

TOWN OF LONDONDERRY PFAS INFORMATIONAL MEETING

**NHDES PANEL
MAY 20, 2021
6:30 P.M.**



HOUSEKEEPING ITEMS



- THIS MEETING IS BEING RECORDED
- ALL ATTENDEES HAVE BEEN MUTED UPON ENTRY
- IF YOU ARE HAVING ANY TECHNICAL DIFFICULTIES WITH THE PLATFORM, PLEASE CALL OR E-MAIL:
MARY BUTOW AT MARY.BUTOW@DES.NH.GOV OR 603-271-8693
- HANDOUTS HAVE BEEN INCLUDED IN THE DASHBOARD
- QUESTIONS WILL BE ENTERTAINED AT THE END OF THE PRESENTATION
 - CALL-IN PARTICIPANTS ARE IN LISTEN-ONLY MODE AND CAN NOT COMMUNICATE WITH THE PANEL DURING THE MEETING.
 - USE THE **“QUESTION”** FUNCTION TO TYPE YOUR NAME TO BE ADDED TO THE QUEUE



AGENDA

- I. **PFAS DISCOVERY AND NHDES APPROACH – DIRECTOR MIKE WIMSATT, WASTE MANAGEMENT DIVISION**
- II. **PFAS HEALTH EFFECTS – DR. JONATHAN ALI**
- III. **PFAS INVESTIGATION: SAMPLING, OCCURRENCE, NOTIFICATION, RESULTS – JEFF MARTS, P.G.**
- IV. **HOMEOWNER ALTERNATIVE WATER OPTIONS – BRANDON KERNEN, P.G.**
- V. **RELEVANT FUNDING PROGRAMS – ERIN HOLMES, P.E.**
- VI. **TOWN INITIATIVES – TOWN OF LONDONDERRY**
- VII. **QUESTION & ANSWER SESSION**



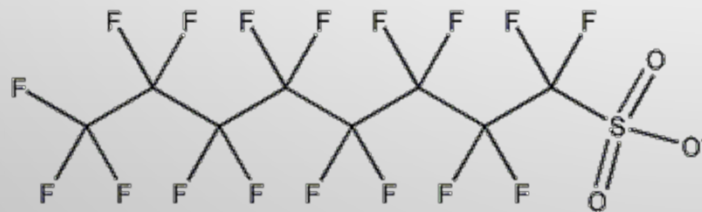
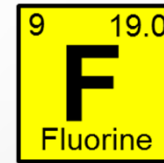
INTRODUCTION TO PFAS AND OVERVIEW OF HISTORY IN SOUTHERN NEW HAMPSHIRE

**MICHAEL WIMSATT, DIRECTOR
WASTE MANAGEMENT DIVISION**

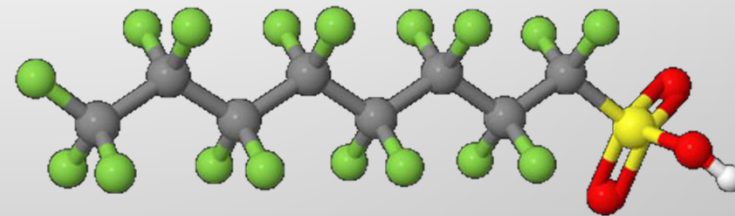


INTRODUCTION TO PFAS

- Synthetic organic compounds that contain multiple Fluorine (F) atoms.
- 2 most studied PFAS are
 - Perfluorooctanoic Acid (PFOA)
 - Perfluorooctane Sulfonate (PFOS)
- PFAS family = thousands of diverse compounds

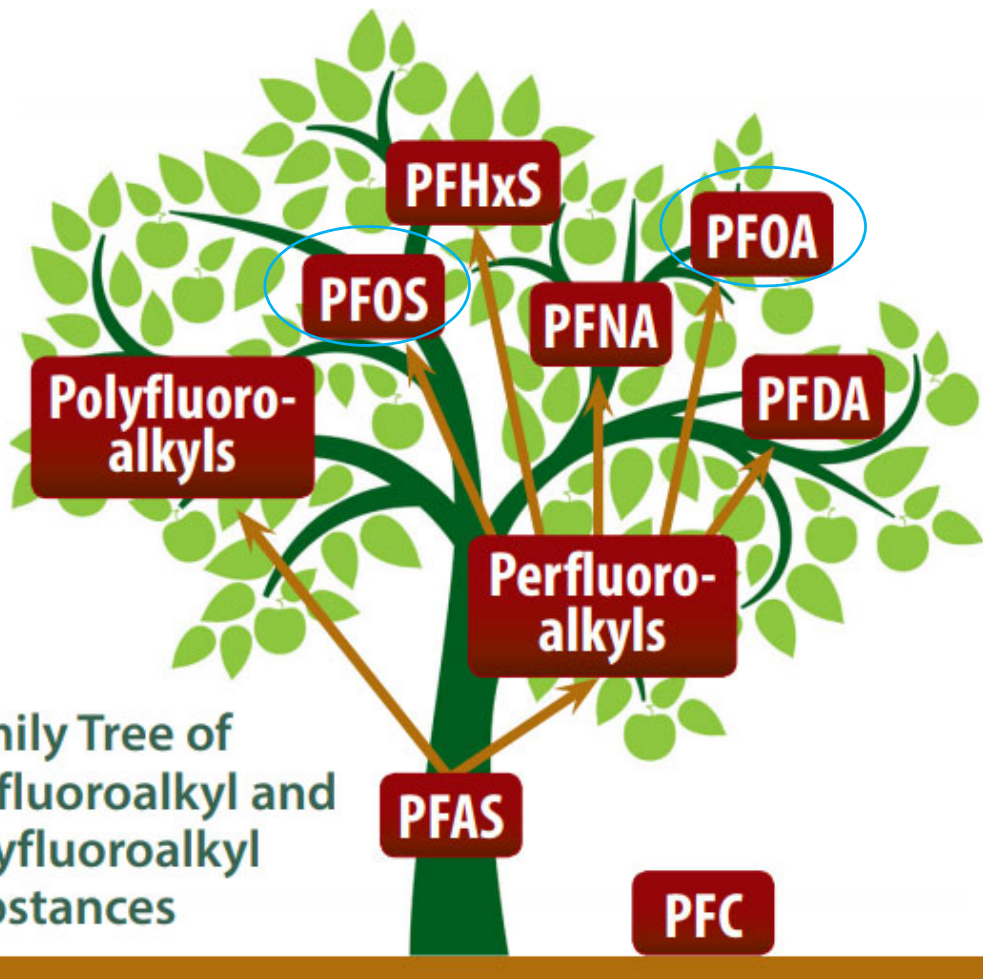


Conder et al. (2008)



Example molecular structures for perfluorooctane sulfonate (PFOS)

Chemspider



Family Tree of Perfluoroalkyl and Polyfluoroalkyl Substances

Figure 1



EXPANSIVE USES OF PFAS

Commercial Products	Industrial Uses
<p>Cookware (Teflon®, Nonstick) Fast Food Containers Candy Wrappers Microwave Popcorn Bags Personal Care Products (Shampoo, Dental Floss) Cosmetics (Nail Polish, Eye Makeup) Paints and Varnishes Stain Resistant Carpet Stain Resistant Chemicals (Scotchgard®) Water Resistant Apparel (Gore-Tex®) Cleaning Products Electronics Ski Wax Soil amendments Pesticides Potting soils</p>	<p>Photo Imaging Metal Plating Semiconductor Coatings Aviation Hydraulic Fluids Medical Devices Class B Firefighting Foam (e.g., Aqueous Film Forming Foam) Insect Baits Printer and Copy Machine Parts Chemically Driven Oil Production Textiles, Upholstery, Apparel and Carpets Paper and Packaging Rubber and Plastics Pesticides</p>



PFOA CONTAMINATION DISCOVERY IN SOUTHERN NEW HAMPSHIRE

- 2016 - SAINT-GOBAIN REPORTED RESULTS OF WATER TESTS AT ITS MERRIMACK FACILITY
- PFOA DETECTED AT 30 PPT IN MVD SUPPLIED WATER
- IMMEDIATE STEPS TO SAMPLE PUBLIC AND PRIVATE DRINKING WATER SUPPLIES IN VICINITY OF THE PLANT
- AIRBORNE TRANSPORT PATHWAY BECOMES EVIDENT
- TESTING EXPANDS RAPIDLY – SIGNIFICANT IMPACTS TO DRINKING WATER WELLS IN LONDONDERRY



INCIDENT RESPONSE COMPONENTS

- MASSIVE OUTREACH AND SAMPLING EFFORT
 - PUBLIC AND PRIVATE WATER SUPPLIES
 - NHDES SAMPLING TEAMS
 - MULTI-FACETED: GIS/MAILINGS/PHONE/DOOR-TO-DOOR
- SHORT-TERM: BOTTLED WATER PROVISION
- LONG-TERM: ALTERNATE WATER
- ULTIMATE RESPONSE – LARGE SCALE WATERLINE PROJECTS FUNDED BY RESPONSIBLE PARTY
- IN LONDONDERRY – NO WATERLINE EXTENSIONS MADE IN 1ST PHASE, BUT EXTENSIVE SAMPLING AND ALTERNATE WATER PLANNING IS ONGOING



DRINKING WATER/GROUNDWATER STANDARDS TIMELINE

- APRIL 2016 – EMERGENCY RULEMAKING FOR AGQS (70 PPT FOR PFOA AND PFOS, SEPARATE OR COMBINED)
- SEPTEMBER 30, 2019
 - NHDES RULEMAKING- ESTABLISHING MCL/AGQS
 - 3M/PLYMOUTH VILLAGE DISTRICT LAWSUIT
- DECEMBER 31, 2019 PRELIMINARY INJUNCTION
- JULY 2020: HB1264 ESTABLISHED PFAS MCLS/AMBIENT GROUNDWATER QUALITY STANDARDS (AGQS) IN STATE LAW

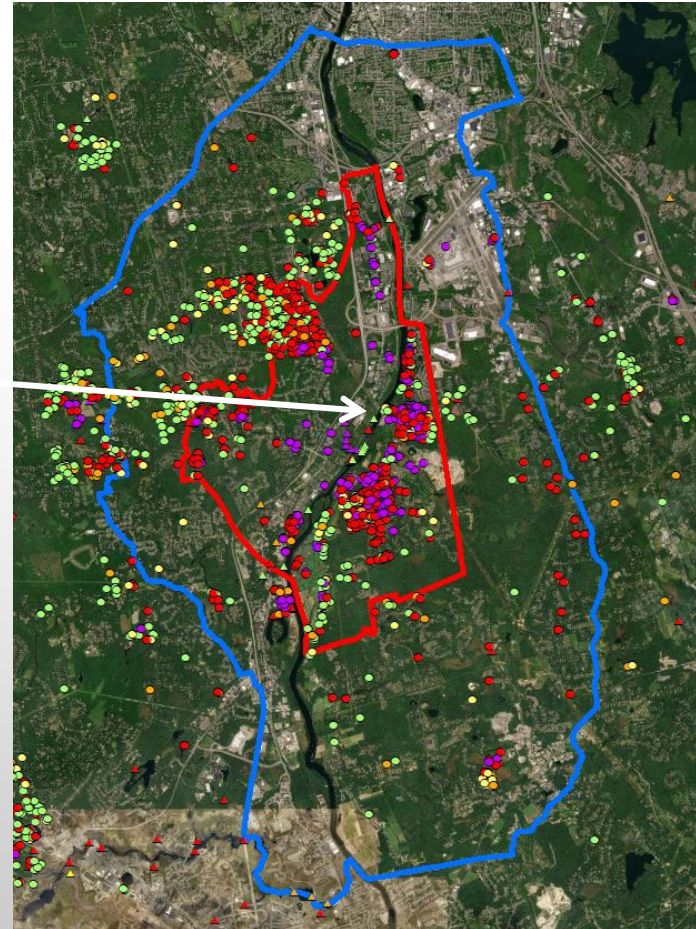
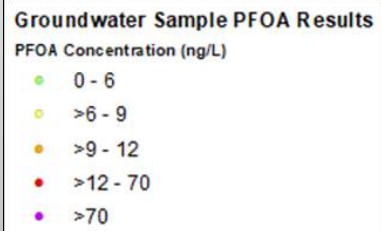


CURRENT DRINKING WATER/GROUNDWATER STANDARDS (EFFECTIVE JULY 2020)

- MCLs (Maximum Contaminant Limits and AGQS (Ambient Groundwater Quality Standards) for four PFAS compounds:
 - PFOA 12 ng/l (parts per trillion)
 - PFOS 15 ng/l
 - PFHxS 18 ng/l
 - PFNA 11 ng/l
- MCLs applicable to regulated public water systems
- AGQS applicable to contaminated sites and permitted discharges to groundwater



SAINT-GOBAIN FACILITY IMPACT / CONSENT DECREE BOUNDARIES



2018 SAINT-GOBAIN CONSENT DECREE

- ESTABLISHED REQUIREMENTS FOR S-G TO PROVIDE ALTERNATE DRINKING WATER WITHIN THE “PRE-GMZ” (RED LINE)
- LIMITED S-G’S RESPONSIBILITIES OUTSIDE THE “OUTER BOUNDARY” (BLUE LINE) TO IMPACTS OVER 70 PPT
- STATE RETAINS ALL AUTHORITIES BETWEEN PRE-GMZ AND OUTER BOUNDARY
- THERE ARE SIGNIFICANT IMPACTS TO DRINKING WATER IN LONDONDERRY BOTH INSIDE AND OUTSIDE THE CD OUTER BOUNDARY



IMPACT OF LOCATION RELATIVE TO THE CONSENT DECREE

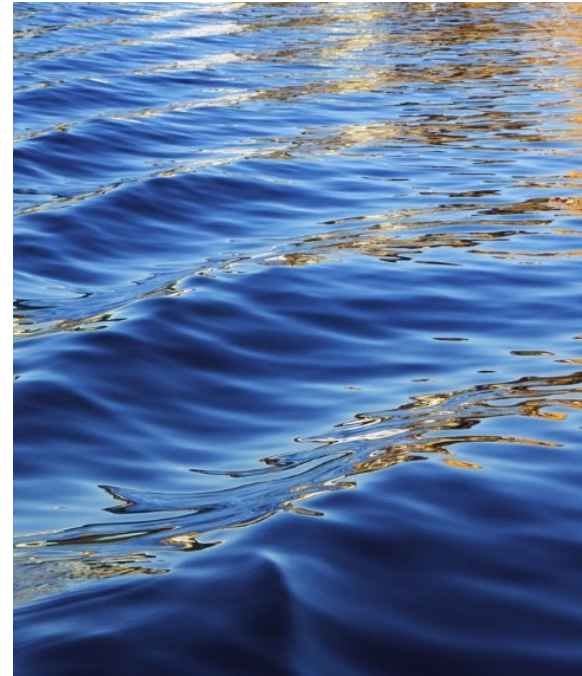
- INSIDE THE OUTER BOUNDARY – DES EXPECTS SAINT-GOBAIN TO INVESTIGATE DRINKING WATER IMPACTS AND TO ADDRESS THOSE IMPACTS THAT ARE ATTRIBUTED, AT LEAST IN PART, TO THEIR EMISSIONS
- OUTSIDE THE OUTER BOUNDARY – DES CANNOT REQUIRE S-G TO SAMPLE; S-G IS RESPONSIBLE FOR PFOA/PFOS IMPACTS TO DRINKING WATER WELLS > 70 PPT, BUT NOT LOWER
- NHDES AND TOWN ARE WORKING TO DEVELOP SOLUTIONS FOR IMPACTS OUTSIDE THE OUTER BOUNDARY





PFAS Exposure, Health Risks and Common Concerns

Jonathan Ali, Ph.D., Toxicologist



Agency for Toxic Substances and
Disease Registry's Partnership to
Promote Local Efforts To Reduce
Environmental Exposures

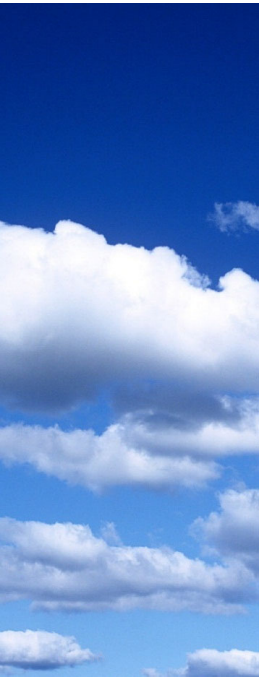
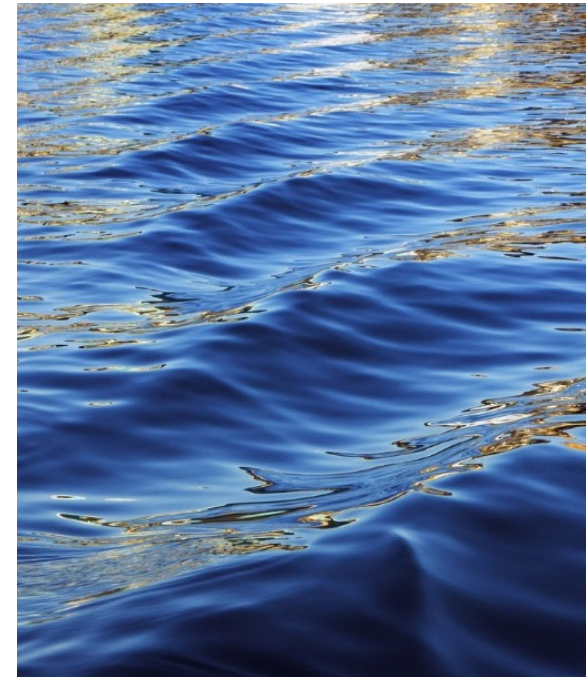
APPLETREE



NEW HAMPSHIRE
DEPARTMENT OF
**Environmental
Services**

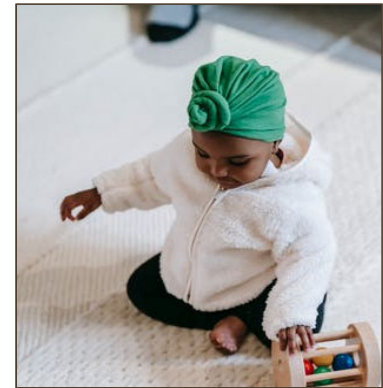


NH DIVISION OF
Public Health Services
Department of Health and Human Services



How are you exposed to PFAS?

- Primary route of exposure is ingestion (e.g. drinking water or food).
- Certain PFAS transfer from the placenta/breastmilk to infants.
- Inhaling/ingesting PFAS-containing dusts may contribute to exposure.
- Certain PFAS are less efficiently absorbed across the skin.
- Certain PFAS are bioaccumulative, meaning they “build-up” in the body.



What are the drinking water limits for PFAS?

- 12 ng/L for PFOA (Perfluorooctanoic acid)
- 15 ng/L for PFOS (Perfluorooctane sulfonic acid)
- 11 ng/L for PFNA (Perfluorononanoic acid)
- 18 ng/L for PFHxS (Perfluorohexane sulfonic acid)

These limits were developed for sensitive segments of the population.

- ✓ Pregnant/lactating women and their infants
- ✓ Individuals who consume a lot of water
- ✓ Individuals with chronic exposure (several years to decades)
- ✓ Accounting for additional sources of exposure (e.g. consumer products and food)

For more information about the NHDES PFAS MCLs:

https://www4.des.state.nh.us/nh-pfas-investigation/?page_id=1036

Health Risks Associated with Per- and Polyfluoroalkyl Substances (PFAS)

- Increased cholesterol levels
- Changes in liver enzyme levels
- Small changes in infant birth weight
- Altered immune system function
- Increased risk of high blood pressure or pre-eclampsia in pregnant women
- Changes in thyroid and/or reproductive hormones
- Possibly increased risks for kidney or testicular cancer

These health outcomes are being studied nationwide by the Agency for Toxic Substances and Disease Registry (ATSDR), as well as by private and academic institutions.

This is a **constantly evolving area of scientific research**. For more information from ATSDR, follow this link: <https://www.atsdr.cdc.gov/pfas/index.html>

FAQs About PFAS Health Effects and Exposure Concerns

- **Where can my physician learn more about PFAS and my family's risks?**

Physician information is available below. The science of PFAS is rapidly evolving, so your physician may not be aware of PFAS or their health risks.

1. **New Hampshire Department of Health & Human Services:**

<https://www.dhhs.nh.gov/dphs/pfcs/index.htm>

2. **Agency for Toxic Substances & Disease Registry:**

<https://www.atsdr.cdc.gov/pfas/resources/index.html>

- **Is there a test to measure PFAS in my blood?**

Yes, but this is a complex issue. At this time, PFAS blood tests do not predict an individual's risk for disease. If your physician has questions about PFAS blood testing, they can review the information available at the links above.

FAQs About PFAS Health Effects and Exposure Concerns

- **Can I cook with the water?**

If your water is above the current standards, NHDES recommends using an alternative source of water for cooking. Boiling water does not remove certain PFAS, and may cause PFAS to concentrate into some foods. Consuming foods that contain PFAS increases your overall exposure.

- **Can I use the water for bathing, showering or cleaning?**

The NHDES PFAS standards are based on water ingestion because this is the main pathway that PFOA, PFOS, PFNA and PFHxS enter the human body. These standards do not determine a “safe” level for skin contact.

- **Can I irrigate my home grown vegetables and fruits?**

The NHDES PFAS standards are not intended as guidance for home gardening. Like other chemical contaminants, some fruits and vegetables can transfer certain PFAS from soil into the leaves, stems and fruits of the plant.

FAQs About PFAS Health Effects and Exposure Concerns

- **Can I use the water to irrigate my lawn?**
The NHDES PFAS standards are not intended as guidance for lawn care. NHDES provides guidance for PFOA, PFOS, PFHxS and PFNA in soils. This information is available at: https://www4.des.state.nh.us/nh-pfas-investigation/?page_id=130
- **Should I be concerned about my pets?**
You should first speak with your veterinarian if you have specific health concerns about your pets. Drinking water standards are developed for the protection of human health, and animals (e.g. cats and dogs) process PFAS differently than humans.
- **Are there limits for PFAS other than PFOA, PFOS, PFHxS and PFNA?**
Not at this time. NHDES evaluates the peer-reviewed scientific information and recommendations from federal partners to determine if additional guidance is needed. This includes reviewing toxicological information about other PFAS, such as short-chain compounds or other novel chemistries.

Agency for Toxic Substances and Disease
Registry's Partnership to Promote Local Efforts
To Reduce Environmental Exposures



APPLETREE



Goal: Work with partners to reduce exposure to harmful chemicals

Partners: NHDES, NH DPHS, federal partners, academic institutions, communities

Capacity: Health risk assessment, toxicology, epidemiology, communication & education, community engagement, project management

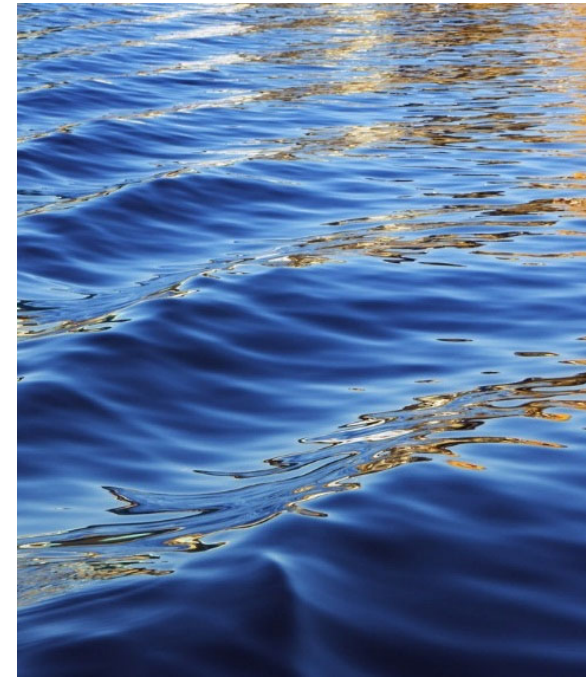
Process:



Contact: Karen Craver, MPH; Karen.m.craver@des.nh.gov, 603-271-6803

Who can you contact about environmental health or exposure questions?

Jonathan Ali, Ph.D.
Toxicologist
Environmental Health Program
(603) 271-1359
Jonathan.ali@des.nh.gov

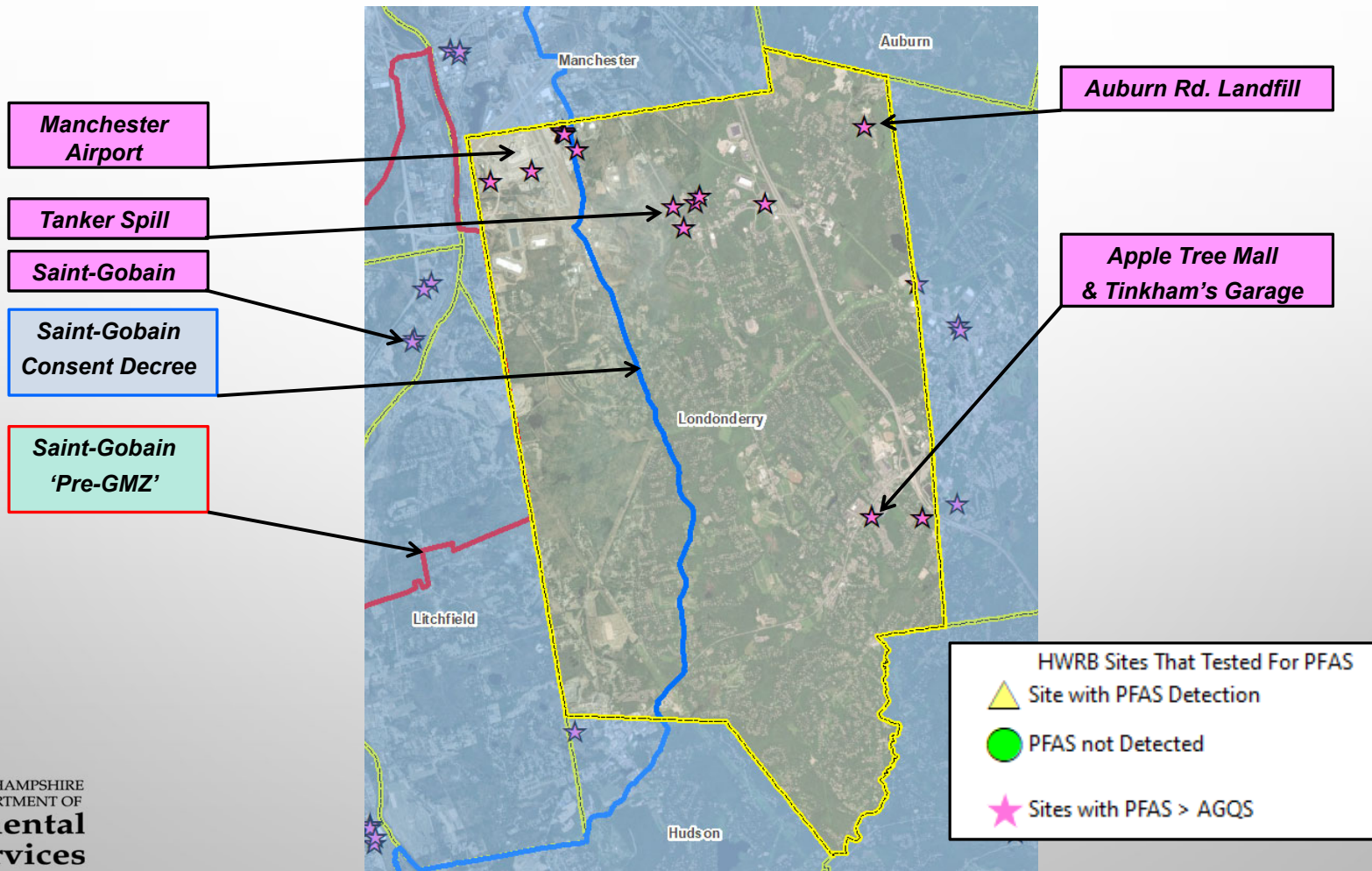


PFAS SITES, DRINKING WATER SAMPLING AND PFAS OCCURRENCE

JEFFREY MARTS, P.G.



SAINT-GOBAIN AND DISCRETE PFAS SITES

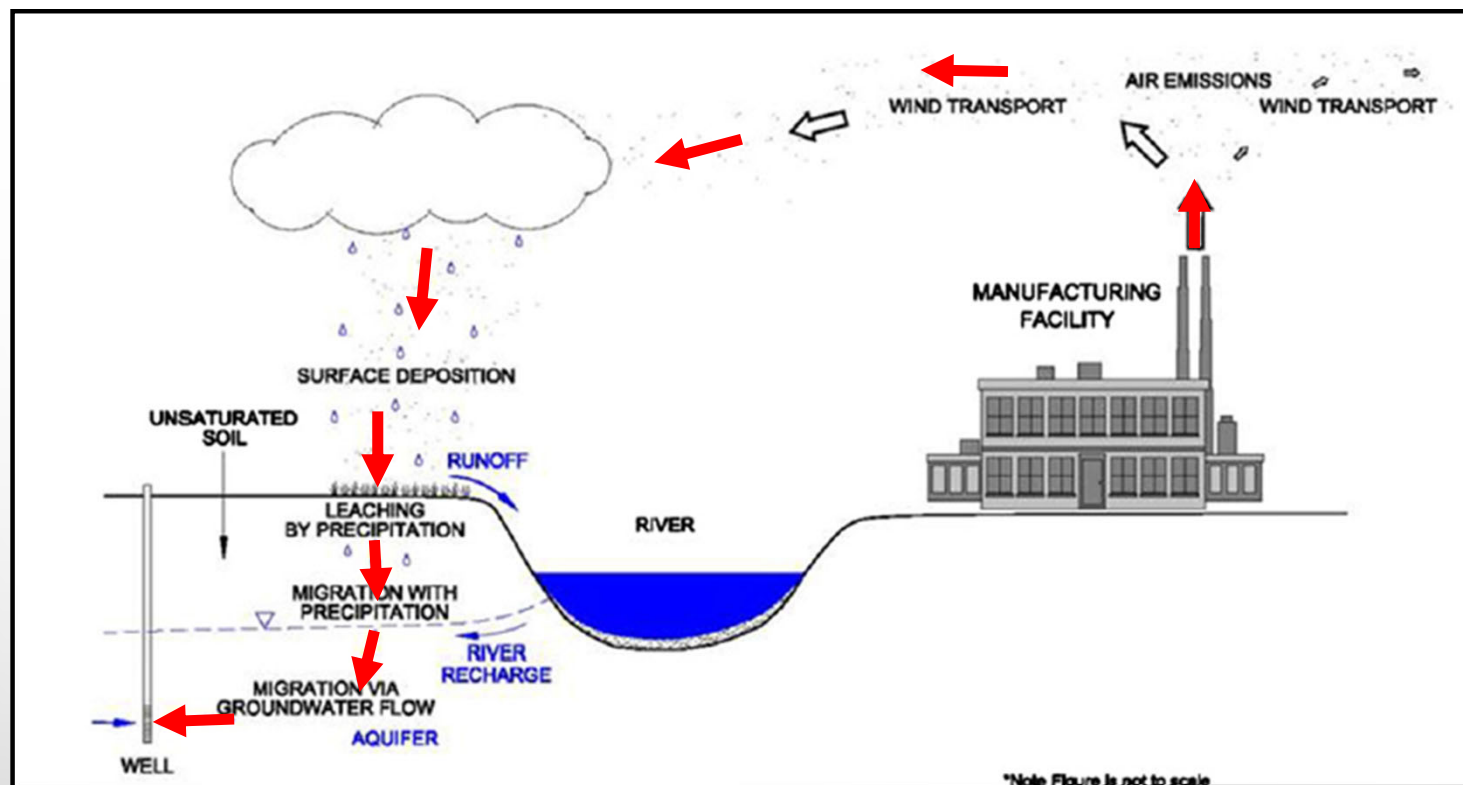


POTENTIAL RELEASES AIR EMISSIONS

**SAINT-GOBAIN IS
REQUIRED TO INSTALL AIR
POLLUTION CONTROL
EQUIPMENT FOR PFAS BY
JULY 30, 2021.**

**FOR AIR EMISSIONS QUESTIONS
CONTACT CATHERINE BEAHM,
ADMINISTRATOR**

**NHDES AIR RESOURCES DIVISION
603-271-6793**



Davis et al., 2007, *Chemosphere*

**FOR ADDITIONAL INFORMATION ABOUT THE REQUIRED AIR POLLUTION CONTROL
EQUIPMENT – SEE THESE NHDES BLOG POSTS:**

[HTTPS://WWW4.DES.STATE.NH.US/NH-PFAS-INVESTIGATION/?P=1340](https://www4.des.state.nh.us/nh-pfas-investigation/?P=1340)

[HTTPS://WWW4.DES.STATE.NH.US/NH-PFAS-INVESTIGATION/?P=1216](https://www4.des.state.nh.us/nh-pfas-investigation/?P=1216)



WATER SUPPLY WELL SAMPLING

FIVE PRIMARY SOURCES FOR PFAS SAMPLING DATA

- **Saint-Gobain** (Inside Consent Decree)
 - Responsible for evaluating extent of AGQS violations inside Consent Decree due to discharges from its Merrimack Facility.
 - Work Plan Submitted September 2019
 - 8 Addenda Submitted to NHDES
 - Bi-Weekly Updates and Bi-Monthly Reports Submitted to NHDES (Available on OneStop)
- **NHDES** – (Outside Consent Decree)
 - NHDES Sampling Outside the Consent Decree Area
 - Private Well Testing Request Form (Survey Monkey)
 - Notification Sampling (Properties within 500 feet of AGQS exceedance)
- **Town of Londonderry and Residents**
- **Discrete Release Sites** – (Responsible Parties)
- **Public Water Supplies** (Public Water System Operators)

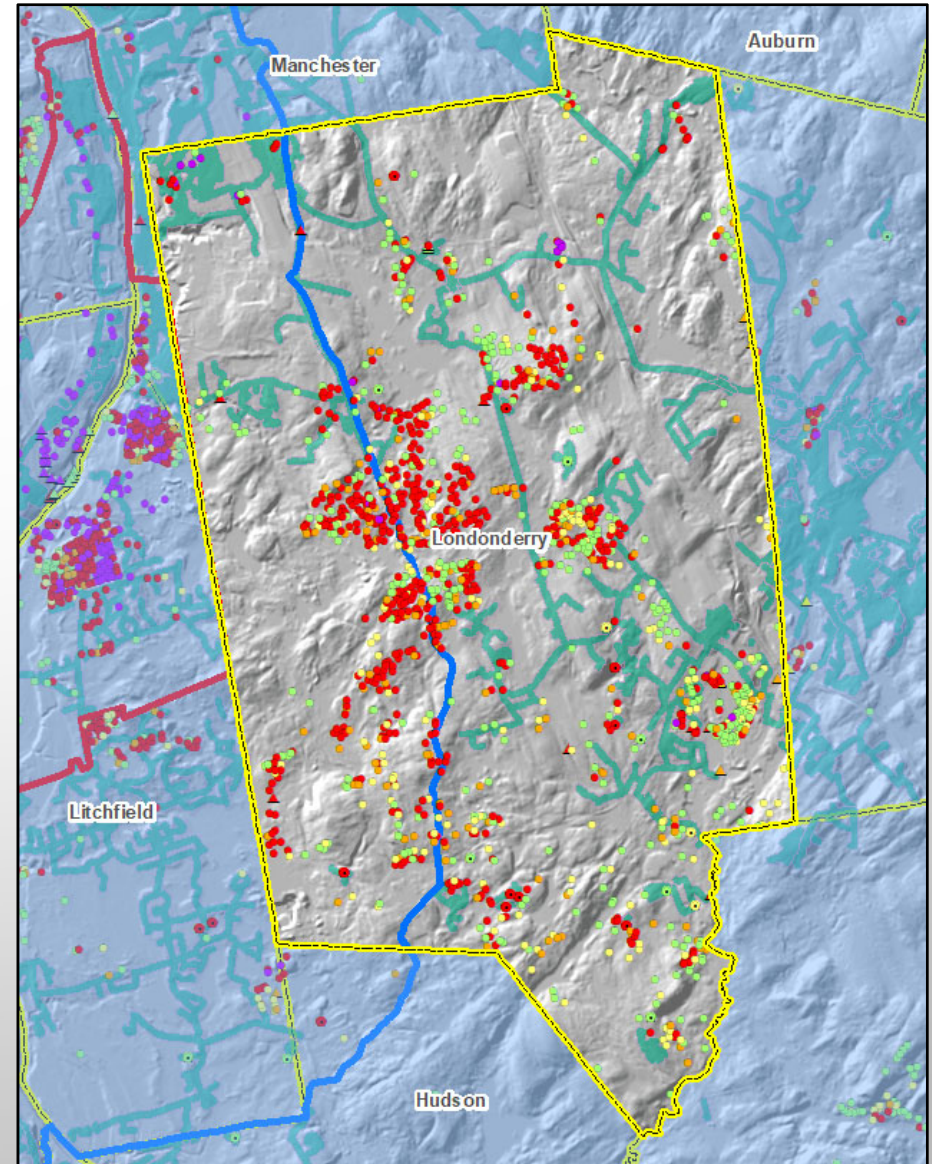
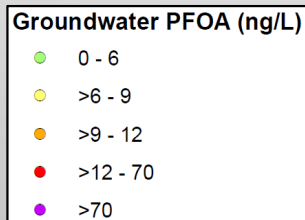


WATER SUPPLY WELL SAMPLING

Sampling Statistics as of May 19, 2021*:

- Approximately **1,340 wells sampled** (383 Inside/957 Outside Consent Decree)
- Approximately **620 samples exceed AGQS** for one or more PFAS (235 Inside/385 Outside Consent Decree)

**These total include wells (includes monitoring wells) sampled and uploaded to EMD. The totals do not include public water supply wells.*

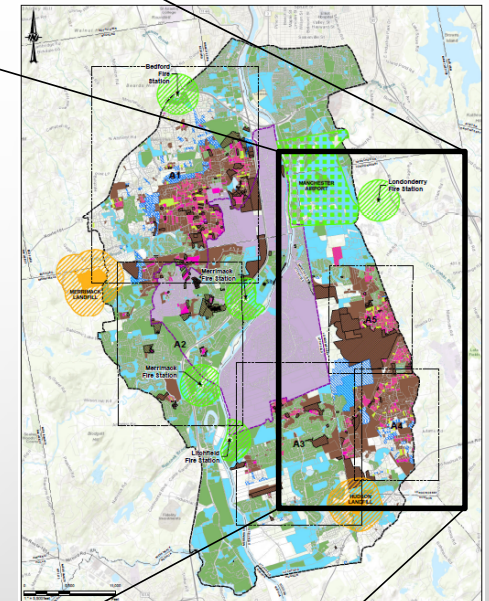
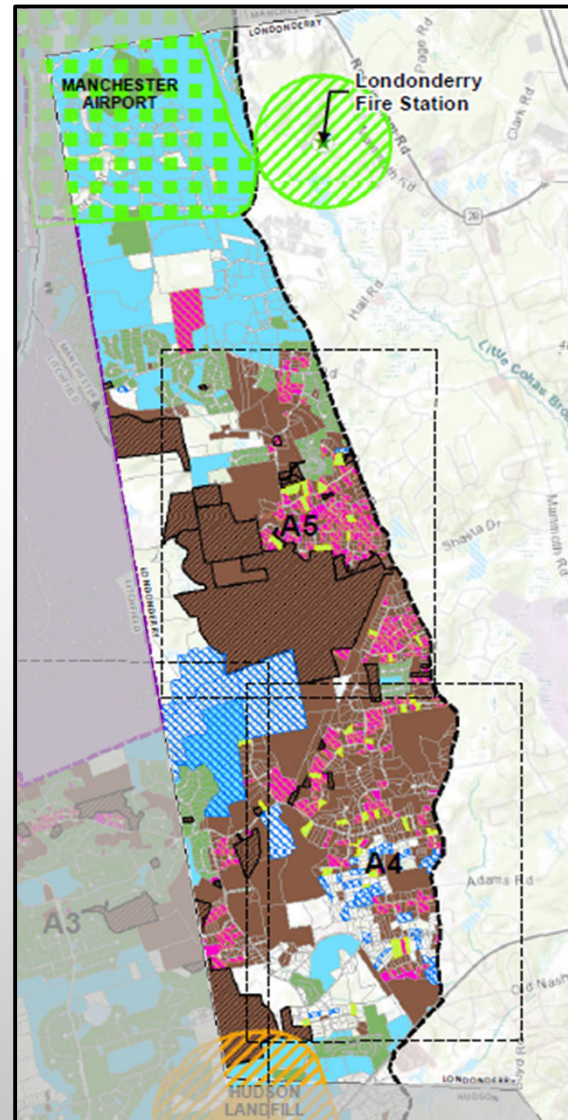


CONSENT DECREE

SAINT-GOBAIN SAMPLING PROGRAM

LEGEND

- Saint-Gobain Merrimack Facility
- ▭ Pre-GMZ Boundary (see Note 1)
- ▭ Outer Boundary (see Note 1)
- ▭ Town Boundary
- Addendum 8 Properties**
- ▭ Identified for Sampling or Confirmation of Water Supply Status
- ▭ Identified for Resampling
- Work Plan and Addendum 1, 2, 3, 4, 5, 6 and 7 Properties**
- ▭ Property Removed from Sampling Program
- ▭ Confirmed Connection to PWS
- ▭ Occupants have been Offered Bottled Water
- ▭ Identified for Sampling Where Occupants have been Offered Bottled Water
- ▭ Identified for Sampling or Confirmation of Water Supply Status
- Property-Water Main Status**
- ▭ Access to Alternate Water (if applicable) confirmed by Consent Decree
- ▭ Connection to PWS Confirmed
- ▭ Access to Water Main is Likely
- ▭ Access to Water Mains is not Likely
- ★ Potential Other Sources
- ▭ Fire Stations 2500 ft Buffer
- ▭ Airport Potential Source Boundary
- ▭ Landfill Boundary 2000 ft Buffer
- ▭ Landfill - Approximate GMZ Boundary Before AGQS



Source: Golder Associates, Inc., *Bi-Monthly Status Report - Work Plan for Sampling of Water Supply Wells and Provision of Alternate Water*, Dated April 28, 2021, Figure 1A

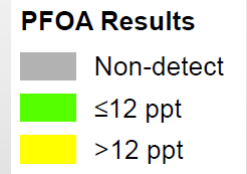
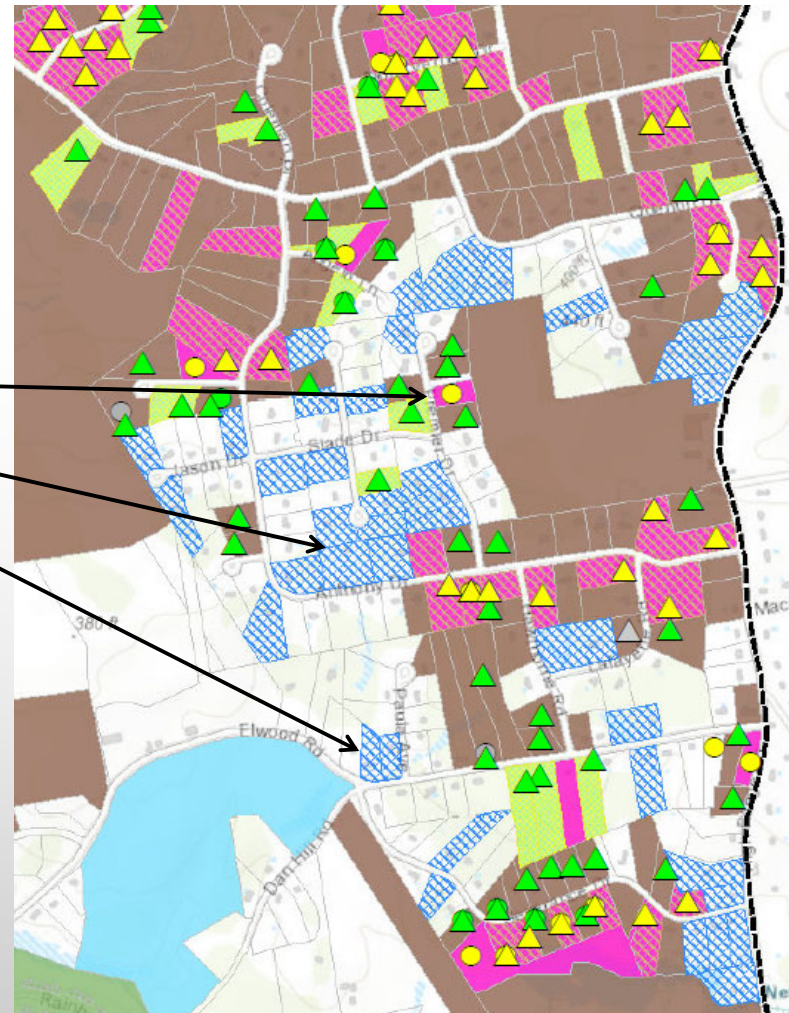


CONSENT DECREE

SAINT-GOBAIN SAMPLING PROGRAM

Why was my property selected for sampling?

- Proximity to >AGQS:
- Neighborhood-scale:
- Low Sample Density:
"Quasi-Random"



Source: Golder Associates, Inc., *Bi-Monthly Status Report - Work Plan for Sampling of Water Supply Wells and Provision of Alternate Water*, Dated April 28, 2021, Figure 1E



SAINT-GOBAIN - ALTERNATE WATER

3.0 IDENTIFICATION OF PROPERTIES FOR INTERIM ALTERNATE WATER

SGPP will provide bottled water for drinking and cooking as an interim source of alternate water to occupants of properties/parcels³ where past sampling has identified PFOA concentrations above the new AGQS. Bottled water will be used as an interim alternate water provision until:

- There is sufficient data to support and implement provision of permanent alternate water (e.g., point of use treatment system [POU], POET, or water line extension), or
- There is sufficient data to demonstrate that PFOA concentrations at a given location are below and are expected to stay below the new PFOA AGQS



Source: Golder Associates, Inc., *Work Plan for Sampling of Water Supply Wells and Provision of Alternate Water*, Dated September 30, 2019

Bedford, NH 03110

RE: **ELIGIBILITY TO RECEIVE BOTTLED WATER**

SUBJECT PROPERTY: **SEBBINS POND DR, BEDFORD, NH (BW-00)**

Monadnock Mountain Spring Water has been authorized by Saint Gobain Performance Plastics (SGPP) to provide bottled water at no charge to the occupants of the above-listed subject property. This offer is made because sampling records indicate this property is served by a well that has been tested for per- and polyfluorinated alkyl substances (PFAS), and that concentrations of certain PFAS exceed the recently revised NHDES Maximum Contaminant Level (MCL) / Ambient Groundwater Quality Standard (AGQS). **To accept this offer of bottled water at no charge, please contact Nathan Curtis of Monadnock Mountain Spring Water at 603-654-2728 ext. 210 to schedule your first bottled water delivery and to discuss future water delivery.**

EXAMPLE BOTTLED WATER LETTER

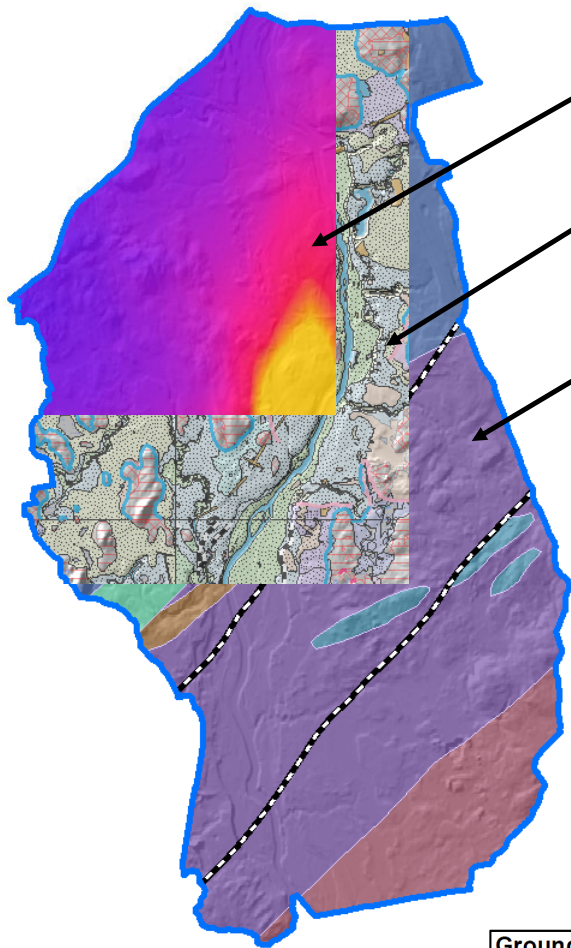


Properties Eligible for Interim Alternate Water Under the Saint-Gobain Work Plan

For properties eligible for interim alternate water under the 2019 Work Plan for Sampling of Residential Wells and Provision of Alternate Water, the results transmittal includes an eligibility letter. Next steps include the following:

- Golder provides the letters to property owner and copies to Monadnock Springs
- Property owner contacts Monadnock Springs to coordinate delivery
 - Set up routine delivery dates/amounts
- Property owner monitors inventory and notifies Monadnock Springs 2 to 3 weeks before additional water is needed
- Property owner to make sure that all occupants of the subject property, including any tenants, are made aware of the offer

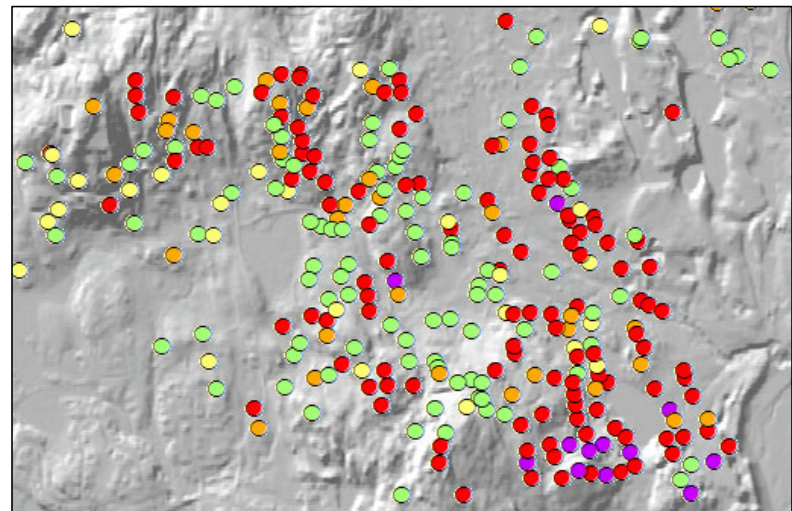
Note: This slide was submitted to NHDES by Golder Associates, Inc., on behalf of Saint-Gobain and this note is the only NHDES modification.



AIR DEPOSITION +
 SURFICIAL GEOLOGY +
 BEDROCK GEOLOGY +
 TIME-RELATED FACTORS =

(E.G. CHANGES IN CHEMICALS RELEASED, PRECURSOR TRANSFORMATIONS,
 SEASONAL VARIATION, ETC.)

COMPLEX SPATIAL DISTRIBUTION OF PFAS IN GROUNDWATER



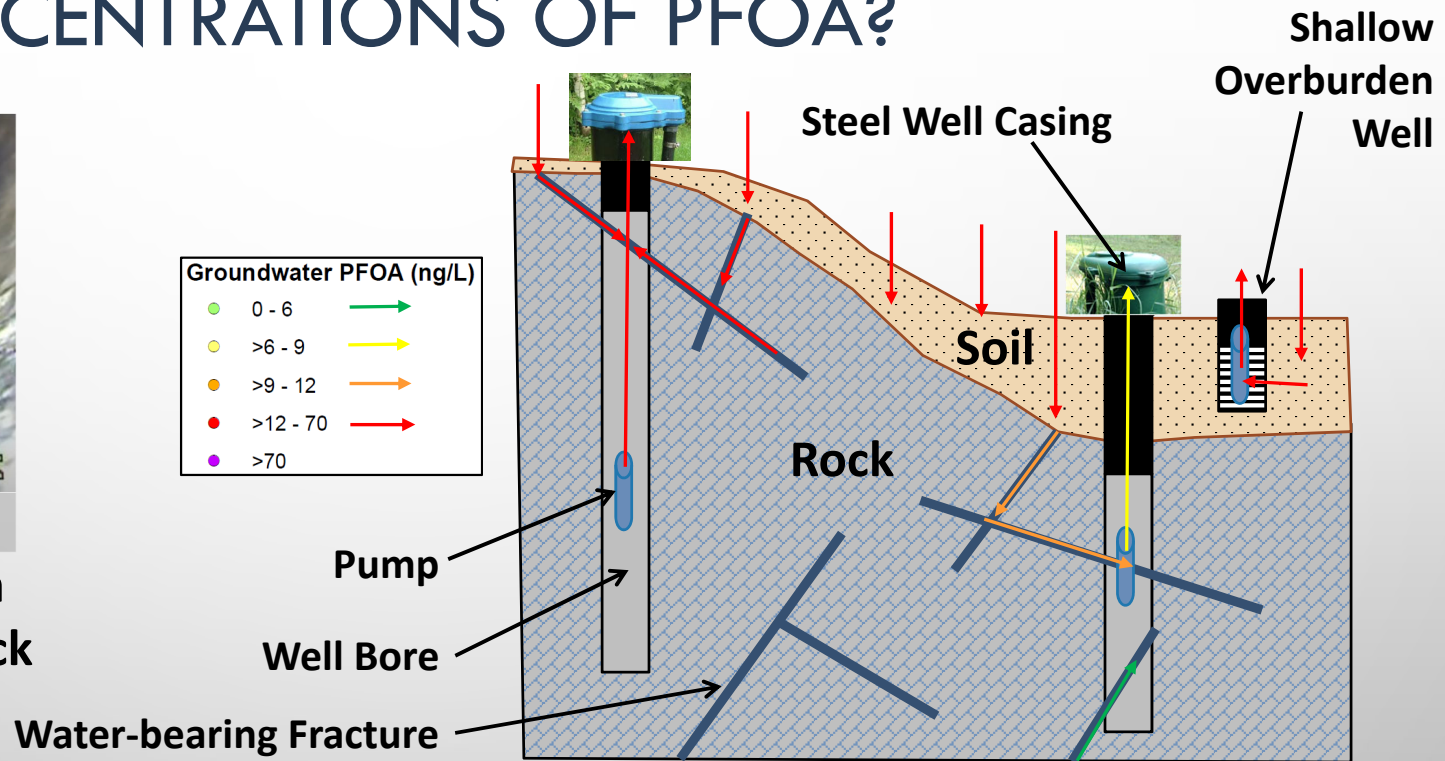
Groundwater PFOA (ng/L)	
●	0 - 6
●	>6 - 9
●	>9 - 12
●	>12 - 70
●	>70



WHY DO NEIGHBORING WELLS HAVE DIFFERENT CONCENTRATIONS OF PFOA?



Water entering a well from fractures (cracks) in the rock



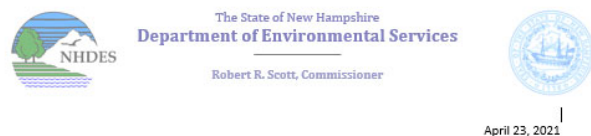
Cross Section (Profile)View

This diagram illustrates a hypothetical cross section showing potential groundwater flow pathways to water supply wells that are depicted by color-coded arrows that correspond to PFOA concentration. The downward red arrows into the soil layer represent aerial deposition of PFOA that infiltrates into the soil above bedrock.

NOTIFICATION PROGRAM

EXAMPLE LETTER

(INSIDE CONSENT DECREE AREA)



«OwnerName» «CoOwnerNam»
 «MailingAdd» «MailingA_1»
 «MailingCit» «MailingSta» «MailingZip»

Subject: GROUNDWATER CONTAMINATION NOTIFICATION PROGRAM
NOTIFICATION: 20210407_1
 «StreetAddr» «TOWN», NH

Dear Property Owner,

The New Hampshire Department of Environmental Services (NHDES) is required by statute (RSA 485-C:14-b, effective May 17, 2004) to notify owners of all property with a water supply well that is within 500 horizontal feet of a well where contamination is discovered at a concentration that exceeds state Ambient Groundwater Quality Standards (AGQS). You may disregard this notice if you are served by a public water system and do not have a drinking water well in use on your property.

One or more water supply wells within 500 feet of the property referenced in the subject line exceeds the AGQS for one or more of the following contaminants: perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), perfluorohexane sulfonic acid (PFHxS), and/or perfluorononanoic acid (PFNA). An interactive map of these and other sample locations in the NHDES Environmental Monitoring Database may be found at the following link: <https://tinyurl.com/NHPFASMap>.

Your property is located within an area described in a consent decree (Consent Decree Area) between Saint-Gobain Performance Plastics (Saint-Gobain) and NHDES. At this time, NHDES is not sampling wells in areas within the Consent Decree Area where Saint-Gobain has been identified as a party responsible for well testing due to release of PFAS from their facility located in Merrimack. Any parties who receive this letter and wish to have their well sampled for the first time are advised to contact Saint-Gobain's hotline at 1-800-742-8498. Please note that it is currently taking 3 - 5 days for them to respond to messages left on the hotline. Alternatively, please contact Saint-Gobain's environmental consultant (Golder Associates, Inc.) at NH.RWS@golder.com. Currently, Saint-Gobain is resampling wells on a limited basis where PFOA was previously detected at a concentration between 10 and 12 parts per trillion and where

www.des.nh.gov
 29 Hazen Drive • PO Box 95 • Concord, NH 03302-0095
 (603) 271-7174 • TDD Access: Relay NH 1-800-735-2964

EXAMPLE LETTER

(OUTSIDE CONSENT DECREE AREA)



Date: April 13, 2021

NHDES Environmental Monitoring Database (EMD) Station Number: MTBE_.

From: Suzanne Picone, (603) 271-2912, Suzanne.Picone@des.nh.gov

SUBJECT: GROUNDWATER CONTAMINATION NOTIFICATION PROGRAM

Notice to Owners of Property

The New Hampshire Department of Environmental Services (NHDES) is required to notify owners of drinking water wells that are located on property that is within 500 feet of a potential source of groundwater contamination. The Notification Program applies to man-made contamination such as gasoline or industrial chemicals and does not apply to naturally occurring contamination such as radon. Please refer to Table 1 below for some basic information about the detected contamination.

Please be advised NHDES has recently obtained information that contamination above Ambient Groundwater Quality Standards (AGQS) was detected in a groundwater sample collected from a location that is within 500 feet of your property in Bedford. You are being notified about the contamination because your property meets the distance criterion. **You can disregard this notice if you do not have a drinking water well.**

THIS NOTICE IS NOT INTENDED TO ALARM ANYONE – it is for informational purposes only and being sent to satisfy the notification requirement of RSA 485-c:14-b, effective May 17, 2004. Laboratory analysis of your drinking water is the only way to find out if your well has been impacted. Depending on the actions taken on behalf of the above mentioned project, you may have already been contacted for requests to sample your drinking water. If your well has been sampled as part of an ongoing investigation in the area, you will be informed of the individual analytical results by separate letter. **If your well was not previously sampled and you would like it to be, please call Sharon Lewandowski at 603-848-0713 to set up an appointment. NHDES' MIBE Remediation Bureau will sample your well at no cost to you.**

Should you choose to arrange your own sampling, Table 2 on page 2 of this letter is a list of certified laboratories for your reference. To learn more about sampling your well, go to the NHDES Website, www.des.nh.gov, and select the "get my water tested?" link in the "How Do I..." box.

Table 1 – Contaminant Information

Address of Detection:	Bedford
Contaminant:	Perfluorooctanoic acid (PFOA)
Sampling Date:	February 24, 2021
Concentration:	12.5 parts per trillion (ppt)
Ambient Groundwater Quality Standard (AGQS):	12 ppt
Sampling Point:	On-site Drinking Water Supply Well

Note: Additional contaminants or contaminants not requiring notification may also have been detected.

www.des.nh.gov
 PO Box 95, 29 Hazen Drive, Concord, NH 03302-0095
 Telephone: (603) 271-3899 Fax: (603) 271-2181 TDD Access: Relay NH 1-800-735-2964

RSA 485-C:14-B REQUIRES NHDES TO NOTIFY PROPERTY OWNERS LOCATED WITHIN 500' OF A WELL WITH AN AGQS VIOLATION.

LETTERS INCLUDE CONTACT INFORMATION IF YOU WOULD LIKE TO HAVE YOUR WELL SAMPLED



EXAMPLE LAB REPORTS

EXAMPLE TABLE FROM GOLDER ASSOCIATES SUMMARIZING LAB DATA (INSIDE CONSENT DECREE AREA)

FOUR PFAS REGULATED BY NHDES ARE HIGHLIGHTED IN YELLOW.

THE RESULTS FOR EACH COMPOUND ARE LISTED IN THE 'RESULT' COLUMN; IF THERE IS A 'U' AFTER THE NUMBER, THE COMPOUND WAS NOT DETECTED IN THE SAMPLE

IF THE RESULTS ARE GREATER (>) THAN THE VALUE LISTED IN THE 'AGQS' COLUMN, THE SAMPLE RESULTS VIOLATE STATE STANDARDS FOR THAT COMPOUND

					Sample ID	RWS-04054		
					Lab Sample ID	410-19420-1		
					Sample Collection Date	11/02/2020 11:05		
Analyte ¹	Analyte Acronym	CAS ID	Unit	AGQS ²	Result	MDL	LOQ	
PFAS								
Perfluorohexanoic acid	PFHxA	307-24-4	ng/l	NS	5.7	0.47	1.9	
Perfluoroheptanoic acid	PFHpA	375-85-9	ng/l	NS	7.3	0.47	1.9	
Perfluorooctanoic acid	PFOA	335-67-1	ng/l	12	66	0.47	1.9	
Perfluorononanoic acid	PFNA	375-95-1	ng/l	11	0.47 U	0.47	1.9	
Perfluorodecanoic acid	PFDA	335-76-2	ng/l	NS	0.47 U	0.47	1.9	
Perfluorotridecanoic acid	PFTrDA	72629-94-8	ng/l	NS	0.47 U	0.47	1.9	
Perfluorotetradecanoic acid	PFTeDA	376-06-7	ng/l	NS	0.47 U	0.47	1.9	
Perfluorobutanesulfonic acid	PFBS	375-73-5	ng/l	NS	1.8 J	0.47	1.9	
Perfluorohexanesulfonic acid	PFHxS	355-46-4	ng/l	18	2.6	0.47	1.9	
Perfluoro-octanesulfonic acid	PFOS	1763-23-1	ng/l	15	4.6	0.47	1.9	
N-ethyl perfluorooctanesulfonamidoacetic acid	NEtFOSAA	2991-50-6	ng/l	NS	0.47 U	0.47	2.8	
N-methylperfluorooctane sulfonamidoacetic acid	NMeFOSAA	2355-31-9	ng/l	NS	0.57 U	0.57	1.9	
Perfluorobutanoic acid	PFBA	375-22-4	ng/l	NS	2.9 J	1.9	4.7	
Perfluoroundecanoic acid	PFUnA	2058-94-8	ng/l	NS	0.47 U	0.47	1.9	
Perfluorododecanoic acid	PFDoA	307-55-1	ng/l	NS	0.47 U	0.47	1.9	
Perfluoropentanoic acid	PFPeA	2706-90-3	ng/l	NS	3.4	0.47	1.9	

Notes:

- 1.) Samples were submitted to Eurofins Lancaster Laboratories Environmental (ELLE) of Lancaster, Pennsylvania for analysis of per- and polyfluoro-alkyl substances (PFAS) by EPA Method 537 Version 1.1 Modified. Data presented in the table are unvalidated.
- 2.) Ambient Groundwater Quality Standards (AGQS) based on HB 1764 effective July 23, 2020. Results greater than the AGQS are bolded.

Checked by: MKS
Reviewed by: RWB

Abbreviations:

- LOQ = Limit of Quantitation
- MDL = method detection limit
- NA = not applicable
- ng/l = nanograms per liter
- NS = no standard
- "-" = not analyzed

Lab Qualifiers:

- U = Analyte result was not detected above the laboratory MDL.
- J = The result is an estimated quantity. Analyte results above laboratory MDL, but below laboratory LOQ.

IN THIS EXAMPLE, THE COMPOUND PFOA EXCEEDS THE STATE AMBIENT GROUNDWATER QUALITY STANDARD OF 12 NG/L WITH A CONCENTRATION OF 66 NG/L



EXAMPLE LAB REPORTS

EXAMPLE TABLE FROM PRIVATE TESTING LAB

FOUR PFAS REGULATED BY NHDES ARE HIGHLIGHTED IN YELLOW.

THE RESULTS FOR EACH COMPOUND ARE LISTED IN THE 'RESULT' COLUMN; IF THERE IS A 'ND' INSTEAD OF A NUMBER, THE COMPOUND WAS NOT DETECTED IN THE SAMPLE

IN THIS EXAMPLE, THE COMPOUND PFOA EXCEEDS THE STATE AMBIENT GROUNDWATER QUALITY STANDARD OF 12 NG/L WITH A CONCENTRATION OF 14.4 NG/L

Project Name: 121010452
Project Number: Not Specified

Lab ID: L2100880-01
Client ID: 121010452
Sample Location: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 136,533
Analytical Date: 01/13/21 01:29
Analyst: LV

SAMPLE RESULTS

Lab Number: L2100880
Report Date: 01/13/21

Date Collected: 01/06/21 17:00
Date Received: 01/07/21
Field Prep: Not Specified

Extraction Method: EPA 533
Extraction Date: 01/12/21 07:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 533 - Mansfield Lab						
Perfluorohexanesulfonic Acid (PFHxS)	8.32		ng/l	2.00	--	1
Perfluorooctanoic Acid (PFOA)	14.4		ng/l	2.00	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--	1
Surrogate (Extracted Internal Standard)						
				% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)				81		50-200
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)				88		50-200
Perfluoro[13C4,13C5]Butanoic Acid (M3PFBA)				88		50-200



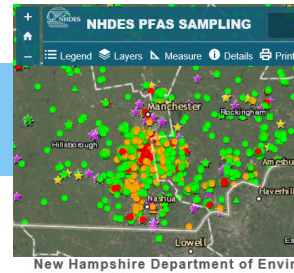
For Additional Information See NHDES PFAS Webpage:

<https://www4.des.state.nh.us/nh-pfas-investigation/>

PFAS Information On:

- Private Well Testing
- NHDES Well Testing Form
- PFAS Treatment Technology

Interactive
PFAS Map



Frequently Asked
PFAS Questions

NH PFAS Investigation

PFAS IN DRINKING WATER PFAS IN THE ENVIRONMENT MAPS & DATA PUBLIC INFORMATION RESOURCES FAQs



Welcome

Posted on September 1, 2017 by Jana Ford

Welcome. This website will be used to update interested parties on NHDES' current investigation into the presence of Per- and Polyfluoroalkyl Substances (PFAS) in New Hampshire. You can access our previous webpage for archived information: <https://www.des.nh.gov/organization/commissioner/pfoa.htm>.

ADDITIONAL RESOURCES

[Water Line Extension Projects](#)
[Investigation Documents](#)
[Be Well Informed Guide](#)
[Pease Tradeport Investigation](#)
[Archive](#)

Scroll Down
the Page to
Sign-Up for
Email Alerts
for New
Blog Posts

Scroll Down the Page to See
PFAS Blog Posts

SUBSCRIBE

Subscribe for email alerts

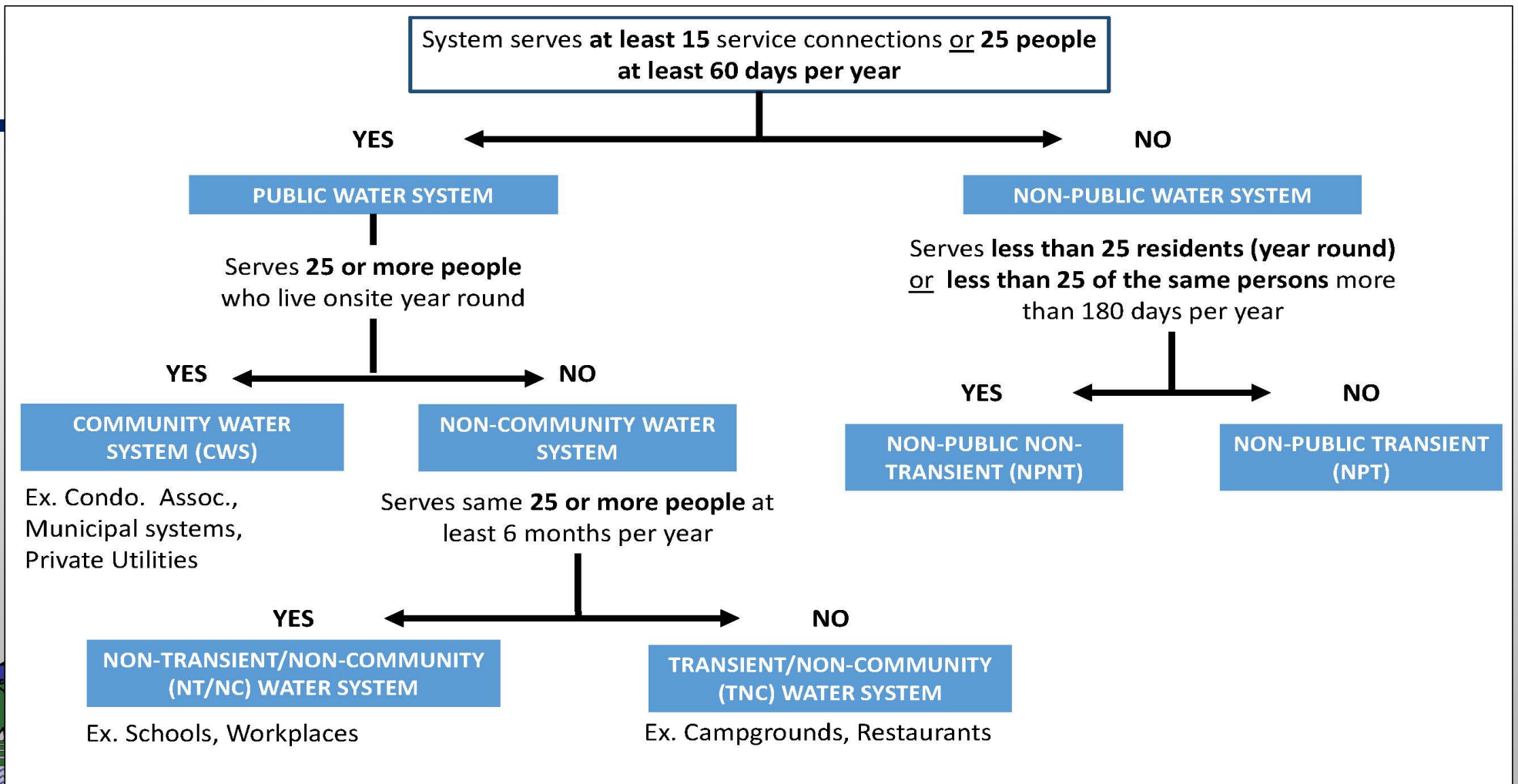


OVERVIEW OF PUBLIC WATER SYSTEMS IN LONDONDERRY

**BRANDON KERNEN, ADMINISTRATOR – DRINKING
WATER & GROUNDWATER BUREAU**

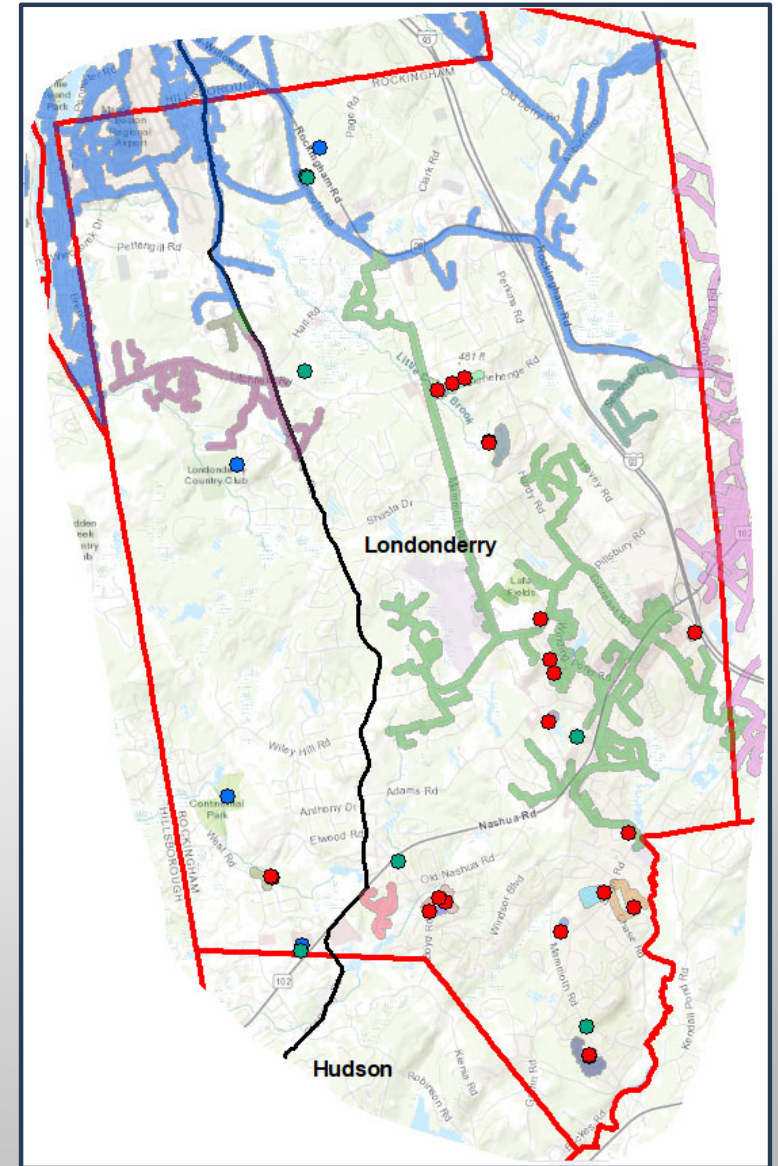


WATER SYSTEM DESIGNATIONS



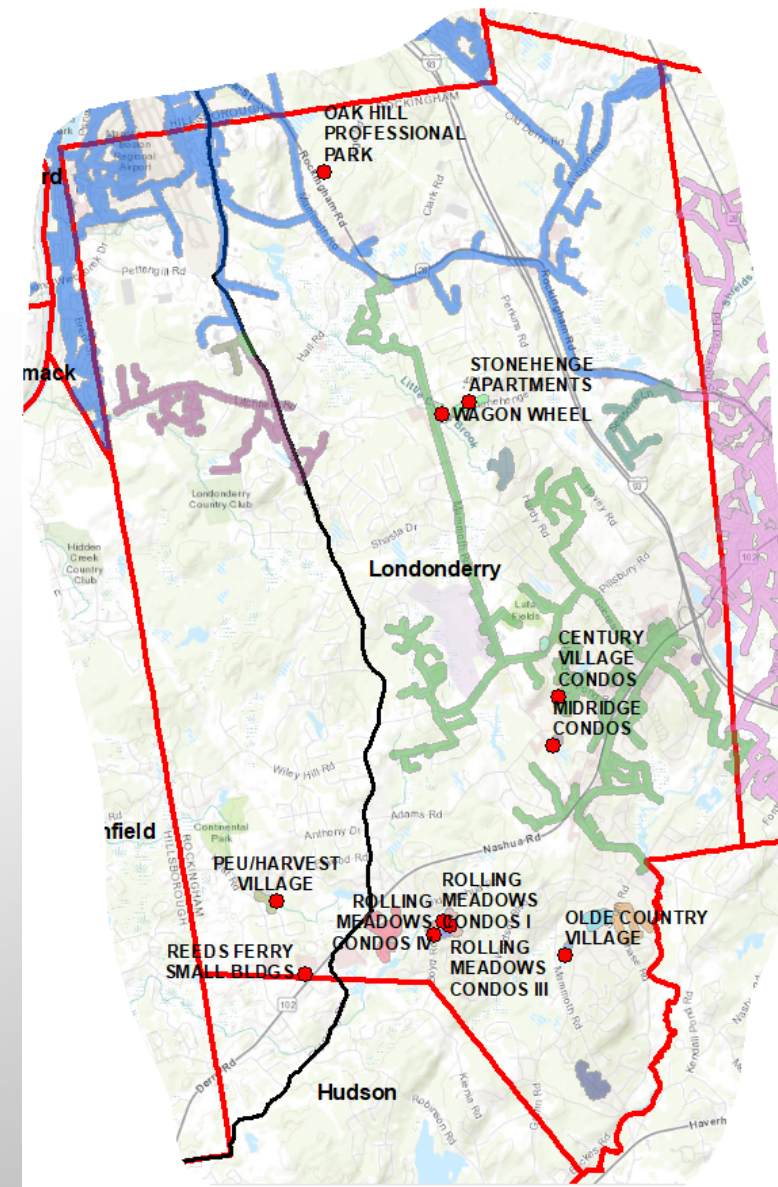
WATER SYSTEMS IN LONDONDERRY

- Standalone Community Water System (23)
- Non-transient/ Non-Community Water System (4)
- Transient/ Non-Community Water System (7)



LOCATION OF PFAS EXCEEDANCES – PUBLIC WATER SYSTEMS

WATER SYSTEM NAME	POPULATION SERVED	PFOA (ppt)
OLDE COUNTRY VILLAGE	130	27
MIDRIDGE CONDOS	100	16
CENTURY VILLAGE CONDOS	875	27
ROLLING MEADOWS CONDOS I	80	31
ROLLING MEADOWS CONDOS III	50	21
ROLLING MEADOWS CONDOS IV	42	18
PEU/HARVEST VILLAGE	175	17
WAGON WHEEL	88	15
OAK HILL PROFESSIONAL PARK	100	13
REEDS FERRY SMALL BLDGS	27	16
STONEHENGE APARTMENTS	105	24



NEW DRINKING WATER STANDARDS IN NH

- **PFAS**
 - **PFOA – 12 PPT**
 - **PFOS – 15 PPT**
 - **PFNA – 11 PPT**
 - **PFHXS – 18 PPT**
- **ARSENIC – 5 PPB (6 SYSTEMS MAY BE IMPACTED)**
- **MANGANESE - 0.1/0.3 MG/L (4 SYSTEMS MAY BE IMPACTED)**
- **7 SYSTEMS CURRENTLY REMOVE RADIONUCLIDES.**

***Other contaminants, including natural contaminants, should be included in town-wide planning.**



STANDALONE SMALL COMMUNITY WATER SYSTEMS

- OFTEN LACK FINANCIAL AND TECHNICAL CAPACITY TO OPERATE RELIABLY AND IN ACCORDANCE WITH FEDERAL AND STATE STANDARDS.
- WATER SYSTEM IMPROVEMENTS CAN BE VERY COSTLY TO THE RATE PAYERS BECAUSE OF THE ECONOMY OF SCALE.
- DO NOT PROVIDE FIRE PROTECTION.



5-MINUTE BREAK



AGENDA

- I. PFAS DISCOVERY AND NHDES APPROACH – DIRECTOR MIKE WIMSATT, WASTE MANAGEMENT DIVISION
- II. PFAS HEALTH EFFECTS – DR. JONATHAN ALI
- III. PFAS INVESTIGATION: SAMPLING, OCCURRENCE, NOTIFICATION, RESULTS – JEFF MARTS, P.G.
- IV. OVERVIEW OF PUBLIC WATER SYSTEMS – BRANDON KERNEN, P.G.
- V. HOMEOWNER ALTERNATIVE WATER OPTIONS – BRANDON KERNEN, P.G.
- VI. RELEVANT FUNDING PROGRAMS – ERIN HOLMES, P.E.
- VII. TOWN INITIATIVES – TOWN OF LONDONDERRY
- VIII. QUESTION & ANSWER SESSION



HOMEOWNER ALTERNATIVE WATER OPTIONS

**BRANDON KERNEN, ADMINISTRATOR – DRINKING
WATER & GROUNDWATER BUREAU**



RECOMMENDED STEPS FOR PRIVATE WELL OWNERS IN LONDONDERRY

- 1) TEST YOUR WATER FOR PFAS (AT LEAST PFOA, PFOS, PFNA AND PFHXS), ARSENIC, BACTERIA (TOTAL COLIFORM AND E. COLI), CHLORIDE, COPPER, FLUORIDE, HARDNESS, IRON, LEAD, MANGANESE, NITRATE/NITRITE, PH, RADON, SODIUM AND URANIUM.

[HTTPS://WWW.DES.NH.GOV/SITES/G/FILES/EHBEMT341/FILES/DOCUMENTS/LABS-PRIVATE-WELLS.PDF](https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/labs-private-wells.pdf)

- 2) ENTER RESULTS INTO NHDES' "BE WELL INFORMED" WEB APPLICATION

- OUTPUT REPORT TELLS YOU FOR EACH PARAMETER IF YOUR WATER MEETS STANDARDS
- APPLICATION IDENTIFIES STRATEGIES FOR TREATMENT PROCESSES THAT ARE APPROPRIATE FOR YOUR WATER QUALITY.



“BE WELL INFORMED”

[HTTPS://WWW4.DES.STATE.NH.US/DWITOOL/WELCOME.ASPX](https://www4.des.state.nh.us/dwitool/welcome.aspx)

The NHDES Be Well Informed Guide

PROTECT YOUR FAMILY'S HEALTH AND HOME

INFORMATION AND GUIDANCE FOR
TREATING YOUR WELL WATER



The **Be Well Informed** Guide from NHDES is designed to help you understand your water test results and, if your well water has commonly found pollutants in it, provide information about health concerns and water treatment choices. New Hampshire is fortunate to have an abundance of clean groundwater, and nearly half of New Hampshire's residents (over 500,000 people) rely solely upon domestic wells (also called "private wells") as their primary source of drinking water. While many private wells provide safe drinking water, certain pollutants like arsenic, iron and manganese are sometimes present in groundwater at levels that can affect your health and home.


NHDES recommends private well owners test their well water every three to five years for pollutants commonly found in New Hampshire's groundwater. This group of commonly found pollutants is listed in the NHDES Private Well Brochure and is referred to as the "Standard Analysis." The Be Well Informed Guide evaluates the pollutants that are part of the Standard Analysis. NHDES recommends that you have your water tested at a **NHDLAP accredited laboratory**. When you have your water tested, your test results will be summarized in the form of a **lab report**.


With your water test results in hand, click the button below to enter your test results from your laboratory report. You will receive an evaluation of your well water quality and, if advisable, water treatment options. Regardless of water treatment technology, it is essential that your treatment system is maintained on schedule in order for it to work properly.

Read This Disclaimer Before Proceeding

Information provided on this website is for informational purposes only and should not be substituted for direct consultation with a qualified water treatment professional. Other conditions or factors related to your well or home not considered by this online guide may determine the most appropriate water treatment option.

[Enter Your Well Water Test Results](#)

 [DES Private Well Brochure](#)

 [Accredited Labs in NH](#)

 [NHDES Private Well Testing Program](#)

[Questions or Comments](#)

 (603) 271-2513

 dwginfo@des.nh.gov



PFAS WATER TREATMENT

- NHDES DEVELOPED A PFAS TREATMENT FACTSHEET
- POINT OF USE – “UNDER THE SINK” – DEDICATED FAUCET
 - REVERSE OSMOSIS (REMOVES PFAS & MOST OTHER CONTAMINANTS)
 - GRANULAR ACTIVATED CARBON
 - CERTAIN UNITS HAVE BEEN TESTED AND SHOWN TO REMOVE PFAS TO NON-DETECT LEVELS
 - CERTAIN FAUCET, WATER PITCHER, REFRIGERATOR BASED FILTERS LIKELY REDUCE BUT DO NOT REMOVE PFAS TO NON-DETECT LEVELS.
- POINT-OF-ENTRY TREATMENT
 - GRANULAR ACTIVATED CARBON - NOT AN “OFF-THE-SHELF” PRODUCT
 - RADON BUILD-UP IN GRANULAR ACTIVATED CARBON NEEDS TO BE ADDRESSED
 - DOES NOT REMOVE OTHER COMMON CONTAMINANTS IN WELL WATER



TREATMENT AND TESTING RESOURCES

RESOURCES ARE AVAILABLE FOR:

- GUIDANCE ON TESTING YOUR WATER FOR PFAS AND A LIST OF LABORATORIES
 - [HTTPS://WWW4.DES.STATE.NH.US/NH-PFAS-INVESTIGATION/WP-CONTENT/UPLOADS/2019/06/PFOA-TESTING-LABS.PDF](https://www4.des.state.nh.us/nh-pfas-investigation/wp-content/uploads/2019/06/pfoa-testing-labs.pdf)
- PFAS TREATMENT - [HTTPS://WWW4.DES.STATE.NH.US/NH-PFAS-INVESTIGATION/?PAGE_ID=171](https://www4.des.state.nh.us/nh-pfas-investigation/?page_id=171)
 - DESCRIPTION OF TREATMENT OPTIONS AND TECHNOLOGY
 - LINKS TO NSF CERTIFIED EQUIPMENT
 - LINKS TO USEPA AND MINNESOTA STUDIES ON TREATMENT UNITS



RELEVANT FINANCIAL ASSISTANCE PROGRAMS FOR PUBLIC WATER SYSTEMS

ERIN HOLMES, P.E. - DWGTF ADMINISTRATOR



PFAS CONTAMINATION FINANCIAL ASSISTANCE TAKE AWAY

1. CURRENTLY ESTABLISHED FINANCIAL ASSISTANCE PROGRAMS TARGET VARIOUS TYPES OF PUBLIC WATER SYSTEMS AS WELL AS SCHOOLS AND CHILD CARE CENTERS
2. FINANCIAL ASSISTANCE RANGES FROM STUDIES TO ASSIST WITH DECISION MAKING, DESIGN SERVICES, AND INFRASTRUCTURE PROJECTS SUCH AS TREATMENT, NEW SUPPLY OR INTERCONNECTION
3. FEDERAL STIMULUS FUNDING MAY BECOME AVAILABLE
4. CURRENTLY NO ESTABLISHED FUNDING MECHANISM FOR PRIVATE WELLS

**BOTTOM LINE – CONTACT AMY ROUSSEAU
(AMY.ROUSSEAU@DES.NH.GOV) OR
ERIN HOLMES (ERIN.HOLMES@DES.NH.GOV)**



PRIMARY FUNDING SOURCES

- **PFAS REMEDIATION LOAN FUND (PFAS RLF)**

- LOW-INTEREST LOAN WITH POTENTIAL FOR PRINCIPAL FORGIVENESS (IF ELIGIBLE) AND CONTINGENT REIMBURSEMENT FOR ADDRESSING PFAS CONTAMINATION
- \$50 M APPROPRIATION THROUGH ENABLING STATUTE (RSA 485-H)
- APPLIES TO ELIGIBLE PUBLIC WATER SYSTEMS WITH A PFAS MCL EXCEEDENCE LOOKING TO ADD TREATMENT OR ALTERNATIVE OPTIONS SUCH AS A NEW SOURCE OR INTERCONNECTION

- **DRINKING WATER AND GROUNDWATER TRUST FUND (DWGTF)**

- LOW-INTEREST LOAN AND GRANTS FOR DRINKING WATER INFRASTRUCTURE PROJECTS
- ESTABLISHED UNDER RSA 485-F WITH APPROXIMATELY \$153 M IN CORPUS ACCOUNT (AS OF DEC. 31, 2020)
- SPECIAL PROJECT ASSISTANCE PROGRAM FOR CONTAMINATION-RELATED PROJECTS AND CONSOLIDATION STUDY ASSISTANCE PROGRAM
- FUNDING DECISIONS MADE BY 19-MEMBER DRINKING WATER AND GROUNDWATER ADVISORY COMMISSION



PFAS Treatment Design Services

- \$800,000 Appropriation
- All schools & child care centers
- Transient/Non-Transient Public Water Systems
- Reimbursement up to 26% of Total Project Cost



Drinking Water and Groundwater Trust Fund Consolidation Study Assistance Program

- \$200,000 Appropriation
- Small Community Water Systems (up to 1,000 pop. Served) and Non-Transient/Non-Community Water Systems
- \$10,000 Grant to Evaluate Treatment vs. Consolidation

PFAS Remediation Loan Fund

- \$50 M Appropriation
- Community and Non-Profit/Non-Transient Public Water Systems
- Low Interest Loan Program
- Percentage of Loan Forgiveness for Eligible Communities
- Contingent Reimbursement

Drinking Water & Groundwater Trust Fund

- \$153 M Available
- Public Water Systems (Any Size), Municipalities or any Political Sub-Division of the State
- Low Interest Loans & Grants Available
- Special Projects Assistance Program Pathway



NEW HAMPSHIRE DRINKING WATER & GROUNDWATER TRUST FUND

DEPARTMENT OF

Must Exceed PFAS MCL

REFERENCE OF RELEVANT FUNDING PROGRAM INFORMATION LINKS

- **PFAS DESIGN SERVICES** - [HTTPS://WWW4.DES.STATE.NH.US/NH-PFAS-INVESTIGATION/?PAGE_ID=1284](https://www4.des.state.nh.us/nh-pfas-investigation/?page_id=1284)
- **PFAS REMEDIATION LOAN FUND** - [HTTPS://WWW4.DES.STATE.NH.US/NH-PFAS-INVESTIGATION/?PAGE_ID=1287](https://www4.des.state.nh.us/nh-pfas-investigation/?page_id=1287)
- **DRINKING WATER AND GROUNDWATER TRUST FUND**
 - **CONSOLIDATION STUDY ASSISTANCE PROGRAM** - [HTTPS://WWW4.DES.STATE.NH.US/NH-DWG-TRUST/?PAGE_ID=1675](https://www4.des.state.nh.us/nh-dwg-trust/?page_id=1675)
 - **SPECIAL PROJECTS ASSISTANCE PROGRAM** - [HTTPS://WWW4.DES.STATE.NH.US/NH-DWG-TRUST/?PAGE_ID=1424](https://www4.des.state.nh.us/nh-dwg-trust/?page_id=1424)



AGENDA

- I. INTRODUCTIONS
- II. PFAS DISCOVERY AND NHDES APPROACH
- III. PFAS HEALTH EFFECTS
- IV. PFAS INVESTIGATION: SAMPLING, OCCURRENCE, NOTIFICATION, RESULTS
- V. **QUESTION & ANSWER SESSION**



QUESTION SESSION LOGISTICS – HOW TO AND GROUND RULES

- **HOW TO ASK QUESTIONS** - IDENTIFY THAT YOU WISH TO ASK A QUESTION BY USING THE “**QUESTION**” FUNCTION
- NHDES WILL MONITOR THE QUESTIONS” AND CALL UPON EACH ATTENDEE IN ORDER AS RECEIVED IN THE QUEUE
- YOU WILL BE IDENTIFIED, AND UNMUTED, AND INVITED TO ASK YOUR QUESTION TO THE PANEL
 - **NOTE: NHDES WILL UNMUTE YOU ON THE WEBINAR, BUT YOU WILL ALSO NEED TO UNMUTE YOURSELF**



QUESTION SESSION LOGISTICS – HOW TO AND GROUND RULES (CONTINUED)

- WHEN YOU ARE INVITED TO SPEAK, PLEASE STATE **YOUR FIRST AND LAST NAME**
- ATTENDEES WILL INITIALLY BE LIMITED TO 3 MINUTES TO ASK THEIR QUESTIONS IN ORDER TO ACCOMMODATE EVERYONE IN THE QUEUE
- ATTENDEES MAY RE-ENTER THEIR INFORMATION INTO THE “QUESTION” FUNCTION TO BE ADDED BACK INTO THE QUEUE



HOW TO USE QUESTION FUNCTION

ATTENDEES CAN PUT THEIR NAME IN THE QUEUE BY DOING THE FOLLOWING:

- ON THE DASHBOARD, CLICK ON THE “QUESTION” BOX
- WHERE IT SAYS [ENTER QUESTION FOR STAFF] PLEASE TYPE:
 - FIRST AND LAST NAME
 - TOWN OF RESIDENCE
 - PLEASE **DO NOT TYPE YOUR QUESTION**
- PRESS “SEND”

For Assistance Contact:

Mary Butow
Mary.Butow@DES.NH.Gov
(603) 271-8693

