



Water Quality Concerns Report

Issue Analysis/Improvement Plan

Publication Date: August 18, 2016

Walton County Emergency Management
63 Bo Pete Manor Rd
DeFuniak Springs, FL 32435
850-892-8530



This Page Intentionally Left Blank

TABLE OF CONTENTS

Table of Contents	1
Executive Summary	3
Identification of Issues	5
Erroneous News Report	5
Water Quality Reporting.....	8
Leaching of Septic Tanks.....	10
Algae Blooms	11
<i>This Page Intentionally Left Blank.....</i>	12
Appendix A - DOH - Walton Healthy Beaches Sampling Sites	13
Appendix B – Frequently Asked Questions: Cyanobacteria/Blue-Green Algae.....	15

This Page Intentionally Left Blank

EXECUTIVE SUMMARY

On June 29, 2016, Glenn Burns, a meteorologist with WSB-TV in Atlanta, erroneously reported the Florida panhandle beaches were closed due to “flesh-eating” bacteria (*Vibrio Vulnificus*). The report spawned a firestorm on social media (Facebook and Twitter) and began “trending” within hours, which resulted in a number of cascading events. The Department of Health (DOH) - Walton started receiving calls late that afternoon and continued to respond to calls throughout the night and the next few weeks. Walton County Sheriff’s Office (WCSO) 911 system quickly became inundated with telephone calls about beach closures. Walton County Emergency Management (WCEM) and the Tourism Development Council (TDC), also began receiving high numbers of telephone calls. Bed tax collectors reported a high number of calls from visitors who wanted to cancel their reservations. In addition to poor water quality test results for enteric bacteria (enterococci) in a few of our area beaches, Walton County was primed for a number of public relations issues. The report also resulted in raising additional questions from the public regarding algae blooms and septic leaching, among other things. On July 11, 2016, Holly Holt, Health Officer for DOH-Walton, convened an after-action meeting to discuss what went well (sustains), what can be improved (areas for improvement), and recommendations. On August 4th, Jeff Goldberg, Emergency Management Director, met with Commissioner Meadows, to discuss and clarify other concerns brought to her by some of her constituents.



On August 8, 2016, WCEM convened a working group comprised of representatives from the following agencies to discuss additional questions from the public regarding algae blooms and septic leaching, among other concerns:

1. Walton County Planning Department
2. Walton County Public Information
3. DOH – Walton
4. Visit South Walton (Tourist Development Council)

The group was charged with identification of the issues and development of corrective actions. This initial report will identify the issues, dispel rumors on some of those issues, and identify what corrective actions have taken place. It will also outline the process for continuous improvement and corrective actions, as well as detail areas of responsibility for each agency.

This Page Intentionally Left Blank

IDENTIFICATION OF ISSUES

On July 11, Holly Holt, Health Officer for DOH – Walton, facilitated an after-action meeting with community members consisting of the TDC, WCEM, well as with Corey Dobridnia, WCSO Public Information Officer (PIO), to discuss some concerns surrounding the erroneous news report and formulate corrective actions (this will be outlined later in this report). In addition, on August 4th, Jeff Goldberg, Emergency Management Director, met with Commissioner Meadows, as it was some of her constituents who brought up other concerns. He also met with Roger Hall, Chief Executive Officer of Sacred Heart Hospital on the Emerald Coast, to start identification and clarification of additional issues.

The issues that were identified from both meetings are:

- The erroneous news report which caused a “panic”
 - How can we handle that if it happens again?
- Water quality reporting and what it means
 - How often?
 - How do we educate the public?
- Leeching of septic tanks into the dune lakes and our waterways
 - How can we mitigate against it?
- Algae blooms around the state
 - Could it happen here?
 - How can we prevent and prepare for it?
 - How do we respond to it?

Erroneous News Report



On June 29, 2016, Glenn Burns, a meteorologist with WSB-TV in Atlanta, reported Florida panhandle beaches were closed due to “high levels of fecal bacteria.” He went on to say, “They call this kind of flesh-eating bacteria.”

As stated earlier, the report caused a large number of calls being placed to the DOH-Walton, WCSO 911 system, the TDC, and WCEM asking whether the beaches were

indeed closed. Some bed tax collectors also reported that some visitors attempted to cancel their reservations.

On July 11, 2016, an after-action meeting was convened at DOH-Walton to discuss what went well (sustains), what can be improved (areas for improvement), and recommendations.

Sustains

1. Public called for information
2. Local interagency communication went very well
3. Rapid re-sampling of the beach water
4. Situation handled quickly by all local agencies involved
5. The situation was handled in a very rapid and professional manner.
6. Did not allow personal opinions get involved

Areas for Improvement

1. **Observation:** Limitations on access to Facebook and other social media by DOH-Walton resulted in delay in response to information.
 - a. **Recommendation:** Work with FDOH in Tallahassee on the importance of a rapid, proactive approach to media relations for this type of incident.
COMPLETED
 - i. **Responsible Agency/Organization:** DOH - Walton
2. **Observation:** Large call volume at DOH - Walton and WCSO.
 - a. **Recommendation 1:** Consider activating the Citizen Information Center (CIC) and a Joint Information Center (JIC).
 - b. **Recommendation 2:** Develop activation triggers for the CIC and JIC in plans
 - i. **Responsible Agency/Organization:** WCEM and Walton County PIO
3. **Observation:** WCEM received calls and twitter information before DOH – Walton.
 - a. **Recommendation 1:** Continue proactive messaging. **COMPLETED**
 - b. **Recommendation 2:** Consider activating the CIC and JIC.
 - c. **Recommendation 3:** Develop a PIO distribution list for PIO notifications.
COMPLETED

- i. **Responsible Agency/Organization:** WCEM and Walton County PIO
- 4. **Observation:** FDOH in Tallahassee distributed information to the national media outlets but notification of the local Health Officers of that information was delayed.
 - a. **Recommendation 1:** Work with FDOH in Tallahassee on the importance of a rapid, proactive approach to media relations for this type of incident to include notification of local Health Officers of messages being distributed.

COMPLETED

- i. **Responsible Agency/Organization:** DOH – Walton.
 - b. **Recommendation 2:** Make contact with national media outlets and share information through social media and a proactive press release campaign.
 - i. **Responsible Agency/Organization:** TDC and Walton County PIO.
- 5. **Observation:** FDOH in Tallahassee was unaware of the potential impact to Walton County’s economy this kind of issue can have. For example, \$0.65 of every \$1.00 comes from tourism in our area. June and July are the busiest months of the year and during those months we are the biggest tourism economy in coastal areas in the state.
 - a. **Recommendation:** Work with FDOH to help them understand the potential negative impact this can have on the economy. **COMPLETED**

- i. **Responsible Agency/Organization:** DOH - Walton

- 6. **Observation:** The Healthy Beaches report and the environmental health signs (swimming advisory/no swimming) language is confusing.
 - a. **Recommendation 1:** Provide clearer language on the report and on the signs.
 - i. **Comment:** DOH-Walton is in the process of ordering new signs.
 - b. **Recommendation 2:** Develop and institute a proactive outreach program.
 - c. **Recommendation 3:** Develop and institute new resampling protocols prior to issuing an advisory. **COMPLETED**

- i. **See Appendix A** – DOH-Walton Healthy Beach Sampling Locations
 - ii. **Responsible Agency/Organization:** DOH – Walton Environmental Health
7. **Observation:** Difficulty monitoring social media to stay ahead of issues and respond quickly.
 - a. **Recommendation:** Set up process for using the Virtual Operations Support Team (VOST) at Florida State University (FSU) for incident specific social media monitoring. **COMPLETED**
 - i. **Responsible Agency/Organization:** WCEM
 - b. **Recommendation:** Purchase services from company to monitor social media and alert when key words or phrases are recurring.
 - i. **Responsible Agency/Organization:** WCSO
8. **Observation:** Press releases and public service announcements (PSAs) were not readily available for use with this type of incident.
 - a. **Recommendation:** Ensure that PSAs are developed pre-incident for this type of incident. PSAs have already been developed and are quickly disseminated to public for things like Vibrio. **COMPLETED**
 - i. **Responsible Agency/Organization:** All Emergency Support Function (ESF) – 14 partners (DOH – Walton, WCEM, Walton County PIO, WCSO, TDC, and others).

Water Quality Reporting

The current process for water quality testing and reporting is below:

- The DOH - Walton currently samples seven (7) beach sites in Walton County from March 1 to the end of October.
- A health advisory does **not** close the beach to the public.
- These beaches were sampled and test for a specific type of bacteria, enterococci.

- If the beaches' samples tested contained more than the enterococci standard recommended by the Environmental Protection Agency (EPA), DOH - Walton will immediately resample. If the resample still exceeds the standard recommended by the EPA an advisory will be issued.
- The water samples are analyzed for enteric bacteria (enterococci) that normally inhabit the intestinal tract of humans and animals and which may cause human disease, infections, or rashes.
- The presence of enteric bacteria is an indication of fecal pollution, which may come from storm water runoff, pets and wildlife, and human waste.
- The bacteria that DOH - Walton tests for, enterococci, IS NOT the same as *Vibrio Vulnificus*—what the media is calling incorrectly as “flesh eating bacteria.”
- Swimming in natural water bodies is always at your own risk, regardless of whether or not an advisory is issued.
- If the health department has issued an advisory, it is because enterococci bacteria have exceeded the acceptable level at the time of weekly sampling.
- Swimming in a beach with a health advisory is a personal decision. DOH - Walton is advising you to not enter the water if the beach is under an advisory. There is a risk of illness from contacting beach water with elevated bacteria levels by ingesting water; by getting water in the nose, eyes, and ears, or by water making contact with an open wound.
- For the vast majority of people, the risk of serious illness is minimal. An otherwise healthy person may have no problems with contact with the water of a beach that is under an advisory. Some may experience a minor inflammation of a cut, a mild sore throat or mild diarrhea after exposure to water from a body of water under advisory.
- The greatest risk is for very young children, the elderly and people who have weakened immune systems since their ability to fight off infection is limited by age or disease.
- An issuance of a “Health Advisory” is not rare. It is simply to advise the public of possible health risks.
- The beach flags present at public access beaches do not take into account the posted health advisories.
- For more information or for recent sampling results, visit <http://walton.floridahealth.gov/> and click the link under Beach Water Quality.

Leaching of Septic Tanks

Over the past two years, DOH – Walton has received 22 septic tank complaints. All of those issues were abated very quickly and none of them impacted waterways. Also of note, within those same two years, there have been 25 sewage spills, with 5 (all in 2014) that impacted various waterways and Advisories were issued. The cause of water contamination cannot only be pointed to septic tank leaching or sewage spills, as you will see in the “Water Quality Reporting” section, this type of contamination can be caused by animal waste products that have gotten into the waterways. The only way to tell for sure whether or not the contamination is human or animal is to perform more specific testing. This type of testing is currently being performed at Morrison Springs Park to determine the cause of that contamination.



- Failing septic systems are considered sanitary nuisances. DOH - Walton receives sanitary nuisance complaints and investigates to determine if the complaint is valid. If the complaint is valid the property owner is required to repair the septic system or if public sewer is available, they are required to connect. DOH - Walton cannot issue a repair permit if sewer is available.
- 381.00655(1)(a) states “The owner of a properly functioning onsite sewage treatment and disposal system, excluding an approved onsite graywater system, must connect the system or the building’s plumbing to an available publicly owned or investor-owned sewage system within 365 days after written notification by the owner of the publicly owned or investor-owned sewerage system that the system is available for connection.”
- There has been a plan in place to responded to sewage spills that impact waterways for the Department of Environmental Protection, who regulates public sewage and the Department of Health, who regulates septic systems. Sewage spills in any waterway are investigated by Environmental Health (EH) staff, whether it is from a public sewage spill or septic tank. If a waterway has been impacted, DOH - Walton posts the waterway with an advisory and sampling is conducted, normally upstream and downstream of the spill to determine impact to the waterway. The advisory and sampling continues until criteria are met.
- If the sewage spill is from a public sewer line, the utility company notifies the State Watch Office, who in turns notifies appropriate Florida Department of Environmental Protections (DEP) and DOH staff. Once DOH - Walton receives the notice they contact the utility company to get more information regarding the exact location and body of water impacted and advisories are posted. DOH - Walton also sends out a press release regarding the advisory. The utility company is responsible for sampling and submitting samples to DEP and DOH - Walton.
- If a septic tank is in failure and is impacting a waterway, the property owner is required to keep the septic tank pumped out until it can be repaired or if public sewage is available, until they are connected to public sewer. DOH - Walton would sample the

waterway and post the advisory. This is handled under our sanitary nuisance and septic codes.

- An EH staff member is available afterhours to respond to public health emergencies to include sewage spills that impact waterways.

Algae Blooms



With all the media attention that Martin County and other areas surrounding Lake Okeechobee, it was only natural to question whether algal blooms could happen in Walton County. Algal blooms could happen but not likely to the extent as seen in Martin and St. Lucie Counties. In the Martin County and St. Lucie County situation, Lake Okeechobee which was already experiencing an algal bloom when the locks were opened to lower the water levels of Lake Okeechobee. The water from Lake Okeechobee mixed with other fresh water which may have been high in nutrients and with the warm weather

temperatures created a super algal bloom.

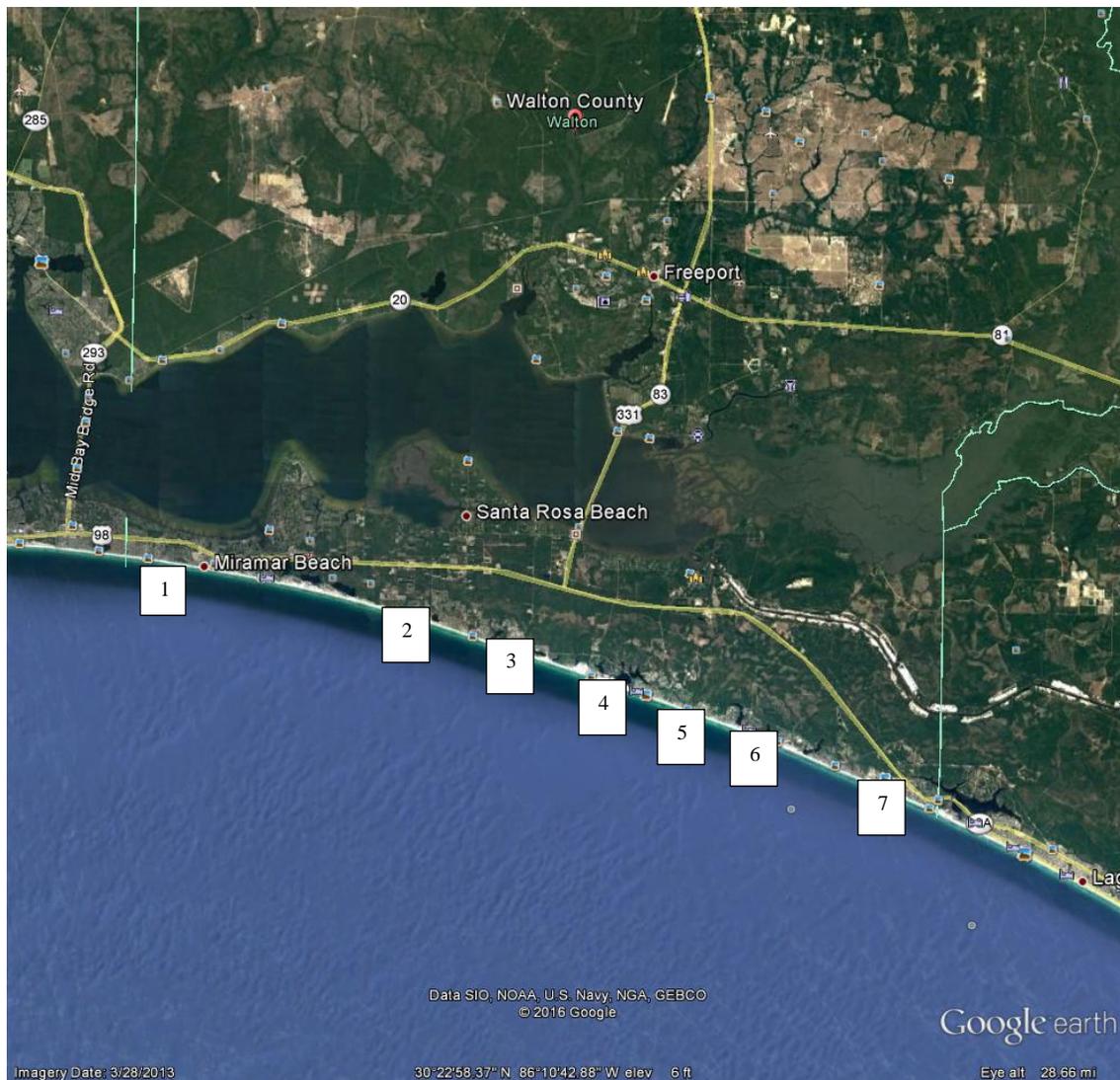
Blue-green algae are a naturally occurring aquatic bacteria that contain chlorophyll and depend on sunlight to grow. These algal blooms multiply quickly in water bodies with high nutrient levels, warm temperatures, and calm water conditions. The nature of most algal bloom events makes it difficult to predict when and where a bloom will occur or how long it will last.

Prevention is not always possible but there are ways to lessen the negative effects of algae blooms such as restoration work to improve water quality and the reduction of nutrient loading by fertilizing wisely, properly maintaining stormwater systems, properly maintaining septic systems, and reducing sediment runoff from construction sites. Reducing nitrogen and phosphorous levels can help decrease the intensity and duration of algal blooms.

In reality, there is not much we can do. The best course of action is to allow the nature to take its course and allow for natural mitigation of the bloom. There are other ways to mitigate an algae bloom but due to Walton County's topography and bodies of water, they are not recommended. For Walton County, this is more of a public relations issue. The County may need to initiate some of the processes outlined earlier in this document. The public needs to be kept up to date and Walton County needs to respond quickly to public requests for information and to stay head of any potential negative press. Identification of key contacts for each local, state, and federal agency involved is very important as well as having a designated spokesperson that can distribute consistently accurate information to the public via media releases, internet, and social media, such as the FDOH "frequently asked questions" sheet in Appendix B.

This Page Intentionally Left Blank

APPENDIX A - DOH - WALTON HEALTHY BEACHES SAMPLING SITES



1. Miramar Beach- Beach Access #1 – 2375 Scenic Gulf Drive, Miramar Beach 32550
2. Dune Allen Beach – Beach Access #4 – 5753 W. Co. Highway 30A, Santa Rosa Beach
3. Blue Mountain Beach – Beach Access #8 – 2365 S. Co. Highway 83, Santa Rosa Beach
4. Grayton Beach – Beach Access #11 – 288 Garfield Street, Santa Rosa Beach
5. Holly Street – Beach Access #60 – 2845 Co. Highway 30A, Santa Rosa Beach
6. Eastern lake – Beach Access #33 – 491 Eastern Lake Road, Santa Rosa Beach
7. Inlet Beach – Beach Access #20B – 139 S. Orange St, Inlet Beach

This Page Intentionally Left Blank

APPENDIX B – FREQUENTLY ASKED QUESTIONS: CYANOBACTERIA/BLEU-GREEN ALGAE



Frequently Asked Questions: *Cyanobacteria/Blue-Green Algae*

What are cyanobacteria/blue-green algae?

Blue-green algae are a group of organisms that can live in freshwater, salt-water or in mixed "brackish" water. Most of us know them as "pond scum." They also have been found to share some characteristics with bacteria, which has led to them being referred to as "cyanobacteria."

What is a cyanobacterial bloom and how do they form?

Cyanobacterial blooms occur when the algae that are normally present grow in numbers more than normal. Within a few days, a bloom can cause clear water to become cloudy. Winds tend to push some floating blooms to the shore where they are very noticeable. Cyanobacterial blooms can form in warm, slow-moving waters that are rich in nutrients. Blooms can occur at any time, but most often occur in late summer or early fall. They can occur in marine, estuarine and fresh waters, but blooms of greatest concern are those that occur in fresh water, such as drinking water reservoirs or recreational waters.

What do cyanobacterial blooms look like?

Some cyanobacterial blooms can look like foam, scum, or mats on the surface of fresh water lakes and ponds. The blooms can be blue, bright green, brown, or red and may look like paint floating on the water. Some blooms may not affect the appearance of the water. As algae in a cyanobacterial bloom die, the water may smell bad.

What are some tips for avoiding cyanobacteria/blue-green algae?

It is important that adults, children and pets avoid swimming in or drinking water containing blue-green algae. It is best not to come in to contact with water in areas where you see foam, scum, or mats of algae on the water.

What should I do if I come in contact with cyanobacteria/blue-green algae?

Blue-green algae toxins can affect the liver, nervous system and skin. Abdominal cramps, nausea, diarrhea, and vomiting may occur if untreated water is swallowed. Some people who are sensitive to the algae may develop a rash or respiratory irritation.

If you come into contact with an algae bloom, wash with soap and water right away. If you experience an illness, please contact your healthcare provider immediately.

What agency should I contact to report fish kills or illness associated with blue-green algae?

- Fish Kill Hotline (Florida Fish & Wildlife Conservation Commission) 1-800-636-0511
- Human Illness (Florida Poison Control Center) 1-800-222-1222

Can I eat fish harvested from areas near or in algae blooms?

No. Do not eat fish that are harvested from areas near or in blooms.

Is it ok to use algae water for showering or irrigation?

Untreated water from the bloom area should not be used for irrigation when people could come into contact with the spray. Do not use untreated water from the area with the bloom for showering or bathing.

Does blue-green algae cause ALS or Alzheimer's?

Beta-N-Methylamino-L-alanine (BMAA) is non-protein amino acid. Some researchers have reported that BMAA can be produced by most cyanobacteria (blue-green algae). However, some concerns have been raised regarding the specificity of the earlier analytical methods and whether BMAA was the only substance quantified.

Little evidence to show how the type of brain changes seen in people with ALS could be induced by BMAA. No animal model has demonstrated that BMAA exposure results in ALS-like neuropathy. Also, no large scale epidemiological studies have been performed that can definitively link BMAA levels as the cause of ALS.

Proximity and spatial association to a water body with cyanobacteria does not prove causality. The BMAA hypothesis is still a hypothesis. No proven connection has been found between cyanobacteria and ALS.

BMAA is one of the many possible environmental triggers to neurological disease that is being investigated by researchers in Florida and elsewhere. There are millions of potential environmental exposures. BMAA is just one of those potential triggers.

There has been little evidence of BMAA being linked to neurodegenerative disease in the general public. BMAA has been reported to be associated with the neurological disease, amyotrophic lateral sclerosis- Parkinson dementia complex (ALS-PDC), in a local population in Guam. This relationship was first noted over 40 years ago. The source of exposure for this population was cycad plant seeds, used for making flour, and fruit bats that feed on cycad fruit; the amount of BMAA exposure was very high. This is an unusual and very limited population.

In laboratory tests on cells and in animals, BMAA has been shown to be a potent neurotoxin, especially when given through injection or other non-food exposures. There is a lack of toxicological information based on standard tests using the oral route of exposure upon which to base a health-based value for use in a risk assessment.

There are the studies of Canadian and U.S. ALS patients that had higher BMAA concentrations in their brain tissue than Huntington disease patients or non-neurologically affected patient. However, this finding may be coincidental. Various chemicals exist in our bodies as part of living in an industrialized society but are at levels that do not necessarily affect our overall health.

Recent research has identified levels of BMAA, on par with levels observed in Guam fruit bats, in shrimp, crabs, bottom fish, and shark fins from South Florida marine ecosystems; however there are no known cases of human neurological diseases related to ingesting animals from these waters.

This Page Intentionally Left Blank