Ozarks Environmental and Water Resources Institute (OEWRI)
Missouri State University (MSU)

Standard Operating Procedure for:

Chain of Custody

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Identification of the method
Use of sample collection and chain of custody forms for water and sediment/soil.

Scope of the method
This standard operating procedure provides Ozarks Environmental and Water Resources (OEWRI) field and laboratory personnel with guidance on the procedure for completion of water and sediment sample collection chain of custody forms.

Summary of method
The form included with this method is used to provide a written record of the collection, possession, and handling of samples. Each sample will be tracked by a chain of custody record that serves to efficiently document the individuals who were responsible for the collection, transport, and handling of the sample during each successive transfer of that sample to various laboratories and departments. This information can be used to legally establish the integrity of the sample and therefore the analytical results derived from the sample analysis. This information is in addition to the standard data sheets used for field collection.

Definitions
Chain of Custody: The maintenance of an unbroken record of possession of a sample from the time of its collection through some analytical or testing procedure.

Health and safety
There are no health or safety concerns when using this procedure.

Personnel qualifications
This procedure will be followed by OEWRI field and laboratory personnel who have received appropriate training, have field experience regarding the collection of water and sediment/soil samples, and who are familiar with all OEWRI's sample handling and labeling procedures.

Equipment and supplies
1. Field book: to record conditions in the field at the time of collection
2. Pen or marker: to record information in the field book and to complete sample container labels
3. Sample collection / Chain of Custody forms (pgs. 7 & 8).

Water Sample Procedure

1. The Water Sample Collection and Chain of Custody Form (pg. 7) is comprised of two sections:
    a. A water sampling collection form including sample information
    b. A chain of custody section to keep record of sample handling.
2. Sample information is arranged by row with records to be filled in under specific column headings. Often the information will be common to all the samples in a group. Fill all columns with permanent ink. Clearly print the data in the columns. Cross out any errors that occur with one line and initial and date the correction.
3. Record the date that samples are collected on the **Sampling Date** line.
4. Indicate which project the samples are being collected for on the **Project** line. The project identification is a short phrase (two or three words and a year) that clearly identifies which project the samples are connected to (for example, Finley Creek 2006 or Rain Garden 2006).
5. Identify which analyses are required for the samples listed on the **Analyses Required** line by placing a check mark in the appropriate box.
6. The **Sample ID** column should be filled with the correct sample identification code. The sample ID is selected by the project assistant and is unique for each sample collection site.
7. Under **Sample Type** indicate either a grab, composite, auto, or first flush sample.
8. In the **Container Type** column, indicate the bottle size used (e.g., 250 mL glass bottle, 1 L plastic bottle, etc.)
9. Under the **Preservative** indicate the concentration and type of any preservative used. All samples should be transported in a cooler containing ice.
10. Enter the time that samples are collected under **Time Collected** using military time (e.g., 13:30 = 1:30 PM).
11. The **Chain of Custody** section allows for tracking of the possession of a set of samples from the time of collection in the field until the samples are delivered and stored at the laboratory.
12. Initials should be used when completing the **Samples Collected by**, **Received by**, and **Analyses completed** lines. Whoever collected the samples should initial the **Samples Collected by** line.

a. That same person should deliver the samples to the laboratory and meet with the laboratory personnel who will be responsible for the samples from that point on.

b. The laboratory manager should verify that all the samples listed on the COC are accounted for and initial the **Received by** line.

c. The person analyzing the samples should initial the **Analyzed by** line and record the date and time on the appropriate lines.

13. Once all samples have been analyzed for all tests, store the completed forms in the appropriate folder marked “Completed COCs” in the file cabinet located in the OEWRI laboratory and in the Laboratory Manager’s share folder on the OEWRI Server. **All COCs are to be held for 7 years**.

14. Dispose of samples appropriately and clean bottles according to laboratory standards.

Sediment / Soil Sample Procedure

1. The Chain of Custody Form for Sediment/Soil Samples form (pg. 8) is comprised of two sections:
   a. A sediment/soil sample chain of custody section to keep record of sample handling
   b. A Sample ID/Lab ID section
2. Indicate which project the samples are for on the **Project** line. The project identification is a short phrase (two or three words and a year) that clearly identifies which project the samples are connected to (for example, Finley Creek 2006 or Rain Garden 2006).
3. Fill out **Form Submitted By** line.
4. For **Sample Type**, indicate either an overbank, glide, bar, lake bottom, or soil.
5. Indicate what fraction size the sediment is on the **Fraction** line.
6. Fill out the **Date Collected** line on the form.
7. Identify which analyses are required for the samples listed on the **Analyses Required** line.
8. For **Bag Type**, indicate the size of bag used (for example, gallon, quart, XRF, etc.)
9. Indicate where the samples are stored under **Laboratory Storage Location**.

10. The **Sample Label** column should be filled with the correct sample identification code from the field. The sample label is selected by the project leader and is unique for each sample collection site. Typically, the sample label is detailed and is specific about where the sample was collected.
    a. An example might be “Site 1, Core 1, 0-10 cm”.
    b. The Lab Number should be simple and avoids details about the sample that may introduce analytical bias by expecting a specific result. By changing to a generic lab number, the analyst will not know any specific details about the sample.
    c. An example being “BR-1” (BR = Big River, Sample #1). The lab number will be used for identifying the sample for all lab analyses for the remainder of the project.
11. Once all samples have been analyzed for the required tests, store the completed forms in the appropriate folder marked “Completed COCs” in the file cabinet located in Temple 125 and in the Sediment Laboratory Coordinator’s share folder on the OEWRI Server. **All COCs are to be held for 7 years.**
12. Dispose of samples appropriately.

Computer Hardware and Software

Word: This document and attached Chain of Custody forms are prepared using Microsoft Word.

Tables, Diagrams, and Flowcharts

1. See below for both the Water Sample and Sediment/Soil Sample Chain of Custody Forms.