# Statistical Analysis

For each constituent, data are analyzed for statistically significant changes between the decadal samples within a network using the Wilcoxon-Pratt signed-rank test (Pratt, 1959) using the R-statistical software. Details of this method are described in Lindsey and Rupert (2012). Briefly, the method first calculates changes in concentrations at individual wells and then uses the pattern of those changes to determine whether or not there has been a statistically significant change for a well network as a whole. For these tests, a 90-percent confidence level, or a p-value of less than 0.10, is used to signify a statistically significant change. Because the R-statistical program cannot analyze networks if all the data are tied (no differences in any pair), networks with all ties are assumed to have no significant change.