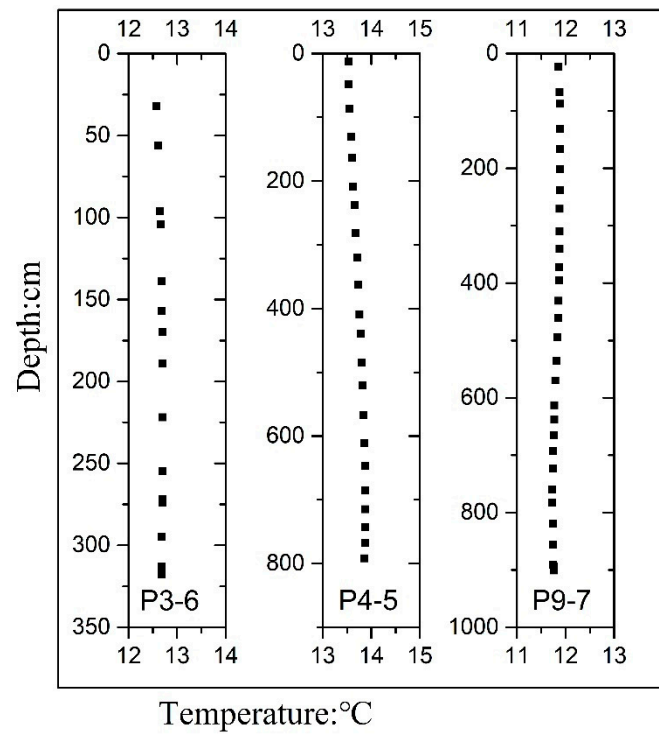
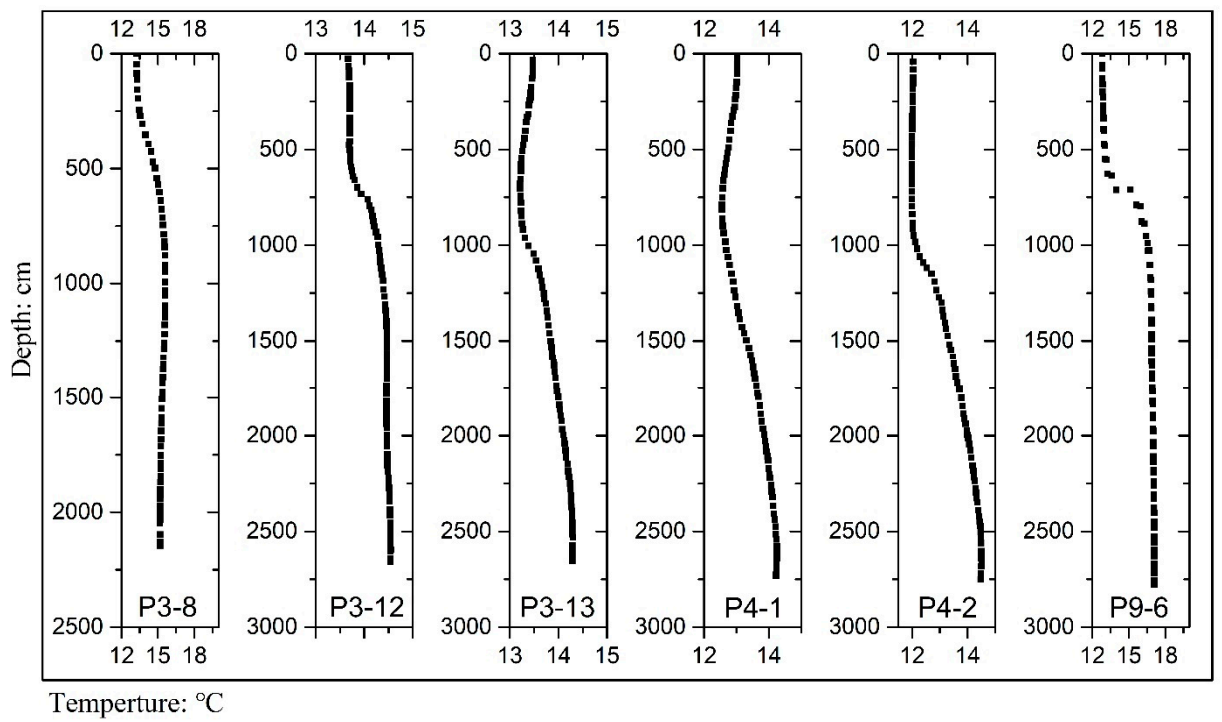
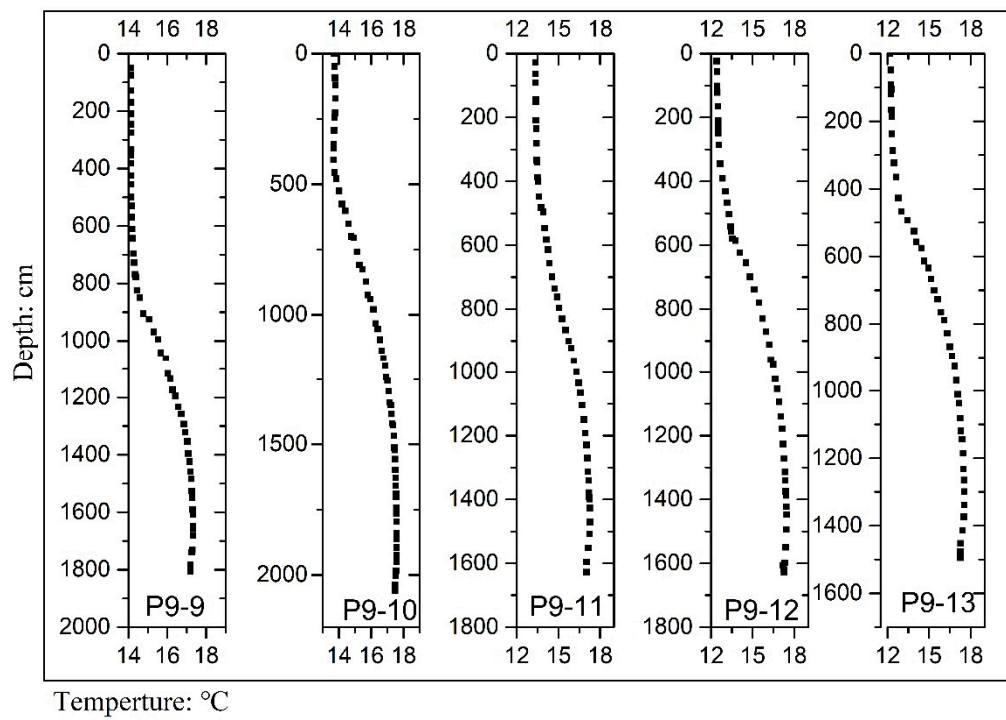


Figure S7 temperature profiles of Class 1

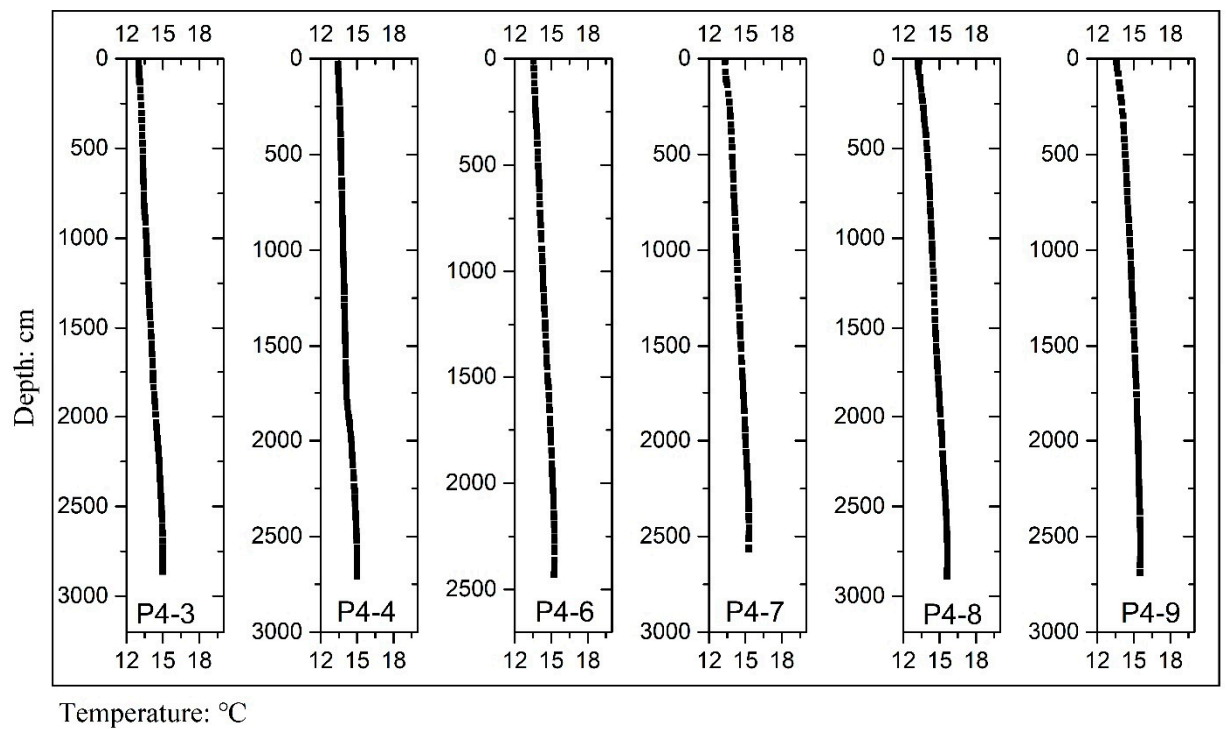


(a)

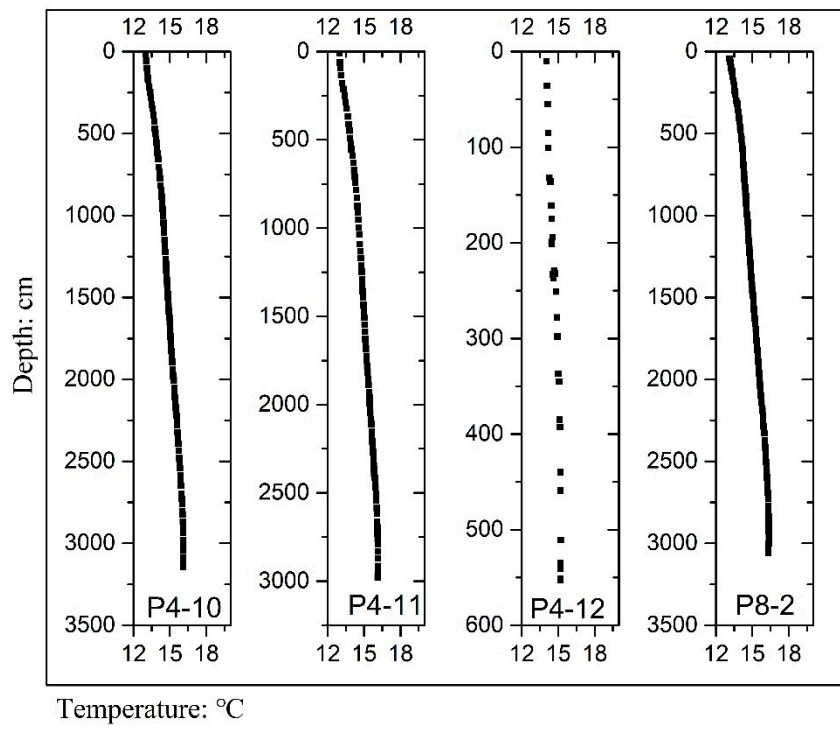


(b)

Figure S8 temperature profiles of Class 2

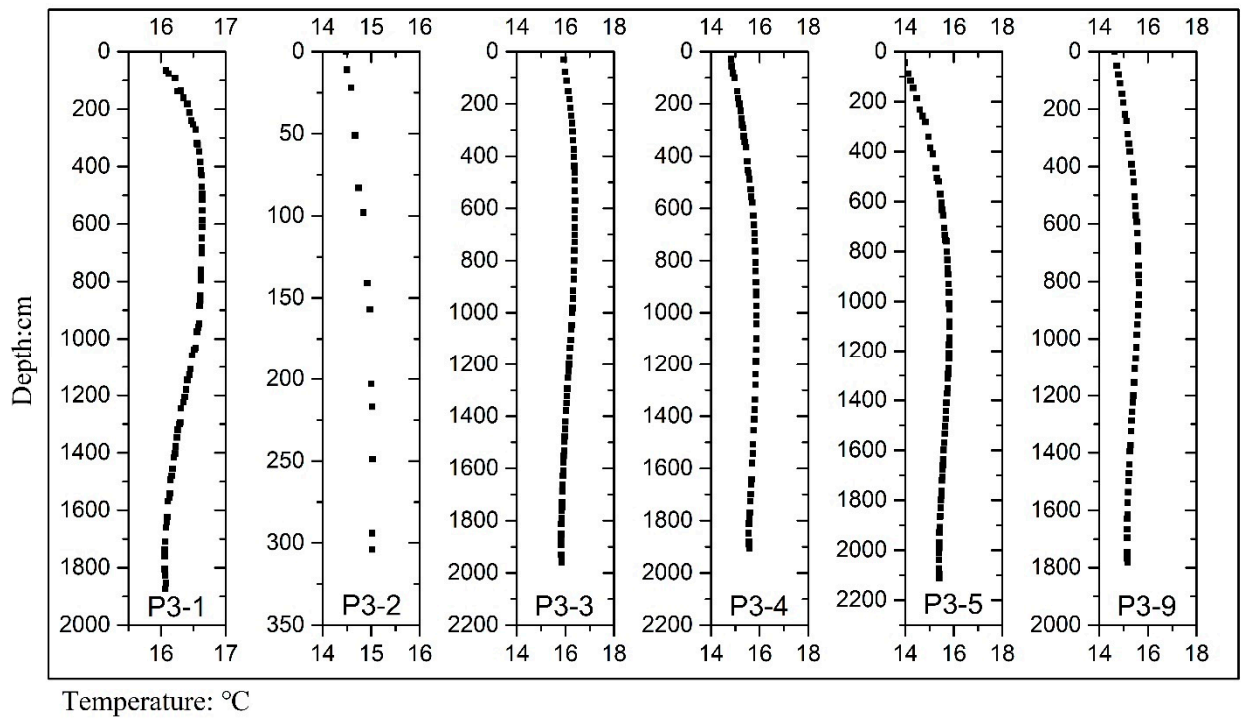


(a)

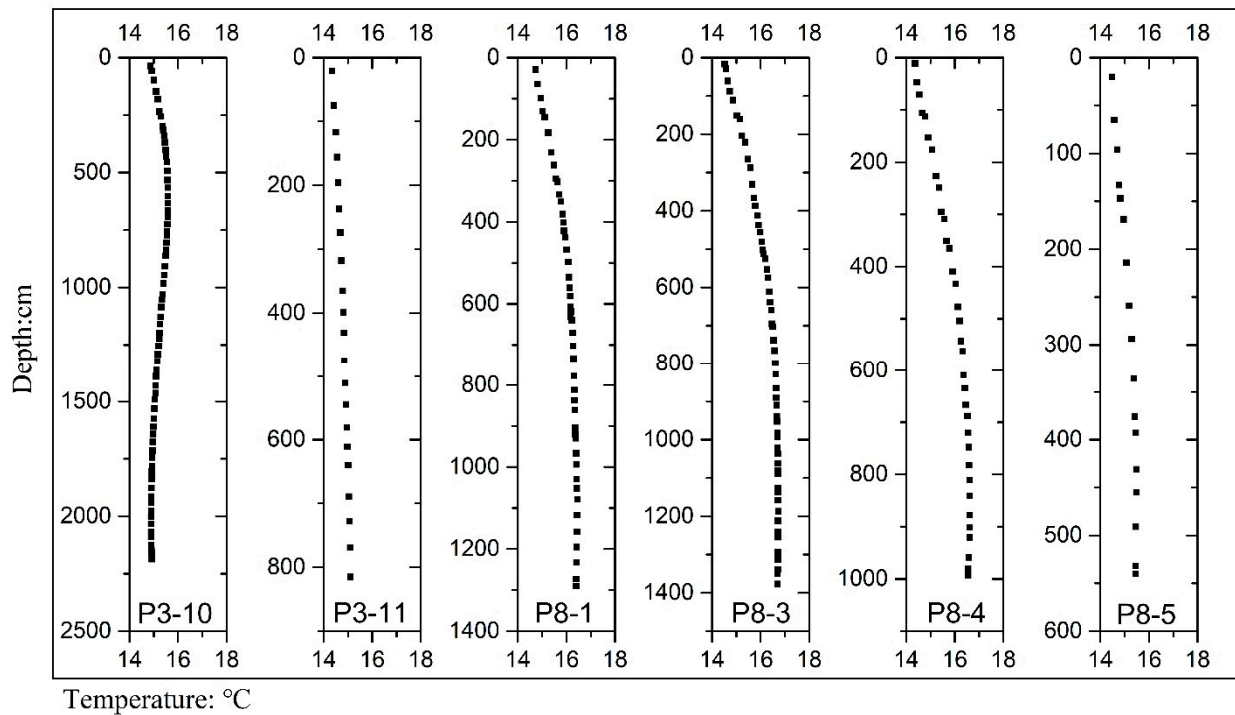


(b)

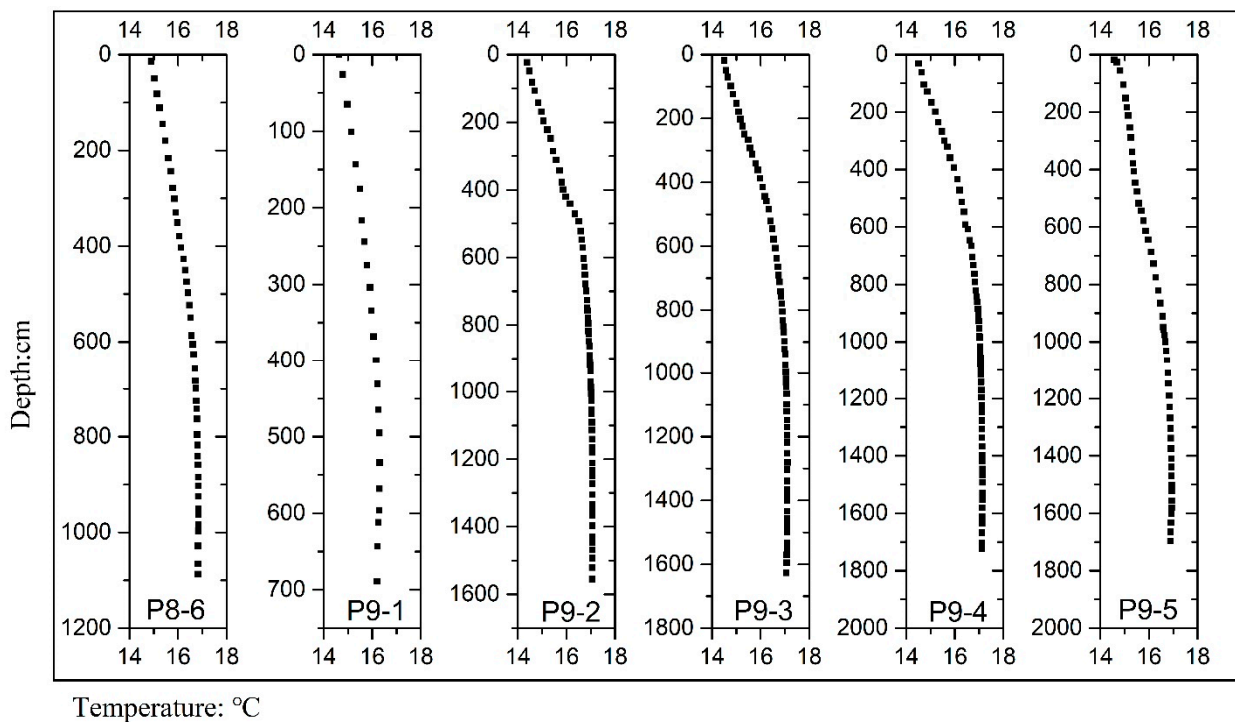
Figure S9 temperature profiles of Class 3



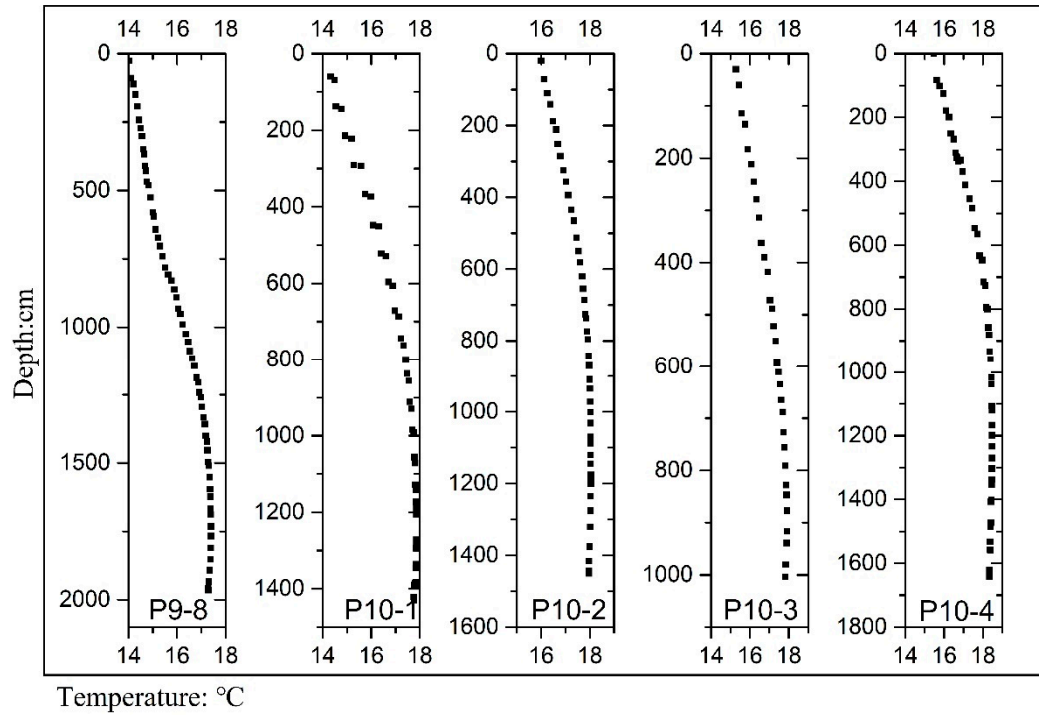
(a)



(b)



(c)



(d)

Figure S10 temperature profiles of Class 4

Table S1 Location of leakage zones by temperature profiles.

Borehole	depth of leakage zone: cm
P3-8	250
P3-12	700
P3-13	900
P4-1	900
P4-2	1100
P9-6	600
P9-9	800
P9-10	500
P9-11	500
P9-12	600
P9-13	500

Table S2 Time interval of SBDT.

Boreholes	Time interval: s			
	t_1-t_2	t_2-t_3	t_3-t_4	t_4-t_5
P3-5	1034	1650	1998	3414
P3-8	940	1741	2004	3429
P9-7	1006	1214	692	665

P9-9	592	542	473	591
P9-12	1377	556	530	570

Table S3 time period and distance on P9-9 and P9-12

Boreholes	Test:	Time period: s	Lower limit of distance: cm	Upper limit of distance: cm
P9-9	1	592	152	195
	2	542	171	182
	3	473	130	133
	4	591	191	221
P9-12	1	1377	228	976
	2	556	153	458
	3	530	199	530
	4	570	209	349