

| Sample      | 81-31    | XM-61    | 81-32    | 81-19    | 81-26    | S64      |
|-------------|----------|----------|----------|----------|----------|----------|
| Age, Ma     | 45       | 41       | 45       | 43       | 44       | 45       |
| Long W      | 103 29.4 | 103 27.3 | 103 29.3 | 103 23.5 | 103 29.2 | 103 29.4 |
| Lat N       | 29 28.7  | 29 26    | 29 29    | 29 28.2  | 29 29.5  | 29 28.7  |
| SiO2        | 69.11    | 68.12    | 68.85    | 68.68    | 68.89    | 68.70    |
| TiO2        | 0.21     | 0.20     | 0.21     | 0.19     | 0.34     | 0.13     |
| Al2O3       | 17.63    | 15.68    | 17.44    | 15.38    | 16.74    | 16.60    |
| Fe2O3       | 0.89     | 2.19     | 0.99     | 3.96     | 1.55     | 1.00     |
| FeO         | 0.36     | 0.41     | 0.36     | 0.18     | 0.36     | 0.21     |
| FeO*        |          |          |          |          |          |          |
| MnO         | 0.01     | 0.07     |          | 0.11     | 0.02     |          |
| MgO         | 0.14     | 0.32     | 0.12     | 0.09     |          | 0.14     |
| CaO         | 0.57     | 0.41     | 0.55     | 0.73     | 0.30     | 0.58     |
| Na2O        | 5.36     | 5.50     | 5.13     | 5.20     | 5.58     | 6.00     |
| K2O         | 5.76     | 5.51     | 5.74     | 4.51     | 5.40     | 4.90     |
| P2O5        |          | 0.08     |          |          |          | 0.06     |
| H2O+        | 0.30     | 0.54     | 0.51     | 1.40     | 0.23     | 0.35     |
| H2O-        |          | 0.30     |          |          |          |          |
| CO2         |          | 0.10     |          | 0.15     |          |          |
| Total       | 100.34   | 99.43    | 99.90    | 100.58   | 99.41    | 98.67    |
| SiO2'       | 69.08    | 69.16    | 69.27    | 69.35    | 69.46    | 69.87    |
| (Na2O+K2O)' | 11.12    | 11.18    | 10.94    | 9.81     | 11.07    | 11.09    |
| Sc          |          |          |          |          |          |          |
| V           |          |          |          |          |          |          |
| Cr          |          |          |          |          |          |          |
| Ni          |          |          |          |          |          |          |
| Cu          |          |          |          |          |          |          |
| Zn          |          | 75       |          |          |          |          |
| Ga          |          |          |          |          |          |          |
| Rb          |          | 137      |          |          |          |          |
| Sr          |          | 47       |          |          |          |          |
| Y           |          | 34       |          |          |          |          |
| Zr          |          | 510      |          |          |          |          |
| Nb          |          | 55       |          |          |          |          |
| Cs          |          |          |          |          |          |          |
| Ba          |          |          |          |          |          |          |
| La          |          |          |          |          |          |          |
| Ce          |          |          |          |          |          |          |
| Pr          |          |          |          |          |          |          |
| Nd          |          |          |          |          |          |          |
| Sm          |          |          |          |          |          |          |
| Eu          |          |          |          |          |          |          |
| Gd          |          |          |          |          |          |          |
| Tb          |          |          |          |          |          |          |
| Dy          |          |          |          |          |          |          |
| Ho          |          |          |          |          |          |          |
| Er          |          |          |          |          |          |          |
| Tm          |          |          |          |          |          |          |
| Yb          |          |          |          |          |          |          |
| Lu          |          |          |          |          |          |          |

|             |  |      |  |  |  |  |
|-------------|--|------|--|--|--|--|
| Hf          |  |      |  |  |  |  |
| Ta          |  |      |  |  |  |  |
| Pb          |  |      |  |  |  |  |
| Th          |  |      |  |  |  |  |
| U           |  |      |  |  |  |  |
| Li          |  |      |  |  |  |  |
| F           |  |      |  |  |  |  |
| Rb/Sr       |  | 2.91 |  |  |  |  |
| Cen/Ybn     |  |      |  |  |  |  |
| Eu*         |  |      |  |  |  |  |
| Zr/Hf       |  |      |  |  |  |  |
| Ba/Rb       |  |      |  |  |  |  |
| Rb/Th       |  |      |  |  |  |  |
| 87Sr/86Sr,l |  |      |  |  |  |  |
| 143Nd/144Nd |  |      |  |  |  |  |
| 206Pb/204Pb |  |      |  |  |  |  |
| 207Pb/204Pb |  |      |  |  |  |  |
| 208Pb/204Pb |  |      |  |  |  |  |

| Sample      | 81-35   | H84-27   | 81-30   | TM-003   | H86-79   | 81-33    |
|-------------|---------|----------|---------|----------|----------|----------|
| Age, Ma     | 44      | 42.2     | 45      | 45       | 43.5     | 45.2     |
| Long W      | 103 30  | 103 32.3 | 103 30  | 105 26.6 | 103 24.5 | 103 29.7 |
| Lat N       | 29 28.2 | 29 23.8  | 29 28.5 | 31 10.6  | 29 29.4  | 29 28.7  |
| SiO2        | 70.11   | 69.57    | 69.33   | 70.79    | 71.30    | 70.44    |
| TiO2        | 0.28    | 0.25     | 0.18    | 0.29     | 0.14     | 0.13     |
| Al2O3       | 14.56   | 15.64    | 13.39   | 15.52    | 14.76    | 16.41    |
| Fe2O3       | 2.63    | 1.08     | 3.06    | 1.77     | 2.43     | 1.03     |
| FeO         | 1.09    | 0.94     | 0.91    |          |          |          |
| FeO*        |         |          |         |          |          |          |
| MnO         | 0.06    | 0.05     | 0.11    | 0.07     | 0.08     |          |
| MgO         | 0.06    | 0.26     | 0.02    | 0.44     | 0.05     | 0.09     |
| CaO         | 1.02    | 0.92     | 1.74    | 1.68     | 0.54     | 0.25     |
| Na2O        | 4.81    | 5.10     | 5.30    | 4.93     | 5.84     | 4.78     |
| K2O         | 5.20    | 4.93     | 4.33    | 4.58     | 5.03     | 5.59     |
| P2O5        |         | 0.06     |         | 0.09     |          |          |
| H2O+        | 0.42    |          | 0.37    |          | 0.19     | 0.52     |
| H2O-        |         |          |         |          |          |          |
| CO2         | 0.10    | 0.01     | 0.95    |          | 0.04     | 0.22     |
| Total       | 100.34  | 98.81    | 99.69   | 100      | 100.4    | 99.46    |
| SiO2'       | 70.24   | 70.41    | 70.48   | 70.79    | 71.18    | 71.35    |
| (Na2O+K2O)' | 10.03   | 10.15    | 9.79    | 9.51     | 10.85    | 10.50    |
| Sc          |         |          |         |          |          |          |
| V           |         |          |         | 30       |          |          |
| Cr          |         |          |         |          |          |          |
| Ni          |         |          |         |          |          |          |
| Cu          |         |          |         |          |          |          |
| Zn          |         |          |         |          |          |          |
| Ga          |         |          |         |          |          |          |
| Rb          |         |          |         | 161      |          |          |
| Sr          |         |          |         | 560      |          |          |
| Y           |         |          |         | 25       |          |          |
| Zr          |         |          |         | 183      |          |          |
| Nb          |         |          |         | 15*      |          |          |
| Cs          |         |          |         |          |          |          |
| Ba          |         |          |         | 1200     |          |          |
| La          |         |          |         |          |          |          |
| Ce          |         |          |         |          |          |          |
| Pr          |         |          |         |          |          |          |
| Nd          |         |          |         |          |          |          |
| Sm          |         |          |         |          |          |          |
| Eu          |         |          |         |          |          |          |
| Gd          |         |          |         |          |          |          |
| Tb          |         |          |         |          |          |          |
| Dy          |         |          |         |          |          |          |
| Ho          |         |          |         |          |          |          |
| Er          |         |          |         |          |          |          |
| Tm          |         |          |         |          |          |          |
| Yb          |         |          |         |          |          |          |
| Lu          |         |          |         |          |          |          |

|                                   |  |  |  |      |  |  |
|-----------------------------------|--|--|--|------|--|--|
| Hf                                |  |  |  |      |  |  |
| Ta                                |  |  |  |      |  |  |
| Pb                                |  |  |  |      |  |  |
| Th                                |  |  |  | 25   |  |  |
| U                                 |  |  |  |      |  |  |
| Li                                |  |  |  |      |  |  |
| F                                 |  |  |  |      |  |  |
| Rb/Sr                             |  |  |  | 0.27 |  |  |
| Cen/Ybn                           |  |  |  |      |  |  |
| Eu*                               |  |  |  |      |  |  |
| Zr/Hf                             |  |  |  |      |  |  |
| Ba/Rb                             |  |  |  | 7.45 |  |  |
| Rb/Th                             |  |  |  | 6.44 |  |  |
| $^{87}\text{Sr}/^{86}\text{Sr}_i$ |  |  |  |      |  |  |
| $^{143}\text{Nd}/^{144}\text{Nd}$ |  |  |  |      |  |  |
| $^{206}\text{Pb}/^{204}\text{Pb}$ |  |  |  |      |  |  |
| $^{207}\text{Pb}/^{204}\text{Pb}$ |  |  |  |      |  |  |
| $^{208}\text{Pb}/^{204}\text{Pb}$ |  |  |  |      |  |  |

| Sample      | S45      | H86-80   | W-150a  | 81-25    | 81-3    | MGD-788 |
|-------------|----------|----------|---------|----------|---------|---------|
| Age, Ma     | 45       | 45       | 38.6    | 45       | 44      | 44      |
| Long W      | 103 27.6 | 103 27.5 | 103 31  | 103 29.4 | 103 29  |         |
| Lat N       | 29 27.4  | 29 29.1  | 29 22.4 | 29 28.7  | 29 27.3 |         |
| SiO2        | 69.20    | 70.77    | 71.70   | 70.86    | 71.16   | 71.28   |
| TiO2        | 0.26     | 0.16     | 0.33    | 0.12     | 0.27    | 0.15    |
| Al2O3       | 11.10    | 12.82    | 14.77   | 15.93    | 13.98   | 12.68   |
| Fe2O3       | 4.80     | 2.89     |         | 0.85     | 2.92    | 4.16    |
| FeO         | 0.12     | 0.60     |         |          | 0.36    | 0.10    |
| FeO*        |          |          | 1.10    |          |         |         |
| MnO         | 0.14     | 0.07     |         |          | 0.08    | 0.39    |
| MgO         | 0.41     |          | 0.23    | 0.01     | 0.04    | 0.02    |
| CaO         | 1.92     | 1.11     | 0.85    | 0.31     | 0.80    | 0.90    |
| Na2O        | 6.30     | 5.75     | 5.43    | 5.62     | 4.24    | 4.77    |
| K2O         | 2.60     | 4.82     | 5.54    | 5.11     | 5.12    | 4.37    |
| P2O5        | 0.05     |          | 0.05    |          |         | 0.01    |
| H2O+        | 0.49     | 0.34     |         | 0.27     | 0.74    | 0.77    |
| H2O-        |          |          |         |          |         |         |
| CO2         |          | 0.69     |         | 0.10     |         | 0.40    |
| Total       | 97.39    | 100.02   | 100     | 99.18    | 99.71   | 99.99   |
| SiO2'       | 71.41    | 71.49    | 71.70   | 71.71    | 71.90   | 72.13   |
| (Na2O+K2O)' | 9.18     | 10.68    | 10.97   | 10.86    | 9.46    | 9.25    |
| Sc          |          |          |         |          |         |         |
| V           |          |          | 2.3     |          |         |         |
| Cr          |          |          | 1.5     |          |         |         |
| Ni          |          |          |         |          |         |         |
| Cu          |          |          |         |          |         |         |
| Zn          |          |          |         |          |         | 413     |
| Ga          |          |          |         |          |         |         |
| Rb          |          |          | 163     |          |         |         |
| Sr          |          |          | 10      |          |         | 70      |
| Y           |          |          | 81.3    |          |         |         |
| Zr          |          |          | 839     |          |         | 1530    |
| Nb          |          |          | 101     |          |         |         |
| Cs          |          |          |         |          |         |         |
| Ba          |          |          | 42      |          |         | 183     |
| La          |          |          | 103     |          |         |         |
| Ce          |          |          | 203     |          |         |         |
| Pr          |          |          |         |          |         |         |
| Nd          |          |          | 91      |          |         |         |
| Sm          |          |          |         |          |         |         |
| Eu          |          |          |         |          |         |         |
| Gd          |          |          |         |          |         |         |
| Tb          |          |          |         |          |         |         |
| Dy          |          |          |         |          |         |         |
| Ho          |          |          |         |          |         |         |
| Er          |          |          |         |          |         |         |
| Tm          |          |          |         |          |         |         |
| Yb          |          |          |         |          |         |         |
| Lu          |          |          |         |          |         |         |

|                                   |  |  |      |  |  |  |
|-----------------------------------|--|--|------|--|--|--|
| Hf                                |  |  |      |  |  |  |
| Ta                                |  |  |      |  |  |  |
| Pb                                |  |  |      |  |  |  |
| Th                                |  |  |      |  |  |  |
| U                                 |  |  |      |  |  |  |
| Li                                |  |  |      |  |  |  |
| F                                 |  |  |      |  |  |  |
| Rb/Sr                             |  |  | 16.3 |  |  |  |
| Cen/Ybn                           |  |  |      |  |  |  |
| Eu*                               |  |  |      |  |  |  |
| Zr/Hf                             |  |  |      |  |  |  |
| Ba/Rb                             |  |  | 0.26 |  |  |  |
| Rb/Th                             |  |  |      |  |  |  |
| $^{87}\text{Sr}/^{86}\text{Sr}_i$ |  |  |      |  |  |  |
| $^{143}\text{Nd}/^{144}\text{Nd}$ |  |  |      |  |  |  |
| $^{206}\text{Pb}/^{204}\text{Pb}$ |  |  |      |  |  |  |
| $^{207}\text{Pb}/^{204}\text{Pb}$ |  |  |      |  |  |  |
| $^{208}\text{Pb}/^{204}\text{Pb}$ |  |  |      |  |  |  |

| Sample      | 81-109   | H90-74   | AF2    | H81-44 | H86-122  | 81-108   |
|-------------|----------|----------|--------|--------|----------|----------|
| Age, Ma     | 41       | 44       | 41     | 44     | 41       | 41       |
| Long W      | 103 27.8 | 103 27.5 | 103 38 | 103 30 | 103 36.2 | 103 27.8 |
| Lat N       | 29 28.7  | 29 27.5  | 29 31  | 29 29  | 29 29.3  | 29 28.7  |
| SiO2        | 71.88    | 70.59    | 73.29  | 71.50  | 74.64    | 74.24    |
| TiO2        | 0.16     | 0.23     | 0.10   | 0.18   | 0.15     | 0.16     |
| Al2O3       | 13.26    | 12.52    | 14.20  | 13.12  | 12.22    | 13.67    |
| Fe2O3       | 3.45     |          |        | 3.80   | 1.53     | 1.27     |
| FeO         | 0.09     |          |        | 0.18   | 0.75     | 0.14     |
| FeO*        |          | 5.25     | 1.22   |        |          |          |
| MnO         | 0.08     | 0.11     |        | 0.21   | 0.09     |          |
| MgO         | 0.03     |          | 0.24   | 0.01   | 0.06     | 0.15     |
| CaO         | 0.24     | 2.05     | 0.30   | 0.45   | 0.16     | 0.52     |
| Na2O        | 4.93     | 4.41     | 6.09   | 5.18   | 5.52     | 4.46     |
| K2O         | 4.52     | 4.81     | 4.54   | 4.41   | 4.73     | 4.89     |
| P2O5        |          | 0.02     | 0.03   | 0.01   |          |          |
| H2O+        | 0.40     |          |        | 0.80   | 0.13     | 0.31     |
| H2O-        |          |          |        |        |          |          |
| CO2         | 0.17     |          |        | 0.1    |          | 0.30     |
| Total       | 99.21    | 96.37    | 100    | 97.90  | 99.98    | 100.11   |
| SiO2'       | 72.87    | 73.25    | 73.29  | 73.71  | 74.52    | 74.61    |
| (Na2O+K2O)' | 9.58     | 9.57     | 10.63  | 9.89   | 10.27    | 9.40     |
| Sc          |          |          |        |        |          |          |
| V           |          |          | 3.4    |        |          |          |
| Cr          |          |          | 3.4    |        |          |          |
| Ni          |          |          | 3.5    |        |          |          |
| Cu          |          |          |        |        |          |          |
| Zn          |          | 510      |        | 252    |          |          |
| Ga          |          |          |        |        |          |          |
| Rb          |          | 480      | 323    |        |          |          |
| Sr          |          | 32       | 10     | 16     |          |          |
| Y           |          | 236      | 150    |        |          |          |
| Zr          |          | 2127     | 1376   | 1640   |          |          |
| Nb          |          | 451      | 385    |        |          |          |
| Cs          |          |          |        |        |          |          |
| Ba          |          | 50       | 76     | 28     |          |          |
| La          |          | 263      | 144    |        |          |          |
| Ce          |          | 610      | 352    |        |          |          |
| Pr          |          |          |        |        |          |          |
| Nd          |          |          | 110    |        |          |          |
| Sm          |          |          |        |        |          |          |
| Eu          |          |          |        |        |          |          |
| Gd          |          |          |        |        |          |          |
| Tb          |          |          |        |        |          |          |
| Dy          |          |          |        |        |          |          |
| Ho          |          |          |        |        |          |          |
| Er          |          |          |        |        |          |          |
| Tm          |          |          |        |        |          |          |
| Yb          |          |          |        |        |          |          |
| Lu          |          |          |        |        |          |          |

|             |  |      |      |    |  |  |
|-------------|--|------|------|----|--|--|
| Hf          |  |      |      |    |  |  |
| Ta          |  |      |      |    |  |  |
| Pb          |  | 31   |      | 12 |  |  |
| Th          |  | 62   |      | 39 |  |  |
| U           |  |      |      |    |  |  |
| Li          |  |      |      |    |  |  |
| F           |  |      |      |    |  |  |
| Rb/Sr       |  | 15   | 32.3 |    |  |  |
| Cen/Ybn     |  |      |      |    |  |  |
| Eu*         |  |      |      |    |  |  |
| Zr/Hf       |  |      |      |    |  |  |
| Ba/Rb       |  | 0.1  | 0.24 |    |  |  |
| Rb/Th       |  | 7.74 |      |    |  |  |
| 87Sr/86Sr,l |  |      |      |    |  |  |
| 143Nd/144Nd |  |      |      |    |  |  |
| 206Pb/204Pb |  |      |      |    |  |  |
| 207Pb/204Pb |  |      |      |    |  |  |
| 208Pb/204Pb |  |      |      |    |  |  |



| Sample      | H86-120  | HE-3     | Pinto-9 |
|-------------|----------|----------|---------|
| Age, Ma     | 41       | 41.2     | 41      |
| Long W      | 103 35.8 | 103 35.5 | 104 30  |
| Lat N       | 29 28.6  | 29 29.4  | 30 00   |
| SiO2        | 76.05    | 75.64    | 75.90   |
| TiO2        | 0.09     | 0.10     | 0.10    |
| Al2O3       | 11.59    | 11.84    | 13.15   |
| Fe2O3       | 1.69     |          | 0.33    |
| FeO         | 0.70     |          | 0.35    |
| FeO*        |          | 2.26     |         |
| MnO         | 0.09     |          | 0.01    |
| MgO         | 0.04     | 0.26     | 0.13    |
| CaO         | 0.09     | 0.14     | 0.49    |
| Na2O        | 5.64     | 5.67     | 3.82    |
| K2O         | 4.35     | 4.03     | 4.40    |
| P2O5        | 0.25     | 0.05     |         |
| H2O+        |          |          | 0.89    |
| H2O-        |          |          | 0.51    |
| CO2         |          |          |         |
| Total       | 100.58   | 100      | 100.08  |
| SiO2'       | 75.61    | 75.64    | 76.92   |
| (Na2O+K2O)' | 9.93     | 9.70     | 8.33    |
| Sc          |          |          |         |
| V           |          | 12.4     |         |
| Cr          |          | 1.7      |         |
| Ni          |          |          |         |
| Cu          |          |          |         |
| Zn          |          |          |         |
| Ga          |          |          |         |
| Rb          |          | 331      |         |
| Sr          |          | 11       |         |
| Y           |          | 84       |         |
| Zr          |          | 953      |         |
| Nb          |          | 251      |         |
| Cs          |          |          |         |
| Ba          |          | 56       |         |
| La          |          | 56.9     |         |
| Ce          |          | 134.6    |         |
| Pr          |          |          |         |
| Nd          |          | 50.7     |         |
| Sm          |          | 13.16    |         |
| Eu          |          | 0.481    |         |
| Gd          |          | 11.7     |         |
| Tb          |          |          |         |
| Dy          |          | 11.9     |         |
| Ho          |          |          |         |
| Er          |          | 7.1      |         |
| Tm          |          |          |         |
| Yb          |          | 8.148    |         |
| Lu          |          |          |         |

|                                   |  |      |  |
|-----------------------------------|--|------|--|
| Hf                                |  |      |  |
| Ta                                |  |      |  |
| Pb                                |  |      |  |
| Th                                |  |      |  |
| U                                 |  |      |  |
| Li                                |  |      |  |
| F                                 |  |      |  |
| Rb/Sr                             |  | 30.1 |  |
| Cen/Ybn                           |  | 4.47 |  |
| Eu*                               |  | 0.12 |  |
| Zr/Hf                             |  |      |  |
| Ba/Rb                             |  | 0.17 |  |
| Rb/Th                             |  |      |  |
| $^{87}\text{Sr}/^{86}\text{Sr}_i$ |  |      |  |
| $^{143}\text{Nd}/^{144}\text{Nd}$ |  |      |  |
| $^{206}\text{Pb}/^{204}\text{Pb}$ |  |      |  |
| $^{207}\text{Pb}/^{204}\text{Pb}$ |  |      |  |
| $^{208}\text{Pb}/^{204}\text{Pb}$ |  |      |  |