

**TABLE 1.** Sample locations

| Sample                      | Lithology   | Latitude, Longitude                 | Distance from contact (m)* | Sample                      | Lithology    | Latitude, Longitude          | Distance from contact (m)* |
|-----------------------------|-------------|-------------------------------------|----------------------------|-----------------------------|--------------|------------------------------|----------------------------|
| East Phepane 06 transect    |             |                                     |                            | West Phepane large transect |              |                              |                            |
| P06-1                       | felsic rock | S 24° 29.876' E 029° 52.833'        |                            | P07-17                      | quartzite    | S 24° 29.861' E 029° 51.052' |                            |
| P06-2                       | felsic rock | S 24° 29.882' E 029° 52.819'        |                            | P07-18                      | metapelite   | S 24° 29.868' E 029° 51.103' |                            |
| P06-3                       | felsic rock | S 24° 29.886' E 029° 52.813'        |                            | P07-19                      | calcsilicate | S 24° 29.861' E 029° 51.114' |                            |
| P06-4                       | felsic rock | S 24° 29.887' E 029° 52.813'        |                            | P07-20                      | metapelite   | S 24° 29.875' E 029° 51.125' |                            |
| P06-5                       | felsic rock | S 24° 29.900' E 029° 52.805'        |                            | P07-21                      | quartzite    | S 24° 29.867' E 029° 51.140' |                            |
| P06-6                       | felsic rock | S 24° 29.897' E 029° 52.808'        |                            | P07-22                      | quartzite    | S 24° 29.856' E 029° 51.160' |                            |
| P06-7                       | felsic rock | S 24° 29.911' E 029° 52.794' 23.6 E | 23.6 E                     | P07-23                      | metapelite   | S 24° 29.864' E 029° 51.198' |                            |
| P06-8                       | felsic rock | S 24° 29.909' E 029° 52.795' 27.9 E | 27.9 E                     | P07-24                      | metapelite   | S 24° 29.886' E 029° 51.220' |                            |
| P06-9                       | felsic rock | S 24° 29.917' E 029° 52.795' 13.5 E | 13.5 E                     | P07-25                      | quartzite    | S 24° 29.891' E 029° 51.263' |                            |
| P06-10                      | felsic rock | S 24° 29.922' E 029° 52.794' 8.6 E  | 8.6 E                      | West Phepane small transect |              |                              |                            |
| P06-11                      | felsic rock | S 24° 29.921' E 029° 52.795' 5.0 E  | 5.0 E                      | P07-26                      | quartzite    | S 24° 30.423' E 029° 51.090' |                            |
| P06-12                      | felsic rock | S 24° 29.922' E 029° 52.795' 3.7 E  | 3.7 E                      | P07-27                      | metapelite   | S 24° 29.415' E 029° 51.109' |                            |
| P06-13                      | felsic rock | S 24° 29.925' E 029° 52.792' 1.5 E  | 1.5 E                      | P07-28                      | quartzite    | S 24° 29.424' E 029° 51.094' |                            |
| P06-14                      | felsic rock | S 24° 29.919' E 029° 52.783' 4.3 E  | 4.3 E                      | P07-29                      | quartzite    | S 24° 29.433' E 029° 51.077' |                            |
| P06-15                      | quartzite   |                                     | 2.8 W                      | P07-30                      | quartzite    | S 24° 29.422' E 029° 51.065' |                            |
| P06-16                      | quartzite   |                                     | 7.6 W                      | P07-31                      | mafic rock   | S 24° 29.424' E 029° 51.064' | 9.0 W                      |
| P06-17                      | quartzite   |                                     | 8.6 W                      | P07-32                      | mafic rock   | S 24° 29.423' E 029° 51.053' | 14.0 W                     |
| P06-18                      | quartzite   |                                     | 9.6 W                      | P07-33                      | mafic rock   | S 24° 29.414' E 029° 51.048' | 23.2 W                     |
| P06-19                      | quartzite   |                                     | 13.3 W                     | P07-34                      | mafic rock   | S 24° 29.427' E 029° 51.045' | 32.6 W                     |
| P06-20                      | metapelite  | S 24° 29.960' E 029° 52.783'        |                            | East Phepane 07 transect    |              |                              |                            |
| West Phepane large transect |             |                                     |                            | P07-49                      | felsic rock  | S 24° 29.731' E 029° 52.621' |                            |
| P07-1                       | quartzite   | S 24° 30.860' E 029° 51.076'        |                            | P07-50                      | quartzite    | S 24° 29.753' E 029° 52.582' | 0.2 W                      |
| P07-2                       | metapelite  | S 24° 29.868' E 029° 51.090'        |                            | P07-51                      | quartzite    | S 24° 29.753' E 029° 52.582' | 4.3 W                      |
| P07-3                       | quartzite   | S 24° 29.883' E 029° 51.077'        |                            | P07-52                      | felsic rock  | S 24° 29.753' E 029° 52.582' | 9.3 E                      |
| P07-4                       | quartzite   | S 24° 29.887' E 029° 51.078'        |                            | P07-53                      | felsic rock  | S 24° 29.753' E 029° 52.582' | 5.2 E                      |
| P07-5                       | metapelite  | S 24° 29.903' E 029° 51.074'        |                            | P07-54                      | metapelite   | S 24° 29.786' E 029° 52.551' |                            |
| P07-6                       | mafic rock  | S 24° 29.900' E 029° 51.035'        |                            | P07-55                      | metapelite   | S 24° 29.757' E 029° 52.581' |                            |
| P07-7                       | mafic rock  | S 24° 29.896' E 029° 51.026'        |                            | P07-56                      | metapelite   | S 24° 29.763' E 029° 52.564' |                            |
| P07-8                       | mafic rock  | S 24° 29.890' E 029° 51.011'        |                            | P07-57                      | quartzite    | S 24° 29.799' E 029° 52.502' |                            |
| P07-9                       | mafic rock  | S 24° 29.892' E 029° 51.002'        |                            | P07-58                      | felsic rock  | S 24° 29.748' E 029° 52.599' |                            |
| P07-10                      | mafic rock  | S 24° 29.887' E 029° 51.001'        |                            | P07-59                      | felsic rock  | S 24° 29.738' E 029° 52.602' |                            |
| P07-11                      | mafic rock  | S 24° 29.880' E 029° 50.971'        |                            | Sedimentary rocks           |              |                              |                            |
| P07-12                      | mafic rock  | S 24° 29.800' E 029° 50.909'        |                            | LV2                         | sandstone    | S 25° 01.335' E 030° 13.485' |                            |
| P07-13                      | mafic rock  | S 24° 29.810' E 029° 50.907'        |                            | LV3                         | sandstone    | S 25° 02.437' E 030° 13.461' |                            |
| P07-14                      | quartzite   | S 24° 29.845' E 029° 51.058'        |                            | LV4                         | sandstone    | S 25° 21.315' E 030° 10.240' |                            |
| P07-15                      | mafic rock  | S 24° 29.872' E 029° 51.046'        |                            | LV6                         | sandstone    | S 24° 56.978' E 030° 13.395' |                            |
| P07-16                      | metapelite  | S 24° 29.849' E 029° 51.088'        |                            | VT1a                        | shale        | S 25° 15.170' E 030° 15.654' |                            |

Notes: \* Distance measured using steel measuring tape oriented perpendicular to the contact. W = distance on the west side of the contact, E = distance on the east side of the contact.

**TABLE 2.** Mineral modes (volume percentage) of representative rock types

| Sample        | P06-19          | P07-28     | P06-2  | P07-32 | P07-6 |
|---------------|-----------------|------------|--------|--------|-------|
| Type          | Lakenvalei      | Lakenvalei | Felsic | Mafic  | Mafic |
|               | Quartzite       | Quartzite  | Rock   | Rock   | Rock  |
|               | East            | West       | East   | West   | West  |
| Quartz        | 83.0            | 87.3       | 20.9   | 8.55   | 0.56  |
| K-feldspar    | 8.97            | 8.89       | 31.8   | 1.64   | 0.17  |
| Plagioclase   | 5.30            | 3.39       | 32.2   | 78.7   | 64.5  |
| Hornblende    | 0               | 0          | 13.3   | 7.20   | 23.9  |
| Clinopyroxene | 0               | 0          | 0      | 0.68   | 3.77  |
| Orthopyroxene | 0               | 0          | 0      | 0      | 5.57  |
| Muscovite     | 2.56            | 0.38       | 0      | 0.05   | 0.17  |
| Biotite       | 0               | 0          | 1.4    | tr     | 0     |
| Chlorite      | 0.19            | 0.05       | 0      | 2.00   | 1.16  |
| Calcite       | 0               | 0.09       | 0      | 0.59   | 0     |
| Zircon        | tr <sup>a</sup> | tr         | tr     | tr     | 0     |
| Apatite       | tr              | tr         | 0.05   | 0.55   | 0     |
| Monazite      | tr              | 0          | 0.05   | 0      | 0     |
| Ilmenite      | 0               | 0          | 0.05   | tr     | 0.13  |
| Magnetite     | 0               | 0          | 0.14   | 0      | tr    |
| Titanite      | 0               | 0          | 0      | tr     | 0     |
| Rutile        | 0               | tr         | tr     | 0      | 0     |
| Total points  | 2152            | 2126       | 2174   | 2200   | 2335  |

<sup>a</sup> tr = trace amount, <0.05%.

**TABLE 3.** Plagioclase major element compositions (wt%)

| Sample                         | P07-32 | P07-32 | P07-32 | P07-32 | P07-32 | P07-6 | P07-6 |
|--------------------------------|--------|--------|--------|--------|--------|-------|-------|
| SiO <sub>2</sub>               | 51.80  | 51.55  | 50.81  | 50.57  | 52.53  | 49.52 | 50.15 |
| TiO <sub>2</sub>               | 0.00   | 0.01   | 0.00   | 0.00   | 0.00   | 0.00  | 0.00  |
| Al <sub>2</sub> O <sub>3</sub> | 31.17  | 31.46  | 30.86  | 30.67  | 29.34  | 31.95 | 31.59 |
| FeO                            | 0.08   | 0.11   | 0.08   | 0.01   | 0.07   | 0.08  | 0.06  |
| MnO                            | 0.00   | 0.01   | 0.00   | 0.00   | 0.02   | 0.01  | 0.00  |
| MgO                            | 0.02   | 0.04   | 0.01   | 0.04   | 0.00   | 0.00  | 0.00  |
| CaO                            | 13.27  | 13.58  | 14.60  | 13.27  | 12.95  | 16.03 | 15.50 |
| Na <sub>2</sub> O              | 3.83   | 3.69   | 3.73   | 4.18   | 3.92   | 3.03  | 3.33  |
| K <sub>2</sub> O               | 0.11   | 0.20   | 0.10   | 0.08   | 1.39   | 0.10  | 0.09  |
| Total                          | 100.3  | 100.6  | 100.2  | 98.81  | 100.2  | 100.7 | 100.7 |
| X <sub>An</sub>                | 0.65   | 0.66   | 0.68   | 0.63   | 0.60   | 0.72  | 0.74  |
| X <sub>Ab</sub>                | 0.34   | 0.33   | 0.32   | 0.36   | 0.33   | 0.28  | 0.25  |
| X <sub>Or</sub>                | 0.01   | 0.01   | 0.00   | 0.00   | 0.08   | 0.00  | 0.01  |