

**Table T1.** Shipboard ICP-AES major and trace elements analysis of serpentinite muds. (Continued on next three pages.)

|                                  | 195-1200A     |               |                 |               | 195-1200E       |                 |                 |                 |               |                 |                 |                  |                |                  |
|----------------------------------|---------------|---------------|-----------------|---------------|-----------------|-----------------|-----------------|-----------------|---------------|-----------------|-----------------|------------------|----------------|------------------|
| Core, section interval (cm):     | 9R-1<br>63–65 | 1H-1<br>50–52 | 1H-2<br>100–102 | 1H-2<br>70–72 | 2H-1<br>128–130 | 2H-2<br>126–128 | 2H-3<br>120–122 | 4H-3<br>115–117 | 5H-3<br>47–49 | 7H-2<br>127–129 | 7H-4<br>124–126 | 10H-1<br>113–115 | 10H-2<br>62–64 | 10H-2<br>127–129 |
| Depth (mbsf):                    | 71.03         | 0.50          | 1.00            | 2.20          | 7.38            | 8.86            | 10.30           | 16.15           | 20.58         | 28.67           | 31.64           | 53.53            | 54.52          | 55.17            |
| Major element oxide (wt%):       |               |               |                 |               |                 |                 |                 |                 |               |                 |                 |                  |                |                  |
| SiO <sub>2</sub>                 | 43.90         | 33.90         | 38.17           | 44.45         | 45.42           | 45.42           | 46.25           | 42.48           | 44.33         | 44.21           | 44.91           | 44.50            | 44.92          | 44.88            |
| TiO <sub>2</sub>                 | 0.07          | 0.02          | 0.02            | 0.03          | 0.26            | 0.05            | 0.15            | 0.01            | 0.07          | 0.09            | 0.06            | 0.66             | 0.01           | 0.16             |
| Al <sub>2</sub> O <sub>3</sub>   | 0.95          | 0.33          | 0.48            | 0.63          | 2.45            | 0.85            | 1.68            | 0.34            | 0.86          | 1.04            | 0.75            | 4.27             | 0.40           | 1.43             |
| Fe <sub>2</sub> O <sub>3</sub> T | 8.40          | 5.61          | 6.96            | 8.12          | 8.37            | 8.12            | 8.22            | 8.25            | 8.45          | 8.84            | 8.26            | 9.52             | 8.67           | 8.27             |
| MnO                              | 0.12          | 0.09          | 0.10            | 0.13          | 0.14            | 0.12            | 0.13            | 0.11            | 0.14          | 0.15            | 0.14            | 0.16             | 0.14           | 0.15             |
| MgO                              | 45.95         | 32.81         | 41.77           | 44.87         | 40.62           | 43.90           | 41.46           | 43.35           | 44.29         | 44.00           | 44.41           | 35.12            | 45.01          | 43.18            |
| CaO                              | 0.88          | 26.76         | 11.54           | 0.78          | 1.80            | 0.66            | 1.26            | 4.67            | 0.88          | 0.83            | 0.67            | 4.18             | 0.65           | 1.11             |
| Na <sub>2</sub> O                | 0.96          | 0.47          | 0.91            | 0.93          | 0.85            | 0.83            | 0.76            | 0.67            | 0.93          | 0.80            | 0.76            | 1.31             | 0.18           | 0.76             |
| K <sub>2</sub> O                 | 0.15          | 0.01          | 0.04            | 0.06          | 0.08            | 0.06            | 0.08            | 0.13            | 0.04          | 0.03            | 0.02            | 0.20             | 0.01           | 0.03             |
| P <sub>2</sub> O <sub>5</sub>    | 0.03          | 0.01          | 0.00            | 0.00          | 0.02            | 0.00            | 0.02            | 0.01            | 0.02          | 0.03            | 0.02            | 0.07             | 0.01           | 0.03             |
| Totals:                          | 101.38        | 100.00        | 100.00          | 100.00        | 100.00          | 100.00          | 100.00          | 100.00          | 100.00        | 100.00          | 100.00          | 100.00           | 100.00         | 100.00           |
| LOI                              | 15.22         | 22.50         | 19.93           | 15.42         | 12.94           | 13.91           | 13.49           | 17.00           | 14.67         | 13.94           | 8.77            | 12.08            | 16.42          | 13.83            |
| Trace element (ppm):             |               |               |                 |               |                 |                 |                 |                 |               |                 |                 |                  |                |                  |
| Sc                               | 6.5           | 4.7           | 6.2             | 7.1           | 10.9            | 9.1             | 8.0             | 6.8             | 6.8           | 6.9             | 6.4             | 10.7             | 6.3            | 7.6              |
| V                                | 28.4          | 18.2          | 20.2            | 22.9          | 57.8            | 29.9            | 33.8            | 15.9            | 22.2          | 22.8            | 23.6            | 66.4             | 13.6           | 28.6             |
| Cr                               | 2342          | 1617          | 2316            | 2334          | 2118            | 2363            | 2212            | 1944            | 3311          | 2595            | 2788            | 2410             | 1856           | 2743             |
| Ni                               | 2428          | 4345          | 2284            | 2800          | 3184            | 2475            | 2241            | 2771            | 2905          | 2841            | 2871            | 2274             | 3490           | 2718             |
| Sr                               | 23.5          | 4821          | 1567            | 44.7          | 21.1            | 13.0            | 21.1            | 639             | 13.4          | 12.0            | 11.6            | 39.2             | 35.9           | 15.7             |
| Ba                               | 4.9           | 18.0          | 21.6            | 7.8           | 14.2            | 5.7             | 12.8            | 6.8             | 15.1          | 7.4             | 6.6             | 37.5             | 6.1            | 8.7              |
| Zr                               | 8.2           | 2.6           | 0.0             | 6.7           | 24.4            | 10.4            | 16.8            | 2.7             | 10.3          | 7.3             | 5.9             | 49.8             | 1.7            | 13.8             |
| Y                                | 2.6           | 2.1           | 0.6             | 0.7           | 6.0             | 3.1             | 3.4             | 0.1             | 0.7           | 0.8             | 0.4             | 4.4              | 0.1            | 2.7              |
| B (DCP-AES)                      |               |               |                 |               |                 |                 |                 |                 |               |                 |                 |                  |                | 8.2              |
| Li (DCP-AES)                     |               | 1.6           | 0.9             | 1.4           | 7.6             | 4.9             | 5.2             | 0.7             | 1.8           | 2.8             | 1.8             | 9.8              | 0.6            | 4                |

Note: DCP-AES = direct-current plasma–atomic emission spectrometer, LOI = loss on ignition.

Table T1 (continued).

| Core, section<br>interval (cm):  | 195-1200E       |                 |               |               |                 |                 |
|----------------------------------|-----------------|-----------------|---------------|---------------|-----------------|-----------------|
|                                  | 4H-1<br>128–130 | 4H-2<br>128–130 | 5H-1<br>79–81 | 5H-2<br>78–80 | 6H-1<br>119–121 | 6H-3<br>117–119 |
| Depth (mbsf):                    | 13.28           | 14.78           | 18.39         | 19.83         | 22.39           | 25.31           |
| Major element (wt%):             |                 |                 |               |               |                 |                 |
| SiO <sub>2</sub>                 | 38.39           | 40.54           | 43.77         | 44.73         | 43.48           | 43.23           |
| TiO <sub>2</sub>                 | 0.06            | 0.07            | 0.04          | 0.07          | 0.03            | 0.03            |
| Al <sub>2</sub> O <sub>3</sub>   | 0.77            | 1.07            | 0.65          | 0.84          | 0.55            | 0.54            |
| Fe <sub>2</sub> O <sub>3</sub> T | 6.88            | 7.52            | 8.36          | 8.31          | 8.16            | 8.28            |
| MnO                              | 0.09            | 0.13            | 0.13          | 0.13          | 0.12            | 0.13            |
| MgO                              | 38.92           | 39.07           | 45.60         | 44.28         | 46.24           | 46.63           |
| CaO                              | 13.81           | 10.59           | 0.56          | 0.66          | 0.43            | 0.37            |
| Na <sub>2</sub> O                | 0.90            | 0.83            | 0.76          | 0.83          | 0.80            | 0.67            |
| K <sub>2</sub> O                 | 0.08            | 0.10            | 0.07          | 0.07          | 0.08            | 0.06            |
| P <sub>2</sub> O <sub>5</sub>    | 0.10            | 0.08            | 0.07          | 0.07          | 0.10            | 0.07            |
| Totals:                          | 100.00          | 100.00          | 100.00        | 100.00        | 100.00          | 100.00          |
| LOI                              | 18.95           | 17.44           | 15.70         | 14.44         | 15.24           | 14.96           |
| Trace element (ppm):             |                 |                 |               |               |                 |                 |
| Sc                               | 6.7             | 7.5             | 7.8           | 7.7           | 7.2             | 8.2             |
| V                                | 30.9            | 28.7            | 23.7          | 24.3          | 19.7            | 23.3            |
| Cr                               | 2066            | 2136            | 2214          | 2330          | 2420            | 2518            |
| Ni                               | 1942            | 2226            | 5272          | –             | –               | 5619            |
| Sr                               | 2007            | 1358            | 24.9          | 14.8          | 16.9            | 18.6            |
| Ba                               | 44.3            | 25.6            | 22.3          | 13.8          | 10.9            | 9.6             |
| Zr                               | 10.4            | 10.7            | 9.1           | 8.2           | 9.6             | 11.9            |
| Y                                | 2.3             | 3.2             | 1.4           | 1.5           | 1.6             | 0.7             |
| B (DCP-AES)                      |                 |                 |               |               |                 |                 |
| Li (DCP-AES)                     | 7.6             | 3.4             | 1.4           | 2             | 1.5             | 2.5             |

Table T1 (continued).

| Core, section<br>interval (cm):  | 195-1200D     |               |               |               |                 |               |               |             |               |                 |                |               |               |               |               |
|----------------------------------|---------------|---------------|---------------|---------------|-----------------|---------------|---------------|-------------|---------------|-----------------|----------------|---------------|---------------|---------------|---------------|
|                                  | 2H-2<br>40–42 | 3H-1<br>52–54 | 5H-1<br>17–19 | 6H-1<br>96–98 | 7H-1<br>103–105 | 8H-2<br>95–97 | 9H-1<br>64–66 | 1H-1<br>0–2 | 1H-1<br>50–52 | 1H-1<br>100–102 | 1H-CC<br>32–34 | 1H-2<br>70–72 | 1H-3<br>38–40 | 1H-4<br>62–64 | 2H-1<br>60–62 |
| Depth (mbsf):                    | 8.80          | 10.42         | 13.87         | 22.46         | 24.53           | 27.45         | 28.64         | 0.00        | 0.50          | 1.00            | 6.72           | 2.20          | 3.38          | 5.12          | 7.50          |
| Major element oxide (wt%):       |               |               |               |               |                 |               |               |             |               |                 |                |               |               |               |               |
| SiO <sub>2</sub>                 | 44.85         | 45.47         | 45.11         | 45.41         | 46.08           | 45.54         | 45.19         | 43.56       | 38.05         | 38.81           | 42.19          | 43.41         | 42.01         | 43.94         | 44.42         |
| TiO <sub>2</sub>                 | 0.05          | 0.01          | 0.01          | 0.05          | 0.07            | 0.03          | 0.06          | 0.06        | 0.03          | 0.02            | 0.01           | 0.04          | 0.03          | 0.01          | 0.06          |
| Al <sub>2</sub> O <sub>3</sub>   | 0.84          | 0.26          | 0.35          | 0.81          | 1.14            | 0.57          | 0.85          | 0.80        | 0.67          | 0.41            | 0.35           | 0.58          | 0.47          | 0.26          | 0.91          |
| Fe <sub>2</sub> O <sub>3</sub> T | 7.98          | 7.54          | 7.95          | 8.11          | 7.89            | 7.68          | 8.29          | 7.17        | 6.36          | 6.87            | 9.15           | 7.72          | 7.21          | 8.16          | 8.16          |
| MnO                              | 0.12          | 0.11          | 0.12          | 0.12          | 0.13            | 0.11          | 0.13          | 0.07        | 0.08          | 0.10            | 0.15           | 0.11          | 0.11          | 0.12          | 0.13          |
| MgO                              | 44.65         | 45.72         | 45.41         | 44.19         | 42.97           | 44.96         | 44.30         | 39.09       | 37.11         | 38.54           | 47.82          | 46.45         | 48.60         | 46.47         | 44.86         |
| CaO                              | 0.67          | 0.21          | 0.22          | 0.66          | 0.96            | 0.51          | 0.55          | 8.53        | 17.04         | 14.59           | 0.19           | 0.84          | 0.81          | 0.28          | 0.67          |
| Na <sub>2</sub> O                | 0.79          | 0.63          | 0.78          | 0.61          | 0.72            | 0.55          | 0.59          | 0.70        | 0.64          | 0.65            | 0.13           | 0.81          | 0.74          | 0.72          | 0.75          |
| K <sub>2</sub> O                 | 0.05          | 0.03          | 0.04          | 0.04          | 0.05            | 0.04          | 0.04          | 0.01        | 0.02          | 0.02            | 0.01           | 0.03          | 0.03          | 0.03          | 0.03          |
| P <sub>2</sub> O <sub>5</sub>    | 0.00          | 0.00          | 0.00          | 0.02          | 0.00            | 0.00          | 0.02          | 0.02        | 0.00          | 0.00            | 0.02           | 0.00          | 0.00          | 0.00          | 0.00          |
| Totals:                          | 100.00        | 100.00        | 100.00        | 100.00        | 100.00          | 100.00        | 100.00        | 100.00      | 100.00        | 100.00          | 100.00         | 100.00        | 100.00        | 100.00        | 100.00        |
| LOI                              | 15.67         | 15.08         | 15.29         | 12.02         | 14.20           | 14.35         | 14.76         | 18.23       | 22.50         | 19.60           | 16.07          | 15.42         | 16.95         | 15.83         | 14.86         |
| Trace element (ppm):             |               |               |               |               |                 |               |               |             |               |                 |                |               |               |               |               |
| Sc                               | 9.2           | 5.5           | 6.8           | 8.3           | 8.1             | 6.1           | 7.5           | 7.1         | 6.0           | 5.3             | 9.6            | 6.8           | 5.9           | 5.8           | 7.6           |
| V                                | 27.1          | 16.1          | 17.7          | 22.0          | 29.9            | 20.8          | 27.2          | 32.9        | 25.1          | 19.6            | 22.3           | 22.7          | 17.4          | 19.6          | 28.7          |
| Cr                               | 2340          | 2269          | 2976          | 2002          | 2538            | 2552          | 2781          | 2228        | 1967          | 2208            | 2742           | 2063          | 2004          | 2183          | 2570          |
| Ni                               | 2467          | 2328          | 4074          | 2615          | 2494            | 2883          | 2999          | 1502        | 1902          | 2107            | 3836           | 4014          | 2420          | 2801          | 2509          |
| Sr                               | 12.9          | 5.7           | 7.7           | 14.6          | 19.7            | 10.5          | 13.9          | 1548        | 2961          | 1958            | 15.0           | 30.9          | 11.4          | 5.7           | 8.8           |
| Ba                               | 5.7           | 6.4           | 1.8           | 2.3           | 2.7             | 1.8           | 8.0           | 12.8        | 15.2          | 14.0            | 5.1            | 6.3           | 6.2           | 4.5           | 14.2          |
| Zr                               | 10.1          | 9.3           | 8.0           | 13.1          | 2.8             | 11.5          | 10.7          | 2.8         | 2.3           | 1.0             | 2.3            | 5.7           | 3.9           | 3.9           | 8.1           |
| Y                                | 2.8           | 2.0           | 1.4           | 1.6           | 2.5             | 0.7           | 2.6           | 2.6         | 2.1           | 20.8            | 1.2            | 2.0           | 1.2           | 1.8           | 2.8           |
| B (DCP-AES)                      |               |               |               |               |                 | 5             | 5.4           |             |               |                 |                |               |               |               |               |
| Li (DCP-AES)                     | 0.9           | 1.4           | 0.8           | 2.3           | 2.8             | 1.1           | 2.6           | 2.4         | 2.1           | 1.3             |                | 1.5           | 1.4           | 0.4           | 2.6           |

Table T1 (continued).

| Core, section<br>interval (cm):  | 195-1200F     |               |               |                 |                 |               |
|----------------------------------|---------------|---------------|---------------|-----------------|-----------------|---------------|
|                                  | 1H-1<br>10-12 | 1H-1<br>86-88 | 1H-2<br>55-57 | 1H-2<br>133-136 | 2H-2<br>135-137 | 2H-4<br>66-68 |
| Depth (mbsf):                    | 0.10          | 0.86          | 2.05          | 2.86            | 10.55           | 12.36         |
| Major element oxide (wt%):       |               |               |               |                 |                 |               |
| SiO <sub>2</sub>                 | 34.67         | 38.38         | 44.43         | 43.48           | 44.53           | 45.14         |
| TiO <sub>2</sub>                 | 0.06          | 0.04          | 0.08          | 0.03            | 0.11            | 0.09          |
| Al <sub>2</sub> O <sub>3</sub>   | 0.82          | 0.70          | 1.07          | 0.62            | 1.35            | 1.40          |
| Fe <sub>2</sub> O <sub>3</sub> T | 6.39          | 7.06          | 8.33          | 7.88            | 7.68            | 8.06          |
| MnO                              | 0.10          | 0.12          | 0.15          | 0.12            | 0.13            | 0.13          |
| MgO                              | 32.71         | 47.53         | 43.99         | 45.99           | 44.23           | 43.56         |
| CaO                              | 24.46         | 5.27          | 0.85          | 0.83            | 0.96            | 0.61          |
| Na <sub>2</sub> O                | 0.72          | 0.80          | 1.05          | 0.96            | 0.85            | 0.84          |
| K <sub>2</sub> O                 | 0.02          | 0.02          | 0.04          | 0.08            | 0.09            | 0.10          |
| P <sub>2</sub> O <sub>5</sub>    | 0.05          | 0.08          | 0.02          | 0.01            | 0.08            | 0.07          |
| Totals:                          | 100.00        | 100.00        | 100.00        | 100.00          | 100.00          | 100.00        |
| LOI                              | 21.95         | 7.24          | 15.86         | 16.07           | 14.40           | 14.60         |
| Trace element (ppm):             |               |               |               |                 |                 |               |
| Sc                               | 5.4           | 5.4           | 7.2           | 7.2             | 8.8             | 9.4           |
| V                                | 35.3          | 20.5          | 24.6          | 21.8            | 31.4            | 29.9          |
| Cr                               | 2544          | 2407          | 3098          | 2799            | 2140            | 2305          |
| Ni                               | 1748          | 2335          | 3215          | 2742            | 2443            | 2603          |
| Sr                               | 2976          | 438           | 13.9          | 21.7            | 21.5            | 22.5          |
| Ba                               | 29.5          | 27.6          | 9.1           | 14.4            | 18.6            | 19.5          |
| Zr                               | 9.2           | 6.7           | 10.1          | 8.0             | 10.5            | 7.8           |
| Y                                | 1.8           | 0.7           | 0.9           | 1.1             | 4.7             | 2.7           |
| B (DCP-AES)                      | 8.1           | 1.1           | 2.7           | 1.9             | 4               | 4             |
| Li (DCP-AES)                     |               |               |               |                 |                 |               |