

Blue-Green Algae Bloom Response Plan

Final



State of Idaho
Department of Environmental Quality
Department of Health and Welfare

October 2015

Acknowledgments

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Blue-green algae bloom at Fernan Lake, July 2007. Photograph taken by the Idaho Department of Environmental Quality.



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1 Introduction

Cyanobacteria, commonly referred to as blue-green algae because of their color, are bacteria rather than algae. Many species of blue-green algae are found naturally in surface waters, occurring as both singular and multicellular organisms. These organisms are unique in that they are photosynthetic, and some species are also noted for their ability to fix nitrogen. This ability allows them to use nitrogen from the atmosphere as an energy source that is otherwise unavailable to other species. It also gives the organisms a competitive advantage over phytoplankton that cannot fix nitrogen when water nitrogen concentrations are low. Blue-green algae blooms can be unsightly and vary in appearance. They may appear as foam, scum, or mats on the surface of water, especially near the shoreline. Blooms can range in color from blue, bright green, to brown and red, while some may not affect the appearance of the water (CDC 2015). Some blooms are associated with foul odors that results when the cyanobacteria die.

Some species of blue-green algae produce toxins that may cause illness or possible death to animals, including pets, livestock, and wild animals. Humans who drink, swim, or enjoy other recreational activities in water that contains high concentrations of cyanobacteria or cyanobacterial toxins may experience gastroenteritis, skin irritation, allergic responses, or liver damage (CDC 2008). The toxins tend to accumulate in the viscera of fish, so eating fish not properly cleaned could pose health risks. These effects are typically short term and may impair beneficial uses of the water such as agricultural water supply, domestic water supply, aesthetics, and contact recreation.

2 Blue-Green Algae Blooms in Idaho

Reports of nuisance blue-green algae blooms in Idaho are increasing and are a growing concern in the Pacific Northwest (Jacoby and Kann 2007). Blue-green algae have been widely detected throughout Idaho, although their associated toxins have rarely been measured. Jacoby and Kann (2007) reported two detections of cyanotoxins in Idaho: Black Lake (1985 and 1986) and Cascade Reservoir (1993 to 1996). The Black Lake incidents were heavy blooms of *Anabaena flos-aquae* releasing the toxin anatoxin-a, which caused death of dogs, cattle, and deer (Kann and Falter 1987 in Jacoby and Kann 2007). In Cascade Reservoir, 23 cattle died after consuming water containing the toxin microcystin. These blooms caused animal deaths and resulted in beach closures (Jacoby and Kann 2007).

Currently Idaho water quality standards do not directly address the toxins related to blue-green algae (cyanobacteria) or the organisms themselves. However, the standards do address conditions when algae blooms impair beneficial uses (i.e., recreation, cold water aquatic life, and aesthetics). The narrative criteria for excess nutrients state that “Surface waters of the state shall be free from excess nutrients that can cause visible slime growths or other nuisance aquatic growths impairing designated beneficial uses” (IDAPA 58.01.02.200.06). It should be noted that blue-green algae blooms can occur in waters that do not have excess nutrients. Also narrative criteria for floating, suspended, or submerged matter state that “Surface waters of the state shall be free from floating, suspended, or submerged matter of any kind in concentrations causing

nuisance or objectionable conditions or that may impair designated beneficial uses” (IDAPA 58.01.02.200.05). The rules for toxic substances addressed under IDAPA 58.01.02.200.02 state “Surface waters of the state shall be free from toxic substances in concentrations that impair designated beneficial uses.” Narrative criteria exceedance determinations are described in the *Waterbody Assessment Guidance* (Grafe et al. 2002). Section 5 of Grafe (2002) specifically addresses the Idaho Department of Environmental Quality’s (DEQ’s) narrative criteria evaluation policy.

3 Blue-Green Algae Bloom Investigation and Response

The increase in blue-green algae blooms, complaints, and associated investigations have highlighted the need for a statewide blue-green algae response plan. This response plan outlines response procedures, sampling, and follow-up monitoring along with procedures for coordinating with the Idaho public health districts in issuing health advisories when needed. Complaints of blue-green algae blooms may be made by the public or referred to DEQ by another agency. DEQ is responsible for investigating blue-green algae blooms, while the public health districts are responsible for issuing health advisories related to blue-green algae. DEQ will respond to public complaints, identify whether a problem exists, and if possible quantify the problem with the intent of minimizing and preventing risk to the nearby ecosystem, animals, and humans. Each investigation should document the presence or absence of a blue-green algae bloom, identify the species present, and enumerate the number of cells or colonies. The number of cells or colonies per volume of water is used to estimate the risk of toxicity and to determine whether a health advisory is warranted (Table 3). DEQ will coordinate with the public health districts when public health advisories and postings are warranted, and public communication is necessary. The public health districts are responsible for issuing health advisories, DEQ should coordinate closely during this process.

When a potential blue-green algae bloom is reported as a complaint, or otherwise suspected, the DEQ regional office Surface Water Quality Program Manager should be notified. DEQ water quality staff will investigate the occurrence in a timely manner, preferably the day the report is received. DEQ staff should immediately notify the laboratory selected for analyses before sample collection, provide the laboratory with a description of the bloom and analyses that will be needed, and obtain any additional instructions or recommendations from laboratory staff. Samples should be taken when scum is present that appears to be blue-green algae, or when a perceived risk exists that concerns the public. In the event of a fish or wildlife kill, the regional Idaho Department of Fish and Game should be contacted. If livestock are affected or agricultural irrigation is taking place, the local Idaho Department of Agriculture should be contacted. DEQ staff should also contact the regional Idaho public health district to inform them of the investigation. All contacts are listed in Appendix C.

Detailed record keeping of each bloom is critical. DEQ staff should complete the Bloom Report Form (Appendix D) and include local conditions, report date and time, investigators, and what was observed. Specific attention should be given to coloration, nearshore surface scums, odor, fish kills or other animal sickness, weather conditions, and other pertinent information, such as reports of human illness. Create a file (preferably electronic) that includes photographs, report forms, and all laboratory results.

Complaint investigations related to blue-green algae blooms, bloom confirmation, laboratory analysis, and public health advisories issued must be documented and tracked using DEQ's statewide tracking system for blue-green algae, which is used to document blue-green algae blooms and DEQ's response. Data are entered into the Harmful Algal Bloom Tracker in TRIM (TRIM record number 2015AKL65). The log must be kept current. This tracking tool serves as a repository for the response effort related to blue-green algae blooms and will serve as a resource for future monitoring.

All field investigations tend to be site-specific and pose unique challenges. If the DEQ regional office Surface Water Quality Program Manager determines that a deviation from this response plan is necessary, the deviation should be documented and justified, involved parties notified, and recommendations made for improving the response plan in the future.

3.1 Safety

While acute human health effects are rare, blue-green algae can release toxins with human health effects ranging from skin irritation to neurotoxic effects. Care should be taken to avoid skin contact with blue-green algae scums. Use gloves, waders, and instruments to collect samples and use appropriate decontamination procedures (section 3.5) after sampling.

Lugol's iodine solution, which is used as a sample preservative, can be harmful if swallowed and cause irritation. Avoid breathing the solution's vapors, and avoid contact with skin and eyes. Wash thoroughly after handling the solution.

3.2 Response Kit

DEQ staff should have a response kit available that contains the equipment and supplies needed to conduct a field investigation of the bloom and collect samples. The recommended basic response consists of a field visit with visual observations, photographs, and algae samples taken for identification and enumeration. A suggested supply list is included below. Each year, equipment should be prepared by early spring before blooms occur (late summer, early fall).

Equipment List

- Camera
- Field notebook
- Bloom Report Forms
- Pens, sharpies, and pencils
- Map
- GPS receiver
- Personal protective equipment
 - Neoprene or rubber gloves
 - Waders
- Several 125 milliliter (mL) or 250 mL high-density polyethylene brown bottles. Brown bottles are needed because the preservative, Lugol's solution, is sensitive to sunlight; clear bottles may be used but need to be covered in aluminum foil.

- Bottle labels
- Lugol's solution (1.5 mL/125 mL sample or 3 mL/250 mL sample) plus appropriate protective gear (i.e., gloves and goggles)
- Rinse water for cleaning equipment
- Chain-of-custody forms

3.3 Sample Collection

When the presence of blue-green algae is suspected the following procedure should be followed:

- Collect grab samples from the surface where concentrations of algae or scums are visible. For locations with visual differences (i.e., different color), collect a separate grab sample from each visually different location.
- Put on gloves and clearly label the sample bottle with a unique identifier including the water body name, specific location on water body, date and time of sample, and sample collector's name. The same unique identifier should be entered in the field sampling notebook or field forms and the chain-of-custody form.
- Collect representative samples carefully. If possible, collect the sample at a time of day when recreation is likely to occur (i.e., middle of the day) and when it is warm and calm. Sampling during or immediately following a rain event is discouraged. To collect a sample representative of a potential recreational exposure, select a sampling site where public access is likely. Determine the depth of the sample to be taken based on visual assessment of scum. Samples of a well-developed scum layer used for identification and enumeration should be from the surface. Samples for the measurement of toxins may include water below the scum layer (notably within 2–4 inches of the surface). Individual laboratories may advise on sample selection.
- Collect a sample from the determined depth directly into the sample bottle.
- Invert the bottle so the opening is upright and pointing towards the direction of flow (if applicable). Allow water to enter and fill the bottle.
- Pull the bottle to the surface, ensuring adequate headspace. Preserve the sample following the preservation technique outlined in section 3.4. Secure the cap for transport.
- Record notes on bloom report form and take photographs. All locations should be recorded with a Global Positioning System and may be marked on a printed map. Describe the appearance of the algae bloom, extent of the bloom, and sample location. Note weather conditions, land use, and other conditions (e.g., wave action against the shoreline and public and animal exposure occurrence,).

3.4 Sample Preservation, Transport, and Handling

Sample collection should be planned without compromising the sample validity. Communication with the analytical laboratory is critical to ensure that the laboratory will be open to receive the shipped samples. The receiving laboratory may advise on sample volume, sample number, and packaging and shipping. All samples are required to have a chain-of-custody form, which should include project name, analyte (i.e., microcystin), number of samples, shipping date, tracking number, and contact information.

- Preserve samples with Lugol's iodine solution with sufficient volume (1.5 mL/125 mL sample or 3 mL/250 mL sample) to ensure the sample has an amber color. Add the Lugol's solution as quickly as possible to ensure preservation is effective. Keep the Lugol's solution and preserved samples in the dark to prevent breakdown of the solution
- While samples do not require refrigeration once they are preserved with Lugol's solution, keep the samples cool, on ice in a cooler, and ship within 24–48 hours.
- Once the samples are collected, contact the analytical laboratory to arrange for sample shipment or pickup. Generally, the samples should be shipped on the same day as collected, following the instructions provided by the laboratory.
- Complete the chain-of-custody form before submitting the samples to the laboratory. All samples collected in the field should have an accompanying a chain-of-custody form.

3.5 Decontamination Procedures

Once sampling is complete, all equipment used during the sampling event must be decontaminated to prevent unintentional contact and to ensure that equipment is clean and uncontaminated for the next sampling event. All equipment should be cleaned before and after each use. General decontamination consists of a triple rinse using deionized or tap water. Sampling equipment that has come into contact with cyanobacteria or cyanotoxins should be thoroughly cleaned using Alconox or a similar cleaning agent, followed by a triple rinse using deionized or tap water. Do not use site water as a rinsate. Further information on decontamination is found at:

http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Hydro/Hydro_Licensing/Klamath_River/Cyanobacteria_Sampling_SOP.pdf (Klamath Blue Green Algae Working Group 2009).

3.6 Laboratory Analyses

DEQ recommends that the type of bloom and species involved in the bloom be identified (to the extent practicable). Blue-green algae should also be enumerated by cells or colonies. An expedited turn-around may be needed from the analytical laboratory in response to the urgent nature of the bloom conditions. Ideally, the laboratory should notify DEQ regional staff immediately via e-mail or telephone about the results and follow up with a laboratory report.

Laboratory results will confirm whether a blue-green algae bloom is occurring, which species are present, whether potentially toxin-producing species are present, and their density. This information should be used to determine the water quality status of the water body, whether public health warnings are needed, and to develop a better understanding of phytoplankton dynamics in Idaho waters.

3.7 Response to an Event

Risks posed by cyanotoxins include gastroenteritis, skin irritation, allergic responses, and liver damage; however, much is uncertain and research into the health effects continues. The World Health Organization (WHO) and others have drafted recommendations and risk analyses about threshold values for cyanotoxins (Table 1—microcystins). In June 2015, EPA released drinking

water health advisories to protect the public under the Safe Drinking Water Act for two cyanobacterial toxins: microcystins, and cylindrospermopsin (Table 2) (EPA 2015). Health advisories are non-regulatory drinking water concentrations at or below which adverse health effects are not anticipated and serve as a technical guideline managers.

Any water bodies used for or designated for drinking water

Table 1. WHO risk analysis for recreational exposure to microcystins (Chorus and Bartram 1999).

| Risk Category | Microcystin concentration (micrograms per liter) |
|----------------------|---|
| Low risk | 10 |
| Moderate risk | 10–20 |
| High risk | 20–2,000 |
| Very high risk | >2,000 |

Table 2. 2015 EPA Drinking Water Health Advisory Concentrations for two cyanotoxins

| Cyanotoxin | Children younger than 6 years of age | All other ages |
|--------------------|---|-----------------------|
| Microcystin | 0.3 ug/L | 1.6 ug/L |
| Cylindrospermopsin | 0.7 ug/L | 3.0 ug/L |

The Oregon Department of Human Services developed guidance about issuing public health advisories associated with blue-green algae (Table 3) (ODHS 2015; Stone and Bress 2007 in Jacoby and Kann 2007). This response plan recommends the decision-tree approach Oregon has adopted. This approach was also recommended in Jacoby and Kann 2007. If scum is visible and associated with toxigenic species, DEQ regional manager will coordinate with the regional public health district responsible for issuing and posting public health advisories in conjunction with the agency that manages the water body. If scum is not present, advisory posting decisions will depend upon the species and concentrations present. An example of a health advisory posting is included in Appendix B.

Additional follow-up observation and monitoring should be conducted until the bloom subsides and health advisories are removed. Follow-up monitoring depends upon site-specific conditions; ideally follow-up monitoring would be conducted on a weekly basis until the bloom subsides.

Table 3. Decision-making scheme for blue-green algae health risks to guide issuing public health advisories (adapted from ODHS 2015).

| Risk Measurement | Decision | Action—Posting | Action—News Release |
|--|----------|---|---------------------------------|
| 1. Is surface scum visible and associated with toxigenic ^a species? | Yes | Recommend posting by PHD in conjunction with water body management agency | DEQ and PHD make determination. |
| | No | Proceed to 2. | |
| 2. Is the sum of all potentially toxigenic ^a taxa $\geq 100,000$ cells/mL? Is the sum of all potentially toxigenic ^a taxa $> 100,000$ cells/mL? | Yes | Recommend posting by PHD in conjunction with water body operator. | DEQ and PHD make determination. |
| | No | Proceed to 3. | |
| 3. Is the density of <i>Microcystis</i> or <i>Planktothrix</i> $> 40,000$ cells/mL? | Yes | Recommend posting by PHD in conjunction with water body operator. | DEQ and PHD make determination. |
| | No | Do not recommend posting. | |

a. Toxigenic taxa include *Anabaena*, *Microcystis*, *Planktothrix*, *Nostoc*, *Coelosphaerium*, *Anabaenopsis*, *Aphanizomenon*, *Gloeotrichia*, *Woronichinia*, *Oscillatoria*, and *Lyngbya*. Additional taxa are known to be potentially toxic and may be added to the list.

Notes: public health district (PHD); Idaho Department of Environmental Protection Agency (DEQ); milliliter (mL)

3.8 Communications

Effective communication during a blue-green algae bloom investigation is critical to effectively issue public health advisories and communicate accurate information to the public about the risks related to blue-green algae blooms. Upon receiving the initial complaint or call for investigation, DEQ staff will notify the analytical laboratory that samples will require expedited processing; also before sampling, notify the local public health district about the investigation. This initial contact will ensure quick response time in the event a public health advisory is necessary. The local Idaho public health district should be notified immediately when the hazard identification decision-making scheme (Table 3) indicates that issuing a health advisory is necessary. Once laboratory results indicate a health advisory posting is necessary, DEQ should coordinate closely with the Idaho public health districts throughout the process and until the warning is removed. The Idaho Department of Fish and Game should be notified in the event of a fish kill or unusually heavy wildlife mortality. If livestock are at risk, the Idaho State Department of Agriculture should be notified.

Contacts for these agencies are included in Appendix C. Additionally, any blue-green algae bloom investigations and resulting public health advisories issued should be closely coordinated with the agency responsible for managing the water body. The responsible managing agency varies by water body, and events should be handled on a case-by-case basis. For specific consultation on toxicology and human health effects, contact the Idaho Department of Health and Welfare (Appendix C).

Communication with the public should include educational information about blue-green algae and water quality. The Idaho Department of Health and Welfare has provided a general informational handout available at <http://www.healthandwelfare.idaho.gov/Portals/0/Health/EnvironmentalHealth/HarmfulAlgalBloom.pdf>. A designated press contact is recommended, and all outreach to the public should follow appropriate media protocols. A press release is a vital outreach tool. A sample draft press release is included in Appendix A and may be modified to address specific circumstances. A draft health advisory posting is included in Appendix B.

Benefits of effective public outreach include the following:

- The public will know who to contact to report a bloom or to request further information.
- Greater awareness increases the understanding of the links between water quality and blue-green algae blooms.
- With a greater knowledge, the public can be more engaged in the process of improving water quality and preventing future blooms.

Once DEQ determines the water is safe, the public health district should be notified that the advisory postings can be removed, or they can work with the water body manager to remove postings.

4 References

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Appendix A. +Example Press Release

[] Health District

[Address]

[Web Address]

FOR IMMEDIATE RELEASE

[Date]

PHD Press Contact:

DEQ Press Contact:

Health Advisory Issued for [Insert water body name]



[Insert Picture above]

[County Name, Idaho] -- A health advisory was issued today for **[water body name]** by the **[region]** Health District and the Idaho Department of Environmental Quality. Water samples confirmed the presence of the blue-green algae species of *Microcystis*, *Anabaena*, and *Aphanizomenon* - all species can produce potentially dangerous toxins. Precaution is advised.

These algae species may produce potentially dangerous toxins. *Children and pets are particularly susceptible.* In animals, a toxin that may be produced by *Anabaena* and *Aphanizomenon* can cause a rapid progression of neurological symptoms such as muscle

spasm, decreased movement, labored breathing, convulsions, and death. Symptoms have not been documented in people. However, the public is advised to avoid any activity that could lead to ingesting the lake water considering the effect these algal species have on animals.

This bloom requires added precaution because it is applicable to open water in the lake where water is an uncharacteristic green color and where unsightly thick green mats are present along shorelines. Drinking water from the lake may be dangerous if toxins are present; the toxins cannot be removed by boiling or filtering the water.

If people choose to eat fish from this area, it is recommended that you remove all fat, skin and organs before cooking since toxins are more likely to collect in those tissues.

Blue-green algae are naturally occurring, microscopic bacteria. Many species occur in Idaho surface waters and only some species release toxins under certain conditions. Harmful algal blooms occur in water conditions of optimal temperature, oxygen, and when nitrogen is unavailable and phosphorus is abundant. These circumstances are most common during the warmer months of late summer.

The public will be advised when the concern no longer exists.

Often excess nutrients associated with algae blooms are caused by pollution from human activities. Blue-green algae blooms are not always associated with excess nutrients. However, reducing nutrient levels will improve overall water quality so the Idaho Department of Environmental Quality is working with residents and landowners to implement nutrient reduction projects.

For health questions, contact [region] Health District: [name and phone contact].

For environmental questions, contact the Idaho Department of Environmental Quality: [name and phone contact]

###

Appendix B. Example Health Advisory Posting

CAUTION

Harmful Algal Bloom

  

⚠ AVOID WATER CONTACT

Do not go in or near water with:

- an unusual color (red, pea-green, blue, or blue-green)
- an unpleasant odor or stench
- a scummy, thick mat, or a foamy appearance
- the appearance of paint spilled on it

Symptoms may include skin or eye irritation, nausea, diarrhea, numbness of hands and feet, and/or difficulty breathing. Pets are especially at risk. If symptoms appear, call your doctor.

For additional information on Harmful Algal Blooms contact

[Department/ Agency Contact Information]



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Appendix C. Contacts

Idaho Department of Environmental Quality Regional Offices

DEQ Boise Regional Office

1445 N. Orchard St.
Boise, ID 83706
Phone: (208) 373-0550
Fax: (208) 373-0287
Contact: Lance Holloway
E-mail: Lance.Holloway@deq.idaho.gov

DEQ Coeur d'Alene Regional Office

2110 Ironwood Parkway
Coeur d'Alene, ID 83814
Phone: (208) 769-1422
Fax: (208) 769-1404
Contact: Thomas Herron
E-mail: Thomas.Herron@deq.idaho.gov

DEQ Idaho Falls Regional Office

900 N. Skyline Drive, Suite B
Idaho Falls, ID 83402
Phone: (208) 528-2650
Fax: (208) 528-2695
Contact: Troy Saffle
E-mail: Troy.Saffle@deq.idaho.gov

DEQ Lewiston Regional Office

1118 "F" St.
Lewiston, ID 83501
Phone: (208) 799-4370
Fax: (208) 799-3451
Contact: Cynthia Barrett
E-mail: Cynthia.Barrett@deq.idaho.gov

DEQ Pocatello Regional Office

444 Hospital Way, #300
Pocatello, ID 83201
Phone: (208) 236-6160
Fax: (208) 236-6168
Contact: Lynn Vanevery
E-mail: Lynn.Vanevery@deq.idaho.gov

DEQ Twin Falls Regional Office

650 Addison Avenue West, Suite 110
Twin Falls, ID 83301
Phone: (208) 736-2190
Fax: (208) 736-2194
Contact: Balthasar "Sonny" Buhidar
E-mail: Balthasar.Buhidar@deq.idaho.gov

Idaho Public Health Districts

Idaho Panhandle Health District

8500 N. Atlas Road
Hayden, ID 83835
Phone: (208) 415-5100
Fax: (208) 415-5101
Contact: Eric Ketner
Phone: (208) 415-5224
E-mail: EKetner@phd1.idaho.gov

Idaho North Central Health District

215 10th Street
Lewiston, ID 83501
Phone: (208) 799-3100
Fax: (208) 799-0349
Contact: Ed Marugg
Phone: (208) 799-0356
E-mail: emarugg@phd2.idaho.gov

Idaho Southwest District Health

13307 Miami Lane
Caldwell, ID 83607
Phone: (208) 455-5300
Fax: (208) 454-7722
Contact: Brian Crawford
E-mail: brian.crawford@phd3.idaho.gov

Idaho Central District Health Department

707 North Armstrong Place
Boise, ID 83704-0825
Phone: (208) 375-5211
Fax: (208) 327-7100
Contact: Mike Reno
E-mail: mreno@cdhd.idaho.gov

Idaho South Central Public Health

Twin Falls, ID 83301-3156
Phone: (208) 734-5900
Fax: (208) 734-9502
Contact: Josh Jensen
E-mail: jjensen@phd5.idaho.gov

Idaho Southeastern Idaho Public Health

1901 Alvin Ricken Drive
Pocatello, ID 83201
Phone: (208) 233-9080
Fax: (208) 234-7169
Contact: Steve Pew
E-mail: spew@siph.idaho.gov

Idaho Eastern Idaho Public Health District

1250 Hollipark Drive
Idaho Falls, ID 83401
Phone: (208) 522-0310
Fax: (208) 525-7063
Contact: Kellye Eager
E-mail: keager@eiph.idaho.gov

Idaho Fish and Game Regional Offices

Panhandle Region

2885 W. Kathleen Ave.
Coeur d'Alene, ID 83815
Phone: (208) 759-6229
Fax: (208) 769-1418
Contact: Andy Dux
E-mail: andy.dux@idfg.idaho.gov

Clearwater Region

3316 16th St.
Lewiston, ID 83501
Phone: (208) 750-4208 or 553-8299
Fax: (208) 799-5012
Contact: Joe Dupont
E-mail: joe.dupont@idfg.idaho.gov

Southwest Region

3101 S. Powerline Rd.
Nampa, ID 83686
Phone: (208) 697-1117
Fax: (208) 465-8467
Contact: Joe Kozfkay
E-mail: joe.kozfkay@idfg.idaho.gov

McCall Subregion

555 Deinhard Lane
McCall, ID 83638
Phone: (208) 630-4634
Fax: (208) 634-4320
Contact: Dale Allen
E-mail: dale.allen@idfg.idaho.gov

Magic Valley Region

324 South 417 East, Suite 1
Jerome, ID 83338
Phone: (208) 539-0286
Fax: (208) 324-1160
Contact: Doug Megargle
E-mail: doug.megargle@idfg.idaho.gov

Southeast Region

1345 Barton Road
Pocatello, ID 83204
Phone: (208) 251-9401
Fax: (208) 233-6430
Contact: David Teuscher
E-mail: david.teuscher@idfg.idaho.gov

Upper Snake Region

4279 Commerce Circle
Idaho Falls, ID 83401
Phone: (208) 390-0601
Fax: (208) 523-7604
Contact: Dan Garren
E-mail: dan.garren@idfg.idaho.gov

Salmon Region

99 Hwy. 93 N.
Salmon, ID 83467
Phone: (208) 561-1030
Fax: (208) 756-6274
Contact: Greg Schoby
E-mail: greg.schoby@idfg.idaho.gov

Idaho State Department of Agriculture

Dr. Bill Barton
State Veterinarian
Phone: (208) 332-8540
Fax: (208) 334-4062
E-mail: bill.barton@agri.idaho.gov

Phytoplankton/Cyanobacteria Analysis

Advanced Eco-Solutions Inc.
1324 N. Liberty Lake Rd. #124
Liberty Lake, WA 99019
Contact: Darren Brandt
Phone: (509) 226-0146
E-mail Darren.brandt@adveco-sol.com

Cyanotoxin Analysis

Water Management Laboratories Inc.
1515 80th Street East
Tacoma, WA 98404
Phone: (253) 531-3121

Veterinary Toxicology

Patricia A. Talcott, MS, DVM, PhD, DABVT
Associate Professor, Veterinary Diagnostic Toxicologist
Director of Admissions
VCAPP, Washington State University, College of Veterinary Medicine
205 Wegner Hall
P.O. Box 646520
Pullman, WA 99164-6520
Phone: (509) 335-0807
Fax: (509) 335-7424
E-mail: ptalcott@vetmed.wsu.edu

Appendix D. Bloom Report Form

Report

| | |
|-------------------|--|
| Date | |
| Water Body | |
| County | |

| | | | |
|--------------------------------------|---------------|--------------------------------------|---------------|
| Complainant/Bloom Reported By | | | |
| Name | | | |
| Phone Number | | | |
| Authorized Release of Name? | Yes / No / NA | Willing to Provide Testimony? | Yes / No / NA |
| Description of Report | | | |
| Received by: | | | |
| Referred to/ Responder: | | | |

Investigation

| | |
|--|--|
| Date | |
| Responder | |
| Observations | |
| Bloom conditions visible? Extent and location? Color? Odor? | |
| Scum visible? Extent and location? | |
| Fish kill? Animal impacts reported? | |
| Sample(s) collected – Describe and record GPS location | |
| Other measurements (if applicable) | |
| Temperature | |
| Dissolved Oxygen | |
| Chlorophyll A | |
| Secchi Depth | |
| Other | |