

**STANDARD OPERATING PROCEDURE**  
**PREPARATION OF A FIELD BLANK SAMPLE**

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**KEY WORDS**

Distilled Water, Deionized Water, Native Rinse, Preservative, Sample Transport, Chain of Custody

**APPROVALS**

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Environmental Monitoring Branch organization and personnel, such as management, senior scientist, quality assurance officer, project leader, etc., are defined and discussed in Standard Operating Procedure (SOP) [ADMN002.01](#).

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#### **1.0 INTRODUCTION**

##### **1.1 Purpose**

A field blank is a quality control sample that checks for contamination at the point of filling a sample bottle and during transport and storage. The field blank is different than a rinse blank which checks equipment cleanliness and is described in SOP [QAQC006.00](#).

#### **2.0 MATERIALS**

- 2.1** Distilled water or deionized water depending on the requirements of the study protocol. Because either may be used, both water types will be referred to as “field blank water” in this SOP.
- 2.2** Plastic bag or sheets to use as ground cover
- 2.3** Bottle, same as used for regular samples, labeled as required in SOP [QAQC005.00](#)
- 2.4** Chain of Custody (COC) filled out as required in SOP [ADMN006.01](#)
- 2.5** Latex gloves

#### **3.0 PROCEDURES**

##### **3.1 Field Blank Water Types**

**Distilled Water** is water that has many of its impurities removed through distillation. Distillation involves boiling the water and then condensing the vapor into a clean container.

**Deionized Water** is water that has had the ions removed. Deionization does not significantly remove uncharged organic molecules, viruses or bacteria, except by incidental trapping.

## **STANDARD OPERATING PROCEDURE**

### **PREPARATION OF A FIELD BLANK SAMPLE**

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### **3.2 Choosing Field Blank Water**

3.2.1 Review the study protocol to determine the type of field blank water required. If the protocol does not specify which type of water to use, consult with the project leader or the quality assurance officer.

3.2.2 Ensure there is enough field blank water for your sampling trip:

3.2.2.1 Deionized water is obtained from the California Department of Food and Agriculture Center for Analytical Chemistry (CDFA CAC) and kept at the West Sacramento warehouse. If there is not enough deionized water for your sampling trip or you deplete the warehouse stocks, alert the warehouse manager. You may need to take a trip out to the CDFA CAC to obtain enough field blank water.

3.2.2.2 Distilled water is not typically available at the West Sacramento warehouse. If you need distilled water for your field blank samples, you can purchase it in advance through DPR's procurement procedure or you may buy unopened, sealed containers during your sampling trip.

If you are planning to purchase it in advance through DPR, you should allow adequate time to complete the procurement process.

3.2.3 If you run out of field blank water during a sampling trip, you should try to find a source of the field blank water specified in the protocol. If that is not possible, follow these instructions to identify an appropriate replacement:

3.2.3.1 Distilled water is readily available in most grocery stores. Make sure that the container seal is intact before you purchase it.

3.2.3.2 If the protocol specifies the use of deionized water but it is unavailable, you may use distilled water as a substitute provided it comes from a sealed container and the project leader notes this as a protocol deviation.

## **STANDARD OPERATING PROCEDURE**

### **PREPARATION OF A FIELD BLANK SAMPLE**

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3.2.3.3 If you cannot find a source of distilled or deionized water, contact the project leader. The project leader will identify an alternative type of field blank water. Do not use anything other than distilled or deionized water unless the change is approved by the project leader and noted as a deviation to this SOP and/or the study protocol.

### **3.3 Collecting Field Blanks**

You should collect the field blank sample as close to the sample location and sample collection time as possible. The field blank sample should be collected in a similar manner as the sample, but without using the sample collection equipment.

- 3.3.1 Put on new latex gloves to prevent contaminating samples.
- 3.3.2 Bring a plastic bag to use as ground cover at the sample site.
- 3.3.3 Bring the container of field blank water and the sample bottle to where the regular sample is collected. Place them on a clean plastic bag. Neither the field blank water container, nor the sample bottles should be in direct contact with the ground.
- 3.3.4 While wearing gloves take off the sample bottle cap.
- 3.3.5 Pour the field blank water into the sample bottle, which may be held in the Styrofoam 6-pack container. Fill bottle to the top leaving no headspace. Try not to overfill the bottle so as not to dilute any contaminants.
- 3.3.6 Cap the bottle and prepare the COC in the same manner as other water samples. The bottle cap should be marked "FB".
- 3.3.7 If a preservative is necessary, check with the project leader to determine the amount required.
  - 3.3.7.1 If it is determined that a preservative is to be added after the field blank is filled, be sure to leave enough space at the top of the bottle.

## **STANDARD OPERATING PROCEDURE**

### **PREPARATION OF A FIELD BLANK SAMPLE**

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- 3.3.7.2 If it is determined that a preservative is to be added before the field blank is filled, do not overfill the bottle as to not spill any preservatives.
- 3.3.8 Transport and store field blank samples under the same conditions as the study samples as required in SOP [QAQC004.01](#).
- 3.3.9 Fill out a Check-In sheet as required in SOP [QAQC003.02](#) by writing 'FB' in the sample code field.

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