Supplementary Data

Table 1: Concentration of the various measured parameters and Chalcedony temperature

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S.no** | **pH** | **TDS** | **Ca** | **Mg** | **Na** | **K** | **Cl** | **HCO3** | **SO4** | **SiO2** | **Chalcedony T.** |
| 1 | 7.30 | 764 | 109.00 | 29.60 | 92.70 | 11.30 | 210.00 | 219.20 | 114.70 | 30.60 | 48.91938 |
| 2 | 7.00 | 1113 | 135.50 | 37.80 | 169.40 | 22.00 | 240.20 | 295.50 | 300.00 | 18.10 | 27.52114 |
| 3 | 7.60 | 1160 | 130.00 | 37.50 | 170.00 | 15.70 | 165.00 | 202.00 | 408.00 | 20.20 | 31.7561 |
| 4 | 7.45 | 934 | 97.40 | 28.60 | 141.00 | 16.00 | 185.00 | 128.00 | 277.00 | 23.30 | 37.44601 |
| 5 | 7.29 | 3278 | 468.00 | 103.20 | 415.80 | 20.00 | 967.00 | 201.40 | 758.00 | 46.70 | 68.49457 |
| 6 | 7.24 | 2111 | 331.00 | 84.40 | 197.00 | 18.70 | 530.00 | 162.30 | 580.00 | 41.00 | 62.21806 |
| 7 | 7.52 | 1211 | 127.00 | 34.50 | 188.00 | 20.70 | 240.00 | 145.90 | 377.00 | 22.70 | 36.39049 |
| 8 | 7.57 | 2107 | 228.00 | 52.00 | 210.00 | 17.60 | 288.00 | 133.30 | 318.00 | 55.20 | 76.91061 |
| 9 | 7.52 | 5374 | 833.80 | 168.30 | 720.60 | 11.00 | 1753.00 | 141.00 | 908.00 | 58.60 | 80.02038 |
| 10 | 7.02 | 856 | 119.00 | 36.00 | 98.50 | 4.50 | 138.00 | 360.10 | 127.00 | 71.50 | 90.78208 |
| 11 | 7.34 | 643 | 75.10 | 24.30 | 79.00 | 1.80 | 86.00 | 315.90 | 69.20 | 71.00 | 90.39136 |
| 12 | 7.26 | 614 | 62.40 | 21.80 | 79.50 | 2.00 | 62.20 | 245.20 | 79.00 | 67.00 | 87.19461 |
| 13 | 7.12 | 569 | 68.00 | 26.50 | 77.20 | 5.20 | 120.00 | 158.80 | 114.00 | 22.50 | 36.03407 |
| 14 | 7.28 | 642 | 68.00 | 28.00 | 92.60 | 17.50 | 144.60 | 155.40 | 122.70 | 21.40 | 34.03069 |
| 15 | 7.40 | 1483 | 204.00 | 56.20 | 187.00 | 11.00 | 435.00 | 164.75 | 306.00 | 27.80 | 44.78415 |
| 16 | 7.32 | 1205 | 212.40 | 56.00 | 112.00 | 14.30 | 382.30 | 267.30 | 176.60 | 36.40 | 56.67852 |
| 17 | 7.19 | 1484 | 231.00 | 72.30 | 130.00 | 8.50 | 433.60 | 153.90 | 311.00 | 34.00 | 53.58519 |
| 18 | 7.05 | 1478 | 252.00 | 72.40 | 107.30 | 9.00 | 460.00 | 154.10 | 267.00 | 32.10 | 51.02202 |
| 19 | 7.07 | 1485 | 254.00 | 73.30 | 97.00 | 8.20 | 458.00 | 148.40 | 294.00 | 33.60 | 53.05438 |
| 20 | 7.00 | 1546 | 260.00 | 74.00 | 107.20 | 9.00 | 482.00 | 148.00 | 297.00 | 33.80 | 53.32036 |
| 21 | 7.00 | 1268 | 237.00 | 67.00 | 90.00 | 8.30 | 458.00 | 148.10 | 116.60 | 32.70 | 51.84308 |
| 22 | 7.00 | 880 | 123.00 | 43.00 | 80.50 | 6.40 | 192.00 | 181.00 | 187.00 | 43.30 | 64.82148 |
| 23 | 7.22 | 1434 | 242.60 | 68.00 | 101.40 | 7.70 | 448.20 | 138.90 | 250.00 | 36.40 | 56.67852 |
| 24 | 7.20 | 1255 | 186.70 | 45.30 | 149.10 | 7.70 | 437.30 | 174.90 | 152.00 | 47.50 | 69.33094 |
| 25 | 7.00 | 2083 | 252.20 | 67.00 | 371.60 | 3.00 | 573.80 | 285.00 | 460.00 | 72.70 | 91.71214 |
| 26 | 7.00 | 1262 | 227.00 | 60.70 | 98.10 | 7.30 | 400.00 | 141.30 | 167.00 | 35.30 | 55.27966 |
| 27 | 7.20 | 940 | 153.00 | 44.20 | 73.30 | 6.30 | 276.00 | 143.40 | 136.00 | 35.70 | 55.79194 |
| 28 | 7.00 | 1756 | 158.00 | 46.10 | 358.00 | 3.40 | 433.00 | 193.00 | 330.00 | 57.00 | 78.57324 |
| 29 | 7.00 | 1084 | 178.50 | 48.20 | 97.70 | 8.50 | 309.80 | 160.00 | 159.00 | 36.80 | 57.17962 |
| 30 | 7.00 | 791 | 111.70 | 33.00 | 81.70 | 6.70 | 197.50 | 169.20 | 122.00 | 39.00 | 59.86759 |
| 31 | 7.02 | 746 | 104.20 | 31.10 | 78.00 | 5.70 | 181.70 | 170.80 | 114.00 | 40.40 | 61.52174 |
| 32 | 7.33 | 712 | 100.30 | 26.30 | 72.40 | 7.10 | 154.70 | 184.90 | 103.50 | 41.70 | 63.02125 |
| 33 | 7.06 | 780 | 110.60 | 33.20 | 75.00 | 6.40 | 196.00 | 166.70 | 118.60 | 38.50 | 59.26647 |
| 34 | 7.13 | 1835 | 263.00 | 78.50 | 196.00 | 2.60 | 299.00 | 228.00 | 426.00 | 55.70 | 77.37624 |
| 35 | 7.23 | 831 | 118.20 | 34.50 | 99.60 | 3.80 | 189.60 | 206.70 | 111.20 | 37.70 | 58.29288 |
| 36 | 7.02 | 991 | 147.00 | 35.50 | 123.00 | 5.30 | 215.00 | 246.00 | 129.10 | 36.60 | 56.92956 |
| 37 | 7.00 | 805 | 119.70 | 31.00 | 84.00 | 4.80 | 220.00 | 186.00 | 101.00 | 34.10 | 53.71719 |
| 38 | 7.00 | 858 | 122.00 | 27.60 | 92.00 | 10.50 | 173.80 | 164.70 | 171.80 | 37.40 | 57.92395 |
| 39 | 7.01 | 1004 | 164.00 | 38.30 | 99.80 | 9.30 | 185.00 | 179.60 | 251.00 | 36.40 | 56.67852 |
| 40 | 7.23 | 1027 | 153.00 | 33.00 | 104.00 | 9.80 | 193.00 | 175.00 | 280.00 | 35.70 | 55.79194 |
| 41 | 7.00 | 983 | 162.00 | 30.30 | 98.00 | 17.00 | 217.80 | 184.00 | 156.00 | 41.00 | 62.21806 |
| 42 | 7.10 | 1114 | 159.60 | 35.00 | 120.60 | 23.10 | 196.70 | 200.60 | 254.00 | 55.70 | 77.37624 |
| 43 | 7.12 | 1023 | 151.50 | 31.80 | 115.10 | 18.20 | 300.30 | 143.90 | 160.30 | 38.10 | 58.78152 |
| 44 | 7.10 | 1088 | 217.00 | 31.00 | 84.00 | 15.00 | 287.00 | 163.00 | 185.00 | 32.00 | 50.8841 |
| 45 | 7.00 | 1134 | 233.00 | 29.00 | 84.00 | 17.00 | 276.00 | 145.00 | 242.00 | 31.10 | 49.62844 |
| 46 | 7.10 | 1355 | 247.70 | 46.20 | 124.70 | 11.10 | 393.20 | 134.40 | 281.00 | 32.60 | 51.707 |
| 47 | 7.00 | 1427 | 257.00 | 50.00 | 138.00 | 13.20 | 423.00 | 138.80 | 283.00 | 29.40 | 47.18248 |
| 48 | 7.00 | 2878 | 509.60 | 136.80 | 241.20 | 11.40 | 1258.00 | 183.50 | 284.00 | 38.30 | 59.02445 |
| 49 | 7.10 | 1548 | 260.00 | 60.40 | 165.80 | 12.40 | 442.00 | 186.20 | 325.00 | 30.10 | 48.20182 |
| 50 | 7.40 | 953 | 104.10 | 29.70 | 162.00 | 17.60 | 228.00 | 172.00 | 178.00 | 27.80 | 44.78415 |
| 52 | 7.36 | 1709 | 210.00 | 64.60 | 220.00 | 19.00 | 400.20 | 160.00 | 512.00 | 24.50 | 39.49827 |
| 53 | 7.10 | 889 | 116.30 | 29.50 | 115.00 | 16.10 | 180.00 | 180.70 | 150.00 | 45.00 | 66.6828 |
| 54 | 7.00 | 814 | 106.20 | 25.90 | 96.30 | 10.00 | 161.90 | 174.20 | 141.70 | 43.20 | 64.71037 |
| 55 | 7.20 | 997 | 131.00 | 36.80 | 127.80 | 11.20 | 202.50 | 221.80 | 150.10 | 44.00 | 65.59412 |
| 56 | 7.10 | 972 | 134.00 | 35.00 | 119.00 | 10.00 | 182.60 | 213.30 | 155.60 | 41.70 | 63.02125 |
| 57 | 7.00 | 889 | 111.50 | 31.30 | 115.00 | 12.50 | 170.00 | 196.60 | 148.00 | 43.70 | 65.26407 |
| 58 | 7.00 | 869 | 115.30 | 31.50 | 98.80 | 7.10 | 184.00 | 212.30 | 133.00 | 40.30 | 61.40496 |
| 59 | 7.00 | 1158 | 146.00 | 37.40 | 143.00 | 11.10 | 190.00 | 198.20 | 286.00 | 47.30 | 69.12279 |
| 60 | 7.00 | 1024 | 126.00 | 33.00 | 132.00 | 12.60 | 232.00 | 216.00 | 157.00 | 43.00 | 64.48761 |
| 61 | 7.00 | 968 | 123.40 | 32.40 | 130.00 | 17.00 | 183.00 | 216.00 | 154.00 | 44.30 | 65.92257 |
| 67 | 7.30 | 1084 | 168.30 | 37.60 | 119.40 | 8.50 | 189.90 | 213.20 | 223.00 | 36.00 | 56.17343 |
| 68 | 7.30 | 1285 | 192.00 | 43.10 | 132.50 | 12.60 | 288.10 | 205.10 | 259.00 | 35.00 | 54.8927 |
| 69 | 7.00 | 1295 | 195.00 | 43.00 | 136.00 | 9.00 | 283.80 | 222.00 | 267.00 | 36.00 | 56.17343 |
| 70 | 7.45 | 1318 | 190.00 | 41.40 | 152.00 | 7.50 | 315.00 | 210.90 | 244.00 | 41.20 | 62.44854 |
| 71 | 7.44 | 1376 | 201.00 | 43.50 | 154.00 | 10.30 | 333.00 | 208.70 | 258.00 | 41.40 | 62.67822 |
| 72 | 7.45 | 1275 | 200.40 | 43.30 | 151.20 | 7.80 | 310.80 | 190.20 | 200.00 | 40.50 | 61.6383 |
| 73 | 7.24 | 1348 | 209.70 | 45.60 | 157.00 | 8.80 | 314.00 | 192.20 | 251.00 | 40.40 | 61.52174 |
| 74 | 7.00 | 7726 | 486.20 | 170.70 | 2036.00 | 7.30 | 3180.00 | 248.10 | 894.00 | 44.10 | 65.70378 |
| 75 | 7.10 | 7738 | 891.00 | 260.00 | 1513.00 | 11.10 | 3178.00 | 152.40 | 1185.00 | 66.10 | 86.45712 |
| 76 | 7.69 | 5633 | 218.00 | 91.30 | 1740.00 | 8.00 | 2121.00 | 213.40 | 838.00 | 61.00 | 82.13991 |
| 77 | 7.45 | 3368 | 77.20 | 64.00 | 970.00 | 5.00 | 1185.00 | 196.00 | 599.00 | 64.20 | 84.8769 |
| 78 | 7.76 | 575 | 76.50 | 19.00 | 66.00 | 7.00 | 150.00 | 128.00 | 108.00 | 24.50 | 39.49827 |
| 79 | 7.80 | 460 | 62.00 | 14.70 | 50.00 | 7.20 | 104.00 | 140.00 | 72.20 | 26.50 | 42.75991 |
| 80 | 7.40 | 912 | 127.00 | 28.00 | 117.00 | 9.40 | 227.00 | 156.00 | 232.00 | 21.80 | 34.76783 |
| 81 | 7.00 | 931 | 124.00 | 28.30 | 142.00 | 20.80 | 201.00 | 158.00 | 243.00 | 22.30 | 35.6753 |
| 82 | 7.07 | 784 | 115.00 | 26.10 | 88.50 | 8.40 | 218.00 | 132.90 | 180.00 | 20.60 | 32.52518 |
| 83 | 7.19 | 699 | 118.00 | 22.30 | 82.00 | 10.20 | 178.00 | 96.60 | 163.20 | 22.60 | 36.21257 |
| 84 | 7.21 | 626 | 101.50 | 20.80 | 70.80 | 8.80 | 135.70 | 141.60 | 140.50 | 21.80 | 34.76783 |
| 85 | 7.12 | 623 | 97.40 | 20.80 | 63.20 | 7.60 | 156.10 | 129.00 | 137.40 | 20.90 | 33.09475 |
| 86 | 7.10 | 690 | 96.30 | 24.30 | 81.80 | 7.20 | 180.00 | 156.50 | 129.90 | 27.70 | 44.63093 |
| 87 | 7.30 | 935 | 104.20 | 27.80 | 149.00 | 8.80 | 283.00 | 134.90 | 155.00 | 33.40 | 52.78726 |
| 88 | 7.00 | 1103 | 95.40 | 30.30 | 189.50 | 6.10 | 260.00 | 135.50 | 257.00 | 36.90 | 57.30428 |
| 89 | 7.30 | 411 | 36.40 | 11.60 | 64.20 | 4.70 | 41.80 | 168.10 | 76.10 | 28.20 | 45.39301 |
| 90 | 7.37 | 1444 | 210.00 | 50.40 | 179.00 | 7.70 | 357.40 | 47.80 | 390.00 | 36.40 | 56.67852 |
| 91 | 7.11 | 1774 | 273.20 | 84.40 | 195.80 | 11.20 | 506.00 | 188.90 | 463.00 | 37.00 | 57.42869 |
| 92 | 7.00 | 939 | 122.00 | 23.10 | 157.10 | 6.20 | 123.60 | 220.40 | 302.00 | 35.60 | 55.66426 |
| 93 | 7.40 | 648 | 90.10 | 16.30 | 95.00 | 3.40 | 90.00 | 193.80 | 171.00 | 35.00 | 54.8927 |
| 94 | 7.50 | 447 | 72.00 | 12.00 | 63.00 | 3.50 | 115.20 | 161.00 | 18.50 | 28.20 | 45.39301 |
| 95 | 7.50 | 903 | 68.60 | 9.30 | 67.30 | 6.50 | 110.40 | 137.90 | 99.50 | 26.30 | 42.44206 |
| 96 | 7.50 | 787 | 61.70 | 8.10 | 58.60 | 8.00 | 81.00 | 135.30 | 93.50 | 30.20 | 48.34602 |
| 97 | 7.70 | 717 | 57.70 | 7.80 | 52.00 | 4.40 | 70.00 | 137.80 | 83.80 | 30.00 | 48.05727 |
| 98 | 7.70 | 1442 | 95.50 | 21.20 | 119.30 | 5.00 | 109.00 | 200.80 | 248.00 | 36.40 | 56.67852 |
| 99 | 7.20 | 1809 | 154.00 | 38.60 | 296.00 | 16.00 | 112.00 | 236.00 | 655.00 | 29.80 | 47.7671 |
| 100 | 7.30 | 1368 | 165.10 | 55.00 | 214.20 | 12.60 | 254.90 | 175.00 | 514.00 | 34.00 | 53.58519 |
| 101 | 7.50 | 929 | 117.00 | 43.50 | 94.20 | 8.00 | 134.00 | 246.00 | 337.00 | 36.60 | 56.92956 |
| 102 | 8.11 | 872 | 74.50 | 25.50 | 143.60 | 6.00 | 162.00 | 212.00 | 126.00 | 38.30 | 59.02445 |
| 103 | 7.83 | 1828 | 194.00 | 108.00 | 293.00 | 5.90 | 681.00 | 240.30 | 340.00 | 48.60 | 70.46472 |
| 105 | 7.50 | 5715 | 360.00 | 162.10 | 1515.00 | 5.20 | 2113.30 | 126.90 | 1125.00 | 38.00 | 58.65971 |
| 106 | 7.42 | 6131 | 647.00 | 204.00 | 1322.00 | 5.10 | 2377.00 | 157.10 | 1077.00 | 48.10 | 69.95165 |
| 108 | 7.92 | 2240 | 232.00 | 93.30 | 326.00 | 5.40 | 466.10 | 188.80 | 686.00 | 40.50 | 61.6383 |
| 109 | 8.00 | 2821 | 302.00 | 141.70 | 449.00 | 5.20 | 840.00 | 190.50 | 648.00 | 44.00 | 65.59412 |
| 110 | 7.84 | 4118 | 350.00 | 180.00 | 860.00 | 4.80 | 1274.00 | 157.20 | 1040.00 | 46.30 | 68.07256 |
| 111 | 8.00 | 3488 | 348.70 | 155.30 | 639.60 | 5.00 | 1074.00 | 206.50 | 811.00 | 66.40 | 86.70373 |
| 112 | 7.61 | 752 | 103.00 | 30.20 | 107.70 | 10.00 | 157.50 | 178.90 | 158.00 | 43.60 | 65.1537 |
| 113 | 7.70 | 1462 | 122.40 | 52.40 | 298.80 | 6.00 | 377.00 | 228.20 | 350.00 | 47.30 | 69.12279 |
| 114 | 7.43 | 6296 | 666.10 | 334.00 | 1160.00 | 5.20 | 2289.00 | 190.00 | 1513.00 | 53.40 | 75.20928 |
| 115 | 7.23 | 5899 | 632.70 | 292.70 | 1076.30 | 3.00 | 2108.40 | 182.00 | 1316.00 | 82.70 | 99.07797 |
| 116 | 7.37 | 6298 | 687.10 | 300.70 | 1075.40 | 3.00 | 2425.10 | 162.00 | 1275.00 | 82.40 | 98.86619 |
| 117 | 7.18 | 6594 | 654.00 | 246.00 | 1410.00 | 2.10 | 2362.00 | 212.00 | 1439.00 | 80.70 | 97.656 |
| 118 | 7.00 | 14169 | 1740.00 | 422.00 | 3075.00 | 7.10 | 6720.00 | 134.00 | 1651.00 | 56.70 | 78.29873 |
| 119 | 7.26 | 10054 | 1150.00 | 423.00 | 2001.00 | 3.50 | 4268.00 | 156.40 | 1550.00 | 67.60 | 87.68244 |
| 120 | 7.40 | 4108 | 363.00 | 69.00 | 1026.00 | 2.70 | 1119.00 | 157.00 | 1299.00 | 34.70 | 54.50332 |
| 121 | 7.17 | 7908 | 750.20 | 240.00 | 1770.00 | 3.30 | 2385.00 | 145.50 | 2456.00 | 51.30 | 73.17236 |
| 122 | 7.00 | 8306 | 883.00 | 344.00 | 1680.00 | 2.00 | 3228.00 | 192.00 | 1568.00 | 66.00 | 86.37475 |
| 123 | 7.27 | 4208 | 260.00 | 77.40 | 1150.00 | 7.40 | 1059.00 | 294.40 | 1288.00 | 46.80 | 68.59968 |
| 124 | 7.00 | 11399 | 1075.00 | 415.20 | 2535.00 | 9.10 | 4675.00 | 200.60 | 1708.00 | 59.10 | 80.4669 |
| 125 | 7.80 | 11041 | 1222.00 | 373.00 | 2337.00 | 2.00 | 4615.00 | 154.00 | 1426.00 | 94.70 | 107.1496 |
| 126 | 8.00 | 9488 | 723.40 | 134.30 | 2520.00 | 3.10 | 2487.00 | 150.10 | 3264.00 | 44.00 | 65.59412 |
| 127 | 8.00 | 13325 | 1037.00 | 390.00 | 3400.00 | 4.30 | 5475.50 | 215.00 | 1613.00 | 75.50 | 93.84165 |
| 128 | 7.91 | 17969 | 1424.00 | 579.60 | 4359.00 | 3.70 | 7478.00 | 205.30 | 1752.00 | 76.60 | 94.66331 |
| 129 | 7.90 | 13450 | 1150.00 | 470.00 | 3150.00 | 2.30 | 5384.00 | 152.00 | 1650.00 | 90.00 | 104.0764 |
| 130 | 8.00 | 16198 | 810.00 | 462.00 | 4311.00 | 4.30 | 6002.00 | 266.60 | 3148.00 | 83.00 | 99.28922 |
| 135 | 7.65 | 3511 | 538.50 | 139.90 | 428.80 | 9.07 | 1475.80 | 154.08 | 562.40 | 24.13 | 38.87355 |
| 136 | 7.56 | 2922 | 430.40 | 110.70 | 372.50 | 8.09 | 1189.90 | 140.10 | 503.80 | 23.17 | 37.21904 |