



# Harmful Algae Bloom (HAB) Information

[Cyanobacterial Harmful Algal Bloom  
Fact Sheet](#)



[HAB Fact Sheet for Lakefront  
Communities](#)



[NJ Department of Health Private Well  
Fact Sheet](#)



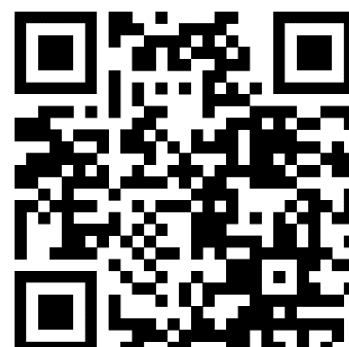
[Harmful Algae Bloom Monitoring  
FAQ's](#)



[NJDEP Algal Bloom Sampling Status  
Dashboard](#)



[NJ Harmful Algae Bloom Reporting  
Form](#)



[Harmful Algae Blooms and Pets Fact  
Sheet](#)



*Note: copies of the linked fact sheets are included as attachments to this document as well.*



## Cyanobacterial Harmful Algal Blooms (HABs)

### What are Cyanobacteria?

Cyanobacteria are a type of bacteria capable of photosynthesis. Although they are not true algae, they are often referred to as “blue-green algae.” Cyanobacteria frequently impart off-tastes and odors to the water in which they grow, and sometimes they produce toxins that can be harmful to the health of humans and other animals. Although problems related to cyanobacteria most often occur in freshwaters (lakes and streams), cyanobacteria can also be found in marine waters.

### What are Cyanobacterial Harmful Algal Blooms (HABs)?

A cyanobacterial harmful algal bloom (HAB) is the name given to the excessive growth, or “bloom”, of cyanobacteria, some of which can produce one or more types of potentially harmful toxins (cyanotoxins). HABs can occur under suitable environmental conditions of light, temperature, nutrients and calm water. These “blooms” can result in a thick coating or “mat” on the surface of a waterbody, often in late-summer or early fall.

### How do I identify a Cyanobacterial Harmful Algal Bloom (HAB)?

A cyanobacterial HAB often looks like a layer of bright bluish-green or white paint on the water surface. Other evidence of a potential cyanobacterial HAB could be discolored or pea-green colored water, parallel streaks, or green dots/globs in the water. It is important to note that some blooms are due to common green algae and not cyanobacteria. Additionally, even when present, cyanobacteria do not always produce cyanotoxins. Below are some photographs of cyanobacterial HABs and also photographs of algal mats, surface films, plant pollen, or harmless plants that may resemble, but are not, cyanobacterial HABs.

### Common Cyanobacterial Harmful Algal Bloom (HAB) appearance



Spilled Paint



Pea Soup

### Common Cyanobacterial Harmful Algal Bloom (HAB) appearance



Green streaks parallel to shoreline

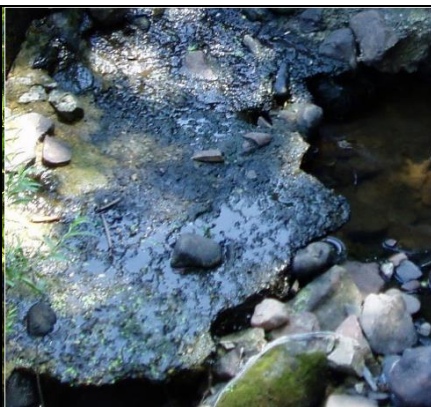


Large green dots

### Non-HAB (harmless look-alikes) photos



Algal mat (algae or water plants that have collected on the surface)



Muck (a mixture of organic material on the surface or banks)



Duckweed (a tiny floating plant with true leaves)

## **Risk of Cyanobacterial Harmful Algal Blooms (HABs)**

If you see what you think might be a HAB avoid contact and report its location to the DEP Hotline. Because animals can be harmed by drinking from waterbodies during a cyanobacterial HAB event, keep pets and domestic animals away from waters if a suspected HAB is present. If a HAB has been identified in a body of water used for drinking or recreation, signs may be posted by local or county authorities.

### **Should I swim?**

You should not swim or conduct any activity which might result in direct contact with the water when a suspected HAB is present.

### **Should I eat the fish?**

You should not eat fish or shellfish from a waterbody where a HAB is present.

### **Should I drink the water?**

Never consume untreated surface water (e.g., lakes, ponds, or streams), especially if a HAB is suspected. You should never use untreated surface water as a substitute for potable water.

## **What is the New Jersey Department of Environmental Protection doing?**

DEP has implemented a *New Jersey Cyanobacterial Harmful Algal Bloom (HAB) Response Strategy*. This Strategy provides a unified statewide approach for response to cyanobacterial HABs in freshwater recreational waters and sources of drinking water, and for protection of the public from risks associated with exposure to cyanobacteria and the toxins they can produce. Although the primary focus is on the protection of human health, this Strategy also provides some information and recommendations regarding prevention of exposure to domestic animals, wildlife, and livestock.

The Response Strategy specifically provides information on:

- Entities responsible for response and actions
- Recreational risk thresholds
- Acceptable parameters and methods for assessing risk
- Appropriate monitoring and analysis for toxins
- Recommended Advisories and other appropriate communication mechanisms

The Strategy is applicable to lakes, ponds, rivers, and streams with potential public access, recreational use, licensed bathing beaches, or serve as sources of drinking water. If an algal bloom occurs in freshwater that is used for drinking water, the DEP partners with the drinking water supplier to test for the presence of cyanobacteria and cyanotoxins, and appropriate adjustments to drinking water treatment are implemented if necessary.



## You Can Help!

If you observe what you think might be a HAB in a pond, lake, or stream, a suspected Harmful Algal Bloom report can be submitted by smartphone or PC using the [NJDEP HAB Interactive Map Reporting and Communication System](#). The HAB System will be used to gather initial information such as: location coordinates, photos, known recreational activities, and extent of the waterbody. This information will be used to inform DEP to initiate appropriate response actions. Once the DEP completes the investigation of the suspected HAB, results and any recommendations for public notices or advisories will be communicated through the HAB Dashboard [NJDEP Harmful Algal Bloom \(HAB\) Dashboard \(arcgis.com\)](#). All information and HAB data will be accessible by clicking the location on the interactive map in the HAB System. If a smart phone or computer is not available, reports may also be submitted to the DEP Hotline at 1-877-WARNDEP (927-6337) - If reporting by phone, please note the exact location of the suspected HAB along with any details (e.g., date/time, bloom appearance and color, and if known, whether a swimming beach is nearby or whether the waterbody is a drinking water source like a reservoir).

## Contacts

DEP HAB Reporting and Communication System:

<https://survey123.arcgis.com/share/993bfe45dc494666af762b5397c12b9c>

To see the current status of NJ HABs:

<https://njdep.maps.arcgis.com/apps/opsdashboard/index.html#/49190166531d4e5a811c9a91e4a41677>

DEP Hotline: 1-877-WARNDEP (1-877-927-6337) <http://www.nj.gov/dep/warndep.htm>

DEP Bureau of Freshwater & Biological Monitoring (609-292-0427)

[njcyanoabs@dep.nj.gov](mailto:njcyanoabs@dep.nj.gov)

<http://www.state.nj.us/dep/wms/bfbm/CyanoHABHome.html>

<http://www.state.nj.us/dep/wms/bfbm>

DOH Public Health and Food Protection Program (PHFPP) (609-826-4935)

<https://nj.gov/health/ceohs/food-drug-safety/>

Local and County Health Departments in New Jersey

<https://www.nj.gov/health/lh/community/index.shtml>

For questions regarding drinking water, please contact your local water supplier or DEP Division of Water Supply and Geoscience (609-292-7219)

<http://www.nj.gov/dep/watersupply>

## Additional Information

DEP Harmful Algal Bloom Website: <https://www.nj.gov/dep/hab/>

U.S. Environmental Protection Agency (EPA) Cyanobacterial Harmful Algal Blooms: (including links to other states' information)

<https://www.epa.gov/cyanoabs>

Rutgers New Jersey Agricultural Experiment Station

Blue-green Algae in Waterways:

<http://njaes.rutgers.edu/pubs/fs1216/>

NY Department of Environmental Conservation

Blue-green Harmful Algal Blooms:

<http://www.dec.ny.gov/chemical/77118.html>



# Water Quality Concerns for Lakefront Communities

## Sources of Contamination

Microorganisms may exist naturally or be introduced to surface waterbodies by stormwater runoff or septic systems. These sources of contamination can also feed microorganisms and result in an overgrowth (i.e. harmful algal blooms). Some examples of waterborne microorganisms are:

- *E. coli*
- *Cryptosporidium* and *Giardia* Parasites
- **Viruses (Adenovirus)**
- **Cyanobacteria/Harmful Algal Blooms (HAB)**

HABs can overgrow in nutrient rich environments. Signs of overgrowth may include a blue-green or green discoloration to the water or a “spilled paint” or “pea soup” like consistency on the surface.



*Harmful Algal Bloom*

### NEVER USE UNTREATED SURFACE WATER FROM THESE SOURCES

- **Identify** your water source.
- **Test** for possible contamination.
- **Seek an alternate water source**, if needed.

HABs: If you suspect a HAB, call 1-877-WARNDEP.

*Boiling untreated HAB waters will not remove the toxin and may worsen the contamination.*

## Surface Water

**Untreated surface water should never be used for any potable use, showering, handwashing, dishwashing, drinking, or preparing food, especially for infants or children.** Even with various types of home treatment some risks remain. While water may often appear to be “clean,” one drop of water can contain thousands of microorganisms, some of which could be potentially dangerous or make you ill.

## Poorly Constructed Wells

An older shallow or poorly constructed well located near a water body may be at higher risk because it is connected to surface water through the groundwater. Wells with inadequate casing length, or casing and grout deterioration are also at higher risk to contamination from septic tank leaching or other contaminants. **Make sure your well has been properly installed, maintained, and is undergoing routine testing.** You may be at risk if your well:

- Was constructed prior to 1996 (prior to current protective construction standards)
- Is a hand-dug well composed from brick, stone, or concrete rings.
- Has significantly lower water levels or dries up when nearby surface water levels decline.



*Hand-dug Well*

Information on Harmful Algal Blooms can be found at the website: [www.nj.gov/dep/hab](http://www.nj.gov/dep/hab). For more information on well construction, permitting or interpreting well record documents, contact the NJDEP Bureau of Water Allocation & Well Permitting at 609-984-6831 or [wellpermitting@dep.nj.gov](mailto:wellpermitting@dep.nj.gov). If you are unsure about the construction of your well, [complete an individual well search](#) to obtain records from the NJDEP or contact a licensed well driller to evaluate your well.

Follow us on Twitter @NewJerseyDEP



## Drinking Water Facts:

# Private Wells

### Introduction

About 12% of New Jersey residents get their drinking water from private wells. While public water supplies are protected under State and Federal regulations, private well owners are responsible for monitoring the quality of their own well water and for maintaining their own wells. Drinking water can be contaminated by natural sources, like bedrock, or from man-made sources, like agricultural run-off, waste sites, disinfection chemicals, or plumbing fixtures. Regular water testing is an important step that private well owners can take to ensure that their water supply is both safe to drink and appealing to use.

### Why should I test my private well water?

- **To ensure your water is safe to drink.** Your water may appear fine. Regular testing can help identify the presence of contaminants in your water supply which could go unnoticed or to ensure your water treatment is working effectively.
- **If there is known or suspected well water contamination in your area.**
- **If your well is susceptible to contamination.** See the next page for more information.
- **Unpleasant taste, smell, and appearance.** Testing will help you identify contaminants which may be affecting the quality of your drinking water and select proper treatment methods.
- **At real estate transactions and every 5 years for rental properties** testing is mandatory through the NJ Private Well Testing Act (PWTA)

### What contaminants may be in my well water?

There are many substances that can negatively affect the quality of your well water and your health. Some are found naturally in the environment while others result from human activities.

The [two most common types](#) of well water contaminants in New Jersey are:

- **Arsenic** which is largely naturally occurring from the rock formations and,
- **Radionuclides**, such as radium, uranium, and radon, which come from the decay of natural rock. **Gross alpha** is a measure of radioactivity.

### Additional contaminants include:

- **Infectious microorganisms** such as bacteria and viruses, which are found in human and animal feces.
- **Nitrate** which comes from the natural breakdown of human and animal wastes, and from chemical fertilizers.
- **Volatile organic compounds (VOCs) or synthetic organic compounds (SOCs)**, manmade chemicals which come from household septic tanks, gas stations, landfills, dry-cleaning facilities, industrial facilities, and hazardous waste sites.
- **Lead** which was used in the past in household plumbing and can also come from landfills, industrial facilities, and hazardous waste sites and risks can increase when pH is low (<6.5).
- **Mercury** comes from household septic tanks, landfills, industrial facilities, hazardous waste sites, or can occur naturally.
- **PFAS** comes from past use of aqueous firefighting foams, industrial release, and discharge from sewage treatment plants.

### How can these contaminants affect my health?

- **Arsenic** may increase the risk of lung, bladder, and skin cancer.
- **Radionuclides** such as radium increase the risk of bone and sinus cancer. Radon may increase the risk of lung cancer and uranium can affect kidney function.
- **Infectious microorganisms** can cause nausea, vomiting, diarrhea, and stomach cramps.
- **Nitrates** can interfere with the blood's ability to carry oxygen resulting in a type of anemia called methemoglobinemia, especially in infants.
- **Lead** can cause learning, behavioral, and developmental problems in infants and children.
- **Volatile organic compounds (VOCs) and synthetic organic compounds (SOCs)**, may affect the liver, kidney, nervous system, or heart. Exposure to some VOCs and SOC's can raise the risk of developing cancer.
- **Mercury**, at high levels, may result in nervous system and kidney damage.
- **PFAS** may cause increases in serum cholesterol, uric acid levels, and liver enzymes in the blood and decreased antibody response following vaccination.

## What is the NJ Private Well Testing Act (PWTA)?

The NJ PWTA became effective in September 2002. It requires the testing of raw (untreated) water from private wells whenever a property is transferred by contract of sale. Testing is also required every five years if the property is leased. Regular well testing has the added benefit of establishing a record of your water quality over time and providing potential buyers with valuable information if you ever want to sell your home.

**Private well owners should test their wells regularly even if not required by the NJ PWTA.**

## What types of contaminants should I test for?

The following is a list of naturally occurring, man-made contaminants, and water quality parameters that are required to be tested for by the NJ PWTA<sup>1</sup>:

- Total coliform/Fecal or *E. coli* bacteria
- VOCs (includes 29 different chemicals)
- Nitrate
- Lead
- Arsenic
- Mercury<sup>2</sup>
- Radionuclides: Gross alpha (a measure of radioactivity) and uranium<sup>3</sup>
- SOCs
- PFAS (PFNA, PFOA, PFOS)
- Iron, manganese, and pH

<sup>1</sup>Average cost of PWTA is \$1250

<sup>2</sup>Only required in Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Monmouth, Ocean, and Salem Counties

<sup>3</sup>Only required in Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Morris, Passaic, Somerset, Sussex, Union, and Warren Counties

## How often should I test?

You must test your well when required by the NJ PWTA. In addition, well owners are encouraged to test as follows:

**Every year (at least):** Total coliform, nitrates, and pH

**Every 5 years:** Lead, VOCs, arsenic, manganese, and iron

**At least once:** Mercury, gross alpha, and uranium

Local conditions may prompt you to test for other contaminants or to test more or less often.

## Where should I get my well water tested?

There are commercial testing laboratories certified for private well sampling in accordance with the NJ PWTA. A list of certified NJ labs certified can be obtained from NJDEP DataMiner at:

[https://njems.nj.gov/DataMiner/DM\\_REPORT.aspx?RN=Laboratories+Certified+for+PWTA+Sample+Collection&TOT=1](https://njems.nj.gov/DataMiner/DM_REPORT.aspx?RN=Laboratories+Certified+for+PWTA+Sample+Collection&TOT=1)

## What should I do if contaminants are found in my well water?

If contaminants are found, you may want to **retest** your well water to make sure that the first sample was collected and analyzed properly. If contaminants are found above federal and state public drinking water standards, you should take steps to reduce contaminant levels in your well water.

Corrective actions should be selected based on the contaminants of concern and the source of contamination. Some actions are intended for short-term use while others are permanent or long-term solutions.

- Install a home water treatment device
- Install a new and/or deeper well
- Repair and/or maintain your septic system
- Connect to a nearby public water supply

## Where can I learn about water treatment?

Effective treatment devices will reduce contaminant levels in your drinking water. Both point-of-entry (POE, whole-house) treatment systems and point-of-use (POU, single-tap devices) are available. These devices will vary depending on your water quality and the contaminant detected in your water. Local water treatment companies may be a good resource. There are no State regulations for water treatment professionals in New Jersey. You should get quotes and information from several companies.

Water treatment financing (no interest loan up to \$10,000) from the NJ Housing and Mortgage Finance Agency's Potable Water Loan Program (<https://www.nj.gov/dca/hmfa/consumers/homeowners/>) is available for water exceeding primary drinking water standards. Contamination due to pollution may be eligible for assistance from the NJ Department of Environmental Protection's Spill Fund <https://www.nj.gov/dep/srp/finance/eca.htm>

Updated January 2023





# Harmful Algal Blooms and Pets

July 2020

## **Cyanobacterial toxins can poison people and pets.**

Pets can be affected by HAB toxins by drinking affected water, licking their fur or eating algae. If untreated, cyanobacterial poisonings are usually fatal in dogs. Even in cases where a poisoned dog receives prompt veterinary care, it may not fully recover:

Don't let your pet have contact with water if:

- It's slimy or has foam, scum or mats of cyanobacteria on the surface.
- The color can vary. HABs can be bright green, blue-green, brown/red or white.
- It smells. Some HABs produce a rotten smell caused by decaying cyanobacteria.
- You see a sign indicating a HAB is present (even if the water looks ok).

Report the location of the suspected HAB.

- The DEP will test the water to determine if a HAB is occurring and will post appropriate warning signs.

## **What should I do if my dog waded or swam in water with a suspected HAB?**

Call your vet immediately if your dog has swallowed water from an area with a suspected HAB or if any of the following symptoms arise:

- Rashes or hives
- Loss of appetite, vomiting, or abdominal swelling or tenderness
- Diarrhea or tarry or bloody stool
- Staggering, convulsions, seizures or paralysis
- Foaming at the mouth, yellowing of gums or eye whites, excessive drooling
- Any other unexplained sickness after being in contact with water



Photo Credit: GettyImages

***Symptoms can occur anywhere from 15 minutes to several days after exposure. In severe cases, dogs can show signs of toxicity within a few minutes and can die within an hour of toxin exposure.***



Photo Credit: NJ DEP

## What are Harmful Algal Blooms (HABs)?

Cyanobacterial Harmful Algal Blooms (HABs) are excessive growths of cyanobacteria (also called blue-green algae), some of which can produce harmful toxins. Blooms can form in warm, slow-moving waters that are rich in nutrients from sources such as fertilizer runoff or septic tank overflows. Blooms often result in a thick coating or “mat” on the surface of a waterbody, often in mid-late summer or early fall, as long as the weather remains warm.

## How to identify a HAB:

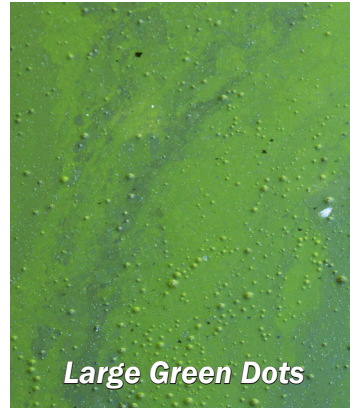
HABs are typically bright green, but they can also appear as spilled paint, discolored water, parallel streaks, green dots or globs, and/or can appear foamy or as surface scum. Blooms can also sometimes occur just beneath the surface of the water. The water may smell bad as cyanobacteria in the bloom die.

It is important to note that not all blooms are caused by cyanobacteria or are harmful. Some algal blooms are due to common green algae. Additionally, pond “muck” and duckweed can be mistaken for algal blooms. Even when present, cyanobacteria do not always produce cyanotoxins. You cannot tell if a bloom has toxins by looking at it. If you are unsure, it is best to avoid contact with the water and keep your pet on a leash at all times.

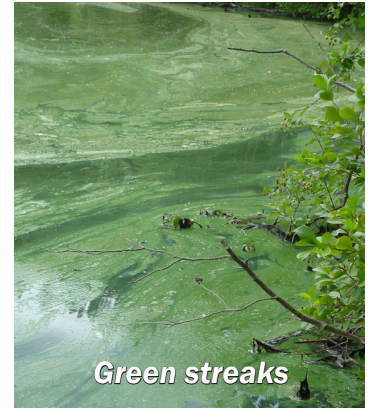
## Report a HAB

- A suspected HAB in a lake, pond, river, or stream can be reported by Smart Phone or PC using the DEP HAB Reporting and Communication System (<https://survey123.arcgis.com/share/993bfe45dc494666af762b5397c12b9c>). If a smart phone or computer is not available, call the DEP Hotline at 1-877-WARNDEP (927-6337) and please note the exact location of the suspected HAB along with any details (e.g., date/time, bloom appearance and color, whether a swimming beach is nearby). For more information, please visit the DEP Harmful Algal Blooms website: [www.nj.gov/dep/hab/](http://www.nj.gov/dep/hab/)

## Common Cyanobacteria Harmful Algal Blooms / HABs



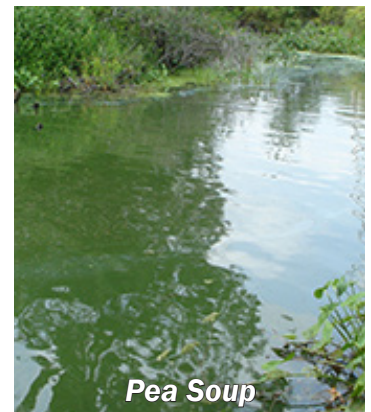
*Large Green Dots*



*Green streaks*



*Spilled Paint*



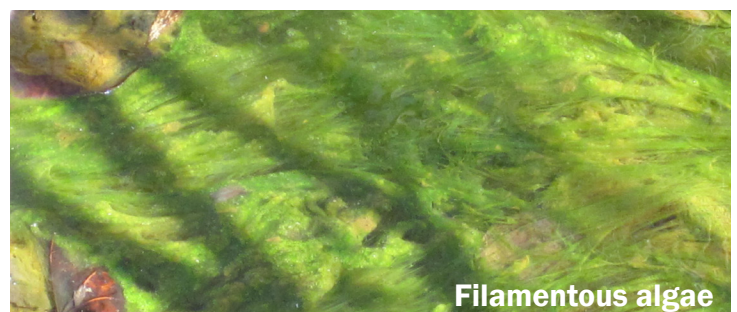
*Pea Soup*

Photo Credit: NJ DEP

## Not a Harmful Algal Bloom / HAB



*Duckweed*



*Filamentous algae*

Photo Credit: NJ DEP

## AVOID IT & REPORT IT!

Report a suspected harmful algal bloom by scanning the QR Code with your smart phone's camera or here: <https://www.nj.gov/dep/hab/>

If you do not have a smart phone or computer, you can call the DEP Hotline at 1-877-WARNDEP (927-6337) or download the WARN NJDEP mobile app ([nj.gov/dep/warndep.htm](http://nj.gov/dep/warndep.htm))

