附表1 渤海辽东湾海域BD4-1a井石英砂岩主量元素含量（%）

**Attached Table 1 Content of major elements (%) in quartz sandstone of well BD4-1a in Liaodong Bay, Bohai Sea(%)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 样品名称 | 2482-1 | 2482-2 | 2482-3 | 2482-4 | 2482-5 |
| SiO2（%） | 93.06 | 88.53 | 91.57 | 92.69 | 91.46 |
| Al2O3（%） | 2.02 | 2.07 | 2.10 | 3.73 | 2.34 |
| TFe2O3（%） | 0.93 | 1.60 | 1.03 | 0.47 | 1.11 |
| MgO（%） | 0.38 | 0.96 | 0.54 | 0.21 | 0.64 |
| MnO（%） | 0.01 | 0.02 | 0.01 | 0.00 | 0.01 |
| CaO（%） | 0.73 | 2.16 | 1.10 | 0.12 | 1.02 |
| Na2O（%） | 0.03 | 0.03 | 0.05 | 0.04 | 0.04 |
| K2O（%） | 0.68 | 0.68 | 0.69 | 1.23 | 0.78 |
| TiO2（%） | 0.03 | 0.02 | 0.03 | 0.08 | 0.04 |
| P2O5（%） | 0.01 | 0.01 | 0.01 | 0.02 | 0.01 |
| F1 | -8.13 | -7.59 | -8.03 | -8.34 | -8.16 |
| F2 | -6.39 | -7.22 | -6.56 | -5.14 | -6.56 |
| CIA | 71.01 | 71.01 | 69.51 | 71.57 | 70.52 |
| LOI（%） | 1.55 | 3.61 | 2.17 | 0.76 | 1.68 |
| 总和 | 99.42 | 99.69 | 99.30 | 99.35 | 99.14 |

注：化学蚀变指数，其中Cao\*为校正后的含量（CaO摩尔数≤Na2O摩尔数时，采用CaO的值；CaO摩尔数＞Na2O摩尔数时，CaO=Na2O的值）；；。

附表2 渤海辽东湾海域BD4-1a井石英砂岩微量元素和稀土元素含量（×10-6）

**Attached Table 2 Trace elements and rare earth elements in quartz sandstone of well BD4-1a in Liaodong Bay, Bohai Sea (×10-6)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 样品名称 | 2482-1 | 2482-2 | 2482-3 | 2482-4 | 2482-5 |
| Li | 6.11 | 5.78 | 5.94 | 5.11 | 6.01 |
| Be | 0.50 | 0.50 | 0.42 | 1.14 | 0.61 |
| Sc | 0.85 | 0.89 | 0.74 | 1.30 | 0.86 |
| V | 6.03 | 8.23 | 6.61 | 6.69 | 6.91 |
| Cr | 4.60 | 5.68 | 5.21 | 6.81 | 5.32 |
| Co | 4.14 | 4.79 | 3.66 | 3.50 | 4.03 |
| Ni | 6.54 | 8.49 | 6.68 | 2.60 | 5.62 |
| Cu | 2.12 | 2.18 | 1.73 | 0.56 | 1.95 |
| Zn | 3.76 | 9.48 | 4.43 | 3.62 | 5.68 |
| Ga | 2.77 | 2.78 | 2.87 | 4.54 | 3.03 |
| Rb | 23.59 | 23.25 | 23.87 | 32.03 | 27.30 |
| Sr | 10.78 | 17.92 | 10.90 | 18.65 | 15.30 |
| Y | 1.61 | 1.54 | 1.43 | 3.18 | 1.85 |
| Zr | 26.76 | 23.17 | 23.62 | 19.47 | 24.10 |
| Nb | 0.47 | 0.50 | 0.49 | 1.54 | 0.65 |
| Sn | 0.17 | 0.19 | 0.19 | 0.39 | 0.20 |
| Cs | 0.40 | 0.45 | 0.42 | 1.32 | 0.70 |
| Ba | 38.24 | 135.66 | 25.10 | 37.89 | 58.30 |
| La | 1.96 | 1.64 | 1.66 | 5.36 | 2.33 |
| Ce | 4.03 | 3.24 | 3.30 | 10.61 | 5.23 |
| Pr | 0.49 | 0.42 | 0.38 | 1.15 | 0.68 |
| Nd | 1.70 | 1.53 | 1.44 | 3.98 | 1.89 |
| Sm | 0.38 | 0.39 | 0.32 | 0.67 | 0.56 |
| Eu | 0.09 | 0.14 | 0.10 | 0.19 | 0.12 |
| Gd | 0.28 | 0.41 | 0.31 | 0.61 | 0.35 |
| Tb | 0.05 | 0.06 | 0.04 | 0.10 | 0.05 |
| Dy | 0.26 | 0.30 | 0.30 | 0.53 | 0.35 |
| Ho | 0.05 | 0.06 | 0.06 | 0.11 | 0.09 |
| Er | 0.17 | 0.16 | 0.15 | 0.32 | 0.21 |
| Tm | 0.03 | 0.02 | 0.02 | 0.05 | 0.04 |
| Yb | 0.15 | 0.15 | 0.15 | 0.37 | 0.23 |
| Lu | 0.02 | 0.02 | 0.02 | 0.06 | 0.03 |
| Hf | 0.75 | 0.61 | 0.62 | 4.21 | 0.98 |
| Ta | 0.03 | 0.04 | 0.03 | 0.11 | 0.10 |
| Tl | 0.22 | 0.15 | 0.15 | 0.23 | 0.19 |
| Pb | 2.92 | 3.61 | 2.38 | 0.91 | 2.35 |
| Th | 1.00 | 1.00 | 0.94 | 2.65 | 1.21 |
| U | 0.26 | 0.27 | 0.24 | 0.54 | 0.35 |
| Th/U | 3.93 | 3.71 | 3.88 | 4.92 | 3.46 |
| La/Sc | 2.29 | 1.84 | 2.24 | 4.12 | 2.71 |
| Th/Sc | 1.18 | 1.12 | 1.26 | 2.04 | 1.41 |
| Th/Sc | 1.18 | 1.12 | 1.26 | 2.04 | 1.41 |
| Cr/Zr | 0.17 | 0.25 | 0.22 | 0.35 | 0.22 |
| La/Th | 1.95 | 1.65 | 1.77 | 2.02 | 1.93 |
| La/Yb | 12.94 | 11.12 | 11.44 | 14.58 | 10.13 |
| Zr/Sc | 31.39 | 25.97 | 31.77 | 14.95 | 28.02 |
| ΣREE | 9.65 | 8.52 | 8.26 | 24.12 | 12.16 |
| LREE | 8.64 | 7.35 | 7.20 | 21.97 | 10.81 |
| HREE | 1.00 | 1.17 | 1.06 | 2.15 | 1.35 |
| LREE/HREE | 8.61 | 6.28 | 6.80 | 10.21 | 8.03 |
| LaN/YbN | 9.28 | 7.97 | 8.21 | 10.46 | 7.27 |
| δEu | 0.81 | 1.04 | 0.94 | 0.90 | 0.77 |
| δCe | 0.98 | 0.94 | 0.98 | 1.00 | 1.01 |

附表3 渤海辽东湾海域BD4-1a井新元古界青白口系长龙山组石英砂岩碎屑锆石LA-ICP-MS U-Pb定年结果

**Attached Table3 Laser ablation inductively coupled plasma mass spectrometry (LA-ICP-MS) U-Pb dating of detrital zircons from quartz sandstones of the Changlongshan Formation of the Neoproterozoic Qingbaikou System, well BD4-1a, Liaodong Bay, Bohai Sea**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 测点号 | 含量（x10-6） | | Th/U | 同位素比值 | | | | | | 同位素年龄（Ma） | | | | | | 谐和度% |
| Th | U | 207Pb/206Pb | ±1σ | 207Pb/235U | ±1σ | 206Pb/238U | ±1σ | 207Pb/235U | ±1σ | 206Pb/238U | ±1σ | 207Pb/206Pb | ±1σ |
| S-1 | 15 | 22 | 0.67 | 0.121 9 | 0.005 0 | 5.707 3 | 0.270 4 | 0.348 3 | 0.008 6 | 1 932 | 41 | 1 927 | 41 | 1 984 | 73 | 99% |
| S-2 | 1 | 183 | 0.01 | 0.104 6 | 0.002 9 | 4.553 7 | 0.179 4 | 0.318 7 | 0.005 5 | 1 741 | 33 | 1 783 | 27 | 1 707 | 55 | 97% |
| S-3 | 34 | 34 | 0.99 | 0.100 7 | 0.003 3 | 4.257 9 | 0.173 0 | 0.310 1 | 0.005 8 | 1 685 | 33 | 1 741 | 28 | 1 639 | 60 | 96% |
| S-4 | 109 | 129 | 0.84 | 0.112 6 | 0.002 8 | 5.573 5 | 0.202 1 | 0.361 2 | 0.006 6 | 1 912 | 31 | 1 988 | 31 | 1 843 | 46 | 96% |
| S-5 | 32 | 24 | 1.32 | 0.098 1 | 0.003 6 | 4.051 0 | 0.154 8 | 0.303 6 | 0.006 3 | 1 644 | 31 | 1 709 | 31 | 1 589 | 70 | 96% |
| S-6 | 30 | 23 | 1.29 | 0.099 3 | 0.003 5 | 4.312 3 | 0.164 5 | 0.317 7 | 0.006 7 | 1 696 | 31 | 1 778 | 33 | 1 610 | 65 | 95% |
| S-7 | 7 | 98 | 0.07 | 0.100 1 | 0.002 9 | 4.093 4 | 0.129 8 | 0.297 5 | 0.004 1 | 1 653 | 26 | 1 679 | 21 | 1 625 | 55 | 98% |
| S-8 | 121 | 186 | 0.65 | 0.099 6 | 0.003 0 | 4.286 2 | 0.134 9 | 0.312 7 | 0.004 6 | 1 691 | 26 | 1 754 | 23 | 1 617 | 56 | 96% |
| S-9 | 836 | 266 | 3.14 | 0.100 5 | 0.003 3 | 3.770 8 | 0.211 6 | 0.271 2 | 0.012 5 | 1 587 | 45 | 1 547 | 63 | 1 633 | 61 | 97% |
| S-10 | 21 | 23 | 0.92 | 0.099 6 | 0.004 2 | 4.348 5 | 0.181 7 | 0.317 4 | 0.006 0 | 1 703 | 35 | 1 777 | 29 | 1 617 | 79 | 95% |
| S-11 | 90 | 127 | 0.71 | 0.097 7 | 0.002 8 | 4.010 4 | 0.131 2 | 0.297 5 | 0.005 9 | 1 636 | 27 | 1 679 | 29 | 1 581 | 55 | 97% |
| S-12 | 37 | 39 | 0.96 | 0.099 3 | 0.003 0 | 4.121 3 | 0.152 3 | 0.298 8 | 0.006 6 | 1 659 | 30 | 1 685 | 33 | 1 613 | 62 | 98% |
| S-13 | 14 | 32 | 0.44 | 0.167 9 | 0.004 5 | 11.455 1 | 0.337 4 | 0.493 8 | 0.008 2 | 2 561 | 28 | 2 587 | 35 | 2 537 | 45 | 98% |
| S-14 | 33 | 30 | 1.10 | 0.102 8 | 0.003 0 | 4.262 9 | 0.129 3 | 0.301 5 | 0.006 2 | 1 686 | 25 | 1 699 | 31 | 1 676 | 54 | 99% |
| S-15 | 45 | 44 | 1.02 | 0.106 1 | 0.003 3 | 4.473 5 | 0.139 5 | 0.306 1 | 0.005 3 | 1 726 | 26 | 1 722 | 26 | 1 733 | 56 | 99% |
| S-16 | 57 | 94 | 0.60 | 0.170 5 | 0.003 6 | 11.495 5 | 0.356 6 | 0.487 6 | 0.012 4 | 2 564 | 29 | 2 560 | 54 | 2 563 | 35 | 99% |
| S-17 | 18 | 16 | 1.18 | 0.108 1 | 0.004 3 | 4.616 5 | 0.187 6 | 0.310 3 | 0.006 3 | 1 752 | 34 | 1 742 | 31 | 1 769 | 72 | 99% |
| S-18 | 56 | 120 | 0.46 | 0.105 3 | 0.002 3 | 4.510 6 | 0.112 0 | 0.309 1 | 0.004 7 | 1 733 | 21 | 1 737 | 23 | 1 720 | 41 | 99% |
| S-19 | 31 | 56 | 0.56 | 0.105 9 | 0.003 1 | 4.267 5 | 0.139 3 | 0.291 9 | 0.006 4 | 1 687 | 27 | 1 651 | 32 | 1 731 | 54 | 97% |
| S-20 | 78 | 115 | 0.68 | 0.175 9 | 0.003 6 | 12.223 4 | 0.278 0 | 0.501 6 | 0.007 4 | 2 622 | 21 | 2 621 | 32 | 2 615 | 35 | 99% |
| S-21 | 84 | 124 | 0.68 | 0.147 9 | 0.002 9 | 8.840 1 | 0.196 6 | 0.431 5 | 0.006 1 | 2 322 | 20 | 2 312 | 28 | 2 321 | 34 | 99% |
| S-22 | 189 | 178 | 1.06 | 0.111 6 | 0.003 3 | 4.938 6 | 0.179 2 | 0.321 8 | 0.009 7 | 1 809 | 31 | 1 798 | 47 | 1 828 | 54 | 99% |
| S-23 | 184 | 158 | 1.17 | 0.111 5 | 0.002 2 | 3.572 2 | 0.082 8 | 0.231 4 | 0.003 8 | 1 543 | 18 | 1 342 | 20 | 1 824 | 36 | 86% |
| S-24 | 107 | 76 | 1.42 | 0.153 8 | 0.003 1 | 9.621 5 | 0.219 6 | 0.451 6 | 0.006 8 | 2 399 | 21 | 2 403 | 30 | 2 391 | 39 | 99% |
| S-25 | 60 | 103 | 0.58 | 0.109 8 | 0.002 4 | 4.771 2 | 0.106 1 | 0.314 6 | 0.004 5 | 1 780 | 19 | 1 763 | 22 | 1 796 | 34 | 99% |
| S-26 | 80 | 64 | 1.25 | 0.170 2 | 0.003 4 | 10.813 7 | 0.206 3 | 0.460 0 | 0.005 6 | 2 507 | 18 | 2 440 | 25 | 2 561 | 34 | 97% |
| S-27 | 34 | 47 | 0.72 | 0.182 9 | 0.003 9 | 12.830 3 | 0.288 0 | 0.507 5 | 0.007 2 | 2 667 | 21 | 2 646 | 31 | 2 679 | 35 | 99% |
| S-28 | 51 | 29 | 1.77 | 0.151 7 | 0.004 3 | 9.614 7 | 0.269 9 | 0.459 4 | 0.007 5 | 2 399 | 26 | 2 437 | 33 | 2 366 | 48 | 98% |
| S-29 | 45 | 103 | 0.44 | 0.137 2 | 0.003 5 | 7.816 7 | 0.331 0 | 0.408 8 | 0.013 3 | 2 210 | 38 | 2 209 | 61 | 2 192 | 44 | 99% |
| S-30 | 23 | 27 | 0.88 | 0.122 4 | 0.004 9 | 5.905 7 | 0.221 0 | 0.352 7 | 0.007 5 | 1 962 | 33 | 1 948 | 36 | 1 992 | 71 | 99% |
| S-31 | 67 | 123 | 0.55 | 0.116 4 | 0.002 4 | 5.530 7 | 0.120 4 | 0.344 3 | 0.005 3 | 1 905 | 19 | 1 908 | 25 | 1 902 | 37 | 99% |
| S-32 | 63 | 234 | 0.27 | 0.116 5 | 0.002 1 | 5.644 5 | 0.118 0 | 0.350 2 | 0.005 0 | 1 923 | 18 | 1 936 | 24 | 1 906 | 32 | 99% |
| S-33 | 34 | 40 | 0.86 | 0.190 1 | 0.003 8 | 14.132 7 | 0.358 5 | 0.538 8 | 0.010 8 | 2 759 | 24 | 2 778 | 45 | 2 744 | 33 | 99% |
| S-34 | 55 | 107 | 0.52 | 0.138 8 | 0.002 7 | 7.965 7 | 0.209 4 | 0.415 9 | 0.009 1 | 2 227 | 24 | 2 242 | 42 | 2 213 | 29 | 99% |
| S-35 | 296 | 198 | 1.49 | 0.123 0 | 0.002 6 | 4.524 1 | 0.099 1 | 0.267 1 | 0.004 6 | 1 735 | 18 | 1 526 | 23 | 2 067 | 37 | 87% |
| S-36 | 15 | 20 | 0.78 | 0.121 4 | 0.004 8 | 5.926 5 | 0.245 8 | 0.355 3 | 0.008 2 | 1 965 | 36 | 1 960 | 39 | 1 977 | 70 | 99% |
| S-37 | 47 | 36 | 1.31 | 0.107 7 | 0.002 7 | 4.572 8 | 0.121 0 | 0.308 8 | 0.005 8 | 1 744 | 22 | 1 735 | 29 | 1 761 | 46 | 99% |
| S-38 | 56 | 100 | 0.56 | 0.112 8 | 0.002 3 | 5.253 0 | 0.118 3 | 0.336 8 | 0.004 8 | 1 861 | 19 | 1 871 | 23 | 1 856 | 37 | 99% |
| S-39 | 50 | 89 | 0.56 | 0.136 3 | 0.004 8 | 7.004 3 | 0.219 2 | 0.375 3 | 0.005 8 | 2 112 | 28 | 2 054 | 27 | 2 181 | 61 | 97% |
| S-40 | 27 | 27 | 1.01 | 0.165 8 | 0.003 9 | 10.808 4 | 0.281 4 | 0.473 8 | 0.009 6 | 2 507 | 24 | 2 500 | 42 | 2 516 | 40 | 99% |
| S-41 | 56 | 48 | 1.17 | 0.115 6 | 0.003 0 | 4.595 7 | 0.136 8 | 0.288 4 | 0.005 7 | 1 748 | 25 | 1 633 | 28 | 1 900 | 47 | 93% |
| S-42 | 38 | 48 | 0.79 | 0.113 8 | 0.002 6 | 5.223 2 | 0.146 5 | 0.331 9 | 0.005 7 | 1 856 | 24 | 1 848 | 27 | 1 862 | 41 | 99% |
| S-43 | 53 | 86 | 0.62 | 0.110 5 | 0.002 3 | 4.846 5 | 0.115 3 | 0.317 8 | 0.005 1 | 1 793 | 20 | 1 779 | 25 | 1 809 | 43 | 99% |
| S-44 | 69 | 36 | 1.94 | 0.161 9 | 0.003 7 | 10.649 1 | 0.263 7 | 0.477 3 | 0.007 6 | 2 493 | 23 | 2 516 | 33 | 2 476 | 39 | 99% |
| S-45 | 78 | 57 | 1.37 | 0.157 9 | 0.004 1 | 8.409 9 | 0.241 5 | 0.388 5 | 0.009 4 | 2 276 | 26 | 2 116 | 44 | 2 435 | 43 | 92% |
| S-46 | 78 | 183 | 0.43 | 0.147 2 | 0.002 7 | 7.596 8 | 0.204 9 | 0.374 6 | 0.008 9 | 2 184 | 24 | 2 051 | 42 | 2 313 | 31 | 93% |
| S-47 | 222 | 152 | 1.46 | 0.169 0 | 0.003 4 | 8.159 9 | 0.200 5 | 0.350 2 | 0.006 6 | 2 249 | 22 | 1 936 | 32 | 2 548 | 34 | 85% |
| S-48 | 73 | 89 | 0.81 | 0.140 1 | 0.002 9 | 7.907 9 | 0.183 6 | 0.409 0 | 0.006 0 | 2 221 | 21 | 2 210 | 28 | 2 229 | 36 | 99% |
| S-49 | 25 | 25 | 1.03 | 0.112 1 | 0.003 7 | 4.943 8 | 0.157 7 | 0.322 3 | 0.007 1 | 1 810 | 27 | 1 801 | 35 | 1 833 | 60 | 99% |
| S-50 | 40 | 88 | 0.46 | 0.112 2 | 0.002 5 | 5.056 4 | 0.126 1 | 0.326 9 | 0.005 7 | 1 829 | 21 | 1 823 | 28 | 1 835 | 41 | 99% |
| S-51 | 77 | 98 | 0.78 | 0.157 1 | 0.003 1 | 9.032 2 | 0.206 9 | 0.415 4 | 0.006 5 | 2 341 | 21 | 2 240 | 30 | 2 425 | 33 | 95% |
| S-52 | 115 | 111 | 1.04 | 0.158 1 | 0.003 0 | 8.709 7 | 0.281 8 | 0.398 1 | 0.011 2 | 2 308 | 30 | 2 160 | 51 | 2 435 | 37 | 93% |
| S-53 | 42 | 50 | 0.84 | 0.109 6 | 0.002 5 | 4.753 6 | 0.114 5 | 0.314 6 | 0.006 0 | 1 777 | 20 | 1 763 | 29 | 1 794 | 42 | 99% |
| S-54 | 25 | 44 | 0.56 | 0.110 3 | 0.002 9 | 5.026 3 | 0.147 6 | 0.329 4 | 0.005 8 | 1 824 | 25 | 1 836 | 28 | 1 806 | 44 | 99% |
| S-55 | 21 | 17 | 1.28 | 0.127 1 | 0.006 8 | 6.292 0 | 0.304 6 | 0.366 6 | 0.008 7 | 2 017 | 42 | 2 013 | 41 | 2 058 | 95 | 99% |
| S-56 | 42 | 50 | 0.85 | 0.112 1 | 0.002 7 | 5.009 5 | 0.131 6 | 0.322 9 | 0.005 7 | 1 821 | 22 | 1 804 | 28 | 1 835 | 43 | 99% |
| S-57 | 80 | 59 | 1.35 | 0.140 1 | 0.003 2 | 7.878 8 | 0.166 3 | 0.406 9 | 0.006 6 | 2 217 | 19 | 2 201 | 30 | 2 229 | 39 | 99% |
| S-58 | 26 | 23 | 1.11 | 0.111 6 | 0.003 8 | 5.023 5 | 0.160 4 | 0.327 7 | 0.007 6 | 1 823 | 27 | 1 827 | 37 | 1 826 | 62 | 99% |
| S-59 | 24 | 24 | 0.98 | 0.116 0 | 0.003 4 | 5.439 4 | 0.157 4 | 0.341 2 | 0.007 8 | 1 891 | 25 | 1 892 | 37 | 1 895 | 53 | 99% |
| S-60 | 201 | 166 | 1.21 | 0.115 7 | 0.002 3 | 4.277 4 | 0.099 5 | 0.266 2 | 0.004 2 | 1 689 | 19 | 1 521 | 21 | 1 891 | 37 | 91% |
| S-61 | 15 | 17 | 0.92 | 0.108 8 | 0.004 4 | 4.717 1 | 0.192 8 | 0.315 5 | 0.007 0 | 1 770 | 34 | 1 768 | 34 | 1 789 | 75 | 99% |
| S-62 | 40 | 71 | 0.57 | 0.175 6 | 0.003 2 | 12.162 2 | 0.400 6 | 0.499 1 | 0.014 1 | 2 617 | 31 | 2 610 | 60 | 2 613 | 31 | 99% |
| S-63 | 89 | 114 | 0.78 | 0.111 9 | 0.002 1 | 4.978 8 | 0.094 2 | 0.321 7 | 0.004 4 | 1 816 | 16 | 1 798 | 21 | 1 831 | 33 | 99% |
| S-64 | 4 | 61 | 0.07 | 0.126 0 | 0.002 6 | 6.421 1 | 0.144 4 | 0.369 1 | 0.006 4 | 2 035 | 20 | 2 025 | 30 | 2 043 | 37 | 99% |
| S-65 | 22 | 30 | 0.72 | 0.119 3 | 0.003 0 | 5.792 8 | 0.152 8 | 0.353 1 | 0.007 6 | 1 945 | 23 | 1 949 | 36 | 1 946 | 46 | 99% |
| S-66 | 36 | 33 | 1.09 | 0.101 7 | 0.005 4 | 4.279 0 | 0.177 4 | 0.298 6 | 0.007 6 | 1 689 | 34 | 1 684 | 38 | 1 655 | 98 | 99% |
| S-67 | 95 | 173 | 0.55 | 0.147 6 | 0.002 9 | 8.756 9 | 0.257 5 | 0.428 9 | 0.010 1 | 2 313 | 27 | 2 301 | 46 | 2 318 | 33 | 99% |
| S-68 | 51 | 117 | 0.44 | 0.116 3 | 0.002 5 | 5.452 1 | 0.132 7 | 0.339 5 | 0.005 5 | 1 893 | 21 | 1 884 | 27 | 1 900 | 39 | 99% |
| S-69 | 36 | 41 | 0.87 | 0.114 1 | 0.003 4 | 5.258 7 | 0.148 2 | 0.335 0 | 0.005 5 | 1 862 | 24 | 1 863 | 27 | 1 866 | 53 | 99% |
| S-70 | 20 | 23 | 0.87 | 0.117 2 | 0.003 5 | 5.630 3 | 0.167 5 | 0.349 7 | 0.007 3 | 1 921 | 26 | 1 933 | 35 | 1 915 | 54 | 99% |
| S-71 | 66 | 103 | 0.64 | 0.114 6 | 0.002 3 | 5.358 3 | 0.129 2 | 0.337 2 | 0.005 3 | 1 878 | 21 | 1 873 | 26 | 1 874 | 35 | 99% |
| S-72 | 48 | 73 | 0.66 | 0.119 2 | 0.002 4 | 5.699 4 | 0.128 1 | 0.345 7 | 0.006 0 | 1 931 | 19 | 1 914 | 29 | 1 944 | 36 | 99% |
| S-73 | 105 | 99 | 1.06 | 0.113 4 | 0.002 6 | 5.174 6 | 0.126 1 | 0.330 2 | 0.006 2 | 1 848 | 21 | 1 840 | 30 | 1 854 | 41 | 99% |
| S-74 | 45 | 71 | 0.63 | 0.135 1 | 0.002 8 | 7.395 8 | 0.197 1 | 0.394 8 | 0.008 4 | 2 160 | 24 | 2 145 | 39 | 2 166 | 36 | 99% |
| S-75 | 73 | 150 | 0.49 | 0.131 8 | 0.002 5 | 7.198 8 | 0.165 3 | 0.392 8 | 0.006 6 | 2 136 | 21 | 2 136 | 30 | 2 122 | 33 | 99% |
| S-76 | 70 | 66 | 1.06 | 0.110 9 | 0.002 6 | 4.987 9 | 0.109 9 | 0.325 3 | 0.005 7 | 1 817 | 19 | 1 816 | 28 | 1 813 | 44 | 99% |
| S-77 | 39 | 49 | 0.79 | 0.114 0 | 0.003 0 | 5.235 8 | 0.142 5 | 0.331 4 | 0.006 7 | 1 858 | 23 | 1 845 | 32 | 1 865 | 53 | 99% |
| S-78 | 18 | 19 | 0.98 | 0.149 6 | 0.006 7 | 9.153 0 | 0.419 7 | 0.443 3 | 0.010 7 | 2 353 | 42 | 2 365 | 48 | 2 343 | 77 | 99% |
| S-79 | 32 | 49 | 0.66 | 0.110 1 | 0.002 8 | 4.955 9 | 0.136 1 | 0.323 3 | 0.005 6 | 1 812 | 23 | 1 806 | 27 | 1 811 | 46 | 99% |
| S-80 | 70 | 55 | 1.28 | 0.113 6 | 0.002 9 | 5.268 0 | 0.137 7 | 0.333 5 | 0.005 7 | 1 864 | 22 | 1 855 | 28 | 1 858 | 46 | 99% |
| S-81 | 62 | 70 | 0.88 | 0.174 2 | 0.003 4 | 12.031 8 | 0.289 2 | 0.496 0 | 0.009 2 | 2 607 | 23 | 2 597 | 40 | 2 598 | 33 | 99% |
| S-82 | 86 | 110 | 0.79 | 0.154 1 | 0.002 9 | 9.391 3 | 0.176 2 | 0.438 7 | 0.006 7 | 2 377 | 17 | 2 345 | 30 | 2 392 | 36 | 98% |
| S-83 | 63 | 49 | 1.29 | 0.149 3 | 0.003 3 | 9.230 4 | 0.215 3 | 0.445 3 | 0.007 5 | 2 361 | 21 | 2 374 | 33 | 2 338 | 38 | 99% |
| S-84 | 18 | 72 | 0.26 | 0.133 9 | 0.002 7 | 7.447 2 | 0.151 2 | 0.400 7 | 0.005 9 | 2 167 | 18 | 2 172 | 27 | 2 150 | 35 | 99% |
| S-85 | 24 | 17 | 1.44 | 0.112 7 | 0.004 3 | 5.172 4 | 0.177 4 | 0.334 3 | 0.007 0 | 1 848 | 29 | 1 859 | 34 | 1 844 | 74 | 99% |
| S-86 | 16 | 12 | 1.31 | 0.121 6 | 0.005 5 | 5.820 3 | 0.249 0 | 0.351 1 | 0.009 7 | 1 949 | 37 | 1 940 | 46 | 1 979 | 80 | 99% |
| S-87 | 53 | 125 | 0.42 | 0.115 9 | 0.002 5 | 5.633 8 | 0.141 6 | 0.350 1 | 0.006 7 | 1 921 | 22 | 1 935 | 32 | 1 894 | 37 | 99% |
| S-88 | 52 | 143 | 0.36 | 0.148 7 | 0.003 1 | 9.228 3 | 0.215 3 | 0.446 5 | 0.007 2 | 2 361 | 21 | 2 380 | 32 | 2 331 | 35 | 99% |
| S-89 | 25 | 35 | 0.71 | 0.117 4 | 0.003 6 | 5.583 3 | 0.164 1 | 0.345 8 | 0.006 5 | 1 914 | 25 | 1 915 | 31 | 1 917 | 56 | 99% |
| S-90 | 13 | 61 | 0.22 | 0.111 6 | 0.002 5 | 5.101 1 | 0.132 1 | 0.330 4 | 0.006 2 | 1 836 | 22 | 1 840 | 30 | 1 825 | 41 | 99% |
| S-91 | 108 | 142 | 0.76 | 0.147 6 | 0.002 5 | 8.940 1 | 0.158 1 | 0.437 3 | 0.005 4 | 2 332 | 16 | 2 338 | 24 | 2 318 | 29 | 99% |
| S-92 | 179 | 206 | 0.87 | 0.115 6 | 0.002 0 | 5.068 2 | 0.090 6 | 0.316 5 | 0.003 8 | 1 831 | 15 | 1 773 | 18 | 1 900 | 31 | 96% |
| S-93 | 88 | 124 | 0.71 | 0.122 7 | 0.002 6 | 6.069 6 | 0.128 3 | 0.358 2 | 0.005 1 | 1 986 | 18 | 1 973 | 24 | 1 995 | 38 | 99% |
| S-94 | 48 | 84 | 0.57 | 0.110 9 | 0.002 4 | 5.102 3 | 0.129 6 | 0.332 2 | 0.005 4 | 1 836 | 22 | 1 849 | 26 | 1 814 | 39 | 99% |
| S-95 | 42 | 66 | 0.63 | 0.110 2 | 0.002 7 | 4.498 5 | 0.114 0 | 0.296 0 | 0.005 0 | 1 731 | 21 | 1 671 | 25 | 1 803 | 45 | 96% |
| S-96 | 53 | 65 | 0.81 | 0.158 2 | 0.003 2 | 9.897 6 | 0.217 1 | 0.452 2 | 0.006 2 | 2 425 | 20 | 2 405 | 27 | 2 437 | 34 | 99% |
| S-97 | 31 | 56 | 0.57 | 0.108 8 | 0.002 9 | 4.835 8 | 0.131 1 | 0.323 0 | 0.005 5 | 1 791 | 23 | 1 804 | 27 | 1 780 | 48 | 99% |
| S-98 | 28 | 29 | 0.96 | 0.111 6 | 0.003 8 | 4.850 5 | 0.156 1 | 0.318 7 | 0.007 2 | 1 794 | 27 | 1 784 | 35 | 1 826 | 62 | 99% |
| S-99 | 24 | 40 | 0.60 | 0.116 8 | 0.003 4 | 5.499 5 | 0.151 7 | 0.342 4 | 0.005 5 | 1 901 | 24 | 1 898 | 26 | 1 909 | 52 | 99% |
| S-100 | 22 | 32 | 0.67 | 0.113 3 | 0.003 0 | 5.103 5 | 0.138 8 | 0.328 4 | 0.006 8 | 1 837 | 23 | 1 830 | 33 | 1 854 | 48 | 99% |
| S-101 | 37 | 64 | 0.57 | 0.149 1 | 0.002 9 | 8.889 1 | 0.205 6 | 0.430 8 | 0.006 6 | 2 327 | 21 | 2 309 | 30 | 2 336 | 33 | 99% |
| S-102 | 178 | 109 | 1.63 | 0.125 7 | 0.007 6 | 6.629 9 | 0.692 8 | 0.379 0 | 0.030 0 | 2 063 | 92 | 2 072 | 140 | 2 039 | 107 | 99% |
| S-103 | 109 | 171 | 0.64 | 0.139 5 | 0.002 8 | 7.388 3 | 0.168 9 | 0.382 7 | 0.006 0 | 2 160 | 20 | 2 089 | 28 | 2 221 | 35 | 96% |
| S-104 | 167 | 130 | 1.28 | 0.147 2 | 0.003 1 | 7.035 6 | 0.163 8 | 0.345 9 | 0.006 0 | 2 116 | 21 | 1 915 | 29 | 2 313 | 37 | 90% |
| S-105 | 63 | 83 | 0.75 | 0.176 7 | 0.004 1 | 12.245 2 | 0.374 9 | 0.500 4 | 0.011 3 | 2 623 | 29 | 2 615 | 49 | 2 622 | 39 | 99% |
| S-106 | 134 | 104 | 1.29 | 0.119 4 | 0.002 7 | 5.820 8 | 0.138 4 | 0.351 9 | 0.005 2 | 1 950 | 21 | 1 944 | 25 | 1 947 | 40 | 99% |
| S-107 | 67 | 122 | 0.55 | 0.139 9 | 0.003 3 | 7.876 5 | 0.183 4 | 0.408 7 | 0.008 2 | 2 217 | 21 | 2 209 | 38 | 2 228 | 41 | 99% |
| S-108 | 28 | 39 | 0.74 | 0.122 7 | 0.003 2 | 6.208 6 | 0.157 0 | 0.366 7 | 0.006 5 | 2 006 | 22 | 2 014 | 31 | 1 995 | 46 | 99% |
| S-109 | 49 | 65 | 0.76 | 0.146 9 | 0.003 2 | 8.732 0 | 0.189 2 | 0.428 4 | 0.005 2 | 2 310 | 20 | 2 299 | 24 | 2 311 | 37 | 99% |
| S-110 | 63 | 133 | 0.47 | 0.113 3 | 0.002 4 | 5.185 6 | 0.107 8 | 0.330 2 | 0.004 7 | 1 850 | 18 | 1 840 | 23 | 1 854 | 43 | 99% |
| S-111 | 73 | 125 | 0.58 | 0.150 4 | 0.002 8 | 9.098 5 | 0.195 2 | 0.434 7 | 0.006 6 | 2 348 | 20 | 2 327 | 29 | 2 351 | 31 | 99% |
| S-112 | 208 | 184 | 1.13 | 0.111 9 | 0.002 3 | 5.234 9 | 0.142 3 | 0.335 4 | 0.006 3 | 1 858 | 23 | 1 864 | 31 | 1 831 | 69 | 99% |
| S-113 | 134 | 135 | 1.00 | 0.148 8 | 0.003 4 | 8.958 2 | 0.219 3 | 0.432 2 | 0.007 1 | 2 334 | 22 | 2 315 | 32 | 2 332 | 39 | 99% |
| S-114 | 50 | 46 | 1.09 | 0.109 0 | 0.003 2 | 4.942 5 | 0.134 4 | 0.326 7 | 0.005 9 | 1 810 | 23 | 1 823 | 29 | 1 784 | 52 | 99% |
| S-115 | 183 | 171 | 1.07 | 0.154 2 | 0.003 6 | 9.615 8 | 0.226 3 | 0.447 0 | 0.007 0 | 2 399 | 22 | 2 382 | 31 | 2 394 | 39 | 99% |
| S-116 | 178 | 231 | 0.77 | 0.113 9 | 0.002 5 | 5.459 2 | 0.119 5 | 0.344 1 | 0.005 3 | 1 894 | 19 | 1 906 | 26 | 1 862 | 34 | 99% |
| S-117 | 176 | 173 | 1.02 | 0.105 0 | 0.002 2 | 4.418 5 | 0.112 8 | 0.302 1 | 0.006 2 | 1 716 | 21 | 1 702 | 31 | 1 717 | 39 | 99% |
| S-118 | 43 | 52 | 0.83 | 0.111 0 | 0.003 1 | 5.077 0 | 0.136 7 | 0.329 4 | 0.005 1 | 1 832 | 23 | 1 836 | 25 | 1 817 | 50 | 99% |
| S-119 | 56 | 124 | 0.45 | 0.162 2 | 0.002 9 | 10.551 4 | 0.246 4 | 0.468 3 | 0.009 9 | 2 484 | 22 | 2 476 | 43 | 2 480 | 30 | 99% |
| S-120 | 50 | 109 | 0.45 | 0.113 8 | 0.002 2 | 5.291 0 | 0.114 6 | 0.334 8 | 0.006 1 | 1 867 | 19 | 1 862 | 29 | 1 861 | 34 | 99% |
| S-121 | 49 | 55 | 0.89 | 0.167 0 | 0.003 6 | 11.035 1 | 0.257 9 | 0.475 0 | 0.006 8 | 2 526 | 22 | 2 505 | 30 | 2 527 | 37 | 99% |
| S-122 | 26 | 32 | 0.80 | 0.113 7 | 0.003 1 | 5.304 6 | 0.156 8 | 0.337 5 | 0.008 0 | 1 870 | 25 | 1 875 | 39 | 1 859 | 50 | 99% |
| S-123 | 39 | 89 | 0.44 | 0.126 0 | 0.002 7 | 6.576 3 | 0.155 7 | 0.375 7 | 0.006 6 | 2 056 | 21 | 2 056 | 31 | 2 043 | 37 | 99% |
| S-124 | 41 | 32 | 1.31 | 0.108 6 | 0.003 4 | 4.783 6 | 0.146 4 | 0.320 1 | 0.007 1 | 1 782 | 26 | 1 790 | 35 | 1 776 | 56 | 99% |
| S-125 | 46 | 29 | 1.55 | 0.112 1 | 0.003 2 | 5.143 2 | 0.139 9 | 0.332 9 | 0.006 8 | 1 843 | 23 | 1 852 | 33 | 1 835 | 52 | 99% |
| S-126 | 46 | 71 | 0.65 | 0.128 1 | 0.002 6 | 6.682 6 | 0.134 0 | 0.376 0 | 0.005 2 | 2 070 | 18 | 2 057 | 24 | 2 073 | 37 | 99% |
| S-127 | 104 | 102 | 1.02 | 0.187 0 | 0.003 3 | 13.174 1 | 0.458 3 | 0.506 5 | 0.015 5 | 2 692 | 33 | 2 642 | 66 | 2 717 | 29 | 98% |
| S-128 | 62 | 105 | 0.59 | 0.147 3 | 0.002 6 | 8.746 8 | 0.183 5 | 0.426 9 | 0.006 0 | 2 312 | 19 | 2 292 | 27 | 2 317 | 31 | 99% |
| S-129 | 103 | 134 | 0.77 | 0.108 1 | 0.002 1 | 4.865 8 | 0.092 4 | 0.324 8 | 0.004 6 | 1 796 | 16 | 1 813 | 22 | 1 769 | 35 | 99% |
| S-130 | 47 | 52 | 0.90 | 0.127 9 | 0.002 7 | 6.643 4 | 0.141 3 | 0.375 1 | 0.005 9 | 2 065 | 19 | 2 053 | 28 | 2 070 | 38 | 99% |
| S-131 | 107 | 72 | 1.49 | 0.138 3 | 0.003 3 | 8.021 2 | 0.447 4 | 0.414 2 | 0.020 7 | 2 233 | 50 | 2 234 | 94 | 2 205 | 41 | 99% |
| S-132 | 25 | 20 | 1.27 | 0.110 8 | 0.004 7 | 4.869 1 | 0.175 9 | 0.323 3 | 0.007 0 | 1 797 | 30 | 1 806 | 34 | 1 813 | 77 | 99% |
| S-133 | 36 | 48 | 0.75 | 0.108 0 | 0.003 0 | 5.362 6 | 0.155 8 | 0.358 4 | 0.006 0 | 1 879 | 25 | 1 975 | 28 | 1 766 | 50 | 95% |
| S-134 | 43 | 72 | 0.59 | 0.109 7 | 0.003 1 | 4.790 9 | 0.122 5 | 0.318 4 | 0.007 0 | 1 783 | 22 | 1 782 | 34 | 1 795 | 52 | 99% |
| S-135 | 50 |  | 0.41 | 0.157 9 | 0.003 5 | 10.260 1 | 0.233 0 | 0.468 2 | 0.007 0 | 2 459 | 21 | 2 476 | 31 | 2 435 | 38 | 99% |

注：