The Meadows Center for Water and the Environment
Texas State University
Texas Stream Team

OPTICAL BRIGHTENER TRAINING CHECKLIST

This document outlines essential steps and key talking points for trainers or trainers-in-training to ensure comprehensive coverage during an Optical Brightener (OB) training.

I. PRE-TRAINING

- ☐ Ensure the training location has water access and is accessible.
- ☐ Submit the training event to the Texas Stream Team calendar.
- ☐ Send trainees the OB Module and Training Enrollment Form.
- ☐ Gather and/or purchase all necessary supplies for trainees.
- ☐ Send trainees a reminder email at least a week prior to the training.
- ☐ Print 1 Training Participant Packet per trainee (including an extra for trainer(s)) and 1 Sign-In Sheet for the training.
- ☐ Optionally, print several Monitoring Sign Notices – these can be given out if needed.

II. DAY-OF TRAINING

1. Introduction

- ☐ Introduction from trainer – name, position, organization, etc.
- ☐ Distribute Sign-In Sheet and allow introductions (if time allows).
- ☐ Review prerequisites: Training Enrollment Form and Module (if used) and agenda.

Go through the OB PowerPoint presentation

- ☐ Explain the Texas Stream Team program and its partnerships.
- ☐ Explain how Texas Stream Team data is used and that we operate under a TCEQ-approved Quality Assurance Project Plan.
- ☐ Define OBs, OB sources, and their ability to fluoresce under UV light, enabling their detection in water samples.
- ☐ Describe how OBs fluoresce under specific wavelengths, and why we use a 365 nm flashlight.
- ☐ Clarify the objective of OB monitoring: to identify and investigate bacterial sources in water. This enables targeted investigations of pollution sources and complements broader bacteria monitoring efforts. Discuss how OBs serve as proxies for wastewater contamination, often correlating with harmful bacteria like *E. coli* or Enterococcus.

- Explain the OB collection methods: modified water bottle or Whirl-Pak© bag, when to use each, and their ideal site conditions.
- Emphasize why we use organic, untreated tampons to avoid preexisting OB contamination.
- Explain that in Phase I, trainees practice the bottle method. In Phase II, they will practice the Whirl-Pak© method. Finally, in Phase III, trainees will choose and practice their preferred method.
- Stress the importance of quality control and contamination prevention during training.

2. Modified Bottle Method

- Review necessary supplies and emphasize checking bottles/equipment with a UV LED black light to rule out OB contamination, which affects results.
- Highlight the 24–72-hour deployment period and the importance of deploying in a hidden spot or using signage to prevent interference.
- Demonstrate labeling Whirl-Pak© bags with site ID, date, and time for clear sample identification, and recording the monitoring method on the Monitoring Form.
- Explain how to document field observations, including potential sources of bacteria or OBs and other relevant details.
- Show how to modify a clear recycled plastic water bottle with slits.
- Demonstrate tampon insertion and deployment, ensuring no contact with the tampon, and placing the bottle in the centroid of flow in a shaded area.
- Demonstrate bottle retrieval and emphasize protecting the sample in a black photosensitive Whirl-Pak© bag to prevent contamination or degradation.

3. Whirl-Pak© Bag Method

- Review ideal site conditions and clarify that this method involves 24-hour home deployment, not extended field deployment.
- Discuss necessary supplies and emphasize using a black photosensitive Whirl-Pak© bag to protect OB samples from UV light.
- Stress the importance of consistent submersion times across monitoring events and between multiple sites for data comparability.
- Demonstrate sample collection using a bucket, extension pole, or direct bag method, ensuring careful tampon placement in the bag without contamination. Ensure the bag sits upright during submersion.

4. Sample Analysis

- Demonstrate how to record sample deployment and retrieval dates/times on the Monitoring Form under the appropriate fields.
- Explain the presence/absence method for analyzing OB samples.
- Explain different types of fluorescence in OB samples. Clearly define and explain what OB fluorescence is.
- Stress avoiding cross-contamination and UV exposure during analysis and discuss potential false positives/negatives.
- Emphasize the need for analysis in a dark area, on a clean surface, wearing gloves. Clarify that tampons can be wet or dry, but excess water must be squeezed out before analysis.
- Discuss flashlight safety, avoiding shining light too close to skin.
- Let trainees examine real OB samples and demonstrate proper analysis, including using tweezers and ensuring fluorescence is within the tampon's fibers.
- Show how to record fluorescence presence/absence on the Monitoring Form and dispose of samples properly.

5. Monitoring Form Reminders

- Emphasize the importance of listing full name and group affiliation consistently.
- Verify that all field observations, results, and sampling times/dates are recorded on each trainee’s monitoring form.
- Explain required sections for total time spent sampling and traveling, roundtrip distance traveled, number of participants, and the field quality control checklist.
- Remind participants to contact Texas Stream Team or their trainer for any monitoring issues or guidance.
- Stress the importance of submitting data as soon as possible.

6. Conclusion

- Did everyone sign in? Explain that attendance documentation is required for certification.
- Remind participants to complete the Training Enrollment Form and Module (if required) to receive certification.
- Notify that certificates will be distributed at the beginning of the month following the training if prerequisites are met.

- ☐ Did the trainer provide details on site selection, the Waterways Dataviewer, Datamap, online calendar, and videos?
- ☐ Did everyone leave with a copy of their instructions/packet and a clear idea of how to start monitoring?
- ☐ Did everyone leave with a clear understanding of what to do if OBs are detected at a site?
- ☐ Were all questions answered?
- ☐ Follow clean-up protocols by properly disposing of waste, cleaning surfaces, and returning/storing all equipment.

III. POST-TRAINING

- ☐ Be sure to send the sign in sheet to Txstreamteam@txtsate.edu so that trainees will receive their certificates.
- ☐ Follow up with your trainees via email and send final reminders about the Training Enrollment Form, prerequisite module, and how to get plugged into a monitoring site with their nearest trainer or group.