Standard Operating Procedure

Groundwater Completing Chains of Custody

Commonwealth of Kentucky
Energy and Environment Cabinet
Department for Environmental Protection
Division of Water

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COMPLETING CHAINS-OF-CUSTODY
Groundwater Section Standard Operating Procedure GWB 100.2.1

A Chain-of-Custody (CoC) form is used to record the custodial history of all samples collected and maintained by investigators (Appendix 1 of GWB 100.2.1). The CoC record shall accompany all sample sets. This record documents transfer of custody of samples from the sample custodian to another person, to the laboratory, or to other organizational elements. The CoC also serves as a sample logging mechanism for the laboratory sample custodian. This form shall not be used to document the collection of split samples where there is a legal requirement to provide a receipt for samples. A CoC record shall be completed for each site where samples are collected.

Chain-of-custody procedures are comprised of the following elements:

1) maintaining sample custody and
2) documentation of samples for evidence

To document chain-of-custody, an accurate record must be maintained to trace the possession of each sample from the moment of collection to its introduction into a laboratory for analysis.

A sample is in custody if:

1) it is in the actual possession of an investigator;
2) it is in the view of an investigator, after being in their physical possession;
3) it was in the physical possession of an investigator and then they secured it to prevent tampering; and/or
4) it is placed in a designated secure area.

A CoC is used whenever a sample is collected by Groundwater Section personnel for the Ambient Groundwater Network Program, 319 nonpoint source grant projects, Pesticides Memorandum of Agreement projects, or for well and spring complaint assessments that will be submitted to a separate entity for analysis. This does not *necessarily* apply to BART kits, field analyses or other tests that are conducted or retained by the sampler.

The following information must be supplied in the indicated spaces to complete a Branch CoC record.

- Heading:
  Consists of information about who originated the CoC, including Cabinet, Division, and Branch; which program is requesting analysis of the sample; and the Funding Source from which the money will come to pay for the analysis. This information is generally printed at the top of the CoC, but often the Requesting Program and Funding Source will have to be added by the sampler.

- Site Identification:

1. Location is the place name of the site. Sites are usually wells or springs, but may be ponds, lakes, caves, coal mines, or streams.

2. County: County where the site is located.

3. AKGWA #: Springs and wells should be identified by a number from the Department for Environmental Protection Consolidated Groundwater Database. If the spring or well does not have a number, the sampler will fill out the correct well inspection form or spring inventory form and assign an AKGWA Number. Some sites may not need an identifying number (i.e. occasional surface water samples, etc).

4. Check box to indicate if sample site is for a complaint or one-time basis and not an "Active" site.

- Collection Date/Time: The collection date and time (24 hour clock).

- Field Measurements: The results of field measurements. At springs, an estimation of the volume of water being discharged by the spring is required. This is typically noted in cubic feet per second (cfs), however conversion from other units is possible.

- Sampler ID: The names of all personnel participating in the sampling event (printed).

- Analysis Requested: Mark all boxes beside parameters for which an analysis is being requested. The laboratories use this section to determine which parameters will be analyzed for and by what method. If the box is unmarked, the lab will not conduct the analysis.

- Signatures Box. At time of relinquishment of custody of samples: Signature of sampler, date and time relinquished, and signature of receiver.

- DISCARD SAMPLES UPON COMPLETION. This statement is for the laboratory. It directs the lab to get rid of any leftover sample material. Not all CoCs will have this statement as some samples may need to be kept for a specified period of time due to judicial or political issues associated with the sample. If the samples should be kept and this statement is on the CoC, draw a line through it and make the receiving institution aware of the need to retain these samples.

- Comments and Acid Preservative Expiration Dates. Expiration dates for each acid preservative used can be found on the outside of the plastic vial – these dates must be noted on the CoC as proof of their viability. Please include any pertinent comments in the box (i.e. recent precipitation or lack of, changes/difficulties with site...)

- The VOC trip blank form is very similar to the sample collection CoC.

1. Heading: Consists of information about who originated the CoC, including Cabinet, Division, and Branch; which program is requesting analysis of the sample; and the Funding Source from which the money will come to pay for the analysis. This

information is generally printed at the top of the CoC, but often the Requesting Program and Funding Source will have to be added by the sampler.

2. Site Identification: After "**TRIP BLANK** FOR:" enter the names of all sites visited during that particular sampling event. If the trip blank is for a specific Ambient Monitoring Network Run then it may be noted as such (i.e. SW Run) without listing each site on that run.

3. Preparation Date/Time: Enter the date, time, and preparer of the trip blank which will be found on the trip blank label. If you must prepare a trip blank, make sure you put the date, time, and your name on the label.

4. Funding Source: These blocks assist the laboratory in determining who pays the bills. Find out who is requesting the analysis and check the appropriate box.

5. Field Sampler I.D.: All sampler names (printed).

6. Analysis Requested: Mark the appropriate box with a check or X.

- Signatures Box: At time of relinquishment of custody of samples: Signature of sampler, date and time relinquished, and signature of receiver.

1. Box below signatures box: DO NOT MARK IN THIS BOX. FOR LAB USE ONLY.

Always check the Revised date at the bottom left corner of a Branch CoC. Make sure you have the most up-to-date CoC.

Direct any questions regarding the above information to the Ambient Groundwater Monitoring Network Program Coordinator, NPS Lead Investigator, Field Inspector/Investigator or Groundwater Section Supervisor.

Appendix 1

Groundwater Section Chains-of-Custody

CHAIN OF CUSTODY RECORD
ENERGY and ENVIRONMENT CABINET
DIVISION OF WATER - WATERSHED MANAGEMENT BRANCH - GROUNDWATER – WPC0603Z

Site Identification	**Collection Date/Time**	**Field Measurements**
? – Complaint/1x Sample Site Location: County: AKGWA #:	Date: _____ Time: _____	pH: _____ Conductivity: _____ µmhos Temp: _____ °C Spring flow: _____

Sampler ID:

Division for Environmental Services Samples			
Analysis Requested	**Container Size, Type**	**Preservation Method**	**Parameters**
	1000 ml Plastic Boston Round	Cool to 4°C	**Bulk Parameters** Chloride, Conductivity, Fluoride, Nitrate-N, Nitrite-N, pH, Sulfate, TSS, TDS, Ortho-P
	1000 ml Plastic Boston Round	H_2SO_4 Cool to 4°C	**Nutrients** NH_3 / TKN / TOC/Total Phosphorous
	1000 ml Plastic Boston Round	Filtered HNO_3 Cool to 4°C	**Dissolved Metals by ICP** Plus: Arsenic, Lead, Mercury, Selenium
	1000 ml Plastic Boston Round	HNO_3 Cool to 4°C	**Total Metals by ICP** plus Arsenic, Lead, Mercury, Selenium
	1000 ml Amber Glass	Cool to 4°C	**NP Pesticides** **Pesticides/PCBs** Methods 507/508
	1000 ml Amber Glass	5ml HCl Cool to 4°C	**Herbicides/Caffeine**
	250 ml HDPE Wide Mouth	Cool to 4°C NO HEAD SPACE	**Alkalinity**
	Three 40ml Amber Glass	50% HCl Cool to 4°C	**VOCs** (Trip Blank Required)
	125ml Amber Glass	Cool to 4° C	**Glyphosate**
	Two - 1000 ml Amber Glass	5ml HCl Cool to 4°C	**Duplicate** (only collect if requested)

Signatures:
Relinquished by: _____ Date: Time:
Received by: __
Relinquished by: _____ Date: _____ Time: _____
Received by: _____
Relinquished by: _____ Date: Time:
Received by: __

Sample #: Report #:
DISCARD SAMPLES UPON COMPLETION

Comments:

H_2SO_4 _____ (Expiration Date)

HNO_3 _____ (Expiration Date)

HCl (1:1) _____(Expiration Date)

CHAIN OF CUSTODY RECORD
ENERGY AND ENVIRONMENT CABINET
DIVISION OF WATER - WATERSHED MANAGEMENT BRANCH

Preparation Date/Time	**Billing Code**
Date: _____	☐ **(Salt/Licking) NPS0302Z-B304** ☐ **(South Elkhorn) NPS0202Z-B295**
Time: _____	☐ **(Groundwater) WPC0503Z** ☐ **(Pesticides MOA) PC0400Z-A948**
Prepared by: _____	☐ **(Drillers Program) 1300BACO**

Site Identification

TRIP BLANK FOR :

Field Sampler ID:_____

Division for Environmental Services Samples			
Analysis Requested	**Container Size, Type**	**Preservation Method**	**Parameters**
	40 ml Glass	**50 % HCl Cool to 4°C**	**VOCs**

Signatures:

Relinquished by: _____ Date: _____ Time: _____

Received by: _____

Relinquished by: _____ Date: _____ Time: _____

Received by: _____

Relinquished by: _____ Date: _____ Time: _____

Received by: _____

Sample #: _____ Report #: _____

DISCARD SAMPLES UPON COMPLETION

Revised 6/18/07