

Appendix B-3

Field QC and Laboratory QC Sample Collection and Documentation Requirements

SAMPLE TYPE	PURPOSE	COLLECTION ¹	SAMPLE NUMBER
Field Duplicate ²	To check reproducibility of laboratory and field procedures. To indicate non-homogeneity.	Collect from areas that are known or suspected to be contaminated. Collect one sample per week or 10% (projects may vary) of all field samples per matrix, whichever is greater.	Assign two separate (unique) sample numbers (i.e. one number to the primary sample and one to the duplicate). Submit blind to the lab.
Field Blanks	To check cross-contamination during sample collection, sample shipment, and in the laboratory. Also to check sample containers.	Collect for each group of samples of similar matrix per day of sampling. Organics - Use water (demonstrated to be free of the contaminants of concern). Inorganics - Use metal-free (deionized or distilled) water.	Assign separate sample numbers to the trip blanks. Submit blind to the lab.
Volatiles Trip Blank	To check contamination during sample handling and shipment from field to laboratory.	Prepare one sample using water demonstrated to be free of the contaminants of concern (DI water is appropriate). Place this sample in the cooler used to ship volatile samples.	Assign separate sample numbers to the equipment blanks. Submit blind to the lab.
Equipment Blank or Rinse Blank	To check field decontamination procedures.	Collect when sampling equipment is decontaminated and reused in the field or when a sample collection vessel (bailer or beaker) will be used. Use blank water (water decontamination to be organic-free, deionized or distilled for inorganics) to rinse water into the sample containers.	Assign separate sample numbers to the equipment blanks. Submit blind to the lab.
Matrix Spike and Matrix Spike Duplicate ³	Required by laboratory's contract to check accuracy and precision of organic analyses.	Collect triple volume for one water sample per 20 water samples. The triple volume water sample should be collected in the first shipment of organics samples.	Assign the primary sample, extra volume, matrix spike and matrix spike duplicates the same sample number. Label the extra volume "Lab QC".
Spike and Lab Duplicate ³	Required by laboratory's contract to check accuracy and precision of inorganic analyses.	Collect double volume for one water sample per 20 water samples. The double water volume samples should be collected in the first shipment of inorganic samples.	Assign the primary sample, extra volume, spike and duplicate the same sample number. Label the extra volume "Lab QC."

1 Consult Regional or Project Manager guidance for field QC sample frequencies; laboratory QC sample frequencies are generally fixed in the laboratory subcontracts or specified in analytical methods.

2 A true split for sediment, sludge, and soil samples (and other heterogenous samples such as highly turbid waters) is typically not feasible under field conditions. A split of this type of sample should generally be considered a duplicate.

3 No extra volume is required for the soil/sediment matrix; however, the sample to be used for laboratory QC must be designated on the Traffic Report/Chain-of-Custody Record.