

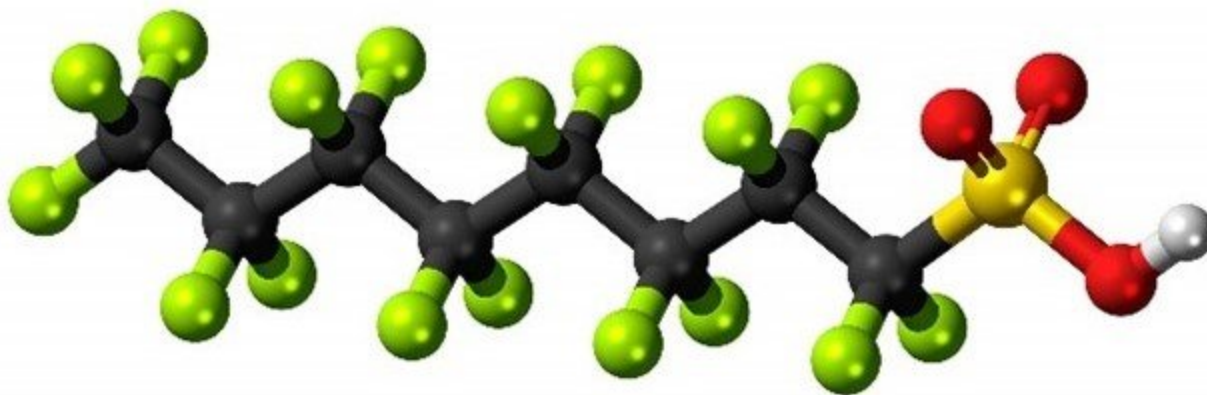


## Lessons for Brunswick

*The tragic leak of firefighting foam follows a familiar script from US bases worldwide.*

By Pat Elder  
August 30, 2024

<https://www.militarypoisons.org/latest-news/lessons-for-brunswick>

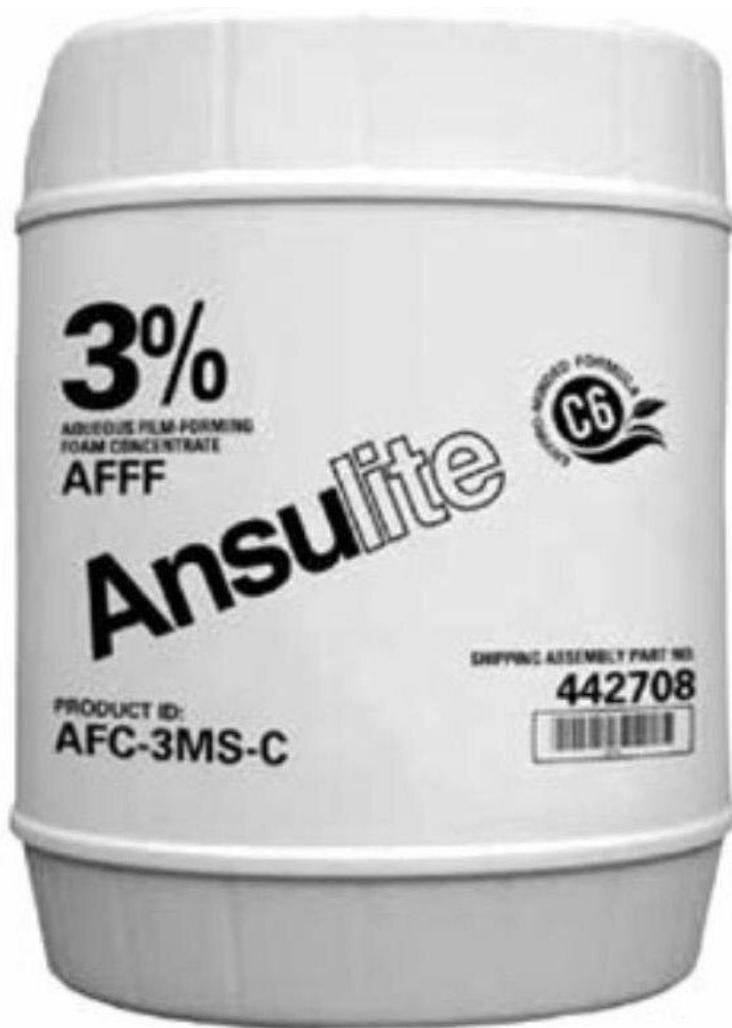


I attended the Brunswick Town Hall meeting via Zoom on Thursday, August 29, 2024. My report follows. I published a list of [2 dozen questions](#) and distributed them to members of the town council, the press, and the public, but my questions were ignored. That's fair. I'm an outsider.

In late 2021 I tested water for PFAS in the Androscoggin River and in streams leaving the Brunswick Executive Airport and I reported dangerous levels of PFAS using Cyclopure test kits. [The Times Record](#) questioned the efficacy of my results. I have taken samples of surface water draining from military bases at 400 locations throughout the U.S., Europe, and Japan. There is very little unique about the nightmare Brunswick is living. I'd like to share what I know.

I have witnessed and played an active role in a dozen meetings like this across the country. The Maine Town Council officials were extremely professional in the way they conducted themselves. They were respectful of citizens who were visibly shaken by this public health crisis.

### **Foam v. concentrate**



There has been some confusion about the foam that flowed from Hangar 4. We must come to understand the difference between the aqueous film-forming foam (AFFF) concentrate and the foam that is created when the liquid concentrate is mixed with water under pressure.

The Navy has been known to use Ansilite 3% aqueous film-forming foam (AFFF), at several bases. We are not certain of the manufacturer of the foam in the Brunswick spill. This information is likely to be kept secret because all of this is likely to result in lawsuits.



Apparently, 1,450 gallons of liquid concentrate mixed with 50,000 gallons of water to create 51,450 gallons of firefighting foam. This comes to a 2.81% mixture. The foam was dispersed from four wall-mounted cannons. News Center Maine has reported that 1,450 gallons of foam still remain in Hangar 4; 3,200 gallons of foam in Hangar 5; and 1,500 gallons in Hangar 6. They likely mean to say that the hangars still contain this much concentrate. If 6,150 gallons of concentrate remain in the three hangars, this would be enough to produce 218,000 additional gallons of foam.

The leak from Hangar 4 is the 6th largest in US history, while the concentration of PFAS in the foam is the highest reported anywhere on earth that I have seen.



We've seen photos of workers who apparently are not wearing masks or ventilators to protect them from breathing in the carcinogens.

***The Safety Data Sheet for the Ansulite 3% contains a warning about breathing in vapors.***



by Tyco Fire Suppression & Building Products

## MATERIAL SAFETY DATA SHEET

### ANSULITE 3% AFFF (FORMULA DC-3)

Product Code: 1010-2-026 ANa

Issue Date: 08-01-2010

#### 1. Product and Company Identification

Material name	ANSULITE 3% AFFF (FORMULA DC-3)
Version #	01
Revision date	08-01-2010
CAS #	Mixture
Product Code	1010-2-026 ANa
Product use	Fire extinguishing agent
Manufacturer / Importer / Supplier	
Name	Tyco Fire Suppression and Building Products
Address	One Stanton Street Marinette, WI 54143-2542
Phone	715-735-7411
Internet	<a href="http://www.ansul.com">http://www.ansul.com</a>
Emergency Phone Number	CHEMTREC 800-424-9300 or 703-527-3887

#### 2. Hazards Identification

Emergency overview	WARNING! Causes skin and eye irritation.
OSHA regulatory status	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects	
Routes of exposure	Eye contact. Skin contact. Inhalation. Ingestion.
Eyes	Do not get this material in contact with eyes.
Skin	Avoid contact with the skin. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
Inhalation	Do not breathe vapor. May be irritating.

See the excellent article by the Environmental Working Group ([EWG](#)) on the recent leak. This organization is a trusted source for information. The PFAS-containing foam stored at Hangar 4 was slated for collection by the Navy this October. Even with the spill and the cleanup now underway, the site stores additional tanks of AFFF. The incident is yet another stark reminder of the DOD's irresponsible pace of addressing its stockpile of AFFF. The DOD is above all regulation in this matter. Here, they dictate environmental policy to the EPA, the state of Maine, and the Town of Brunswick. They are not just above the law. They *are* the law.

Since the early 1970's the DOD required the use of foams containing PFAS at 600 bases in the U.S. and several hundred overseas. Japan and South Korean are terribly polluted. Like Maine, these folks have no recourse.

In 2019, Congress required the Pentagon to update these standards by January 31, 2023, and stop buying PFAS-based foams by October 1, 2023. Congress demanded a full transition away from the use of these foams by October 1.

In January 2023, the DOD released new requirements for firefighting foam used to put out jet fuel fires, a pivotal step toward the phaseout of foams with toxic PFAS. The specifications require manufacturers to ensure their products contain no intentionally added PFAS and prove they don't contain PFAS above set limits.

Many PFAS-free foams meet the international aviation standards used by airports around the world, and several foams meet the Pentagon's new standards.

Federal Aviation Administration regulations have historically been tied to outdated military standards that restricted civilian airports from moving to PFAS-free foam, but the new specifications remove this barrier, enabling U.S. airports to make the switch. Thanks to the EWG for being such an excellent resource.

There is no excuse for this accident. The AFFF foams should have disappeared long ago. Maine's recent laws limiting the use of PFAS-containing firefighting foam failed to prevent the massive spill.

**The Maine Department of Environmental Protection** has done a miserable job and shares the blame for the impacts on your health and the degradation of the environment. They have allowed the military to dictate environmental policy in Maine. Lethal contamination of PFAS and other deadly carcinogens by the DOD is well documented at former Naval Air Station (NAS) Brunswick, Loring Air Force Base in Limestone, the Maine Air National Guard bases in in Bangor and South Portland, and the Portsmouth Naval Shipyard. Who knew?

In a Maine DEP study of streams near Loring Air Force Base, where fire-fighting foams have been used, DEP found brook trout to have concentrations of PFOS ranging up to [1,080,000 parts per trillion](#) of PFOS alone. Who knew? It's the same around the world. The Navy and the Air Force are 800-pound gorillas. They call the shots. Know what you're up against.

What took the DEP so long to establish fish advisories in streams and ponds in Brunswick? Women who are pregnant or may become pregnant should be strongly warned not to eat the seafood from this region.

**The Midcoast Regional Development Authority, (MRAA)** is apparently more concerned with profit than human health. The crime occurred when the lands were allowed to be used for commercial and residential development. The Navy would like everyone to forget their liability in Brunswick. The actors on stage are different from place to place, but their roles are the same. They'll speak in generalities. They'll suggest studies. They'll say they're investigating things. They'll never say they're at fault and they'll never admit liability.

"It's much too early to comment on who has the ultimate financial liability," said Jeffrey Jordan, deputy director of MRAA at the town hall meeting last night.

### **Maine CDC Toxicologist downplays air pathway to ingestion**

There was a great deal of discussion and speculation regarding the propensity of the foams to create an airborne hazard. The state's toxicologist played down this well documented pathway to human ingestion. CDC toxicologist Dr. Andy Smith said during the Town Hall, "We think it is theoretically possible, but we don't have anything quantitative or a model of it.

**Table 11. Summary statistics for dust samples collected in Berkeley County**

PFAS	FOD (%)	Maximum Detected Result (ng/g)	Geometric Mean (ng/g)	95% Confidence Interval for Geometric Mean (ng/g)	Percentiles (ng/g)		
					50 <sup>th</sup> (Median)	90 <sup>th</sup>	95 <sup>th</sup>
PFBS	42	683	NA*	NA*	2.78	43.6	123
PFPeS	11	140	NA*	NA*	0.99	14.4	46.2
PFHxS	47	16,400	NA*	NA*	1.91	40.3	1,000
PFHpS	11	77.4	NA*	NA*	0.986	15.9	56.9
PFOS	89	13,900	15.9	4.33–58.6	7.90	684	4,990
PFNS	5	14.2	NA*	NA*	0.986	11.4	11.6
PFDS	53	27.8	NA*	NA*	1.78	11.9	16.2
PFDoS	5	14.4	NA*	NA*	0.827	11.4	11.6
PFBA	37	736	NA*	NA*	6.46	72.8	134
PFPeA	37	72.4	NA*	NA*	3.01	27.4	67.8
PFHxA	89	460	8.51	3.99–18.2	6.65	65.1	242
PFHpA	63	456	5.50	2.34–13.0	3.24	70.8	95.8
PFOA	95	3,430	15.1	5.14–44.3	8.65	418	794
PFNA	68	74.5	3.85	2.31–6.41	2.68	11.4	14.6
PFDA	37	27.0	NA*	NA*	1.60	11.4	12.2
PFUnA	37	11.5	NA*	NA*	1.36	6.84	11.4
PFDoA	26	13.9	NA*	NA*	1.27	11.4	11.6
PFTTrA	21	11.5	NA*	NA*	0.986	5.07	11.4
PFTA	26	11.5	NA*	NA*	1.34	5.07	11.4
PFOSA	11	472	NA*	NA*	0.986	11.4	34.5
N-MeFOSA	5	289	NA*	NA*	0.984	13.1	26.9
MeFOSAA	42	3,810	NA*	NA*	2.04	30.9	386

**Dust in homes close to an Air National Gurd base in Martinsburg, WV**

*Lots of cancer-causing dust in people’s homes close to the reckless use and dumping of firefighting foams.*

The U.S. Centers for Disease Control performed PFAS exposure assessments in eight communities around the country near military bases. The study in Martinsburg, W.VA. shows [dust in homes](#) adjacent to Shepherd Field Air National Guard Base had dangerous levels of PFAS. PFHxS was found at 16,400 ng/g while PFOS was reported at 13,900 ng/g. Ng/g stands for nanograms per gram, which is the same as parts per billion. This means dust in people’s homes outside of the base in Martinsburg has 16.4 million parts per trillion (ppt) of PFHxS and 13.9 million ppt of PFOS. The Air Force base in Martinsburg was careless with PFAS although not to the extent that we have witnessed in Brunswick.

The dust and air is a major pathway to human ingestion. The dust disproportionately affects small children.

Scientists believe the sediment and the banks of the streams are coated with these chemicals. When the levels of the water ebb, the sun dries the banks, and the carcinogens become airborne. They settle in our lungs and as dust in our homes. When people finally catch on, and toxicologists in places like Maine get on board, we will see a revolution in the way we clean our

homes. Changing the vacuum cleaner bag may expose us to dangerous cancer - causing agents. We ought to be using wet-mop strategies and we should be changing our air filters much more frequently.

In communities like Brunswick, PFAS can be transferred from the sea surface to sea spray aerosol particles through wave breaking and bubble bursting, and PFAS emitted to the atmosphere in the gas phase can sorb to particulate matter and be brought into our lungs.

Ocean spray emits more PFAS than industrial polluters, a [study finds](#). A cursory glance of scientific journals shows many studies documenting PFAS pathways to human exposure from the air. Rainwater collected in Cleveland contained a combined concentration of about 1,000 parts-per-trillion (ppt) of PFAS compounds.

Another major concern not addressed this evening is the impact of the potential for the impartial incineration of these chemicals. We should know the full record of Navy and MRRRA actions in this regard.

We should also know exactly how the sewer sludge generated from waste from the former base and the current tenants has been disposed of. Often records of this sort may not be publicly available. If they were spread on agricultural fields, we must have test results documenting soil, air, groundwater, surface water, and aquatic life.

### **Test your blood, Brunswick**

The state toxicologist missed the opportunity to address the need for blood serum testing for PFAS.

I just returned from a 14-city tour of Japan that addressed the US military's criminal use of PFAS and disregard for people's health. My colleague, Yukio Negiyama in western Tokyo has long been concerned about the reckless use of firefighting foams at the US Yokota Airbase. They tested the blood of 650 people who live close to the base. Their plasma samples were analyzed for four PFAS chemicals — PFOS, PFHxS, PFOA and PFNA — with the results showing that the average level of exposure to the sum of the four chemicals was 24.2 ng/mL, (nanograms per milliliter, or parts per billion) while the highest was 124.5 ng/mL. Drinking water, air, and food are thought to be the most prevalent factors for the alarming numbers. Vegetable gardens are terribly contaminated.

I served as a community liaison for the National Academies of Sciences, Education and Medicine two years ago and several of us prevailed on them to publish [Guidance on PFAS testing](#) and health outcomes.

The National Academies is advising clinicians to offer PFAS blood testing to patients likely to have a history of elevated exposure. That would be everyone in Brunswick. The august body says there may be increased risk of adverse health effects if the total of these seven compounds exceeds 2 ng/mL: PFOS, PFOA, PFHxS, PFNA, PFDA, PFUnDA, and MeFOSAA.

***For patients with a serum PFAS concentration of 2 ng/mL or higher and less than 20 ng/mL, clinicians should encourage PFAS exposure reduction if a source of exposure is identified, especially for pregnant women. Within the usual standard of care clinicians should:***

- Prioritize screening for dyslipidemia

- Screen for hypertensive disorders of pregnancy at all prenatal visits
- Screen for breast cancer

***For patients with serum PFAS concentration of 20 ng/mL or higher, clinicians should perform the following tests during all routine visits:***

- Conduct thyroid function testing (for patients over age 18) with serum thyroid stimulating hormone (TSH)
- Assess for signs and symptoms of kidney cancer (for patients over 45), including with urinalysis, and
- Assess for signs and symptoms of testicular cancer and ulcerative colitis.

Brunswick has work to do.

**Take it upon yourself to test your water, especially if you have a well.**



Ed Friedman of Friends of Merrymeeting Bay describes the inexpensive and reliable Cyclopure PFAS test kit. Standard water collection methods cost about \$350 and involve sending liquid samples at a prescribed temperature. The [Cyclopure kit is \\$79](#) and results are typically available within two weeks.

Users simply fill the collection cup with water and allow it to drain completely through the filter at the bottom.





Place the cup back in the box with your sample details and return to Cyclopure using the prepaid shipping label.

Cyclopure tests for 55 PFAS analytes, including all 40 compounds covered under EPA Method 1633. They measure and quantify PFAS to a reporting limit of 1.0 ppt (1 ng/L), the lowest of any commercial lab. The company is used by the DOD and municipalities across the country.

## What Does Clean-Up Mean?

Hanger 4 is being scrubbed.

Foam is being sucked into vacuum trucks everywhere it is popping up.

DEP is strategically sampling a wide area and will do so repeatedly so that we have a clearly defined map of contamination, which can make cleanup efforts more precise.

Over the long term, waterways on the landing will be continue to be treated until water meets the new federal standard of 4 ppt.

Question: What is the long-term impact on ground water and soil in the area and what would it take to remediate it all?

Clean-up is not possible. Think of the subsurface soils in the region as a massive subterranean sponge full of carcinogens that perpetually squeeze out into groundwater and surface water forever.

It is admirable to shoot for reducing PFAS levels to 4 ppt in your waterways but the navy has a different idea of what can be considered safe in surface waters. Sometimes the navy will employ

a kind of “pump and treat” system where wells extract contaminated water, and granular activated carbon filters are used to clean the water. The water is then re-injected into the ground. Skeptics have compared this to inserting a few drinking water straws into a watermelon the size of an aircraft carrier.

## Major Site Activity Updates

### PFAS RI Surface Water/Stormwater/Porewater PSLs

PFAS Compound	Project Screening Level (ng/L)
PFOA	304
PFOS	203
PFBS	30,200
PFHxA	46,200
PFHxS	1,750
PFNA	256
PFBA	57,400
HFPO-DA (aka Gen-X)	11

**From the Restoration Advisory Board (RAB) former Naval Air Station Brunswick [May, 2024 publication](#):**

While the locals would like to keep waters under 4 ppt, the Navy has different ideas on ways to protect human health. Restoration Advisory Boards have come under scrutiny across the country. The influence of RABs is very limited, as RABs are not decision-making bodies, and the installation is not required to follow RAB recommendations.

You legislators and your town councilors are good people, likely to be trusted, but they’re on a steep learning curve right now. They’ll need some time to get up to speed.

We should understand that the seafood we consume is, by far, the number one pathway to human ingestion for these chemicals.

There was a sentiment expressed last night that we should not be adversarial, but I don’t agree. We must not underestimate our foe. The DOD files “sovereign immunity” responses to lawsuits in federal court. They argue they have the right to poison us without liability because of matters due to national security. We must get away from notions that these charges are tantamount to conspiracy theories or anti-militarism. This is about protecting human health. This is about

creating a flow of trustworthy information, despite commercial interests and a military that has escaped civilian control.



The [Downs Law Group](#) helps to make this work possible. Their support allows us to research and write about military contamination around the world.

The firm is working to provide legal representation to individuals in the U.S. and abroad with a high likelihood of exposure to a host of contaminants.

The Downs Law Group employs attorneys accredited by the Department of Veterans Affairs to assist those who have served in obtaining VA Compensation and Pension Benefits they are rightly owed.



If you spent time in the military and you think you or your dependents may be sick as a result of your service, think about joining this group to learn from others with similar issues.

Are you interested in joining a multi-base class action lawsuit pertaining to illnesses stemming from various kinds of environmental contamination? Contact James Bussey at [busride1969@hotmail.com](mailto:busride1969@hotmail.com)

Consider joining the Veterans & Civilians Clean Water Alliance [Facebook group](#). **2,700 members and growing.**