Table 2. Luminescence Age Results

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Site,  Sample # | Unit, facies | lithofacies | Depth (m) | Aliquots1 | Equivalent dose2  (Gy) ± 2σ | Dose Rate3  (Gy/ka) | OSL Age (ka)  ± 1σ |
| Bush Stream |  |  |  |  |  |  |  |
| USU-917 | Unit 4, Sr | LFA 4 glacifluvial | 25 | 36 (48) | 74.4 ± 7.0 | 2.91 ± 0.13 | **25.5 ± 2.8** |
| USU-916 | Unit 1d, Sr | LFA 2 lacustrine | 65 | 31 (38) | 141.5 ± 17.2 | 2.73 ± 0.13 | **51.8 ± 5.9** |
|  |  |  |  |  |  |  |  |
| Scour Stream |  |  |  |  |  |  |  |
| USU-919 | Unit 8, Sl, Sr, def | LFA 4 glacifluvial | 0.9 | 19 (39) | 34.6 ± 6.8 | 3.04 ± 0.14 | **11.4 ± 1.6** |
| USU-920 | Unit 6, St | LFA 4 glacifluvial | 2 | 24 (54) | 51.5 ± 10.6**4** | 2.91 ± 0.13 | **17.7 ± 2.7** |
| USU-918 | Unit 4, Sr, St | LFA 4 glacifluvial | 2 | 24 (39) | 59.6 ± 5.9 | 2.82 ± 0.13 | **21.1 ± 2.3** |
| USU-921 | Unit 3, Sl within Dml | LFA 3 ice contact | 6 | 27 (32) | 123.3 ± 17.4 | 2.22 ± 0.10 | **55.4 ± 6.6** |
|  |  |  |  |  |  |  |  |
| Tui Stream |  |  |  |  |  |  |  |
| USU-1089 | Unit 5, St, Sr | LFA 4 glacifluvial | 2.3 | 36 (47) | 103.6 ± 13.3**4** | 2.49 ± 0.11 | **41.6 ± 4.9** |
| USU-1088 | Unit 3, St | LFA 1 deltaic | 4 | 24 (43) | 118.0 ± 6.6 | 2.92 ± 0.13 | **40.4 ± 4.0** |
| USU-1904 | Unit 2, Sr | LFA 2 lacustrine | 38 | 25 (48) | 118.6 ± 20.1 | 2.70 ± 0.13 | **44.0 ± 5.7** |
|  |  |  |  |  |  |  |  |
| Zig-zag road |  |  |  |  |  |  |  |
| USU-1086 | Unit 3, Sl | LFA 4 glacifluvial | 20 | 23 (48) | 64.3 ± 9.4 | 3.08 ± 0.14 | **20.9 ± 2.5** |
|  |  |  |  |  |  |  |  |
| 1 Number of aliquots used for age calculation and total number of aliquots analyzed in parentheses. Rejection criteria include evidence for feldspar contamination (IRSL signal greater than 2x background), corrected signal response greater than 15% between repeat points and greater than 5% signal recuperation on the zero-dose steps.  2 Equivalent dose (DE) determined using the single aliquot regenerative dose (SAR) method (Murray and Wintle, 2000) on quartz sand. DE values calculated using the central age model (CAM, Galbraith and Roberts, 2012) unless noted otherwise.  3 See Table 2 for details on dose-rate calculation.  4 DE calculated using the minimum age model (MAM) of Galbraith et al. (2011). | | | | | | | |

Table 3. Dose-rate data for luminescence samples.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sample # | Grain-size  (µm) | H2O  (wt %) | K  (%) 1 | Rb  (ppm) 1 | Th  (ppm) 1 | U  (ppm) 1 | Cosmic (Gy/ka) 2 | Total dose rate (Gy/ka) 3 |
|  |  |  |  |  |  |  |  |  |
| USU-916 | 150-250 | 6.9 4 | 1.82 | 88.0 | 10.1 | 1.9 | 0.00 | 2.73 ± 0.13 |
| USU-917 | 150-212 | 9.6 | 1.99 | 97.7 | 10.3 | 2.2 | 0.02 | 2.92 ± 0.13 |
| USU-918 | 75-150 | 4.9 4 | 1.74 | 81.4 | 8.8 | 2.0 | 0.16 | 2.82 ± 0.13 |
| USU-919 | 90-150 | 2.9 4 | 1.81 | 85.2 | 9.9 | 2.3 | 0.19 | 3.04 ± 0.14 |
| USU-920 | 150-250 | 4.6 4 | 1.81 | 85.4 | 9.1 | 2.4 | 0.16 | 2.91 ± 0.13 |
| USU-921 | 150-250 | 11.0 | 1.41 | 61.8 | 8.6 | 1.8 | 0.10 | 2.22 ± 0.19 |
| USU-1086 | 125-250 | 3.9 4 | 2.00 | 106.5 | 11.1 | 2.3 | 0.02 | 3.07 ± 0.14 |
| USU-1088 | 125-212 | 2.8 4 | 1.77 | 94.9 | 10.3 | 2.3 | 0.13 | 2.92 ± 0.13 |
| USU-1089 | 150-250 | 4.7 4 | 1.43 | 69.8 | 9.4 | 2.0 | 0.16 | 2.49 ± 0.11 |
| USU-1904 | 75-150 | 7.5 | 1.66 | 73.9 | 10.1 | 2.1 | 0.01 | 2.70 ± 0.13 |
|  |  |  |  |  |  |  |  |  |
| 1 Elemental analysis using ICP-MS/ICP-AES.  2 Cosmic dose rate calculated using the Prescott and Hutton (1994).  3 Total dose rate is calculated using conversion factors of Guérin et al. (2011) and beta attenuation values of Brennan et al. (2003) and includes cosmic contribution and attenuation by water.  4 Water content assumed to be 7±3% for samples with low in-situ water content due to affects of outcrop drying. | | | | | | | | |