

Field Work Safety Plan

Projects involving the environment have become increasingly complex and can involve a myriad of variables. This guide is meant to help students and teachers in developing a safe, environmentally responsible project and should be reviewed along with the research plan prior to experimentation. This guide is based on EPA requirements for scientists collecting, air, water, and/or soil samples while working in the field (Source a).

Student Name(s): _____

Project Title: _____

Does your field work include the following?

Testing/Collection	Yes	No	Concerns to be addressed in RP
Soil sampling			Transport, testing facility, cross contamination prevention.
Water sampling			Are water test kits used? What happens to water samples? Transport, testing facility, cross contamination prevention.
Air sampling			Device and method to be used
Device deployment			Time period of deployment. Environmental impact
Chemicals			Disposal. Personal safety. Environmental impact. Review of MSDS.
Microorganism collection			BSL2 for all unknowns. Transport, testing facility, cross contamination prevention.
Plant collection			Specify if invasive/toxic or if specimen carries invasive/toxic agents. Follow all state/federal transportation, relocation, and disposal laws. Cross contamination prevention

Pre-Approval Requirements:

- *Are you culturing/working with microorganisms?*
- *Are you working with invasive species?*
- *Is there a licensing or agency approval?*
- *Is there a work site permit required?*

Work Site Information:

a. Site Name: _____

b. Site Address _____

c. Is there licensing or agency approval required? ____ yes ____ no

1. (If yes, attach copies of agency approval or license.)

2. Will the environment be altered during testing/collection? ____yes ____no

3. (Describe environmental alterations in Research Plan.)

d. Will microorganisms in water samples be studied? If so, BSL2 protocols must be followed in the field and lab as the organisms are unknown.

Final Questions:

1. Attach a research plan that includes testing/collection that is to take place. Include disposal of collected samples as well as decontamination steps to prevent cross contamination. Describe safety procedures to be followed. Include boating, driver/transportation, and other safety precautions where applicable as well as PPE to be used. Description of field site(s) should also include safety information such as accessibility, adequate cell phone coverage or communication device in case of emergency, adequate lighting, distance to closest urgent care/hospital, etc.
2. Will the student be accompanied or have a work partner during field sampling? If no, will the student alert their advisor/mentor/teacher before and after completion of the field work?
3. Testing/collection cannot take place during a harmful algal bloom (HAB). Provide evidence showing that no bloom was active at the time of water sample collection. This can be a screenshot of a website, an email from an appropriate agency, or other written documentation from an agency. State and local health departments track HABs.
4. Helpful Links:

Link	Source	Description
https://www.epa.gov/healthsafetymannual/forms/Health%20and%20Safety%20Plans/HASP%20Template.docx	EPA Health and Safety Plan Template	Template of a site-specific health and safety plan for hazard control, determining proper personal protective equipment, etc.
https://hab.who.edu/impacts/impacts-human-health/	U.S. National Office for Harmful Algal Blooms	Information on harmful algal blooms and human health impacts
https://www.epa.gov/sites/default/files/2017-07/documents/surface_water_sampling201_af.r4.pdf	EPA Operating Procedure for Surface Water Sampling	Information on general and specific procedures, methods, and considerations to be used and observed when collecting surface water samples for field screening or laboratory analysis
https://www.cdc.gov/ohhabs/about/index.html	CDC One Health Harmful Algal Bloom System (OHHABS)	OHHABS is a public health system that collects information about harmful algal blooms and the illnesses they can cause in humans and animals and communicates this with the public
https://oceanservice.noaa.gov/hazards/hab/#regional	NOAA Harmful Algal Blooms	Information from NOAA on harmful algal blooms such as monitoring, forecasting, and research

5. Terminology

- a. **HABs:** Harmful Algal Blooms can occur in fresh, salt, or brackish water. They occur when colonies of microorganisms grow out of control. Not all blooms produce toxins. But the toxins produced are harmful to humans, aquatic life, and pets. Animals that consume infected aquatic life can also be affected.
- b. **Cross contamination prevention:** What steps will be taken to minimize the chance of cross contamination? Ex: Decontamination by rinsing shoes worn during collection before leaving collection site. (table G EPA template)
- c. **Transport of samples:** Samples suspected to be contaminated need to be placed in separate containers for transport to a testing facility. They need to be secured so that spillage doesn't occur.