

Standard Operating Procedure

Enhanced Field Safety Protocols for Water Quality Monitoring Staff During a Pandemic

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1. Scope and Application

This SOP provides best management practices (BMPs) and guidelines for Water Quality Monitoring staff conducting field sampling activities during a contagious disease outbreak that is widespread enough to be considered to be a pandemic. This current version focuses on the COVID-19 pandemic. This plan can be amended in the future to cover other contagious disease outbreaks events.

2. Summary

The objective of this SOP is to provide guidance for field staff to safely conduct limited field monitoring activities during a pandemic. It will cover the preparation for a field run, field activities, and the post-field activities. Laboratory staff in sample receiving and the analytical sections may have their own enhanced safety protocols. We will make every effort to make sure these methods don't conflict with each other and support the overall goal of keeping staff safe while we conduct essential work activities.

The recommendations in this document are intended to comply with current CDC, OHA and DEQ's recommendations and requirements. Keep in mind that these recommendations and requirements may change at any time. Additional resources for the most up-to-date information:

- www.healthoregon.org/coronavirus
- www.cdc.gov/coronavirus/2019-ncov
- <https://govstatus.egov.com/or-covid-19>

The current pandemic is called COVID-19, which is an infectious disease that can cause severe acute respiratory syndrome. The disease was first identified in 2019 in Wuhan, the capital of China's Hubei province, and has since spread globally, resulting in the ongoing coronavirus pandemic. COVID-19 is considered highly contagious and is spread mainly from person to person (e.g., through respiratory droplets produced when talking, coughing, or sneezing). Current research suggests that the virus can remain viable on surfaces ranging from a few hours to several days. Maintaining social distancing of at least 6 feet, disinfecting shared surfaces, and frequent and thorough hand washing helps limit the spread of the disease.

Finally, workers should be aware of the exposure risk level associated with their job duties. In addition, a pandemic may disproportionately affect people in certain age groups or with specific health histories. Workers with job-related exposure to infections who voluntarily disclose personal health risks should be considered for job accommodations and/or additional protective measures, e.g., use of PPE. (1) If at any time a worker finds the protective measures and/or accommodation insufficient given the risks they are not required to perform the work. If you have questions or concerns you should speak with your manager or with H.R.

3. Personnel/Qualifications

Personnel should read this SOP prior to doing any field work during a pandemic.

4. Safety

Personnel working in the LEAD facility must review the Laboratory's Chemical Hygiene Plan / Laboratory Safety Plan ([DEQ04-LAB-0006-SFTY](#)) and the Emergency Operation Plan (EOP/[DEQ04-LAB-0050-SFTY](#)).

Staff requested to conduct field sampling activities during a pandemic should familiarize themselves with the characteristics of the disease, such as its infectivity (how quickly it can spread), virulence (severity), and symptoms. Follow the recommendations in this document and any additional recommendations from the CDC, OHA, and DEQ management not included in this document at the time of its writing. These safety protocols are intended to protect employees and their families, co-workers who share the same space and equipment, and all individuals encountered in the field.

Symptoms – Stay home and consult your doctor or a clinic if you are ill with any of these symptoms:

- Fever of 100°F or higher
- Cough
- Shortness of breath



Preventative Measures

- Maintain at least 6 feet between you and all other people.
- Wash hands often with soap and water for at least 20 seconds or use an alcohol-based hand sanitizer that contains a minimum of 70% alcohol, covering all surfaces of the hands and rubbing them together until dry. Soap and water should be used if hands are visibly dirty.
- Do not touch your face, except after washing or sanitizing your hands.
- Avoid groups and contact with other people.
- Cover coughs and sneezes using a facial tissue or the inside of your elbow.
- Consult with DEQ Health & Safety if you feel additional Personal Protective Equipment not currently provided at the laboratory is needed to perform field work safely.



Below we will discuss several sampling approaches staff can use for conducting field sampling activities. Each will present slightly different safety concerns.

5. Equipment and Supplies

Supplies needed beyond the base requirements for typical WQ field work:

- Disposable gloves – in order to reduce the need for disinfecting staff will need to use more gloves, so make sure you bring extra.
- Disinfectants
 - DEQ provided disinfectant wipes or sprays. Currently utilizing Clorox Healthcare Hydrogen Peroxide wipes, but this product may be replaced with an alternate disinfectant based on availability.
 - Alcohol-based products (must be a minimum of 70% alcohol)
- Cloth face coverings – are currently only needed if you are a health care provider or if you are currently sick or may be sick. If you have some of the key symptoms you shouldn't be at work. At this point in time work does not provide cloth face coverings. However, if CDC makes any changes to their guidelines this may become a requirement.

6. Quality Control

Normal quality control procedures will be followed as outlined in the SOP covering the work you are performing. This SOP does not require any new or different QC steps related to the data being collected. Instead, there is the possibility these protocols could negatively impact the samples or field data collected. Below are some concerns staff should be aware of so they can be avoided or mitigated.

- Direct Impact(s)
 - Disinfectants – Staff should be careful they don't accidentally contaminate a sample with a disinfectant. To prevent this staff shouldn't use the disinfectant in any way that might get it on the sample containers. Staff should wear clean gloves at all times when handling samples, labels, paperwork, etc. If you keep surfaces from getting contaminated you will not need to do any disinfecting.
- Indirect Impact(s)
 - Solo Sampling – If you are working alone you will be doing the work that is normally done by two. Keep that in mind while you work. Don't rush and remember to double check everything before you leave a site.

7. Procedure

Overview

These procedures are intended to provide the best management practices to enhance the safety of staff while conducting field work. A pandemic is a highly dynamic situation and can change at any time; therefore, staff should take the extra time to understand everything they need to do to keep themselves and others safe. This approach can be likened to handling a dangerous chemical. You need to follow safety protocols, have appropriate safety gear, and maintain a high level of diligence at all times. The big difference being you cannot see a virus, smell it, or even know where it might be. The safest approach is to consider yourself as a carrier. One of the worst characteristics of the COVID-19 virus is that you can be an asymptomatic carrier with the ability to get other people sick for up to two weeks.

Procedure Options

Given the dynamics of a pandemic, variation in field sampling methods, and staff preferences, no single solution exists for how to complete a field sampling run. Therefore, we narrowed procedures down to three options. An overview of each, along with pros and cons, is below in [Section 7.2 Sampling Activities](#).

7.1. Preparation Activities

Preparation for a field run during a pandemic will be very similar to normal circumstances, with the following key exceptions

- Any surface that could be considered 'high-touch' might be contaminated and staff should follow the preventative measures outlined [Section 4. Safety](#). If staff don't think those preventative measures are sufficient because, for example you have a habit of touching your face while driving, it would be prudent to disinfect any area you might touch prior to driving.
 - High-touch surfaces include, but are not limited to: coolers, meters, meter cases, clipboards, pens/pencils, binders, DI squirt bottles, carboys, buckets, rope, bucket carry bar, vehicle keys, vehicle surfaces (door handles, steering wheel, radio, shifter, seatbelt, etc.).

- When coordinating sample preparation with a partner, remember to maintain at least 6 feet of distance.
- Extra supplies needed: gloves and cleaning products.
- Optional idea: If doing a day run, you could consider pre-labeling bottles to reduce your time in the field. You will still need to add the date and times.

7.2. Sampling Activities

Follow all our standard safety procedures when working in the field. This includes recommendations in MOMs, Check-in Check-out SOP, and any project-specific recommendations detailed in their associated QAPP/SAP.

Option 1: Solo trip

One person does all the sample collection and processing.

- Pros: Simplest from a logistical standpoint.
- Cons: More time consuming – may get fewer sites done in a day. Possibly more safety risks of being along a roadside and bridge for longer than usual.

Consider collecting duplicates at safer locations (e.g., boat ramps) so that you can minimize risk while sampling. It is also important to keep the time between the primary and duplicates as close as possible (primary and duplicate samples need to be collected within 15 minutes of each other). Take a satellite phone for emergency use if you are working in a remote location without good cell coverage.

Option 2: Group trip – different vehicles, different sites

Two or more people drive different fully-equipped rigs to different sites within a same run. For example, on an Ambient run with 8 sites, person 1 samples sites 1-4 and person 2 samples sites 5-8 (i.e., no leap-frogging). This approach minimizes drive time. Each person fills out their COCs and submits samples separately.

- Pros: Next best in terms of simplicity. Potentially safer because second sampler is the same region in case of emergency.
- Cons: Potential strain on sample receiving. Doubles the amount of effort on paperwork and meter accuracy checks. Requires twice as much gear and vehicles.

Option 3: Group trip – different vehicles, same sites

Two or more people drive different vehicles to the same sites within a run. A similar scenario could be used for other work like Toxics or complaint response. Below is one option, specific to Ambient that allocates effort while maintaining social distancing.

Vehicle #1: Collects and processes the “sample bucket”. Fills their own graduated cylinders for DOC, ortho-phosphate, and DI rinse. Fills the 1-L and 500-mL poly bottles. Acidifies their samples. Places samples in their own cooler. Labels new poly bottles.

Vehicle #2: Collects and processes the “bottle bucket”. Caps BOD and bacteria bottles. Acidifies the 125mL amber glass bottle. Takes all meter readings, including pH. Places samples in their own cooler. Labels new bottles and loads them into the bucket.

- Pros: No duplication of effort on paperwork and meter checks. Crews can communicate easily.
- Cons: Requires more coordination to pull off. Results in samples from the same site being split into different coolers. Potential safety issues at sites with small vehicle pullouts. Staying 6 feet

away on the bridge may result in some unrepresentative collections, especially on small streams.

7.3. Post-sampling Activities

After returning to the lab your post-sampling activities will depend on how much you made use of wearing clean gloves during all the activities. It is highly recommend you wear clean gloves at all times, but if you cannot for some reason, you will need to do more disinfecting. Here is a breakdown of those additional activities.

Relinquishing Samples

- When relinquishing your samples to sample receiving please remember to follow social distancing guidelines.
- If sampling receiving staff have enhanced safety protocols please make sure to follow them.

Vehicle(s) and Equipment

- Disinfect all equipment thoroughly while wearing gloves. This is especially important if returning equipment for general use (e.g., placing meters back on shared WQ shelf).
- Disinfect 'high-touch' surfaces in all vehicles used. A full disinfecting is not required if nobody will be using that same vehicle before your next field sampling event.

CDC Cleaning Recommendations: <https://www.cdc.gov/coronavirus/2019-ncov/prepare/disinfecting-building-facility.html>

How to clean and disinfect



 **Wear disposable gloves** to clean and disinfect.

Clean

- **Clean surfaces using soap and water.** Practice routine cleaning of frequently touched surfaces.

High touch surfaces include:

Tables, doorknobs, light switches, countertops, handles, desks, phones, keyboards, toilets, faucets, sinks, etc.



Disinfect

- Clean the area or item with soap and water or another detergent if it is dirty. Then, use disinfectant.
- **Recommend use of [EPA-registered household disinfectant](#)**  .
Follow the instructions on the label to ensure safe and effective use of the product.
Many products recommend:
 - Keeping surface wet for a period of time (see product label)
 - Precautions such as wearing gloves and making sure you have good ventilation during use of the product.
- **Diluted household bleach solutions may also be used** if appropriate for the surface. Check to ensure the product is not past its expiration date. Unexpired household bleach will be effective against coronaviruses when properly diluted.
Follow manufacturer's instructions for application and proper ventilation. Never mix household bleach with ammonia or any other cleanser.
Leave solution on the surface for **at least 1 minute**
To make a bleach solution, mix:
 - 5 tablespoons (1/3rd cup) bleach per gallon of water
 - OR
 - 4 teaspoons bleach per quart of water
- **Alcohol solutions with at least 70% alcohol.**

Figure 1 Clean and Disinfect Guidance – EPA-registered household disinfectant list
(<https://www.epa.gov/newsreleases/epa-releases-list-disinfectants-use-against-covid-19>)

8. Records Management

None.

9. Definitions

Standard Definitions applicable to laboratory quality systems can be found in Appendix A of the LEAP Quality Manual [DEQ91-LAB-0006-LQM](#)

10. References

- 1) <https://www.osha.gov/Publications/OSHA-FS-3747.pdf>
- 2) www.healthoregon.org/coronavirus
- 3) <https://www.cdc.gov/coronavirus/2019-ncov/prepare/disinfecting-building-facility.html>
- 4) www.cdc.gov/coronavirus/2019-ncov
- 5) <https://www.osha.gov/Publications/OSHA-FS-3747.pdf>
- 6) <https://govstatus.egov.com/or-covid-19>
- 7) <https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2>

11. Revision History

Revision	Date	Changes	Editor
1.0	4/6/2020	New document	Greg Coffeen