column preparation: The size of the particles within each sample being evaluated is a contributing factor to the effects of exposure to weathering (i.e., the smaller the particle size, the greater the surface area exposed). For this reason, and because particle size distributions within the samples that will be evaluated using this method are largely the result of mechanical sample crushing, the method developers have determined that the method should include a procedure for reconstructing samples according to a standardized particle-size distribution. This standardized distribution can facilitate comparison of the effects of weathering on various sample types. Laboratories participating in this study were tasked with preparing samples for each column according to the particle-size distributions listed in Table 2 of the draft method and in Table 4.3 below.

Table 4.3: Particle Size Distribution of Reconstructed Samples

U.S. Sieve # (or equivalent mesh size)	Percent of Sample (by weight)
3/8" to 4	40
4 - 10	25
10 - 16	15
16 - 35	10
35 - 60	5
Less than 60	5
Total	**100**

To provide an assessment of method precision, laboratories were tasked with preparing aliquots of each shale samples for exposure to identical weathering conditions in separate duplicate columns. Laboratories were also tasked with preparing a sandstone sample to evaluate weathering effects in a sample known to produce only small amounts of target analytes (i.e., contain low sulfur and relatively low NP).

Method Evaluation

Laboratories evaluated column test procedures as written and according to study requirements, with the following exceptions:

- **sample duplicates:** Laboratories were instructed to evaluate weathering procedures in duplicates of all four shale samples and in a single sandstone sample. Laboratory 8 evaluated procedures in duplicates of three of the four shale samples, in duplicates of the sandstone sample, and a single Kanawha Black Flint Shale sample.

- **study schedule:** Due to laboratory contracting schedules, not all laboratories were available to initiate study activities concurrently. Six of the eight participating laboratories initiated the test procedure on January 9, 2006. Laboratory 1 began the study approximately 12 weeks before these laboratories, using a slightly different column construction. Laboratory 8 began method activities approximately 4 weeks following study initiation, performing metals analysis in the laboratory rather than sending samples to the metals laboratory.