

Because of dissolution kinetics of calcite, dolomite, and gypsum – a main calcium and magnesium-bearing minerals, are not diffusion controlled when measured on single phases, it can be further concluded that the movement of these ions through the mass of generally inert material in the columns is the source of the diffusion barrier.

Table 7.9 Fitting parameters for power law regression of minor element data.

|                | BCS3-PA | HCS-IN | KBF-WV | LKFC-PA | MKSS-PA |
|----------------|---------|--------|--------|---------|---------|
| CALCIUM        |         |        |        |         |         |
| A              | 150276  | 320331 | 40638  | 120685  | 42966   |
| n              | 0.451   | 0.564  | 0.630  | 0.381   | 0.715   |
| R <sup>2</sup> | 0.988   | 0.978  | 0.991  | 0.995   | 0.992   |
|                |         |        |        |         |         |
| MAGNESIUM      |         |        |        |         |         |
| A              | 78068   | 272488 | 40836  | 143448  | 14330   |
| n              | 0.432   | 0.490  | 0.561  | 0.326   | 0.597   |
| R <sup>2</sup> | 0.993   | 0.944  | 0.992  | 0.993   | 0.998   |
|                |         |        |        |         |         |
| POTASSIUM      |         |        |        |         |         |
| A              | 6879    | 11790  | 9030   | 12212   | 7391    |
| n              | 0.431   | 0.400  | 0.453  | 0.346   | 0.427   |
| R <sup>2</sup> | 0.989   | 0.974  | 0.993  | 0.988   | 0.998   |
|                |         |        |        |         |         |
| ZINC           |         |        |        |         |         |
| A              | 10.7    | 8988   | 10.3   | 504     | 26.0    |
| n              | 0.849   | 0.604  | 0.812  | 0.279   | 0.872   |
| R <sup>2</sup> | 0.937   | 0.634  | 0.943  | 0.988   | 0.962   |
|                |         |        |        |         |         |
| SELENIUM       |         |        |        |         |         |
| A              | 48.7    | 3556   | 10.8   | 86.9    | 5.3     |
| n              | 0.160   | 0.313  | 0.192  | 0.324   | 0.354   |
| R <sup>2</sup> | 0.956   | 0.982  | 0.907  | 0.999   | 0.970   |
|                |         |        |        |         |         |
| IRON           |         |        |        |         |         |
| A              | 20.4    | 32987  | 34.2   | 1288    | 20.7    |
| n              | 0.663   | 0.518  | 0.279  | 0.031   | 0.432   |
| R <sup>2</sup> | 0.854   | 0.144  | 0.893  | 0.920   | 0.923   |
|                |         |        |        |         |         |
| MANGANESE      |         |        |        |         |         |
| A              | 406     | 13979  | 31.4   | 50388   | 209     |
| n              | 0.413   | 0.548  | 0.468  | 0.334   | 0.973   |
| R <sup>2</sup> | 0.971   | 0.897  | 0.989  | 0.998   | 0.994   |
|                |         |        |        |         |         |