

Table 2.3 shows the median and quartiles of PCO_2 values for the columns and humidity cells, and recalculated PCO_2 assuming equilibrium with respect to calcite. The calculated PCO_2 values in Table 2.3 showed that the PCO_2 in humidity cells with and without the enhanced CO_2 gas mixture were nowhere near the 10% target CO_2 value; also leaching columns with carefully controlled CO_2 introduction usually met the target 10% value, while columns with less rigorous CO_2 introduction fell short of the target value.

The distribution of calculated saturation indices for leachate from the leaching columns and humidity cells is shown in a series of boxplots in Figure 2.5. Boxplots 5 through 8 are humidity cells, all others are columns. Stippled boxplots represent columns and cells that had air enriched with 10% CO_2 circulated through them. The boxplots that are not stippled represent apparatuses with atmospheric air only. Where duplicate columns were run, the data were combined (items 1 through 8 in Fig. 2.5). In general, the columns were supersaturated, or nearly saturated with respect to calcite. The humidity cells were almost always undersaturated with respect to calcite.

The gas handling procedures at Laboratory 2 differed from those of Laboratory 1, in that each of the three leaching columns had separate flow meter controls connected to the regulators of the tanks of compressed gas. Further evaluations of the kinetic test procedures demonstrated the importance of incorporating most of these Laboratory 2 gas handling procedures into the draft method, in order to maintain the target mixture within the leaching column (or humidity cell) apparatus throughout the weathering test. Laboratory 2 conducted leaching column tests on shale, sandstone and limestone samples for 16 weeks, using the ADTI-WP2 draft method. The rock samples were representative splits of the same Brush Creek shale and Wadesville sandstone samples used by Laboratory 1, plus a Valentine limestone sample. Figure 2.6 shows the alkalinity concentrations for the sandstone, shale and limestone samples for the 16 week weathering period.

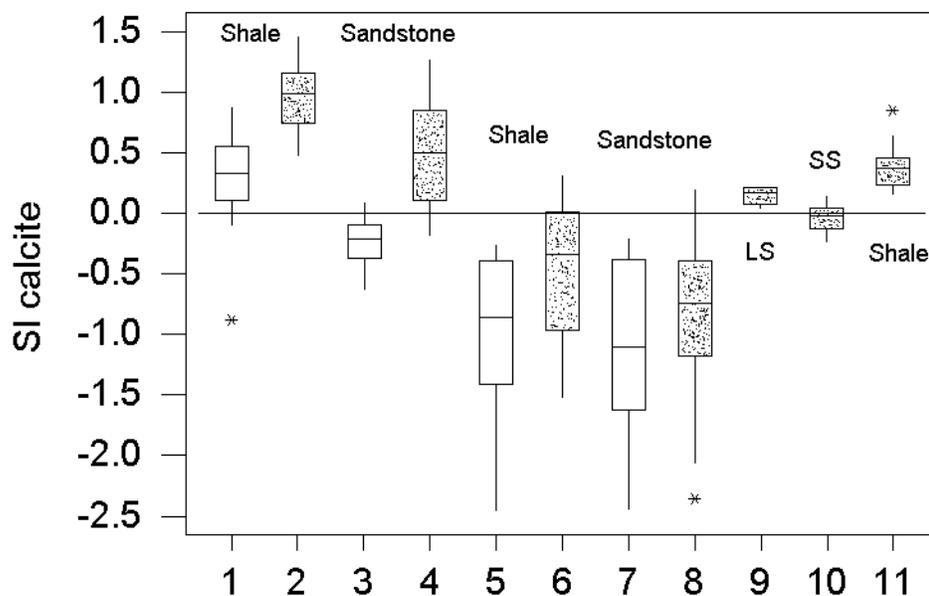


Figure 2.5. Boxplots showing the distribution of saturation indices for calcite for leaching apparatuses.