

Sample Weights

As described previously, laboratories reconstructed samples according to the particle size distribution in Table 4.2. All laboratories, with the exception of Laboratory 8, prepared duplicates of four shale samples and a single sandstone sample. Laboratory 8 prepared a single Kanawha Black Flint Shale sample and duplicates of all other samples, including sandstone. Weights of reconstructed samples added to columns in each laboratory are presented in Table 4.5.

Table 4.5: Sample Types and Weights (in grams)

Lab	Brush Creek Shale (BCS3-PA)	Kanawha Black Flint Shale (KBF-WV)	Lower Kittanning Shale (LKFC-PA)	Houchin Creek Shale (HCS-IN)	Middle Kittanning Sandstone (MKSS)
1	2000	2000	2000	2000	2000
	2000	2000	2000	2000	-
2	1801	1653	1895	1298	1684
	1807	1883	1841	1589	-
3	1691	1819	2011	1521	1751
	1828	1849	1884	1489	-
4	1850	2055	2078	1487	1964
	1922	2039	2038	1515	-
5	1880	2079	2014	1482	1896
	1904	2056	2001	1521	-
6	1833	1999	1971	1361	1905
	1859	2002	1933	1410	-
7	1900	1862	1970	1412	1790
	1836	1912	2010	1487	-
8	1900	1800	2000	1800	2000
	1900	-	2000	1800	2000

Columns in Laboratory 1 were prepared in accordance with initial method instructions to add approximately 2 kg sample to each column. The remaining laboratories initiated study activities approximately three months later, following revised instructions to fill columns to approximately 4 inches below the top of the column, using little to no packing. Discussions with Laboratory 1 indicated that sample compaction was needed to add 2000g to each HCS-IN column. All other laboratories added from 1361 to a maximum of 1800g to HCS-IN columns. Recorded water volumes indicate that sample compaction could have affected the amount of water added to and collected from samples, particularly the HCS-IN samples.

Method Performance

Method performance, in terms of the precision that can be expected to be achieved in a single laboratory, was evaluated in terms of the RPD in unweighted (concentration) results and weighted (concentration multiplied by water volume collected over the total weight of the sample) results between duplicate samples. Precision that can be expected in multiple laboratories testing replicate (more than two) samples was evaluated in terms of the RSD in concentration and weighted results in replicate samples across laboratories.