3 and 15 of the shale and sandstone humidity cells to the other weeks. That observation prompts further study of whether it is due to inconsistencies in the control of carbon dioxide partial pressures in the apparatus through time, or due to some geochemical factors in the weathering process.

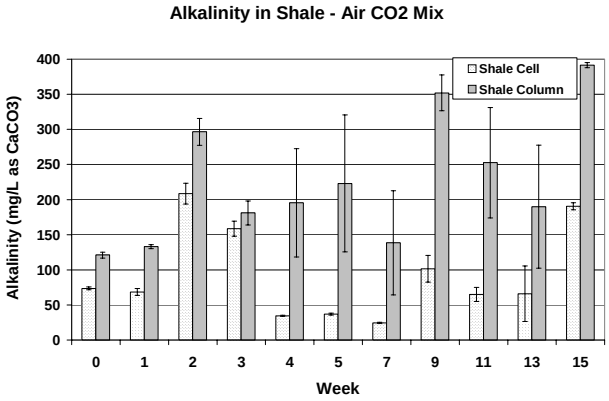

Figure 2.3a. Comparison of Humidity Cell and Leaching Column Performance on Alkalinity Production in Shale Sample Using CO_2 Enhanced Mixture

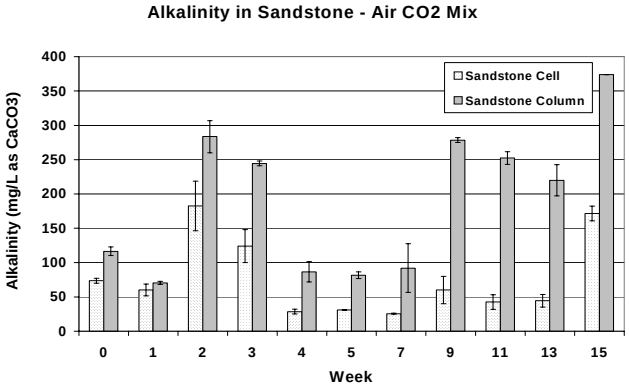

Figure 2.3b Comparison of Humidity Cell and Leaching Column Performance and Alkalinity Production in Sandstone Samples Using CO_2 Enhanced Gas.

<u>comparison of leaching efficiency of columns and humidity cells:</u> Figure 2.3 shows the comparison of humidity cell and leaching column performance on duplicate samples of shale and sandstone with air only and CO_2-enhanced gas mixtures. In comparing the performance of the humidity cells and leaching columns with the CO_2-enhanced gas mixture on the same shale sample, it is obvious that the alkalinities are much greater (i.e. often 2 to 6 times greater) in Figure 2.3a for the columns. The humidity cells in Figure 2.3a generally have alkalinities that are much lower than the leaching columns, and there is usually less variability between the duplicates and through time.

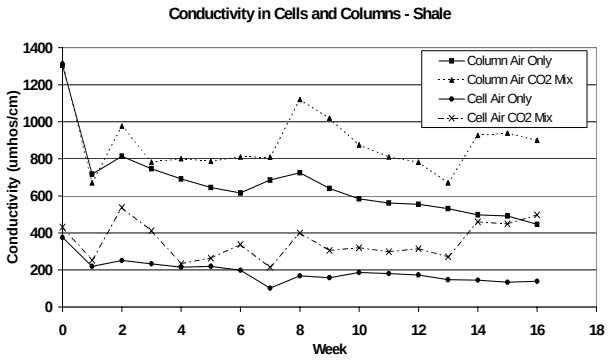

Figure 2.4a. Conductivity in Leachate from Shale in Humidity Cells and Leaching Columns

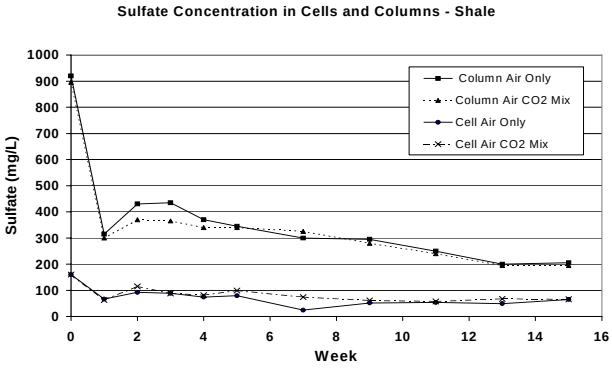

Figure 2.4b. Sulfate in Leachate from Shale in Humidity Cells and Leaching Columns