|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Samples** | **Zone** | **Q-** | **FI** | **Tmice** | **Tmh** | **TmCO2** | **ThCO2** | **Tm(Cl)** | **Th** | **Th(V)** | **Raman results** |
|  |  | **type** | **type** |  |  |  |  |  |  |  | **CO2** | **CH4** | **N2** |
|  |  |  |  | °C | °C | °C | °C | °C | °C | °C | wt % | wt % | wt % |
| SW42-484.0 | VGPS | Q2 | VCH4 | - | - | - | - | - | - | -79.0 |  |  |  |
| SW42-484.0 | VGPS | Q2 | VN2 | - | - | - | - | - | - | -128.4 | 1.4 | 11.9 | 86.7 |
| SW42-484.0 | VGPS | Q2 | VN2 | - | - | - | - | - | - | -128.4 | 1.6 | 11.7 | 86.7 |
| SW42-484.0 | VGPS | Q2 | VN2 | - | - | - | - | - | - | -128.4 | 1.1 | 11.9 | 87 |
| SW42-484.0 | VGPS | Q2 | VN2 | - | - | - | - | - | - | -100.8 | 1.9 | 11 | 87.1 |
| SW42-484.0 | VGPS | Q2 | VN2 | - | - | - | - | - | - | -133.4 |  |  |  |
| SW42-484.0 | VGPS | Q2 | VCH4 | - | - | - | - | - | - | -93.9 |  |  |  |
| SW42-484.0 | VGPS | Q2 | VN2 | - | - | - | - | - | - | -137.3 |  |  |  |
| SW42-484.0 | VGPS | Q2 | VCH4 | - | - | - | - | - | - | -100.8 |  |  |  |
| SW42-484.0 | VGPS | Q2 | VCH4 | - | - | - | - | - | - | -81.0 |  | 95.5 | 4.5 |
| SW42-484.0 | VGPS | Q2 | VCH4 | - | - | - | - | - | - | -79.0 |  |  |  |
| SW42-484.0 | VGPS | Q2 | VN2 | - | - | - | - | - | - | -134.3 |  | 13.4 | 86.3 |
| SW42-484.0 | VGPS | Q2 | VN2 | - | - | - | - | - | - | -130.4 |  | 12.2 | 87.8 |
| SW42-484.0 | VGPS | Q2 | VN2 | - | - | - | - | - | - | -130.4 |  |  |  |
| SW42-484.0 | VGPS | Q2 | VN2 | - | - | - | - | - | - | -152.1 |  | 16.8 | 83.2 |
| SW42-484.0 | VGPS | Q2 | VCH4 | - | - | - | - | - | - | -91.9 |  |  |  |
| SW42-484.0 | VGPS | Q2 | VCH4 | - | - | - | - | - | - | -88.9 |  |  |  |
| SW42-484.0 | VGPS | Q2 | VCH4 | - | - | - | - | - | - | -85.0 |  |  |  |
| SW42-484.0 | VGPS | Q2 | VN2 | - | - | - | - | - | - | -150.1 |  |  |  |
| SW42-484.0 | VGPS | Q2 | VCH4 | - | - | - | - | - | - | -74.1 | 16.4 | 77.2 | 6.4 |
| SW42-484.0 | VGPS | Q2 | VCH4 | - | - | - | - | - | - | -79.0 |  | 85.3 | 14.7 |
| SW42-484.0 | VGPS | Q2 | VN2 | - | - | - | - | - | - | -125.5 |  |  |  |
| SW42-484.0 | VGPS | Q2 | VCH4 | - | - | - | - | - | - | -79.0 |  |  |  |
| SW42-484.0 | VGPS | Q2 | VN2 | - | - | - | - | - | - | -128.4 |  |  |  |
| SW18-495.0 | VGPS | Q2 | Lc-w | -0.9 | - | -57.7 | 21.3 | 9.4 | 315.3 | - | 95.3 | 3.0 | 1.7 |  |
| SW18-495.0 | VGPS | Q2 | Lc-w | -0.2 | - | -56.9 | 25.0 | 8.5 | 312.9 | - | 96.2 | 1.7 | 2.1 |
| SW18-495.0 | VGPS | Q2 | Vc-w | n.o | - | -57.6 | 21.7 | 9.0 | 323.4 | - |  |  |  |
| SW18-495.0 | VGPS | Q2 | Vc-w | n.o | - | -56.9 | 23.3 | 8 | 324.6 | - |  |  |  |
| SW18-495.0 | VGPS | Q2 | Vc-w | n.o | - | -57.8 | 21.0 | 9.9 | 333.9 | - |  |  |  |
| SW18-495.0 | VGPS | Q2 | Vc-w | n.o | - | -57.8 | 20.5 | 10.1 | 338.0 | - |  |  |  |
| SW18-515.0 | VGPS | Q3 | Lc | - | - | -57.2 | 24.8 | - | - | - |  |  |  |
| SW18-515.0 | VGPS | Q3 | VN2 | - | - | - | - | - | - | n.o | 0 | 47.3 | 52.7 |
| SW18-515.0 | VGPS | Q3 | VCH4 | - | - | - | - | - | - | n.o | 0 | 88 | 12 |
| SW18-515.0 | VGPS | Q3 | VCH4 | - | - | - | - | - | - | n.o | 0 | 90 | 10 |
| SW18-515.0 | VGPS | Q3 | VCH4 | - | - | - | - | - | - | n.o | 0 | 60 | 40 |
| SW18-515.0 | VGPS | Q3 | Lc | - | - | -57.1 | 26.4 | - | - | - | 98.2 | 0.9 | 0.9 |
| SW18-515.0 | VGPS | Q3 | Lc | - | - | -57.2 | 25.9 | - | - | - |  |  |  |
| SW18-515.0 | VGPS | Q3 | Lc | - | - | -57.1 | 27.1 | - | - | - |  |  |  |
| SW18-515.0 | VGPS | Q3 | Lc | - | - | -56.8 | 27.2 | - | - | - |  |  |  |
| SW18-515.0 | VGPS | Q3 | Vc | - | - | -57.1 | 27.1 | - | - | - | 97.0 | 1.2 | 1.8 |
| SW18-515.0 | VGPS | Q3 | Vc | - | - | -57.3 | 23.8 | - | - | - | 93.8 | 2.0 | 4.2 |
| SW18-515.0 | VGPS | Q3 | Vc | - | - | -57.0 | 26.7 | - | - | - | 96.6 | 1.0 | 2.4 |
| SW18-515.0 | VGPS | Q3 | Lc | - | - | -57.5 | 24.6 | - | - | - | 96.2 | 2.2 | 1.7 |
| SW18-515.0 | VGPS | Q3 | Vc | - | - | -57.4 | 26.6 | - | - | - | 96.8 | 1.5 | 1.6 |
| SW18-515.0 | VGPS | Q3 | Vc | - | - | -57,5 | 22,1 | - | - | - |  |  |  |
| SW18-515.0 | VGPS | Q3 | Vc | - | - | -57,4 | 23,3 | - | - | - |  |  |  |
| SW18-515.0 | VGPS | Q3 | Vc | - | - | -57,4 | 25,7 | - | - | - |  |  |  |
| SW18-515.0 | VGPS | Q3 | Vc | - | - | -57,3 | 23,6 | - | - | - |  |  |  |
| SW18-515.0 | VGPS | Q3 | Vc | - | - | -57.1 | 25.2 | - | - | - |  |  |  |
| SW18-515.0 | VGPS | Q3 | Vc | - | - | -57.0 | 26.4 | - | - | - |  |  |  |
| SW18-515.0 | VGPS | Q3 | Vc | - | - | -56.8 | 27.6 | - | - | - |  |  |  |
| SW18-515.0 | VGPS | Q3 | Lw1 | -1 | - | - | - | - | 194.1 | - |  |  |  |
| SW18-515.0 | VGPS | Q3 | Lw1 | -1 | - | - | - | - | 255.5 | - |  |  |  |
| SW18-515.0 | VGPS | Q3 | Lw1 | -1.4 | - | - | - | - | 223.5 | - |  |  |  |
| SW18-515.0 | VGPS | Q3 | Lwh | n.o | n.o | - | - | - | 94.3 | - |  |  |  |
| SW18-515.0 | VGPS | Q3 | Lwh | n.o | n.o | - | - | - | 98.1 | - |  |  |  |
| SW18-515.0 | VGPS | Q3 | Lwh | n.o | n.o | - | - | - | 102.0 | - |  |  |  |
| SW18-515.0 | VGPS | Q3 | Lwh | n.o | n.o | - | - | - | 146.7 | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lwh | n.o | 193.1 | - | - | - | 82.6 | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -25.5 | - | - | - | - | 148.4 | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -25.3 | - | - | - | - | 115.4 | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -25.3 | - | - | - | - | 143.8 | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -25.8 | - | - | - | - | 123.5 | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -25.9 | - | - | - | - | 118.4 | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -22.6 | - | - | - | - | 146.2 | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -31.5 | - | - | - | - | 154.2 | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -30.3 | - | - | - | - | 181.3 | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -29.5 | - | - | - | - | 134.5 | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -30.6 | - | - | - | - | n.o | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -30.8 | - | - | - | - | 126.3 | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | VN2 | - | - | - | - | - | n.o | -137.3 |  | 22.1 | 77.9 |
| SW18-382.5 | RGZ | Q2 | VN2 | n.o | - | - | - | - | n.o | - |  | 16.3 | 83.7 |
| SW18-382.5 | RGZ | Q2 | VN2 | n.o | - | - | - | - | n.o | - |  | 14.7 | 85.3 |
| SW18-382.5 | RGZ | Q2 | Lw2 | -31.6 | - | - | - | - | n.o | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -31.2 | - | - | - | - | n.o | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -32.5 | - | - | - | - | n.o | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -20.6 | - | - | - | - | 151.9 | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lwh | n.o | n.o | - | - | - | n.o | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -25.3 | - | - | - | - | 160.9 | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lwh | n.o | n.o | - | - | - | n.o | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -31.6 | - | - | - | - | n.o | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -25.9 | - | - | - | - | 123.4 | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -25.8 | - | - | - | - | 123.0 | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -24.8 | - | - | - | - | 127.4 | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -19.1 | - | - | - | - | 134.4 | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -20.7 | - | - | - | - | 163.9 | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lwh | n.o | 217.7 | - | - | - | 79.5 | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -23.8 | - | - | - | - | 141.9 | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -17.3 | - | - | - | - | n.o | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lwh | n.o | 197.4 | - | - | - | 93.7 | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | n.o | - | - | - | - | 207.8 | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lwh | n.o | 212.0 | - | - | - | 83.1 | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lwh | n.o | 216.5 | - | - | - | 69.1 | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -23.1 | - | - | - | - | 119.1 | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -22.6 | - | - | - | - | 111.2 | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -26.5 | - | - | - | - | 118.0 | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -15.9 | - | - | - | - | n.o | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -16.4 | - | - | - | - | 107.5 | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -10.6 | - | - | - | - | n.o | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -16.5 | - | - | - | - | 127.8 | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -20.2 | - | - | - | - | 120.8 | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -23.1 | - | - | - | - | n.o | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -20.0 | - | - | - | - | n.o | - |  |  |  |
| SW18-382.5 | RGZ | Q2 | Lw2 | -29.5 | - | - | - | - | 131.0 | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lw2 | -25.7 | - | - | - | - | 110.4 | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lw2 | -26.0 | - | - | - | - | 90.6 | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lw2 | -25.1 | - | - | - | - | 106.2 | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lw2 | -24.9 | - | - | - | - | 154.8 | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lw2 | -24.7 | - | - | - | - | 136.2 | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lw2 | -23.5 | - | - | - | - | 104.7 | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lw2 | -22.7 | - | - | - | - | 111.0 | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lw2 | -26.9 | - | - | - | - | 97.7 | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lw2 | -28.2 | - | - | - | - | 108.9 | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lw2 | -25.7 | - | - | - | - | 95.0 | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lw2 | -26.2 | - | - | - | - | n.o | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lw2 | -25.4 | - | - | - | - | 119.5 | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lw2 | -29.4 | - | - | - | - | 107.1 | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lw2 | -26.1 | - | - | - | - | 97.9 | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lw2 | -24.7 | - | - | - | - | 146.2 | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lw2 | -35.5 | - | - | - | - | 99.3 | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lw2 | -26.8 | - | - | - | - | n.o | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lw2 | -25.1 | - | - | - | - | 161.3 | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lw2 | -25.4 | - | - | - | - | 121.2 | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lwh | n.o | 189.7 | - | - | - | 125.3 | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lw2 | -23.5 | - | - | - | - | 124.3 | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lw2 | -25.6 | - | - | - | - | n.o | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lw2 | -24.5 | - | - | - | - | n.o | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lw2 | -23.6 | - | - | - | - | 116.6 | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lw2 | -25.1 | - | - | - | - | 126.9 | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lw2 | -23.9 | - | - | - | - | 109.1 | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lwh | n.o | 199.3 | - | - | - | 100.3 | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lwh | n.o | 239.0 | - | - | - | 123.7 | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lw2 | -25.9 | - | - | - | - | 114.3 | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lw2 | -25.6 | - | - | - | - | 103.2 | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lw2 | -25.7 | - | - | - | - | 113.7 | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lw2 | -25.6 | - | - | - | - | 103.3 | - |  |  |  |
| SW18-382.5 | RGZ | Q3 | Lw2 | -25.7 | - | - | - | - | 92.4 | - |  |  |  |
| SW18-392.5 | RGZ | Q3 | VCH4 | - | - | - | - | - | - | n.o | 0 | 68.4 | 31.6 |
| SW18-392.5 | RGZ | Q3 | VCH4 | - | - | - | - | - | - | n.o | 0 | 89.0 | 11.0 |
| SW18-392.5 | RGZ | Q3 | VCH4 | - | - | - | - | - | - | n.o | 0 | 56.1 | 43.9 |
| SW18-392.5 | RGZ | Q3 | Lw1 | -1 | - | - | - | - | 253.2 | - | 87.4 | 2.2 | 10.5 |
| SW18-392.5 | RGZ | Q3 | Lw1 | -1 | - | - | - | - | 399.7 | - |  |  |  |
| SW18-392.5 | RGZ | Q3 | Lw1 | -1.2 | - | - | - | - | 259.6 | - |  |  |  |
| SW18-392.5 | RGZ | Q3 | Lw1 | -1.2 | - | - | - | - | 384.4 | - |  |  |  |
| SW18-392.5 | RGZ | Q3 | Lw1 | -1.2 | - | - | - | - | n.o | - |  |  |  |
| SW18-392.5 | RGZ | Q3 | Lw1 | -1.7 | - | - | - | - | n.o | - |  |  |  |
| SW18-392.5 | RGZ | Q3 | Lw1 | -2.0 | - | - | - | - | 277.6 | - |  |  |  |
| SW18-392.5 | RGZ | Q3 | Lw1 | -2.9 | - | - | - | - | n.o | - |  |  |  |
| SW18-392.5 | RGZ | Q3 | Lw1 | -1.2 | - | - | - | - | >350 | - |  |  |  |
| SW18-392.5 | RGZ | Q3 | Lw2 | -21.8 | - | - | - | - | 199.2 | - |  |  |  |
| SW18-392.5 | RGZ | Q3 | Lw2 | -38.4 | - | - | - | - | 204.5 | - |  |  |  |
| SW18-392.5 | RGZ | Q3 | Lw2 | -27.4 | - | - | - | - | n.o | - |  |  |  |

Microthermometric and Raman data. Q-type: Quartz type, FI: Fluid Inclusion, Tmice: melting ice temperature, Tmh: melting halite temperature, TmCO2: Melting CO2 temperature, ThCO2: homogenization temperature of CO2, TmCl: Melting clathrates temperature, Th: Temperature of total homogenization, Th(V): Temperature of homogenization to the vapor phase for the monophase vapor fluid inclusions, VCH4: monophase CH4-rich fluid inclusion, VN2: monophase N2-rich fluid inclusion, Lc-w: aqueous-carbonic fluid inclusions homogenizing to liquid phase, Vc-w: aqueous-carbonic fluid inclusions homogenizing to vapor phase, Lc: carbonic fluid inclusions homogenizing to liquid phase, Vc: carbonic fluid inclusions homogenizing to vapor phase, Lw1: low saline aqueous two-phase fluid inclusion, Lw2: high saline aqueous two-phase fluid inclusion, Lwh: three-phase fluid inclusion (V+L+Halite), n.o: not observed