

# Standard Operating Procedures - Site Reconnaissance Guide

## SCOPE

This document is a standard operating procedure (SOP) for sampling site reconnaissance prepared by the Surface Water Ambient Monitoring Program (SWAMP). Station reconnaissance, both before a site visit and during, can help provide more effective planning and ensure the safety and efficiency of field crews (Wilde, F.D.). This SOP is intended to describe general and specific procedures, methods, and considerations on documenting the spatial and logistical aspects of the sampling site prior to or during the first visit to a sampling location. The information within this SOP is provided as guidance only, please record any deviations from this protocol on the Site Reconnaissance Form (Appendix A).

## CAUTIONS AND INTERFERENCES

Proper safety precautions must be observed at all times. Refer to the Health and Safety Guide for guidelines on precautions. All necessary permissions and permits must be obtained in advance of sampling.

## EQUIPMENT AND SUPPLIES

- |  |  |
|--|--|
| <input type="checkbox"/> Copy of this SOP  | <input type="checkbox"/> Agency/landowner contact list       |
| <input type="checkbox"/> Site Dossier  | <input type="checkbox"/> Cellular Phone                      |
| <input type="checkbox"/> Global Positioning System (GPS) receiver or smart phone capable of displaying coordinates | <input type="checkbox"/> Aerial photographs/satellite maps   |
| <input type="checkbox"/> Camera  | <input type="checkbox"/> Pencil and clipboard                |
| <input type="checkbox"/> Landowner Permission  | <input type="checkbox"/> Identification to prove affiliation |
| <input type="checkbox"/> Measuring tape  | <input type="checkbox"/> Compass                             |
|  | <input type="checkbox"/> Proper field attire                 |
|  | <input type="checkbox"/> Site Reconnaissance Form            |

## PERSONNEL QUALIFICATIONS/RESPONSIBILITIES

All personnel conducting this procedure must be familiar with the health and safety protocols and the procedures within this SOP. Personnel should also possess map reading skills and a demonstrated proficiency in the use of a GPS receiver. Personnel are responsible for the implementation of the procedures outlined in this SOP and to ensure that the data generated meets the standards and objectives of the monitoring project. The project or field crew leader will conduct periodic reviews of field personnel to ensure that technical personnel are following procedures in accordance with this SOP.



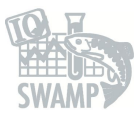
## INSTRUCTIONS

### PRE-FIELD VISIT PREPARATION

**Before visiting a site, take a few moments in the office to assure the safety and efficiency of field crews.** Station reconnaissance research can help provide more effective planning. In researching a station's location, your best resource can be those who may already know the watershed. These organizations can help provide resources important to your reconnaissance such as maps, aerial photos, GIS Layers, Studies and Reports, History and old pictures, as well as further community contacts. This information can be used to create a Site Dossier that can be provided to field crews. Refer to Appendix A to print the Site Reconnaissance Form.

**Before field activities can begin, permission to access locations must be granted.** An important consideration of station reconnaissance is to determine the type of land ownership your sampling site is on. Determine if your site is on private, tribal, state, or federal land. Based on the type of land ownership, it is necessary to contact and be granted permission from the entity that controls access to that location. Some access points may require landowner/manager access keys and/or supervision. The County Assessor's office can assist in obtaining landowner information. **Under no circumstances should field personnel knowingly trespass on private property to access a sampling site.** An example of a permission request letter can be found in Appendix B. After permission has been granted, a Site Dossier should be compiled that also contains safety and navigational information. Here is a list of helpful information to gather about a site to create the Site Dossier:

- Access Permission Letter from Landowner (when required)
- Information about the spatial and logistical aspects of the site including the following:
  - Target latitude and longitude
    - Coordinates should be recorded in decimal degree with a minimum of 5 decimal places
    - Use the following datums: NAD83 or WGS84
  - General site description (Ex: Smith River at Jones road bridge crossing near corner of Hwy 45, Smithtown.)
  - Maps of different scale
  - Specialized maps (AAA road maps, Topo maps, maps from other agencies and entities)
  - Aerial photographs or satellite maps
  - Conversation records
  - Watershed information (if available)
  - Potential HAB impacts at the location (contact recreation, drinking water, wildlife, etc.)
  - Potential driving and access routes
  - Land owner information



- Nearest hospital and emergency response agency
- Site Reconnaissance Form (Appendix A). Pre-fill out some of the known information about the site on the form before traveling to the site.

**Before traveling to a site, it is highly recommended that staff prepare all needed supplies, equipment and vehicles the night before travelling to a site.** Be sure to gather all the supplies you will need, calibrate needed equipment, ensure that the batteries in all devices are charged, and all vehicles are in good working order and have adequate fuel for the trip.

## INITIAL VISIT

1. **While at a sampling site for the first time, take notes on the route, landmarks, and access points on the Site Reconnaissance Form.** Note any unsafe conditions and remark on current site conditions that may influence the water quality, the measurements taken, and observations taken on the Site Reconnaissance Form (Appendix A).
2. **Record the actual latitude, longitude, and datum.**
  - a. Actual coordinates should be recorded in decimal degree with a minimum of 5 decimal places with the use of NAD83 or WGS84 datums.
  - b. Field crews using GPS receivers should have extensive training and experience in the use of the particular device. Devices should be calibrated within 24 hours of the sampling event. When recording coordinates in the field ensure that the accuracy of the device is less than 10 meters and that satellite reception is at least three. If the manufacturer proposes more stringent requirements opt to follow them.
  - c. If a GPS receiver is not available, a phone may be used in its place when applicable. Most modern phones have the ability to display coordinates. The following are the most common applications used:
    - Instructions for determining coordinates using the Google Maps App:
      1. Tap and hold on your current location or drop a pin to a location of your choosing.
      2. Tap on the bar at the bottom of the screen that says Dropped Pin.
      3. Tap on share location, choose email.
      4. Send it to yourself.
      5. The email should be a link which will display coordinate information.

At the time of this SOP Google Map products use the WGS84 datum (Google).

- Instructions for determining coordinates using Apple Maps App:
  1. Tap and hold on your current location or drop a pin to a location of your choosing.
  2. Swipe up on the screen to reveal location information

At the time of this SOP Apple Maps uses the WGS84 datum (Apple).

3. **Photographs are an integral component to site reconnaissance as it is important to have photographic evidence of the presence of a bloom.** For the purpose of this SOP, three types of photographs will need to be taken. A description of each follows:
  - a. **Take a photograph that documents the extent of the bloom.**
    - Determine the location from which you want to take the picture. Be mindful that your photo may need to be reproduced and that for any comparison later the photographs need to be taken from the exact same location using identical equipment and methods. You might want to be some distance away in order to capture the full extent. Record the distance from the bloom on the Site Reconnaissance Form. If you are able to, record the bearing as well. Bearing can be determined by using a magnetic compass or an app on your phone depending on availability. The best way to ensure return visits can take the same picture for comparison, it is important to take the photo from a fixed and permanent object (Hall, Frederick C.). Use the Site Reconnaissance Form to provide as much information as possible to assist in returning to the same exact location.
    - Attempt to frame the full extent of the bloom in your photograph while still clearly identifying it. If the bloom is too large to fit in a single frame consider taking multiple photos. Take time while framing to ensure that the viewer will be able to identify the presence or absence of the bloom. Be aware of lighting conditions that could affect the quality of your images e.g. shadows and glares. It is important to include objects that provide a sense of slope and scale when possible (this can be achieved by placing objects in the frame such as crew members or stadia rods) (Hall, Frederick C.). The bloom and its surroundings must be clearly visible.
  - b. **Take a photo that documents the color of the bloom.**
    - Observe all health and safety precautions and get as close to the bloom as you can.
    - Frame the picture to best represent the color of the bloom. Be mindful of any lighting conditions that could affect the quality of the image.
  - c. **Take a photo that documents the texture of the bloom.**
    - Observe all health and safety precautions and get as close to the bloom as you can.
    - Frame the picture to best represent the texture of the bloom. Be mindful of any lighting conditions that could affect the quality of the image.



## POST-SITE VISIT

Upon completing a first visit to a new sampling site, complete the documentation of the site in the Site Dossier and Site Reconnaissance Form (Appendix A).

- 1) Download, name, and store the photos taken at the site.
- 2) Name the site using landmarks or the nearby road crossing (if applicable), describe location of the station pertaining to that road/landmark (Upstream or Downstream), provide a more detailed description, and include the distance in miles to the nearest town if useful.
- 3) Develop a comprehensive description of your access route to guide sampling crews returning at a later date. Include driving instructions, where to park and access, major landmarks, trail info, etc. Include the photos to provide additional information. It is critical that the reconnaissance crew does a thorough job identifying and documenting the site to ensure successful monitoring of the location and safety and access of future crews.
- 4) Provide pertinent landowner information for the upstream and downstream landowners including name, address, and phone number. Provide contacts for access keys or supervision if required.
- 5) Send an electronic copy of the Site Reconnaissance Form to [CyanoHAB.Reports@waterboards.ca.gov](mailto:CyanoHAB.Reports@waterboards.ca.gov) in order to create a SWAMP Station Code and facilitate the reporting of data associated with the site.

## REFERENCES

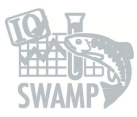
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**Appendix A - Site Reconnaissance Form - Page 7**

**Appendix B - Permission Request Letter - Page 9**

## SWAMP HAB Site Reconnaissance Form

<b>Sampler Name:</b>	<b>Agency:</b>	<b>Date:</b>	<b>Time:</b>
<b>Site Name:</b>	<b>Landmark/Waterbody:</b>		
<b>Site Description:</b>			
<small>(Ex. Right bank of Elder Creek approximately 10 meters down stream from highway 1 bridge or 20 meters east of Hell Hole Reservoir boat ramp covering approximately 10 meters of shore)</small>			

<b>Target Latitude:</b>	<b>Target Longitude:</b>	<b>Datum:</b> ( NAD83 / WGS84 )
<b>Actual Latitude:</b>	<b>Actual longitude:</b>	
<small>(Please record in decimal degree with a minimum of 5 decimal places)</small>		
<b>Means of determining coordinates:</b>	<b>Cellular Coverage:</b> ( Y / N ) <b>Cellular Provider:</b>	
<small>(GIS, GPS, Map, Phone, etc....)</small>	<small>(Instructions for determining coordinates using Google/Apple Maps on back)</small>	

<b>Potential HAB impacts at location:</b>
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<b>Private Property:</b> ( Y / N )	<b>Access Permission Contact Name:</b>	<b># of Gates:</b>
<b>Contact Information:</b>		
<b>Keys/Combo Necessary:</b> ( Y / N )	<b>4X4 Required:</b> ( Y / N )	<b>Parking Available:</b> ( Y / N )
<b>Known Access Precautions:</b>		
<b>Means of access:</b> ( Boat / Automobile / Hike )		<b>Observed in Open Water:</b> ( Y / N )

<b>Driving Directions:</b>
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<b>Water Body Type:</b> ( River, Stream / Lake, Reservoir / Coastal Shoreline / Bay, Harbor / Ocean / Estuary / Wetlands / Other Effluent)			
<b>Tidal Influence:</b> ( Y / N )	<b>Wadable:</b> ( Y / N )	<b>Agriculture Drain:</b> ( Y / N )	<b>Freshwater:</b> ( Y / N )

<b>Land Use Activities:</b>
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<b>PHOTOGRAPHS</b> (Images conveying extent) Distance from camera location to bloom: Bearing from camera location to bloom: Approximate surface size of bloom: Was a permanent object present from which repeat photographs can be taken and if so did you take photos from this location: ( Y / N )
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<b>Notes:</b> (Please describe the camera location and provide a diagram on the back to assist in replicating the images you took. Include any permanent objects or other helpful information):
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# SWAMP HAB Site Reconnaissance Form

## Instructions for determining coordinates using the Google Maps App:

1. Tap and hold on your current location or drop a pin to a location of your choosing.
2. Tap on the bar at the bottom of the screen that says Dropped Pin.
3. Tap on share location, choose email.
4. Send it to yourself.
5. The email should be a link which will display coordinate information.

## Instructions for determining coordinates using Apple Maps App:

1. Tap and hold on your current location or drop a pin to a location of your choosing.
2. Swipe up on the screen to reveal location information

## Description of terms on form:

**Landmark/Waterbody:** Name of waterbody (creek, lake, etc.) , major highways or streets, etc.

**Cell Phone Service Provider:** What company provides your cell phone coverage? e.g., Verizon, AT&T

**Latitude (dd):** Provide the target latitude in decimal degrees with a minimum of 5 decimal places

**Longitude (-ddd):** Provide the target longitude in decimal degrees with a minimum of 5 decimal places

**Datum:** Coordinate system, and a set of reference points, used to locate places on the Earth

**Access Permission:** Include name, phone number, and special time considerations (e.g., only between 8 am and 5 pm)

**Number of gates:** Indicate the number of gates, if any, required to access the site

**Traffic flow/parking:** Indicate if and where there are traffic or parking concerns

**Driving Directions:** Provide a DETAILED description of how to reach site. Please provide as much information as possible. For boat sites, include directions to the boat launch and ramp type (concrete, dirt, etc.).

**Site Description/Directions:** Provide a physical description of the site including any bridges, grade controls, etc.; attach a layout and site location if applicable

**Waterbody Type:** Waterbody type from GEOWBS list: B (Bays and Harbors), C (Coastal Shorelines), E (Estuaries), L (Lakes/Reservoirs), R (Rivers/Streams), S (Saline Lakes), T (Wetlands, Tidal), W (Wetlands, Freshwater)

**Seasonal Considerations:** List any seasonal considerations as flooding, agricultural runoff, etc.

**Land Use Activities:** List known stream impacts (e.g., agriculture, urban runoff, construction, industry, grazing), health hazards, and land use activities

**CHP, Fire, Hospital:** Please list the address and contact info of the nearest emergency services

## Notes/Diagram:





# California Regional Water Quality Control Board

## San Francisco Bay Region



Alan Lloyd  
Secretary for  
Environmental  
Protection

1515 Clay Street, Suite 1400, Oakland, California 94612  
(510) 622-2300 • Fax (510) 622-2460  
<http://www.swrcb.ca.gov/rwqcb2>

Jerry Brown  
Governor

[Month day], 2020

[First & last name]  
[Org] (e.g., East Bay Regional Park District)  
[address]  
[City], CA [zip]

Subject: Water Quality Monitoring Station in [name of creek or park]

Dear Mr?Ms? [last name]:

We are requesting permission to access [creeks, lakes] within the [property or park] for the purpose of water quality monitoring. The San Francisco Bay Regional Water Quality Control Board is in its fourth year of a monitoring rotation under the Surface Water Ambient Monitoring Program (SWAMP), a statewide program (<http://www.swrcb.ca.gov/swamp/>). Under this program our region collects water quality data from creeks, lakes, reservoirs, and bays within the Bay Area. With these data we evaluate the success of water quality control programs and gain an understanding of the region's baseline water quality conditions. We also share the data we collect and any reports or data analyses we prepare with the public and other government agencies. With [FY xxxx] SWAMP funding we will be monitoring creeks in the East Bay. Monitoring will take place during 200x and 200x.

All water quality monitoring within [organization] jurisdiction [or property] will occur at the following sites.

- Site #1: [site location]
- Site #2: [site location]

At each site we plan to deploy one data logger (continuous monitoring probe, model YSI 6600) three times between March 200x and March 200x. We will retrieve the data loggers [one] week after deployment. In the creeks the data logger will be housed in a protective aluminum armor and will be secured by a chain around a tree. In the lake we will deploy three data loggers for a week in the same location at three different depths. We will suspend them using a buoy. The window of times we'll be entering the creek or lake for this continuous monitoring are as follows:

- Deployment 1: Once during March to May 200 x
- Deployment 2: Once during June to August 200 x
- Deployment 3: Once during December 200 x to February 200 x

*Preserving, enhancing, and restoring the San Francisco Bay Area's waters for over 50 years*

In addition to data logger deployment, we plan to collect water samples from [waterbody name]. We will analyze the samples for nutrients and for chlorophyll. As of yet our monitoring methods in [waterbody name] are in the planning stage and we would like to meet with a representative from your agency to discuss them. [first last name], SWAMP manager, is available for questions regarding this aspect of our monitoring plans and can be reached at [email and phone]

We also have a contract with the Department of Fish and Game (DFG) to conduct aquatic bioassessments at the two creek sites. This agency will need access to the creeks under the same research permit if possible. Aquatic bioassessments will be conducted in April 200x. Field technicians will use DFG's Rapid Bioassessment Protocol. Samples will be collected for analysis of benthic macroinvertebrates in the lab.

Once we have collected data and completed QA/QC we will submit and share all data, reports, and scientific papers that result from our research with your [organization or community].

Please advise us on your [organization's research permit application procedure, or send us the forms you would like us to fill out] [preferences regarding access to your property....]

Thank you for your time and consideration.

Sincerely,

[writer]