

## INSTRUCTIONS FOR OPTICAL BRIGHTENER SAMPLING

**Ozark Underground Laboratory, Inc.  
1572 Aley Lane Protom, MO 65733  
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## INSTRUCTIONS FOR OPTICAL BRIGHTENER SAMPLING

### **Samplers**

Optical brightener samplers consist of pieces of cotton test fabrics which have not been optically brightened.

### **Storage of Unused Samplers**

Store all samplers in new plastic bags (such as zip-lock bags) which are free of optical brighteners. Optical brighteners are found in laundry soaps and detergents, and are routinely found adsorbed on clothing and paper.

### **Placement of Samplers**

When springs or streams are sampled, the samplers are routinely anchored at a point where the sampler is as well exposed to the current as possible. The typical approach is to use sturdy copper or galvanized wire to attach the sampler to an anchor such as a large rock or brick. Samplers should not be wired flat against an anchor. Instead, there should be at least an inch of space separating the sampler from an anchor.

Do not use iron wire or old galvanized wire which may leave rust stains on the cotton samplers. The rust stains interfere with our analysis of the samplers. Galvanized wire should typically be replaced each time the sampler is replaced unless experience dictates otherwise. Plastic coated copper wire (such as used in house or automotive wiring) is often a good choice for anchoring packets. Plastic garden ties are also good for anchoring.

When wells are sampled, the sampler is placed in a sample holding device which is threaded at both ends for connection to faucets and garden hoses. The sample holder is unscrewed in the middle and the sampler is inserted in such a way as to most efficiently insure that water will pass through it. In well sampling, the well is typically allowed to run continuously at a rate of about one gallon per minute.

Avoid direct contact with laundry soaps and detergents for at least 24 hours prior to handling any samplers. Contact with laundry soaps and detergents does not appear to be a

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significant problem; this is simply a good precaution. Alternately, one can use disposable gloves.

### Sample Collection

Samples are unwired or removed from the sample holders used on wells. The samplers are then placed in plastic whirl-pak type bags. Plastic zip-lock bags can be used, but are less desirable. Prior to collection, each bag is labelled with a permanent black ink felt pen to indicate the following:

- A) Sampling Station (Number or Name).
- B) Date and Time Sampler Was Placed.
- C) Date and Time Sampler Was Recovered.

Other relevant records are made as appropriate; these can include logging in a record book or preparation of chain of custody forms.

After placement of the sampler in the plastic bag, squeeze out excess water from the sampler by holding the bag and packet between the palms of your hands and pushing firmly; the excess water is allowed to drip out of the open end of the bag. Do not wring-out the samplers; this makes it more difficult for us to clean them in the laboratory.

**Do not put label of any type inside the plastic bag. Do not put any used anchoring wire in the plastic bag. Close the bag effectively.**

When sampling springs and streams, one should routinely place more than one sampler. Samplers can be lost to flood, curious people, or to crayfish. Where crayfish are a particular problem, the samplers can be placed inside small wire baskets made of hardware cloth. Samplers placed in springs and streams should not be placed where they are likely to be readily seen; samplers can often be hidden by careful placement of a few rocks.

All collected samplers should be kept in a cooler or refrigerated until shipment. In practice, one keeps a cooler in the sampling vehicle; he may collect several samplers before returning to the vehicle and placing the samplers in the cooler.

### Sampling Period

This is typically dictated by the study. One week is a typical period to leave the sampler in place, and is the recommended period unless otherwise noted.

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### Shipment

Collected samplers should be shipped via FED EX, UPS, or USPS first class or priority mail to:

Ozark Underground Laboratory, Inc.  
1572 Aley Lane  
Protem, MO 65733  
(417) 785-4289

It is not necessary for the samplers to be shipped under refrigeration or by overnight delivery. Avoid mailing which will likely result in samplers sitting in the post office over a weekend. Parcel post should not be used as delays are sometimes excessive.

When shipped, enclose all of the whirl-pak bags in a larger plastic bag to prevent soggy packages. Enclose all relevant sampling sheets; make sure that they will not become damp by contact with sample bags.