THE TEFLON TOXIN

HOW PFAS GOT INTO DRINKING WATER AND SPREAD THROUGHOUT THE WORLD

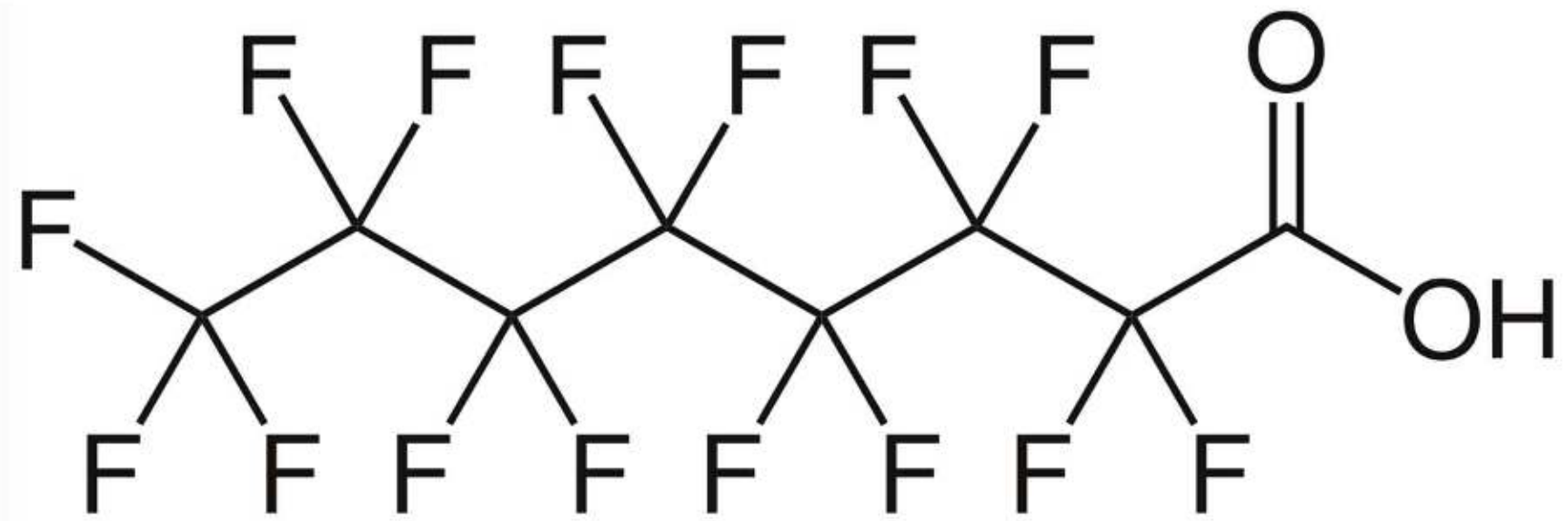
https://theintercept.com/series/the-teflon-toxin/

Sharon Lerner

February 28, 2018

- NJ's Drinking Water Quality Institute had been suspended after it began work setting a drinking water level for PFOA that would have been the most stringent in the country.
- Before the process was complete, the DWQI's activities were suspended

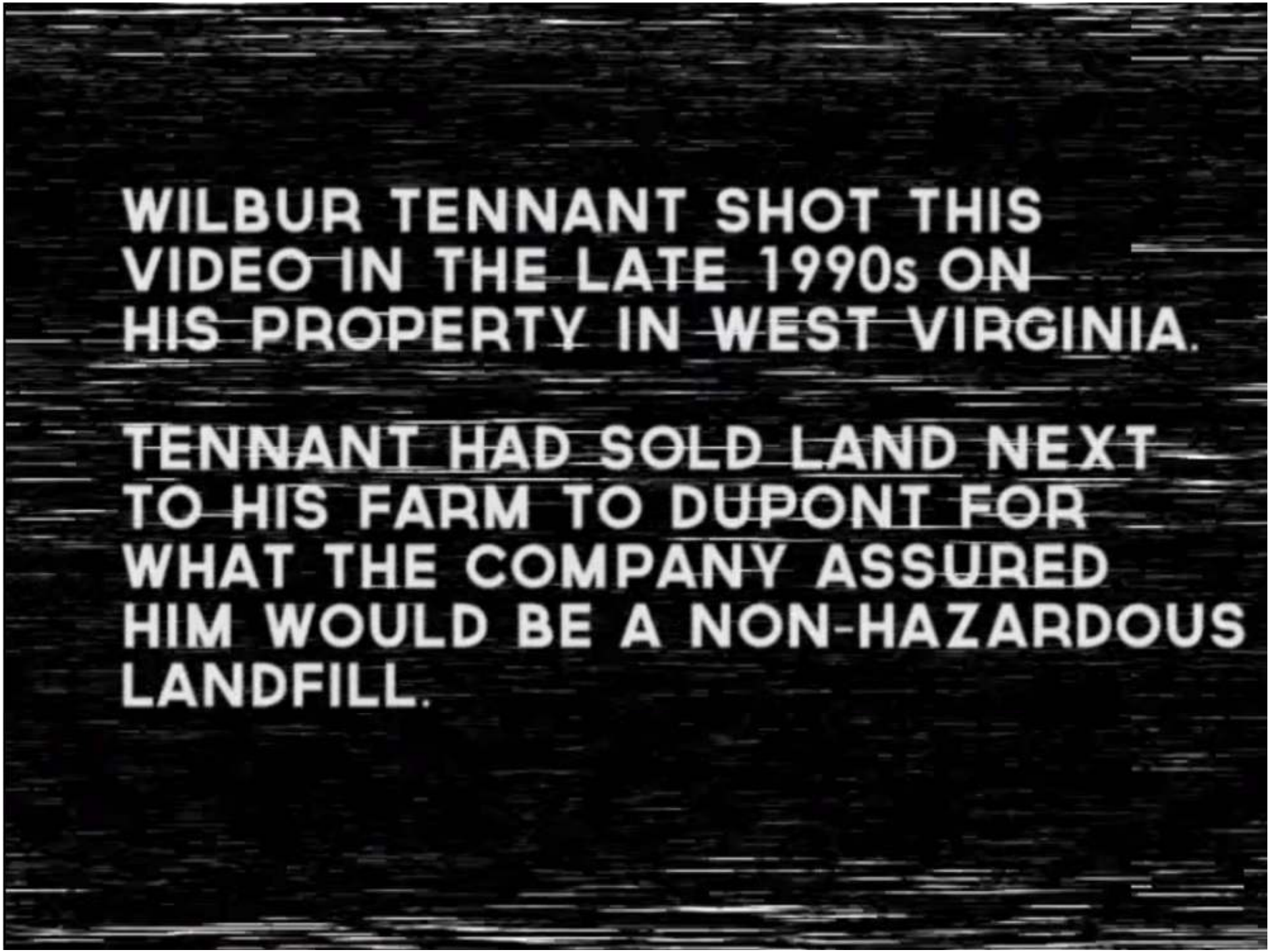
PFOA or C8



DuPont made this chemical at a plant in New Jersey.

While the DWQI was working on setting a level, the NJDEQ was monitoring the levels of PFOA in various water bodies around the state. When the staff scientist working on this paper was in the process of publishing it, she was asked to stop. She didn't. A PhD scientist with 20 years of experience at the agency, she was reassigned to a position with no responsibilities. She later resigned

I soon learned PFOA had become an issue in other places, too


WILBUR TENNANT SHOT THIS VIDEO IN THE LATE 1990s ON HIS PROPERTY IN WEST VIRGINIA.
TENNANT HAD SOLD LAND NEXT TO HIS FARM TO DUPONT FOR WHAT THE COMPANY ASSURED HIM WOULD BE A NON-HAZARDOUS LANDFILL.

OCEAN DUMPING

“After packing the waste into drums, workers added stones to make the drums sink. Then, when there were enough to fill a barge, the company shipped the drums out to sea, dropped them into the water and let them sink. Based on historic production and disposal data, as much as 750 pounds of C8 each year may have sunk to the ocean floor this way”

From: Bernard J Reilly on 08/13/2000 07:57 AM

To: tadams6295@aol.com

cc:

Subject: Aug 13

The boy made it back safe and sound, Sarah came with him, not literally, I assume. Had a fun birthday party for Cass, highlight was attaching helium balloons on strings to the collars of the dogs, drove Rocko crazy, he could think of nothing else, kept jumping at it his own balloon, Otto ignored his in favor of chasing sticks, when he would dash off Rocko would dash after Otto's trailing balloon, very silly. Some of Greg's folks showed up; also low key beer drinkers, everyone at ease.

I insulated a bit more of Erin's attic yesterday, where were you when I needed help? I am hoping we get some ok weather when in VT Labor day weekend, I am in favor of anything outside and amenable to beer consumption. We may actually have to plan, I have pressure on my social calendar now that I am a landowner, plus must visit with sister Pat, without causing family friction. Life is complex indeed.

The shit is about to hit the fan in WV, the lawyer for the farmer finally realizes the surfactant issue, he is threatening to go to the press to embarrass us to pressure us to settle for big bucks. Fuck him Finally the plant recognizes it must get public first, something I have been urging for over a year, better late than never, we are hoping plaintiff does not get there the next couple days, we need about a week. We boned ourselves again, such in life in big and I suspect little companies.

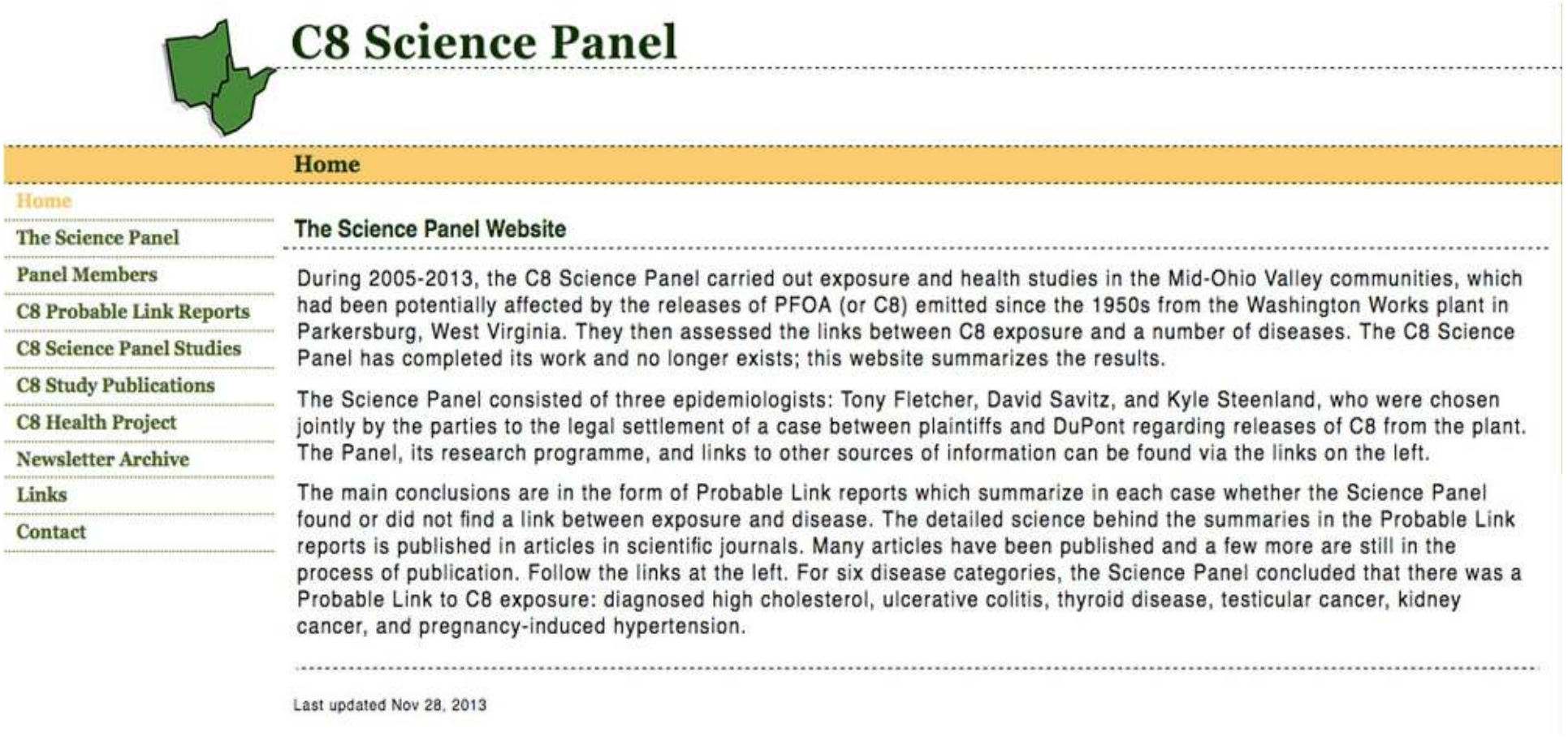
Bern goes back to school today, they have a week of petty abuse before classes start next Monday. Am I glad he is driving himself? Let me count the ways. And more heavy rains predicted, flash floods, mayhem, car fires, overturned tractor trailers, rubber-neck delays, etc.

Has there been a run on 15 inch tires for SUVs? I am running 16 inch real Bridgestones myself, a handsome and reliable tire I might add.

Stay in touch, there are only a few of us old fools left to tell lies about old times, listen to tunes and drink a few cold ones.

--the Bernard

By 2012 C8 Science Panel find probable link to high cholesterol, ulcerative colitis, thyroid disease, testicular cancer, kidney cancer and pregnancy-induced hypertension (preeclampsia)



C8 Science Panel

Home

Home
The Science Panel
Panel Members
C8 Probable Link Reports
C8 Science Panel Studies
C8 Study Publications
C8 Health Project
Newsletter Archive
Links
Contact

The Science Panel Website

During 2005-2013, the C8 Science Panel carried out exposure and health studies in the Mid-Ohio Valley communities, which had been potentially affected by the releases of PFOA (or C8) emitted since the 1950s from the Washington Works plant in Parkersburg, West Virginia. They then assessed the links between C8 exposure and a number of diseases. The C8 Science Panel has completed its work and no longer exists; this website summarizes the results.

The Science Panel consisted of three epidemiologists: Tony Fletcher, David Savitz, and Kyle Steenland, who were chosen jointly by the parties to the legal settlement of a case between plaintiffs and DuPont regarding releases of C8 from the plant. The Panel, its research programme, and links to other sources of information can be found via the links on the left.

The main conclusions are in the form of Probable Link reports which summarize in each case whether the Science Panel found or did not find a link between exposure and disease. The detailed science behind the summaries in the Probable Link reports is published in articles in scientific journals. Many articles have been published and a few more are still in the process of publication. Follow the links at the left. For six disease categories, the Science Panel concluded that there was a Probable Link to C8 exposure: diagnosed high cholesterol, ulcerative colitis, thyroid disease, testicular cancer, kidney cancer, and pregnancy-induced hypertension.

Last updated Nov 28, 2013

Health Problems Linked to PFOA and PFOS in Humans

- High cholesterol
- Decreased immune function
- Testicular and kidney cancer
- Preeclampsia
- Thyroid disorders
- Impaired sperm quality
- Low birth-weight
- Ulcerative colitis (PFOA)
- Reduced fertility and fecundity (PFOS)
- Possible: prostate, bladder and colon cancers (PFOS)

source: EPA drinking water advisory reports https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos

Health Problems Linked to PFOA and PFOS in Lab Animals

- Cancer (liver, testicular, pancreatic)
- Insulin resistance in adult offspring (PFOS)
- Altered learning and memory in offspring (PFOS)
- Developmental effects
- Survival, altered puberty, mammary gland development
- Kidney and liver toxicity, liver

DEVELOPING FETUSES ARE MOST VULNERABLE

DuPont Defense Team

- Mike McCabe, team leader and former EPA Deputy Administrator
- Linda Fisher, succeeded McCabe at EPA then became VP at DuPont in charge of sustainability (was working on C8 within a year of her departure)
- William Reilly, former head of EPA, on DuPont's board

Terms of Settlement

- DuPont would “voluntarily” phase out PFOA
  - DuPont requested the EPA issue reassuring statements about the safety of Teflon; EPA did
- DuPont would research extent of contamination in WV, research would be used to move forward with regulation
  - DuPont never completed report. EPA had no recourse

The Fine

Charged $16.5M for withholding information –

- "Biggest fine in EPA history!"
- Yet, fraction of the $300 million maximum
- Smaller fraction of DuPont's $1.6**B** in ¼ sales
- Less even than division's sales in a single day

The Intercept_

THE TEFLON TOXIN

How DuPont Slipped Past the EPA

A SAMPLING OF GLOBAL PFC CONTAMINATION

AUSTRALIA

Highest average levels of PFOS in human blood

CANADA

PFCs in three arctic lakes

CHINA

Highest level of PFOS ever detected in human blood

DENMARK

PFOS and PFOA levels in children's blood tied to immune suppression

FRANCE

PFOS detected in 27 percent of samples from French public water systems

GERMANY

PFCs detected in drinking water consumed by more than 5 million people

GREENLAND

Rising PFC levels in polar bears

INDIA

15 different PFCs detected in the Ganges River

ITALY

Two chemical plants near the Po River are a major source of PFOA

JAPAN

PFOA contamination near former DuPont plant

NORWAY

12 different PFCs detected in samples of food and beverages

SOUTH AFRICA

PFOA and PFOS were detected in 100 percent of samples from 3 major rivers

SPAIN

PFCs detected in tap water, river water, and bottled water in Tarragona Province

SWEDEN

Elevated levels of PFOA and PFOS near military bases

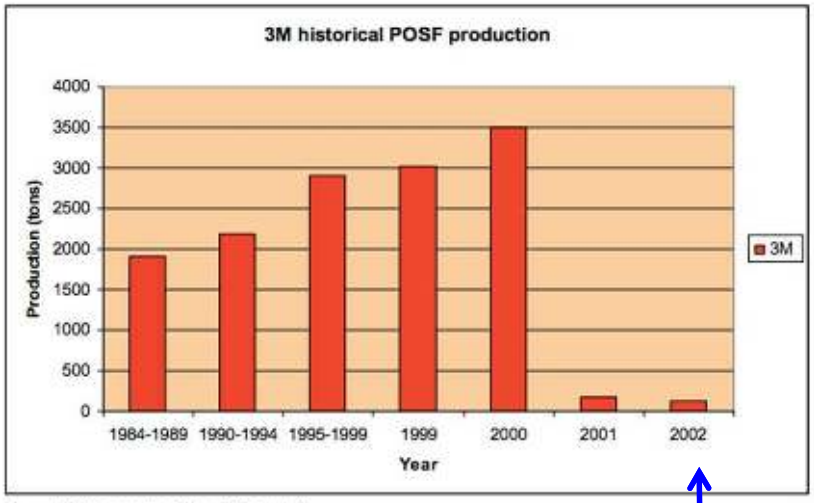
UNITED KINGDOM

Elevated levels of airborne PFOA in Manchester

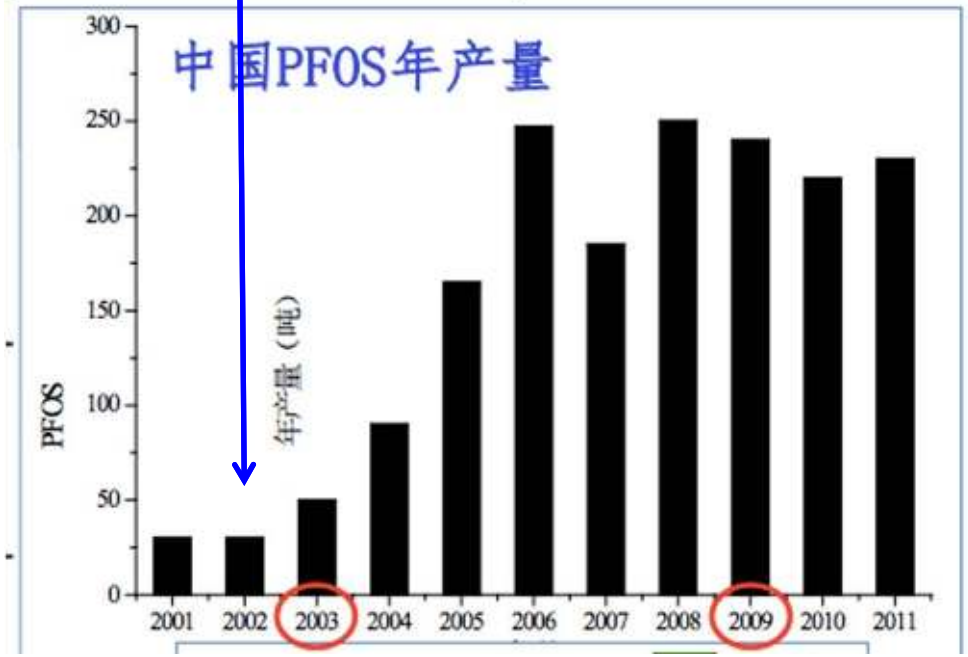
VIETNAM

Study found PFCs in 98–100 percent of Vietnamese women giving birth

Chemours
科慕（常熟）氟化物科技有限公司
The Chemours (Changshu) Fluoro Technology Company Limited



Source: 3M (converting 1 kg=2.2 pounds)

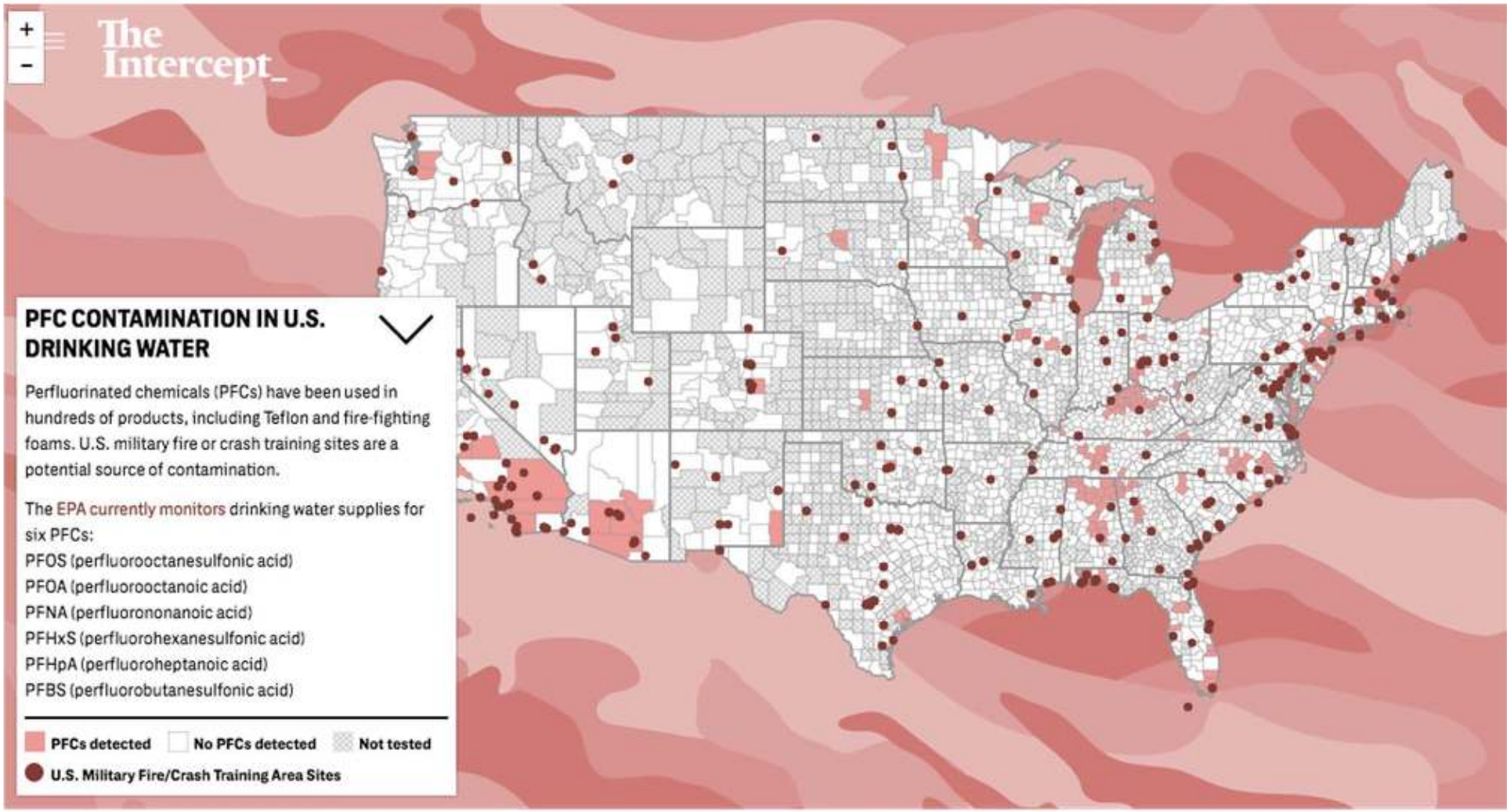


$CF_3CF_2CF_2OCF(CF_3)COOH.NH_3$

--Reproductive problems
--Cancer
--Altered immune response
--Changes in the size of liver and kidneys
--Cholesterol level changes

"It's the same constellation of effects you see with PFOA"
– Deb Rice, retired EPA toxicologist

- Not just in Cape Fear River, but in drinking water it supplies, too
- Also in ground water in WV near DuPont plant
- EPA has asked Chemours to test for it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The Intercept_
PFC CONTAMINATION IN U.S. DRINKING WATER
Perfluorinated chemicals (PFCs) have been used in hundreds of products, including Teflon and fire-fighting foams. U.S. military fire or crash training sites are a potential source of contamination.
The EPA currently monitors drinking water supplies for six PFCs:
PFOS (perfluorooctanesulfonic acid)
PFOA (perfluorooctanoic acid)
PFNA (perfluorononanoic acid)
PFHxS (perfluorohexanesulfonic acid)
PFHpA (perfluoroheptanoic acid)
PFBS (perfluorobutanesulfonic acid)
PFCs detected
No PFCs detected
Not tested
U.S. Military Fire/Crash Training Area Sites

- •Air Force has almost completed swapping “legacy” foam that contains C8 for “green” C6 foam. Navy and Army expected to follow suit
- •Extremely expensive change to similarly problematic chemicals
- •Recent National Defense Authorization Act requires military to look into alternative foams that don’t require PFOS or PFOA – but doesn’t mention replacement chemicals

In the early years, AFFF offered a clear advantage over other options for fighting jet fuel fires. That's no longer the case

-Fluorine-free foams have come close to meeting the MilSpec for AFFF. Navy testing of one of Solberg's fluorine-free foams came in at 9 seconds above the Navy's 30-second requirement in 2004 and 5 seconds off the mark in 2010.

-Nine fire experts I interviewed described an intense campaign against fluorine-free foams within the firefighting foam industry, with manufacturers and sellers of AFFF and the fluorinated surfactants in them fiercely defending their market by discrediting alternative foams.

AFFF Cleanup

- Cleanup is expected to cost > $2B
- DOD not cleaning up to state levels
- DoD cleaning up to 70 ppt – despite some lower state-set levels (13 and 14 ppt proposed)
  - Told me it has to do with not being promulgated
  - So what will happen in NJ?
- DoD only aiming to remediate PFOA & PFOS
  - Because EPA has only set HALs for them

Industry Commands the Science

- Pressure from Industry has limited commercial success of FFFs in US
- DoD has gotten much of its information about AFFF directly from the industry that produced it.
- Note a 2008 memo from Deputy Undersecretary of Defense that passed on assurances about the safety of AFFF containing fluorosurfactants that he had gotten from its manufacturers.

- Growing number of entities worldwide switching to fluorine-free foam
  - The Norwegian and Danish air forces
  - oil and gas sector in the North Sea;
  - firefighting brigades around the world;
  - 60 corporations, including 3M, Exxon Mobil, Statoil, and ConocoPhillips;
  - at least 77 airports (not in the US)