Message

From: d [Personal Email / Ex. 6
Sent: 9/13/2018 4:15:40 PM
To: didi116@aol.com; acaban@med.miami.edu; carignan@anr.msu.edu; emcneely@hsph.harvard.edu; emily.sparer@mail.harvard.edu; gpeaslee@nd.edu; geoffdaly@mkd-usa.com; hdavies@kingcounty.gov; holly.davies@kingcounty.gov; imordukh@hsph.harvard.edu; jburgess@email.arizona.edu; klachapelle@franklinnh.org; lpetrick@iaff.org; mamikw@nifty.com; Personal Email / Ex. 6 mindi@mindiforcongress.com; paul.jacques@pffm.org; pgrand@hsph.harvard.edu; president@pffm.org; Personal Email / Ex. 6 rparis@local718.org; rwalsh4justice@outlook.com; lcadet@hsph.harvard.edu; cmesser@hsph.harvard.edu; bilott@taftlaw.com; kathycrosby@comcast.net; matthew.alba@sfgov.org; stefanit@sbcglobal.net; cell@ffcancer.org; Personal Email / Ex. 6 shaina@toxicsaction.org; gretchen@saferstates.org; katiepelch@tedx.org; quincy@firerein.com; jason.burns@iafflocal1314.com; peter_clark@shaheen.senate.gov; ashley_coulombe@warren.senate.gov; saundrea.shropshire@mail.house.gov; Grevatt, Peter [Grevatt.Peter@epa.gov]; Dunn, Alexandra [dunn.alexandra@epa.gov]; Personal Email / Ex. 6 mariah@mariahblake.com; Personal Email / Ex. 6 aropeik@nhpr.org; carey@careygillam.com; stephanie.ebbs@abc.com; Personal Email / Ex. 6 rdavis@oregonian.com; kif5@cdc.gov; zkz1@cdc.gov; pjb7@cdc.gov; karen.hensel@nbcuni.com; dbond@bennington.edu; Personal Email / Ex. 6 bobbyhalton@pennwell.com; Personal Email / Ex. 6 billc@pennwell.com; omb@cdc.gov; gellison@mlive.com; alicia.rebello-pradas@massmail.state.ma.us; sshaw@meriresearch.org; stephanie.ebbs@abc.com; jason.burns@iafflocal1314.com; Personal Email / Ex. 6 mamikw@nifty.com; Personal Email / Ex. 6
Subject: Robert Bilott's 9.13.2018 Letter to CIH's CDC/ATSDR
Attachments: 9.12.2018 ROB BILOTT'S LETTER TO CDC AND ATSDR ON OMISSION OF FIRE SERVICE FROM PFAS STUDY.pdf

All,
In response to the CDC/ATSDR's exclusion of 'occupationally exposed firefighters' in the PEASE AFB PFAS Study, as outlined in the ATSDR concept plan (see link), please see Environmental Attorney Robert Bilott's 47-page letter **(attached).**

Concept Plan:
https://www.federalregister.gov/documents/2018/08/27/2018-18446/proposed-data-collection-submitted-for-public-comment-and-recommendations

In addition, this 2008 Norway FireTraning PFAS study has a very grim conclusion for the fire training sites in the study.
While it mentions water, soil, earthworms, we know there are firefighters at these locations that are living/working/training in these 'severely contaminated' locations.

http://www.miljodirektoratet.no/old/klif/publikasjoner/2444/ta2444.pdf

pages 66 - 68:

10.4 Recommendations for further investigations This investigation shows that continued fire training over years using AFFF containing PFCs has resulted in quite severe contamination with PFOS, in particular, but also with other PFCs in the local environment. High mobility in some soils and high bioaccumulation potential of some PFCs, make these contaminants an environmental risk that should be further assessed. Comparison of measured soil concentrations at the investigated fire training facilities with estimated PNEC-values (predicted no effect concentration) for 6:2 FTS, PFOA and PFOA in soils, indicated that soil organisms living within about 100 meters of these sites may be at risk. More information is however needed on the effects of PFCs on soil living organisms to make better predictions of effects. The high uncertainty in the soil PNEC-values for PFCs in general calls for more investigations on effects of these compounds in soil living organisms.

11. Conclusions The concentrations of PFCs found in the vicinity of the four fire training facilities in this project show that soils in these areas may be severely contaminated by PFCs coming from AFFFs. Concentrations in most soil samples taken within 200 meters of the training facilities exceed the proposed Norwegian guideline value for PFOS (100 ng/g). Based upon predictions of no effect concentrations (PNEC) for 6:2 FTS, PFOS and PFOA in soils, soil organisms living within about 100 meters from these four sites may be at risk. Since the

PNEC-value for these three PFCs is based on testing of just one organism (earthworm), more information is needed on the effects of PFCs on soil living organisms in order to make better predictions of no effect concentrations and for assessing the environmental risks at fire training facilities in Norway. Exposing earthworms to soils from the four fire training facilities in this project resulted in mean bioaccumulation factors (BAFs) for 6:2 FTS, PFOS and PFOA of 2.4 (0.76-6.7), 2.6 (0.49-6.4) and 5.9 (0.31-14.0), respectively. This is consistent with findings in a previous investigation performed by SFT and Bioforsk. 6:2 FTS which seems to replace PFOS-related compounds in e.g. AFFFs, therefore accumulates to the same extent as PFOS and PFOA. Bioaccumulation of PFDcS has a tendency of having a higher BAF than PFOS. For PFCAs, the bioaccumulation experiments showed that increasing length of the carbon chain increased BAF substantially. The experimental data for PFUnA, PFDoA and PFTeA (C11-C14) indicated that BAFs of 100-1000 can be predicted. The PFOS precursor N-Et-FOSA had BAFs for earthworms in the range 188-770. Also N-Me-FOSA and PFOSA had considerable higher BAFs than 6:2 FTS, PFOS and PFOA. The results showed that increasing silt and clay content in soils reduces both bioaccumulation in earthworms and leaching in the soil profile. Leaching of PFCs in soils occurred at all the investigated sites. Increasing carbon-chain length of PFS and PFOA reduced leaching in most of the investigated soils. PFBS (C5) which is a potential replacement for PFOS-related products therefore has a higher leaching potential compared to PFOS, but a lower bioaccumulation potential. At Gardermoen high concentrations of PFCs have been found in the groundwater. The levels of PFOS and PFOA in the groundwater were far higher than for drinking water criteria from UK, US and Germany. Further measures should be taken to clarify the extent of PFCpollution in the groundwater at Gardermoen. At present, however, the groundwater at Gardermoen is not used for human consumption. Marine sediments and biota have been investigated at Radsundet outside Solberg Scandinavian AS. The high concentrations of PFOS and N-Et-FOSA recorded in sea snail at the seashore, downstream of the industrial area, are attributed to runoff from the industrial area. The level of PFOS in sea snail was higher than the PNEC for molluscs, indicating that the runoff from Solberg Scandinavian may pose a risk to seashore marine organisms. The sediment quality in Radsundet, outside Solberg Scandinavian, is characterised as good according to guidelines for sediment quality. The concentrations of PFCs were, however, found to be up to ten times higher than the concentrations found in e.g. Oslofjorden. Runoff from Solberg Scandinavian AS to the sea, therefore, seemed to have influenced sediment quality in the fjord. Actions to reduce the future runoff from the industrial area to the sea are recommended to be taken.

Sincerely,
Diane Cotter

-----Original Message-----
From: d Personal Email / Ex. 6
To: (Personal Email / Ex. 6 acaban <acaban@med.miami.edu>; carignan <carignan@anr.msu.edu>; emcneely <emcneely@hsph.harvard.edu>; emily.sparer <emily.sparer@mail.harvard.edu>; gpeaslee <gpeaslee@nd.edu>; geoffdaly <geoffdaly@mkd-usa.com>; hdavies <hdavies@kingcounty.gov>; holly.davies <holly.davies@kingcounty.gov>; imordukh <imordukh@hsph.harvard.edu>; jburgess <jburgess@email.arizona.edu>; klachapelle <klachapelle@franklinnh.org>; lpetrick <lpetrick@iaff.org>; mamikw <mamikw@nifty.com>; mick.tisbury Personal Email / Ex. 6 mindi <mindi@mindiforcongress.com>; paul.jacques <paul.jacques@pffm.org>; pgrand <pgrand@hsph.harvard.edu>; president <president@pffm.org>; president.local1009 Personal Email / Ex. 6 rparis <rparis@local718.org>; rwalsh4justice < Personal Email / Ex. 6 lcadet <lcadet@hsph.harvard.edu>; cmesser <cmesser@hsph.harvard.edu>; bilott <bilott@taftlaw.com>; kathycrosby Personal Email / Ex. 6 matthew.alba <matthew.alba@sfgov.org>; stefanit <stefanit@sbcglobal.net>; cell <cell@ffcancer.org>; quintquilts Personal Email / Ex. 6 m>; shaina <shaina@toxicsaction.org>; gretchen <gretchen@saferstates.org>; katiepelch <katiepelch@tedx.org>; quincy <quincy@firerein.com>; jason.burns <jason.burns@iafflocal1314.com>; gretchen <gretchen@saferstates.org>; peter_clark <peter_clark@shaheen.senate.gov>; ashley_coulombe <ashley_coulombe@warren.senate.gov>; saundrea.shropshire <saundrea.shropshire@mail.house.gov>; grevatt.peter <grevatt.peter@epa.gov>; dunn.alexandra <dunn.alexandra@epa.gov>; fastlerner Personal Email / Ex. 6 mariah <mariah@mariahblake.com>; lyons.callie Personal Email / Ex. 6 aropeik <aropeik@nnpr.org>; carey <carey@careygillam.com>; stephanie.ebbs <stephanie.ebbs@abc.com>; thallmanjr Personal Email / Ex. 6 rdavis <rdavis@oregonian.com>; geoffdaly <geoffdaly@mkd-usa.com>; kif5 <kif5@cdc.gov>; zkz1 <zkz1@cdc.gov>; pjb7 <pjb7@cdc.gov>; karen.hensel <karen.hensel@nbcuni.com>; dbond <dbond@bennington.edu>; cell <cell@ffcancer.org>; marr.jon <marr.jon@gmail.com>; bobbyhalton <bobbyhalton@pennwell.com>; chgold151

<chgold151@gmail.com>; billc <billc@pennwell.com>; omb <omb@cdc.gov>; gellison <gellison@mlive.com>; kathycrosby <kathycrosby@comcast.net>; alicia.rebello-pradas <alicia.rebello-pradas@massmail.state.ma.us>
Sent: Tue, Sep 11, 2018 1:35 pm
Subject: 9.11.2018 .... UPDATE. FIRE SERVICE OMITTED FROM PFAS STUDY

All, upon reviewing the link below for the concept plan study, I was amazed to see that the fire service is omitted from the 'PFAS water study'. SEE ATTACHED 'Proof of Study'. This could not be more upsetting. We were told after thousands of hours of effort into this issue, that the fire service would benefit from the 'military community' study. The CDC refuses to recognize the catastrophic failure and omission it has subjected the front line of the fire service to. Below, please see the various emails that outline the very few 'known' water well affected fire stations across the nation. These are only the tip of the iceberg. They are only known to few as there is no concentrated effort to make it public knowledge that the fire service may well have many contaminated water wells due to decades of training with AFFF.

Due to the information Senator Warren and Congressmen McGovern received regarding these studies, they also believed the fire service would benefit from the award. This is not the case. As stated below, the occupationally exposed fire service is not allowed in this study.

How can the fire service benefit from the study if you are not studying any fire fighters in this community, or, for that matter, even their families?

We cannot afford three more years of study in military bases to tell us we are occupationally exposed, when you, the CDC already know we are occupationally exposed as per your own 'PFAS Toxilogical Profile' you sate it numerous times. Manufactures like 3M, and DuPont, and Gore, and Honeywell, who all know of hazards of PFOA/PFOS yet remained silent, can continue to blame our cancers on products of combustion, without a dedicated study to the fire service for our PFAS exposure.

Two studies attached show the significant risks associated with the fire service and PFAS exposure. The PEASE study highlights the PEASE AFB exposures. The Military-Firefighter study highlights the risks of a military firefighter. We have 1.3 million career, volunteer, wildland firefighters who have gone unnoticed in this issue.

Concept plan for study:

https://www.federalregister.gov/documents/2018/08/27/2018-18446/proposed-data-collection-submitted-for-public-comment-and-recommendations

In February of this year, I sat in Congressman Jim McGovern's office during a conference call with Environmental Attorney Robert Bilott. Congressman McGovern and and Attorney Bilott were discussing how best to bring attention to the national exposure of the fire service. Attorney Bilott discussed the need for funds for the fire service and his recent letter to CDC/ATSDR, EPA and Jeff Sessions. Attorney Bilott had recenlty written the 195-page demand letter advising he is seeking testing and studies for the fire service due to

occupational exposure using AFFF and, the lesser known exposure of PFCs used to make the water repellents in your PPE. Some of these PFCs degrade to form 'PFOA'.

https://www.documentcloud.org/documents/3988104-Firefighter-Letter.html

During that conversation, and follow up conversations with elected officials, we were told the funds Attorney Bilott was seeking would be awarded to the military affected communities. That the fire service would still benefit due to the research and findings that would take place. It was NOT what we wanted to hear, but we had no choice but to accept it. We've been working doggedly to bring awareness to the amounts of PFOA/PFNA etc found in new, never worn turnout gear. That the gear is degrading in your stations and dust studies are needed. Also, that the AFFF used in training at fire stations across the country has been found to contaminate water wells at fire stations that train with AFFF. That there is no tracking of AFFF, no national protocol for reporting using AFFF, no proper training material exists of the danger to the end user of the PFAS exposure and reproductive carcinogens within AFFF.

We were told that in the long run, this was the best option for the fire service, the funds being awarded to a large water affected community. That the trickle down results would benefit all firefighters. THIS IS A LIE.

This will not benefit fire fighters in a timely fashion. This will only allow the manufacturers the opportunity to insist that our cancers are from 'PRODUCTS OF COMBUSTION'. The exclusion of the 'occupationally exposed fire service' is yet another catastrophic failure by our CDC/ATSDR, and the EPA that insists on putting us on the front line with PFAS laden tools of our trade, with no PFAS occupation studies specific to the fire service.

Please see additional email below, advising of fire stations across the nation with water wells PFAS contaminated.

Will it take a national boycott by members of the fire service for the CDC/ATSDR and EPA to wake up?

NO ONE IS PROTECTING THE PROTECTORS FROM THESE KNOWN CARCINOGENS AND TOOLS OF OUR TRADE.

Senator Warren is calling for a 5 million dollar study SPECIFIC TO THE FIRE SERVICE FOR PFAS EXPOSURE.

https://www.change.org/p/us-senate-please-appropriate-5-000-000-for-us-firefighters-and-first-responders-for-pfas-study-due-to-our-occupational-exposure-by-afff-and-chemical-coatings-in-our-turnout-gear?recruiter=70179361&utm_source=share_petition&utm_medium=twitter&utm_campaign=share_petition

Previous emails on this issue:

Good Morning,

Wednesday, August 22nd, we were thrilled to see Senator Warren's amendment for a $5,000,000 PFAS Study for First Responders:

https://www.warren.senate.gov/imo/media/doc/PFAS%20amdt.pdf

May I ask for your support please, via a email response to this email, or privately, to State Policy Director
Ashley Coulmbe, whom we have been speaking with since February regarding this issue.

I am concerned with the 45,000,000 PFAS study that Senator Gary Peters just asked for, that the fire service will again be overlooked and lumped into a general study.

https://www.ewg.org/release/new-bipartisan-senate-legislation-aims-spur-federal-response-pfas-crisis#.W4QRmc5KiM_

If you are, ***or***, are not in agreement with Senator's amendment, may I ask you to please comment your thoughts so that the Senator will be well informed when she brings this issue to the floor.

Thank you so much for taking time out of your day to help in this effort.

Sincerely,
Diane Cotter

Chemical Coatings and Turnout Gear:

Many studies have taken place on 'soiled' aka 'contaminated' turnout gear worn by career, military, volunteer, wildland firefighters.

Not one public , NFPA, IAFF, NIOSH, thesis, study exists however, on 'new, never-worn' turnout gear. Specifically, the chemical coatings that make turnout gear water, oil, and stain repellent.

The manufacturers consider the information 'proprietary' and will not disclose. We have tried unsuccessfully to have this information provided to us.

Much information is available on the durable water repellent coatings for use in outdoor wear, children's wear, etc., but none have covered turnout gear.

See attached **Burlington Presentations**, for Dr Roger Klein's discussion on PFCs in turnout gear. Pages 43-93.

To date, only one independent study on PPE has been performed by Professor of Physics, Graham Peaslee of Notre Dame University. This January, 2018 study was performed to answer questions we had specific to the PFAS chemicals used in turnout gear, and if possible, the amounts used. **(attached).**

What is needed is complete knowledge of ***which*** chemicals are used in new, never-worn turnout gear and, ***the amounts of these chemicals in the gear.***

To determine which of these chemicals, if any, are harmful or persistent, bio-accumulative, toxic (PBT).

To set limits for chemicals used in turnout gear that provide protection to meet NFPA standards, but not more than is needed.

To return 'warning labels into PPE that was removed by FEMSA (Fire and Emergency Manufacturers Services Association) and written into standards by members of NFPA. : https://www.femsa.org/whois_femsa/history/

These warning labels should be similar to California's Prop 65 and now Washington State's SB 6413 **(attached)** advising that the garment contains PFAS chemicals, some of which are known to cause reproductive cancers.

See attached January 2018 SB 6413 for Washington State Council of FireFighters first in the nation legislation to limit PFAS in AFFF, and to label PPE that has PFAS in the product.

In May 2018, the Professional Fire Fighters of Massachusetts voted unanimously to make PFAS legislation a priority.

The fire service is eager to understand their exposure to these chemicals. But it will take millions of dollars. Areas needing exploring:

To determine how these chemicals affect a firefighter; donning/doffing, storage, handling, and when body temp rises; interaction with other POC's ., etc.

Are there harmful PFCs degrading in the fire stations from PPE?

What are the routes of exposure? Should we be concerned with dermal, inhalation, ingestion from new and/or gear that is degrading in UV lighting?

What chemicals are coming off during the wash cycle.

Where are these chemicals going in terms of waste water.

End of life. What is the best scenario/method for retiring PPE?
We receive many messages that PPE is given to fire stations within the country who do not have funds to purchase. We are also aware of PPE that is shipped over seas to support fire departments with little funding for PPE.

Legislation is needed for the use of PFAS chemicals in turnout gear, just as has been completed in the European Union. European Chemicals Agency has set limits of 25ppb PFOA and 1ppm 'precursors' for PPE.

https://www.informea.org/sites/default/files/imported-documents/UNEP-POPS-POPRC12FU-SUBM-PFOA-IPEurope-09-20161124.En.pdf

This issue has been well known in Europe since 2006 when the European Chemical Agency first began notifying manufacturers that PFOA will be restricted in the European Union:

http://www.hemmingfire.com/news/fullstory.php/aid/2601/Six-year_PFOA_reprieve_for_firefighters__protective_clothing.html

More recently, in 2016, the PPE & Duty of Care Forum took place in Europe. It focused on:

https://www.firerescueforum.com/content/programme.aspx

https://www.firerescueforum.com/content

PPE & Duty of Care Forum 2016

Personal protective equipment (PPE) is the last line of defence for firefighters yet few Fire & Rescue Services fully understand how the latest generation of protective clothing works or how it should be managed effectively in the light of imminent EU-wide chemical restrictions. At this one-day conference, you can.

What will it cover?

* Disposal of firefighting clothing that contains restricted chemicals

* Maintenance of clothing containing restricted chemicals

* Legal and financial obligations regarding current contracts

* Legal and financial obligations of service contracts

* Managing a potential transition to non-PFOA PPE

In January 2016, we learned of what was happening in Europe regarding PFOA and turnout gear. We spoke with many members of PFFM and IAFF. They were not made aware by the very same manufacturers who stand side by side with them on matters of firefighter cancer prevention and best practices, of the PFOA happenings in Europe. I then began speaking to NFPA in attempts to get their involvement. Attempts to enlist NFPA's assistance to fast track the issue of determining the chemicals used as coatings in PPE have been unsuccessful.

Once Professor Peaslee tested the 2004 new, never-worn PPE, and was able to determine the 'fraction of the potential' of PFAS chemicals used (attached), we then worked to share that information with IAFF, NFPA, EPA, CDC and Niosh.

As of this writing, I am not aware of any efforts from any efforts from any of the above mentioned group to take this on in the **FULL manner that has been done in Europe**. While some groups are providing pieces of work, there is no group or organization identifying the needs listed above.

We were notified just last month that IAFF and NIOSH have begun testing serum of 200 fire fighters from across the country. A good start, but we need so much more.

While speaking at the June 25th New England EPA PFAS Community Engagement Agenda, I advised of the amounts of PFOA, PFNA (long chain harmful PFAS chemicals) found in 'new, never-worn PPE. Dr Peter Grevatt, Director of Water for EPA, along with Alexandra Dunn, New England Regional Director of EPA, were both astonished by the amounts of these chemicals, as I advised as per correspondence with Professor Peaslee, that 'just the fraction of the potential ' of PFOA in the ***coat alone*** was already 14,000 times new new Maximum Recommended Limit (MRL) of PFOA set by the EPA in the June 2018 PFAS Toxicological Profile. Their concerns were relative to what is degrading in landfills from disposed of PPE.

The AFFF issue, now a national PFAS contamination issue, is directly fire fighter related.

In September 2017, Environmental Attorney Robert Bilott wrote a 195 page demand letter to EPA, CDC/ATSDR and US Attorney General Jeff Sessions, demanded testing and studies for first responders specific to their PFAS occupational exposure and PPE. In May 2018, $10,000,000 was awarded to study PFAS in the military bases, of which Senator Jeanne Shaheen successfully advocated for Pease AFB to be the target study group.

https://www.documentcloud.org/documents/3988104-Firefighter-Letter.html

Environmental Scientist and New Hampshire State Representative has written about the new 'short chain' chemistry and it's unknown effects in her May 2018 article, 'Firefighter Cancer Quadfecta'. http://nhlabornews.com/2018/05/mindi-messmer-firefighter-cancer-quadfecta/

In October 2017, 6 out of 7 fire stations tested 'elevated' for PFAS. That prompted the New Hampshire DES to send out this letter instructing all fire stations in NH to test their water:

http://mediad.publicbroadcasting.net/p/nhpr/files/firestation_results_des_12-4-17.pdf

OCTOBER 2017., NEW HAMPSHIRE FIRE STATIONS:

https://www4.des.state.nh.us/…/Fire_Department_H20Sample.pdf

August, 2018, The state of Michigan listed 1,487 fire stations to the 'Potentially PFAS Contaminated Sites' list. In response to that notice, we asked Professor Peaslee his thoughts:

In response to Michigan's 1487 Fire Stations on the Potential PFAS Contamination List, and in addition to the OCTOBER 2017 NH DES Notice to all New Hampshire Fire Stations...

From Professor Peaslee today:

https://www.mlive.com/…/pa…/michigans_water_crisis_pfas.html
In this article, they list six fire departments that have legacy AFFF sitting on their shelves unused. ..and the town of Parchment is one of the six they mention...there are 35 gallons of AFFF concentrate sitting in the Parchment fire department unused. I am afraid this may indicate the source of their groundwater contamination… Parchment is a small city (1800 residents) and city hall is attached to the fire department (which has 19 permanent employees) which also houses the city's Public Works and Water Department. All the well heads for the city's drinking water (which is from an aquifer 50 feet below the city in sandy soil) are within a mile of the FD. Since they have 35 gallons of unused AFFF sitting on their shelves at the moment, they are probably like most small towns near an interstate that purchased and practiced putting out fires you might encounter from a tanker-truck crash. Not sure they ever had a crash in this part of Kalamazoo, but they surely practiced with the foam at some point after they purchased it, otherwise they wouldn't have "leftover" foam sitting on a shelf. If they practiced anywhere within city limits, they probably washed the foam away afterwards, and nobody told them 20 years ago that AFFF would travel directly into the groundwater and last for the next few hundred years environmentally.
This is pure conjecture at the moment from me., there may be another source of PFAS that comes to light eventually, but I have been telling as many people in Michigan as possible to look into it, and today Michigan listed all FD's as potential sources of PFAS and I am guessing that Parchment might be the reason for this action. In a worst-case scenario, Every "small town USA" may have purchased and used AFFF in fire stations around the country and nobody told them it was toxic, nor persistent and a danger to groundwater. Thereafter, any use or practice with this AFFF could potentially have contaminated their own drinking water. This is scary, and maybe Parchment is the only place in the country this has happened, but my bigger fear is that it is only the first place we have looked.

Additionally, the fire stations listed below came from EWG'S list of contaminated sites. These are merely the ***'known' sites...*** without the funding to test

fire stations across the country the fire fighters that work/sleep/eat in their stations may never be informed, and we may be sitting on just the tip of the iceberg.

All, please see below for the numerous *fire stations* that have been contaminated by

AFFF.

https://docs.google.com/spreadsheets/d/1HxLAzOmFdMh7V-mey4ExTPsnNKarEcGG6klBWZH8auA/edit#gid=676990244

ALASKA:

Fairbanks Regional Fire Training Center,

PFASs found in 26/33 private wells, 19 exceeded EPA health advisory (2015); {GHU municipal water 2018 -- PFOS: 2.4-2.9 ppt, PFOA: 2.9-3.5 ppt}; {Airport -- PFOA: 6.4 - 762 ppt} GHU municipal water 2018 -- PFHxS: 5.1-5.9 ppt, PFHxA: 2.8-3.2 ppt

Firefighting foam used from 1984 to 2004 in fire training exercises at the Regional Fire Training Center, and at Fairbanks International Airport since the 1980s

https://dec.alaska.gov/spar/csp/sites/fairbanks-fire-training-center

COLORADO:

Sugarloaf Fire Department

Station 1 Well: [PFOA = 79 ppt; PFOS = 950 ppt], Station 2 Well: [above 70 ppt, numbers unavailable]
Firefighting foam used at Sugarloaf Fire Department

Fire district board members will join representatives from EPA, Boulder County Health Dept, and Colorado Dept. of Health & Environment in a community meeting to brief residents on the status of contamination. Boulder County Health Dept. paid for testing of 12 wells near the two fire stations. "The water quality control division of (the department) has allocated funds that we will be distributing to Boulder County Public Health and then we will work with both the Fire District and Boulder County Public Health and our Region 8 EPA office to determine the best path forward in determining where and when we should best sample," said Dr. Kristy Richardson, environmental toxicologist for the Colorado Dept of Public Health & Environment

MASSACHUSETTS

Barnstable County Firefighting Training Academy.

Please see page 18 for PFOS contamination map of over 70,000 ppt noted in red dots.

http://www.newmoa.org/events/docs/259_227/GallagherMA_May2017_final.pdf

MINNESOTA (by far the most comprehensive study of what was used, how stored, and when used)

DELTA PROJECT NO. 19382-DEL0

These three reports are based mainly on municipal/rural AFFF at fire fighting training locations:

2008: https://www.pca.state.mn.us/sites/default/files/pfc-foamreport-addendum.pdf

2009: https://www.pca.state.mn.us/sites/default/files/c-pfc1-05.pdf

2010: https://www.pca.state.mn.us/sites/default/files/c-pfc1-09.pdf

from page 22:

The PFOA HRL was exceeded in several groundwater sample collected during the current scopes of work and previous scopes of work with laboratory results being presented in this report: 1,260 ng/L PFOA was detected in the groundwater sample collected from the Burnsville B-3 boring;
and, **PFOA concentrations ranging from 958 ng/L to 286,000 ng/L were detected in all four groundwater samples**
collected in May 2009 from borings B-1 through B-4 at the MSP Airport. PFOA concentrations detected in other
groundwater samples collected during the current scopes of work and in Fridley and Luverne were less than 300 ng/L

page 23:

The PFOS HRL was exceeded in several samples collected during the current scopes of work: 522 ng/L PFOS was detected in the Burnsville B-3 groundwater sample; 483 ng/L and 789 ng/L PFOS were detected in the Bemidji B-1 and B-2 groundwater samples, respectively; and, PFOS concentrations ranging from 731 ng/L to 14,900 ng/L were detected in five of the six groundwater samples collected at the Marathon Refinery, including the duplicate sample. The only groundwater sample collected at the Marathon Refinery with a PFOS concentration of less than 300 ng/L was MW-101, which is located near Tank 120 upgradient of the firefighting training area. The PFOS concentrations in other groundwater samples collected during the current scopes of work and in Fridley and Luverne were less than 300 ng/L

NEW HAMPSHIRE

Windham, NH Fire Station

Combined PFOA/PFOS: (Senior Center: 96 ppt; Fire Department building: 112 ppt; Dunkin Donuts/Bodega: 100 ppt)

Firefighting foam used at local fire station

In addition see also: NH DES Oct 2, 2017 letter to all fire stations after 6 of 7 wells tested elevated for PFOA.

https://www4.des.state.nh.us/nh-pfas-investigation/wp-content/uploads/2017/11/Fire_Department_H20Sample.pdf

New York State

Suffolk County Firematics Training Facility

PFOS (<2 ppt - 2540 ppt), PFAS (<2 ppt - 133 ppt) PFHxS: 528 ppt, PFHpA: 137 ppt, PFNA: 252 ppt

Firefighting foam used at Suffolk County Firematics Training Facility

Firematics served as Suffolk County's firefighting training facility since 1959 and used PFC-containing foam until May 2016,
when chemicals in the foam were classified as hazardous substances by NYS.

Hampton Bays Fire Station

Combined PFOA/PFOS (as high as 85.8 ppt)
Firefighting foam used at Fire Station

"In September 2017, two public water supply wells were closed in Hampton Bays when PFCs were detected. The suspected culprit is fire fighting suppressant foam that contained PFCs. A two-acre site that is owned by the Hampton Bays Fire District is now listed as a "potential hazardous waste site"

WASHINGTON

Issaquah

Fire Station; Tanker crash site PFOA (20-80 ppt; non-detect at tap). PFOS (600-2,200 ppt; non-detect at tap)
PFBS: 69.5 ppt; PFHpA: 5.31 ppt; PFHxS: 47.3 ppt; PFNA: 22.1 ppt
Firefighting foam used at Eastside Fire Rescue and firefighting foam sprayed during a tanker fire in 2002

Wisconsin

Tyco-Ansul Fire Technology Center Marinette, Wisconsin
Jan.22.2018: [Groundwater -- combined PFOA/PFOS: ND-1,653 ppt], [well water -- combined PFOA/PFOS: ND-690 ppt]
June 2018: [Out of the 137 wells tested during winter 2017, 97 showed no contamination, 29 had PFAS below the EPA health advisory level of 70 ppt, and 11 had PFAS above the health advisory level. Tyco offered bottled water to homes that had their wells tested, and is still providing bottled water to 126 recipients. For the homes above the health advisory level, Tyco offered GAC water filtration systems to clean the water before use. Seven accepted the filters. In Spring of 2018, Tyco tested 129 wells, most of which were repeat tests but some of which were new. 71 showed no contamination, 23 showed PFAS below the health advisory level, and 1 showed above the advisory level.]

AUSTRALIA:

http://fbeu.net/2007/03/safety-first-3m-foam-banned-return-to-sender/

Safety First. 3M foam banned – return to sender

March 26, 2007

Use or storage of the 3M products known as 3% and 6% Aqueous Film Forming Foam (AFFF) concentrate is now banned by the Union. Even though the Department has stopped purchasing and using this product for a number of years, the Union believes that in some instances it is still being used for 'training purposes'.

Besides banning its use, Members are also instructed to search the Station for these chemicals, collect and tag them as a hazard and to notify the Department's Health Services Unit so that they can be removed from your workplace.

Members at Retained Stations in particular should have a good look for this foam as the Union believes that this foam constitutes both an unacceptable and avoidable risk to members and their families. It has come to light that the Australian Military believes this product can cause serious health problems including:

- Central nervous system depression,
- nausea,
- vomiting and sometimes diarrhoea in humans.

Other symptoms include:

- abdominal and lumbar pain,
- changes in the urine or absence of urine, and
- pathological lesions in the brain, lung, liver and heart.

Observations in animals suggest a remote possibility or pulmonary oedema (swelling and/or fluid accumulation in the lungs) and bone marrow depression. Experimental animal studies have also shown injury to the liver, kidney, spleen, and testes. On that basis, Members should treat this material as hazardous by (as a minimum) not allowing it to come into contact with the skin or breath in its fumes.

Simon Flynn

State Secretary

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Sincerely,

Diane Cotter

Rindge, NH

Formerly of Paxton, Masschusetts