表1Wu-3和Wu-4锆石稀土元素分析结果

Table 1 Analysis results of REE for zircons of sample Wu-3 and Wu-4

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 样品号 | 岩浆锆石  概率(%) | Ti | La | Ce | Pr | Nd | Sm | Eu | Gd | Tb | Dy | Ho | Er | Tm | Yb | Lu |
| Wu-3-Zr-1 | 1.00 | 8.72 | 1.25 | 16.51 | 0.47 | 3.04 | 3.06 | 0.77 | 13.27 | 4.38 | 49.06 | 17.73 | 80.93 | 17.63 | 164.41 | 31.88 |
| Wu-3-Zr-2 | 1.00 | 24.03 | 0.10 | 1.33 | 0.05 | 0.81 | 2.53 | 0.22 | 16.58 | 6.51 | 79.50 | 29.14 | 127.71 | 27.41 | 246.99 | 45.49 |
| Wu-3-Zr-3 | 0.99 | 3.69 | 0.18 | 5.83 | 0.11 | 0.96 | 1.26 | 0.36 | 6.30 | 1.87 | 21.94 | 7.64 | 32.35 | 7.12 | 66.71 | 12.51 |
| Wu-3-Zr-4 | 0.88 | 66.77 | 5.79 | 37.58 | 3.40 | 16.40 | 10.98 | 5.97 | 26.79 | 9.05 | 85.22 | 24.47 | 97.17 | 20.99 | 183.00 | 31.63 |
| Wu-3-Zr-5 | 1.00 | 4.19 | 0.02 | 22.50 | 0.03 | 0.61 | 1.70 | 0.35 | 10.63 | 4.05 | 50.71 | 19.37 | 85.23 | 18.74 | 176.84 | 33.78 |
| Wu-3-Zr-6 | 0.70 | 0.63 | 2.97 | 25.49 | 0.64 | 2.50 | 1.41 | 0.53 | 6.04 | 2.00 | 22.80 | 8.74 | 41.66 | 9.98 | 103.62 | 21.96 |
| Wu-3-Zr-7 | 0.71 | 8.09 | 89.15 | 242.96 | 31.00 | 140.03 | 27.01 | 0.70 | 24.20 | 4.70 | 46.36 | 16.18 | 71.33 | 15.76 | 149.18 | 29.13 |
| Wu-3-Zr-9 | 1.00 | 6.02 | 1.12 | 5.97 | 0.45 | 2.66 | 3.95 | 0.74 | 20.52 | 7.46 | 93.42 | 37.89 | 179.59 | 42.84 | 425.01 | 83.56 |
| Wu-3-Zr-10 | 1.00 | 13.32 | 0.13 | 42.90 | 0.24 | 3.71 | 7.57 | 1.49 | 38.97 | 12.56 | 150.47 | 55.57 | 239.65 | 49.96 | 443.85 | 82.12 |
| Wu-3-Zr-11 | 1.00 | 1.12 | 0.02 | 4.66 | 0.01 | 0.14 | 0.39 | 0.37 | 2.46 | 1.17 | 15.28 | 6.79 | 36.75 | 9.69 | 111.07 | 25.77 |
| Wu-3-Zr-12 | 1.00 | 8.47 | 0.02 | 1.25 | 0.06 | 1.04 | 3.57 | 0.28 | 31.80 | 14.93 | 215.55 | 94.75 | 465.93 | 110.11 | 1066.49 | 203.47 |
| Wu-3-Zr-13 | 1.00 | 9.61 | 4.93 | 18.40 | 1.92 | 9.71 | 6.83 | 2.75 | 20.70 | 6.29 | 66.40 | 23.05 | 102.44 | 24.01 | 241.15 | 49.47 |
| Wu-3-Zr-14 | 0.70 | 10.40 | 0.04 | 3.02 | 0.07 | 1.38 | 3.15 | 0.15 | 15.88 | 4.56 | 42.61 | 12.30 | 41.15 | 7.10 | 55.00 | 8.41 |
| Wu-3-Zr-15 | 1.00 | 10.52 | 0.03 | 10.63 | 0.08 | 1.20 | 2.96 | 0.35 | 16.19 | 5.97 | 71.93 | 27.53 | 121.18 | 25.76 | 236.66 | 42.64 |
| Wu-3-Zr-16 | 1.00 | 2.66 | 0.10 | 5.16 | 0.09 | 1.29 | 2.53 | 0.68 | 14.59 | 5.31 | 64.99 | 24.21 | 108.55 | 23.33 | 216.41 | 39.52 |
| Wu-3-Zr-17 | 0.00 | 22.96 | 0.02 | 2.19 | 0.06 | 0.54 | 0.24 | 0.30 | 1.02 | 1.19 | 15.93 | 6.69 | 31.67 | 7.35 | 72.59 | 14.40 |
| Wu-3-Zr-18 | 0.14 | 10.42 | 1.54 | 8.04 | 0.66 | 4.36 | 6.35 | 1.14 | 24.68 | 5.76 | 36.35 | 7.59 | 22.10 | 3.92 | 31.53 | 5.45 |
| Wu-3-Zr-19 | 0.77 | 3.57 | 0.17 | 1.78 | 0.12 | 0.69 | 0.70 | 0.33 | 3.77 | 1.25 | 15.44 | 5.76 | 26.39 | 5.72 | 56.06 | 10.65 |
| Wu-3-Zr-21 | 1.00 | 4.60 | 0.06 | 5.21 | 0.10 | 2.14 | 4.94 | 0.30 | 29.49 | 10.12 | 118.92 | 44.91 | 195.81 | 41.01 | 369.30 | 68.82 |
| Wu-3-Zr-22 | 1.00 | 100.53 | 0.22 | 3.52 | 0.22 | 1.89 | 3.07 | 0.58 | 18.67 | 6.83 | 82.00 | 30.93 | 140.17 | 32.64 | 325.16 | 61.82 |
| Wu-3-Zr-23 | 0.99 | 9.83 | 2.35 | 20.40 | 1.29 | 5.94 | 4.59 | 2.31 | 13.21 | 4.34 | 44.36 | 13.47 | 56.13 | 12.28 | 116.17 | 22.74 |
| Wu-3-Zr-24 | 0.97 | 63.37 | 19.95 | 95.64 | 8.68 | 40.57 | 25.17 | 14.76 | 62.90 | 20.53 | 192.02 | 52.77 | 199.57 | 41.98 | 388.62 | 84.28 |
| Wu-3-Zr-25 | 1.00 | 10.78 | 2.93 | 27.26 | 1.33 | 6.64 | 5.52 | 1.80 | 22.32 | 7.89 | 87.71 | 30.97 | 142.36 | 33.17 | 336.72 | 69.43 |
| Wu-3-Zr-26 | 0.72 | 12.62 | 0.11 | 12.62 | 1.08 | 16.01 | 19.19 | 0.81 | 50.27 | 11.65 | 96.88 | 27.52 | 95.27 | 17.29 | 139.78 | 23.38 |
| Wu-3-Zr-27 | 1.00 | 5.34 | 0.01 | 12.54 | 0.09 | 1.89 | 4.17 | 0.37 | 21.73 | 7.30 | 85.83 | 32.43 | 141.47 | 29.81 | 267.88 | 50.56 |
| Wu-3-Zr-28 | 1.00 | 202.90 | 4.67 | 16.03 | 1.25 | 6.66 | 4.38 | 2.88 | 17.51 | 5.97 | 71.08 | 24.69 | 105.59 | 22.51 | 212.63 | 43.14 |
| Wu-3-Zr-29 | 1.00 | 4.25 | 0.05 | 6.56 | 0.09 | 1.43 | 2.66 | 0.30 | 14.72 | 4.68 | 54.88 | 21.19 | 93.81 | 19.76 | 186.17 | 36.71 |
| Wu-3-Zr-30 | 1.00 | 46.94 | 0.03 | 34.49 | 0.16 | 2.95 | 4.76 | 0.91 | 19.35 | 5.82 | 62.64 | 22.50 | 101.95 | 23.15 | 222.92 | 43.03 |
| Wu-3-Zr-31 | 0.90 | 3.03 | 0.00 | 4.97 | 0.06 | 0.91 | 2.10 | 0.34 | 11.97 | 3.89 | 45.93 | 17.48 | 78.04 | 17.54 | 167.84 | 33.65 |
| Wu-3-Zr-32 | 1.00 | 35.65 | 6.44 | 66.41 | 3.10 | 14.48 | 11.56 | 4.71 | 38.70 | 12.59 | 140.36 | 47.43 | 195.28 | 40.94 | 359.24 | 62.48 |
| Wu-3-Zr-33 | 0.43 | 6.75 | 4.87 | 12.76 | 1.34 | 6.70 | 5.35 | 1.99 | 25.61 | 7.31 | 54.41 | 11.75 | 35.38 | 6.56 | 55.29 | 9.51 |
| Wu-3-Zr-34 | 0.98 | 7.52 | 0.01 | 9.80 | 0.06 | 1.09 | 2.45 | 0.05 | 14.09 | 4.78 | 56.51 | 21.75 | 94.12 | 20.04 | 177.34 | 33.07 |
| Wu-4-Zr-1 | 1.00 | 10.48 | 0.17 | 8.14 | 0.15 | 1.94 | 2.61 | 0.56 | 11.39 | 3.53 | 39.88 | 13.94 | 60.94 | 13.03 | 118.44 | 21.70 |
| Wu-4-Zr-3 | 0.32 | 8.40 | 0.03 | 2.30 | 0.15 | 3.22 | 8.92 | 0.72 | 50.95 | 15.01 | 120.38 | 23.50 | 47.72 | 5.42 | 28.76 | 3.24 |
| Wu-4-Zr-4 | 1.00 | 11.58 | 0.01 | 10.21 | 0.06 | 1.00 | 2.08 | 0.18 | 9.20 | 3.15 | 37.48 | 13.82 | 60.77 | 13.01 | 118.88 | 22.66 |
| Wu-4-Zr-5 | 0.22 | 9.22 | 1.60 | 11.08 | 0.64 | 3.60 | 2.19 | 1.04 | 8.24 | 2.58 | 30.17 | 12.47 | 66.84 | 17.46 | 204.18 | 53.01 |
| Wu-4-Zr-6 | 0.01 | 7.08 | 14.21 | 15.02 | 8.11 | 38.94 | 16.74 | 5.98 | 30.45 | 8.67 | 90.72 | 30.44 | 135.69 | 30.43 | 290.54 | 53.93 |
| Wu-4-Zr-11 | 0.88 | 2.54 | 0.13 | 4.52 | 0.11 | 0.96 | 1.08 | 0.06 | 6.10 | 1.92 | 24.29 | 10.43 | 52.26 | 12.13 | 121.75 | 26.96 |
| Wu-4-Zr-12 | 0.00 | 7.90 | 11.72 | 51.63 | 4.84 | 18.63 | 5.43 | 0.48 | 16.90 | 6.30 | 83.03 | 34.61 | 175.11 | 42.65 | 443.53 | 88.27 |
| Wu-4-Zr-13 | 0.12 | 7.26 | 0.00 | 8.19 | 0.05 | 0.69 | 1.50 | 0.11 | 5.77 | 2.10 | 25.61 | 9.64 | 44.84 | 9.91 | 95.18 | 18.05 |
| Wu-4-Zr-14 | 1.00 | 15.65 | 0.13 | 11.26 | 0.44 | 6.28 | 8.87 | 0.73 | 30.66 | 8.94 | 94.78 | 32.95 | 135.28 | 27.55 | 243.02 | 44.15 |
| Wu-4-Zr-17 | 0.01 | 6.21 | 0.18 | 1.15 | 0.14 | 1.43 | 2.41 | 0.17 | 12.55 | 4.93 | 66.54 | 29.81 | 153.28 | 37.79 | 391.59 | 80.25 |
| Wu-4-Zr-18 | 1.00 | 15.78 | 0.10 | 5.57 | 0.08 | 0.87 | 2.79 | 0.35 | 19.89 | 7.54 | 95.50 | 36.53 | 166.38 | 35.11 | 324.10 | 61.35 |
| Wu-4-Zr-19 | 1.00 | 7.50 | 0.15 | 12.10 | 0.21 | 2.02 | 2.67 | 0.49 | 9.31 | 2.63 | 26.15 | 8.62 | 37.03 | 8.01 | 77.85 | 15.21 |
| Wu-4-Zr-20 | 1.00 | 6.56 | 0.12 | 6.76 | 0.08 | 0.99 | 1.97 | 0.17 | 13.09 | 4.55 | 57.96 | 22.47 | 101.55 | 21.52 | 200.97 | 38.02 |
| Wu-4-Zr-21 | 0.98 | 8.30 | 0.27 | 18.34 | 0.23 | 3.03 | 6.78 | 0.20 | 38.50 | 13.28 | 159.66 | 60.99 | 267.32 | 54.53 | 480.64 | 87.54 |
| Wu-4-Zr-22 | 1.00 | 9.31 | 0.02 | 1.75 | 0.20 | 3.11 | 3.49 | 0.44 | 13.85 | 4.25 | 52.79 | 22.22 | 110.93 | 26.21 | 267.96 | 55.79 |
| Wu-4-Zr-24 | 1.00 | 5.94 | 0.18 | 48.03 | 0.13 | 1.66 | 3.84 | 0.71 | 21.31 | 6.71 | 79.52 | 28.52 | 124.79 | 26.77 | 250.29 | 46.33 |
| Wu-4-Zr-25 | 0.92 | 11.68 | 0.64 | 81.49 | 0.59 | 8.08 | 13.37 | 5.40 | 65.09 | 18.91 | 200.46 | 68.87 | 289.84 | 58.49 | 520.56 | 98.58 |
| Wu-4-Zr-26 | 0.03 | 2.72 | 0.21 | 14.21 | 0.10 | 0.92 | 1.37 | 0.49 | 8.69 | 3.41 | 45.24 | 19.06 | 95.22 | 22.91 | 236.31 | 50.66 |
| Wu-4-Zr-28 | 0.98 | 5.18 | 0.02 | 25.56 | 0.06 | 0.85 | 0.98 | 0.16 | 3.67 | 1.10 | 13.61 | 5.57 | 28.82 | 7.51 | 86.34 | 20.53 |
| Wu-4-Zr-29 | 1.00 | 18.91 | 0.05 | 13.95 | 0.09 | 1.23 | 1.92 | 0.51 | 8.36 | 2.38 | 27.06 | 10.54 | 52.29 | 12.49 | 131.12 | 28.05 |
| Wu-4-Zr-30 | 1.00 | 5.01 | 0.08 | 14.37 | 0.04 | 0.70 | 1.53 | 0.36 | 10.06 | 3.68 | 49.13 | 20.44 | 102.30 | 25.38 | 270.67 | 56.12 |
| Wu-4-Zr-31 | 0.97 | 5.92 | 6.36 | 27.21 | 2.67 | 13.38 | 7.23 | 3.05 | 18.06 | 4.91 | 49.08 | 15.33 | 70.22 | 17.74 | 224.91 | 69.61 |

表2 Wu-3和Wu-4锆石LA-ICP-MS U-Pb测试结果

Table2 Zircon LA-ICP-MS U-Pb ages of Wu-3 and Wu-4

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 样品 | 浓度 (ppm) | | | | 同位素比值 | | | | | | 年龄 (Ma) | | | | | | 不谐和度 |
| U | Th | Pb | Th/U | 207Pb/206Pb | ±σ | 207Pb/235U | ±σ | 206Pb/238U | ±σ | 207Pb/206Pb | ±σ | 207Pb/235U | ±σ | 206Pb/238U | ±σ | % |
| Wu-3-Zr-1 | 426 | 173 | 190 | 0.41 | 0.1218 | 0.0013 | 5.8636 | 0.0954 | 0.3478 | 0.0037 | 1983 | 51 | 1956 | 14 | 1924 | 18 | 2.00% |
| Wu-3-Zr-2 | 461 | 55 | 182 | 0.12 | 0.1166 | 0.0010 | 5.2406 | 0.0592 | 0.3260 | 0.0031 | 1906 | 10 | 1859 | 10 | 1819 | 15 | 3.00% |
| Wu-3-Zr-3 | 310 | 110 | 131 | 0.36 | 0.1175 | 0.0010 | 5.4312 | 0.0607 | 0.3351 | 0.0027 | 1918 | 21 | 1890 | 10 | 1863 | 13 | 2.00% |
| Wu-3-Zr-4 | 262 | 393 | 97 | 1.50 | 0.1237 | 0.0016 | 5.0472 | 0.1158 | 0.2949 | 0.0051 | 2010 | 23 | 1827 | 19 | 1666 | 25 | 10.00% |
| Wu-3-Zr-5 | 207 | 30 | 96 | 0.14 | 0.1196 | 0.0012 | 6.3351 | 0.1082 | 0.3838 | 0.0052 | 1950 | 18 | 2023 | 15 | 2094 | 24 | 4.00% |
| Wu-3-Zr-6 | 258 | 103 | 173 | 0.40 | 0.1684 | 0.0015 | 11.6230 | 0.1569 | 0.5006 | 0.0054 | 2542 | 15 | 2575 | 13 | 2616 | 23 | 2.00% |
| Wu-3-Zr-7 | 204 | 176 | 109 | 0.86 | 0.1276 | 0.0014 | 6.7693 | 0.1030 | 0.3847 | 0.0042 | 2065 | 19 | 2082 | 13 | 2098 | 19 | 1.00% |
| Wu-3-Zr-9 | 659 | 206 | 242 | 0.31 | 0.1201 | 0.0014 | 4.7034 | 0.0847 | 0.2839 | 0.0036 | 1958 | 21 | 1768 | 15 | 1611 | 18 | 10.00% |
| Wu-3-Zr-10 | 470 | 439 | 230 | 0.93 | 0.1227 | 0.0014 | 5.7688 | 0.0855 | 0.3411 | 0.0030 | 1996 | 20 | 1942 | 13 | 1892 | 14 | 3.00% |
| Wu-3-Zr-11 | 760 | 25 | 311 | 0.03 | 0.1163 | 0.0012 | 5.5894 | 0.0841 | 0.3489 | 0.0038 | 1899 | 19 | 1914 | 13 | 1929 | 18 | 1.00% |
| Wu-3-Zr-12 | 262 | 33 | 108 | 0.13 | 0.1246 | 0.0014 | 5.8263 | 0.0898 | 0.3391 | 0.0034 | 2033 | 20 | 1950 | 13 | 1882 | 16 | 4.00% |
| Wu-3-Zr-13 | 400 | 150 | 184 | 0.37 | 0.1368 | 0.0016 | 6.7481 | 0.1616 | 0.3542 | 0.0060 | 2187 | 19 | 2079 | 21 | 1954 | 29 | 7.00% |
| Wu-3-Zr-14 | 318 | 82 | 138 | 0.26 | 0.1191 | 0.0013 | 5.6731 | 0.0709 | 0.3460 | 0.0031 | 1943 | 19 | 1927 | 11 | 1916 | 15 | 1.00% |
| Wu-3-Zr-15 | 144 | 77 | 62 | 0.53 | 0.1231 | 0.0017 | 5.3415 | 0.0902 | 0.3147 | 0.0029 | 2002 | 26 | 1876 | 14 | 1764 | 14 | 7.00% |
| Wu-3-Zr-16 | 195 | 146 | 116 | 0.75 | 0.1779 | 0.0029 | 10.4709 | 0.3042 | 0.4190 | 0.0060 | 2635 | 27 | 2477 | 27 | 2256 | 27 | 10.00% |
| Wu-3-Zr-17 | 65 | 47 | 34 | 0.72 | 0.1525 | 0.0028 | 8.1243 | 0.1597 | 0.3865 | 0.0039 | 2376 | 31 | 2245 | 18 | 2107 | 18 | 7.00% |
| Wu-3-Zr-18 | 329 | 88 | 139 | 0.27 | 0.1216 | 0.0014 | 5.7380 | 0.0754 | 0.3419 | 0.0024 | 1980 | 19 | 1937 | 11 | 1896 | 11 | 3.00% |
| Wu-3-Zr-19 | 101 | 50 | 39 | 0.49 | 0.1239 | 0.0016 | 5.4490 | 0.1189 | 0.3197 | 0.0062 | 2013 | 22 | 1893 | 19 | 1788 | 30 | 6.00% |
| Wu-3-Zr-21 | 435 | 130 | 199 | 0.30 | 0.1201 | 0.0010 | 5.9567 | 0.0711 | 0.3594 | 0.0034 | 1958 | 15 | 1970 | 10 | 1979 | 16 | 1.00% |
| Wu-3-Zr-22 | 530 | 38 | 199 | 0.07 | 0.1177 | 0.0010 | 5.2480 | 0.0709 | 0.3230 | 0.0033 | 1921 | 16 | 1860 | 12 | 1804 | 16 | 4.00% |
| Wu-3-Zr-23 | 215 | 187 | 83 | 0.87 | 0.1215 | 0.0013 | 4.9528 | 0.0671 | 0.2954 | 0.0026 | 1977 | 19 | 1811 | 11 | 1669 | 13 | 9.00% |
| Wu-3-Zr-24 | 651 | 685 | 250 | 1.05 | 0.1467 | 0.0014 | 5.5440 | 0.0857 | 0.2733 | 0.0025 | 2309 | 17 | 1907 | 13 | 1558 | 13 | 21.00% |
| Wu-3-Zr-25 | 652 | 425 | 273 | 0.65 | 0.1204 | 0.0009 | 5.3575 | 0.0722 | 0.3226 | 0.0038 | 1962 | 13 | 1878 | 12 | 1802 | 19 | 5.00% |
| Wu-3-Zr-26 | 536 | 338 | 240 | 0.63 | 0.1128 | 0.0008 | 5.1224 | 0.0562 | 0.3292 | 0.0031 | 1856 | 13 | 1840 | 9 | 1834 | 15 | 1.00% |
| Wu-3-Zr-27 | 304 | 143 | 135 | 0.47 | 0.1130 | 0.0009 | 5.3410 | 0.0717 | 0.3427 | 0.0038 | 1850 | 16 | 1875 | 11 | 1899 | 18 | 2.00% |
| Wu-3-Zr-28 | 779 | 155 | 365 | 0.20 | 0.1520 | 0.0034 | 7.2416 | 0.1799 | 0.3463 | 0.0036 | 2368 | 39 | 2142 | 22 | 1917 | 17 | 12.00% |
| Wu-3-Zr-29 | 163 | 62 | 102 | 0.38 | 0.1611 | 0.0012 | 10.3435 | 0.1195 | 0.4655 | 0.0046 | 2478 | 13 | 2466 | 11 | 2464 | 20 | 1.00% |
| Wu-3-Zr-30 | 237 | 176 | 161 | 0.74 | 0.1652 | 0.0012 | 10.6807 | 0.1181 | 0.4687 | 0.0042 | 2510 | 12 | 2496 | 10 | 2478 | 19 | 1.00% |
| Wu-3-Zr-31 | 558 | 168 | 237 | 0.30 | 0.1145 | 0.0009 | 5.3712 | 0.0623 | 0.3400 | 0.0032 | 1872 | 15 | 1880 | 10 | 1887 | 15 | 1.00% |
| Wu-3-Zr-32 | 970 | 468 | 509 | 0.48 | 0.1472 | 0.0011 | 7.9607 | 0.0766 | 0.3924 | 0.0031 | 2313 | 13 | 2227 | 9 | 2134 | 14 | 5.00% |
| Wu-3-Zr-33 | 709 | 108 | 286 | 0.15 | 0.1160 | 0.0010 | 5.3824 | 0.0635 | 0.3359 | 0.0027 | 1896 | 21 | 1882 | 10 | 1867 | 13 | 1.00% |
| Wu-3-Zr-34 | 208 | 99 | 99 | 0.48 | 0.1237 | 0.0012 | 6.3779 | 0.0935 | 0.3736 | 0.0043 | 2010 | 17 | 2029 | 13 | 2046 | 20 | 1.00% |
| Wu-4-Zr-1 | 144 | 69 | 63 | 0.48 | 0.1139 | 0.0012 | 5.0904 | 0.0761 | 0.3241 | 0.0038 | 1862 | 19 | 1835 | 13 | 1810 | 19 | 2.00% |
| Wu-4-Zr-3 | 396 | 71 | 165 | 0.18 | 0.1180 | 0.0009 | 5.6084 | 0.0687 | 0.3441 | 0.0035 | 1928 | 13 | 1917 | 11 | 1906 | 17 | 1.00% |
| Wu-4-Zr-4 | 133 | 61 | 58 | 0.46 | 0.1153 | 0.0012 | 5.6035 | 0.0861 | 0.3522 | 0.0041 | 1884 | 20 | 1917 | 13 | 1945 | 20 | 2.00% |
| Wu-4-Zr-5 | 315 | 126 | 151 | 0.40 | 0.1438 | 0.0011 | 7.4470 | 0.0946 | 0.3756 | 0.0044 | 2273 | 13 | 2167 | 11 | 2056 | 21 | 6.00% |
| Wu-4-Zr-6 | 1597 | 240 | 675 | 0.15 | 0.1193 | 0.0008 | 5.8493 | 0.0623 | 0.3551 | 0.0031 | 1946 | 13 | 1954 | 9 | 1959 | 15 | 1.00% |
| Wu-4-Zr-11 | 271 | 88 | 115 | 0.32 | 0.1127 | 0.0011 | 5.1513 | 0.0666 | 0.3307 | 0.0032 | 1844 | 18 | 1845 | 11 | 1842 | 15 | 1.00% |
| Wu-4-Zr-12 | 572 | 52 | 235 | 0.09 | 0.1188 | 0.0010 | 5.7366 | 0.0806 | 0.3495 | 0.0042 | 1939 | 15 | 1937 | 12 | 1932 | 20 | 1.00% |
| Wu-4-Zr-13 | 147 | 53 | 63 | 0.36 | 0.1160 | 0.0012 | 5.3845 | 0.0764 | 0.3358 | 0.0035 | 1895 | 19 | 1882 | 12 | 1867 | 17 | 1.00% |
| Wu-4-Zr-14 | 161 | 110 | 75 | 0.68 | 0.1235 | 0.0012 | 5.6749 | 0.0720 | 0.3329 | 0.0033 | 2007 | 17 | 1928 | 11 | 1853 | 16 | 4.00% |
| Wu-4-Zr-17 | 480 | 72 | 207 | 0.15 | 0.1205 | 0.0009 | 5.8884 | 0.0635 | 0.3536 | 0.0032 | 1965 | 14 | 1960 | 9 | 1952 | 15 | 1.00% |
| Wu-4-Zr-18 | 335 | 105 | 199 | 0.31 | 0.1647 | 0.0012 | 10.2321 | 0.1047 | 0.4494 | 0.0037 | 2506 | 13 | 2456 | 10 | 2393 | 17 | 3.00% |
| Wu-4-Zr-19 | 149 | 96 | 101 | 0.64 | 0.1682 | 0.0015 | 10.9991 | 0.1293 | 0.4735 | 0.0048 | 2539 | 15 | 2523 | 11 | 2499 | 21 | 1.00% |
| Wu-4-Zr-20 | 107 | 43 | 53 | 0.40 | 0.1290 | 0.0014 | 6.8140 | 0.0958 | 0.3825 | 0.0041 | 2084 | 19 | 2088 | 13 | 2088 | 19 | 1.00% |
| Wu-4-Zr-21 | 497 | 222 | 222 | 0.45 | 0.1144 | 0.0009 | 5.5271 | 0.0723 | 0.3492 | 0.0039 | 1872 | 15 | 1905 | 11 | 1931 | 19 | 2.00% |
| Wu-4-Zr-22 | 206 | 73 | 93 | 0.35 | 0.1216 | 0.0012 | 5.9195 | 0.0745 | 0.3523 | 0.0036 | 1981 | 17 | 1964 | 11 | 1946 | 17 | 1.00% |
| Wu-4-Zr-24 | 342 | 316 | 179 | 0.92 | 0.1278 | 0.0010 | 6.3845 | 0.0757 | 0.3617 | 0.0036 | 2078 | 15 | 2030 | 10 | 1990 | 17 | 2.00% |
| Wu-4-Zr-25 | 188 | 273 | 136 | 1.45 | 0.1760 | 0.0016 | 10.9007 | 0.1930 | 0.4467 | 0.0060 | 2617 | 10 | 2515 | 17 | 2381 | 27 | 6.00% |
| Wu-4-Zr-26 | 110 | 27 | 68 | 0.25 | 0.1639 | 0.0015 | 10.9200 | 0.1646 | 0.4821 | 0.0058 | 2496 | 21 | 2516 | 14 | 2537 | 25 | 1.00% |
| Wu-4-Zr-28 | 201 | 94 | 91 | 0.47 | 0.1162 | 0.0012 | 5.5582 | 0.0708 | 0.3474 | 0.0037 | 1898 | 18 | 1910 | 11 | 1922 | 18 | 1.00% |
| Wu-4-Zr-29 | 107 | 64 | 68 | 0.60 | 0.1623 | 0.0016 | 10.3305 | 0.1397 | 0.4618 | 0.0052 | 2480 | 18 | 2465 | 13 | 2448 | 23 | 1.00% |
| Wu-4-Zr-30 | 328 | 105 | 155 | 0.32 | 0.1211 | 0.0011 | 6.1354 | 0.0800 | 0.3669 | 0.0036 | 1972 | 10 | 1995 | 11 | 2015 | 17 | 1.00% |
| Wu-4-Zr-31 | 648 | 299 | 400 | 0.46 | 0.1648 | 0.0018 | 10.7698 | 0.1777 | 0.4727 | 0.0050 | 2505 | 19 | 2504 | 15 | 2496 | 22 | 1.00% |

表3锆石LA-ICP-MS Lu-Hf同位素分析结果

Table3 Zircon LA-ICP-MS Lu-Hf isotope date

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 样号 | 年龄(Ma) | 176Yb/ 177Hf | 176Lu/ 177Hf | 176Hf/ 177Hf | ±2σ | εHf(0) | εHf(*t*) | *t*DM1(Hf) | *t*DM2(Hf) | *f*Lu/Hf |
| Wu-3-1 | 1983 | 0.01607 | 0.00049 | 0.281509 | 0.000018 | -44.7 | -1.03 | 2405 | 2545 | -0.99 |
| Wu-3-2 | 1906 | 0.028326 | 0.00082 | 0.281603 | 0.000014 | -41.3 | 0.13 | 2297 | 2423 | -0.98 |
| Wu-3-3 | 1918 | 0.012696 | 0.00039 | 0.281575 | 0.000023 | -42.3 | -0.02 | 2310 | 2441 | -0.99 |
| Wu-3-4 | 2010 | 0.030322 | 0.000928 | 0.281462 | 0.000022 | -46.3 | -2.71 | 2497 | 2651 | -0.97 |
| Wu-3-5 | 1950 | 0.012567 | 0.000365 | 0.281565 | 0.000018 | -42.7 | 0.38 | 2322 | 2447 | -0.99 |
| Wu-3-6 | 2542 | 0.01004 | 0.00036 | 0.2813 | 0.000017 | -52.1 | 4.42 | 2678 | 2723 | -0.99 |
| Wu-3-7 | 2065 | 0.022532 | 0.000707 | 0.281595 | 0.00002 | -41.6 | 3.56 | 2302 | 2378 | -0.98 |
| Wu-3-9 | 1958 | 0.034885 | 0.001161 | 0.281584 | 0.00002 | -42.0 | 0.18 | 2344 | 2463 | -0.97 |
| Wu-3-10 | 1996 | 0.050898 | 0.001526 | 0.281524 | 0.00002 | -44.1 | -1.61 | 2450 | 2584 | -0.95 |
| Wu-3-11 | 1899 | 0.016932 | 0.00061 | 0.281469 | 0.000016 | -46.1 | -4.50 | 2467 | 2652 | -0.98 |
| Wu-3-12 | 2033 | 0.076079 | 0.002421 | 0.281747 | 0.000025 | -36.2 | 5.89 | 2192 | 2234 | -0.93 |
| Wu-3-13 | 2187 | 0.022681 | 0.000763 | 0.281355 | 0.000024 | -50.1 | -2.31 | 2631 | 2774 | -0.98 |
| Wu-3-14 | 1943 | 0.006432 | 0.000176 | 0.281568 | 0.000019 | -42.6 | 0.56 | 2307 | 2431 | -0.99 |
| Wu-3-15 | 2002 | 0.020059 | 0.000608 | 0.281583 | 0.000016 | -42.0 | 1.85 | 2312 | 2414 | -0.98 |
| Wu-3-16 | 2635 | 0.022419 | 0.000697 | 0.281341 | 0.000021 | -50.6 | 7.40 | 2646 | 2649 | -0.98 |
| Wu-3-17 | 2376 | 0.018673 | 0.000567 | 0.281502 | 0.000031 | -44.9 | 7.47 | 2419 | 2434 | -0.98 |
| Wu-3-18 | 1980 | 0.003004 | 0.000089 | 0.281535 | 0.000024 | -43.7 | 0.35 | 2346 | 2472 | -1.00 |
| Wu-3-19 | 2013 | 0.011267 | 0.000346 | 0.281489 | 0.000021 | -45.4 | -0.89 | 2423 | 2561 | -0.99 |
| Wu-3-21 | 1958 | 0.029881 | 0.000941 | 0.281575 | 0.000024 | -42.3 | 0.14 | 2343 | 2465 | -0.97 |
| Wu-3-22 | 1921 | 0.016391 | 0.000514 | 0.281541 | 0.000022 | -43.5 | -1.34 | 2363 | 2510 | -0.98 |
| Wu-3-23 | 1978 | 0.0184 | 0.000576 | 0.281559 | 0.000025 | -42.9 | 0.50 | 2343 | 2463 | -0.98 |
| Wu-3-24 | 2309 | 0.035228 | 0.000921 | 0.281603 | 0.000018 | -41.3 | 9.00 | 2304 | 2302 | -0.97 |
| Wu-3-27 | 1962 | 0.032688 | 0.000968 | 0.281603 | 0.000018 | -41.3 | 1.19 | 2306 | 2415 | -0.97 |
| Wu-3-28 | 1856 | 0.020771 | 0.000656 | 0.281443 | 0.00002 | -47.0 | -6.46 | 2505 | 2716 | -0.98 |
| Wu-3-29 | 1850 | 0.01872 | 0.00059 | 0.28128 | 0.000022 | -52.8 | -12.29 | 2720 | 3006 | -0.98 |
| Wu-3-30 | 2368 | 0.019939 | 0.000626 | 0.281334 | 0.000017 | -50.9 | 1.23 | 2650 | 2742 | -0.98 |
| Wu-3-31 | 2478 | 0.016799 | 0.000533 | 0.2815 | 0.000017 | -45.0 | 9.77 | 2420 | 2401 | -0.98 |
| Wu-3-32 | 2510 | 0.047793 | 0.001268 | 0.281442 | 0.000017 | -47.0 | 7.18 | 2546 | 2558 | -0.96 |
| Wu-3-33 | 1872 | 0.007894 | 0.000245 | 0.281538 | 0.000013 | -43.6 | -2.19 | 2351 | 2514 | -0.99 |
| Wu-3-34 | 2313 | 0.029038 | 0.000928 | 0.281566 | 0.000021 | -42.6 | 7.76 | 2355 | 2368 | -0.97 |
| Wu-3-35 | 1896 | 0.014877 | 0.000463 | 0.281553 | 0.000013 | -43.1 | -1.40 | 2344 | 2493 | -0.99 |
| Wu-3-36 | 2010 | 0.025035 | 0.000816 | 0.281539 | 0.000019 | -43.6 | 0.19 | 2385 | 2504 | -0.98 |
| Wu-4-1 | 1862 | 0.009378 | 0.000312 | 0.281572 | 0.000018 | -42.4 | -1.30 | 2309 | 2460 | -0.99 |
| Wu-4-3 | 1928 | 0.006638 | 0.000191 | 0.281569 | 0.00002 | -42.5 | 0.24 | 2306 | 2436 | -0.99 |
| Wu-4-4 | 1884 | 0.010275 | 0.000314 | 0.281504 | 0.000019 | -44.8 | -3.21 | 2401 | 2575 | -0.99 |
| Wu-4-5 | 2273 | 0.02383 | 0.000847 | 0.281321 | 0.000017 | -51.3 | -1.72 | 2683 | 2814 | -0.97 |
| Wu-4-6 | 1946 | 0.03634 | 0.001098 | 0.281653 | 0.000017 | -39.6 | 2.45 | 2245 | 2338 | -0.97 |
| Wu-4-11 | 1844 | 0.019222 | 0.000576 | 0.281475 | 0.000022 | -45.9 | -5.49 | 2456 | 2658 | -0.98 |
| Wu-4-12 | 1939 | 0.052663 | 0.001617 | 0.281686 | 0.000022 | -38.4 | 2.78 | 2230 | 2316 | -0.95 |
| Wu-4-13 | 1895 | 0.012151 | 0.000367 | 0.281516 | 0.000018 | -44.4 | -2.60 | 2388 | 2553 | -0.99 |
| Wu-4-14 | 2007 | 0.017427 | 0.000569 | 0.281493 | 0.000025 | -45.2 | -1.17 | 2432 | 2571 | -0.98 |
| Wu-4-17 | 1965 | 0.033515 | 0.001054 | 0.281587 | 0.000016 | -41.9 | 0.57 | 2334 | 2449 | -0.97 |
| Wu-4-18 | 2506 | 0.026055 | 0.000831 | 0.281344 | 0.000022 | -50.5 | 4.35 | 2651 | 2697 | -0.97 |
| Wu-4-19 | 2539 | 0.019626 | 0.000626 | 0.28134 | 0.000019 | -50.6 | 5.31 | 2642 | 2676 | -0.98 |
| Wu-4-20 | 2084 | 0.026247 | 0.000794 | 0.281628 | 0.000018 | -40.5 | 5.03 | 2262 | 2319 | -0.98 |
| Wu-4-21 | 1872 | 0.055307 | 0.001586 | 0.281606 | 0.000018 | -41.2 | -1.47 | 2340 | 2477 | -0.95 |
| Wu-4-22 | 1981 | 0.024102 | 0.000859 | 0.281609 | 0.000019 | -41.1 | 1.96 | 2292 | 2391 | -0.97 |
| Wu-4-24 | 2078 | 0.009173 | 0.000336 | 0.281419 | 0.000015 | -47.8 | -1.89 | 2516 | 2664 | -0.99 |
| Wu-4-25 | 2617 | 0.050182 | 0.00158 | 0.281391 | 0.000025 | -48.8 | 7.19 | 2638 | 2645 | -0.95 |
| Wu-4-26 | 2496 | 0.030483 | 0.001022 | 0.281333 | 0.00002 | -50.9 | 3.41 | 2679 | 2736 | -0.97 |
| Wu-4-28 | 1898 | 0.009089 | 0.000365 | 0.281566 | 0.000015 | -42.6 | -0.77 | 2320 | 2462 | -0.99 |
| Wu-4-29 | 2480 | 0.019399 | 0.000617 | 0.281326 | 0.000016 | -51.1 | 3.49 | 2660 | 2719 | -0.98 |
| Wu-4-30 | 1972 | 0.010354 | 0.000346 | 0.281587 | 0.000024 | -41.9 | 1.67 | 2291 | 2398 | -0.99 |
| Wu-4-31 | 2505 | 0.011912 | 0.00065 | 0.281265 | 0.000023 | -53.3 | 1.83 | 2745 | 2823 | -0.98 |