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Has Barnstable Municipal Airport contaminated Hyannis water supply?

Letter from DEP indicates airport contaminants in Maher Wellfield

ARTICLE | **NEWS** | NOVEMBER 17, 2016 09:05 PM | BY **CAPECODTODAY STAFF**

A letter dated November 10, 2016 from the Department of Environmental Protection to the manager of Barnstable Municipal Airport states that the airport has released hazardous substances into the environment and may have contaminated the Maher Wellfield that provides water to the Hyannis Water District. The entire letter is available at the bottom of this page.

The town has been involved in action against Barnstable County, alleging that the Barnstable County Fire Training Academy is the source of contamination in the Hyannis water supply. As the DEP's letter states, Barnstable has addressed the detection of hazardous substances in the Maher Wells by blending the Maher well water with drinking water from the Yarmouth public water supply wells via an overland water line.

Editor's Note: To the laymen amongst the Cape Cod Today news room, this sounds like someone is running a hose ("overland water line") from Yarmouth to Hyannis so that Yarmouth water can dilute the contaminated Hyannis water ("blending with the Maher well water") to a level where it is allegedly safe to drink.

Questions arise now as to how to allocate the responsibility for the Maher Wellfield contamination between the Fire Academy and the Barnstable Municipal Airport.

Cape Cod Today has emailed Barnstable Town Manager Mark Ells and Barnstable County Administrator Jack Yunits, Jr. seeking comment. Mr. Yunits was unable to comment "because of the ongoing litigation and ongoing confidential settlement discussions."

We have not received a response from Mark Ells as of publication time.

MD 2/11/2019

Toxic Chemicals Contaminate Cape

Cape Cod PFAS 2/11/2019

Toxic chemicals contaminate Cape Cod

Toxic chemicals contaminate Cape Cod drinking water amid reports of seemingly inexplicable illnesses.

Flint, Michigan is no longer the only American city synonymous with contaminated drinking water. Recent reports show there are Flints in nearly every state. The cities and contaminants change, but the unease remains.

Cape Cod, with its quaint hamlets and salty breezes, is more closely associated with Camelot than contaminants. But the seaside escape has been gripped for decades by instances of seemingly unexplainable illnesses.

Within a span of three months, the U.S. government released two reports that called into question the safety of America's drinking water.

In March 2018, the Department of Defense (DoD) provided a full list of military installations that have water near or around them that contain harmful levels of per- and polyfluoroalkyl substances or PFAS.
Dubbed "forever chemicals," these man-made substances like plastic do not break down. They accumulate over time in the environment and some can linger in the human body for years.

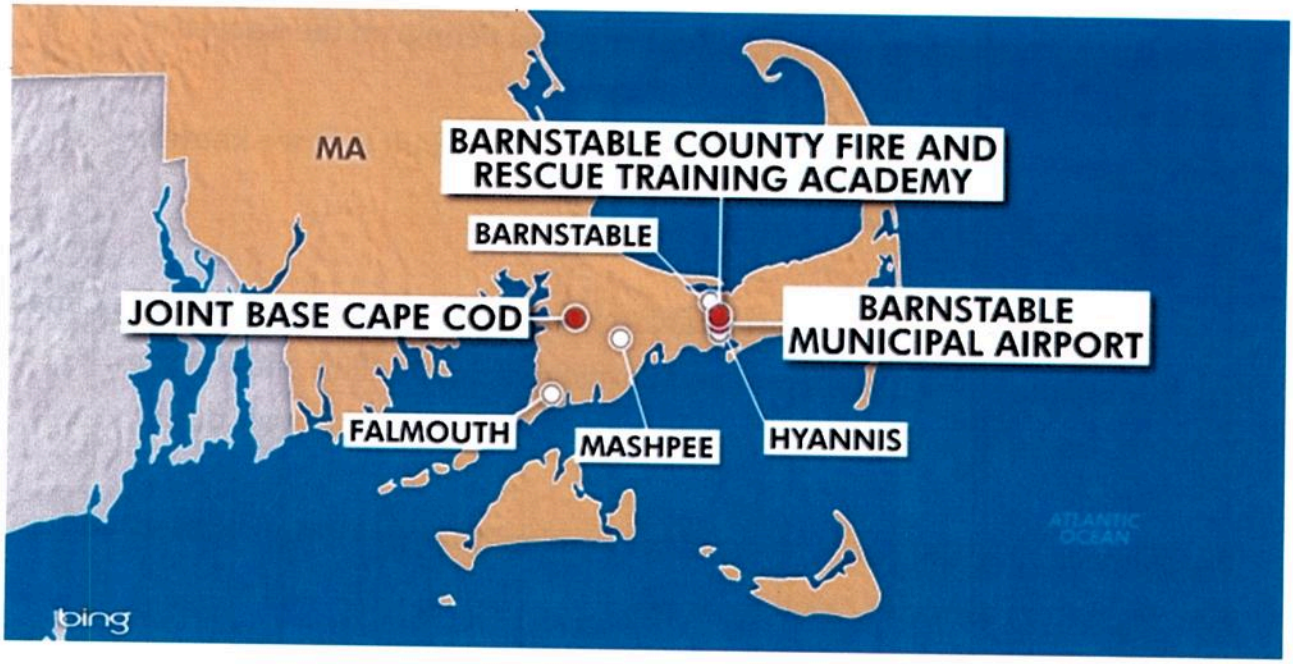
PFAS can be found in the most mundane household products from nonstick cookware to microwave popcorn bags to dental floss. The chemicals are also one

of the main ingredients in firefighting foam which explains their high presence on military bases.

The PFAS chemicals seep into soil and groundwater, contaminating them. A Centers for Disease Control and Prevention (CDC) sanctioned study found PFAS in 98 percent of the American population.
In June 2018, the Agency for Toxic Substances and Disease Registry (ATSDR) released a report the White House deemed a "public relations nightmare." That report linked PFAS to various cancers, thyroid defects and pregnancy complications at levels lower than the EPA's drinking water health advisory. An internal White House email is quoted as saying, "The public, media, and Congressional reaction to these numbers is going to be huge. The impact to EPA and [the Defense Department] is going to be extremely painful. We (DoD and EPA) cannot seem to get ATSDR to realize the potential public relations nightmare this is going to be."

However, long before Washington's so-called "nightmare," the specter of bad water brewed doubt in a popular coastal retreat.
"Higher Rates of Disease Trouble West Cape Cod" is a blazing headline from a 1986 edition of the New York Times. According to the article, a Massachusetts Department of Public Health study revealed that from 1979 to 1983, residents living in towns surrounding Otis Air National Guard Base and Camp Edwards Military Reservation—both considered parts of the current Joint Base Cape Cod—died of cancer at higher rates than other parts of the Cape or Massachusetts.
Families in two of those towns, Falmouth and Mashpee, were advised not to drink water from private wells as government evidence proved those wells contained carcinogenic contaminants believed to come from the military installations.

The state's then Center for Health Promotion and Environmental Disease Prevention reported women were particularly at risk. It found that from 1979 to 1981, women living in the western part of the Cape contracted liver, bladder and kidney cancer more often than women elsewhere on the Cape.



THE CAPE'S PFAS PROBLEM

> **"I don't want people in my home drinking flame retardant that we know is carcinogenic."**
>
> — Robert F. Kennedy, Jr.

Today, Cape Cod is still dealing with drinking water contamination. High levels of PFAS in the Hyannis water system prompted officials to publish temporary public health advisories twice since 2015. Under the advisory, pregnant and/or nursing women and infants were advised not to drink or cook with Hyannis water.

"It's like living in a science fiction nightmare," said Robert F. Kennedy, Jr. "In my own home I haven't been able to drink the water for a couple of years. I have to tell my kids not to drink the tap water—they're being raised on bottled water."

Longtime Cape resident and president of the environmental organization Waterkeeper Alliance, Kennedy says people on the Cape are frightened.

"I don't want people in my home drinking flame retardant that we know is carcinogenic," Kennedy said.

PFAS chemicals were found in groundwater and soil on and near Joint Base Cape Cod, Barnstable Municipal Airport and Barnstable County Fire and Rescue Training Academy in Hyannis. Firefighting exercises are done at all three.

"People need to speak out. They need to complain to their elected officials and their regulatory agencies," said Kennedy.

On January 16, 2019, Massachusetts residents, including town leaders from the Cape, turned out in droves to the public PFAS Petition meeting held at the Massachusetts Department of Environmental Protection's (MassDEP) Boston office.

The petition posed by the Conservative Law Foundation (CLF) and the Toxics Action Center (TAC) sought to establish a drinking water standard for PFAS chemicals.

"To truly ensure public health, PFASs should be regulated as a class," said Sue Phelan, director of GreenCape, an environmental advocacy group based in West Barnstable on the Cape.

> **"A heavy burden falls on communities like Hyannis that have already been exposed to PFAS for decades already."**

— Sue Phelan, GreenCape director

The EPA estimates the PFAS class to be made up of 5,000 chemicals. Phelan believes regulating each chemical individually will only prolong exposure.

"A heavy burden falls on communities like Hyannis that have already been exposed to PFAS for decades already," said Phelan.

"AFFF [firefighting] foams contain possibly up to 40 different PFASs and that is the source of contamination in my community," said Phelan.

In the absence of federal regulation for PFAS, states have established their own rules. In September 2018, New Jersey became the first state to adopt enforceable standards for perfluorononanoic acid (PFNA) a chemical in the PFAS class. A Maximum Contaminant Level (MCL) of 13 parts per trillion (ppt) was set for New Jersey drinking water.

NO FEDERAL OVERSIGHT

> **"We are sick. We need help."**

— Kristen Mello, Westfield, Massachusetts resident

In May 2016, the EPA set a health advisory of 70 ppt for PFOA and PFOS in drinking water. That advisory was much lower than the provisional combined level of 600 ppt. But EPA health advisories are not enforceable. However, water supplies like Hyannis fell out of compliance under this new recommendation. In June 2018, MassDEP issued a similar public health guideline of 70 ppt for 5 of the roughly 5000 PFAS chemicals.

Many attendees of the meeting expressed hope that MassDEP will establish a Maximum Contaminant Level (MCL) of 1 part per trillion (ppt) for the entire PFAS class of chemicals.

Kristen Mello, a resident of Westfield, Massachusetts, an area with wells contaminated from Barnes Air National Guard Base firefighting foam, has met with MassDEP officials several times concerning regulating PFAS as a single class of chemicals.

"We are sick. We need help," said Mello who, along with her neighbors, has experienced negative health effects she attributes to PFAS contamination.

"When they turned the wells off in 2016 what was coming out of my tap was more than 500 parts per trillion PFOS. I'm constantly battling pneumonias. I have masses in my abdomen that keep me from being able to eat. We need a big state response."

Westfield is one of five Massachusetts towns, along with Cape locations Hyannis and Lakeside Estates in Mashpee, that MassDEP lists as having a public water supply contaminated by PFAS with AFFF (firefighting foam) appearing to be the primary source.

Dan Santos is director of public works for the town of Barnstable. Hyannis is a village within Barnstable and as such, Santos is responsible for its water supply. He agrees that a Maximum Contaminant Level (MCL) should be instituted for PFAS when suitable. However, he sees a problem with regulators suddenly lowering the admissible standard.

"With the level so low and with the ubiquitous nature of PFASs in our environment I'm not sure there's any water supply that's not going to have PFAS in it," said Santos.

The widespread use of these chemicals in the United States since the 1940s has led to their discovery in more than 98 percent of Americans, according to the EPA and the National Center for Biotechnology Information (NCBI).
Santos is concerned that a dramatic reduction in what is considered acceptable could force him to shut off the water—again.

In 2016, Santos had to make a quick decision. When the EPA issued its dramatically lower PFAS health advisory, the Hyannis water system was out of compliance for the advisable limit of PFAS chemicals in its drinking water. Santos had to decide whether to keep the water running. Since the EPA's health advisory is not enforceable, Barnstable would have been within its rights to maintain water use. As a precaution, Santos chose to shut off wells. This is a situation he would like to avoid.

SOLE SOURCE AQUIFER

Cape Cod is a designated sole source aquifer. This makes contamination of any kind especially hazardous to public health. The water Cape Cod residents drink is quite literally beneath their feet. Cape Cod has no alternative drinking water source.
Santos points to a main source of contamination on the Cape—a firefighter training area. He believes the state needs to end training and clean up the site.

"That site continues to contaminate the public water supply every single day from rainwater and from the water they apply to train," said Santos.

When it comes to Massachusetts as a whole, residents are waiting to see if state officials will decide to regulate PFAS as one class of chemical

pBARNSTABLE PATRIOT

Cleaning up Barnstable's groundwater

By Bronwen Howells Walsh bwalsh@barnstablepatriot.com

BMA Barnstable Municipal Airport has implemented a set of "good housekeeping" practices designed to minimize introducing chemicals of emerging concern into Hyannis' groundwater, but some of the damage done stems from years ago.

Test wells have pinpointed contamination near the former Barnstable County Fire Training Academy on Flint Rock Road and in two known areas onsite at the airport where drills using firefighting foam used to be conducted.

The airport no longer uses pesticides, road salt, or chemicals to clear snow and ice, Airport Manager Katie Servis informed about 40 people attending a July 29 public hearing at the airport.

While aqueous film-forming foam is required by the FAA, Servis said "aside from one accident in 2016, 1981 was the last time we used foam to put out an aircraft fire."

The airport has a stormwater management plan, conducts regular hazardous material inspections, and operates an aircraft washing and de-icing pad that drains to Barnstable's wastewater treatment plant, Servis said. "We have quarterly meetings with our tenants, and we talk about hazardous materials, we talk about de-icing."

The question is where to go from here. A draft Public Involvement Plan, or PIP – the result of about 20 local petitioners' efforts – is designed to begin to answer that question.

The airport is required to test its firefighting equipment annually, which it now does at one central location onsite, Servis said. "Since 2015, no foam has been used for any of our tri-annual training exercises or annual testing of firefighting equipment."

Hyannis also is the first airport in Massachusetts to have purchased an ecologic unit cart that monitors foam-to-water ratios and vacuums out sand used to absorb spent foam.

Since water use ceased in June at the Barnstable County Fire - Rescue Training Academy (FTA), conservation efforts have moved from monitoring, sampling and testing toward protecting the Hyannis Public Water Supply and the Cape's sole-source aquifer.

The former training academy is located on South Flint Rock Road in Hyannis, where another PIP is underway to ensure that residents are informed of and involved in planning for that site cleanup.

One of Barnstable's 12 public water wells is located at the airport, which was open space at the time the well was installed 100 years ago.

"Most towns don't have the treatment systems in place that would address this," said Barnstable DPW Director Dan Santos. "Many communities are going to be treating for this."

Chemicals of emerging concern like PFAS are found in hundreds of consumer products, including ScotchGuard furniture and carpets, nonstick cookware, and food packaging, like microwave popcorn bags, pizza boxes, and fast-food wrappers designed to prevent moisture from soaking into paper.

Other sources include fleece and Gortex jackets, some shampoos and conditioners, car wax, sealants, and cleaning products. While the U.S. stopped manufacturing these compounds in 2015, they're still being made in other countries.

Where is the source?

"We're still gathering the data to make sense of this," said Mark Nelson, the airport's environmental analyst, of the Sandwich-based Horsely Witten environmental engineering group. "We know a lot about the soil, and we're learning more about groundwater."

The chemical 1,4-Dioxane is mixed with solvents found in consumer products, de-icing chemicals, plastics and pharmaceutical products, and food packaging.

"This is present in the wells in Hyannis, in some levels, in the Maher Field," Nelson said.

Again, consumer products also may be the source of traces of PFOS and PFAS in the airport soil. "We are seeing it in most of the samples that we take. We're working to determine where is the release site."

Land surrounding the airport is primarily undeveloped woods within a public water supply protection area. Flint Rock Pond occupies six acres directly to the west. Several public water supply wells are located to the east, southeast, and west of the training academy, including the town's Mary Dunn wells 1, 2 and 3 to the southeast and east.

Mary Dunn

"From the airport, groundwater flow is at a right angle, from higher elevations to lower elevations...toward Lewis Bay," Nelson said. "The water is moving west to east and somewhat southeast toward the Maher wellfield in general."

Two known locations for PFAS in the soil are the airport's deployment area and its fire-rescue building, Nelson said. "Those are the two primary areas where there have been elevated levels" of PFAS – reportedly at 80 ppt, which is over the current EPA standard of 70 ppt. "We're looking at different depths because it (foam) is applied at the surface."

Groundwater is fed from the rain, Nelson continued. Typically Hyannis gets about four feet of rain per year. Out of that four feet, half evaporates. The other two feet gets down into the groundwater, where monitoring wells are already in place.

"We need to know how it's getting into the groundwater," Nelson said. "We have possible other sources, and it's going to take a little while to figure out who's who. Once we know the extent of the contamination...we'll know how we might look at remediation. We possibly could pump it out and treat it."

The risk of exposure on your skin is low from contaminated soil, he concluded. "The primary concern with these compounds is meeting water quality standards. The water that's served in Hyannis is meeting those standards."

Barnstable DPW Director Dan Santos reiterated that the Hyannis Water System provides water that meets all federal and state standards.

"Our goal is (to be) under 70 ppt," Santos explained. "The EPA is looking to lower that (standard) to 20 ppt," or the equivalent of one teaspoon among 16 Olympic-size swimming pools.

Barnstable Town Councilor Paul Neary called that "a crazy number" and "infinitesimally small."

At the same time, Santos said, it's important that the Hyannis system has interconnections with the Town of Yarmouth public water supply and the COMM water district.

"A major storm could knock out our wells, so it's good to have these redundant systems to do that."

The DPW soon will break ground on a major new $10 million treatment plant at the Maher wellfield, which will take over a year to build, Santos added. Once that treatment plant is online, Barnstable will again be able to rely on its own public water supply wells instead of purchasing water from Yarmouth.

new plant

"We've spent about $20 million to date on this problem," Santos said. Since the Hyannis Water System is one of the town's enterprise funds, "the burden's been on our ratepayers. At the end of the day, if the PFAS is getting into our water system, we've got to treat it."

Next Steps

Comments on the draft PIP are due by Monday, Aug. 19. The plan is online at www.mass.gov/DEP. (Navigate to "Documents" and then "Airport Plan.") Hard copies are available at the Hyannis, West Yarmouth and South Yarmouth libraries. The finalized plan is tentatively set to reach the DEP by Sept. 18.

Additional public meetings will be scheduled following completion of major milestones. Everyone who submits public comments will be notified via a mailing list. The next meeting likely will be in October.

Barnstable County and BETA will prepare a summary of all comments received on each document available for public comment and responses to these comments. A copy of this response summary also will be sent to all those who submitted comments, filed at the libraries, and published on the DEP website.

Reilly, Kevin

From: Reilly, Kevin
Sent: Monday, August 05, 2019 9:28 AM
To: Reilly, Kevin
Subject: BMA Grnd water
Attachments: Cleaning up Barnstable's ground water.docx

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