Table S1 Sr-Nd-Pb isotopic composition of YRD-1101 core

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sample No. | Depth (m) | 87Sr/86Sr | ±2σ | 143Nd/144Nd | ±2σ | εNd | 208Pb/204Pb | ±2σ | 207Pb/204Pb | ±2σ | 206Pb/204Pb | ±2σ | 208Pb/206Pb | ±2σ | 207Pb/206Pb | ±2σ |
| 17D-1 | 3.56 | 0.72237 | 5.34E-06 | 0.512073 | 2.31E-06 | -11.02142252 | 38.8702  | 8.78E-04 | 15.6455  | 3.29E-04 | 18.6324  | 4.16 E-04 | 2.0862  | 1.71 E-05 | 0.83969  | 6.74 E-06 |
| 17D-2 | 9.49 | 0.71866 | 4.32E-06 | 0.512056 | 3.64E-06 | -11.35304055 | 38.9526  | 7.86E-04 | 15.6481  | 2.72 E-04 | 18.6865  | 2.96 E-04 | 2.0845  | 1.64 E-05 | 0.83740  | 4.92 E-06 |
| 17D-3 | 15.46 | 0.72077 | 6.94E-06 | 0.512069 | 4.74E-06 | -11.09945029 | 38.9435  | 6.34E-04 | 15.6447  | 2.17 E-04 | 18.6827  | 2.30 E-04 | 2.0845  | 1.42 E-05 | 0.83739  | 3.59 E-06 |
| 17D-4 | 21.44 | 0.71884 | 5.19E-06 | 0.512062 | 2.24E-06 | -11.23599889 | 38.8332  | 1.26 E-04 | 15.6359  | 2.96 E-04 | 18.5881  | 4.90 E-04 | 2.0891  | 1.91 E-05 | 0.84117  | 7.08 E-06 |
| 17D-5 | 27.65 | 0.71826 | 4.65E-06 | 0.512053 | 2.07E-06 | -11.41156137 | 38.9010  | 9.54 E-04 | 15.6405  | 3.31 E-04 | 18.6445  | 4.04 E-04 | 2.0865  | 1.83 E-05 | 0.83887  | 7.73 E-06 |
| 17D-6 | 33.48 | 0.72084 | 4.57E-06 | 0.512067 | 2.9E-06 | -11.13846418 | 38.9388  | 9.05 E-04 | 15.6465  | 3.53 E-04 | 18.6786  | 3.89 E-04 | 2.0847  | 1.29 E-05 | 0.83766  | 3.92 E-06 |
| 17D-7 | 40.75 | 0.7204 | 4.84E-06 | 0.512048 | 3.17E-06 | -11.50909609 | 39.0032  | 9.11 E-04 | 15.6492  | 4.02 E-04 | 18.7122  | 4.13 E-04 | 2.0844  | 1.56 E-05 | 0.83627  | 6.26 E-06 |
| 17D-8 | 46.42 | 0.7178 | 4.06E-06 | 0.512022 | 1.87E-06 | -12.01627659 | 39.1512  | 8.65 E-04 | 15.6545  | 3.61 E-04 | 18.8318  | 4.42 E-04 | 2.0790  | 1.88 E-05 | 0.83128  | 7.85 E-06 |
| 17D-9 | 52.60 | 0.71999 | 5.11E-06 | 0.512054 | 2.73E-06 | -11.39205443 | 38.8700  | 6.97 E-04 | 15.6387  | 2.57 E-04 | 18.6480  | 2.87 E-04 | 2.0844  | 1.65 E-05 | 0.83864  | 5.57 E-06 |
| 17D-10 | 58.34 | 0.71555 | 5.41E-06 | 0.512107 | 2.77E-06 | -10.35818648 | 38.7055  | 9.63 E-04 | 15.6104  | 3.69 E-04 | 18.5331  | 4.18 E-04 | 2.0885  | 1.82 E-05 | 0.84230  | 5.88 E-06 |
| 17D-11 | 64.27 | 0.71741 | 4.77E-06 | 0.511934 | 2.84E-06 | -13.73288753 | 38.9590  | 8.27 E-04 | 15.6232  | 3.10 E-04 | 18.5630  | 3.06 E-04 | 2.0988  | 1.78 E-05 | 0.84164  | 6.40 E-06 |
| 17D-12 | 70.49 | 0.71896 | 4.74E-06 | 0.512025 | 4.59E-06 | -11.95775577 | 38.8850  | 6.91 E-04 | 15.6368  | 2.64 E-04 | 18.5996  | 3.32 E-04 | 2.0907  | 1.98 E-05 | 0.84071  | 6.96 E-06 |
| 17D-13 | 76.40 | 0.71739 | 4.00E-06 | 0.511991 | 2.32E-06 | -12.62099181 | 38.8168  | 7.18 E-04 | 15.6246  | 2.31 E-04 | 18.5433  | 2.90 E-04 | 2.0933  | 1.44 E-05 | 0.84261  | 4.14 E-06 |
| 17D-14 | 82.56 | 0.72118 | 5.78E-06 | 0.512055 | 4.13E-06 | -11.37254749 | 38.9552  | 8.18 E-04 | 15.6473  | 3.01 E-04 | 18.7037  | 3.43 E-04 | 2.0827  | 1.57 E-05 | 0.83658  | 5.08 E-06 |
| 17D-15 | 88.73 | 0.71676 | 3.77E-06 | 0.511985 | 2.16E-06 | -12.73803347 | 39.4878  | 9.43 E-04 | 15.6705  | 4.40 E-04 | 18.9690  | 4.44 E-04 | 2.0817  | 1.58 E-05 | 0.82612  | 7.55 E-06 |
| 17D-16 | 94.15 | 0.71707 | 4.11E-06 | 0.512031 | 2.32E-06 | -11.84071411 | 39.1164  | 9.27 E-04 | 15.6516  | 3.83 E-04 | 18.7839  | 4.27 E-04 | 2.0824  | 1.56 E-05 | 0.83324  | 7.81 E-06 |
| 17D-17 | 100.44 | 0.72159 | 4.51E-06 | 0.512087 | 8.15E-06 | -10.74832533 | 38.9860  | 9.37 E-04 | 15.6595  | 3.39 E-04 | 18.7477  | 3.90 E-04 | 2.0795  | 1.63 E-05 | 0.83527  | 6.25 E-06 |
| 17D-18 | 106.48 | 0.71945 | 6.60E-06 | 0.512008 | 2.27E-06 | -12.28937379 | 38.9802  | 8.46 E-04 | 15.6436  | 3.35 E-04 | 18.6975  | 3.84 E-04 | 2.0848  | 1.80 E-05 | 0.83666  | 6.64 E-06 |
| 17D-19 | 112.49 | 0.71825 | 5.35E-06 | 0.511809 | 3..59E-06 | -16.17125535 | 40.1563  | 9.08 E-04 | 15.6758  | 3.95 E-04 | 19.1035  | 3.23 E-04 | 2.1020  | 2.73 E-05 | 0.82057  | 6.00 E-06 |
| 17D-20 | 118.49 | 0.71746 | 5.75E-06 | 0.512024 | 1.85E-06 | -11.97726271 | 38.8495  | 7.22 E-04 | 15.6245  | 3.09 E-04 | 18.5983  | 3.98 E-04 | 2.0889  | 1.40 E-05 | 0.84011  | 5.31 E-06 |
| 17D-21 | 124.42 | 0.71923 | 5.33E-06 | 0.512029 | 1.84E-06 | -11.879728 | 38.9955  | 9.26 E-04 | 15.6457  | 3.73 E-04 | 18.7194  | 3.55 E-04 | 2.0832  | 1.80 E-05 | 0.83581  | 5.76 E-06 |
| 17D-22 | 130.40 | 0.7189 | 6.34E-06 | 0.512037 | 2.36E-06 | -11.72367246 | 39.0221  | 9.03 E-04 | 15.6523  | 3.59 E-04 | 18.7602  | 4.03 E-04 | 2.0800  | 1.74 E-05 | 0.83433  | 6.44 E-06 |
| 17D-23 | 136.40 | 0.71783 | 5.68E-06 | 0.512023 | 2.58E-06 | -11.99676965 | 38.9519  | 8.06 E-04 | 15.6402  | 3.23 E-04 | 18.6660  | 3.53 E-04 | 2.0868  | 1.25 E-05 | 0.83789  | 4.39 E-06 |
| 17D-24 | 142.45 | 0.72543 | 4.58E-06 | 0.512092 | 2.69E-06 | -10.65079062 | 38.9474  | 6.37 E-04 | 15.6551  | 2.19 E-04 | 18.7342  | 2.29 E-04 | 2.0790  | 1.58 E-05 | 0.83564  | 4.03 E-06 |
| 17D-25 | 146.45 | 0.72514 | 4.19E-06 | 0.512035 | 5.28E-06 | -11.76268634 | 38.9373  | 7.78 E-04 | 15.6503  | 3.00 E-04 | 18.6895  | 3.57 E-04 | 2.0834  | 1.62 E-05 | 0.83738  | 5.22 E-06 |
| 17D-26 | 152.48 | 0.7198 | 6.82E-06 | 0.512051 | 2.06E-06 | -11.45057526 | 38.9365  | 8.72 E-04 | 15.6534  | 3.51 E-04 | 18.7060  | 3.62 E-04 | 2.0815  | 1.57 E-05 | 0.83681  | 5.46 E-06 |
| 17D-27 | 158.41 | 1322 | 0.72477 | 4.87E-06 | 0.512032 | 3.81E-06 | -11.82120717 | 38.9604  | 6.27 E-04 | 15.6514  | 2.27 E-04 | 18.7000  | 2.97 E-04 | 2.0835  | 1.46 E-05 | 0.83698  | 4.64 E-06 |
| 17D-28 | 164.41 | 1403 | 0.72238 | 4.59E-06 | 0.511993 | 2.32E-06 | -12.58197793 | 38.9629  | 7.98 E-04 | 15.6432  | 2.59 E-04 | 18.6917  | 3.01 E-04 | 2.0845  | 1.71 E-05 | 0.83691  | 4.65 E-06 |
| 17D-29 | 170.08 | 1480 | 0.71837 | 4.64E-06 | 0.511997 | 2.58E-06 | -12.50395016 | 39.1072  | 8.94 E-04 | 15.6558  | 3.36 E-04 | 18.8046  | 3.45 E-04 | 2.0797  | 1.61 E-05 | 0.83255  | 5.17 E-06 |
| 17D-30 | 176.42 | 1567 | 0.72054 | 4.96E-06 | 0.512081 | 2.72E-06 | -10.86536698 | 38.9788  | 8.14 E-04 | 15.6605  | 3.20 E-04 | 18.7453  | 4.53 E-04 | 2.0794  | 1.90 E-05 | 0.83544  | 7.75 E-06 |
| 17D-31 | 182.36 | 1648 | 0.72453 | 4.28E-06 | 0.512077 | 3.29E-06 | -10.94339475 | 38.9561  | 7.61 E-04 | 15.6596  | 2.74 E-04 | 18.7208  | 2.64 E-04 | 2.0809  | 1.61 E-05 | 0.83648  | 5.15 E-06 |
| 17D-32 | 188.60 | 1730 | 0.72435 | 4.45E-06 | 0.512080 | 2.22E-06 | -10.88487393 | 38.9114  | 1.00 E-04 | 15.6500  | 3.68 E-04 | 18.6860  | 3.53 E-04 | 2.0824  | 1.77 E-05 | 0.83753  | 5.91 E-06 |
| 17D-33 | 194.09 | 1803 | 0.71987 | 7.30E-06 | 0.511875 | 2.76E-06 | -14.88379714 | 38.8828  | 8.89 E-04 | 15.6258  | 3.12 E-04 | 18.5172  | 3.64 E-04 | 2.0998  | 2.35 E-05 | 0.84385  | 6.50 E-06 |
| 17D-34 | 200.04 | 1885 | 0.72131 | 4.87E-06 | 0.512006 | 2.71E-06 | -12.32838767 | 38.9120  | 8.00 E-04 | 15.6384  | 2.84 E-04 | 18.6476  | 3.10 E-04 | 2.0867  | 1.51 E-05 | 0.83862  | 4.56 E-06 |