

# Maine Association of Realtors



## PFAS in Maine

*February 27, 2023*

Susanne Miller, Director  
Bureau of Remediation & Waste Management

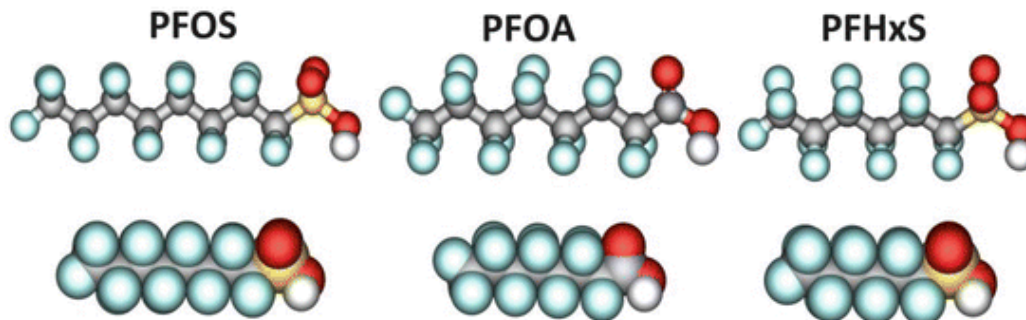
MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION

*Protecting Maine's Air, Land and Water*

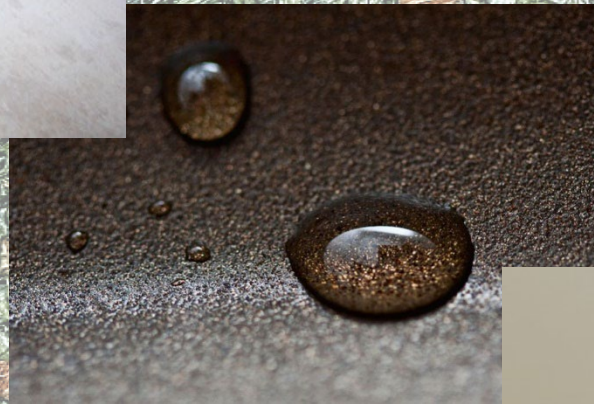
# What is PFAS?

**PFAS = per- and polyfluoroalkyl substances**

- Defined in 32 MRS §1732, 38 MRS §1612 = one fully fluorinated carbon atom
- C-F bond is very difficult to break – “forever chemicals”
- Used in many consumer and commercial products; ubiquitous in environment







# Why are we Concerned About PFAS?



Increased cholesterol levels



Decreased vaccine response in children



Small decreases in infant birth weights



Increased risk of kidney or testicular cancer



Changes in liver enzymes

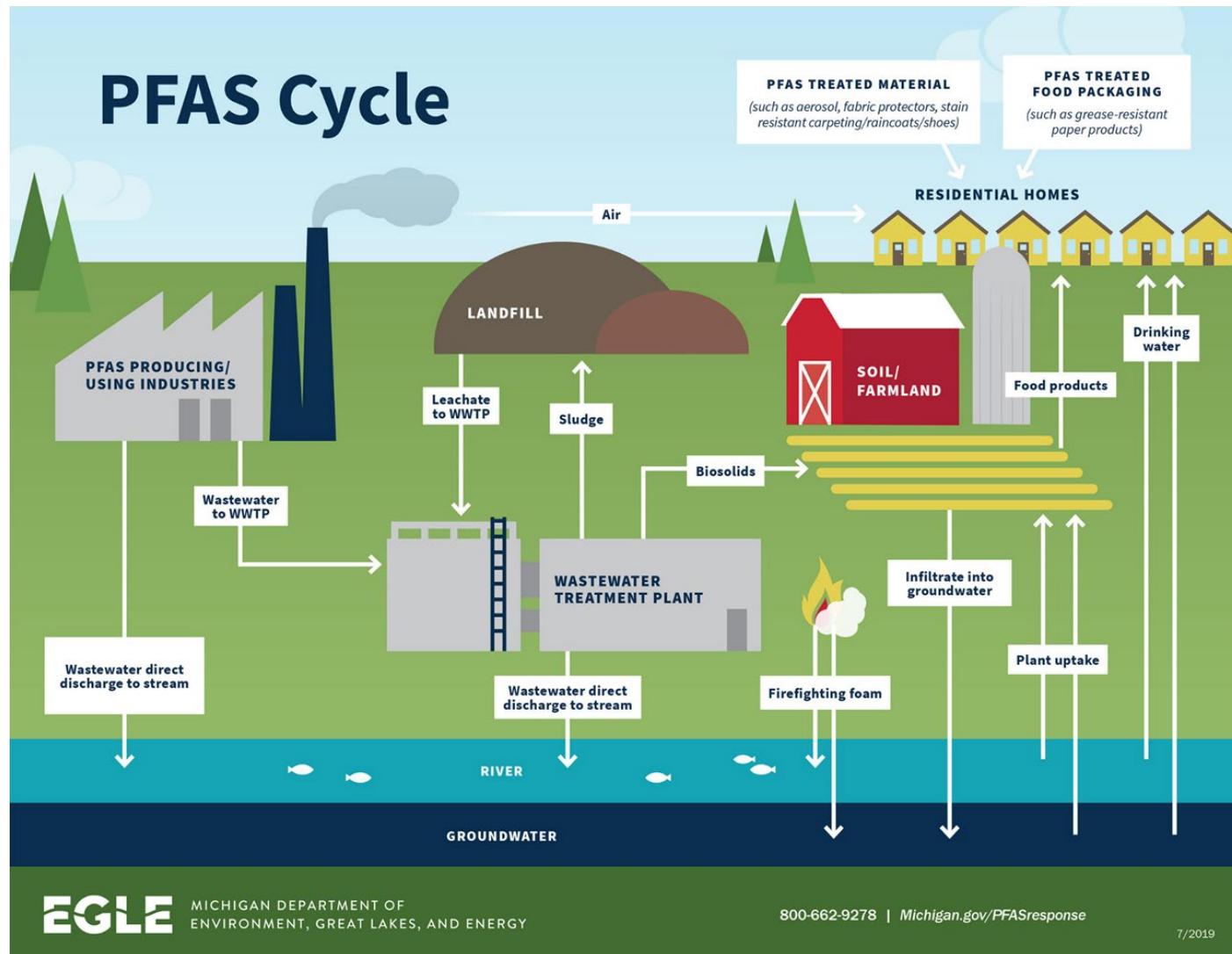


Increased risk of high blood pressure or pre-eclampsia in pregnant women

*Taken from the Agency for Toxic Substances and Disease Registry (U.S. CDC) - [Potential health effects of PFAS chemicals](https://www.cdc.gov/ATSDR/pfas/pfas.html) | [ATSDR \(cdc.gov\)](https://www.cdc.gov/ATSDR/pfas/pfas.html)*



# PFAS are Found in Maine's Soils, Surface and Ground Waters, Plants and Wildlife



# Removing PFAS from the Environment

## Treatment, Destruction, Disposal Technologies

### Destruction

- Gasification and Pyrolysis \*
- Incineration \*
- Super critical water oxidation (SCWO) \*
- Electrochemical Oxidation \*
- Mechanochemical degradation \*
- Hydrothermal Processing \*
- Continuous Flow Liquid-Phase Plasma Discharge \*

### Treatment & Concentration

- Granular Activated Carbon, (GAC)
- Ion Exchange (IX)
- Reverse Osmosis
- Foam fractionation
- Phytoremediation \*

### Disposal & Beneficial Use

- Landfilling
- Land application
- Composting\*

\*Starred items are still in research stage and not ready for full scale operation



# PFAS Soil and Groundwater Investigation

Public Law 2021, Chapter 478: *An Act To Investigate PFAS Substance Contamination of Land and Groundwater*

- Effective October 18, 2021
- DEP must establish and implement a soil and groundwater evaluation to identify contamination derived from licensed land applications of sludge and septage
- Half of all sites must be completed by 2024; all by 2025



# Standards and Screening Levels

- Maine's interim drinking water standard  
**20 ppt for sum of 6 PFAS**  
(PFOA, PFOS, PFNA, PFHxS, PFHpA, PFDA)
- EPA Health Advisories

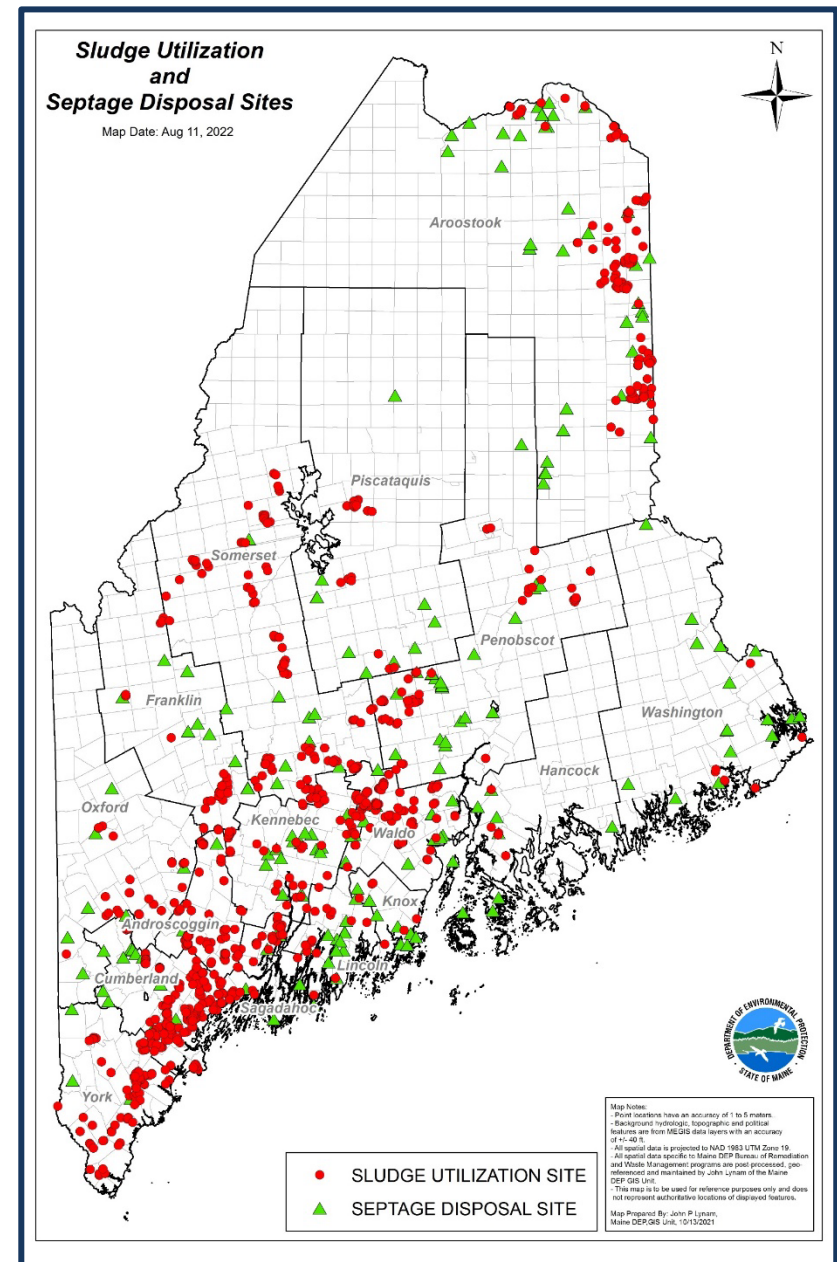
PFAS Compound	New Health Advisories
PFOA	0.004 ppt (Interim)
PFOS	0.02 ppt (Interim)
GenX	10 ppt (Final)
PFBA	2,000 ppt (Final)
For PFOA and PFOS the interim advisory falls below current laboratory reporting levels. Current laboratory methods can't reliably determine if PFOA or PFOS are present at these interim levels	





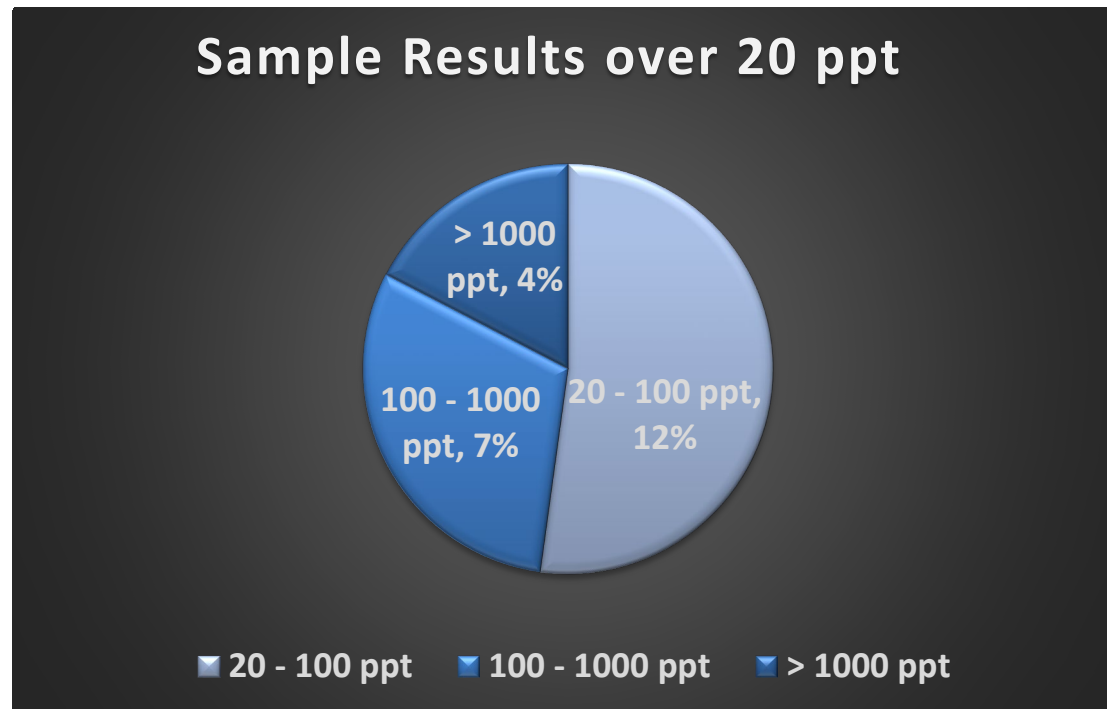
# PFAS Investigation

- 1,037 sites
- Sites often include multiple fields/locations crossing municipal boundaries, lots of acreage
- Some sites were used by multiple generators – and sludge from multiple sources may have been applied to one location
- Land ownership and lot size changes



# PFAS Investigation – Groundwater

- 77% groundwater wells sampled lower than Maine's interim drinking water standard
- Remaining 23% as follows:



# PFAS Investigation - Soil

- ~ 400 **soil samples** collected so far
- No enforceable PFAS soil standard or one number to explain what PFAS in soil levels mean
- Screening levels typically based on use and function of soil
- Screening levels for residential use, recreational use, redevelopment
- DEP does not have screening levels for agricultural use



# Self-Sampling for PFAS

- Homeowners can self sample – but check to see if DEP already has sampled area – cost/sample ~ \$300-\$500
- Guidance available at DEP webpage

<https://www.maine.gov/dep/spills/topics/pfas/index.html>

## Per- and Polyfluoroalkyl Substances (PFAS)

Click on the topics below to expand each section.

[What is PFAS? +](#)

[Where is PFAS in Maine? +](#)

[What is Maine doing about PFAS? +](#)

[PFAS in Products +](#)

[What is EPA doing about PFAS? +](#)

[How can PFAS be removed from the environment? +](#)

[Hide: Data and Guidance -](#)

[Maine PFAS data \(2007-2022\)](#) as of November 22, 2022. For questions regarding this data, please email [pfas.dep@maine.gov](mailto:pfas.dep@maine.gov)

[Maine DEP PFAS Investigation Map \(Formerly the "Septage and Sludge Map"\)](#). Please direct any feedback to [pfas.dep@maine.gov](mailto:pfas.dep@maine.gov)

[PFAS Screening Levels June 2021](#)

[PFAS Water Sampling for Homeowners](#)

[PFAS Soil Sampling for Homeowners](#)

[Information for PFAS Self-testers](#)





# PFAS and Seller Disclosures

- Disclosure for PFAS is not specifically required
- 33 M.R.S. § 173 requires the seller to disclose:
  - Malfunctions of a private water supply system
  - The date of the most recent water test
  - Whether the seller has experienced a problem such as an unsatisfactory water test or a water test with notations

**SELLER'S PROPERTY DISCLOSURE**

Under Maine Law, certain information must be made available to buyers prior to or during preparation of an offer. This statement has been prepared to assist prospective buyers in evaluating this property. This disclosure is not a warranty of the condition of the property and is not part of any contract between the Seller and any buyer. The Seller authorizes the Listing Broker in this transaction to disclose the information in this statement to other real estate licensees and to prospective buyers of this property. The Seller agrees to notify the Listing Broker promptly of any changes in the information and this form will be appropriately changed with an amendment date. Inspections are highly recommended.

NOTE: DO NOT LEAVE ANY QUESTIONS BLANK. WRITE N/A (NOT APPLICABLE) OR UNKNOWN IF NEEDED.

PROPERTY LOCATED AT: \_\_\_\_\_

**SECTION I. WATER SUPPLY**

TYPE OF SYSTEM: ☐ Public ☐ Private ☐ Seasonal ☐ Unknown  
☐ Drilled ☐ Dug ☐ Other \_\_\_\_\_

MALFUNCTIONS: Are you aware of or have you experienced any malfunctions with the (public/private/other) water system?  
Pump: ☐ Yes ☐ No ☐ N/A Quantity: \_\_\_\_\_ ☐ Yes ☐ No ☐ Unknown  
Quality: ☐ Yes ☐ No ☐ Unknown

If YES to any question, please explain in the comment section below or with attachment.

WATER TEST: Have you had the water tested? \_\_\_\_\_ ☐ Yes ☐ No  
IF YES: Date of most recent test: \_\_\_\_\_ Are test results available? \_\_\_\_\_ ☐ Yes ☐ No  
To your knowledge, have any test results ever been reported as unsatisfactory or satisfactory with notation? ☐ Yes ☐ No  
IF YES, are test results available? \_\_\_\_\_ ☐ Yes ☐ No  
What steps were taken to remedy the problem? \_\_\_\_\_

• IF PRIVATE:  
INSTALLATION: Location: \_\_\_\_\_  
Installed BY: \_\_\_\_\_ DATE of Installation: \_\_\_\_\_  
What is the source of your information: \_\_\_\_\_  
USE: Number of Persons currently using system? \_\_\_\_\_  
Does system supply water for more than one household? \_\_\_\_\_ ☐ Yes ☐ No ☐ Unknown

COMMENTS: \_\_\_\_\_



# PFAS and Property Transactions

PFAS can impact real estate transactions!

- Concerns about safe drinking water
- Concerns about soil (gardening, pets, children)
- General uncertainty
- Focus conversations on intended uses of property – this can help!

DEP mapping tool can help you know where investigation has been and will go

- Only 1 year of data so far



# PFAS and Drinking Water

- Find out what the source of drinking water is for your seller/buyer
  - If public water system or public water line – contact the [Maine Drinking Water Program](#) for assistance (or local water utility)
  - If the water is a private drinking water well - water filtration treatment systems are proven effective technology
    - Requires installation
    - Ongoing filter changeouts
    - Monitoring to determine frequency of changeouts
    - Added cost



# Drinking Water Filtration Systems

- Granular Activated Carbon (GAC) Systems
- State's contract rates – may be more individually

## Average Costs of Filtration Installations Per Residence

Filter System Installation (One time)	\$3,400
Pre-Treatment Systems (One time only as needed)	\$3,500
Sheds (One time only as needed)	\$8,700
Filter Changeouts * (Annual cost per changeout)	\$1,500
Routine Sampling ** (Annual cost)	\$3,500

- Changeouts – 1- 4 times/year – depending on level of PFAS detected
- Sampling – determined after several months





# PFAS and Soil

- Find out how the seller/buyer intend to use property – exposure pathways
  - Vegetable vs. ornamental gardening
  - Children and/or pets at play
  - Planned agricultural use
  - Other?
- Look at DEP mapping tool to see if property near investigation area
- Homeowners may self-sample for soil using guidance at <https://www.maine.gov/dep/spills/topics/pfas/index.html>
- Questions about exposures should be directed to Maine CDC



# DEP Tools and Resources



MAINE DEPARTMENT OF  
Environmental Protection

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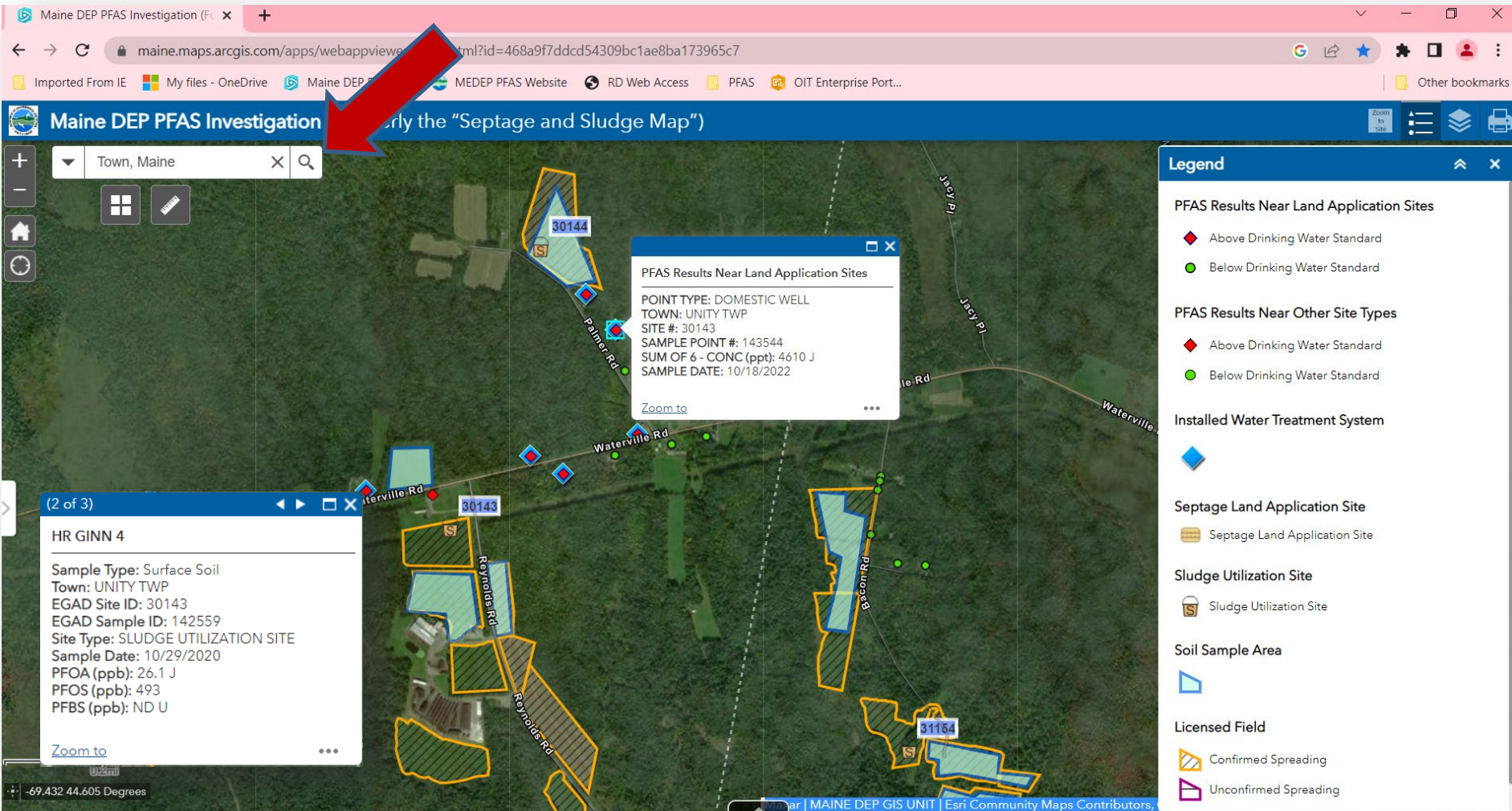
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- [Data and Guidance](#) +
- [Updates and Timeline](#) +
- [More Information](#) +







# Maine DEP PFAS Investigation Map





Contact:

[pfas.dep@maine.gov](mailto:pfas.dep@maine.gov)

[\*www.maine.gov/dep\*](http://www.maine.gov/dep)

