Supplemental Table 2:Optically-Stimulated Luminescence dates from Trench 1.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sample No.** | **% Water**  **contenta** | **K (%)b** | **U (ppm)b** | **Th (ppm)b** | **Cosmic dose**  **(Gy/ka)c** | **Total Dose Rate (Gy/ka)** | **Equivalent Dose (Gy)** | **nd** | **Scattere** | **Age (yrs)f** |
| **USGS 2012** | 2 (14) | 2.70 ± 0.07 | 5.01 ± 0.28 | 19.1 ± 0.67 | 0.14 ± 0.01 | 5.31 ± 0.13 | 98.9 ± 3.64 | 17 (20) | 14% | 18,630 ± 830 |
| **USGS 2013** | 0 (27) | 3.27 ± 0.05 | 2.92 ± 0.28 | 21.5 ± 0.45 | 0.15 ± 0.01 | 5.31 ± 0.09 | 91.3 ± 2.08 | 19 (20) | 0% | 17,190 ± 520 |
| **USGS 2014** | 11 (39) | 1.38 ± 0.04 | 3.02 ± 0.25 | 11.0 ± 0.44 | 0.18 ± 0.01 | 2.79 ± 0.08 | 49.3 ± 4.01 | 6 (20) | 14% | 17,670 ± 1,530 |
| **USGS 2015** | 8 (54) | 1.26 ± 0.04 | 2.34 ± 0.18 | 9.83 ± 0.37 | 0.18 ± 0.01 | 2.35 ± 0.07 | 32.5 ± 1.37 | 11 (20) | 35% | 13,830 ± 710 |
| **\*USGS 2016** | 1 (55) | 1.00 ± 0.06 | 2.41 ± 0.32 | 4.69 ± 0.57 | 0.19 ± 0.01 | 1.82 ± 0.13 | 47.6 ± 216 | 6 (10) | 12% | 26,150 ± 2,210 |
| **USGS 2017** | 1 (52) | 0.59 ± 0.05 | 1.23 ± 0.18 | 3.08 ± 0.49 | 0.22 ± 0.02 | 1.17 ± 0.11 | 14.2 ± 0.41 | 8 (20) | 49% | 12,140 ± 1,210 |
| **USGS 2018** | 0 (23) | 3.36 ± 0.05 | 1.98 ± 0.22 | 16.1 ± 0.51 | 0.24 ± 0.02 | 4.96 ± 0.14 | 36.2 ± 2.38 | 19 (20) | 25% | 7,300 ± 520 |
| Notes: a. Field moisture, with figures in parentheses indicating the complete sample saturation %. Ages calculated using approx. 30% of the saturated moisture, except sand dune (USGS-2019) which was 10%. B. Analyses obtained using high-resolution gamma spectrometry (Ge detector). C. Cosmic doses and attenuation with depth were calculated using the methods of Prescott and Hutton (1994). See text for details. d. Number of replicated equivalent dose (De) estimates used to calculate the final overall equivalent dose. Figures in parentheses indicate total number of measurements included in calculating the represented equivalent dose and age using the minimum age model (MAM) except for USGS-2012, USGS-2013, and USGS-2018, which used the central age model (CAM). E. Defined as "over-dispersion" of the De values. Obtained by taking the average over the std deviation. Values >25% are considered to be poorly bleached or mixed sediments. f. Dose rate and age for fine-grained 250-90 micron sized quartz. Exponential + linear fit used on equivalent doses, errors to one sigma, ages and errors rounded. \*OSL age is not in stratigraphic sequence | | | | | | | | | | |