







Technique ^a	Sample depth (m)	Field gamma dose rate (Gy kyr ⁻¹) ^b	Beta dose rate (Gy kyr ⁻¹) ^b	Cosmic-ray dose rate (Gy kyr ⁻¹) ^c	Internal dose rate (Gy kyr ⁻¹)	Water content (%) ^d	Total dose rate (Gy kyr ⁻¹) ^e	Equivalent dose (Gy) ^f	Age (kyr) ^g
Red TL U	2.23	0.189 ± 0.005	0.727 ± 0.037	0.088 ± 0.009	0.030 ± 0.010	16 / 15 ± 5	1.034 ± 0.068	132 ± 13	128 ± 16
Red TL B								88 ± 25	85 ± 25
PIR-IRSL		0.189 ± 0.005	0.727 ± 0.037	0.088 ± 0.009	0.720 ± 0.020	16 / 15 ± 5	1.723 ± 0.070	105 ± 6	62 ± 5
HRGS	²³⁸ U (Bq/kg)	²²⁶ Ra (Bq/kg)	²¹⁰ Pb (Bq/kg)	²²⁶ Ra (Bq/kg)	²²⁸ Th (Bq/kg)	⁴⁰ K (Bq/kg)	1.141 ± 0.084		
	23 ± 3	14 ± 1	12 ± 4	19 ± 2	21 ± 7	177 ± 12			

Sample code /location ^a	²³⁸ U (ppm)	²³² Th (ppb)	²³⁰ Th/ ²³² Th activity ratio ^b	²³⁴ U/ ²³⁸ U activity ratio	²³⁰ Th/ ²³⁸ U activity ratio	Uncorrected ²³⁰ Th age (kyr)	Corrected ²³⁰ Th Age-I (kyr) ^c	Corrected ²³⁰ Th Age-II (kyr) ^{d,e}
Flowstones								
LA-F1/4 ^f	0.407	868	1.206 ± 0.004	1.0290 ± 0.0007	0.849 ± 0.002	187 ± 1	98 ± 62	71 ± 7
LA-F2/3	0.134	47.6	1.72 ± 0.08	1.0309 ± 0.0023	0.201 ± 0.009	24 ± 1	13 ± 6	11 ± 2
LA-F3/2	0.0116	12.5	2.60 ± 0.04	1.0263 ± 0.0056	0.926 ± 0.016	246 ± 17	211 ± 23	203 ± 17
Soda straw								
LA08-29/4	0.0338	3.24	17.9 ± 0.1	1.017 ± 0.002	0.563 ± 0.004	88 ± 1	85 ± 2	84 ± 1

SAMPLE	13LA508	12LA508
ENAMEL		
Dose (Gy) ^a	45.60 ± 0.80	55.50 ± 0.70
U (ppm) ^b	0.82 ± 0.07	1.05 ± 0.21
²³⁴ U/ ²³⁸ U ^b	3.86 ± 0.02	3.25 ± 0.05
²³⁰ Th/ ²³⁴ U ^b	0.31 ± 0.03	0.35 ± 0.04
Thickness (m)	1421 ± 215	1553 ± 272
Water (%)	0	0
DENTINE		
U (ppm) ^b	9.25 ± 0.49	6.52 ± 0.97
²³⁴ U/ ²³⁸ U ^b	1.06 ± 0.01	1.07 ± 0.05
²³⁰ Th/ ²³⁴ U ^b	0.28 ± 0.01	0.38 ± 0.01
Water (%)	10 ± 5	10 ± 5
SEDIMENT		
U (ppm) ^c	1.86 ± 0.69	1.86 ± 0.69
Th (ppm) ^c	5.20 ± 1.70	5.20 ± 1.70
K (%) ^c	0.57 ± 0.04	0.57 ± 0.04
Water (%)	16.3 ± 5	16.3 ± 5
EXTERNAL DOSE RATE SEDIMENT		
Beta (μGy a ⁻¹)	59 ± 11	55 ± 12
Gamma (μGy a ⁻¹) ^c	189 ± 5	189 ± 5
Cosmic (μGy a ⁻¹)	88 ± 9	88 ± 9
COMBINED US-ESR AGE		
Internal dose (μGy a ⁻¹)	236 ± 54	288 ± 96
Beta Dose dentine (μGy a ⁻¹)	28 ± 6	25 ± 8
P enamel	-0.14	-0.21
P dentine	-0.04	-0.46
Total Dose rate (μGy a ⁻¹) ^c	600 ± 56	645 ± 98
AGE (kyr)	76 ± 7	86 ± 13