

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

# Private Water Advisory Council

Schmeekle Reserve Visitor's Center, Stevens Point, WI

April 19, 2023 | [DNR.WI.GOV](http://DNR.WI.GOV)





# Meeting Agenda

1. **School Wells (Daycare) Regulation Process – Jennifer Peth, DGPW (30 min)**
2. **DNR PFAS Study Update – Matt Silver, DGGW (45 min)**
3. **Welcome and Introductions (5 min)**
4. **PWAC Board Membership (10 min)**
  - a. Thank you to outgoing members
  - b. Review member terms
  - c. New members
5. **WGNHS Updates (Pete Chase) (30 min)**
6. **DNR Updates (75 min)**
  - a. Private Drinking Water Proposals in Governor’s Budget (Nessman)
  - b. Staffing Updates (Nessman/Steinke)
  - c. Compliance and Enforcement activities (Steinke/Fetter)
  - d. NR 812 Revisions (Fetter)
    - i. Board Order DG-07-22(E) and DG-08-22 update (Type IL Cement)
    - ii. NR 812 Subchapter III
      1. Draft Scope Statement & timeline
  - e. NR 146 Revisions (Gundrum)
    - i. Draft Scope Statement
  - f. Licensing & Continuing Education (Gundrum)
    - i. License Exams Update (5 minutes)
    - ii. Pending Private Water Licensing Surveys (10 minutes)
      1. Online Renewals Process
      2. Online Continuing Education vs In-Person
      3. Old Business (15 min)
  - g. Driller Track to Licensing (“road map”) program (Jeff Beiriger/All)
7. **New Business (30 min)**
  - a. Bacteria Sampling after well is drilled, but before pump installation; why? (Beiriger/All)
8. **[January 2023 Meeting Notes](#)**
9. **Future Meeting Dates**
  - a. October 2023 – WGNHS Research Collections & Educational Center, Mt. Horeb (or GEF2, Madison)
  - b. January 2024 – WWA Convention, Wisconsin Dells



# Regulating wells at TN and NN public water system day cares/schools before and after July 1, 2020 chapter NR 812, Wis. Adm. Code revision



Jennifer Peth – Northern Region Public Water Supply Specialist Senior

# **REVIEW** - NON-COMMUNITY PUBLIC WATER SYSTEM DEFINITIONS

- TRANSIENT PUBLIC WATER SYSTEM (TN)
  - **NR 809.04(89)** “Transient non-community water system” or “TNCWS” means a non-community water system that serves at least 25 people at least 60 days of the year but does not regularly serve at least 25 of the same persons over 6 months per year.
    - **Note:** Examples of transient non-community water systems include those serving taverns, motels, restaurants, churches, campgrounds and parks.
- NON-TRANSIENT PUBLIC WATER SYSTEM (NN)
  - **NR 809.04(58)** “Non-transient non-community water system” or “NTNCWS” means a non-community water system that regularly serves at least 25 of the same persons over 6 months per year.
    - **Note:** Examples of non-transient non-community water systems include those serving schools, day care centers and factories.

# TRANSIENT NON-COMMUNITY PUBLIC WATER SYSTEM MONITORING REQUIREMENTS – DAY CARE FACILITIES – ARE DEFINED AS SCHOOLS NR 812.07 (94) – REFER TO SLIDE 8



## TRANSIENT PUBLIC WATER SYSTEM (TN)

Non-community water system that *serves at least 25 people at least 60 days of the year* but does not regularly serve at least 25 of the same persons over 6 months per year –

Examples are seasonal YMCA and migrant camps.

- Quarterly bacteria sampling (Day care facilities can never be reduced lower than quarterly bacteria monitoring)
- Annual nitrate

**NON-TRANSIENT NON-COMMUNITY PUBLIC WATER SYSTEM MONITORING REQUIREMENTS – DAY CARE/SCHOOL FACILITIES** *serves at least 25 of the same persons over 6 months per year*

Contaminant	Standard Monitoring	Reduced Monitoring	Maximum Reduced Monitoring
Coliform Bacteria	1 sample quarterly	1 sample quarterly	1 sample quarterly
Nitrate	1 annual sample	1 annual sample	1 annual sample
Inorganic Contaminants (IOCs)	Once every 3 years	Once every 3 years	Once every 3 years
Volatile Organic Contaminants (VOCs)	1 sample each quarter for a minimum of 4 quarters	1 annual sample	1 sample every 3 or 6 years
Synthetic Organic Contaminants (SOCs)	Once every 3 years	1 sample every 3 or 6 years	1 sample every 3 or 6 years
Lead and Copper	5 samples collected during two six-month periods (i.e., Jan.-June & July-Dec.)	<u>Day care</u> - One set of 5 annual samples collected during June-Sept. <u>School</u> - One set of 5 annual samples collected during Sept.	<u>Day care</u> - One set of 5 samples collected once every three years during June-Sept. <u>School</u> - One set of 5 or 10 samples, based on population, collected once every three years during Sept.
Manganese	1 sample upon system activation	1 sample along with the full IOC panel every 9 years	1 sample along with the full IOC panel every 9 years
PFOA/PFOS	1 sample each quarter for a minimum of 4 quarters - PWS may receive a waiver after 1 ND sample or 2 NDs. Surface water systems are required to have a minimum of 2 samples.	Detection < 2.0 ng/l - 3 years. Detection $\geq 2.0 \leq 10$ ng/l and HI (Health Index) $\leq 0.5$ - 3 years.	No detection - 6 years



Click the hand to open up table

# NR 812.07 (94) September 1994

(94) "School" means a public or private educational facility in which a program of educational instruction is provided to children in any grade or grades from kindergarten through the 12th grade. Water systems serving athletic fields, school forests, environmental centers, homebased schools, **day-care centers** and Sunday schools **are not school water systems**



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# NR 812.07 (94) July 2020

(94) “School” has the meaning specified in [42 USC 300j-21](#) (6). “School” does not include athletic fields, school forests, environmental centers, home-based schools, and Sunday schools. **Note:** [42 USC 300j-21](#) (6) defines “school” as any elementary school or secondary school as defined in section 7801 of Title 20 and any kindergarten or day care facility.



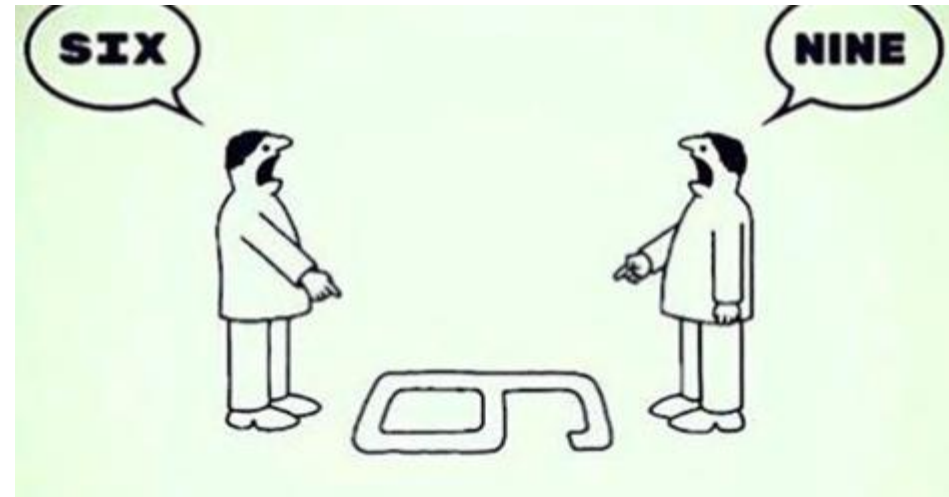
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By treating day care facilities as schools, the DNR is being more protective of the most vulnerable populations.



# WORTH MENTIONING

In accordance with the NR 812 July 2020 code revision, an existing private water supply well is regulated differently than an existing public water supply well/water system at a day care/school.



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# PUBLIC WATER IMPLEMENTATION OF UPDATED CODE REQUIREMENT

*Issue Brief*

**TITLE:** Regulating wells at public water system daycares, after NR 812 July 1, 2020 code revision. Presented 12/07/2021-  
*Option 1 approved*

[DGMT Decisions - Main \(wistate.us\)](https://www.wisconsin.gov/dgmt/decisions-main)

- *Treat existing daycare wells (pre NR 812, July 1, 2020) as **non-conforming features** during the Sanitary Survey, provided no identified risks (setbacks to septic, contamination sources, sampling history, etc.). This would also apply to new daycare operations in a pre-existing facility. New daycares in new construction would follow current NR 812 code and be required to meet capacity requirements.*

# PRIVATE WATER IMPLEMENTATION OF UPDATED NR 812 JULY 1<sup>ST</sup>, 2020 CODE REQUIREMENT

- If an existing private water supply well/water system was properly constructed (according to NR 812) at the time it was installed, and the code has changed over time, the well could still be complying. This assumes that the only issue with compliance is the code change.



# WUWN EF592 / Drilled 04-29-1975 - Example of a Non-Conforming School Well



[Well Construction Information System \(wi.gov\)](http://www.wi.gov)

# WISCONSIN ADMINISTRATIVE CODE NR 812.152

**NR 812.152 Construction requirements for potable high capacity wells, potable school wells, and wastewater treatment plant wells.** Potable high capacity wells, potable school wells, and wastewater treatment plant wells shall be planned and constructed according to the location, approval, and general requirements specified in ss. NR 812.08 to NR 812.12, and according to all of the following requirements:

- (1) **MINIMUM DIAMETER.** The minimum casing and lower drillhole diameter for potable high capacity wells, potable school wells and wastewater treatment plant shall meet the following requirements:
  - (a) Four inches for wells completed in unconsolidated formations.
  - (b) Six inches for wells completed in bedrock formations.
- (2) **CASING MATERIAL.** Only steel well casing pipe meeting the requirements of s. NR 812.11 (6) may be used.
- (3) **UPPER ENLARGED DRILLHOLE.** An upper enlarged drillhole is required for all wells. An upper enlarged drillhole shall be constructed according to the following requirements:
  - (a) An upper enlarged drillhole shall be a minimum of 3 inches larger than the outside diameter of welded casing pipe, or 3 inches larger than the diameter of the casing couplings, when couplings are used.
  - (b) The upper enlarged drillhole shall be constructed to at least the minimum casing depth requirements specified in sub. (4).
  - (c) The upper enlarged drillhole shall be maintained at full diameter for the entire depth by any of the following methods:
    1. Circulating bentonite drilling mud.
    2. Setting a temporary casing to the bottom of the drillhole, or to the top of bedrock.
- (4) **CASING DEPTH.** Minimum casing depths are measured from the ground surface. All wells shall be constructed with casing that extends to the minimum depth for the geologic formation they are completed in according to the all of the following requirements:
  - (a) *Wells completed in unconsolidated formations.*
    1. Sixty feet or 20 feet below the static water level when the static water level is greater than 40 feet.
    2. One hundred feet, or 20 feet below the static water level when the static water level is greater than 80 feet, when the well is to supply water for a wastewater treatment plant and there is a treatment pond or lagoon or sludge beds on the property.

# CASING DEPTH DOES NOT COMPLY WITH CURRENT CODE

Dia (in.)	(ft.)	(ft.)	Enlarged Drillhole	Open Bedrock
24	0	53	<input type="checkbox"/> ---1. Rotary - Mud Circulation----- <input type="checkbox"/> ---2. Rotary - Air----- <input type="checkbox"/> ---3. Rotary - Air and Foam----- <input type="checkbox"/> ---4. Drill-Through Casing Hammer <input type="checkbox"/> ---5. Reverse Rotary <input type="checkbox"/> ---6. Cable-tool Bit      in. dia----- <input type="checkbox"/> 7. Dual Rotary <input type="checkbox"/> 8. Temp. Outer Casing      in. dia. Removed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If no, why not?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> depth (ft)
NR 812.152.(4)(a)(1)				
6. Casing, Liner, Screen		Material, Weight, Specification	From (ft.)	To (ft.)
Dia. (in.)	Manufacturer & Method of Assembly			
	16 NEW STEEL WELDED A53 GR.B .375" WALL		0	40
	10 NEW STEEL WELDED A 53 GR. B .330" WALL		0	43
Dia. (in.)	Screen type, material & slot size	From (ft.)	To (ft.)	
10	STAINLESS STEEL	43	53	
7. Grout or Other Sealing Material. Method:				
Method:		From (ft.)	To (ft.)	# Sacks Cement
Kind of Sealing Material				
NEAT CEMENT		0	40	



# WUWN LD313 / Completed 02-24-1998 - Example of an Existing Non-Conforming Day Care Well



[Well Construction Information System \(wi.gov\)](http://www.wi.gov)

# WISCONSIN ADMINISTRATIVE CODE NR 812.152

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- (b) Six inches for wells completed in bedrock formations.

(2) **CASING MATERIAL.** Only steel well casing pipe meeting the requirements of s. NR 812.11 (6) may be used.

(3) **UPPER ENLARGED DRILLHOLE.** An upper enlarged drillhole is required for all wells. An upper enlarged drillhole shall be constructed according to the following requirements:

- (a) An upper enlarged drillhole shall be a minimum of 3 inches larger than the outside diameter of welded casing pipe, or 3 inches larger than the diameter of the casing couplings, when couplings are used.
- (b) The upper enlarged drillhole shall be constructed to at least the minimum casing depth requirements specified in sub. (4).
- (c) The upper enlarged drillhole shall be maintained at full diameter for the entire depth by any of the following methods:
  - 1. Circulating bentonite drilling mud.
  - 2. Setting a temporary casing to the bottom of the drillhole, or to the top of bedrock.

(5) **GROUTING.** The grouting of an annular space shall be accomplished according to all of the following requirements:

- (a) Only neat cement grout meeting the specification under s. NR 812.11 (15) (b) shall be used.
- (b) Grout shall be placed using an approved pressure grouting method as specified in s. NR 812.20 (3), except that the grout shall be allowed to set for a minimum of 24 hours before drilling is resumed.
- (c) Any temporary casing used during the construction of the upper enlarged drillhole shall be removed.

# CASING DIAMETER, UPPER ENLARGED DRILLHOLE AND SEALING MATERIAL OF DAY CARE WELL THAT DOES NOT COMPLY WITH CURRENT CODE FOR SCHOOL WELLS

Casing < 6-inch diameter (in unconsolidated formation)

No upper enlarged drillhole

Casing not grouted

5. Drillhole Dimensions and Construction Method					8. Geology			
Dia. (in.)	From	To	Upper Enlarged Drillhole	Lower Open Bedrock	Type, Caving/Noncaving, Color, Hardness, etc.	From	To	
	(ft.)	(ft.)				(ft.)	(ft.)	
2	0	133	<input type="checkbox"/> --1. Rotary - Mud Circulation----- <input type="checkbox"/> --2. Rotary - Air----- <input type="checkbox"/> --3. Rotary - Air and Foam----- <input type="checkbox"/> --4. Drill-Through Casing Hammer <input type="checkbox"/> --5. Reverse Rotary <input type="checkbox"/> --6. Cable-tool Bit in. dia----- <input type="checkbox"/> 7. Dual Rotary <input type="checkbox"/> 8. Temp. Outer Casing in. dia. depth (ft) Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No If no, why not?		SAND	0	29	
1.3	133	136			CLAY	29	126	
					MUDDY SAND	126	132	
					CLEAN SAND	132	136	
6. Casing, Liner, Screen Material, Weight, Specification From To					9. Static Water Level			
Dia. (in.)	Manufacturer & Method of Assembly			(ft.)	(ft.)	ft. above ground surface		
2	R@D T@C A589 WHEATLAND 3 75 LBS FOOT			0	133	33 ft. below ground surface		
7. Grout or Other Sealing Material. Method:					10. Pump Test			
Method: GRAVITY					Pumping Level			
Kind of Sealing Material					33 ft. below surface			
CLAY SLURRY					0	0	Pumping at 10 GPM for 4 hours	
					11. Well is:		<input checked="" type="checkbox"/> Above Grade	
					14 in.		<input type="checkbox"/> Below Grade	
					Developed?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
					Disinfected?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
					Capped?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
					12. Did you notify the owner of the need to permanently abandon and fill all unused wells on this property? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If no, explain:			
					13. Signature of the Well Constructor or Supervisory Driller		Date signed	
					Signature of Drill Rig Operator (Mandatory unless same as above) Date signed			



# What if the non-community day care/school well is contaminated?

- An MCL violation results if samples exceed a maximum contaminant level listed in Wisconsin Administrative Code chapter NR 809.
  - This includes *E. coli*.
  - If the well is contaminated with total coliform, it is not a MCL violation, but the system would need to use the "find and fix approach" which could include a new well or treatment.
- A Notice of Noncompliance (NON) is issued with a Public Notice (PN) requirement for *E. coli* MCL violations. A PN letter and PN are sent for chemical contaminant MCL violations. This paperwork is sent by public water program staff assigned to the county that the public drinking water system is located in.
- Public Water Supply Specialist assigned to the public water system will fill out an Environmental Enforcement Request (EE Request).

# Current Chemical Contaminant Maximum Contaminant Levels (MCLs) in Chapter NR 809, Wis. Adm. Code

Table of MCLs is a hyperlink  
 – Right click to open

## Inorganics – IOCs

Contaminant	MCL in mg/L
Antimony	0.006
Arsenic	0.010
Asbestos	7 Million fibers/liter (longer than 10 um)
Barium	2
Beryllium	0.004
Cadmium	0.005
Chromium	0.1
Cyanides free Cyanide	0.2
Fluoride	4.0
Mercury	0.002
Nickel	0.1
Nitrate	10 (as Nitrogen)
Nitrite	1 (as Nitrogen)
Total Nitrate Nitrite	10 (as Nitrogen)
Selenium	0.05
Thallium	0.002

## Volatile Organics – VOCs

Contaminant	MCL (mg/L)
Benzene	0.005
Vinyl chloride	0.0002
Carbon tetrachloride	0.005
1,2-Dichloroethane	0.005
Trichloroethylene	0.005
1,1-Dichloroethylene	0.007
1,1,1-Trichloroethane	0.20
para-Dichlorobenzene	0.075
cis-1,2-Dichloroethylene	0.07
trans-1,2-Dichloroethylene	0.1
Dichloromethane	0.005
1,2-Dichloropropane	0.005
Ethylbenzene	0.7
Monochlorobenzene	0.1
ortho-Dichlorobenzene	0.6
Styrene	0.1
Tetrachloroethylene	0.005
Toluene	1
1,2,4-Trichlorobenzene	0.07
1,1,2-Trichloroethane	0.005
Xylenes (total)	10

## Rads

Gross Alpha (GA)	15 pci/L
Rad 226 +228*	5 pci/L
Uranium	30 ug/L

\* Can substitute GA for Rad 226 portion of this calc if GA ≤5 pci/L.  
 If GA is no detect, substitute 1/4 LOD of GA method.

## Beta Particle & Photon radioactivity

Man-made Beta particles- The average annual dose equivalent to the total body or any internal organ > 4 MREM/ year.

Radionuclide	Critical Organ	pCi per liter
Tritium	Total body	20,000
Strontium-90	Bone marrow	8

## Synthetic Organics – SOCs

Contaminant	MCL (mg/L)
Alachlor	0.002
Atrazine	0.003
Benzo(a)pyrene	0.0002
Carbofuran	0.04
Chlordane	0.002
2,4-D	0.07
Dalapon	0.2
Dibromochloropropane	0.0002
Di(2-ethylhexyl)adipate	0.4
Di(2-ethylhexyl)phthalate	0.006
Dinoseb	0.007
Diquat	0.02
Endothal	0.1
Endrin	0.002
Ethylene Dibromide	0.00005
Glyphosate	0.7
Heptachlor	0.0004
Heptachlor epoxide	0.0002
Hexachlorobenzene	0.001
Hexachlorocyclopentadiene	0.05
Lindane	0.0002
Methoxychlor	0.04
Oxamyl	0.2
Pentachlorophenol	0.001
PFOS and PFOA	0.000070
Picloram	0.5
Polychlorinated biphenyls (PCBs)	0.0005
Simazine	0.004
2,3,7,8-TCDD (Dioxin)	3x10 <sup>-8</sup>
Toxaphene	0.003
2,4,5-TP	0.05

## PBCU

Lead Action Level	15 ug/L
Copper Action Level	1300 ug/L

## Total Trihalomethanes (TTHM)

sum of 4 contaminants	80.0 ug/L
They also show up on VOC samples	
Chloroform (Trichloromethane)	
Bromodichloromethane	
Bromoform (Tribromomethane)	
Dibromochloromethane	

## Haloacetic Acids

sum of 5 contaminants	60.0 ug/L
They also show up on VOC samples	
Dibromoacetic acid	
Dichloroacetic acid	
Monochloroacetic acid	
Monobromoacetic acid	
Trichloroacetic acid	

## Misc

Fluoride Secondary Standard (Exceedance Requires PN)	2mg/L
Chlorine	4.0 mg/L
Chlorine Dioxide	0.8 mg/L
Chloramines	4.0 mg/L
Sodium Aesthetic	30-60 mg/L

(from EPA advisory document, not code)

# What if the non-community day care/school well is contaminated? continued

- An Environmental Enforcement Specialist will issue a Notice of Violation (NOV) in cooperation with the Public Water Supply Specialist.
- An Enforcement Conference is scheduled with the owner of the public drinking water system, Enforcement Specialist and the Public Water Supply Specialist.
- New drilled wells are favored over treatment unless it is proven that a new well will not remedy the MCL problem. [Wisconsin Legislature: NR 812.37\(2\)\(e\)](#)  
Department treatment installation approval shall be obtained prior to installation  
[Wisconsin Legislature: NR 812.37](#) (3)(a)(b)(c)

# What if the non-community day care/school well is contaminated? continued

- A Consent Order is drawn up during the Enforcement Conference. A Consent Order is a formal document that summarizes the violations noted in the NOV and establishes dates for correcting violations. The conditions of the order are negotiated by both parties, and both parties must sign the agreement before the US Environmental Protection Agency (USEPA) considers it a formal enforcement action. A water system owner does not have the right to appeal a Consent Order because both parties consent to the terms of the order. It is a legally binding document, and the Department can refer the case to DOJ for action if the water system does not meet the agreed upon actions.
- An enforceable document such as a Consent Order is necessary when a violation will take 6 months or longer to correct like in MCL violations.



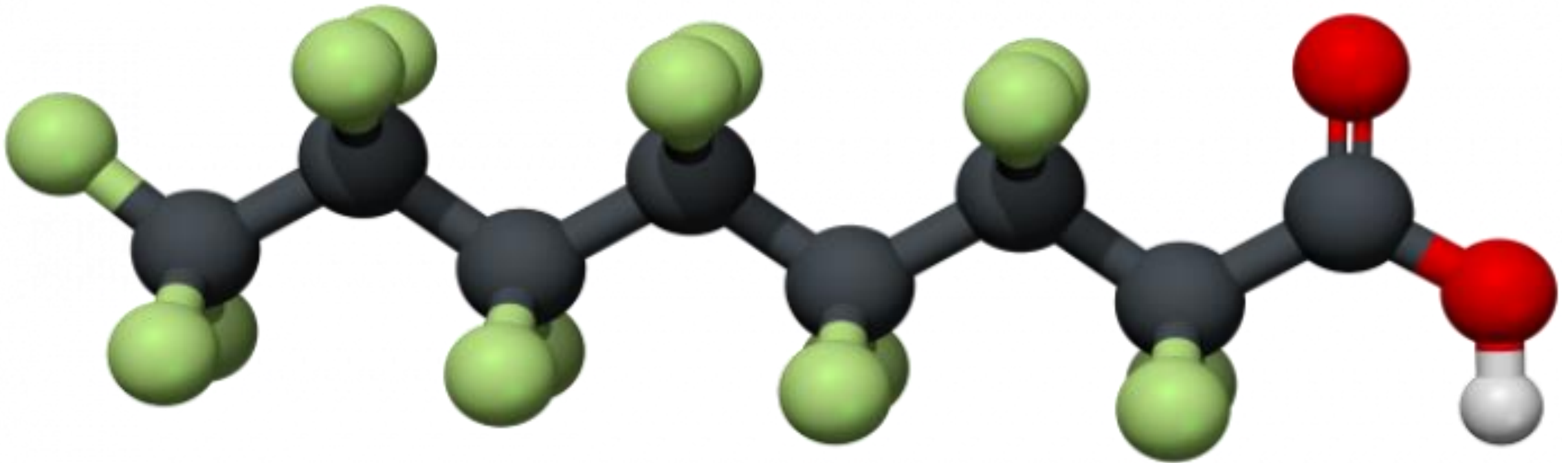
# What if the non-community day care/school well is contaminated? continued

- If the process explained on the previous slides doesn't solve the problem, Enforcement Specialists have more tools in the stepped enforcement process: Administrative Forfeiture Orders (AFO), Administrative Orders (AO) and Referral to the Department of Justice (DOJ).
- Once the corrective actions have been completed as outlined in the Consent Order, the Enforcement Specialist will send the public water system owner a close-out letter that states all of the conditions of the order were met and that the department does not intend to take further action at this time.

Any  
Questions

# DNR PFAS Study Update

Matt Silver, DNR Groundwater Program



# Prevalence and source tracing of PFAS in shallow groundwater used for drinking water in Wisconsin

Matt Silver<sup>1</sup>, Bill Phelps<sup>1</sup>, Kevin Masarik<sup>2</sup>, Chen Zhang<sup>3</sup>, Kyle Burke<sup>3</sup>, Alex Schwartz<sup>3</sup>, Amy Nitka<sup>2</sup>, Jordan Schutz<sup>1</sup>, Tom Trainor<sup>1\*</sup> and Bruce Rheineck<sup>1</sup>

Wisconsin Department of Natural Resources<sup>1</sup>, Drinking Water and Groundwater Program

\*Laboratory Certification Program

UWSP-Center for Watershed Science and Education<sup>2</sup>

Wisconsin State Laboratory of Hygiene<sup>3</sup>

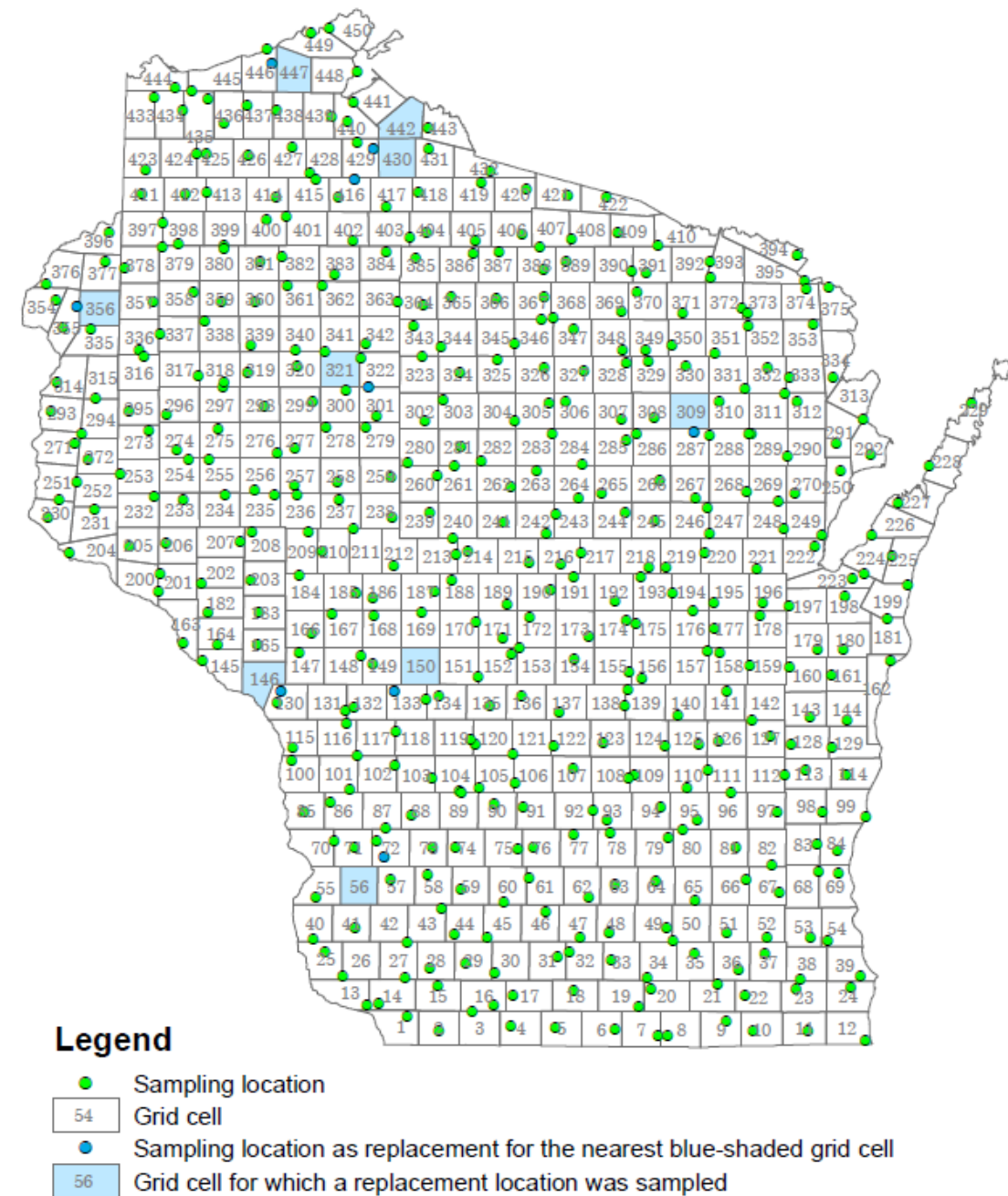


# Introduction

- Studies of wastewater, precipitation and soil suggest ubiquitous PFAS occurrence in those media
- Potential sources to groundwater are diverse
- Prior to this study, no systematic or widespread ambient shallow groundwater data in Wisconsin
- Groundwater is a drinking water source for approx. 70% of WI residents
- Study objectives:
  - Collect snapshot of the overall occurrence of PFAS in Wisconsin shallow groundwater
  - Evaluate potential types of sources to groundwater
  - Inform Source Water Protection needs

# Sampling

- Equal area grid (right)
- Only private shallow wells with casing no deeper than 40 feet below the water table were selected or used
- Invitation letters and participant response form
- Two teams of two samplers (“clean hands/dirty hands”)
- PFAS field blank for every sample
- Protocol with steps, order to perform them, and how to address some contingencies
- Project-specific field sheet for notes at each site, in addition to lab slips
- Lab analysis for PFAS at WSLH and for other analytes at UWSP-WEAL



# Lab analysis

## PFAS:

Perfluor. C	PFCAs	PFSA	Cyclic analogues	FT sulfonic acids	FT carboxylic acids	Fluorosulfonamide/-ido substances	Ether-containing fluorosubstances
3		PFPrS			3:3 FTCA		
4	PFBA	PFBS		4:2 FTSA		PFBSA	
5	PFPeA	PFPeS			5:3 FTCA		
6	PFHxA	PFHxS		6:2 FTSA	6:2 FTUCA	PFHxSA	HFPO-DA
7	PFHpA	PFHpS			7:3 FTCA		DONA
8	PFOA	PFOS	PFECHS	8:2 FTSA	8:2 FTUCA	PFOSA, NETFOSE, NMeFOSE, NETFOSA, NMeFOSA, NETFOSAA, NMeFOSAA	9Cl-PF3ONS
9	PFNA	PFNS					
10	PFDA	PFDS		10:2 FTSA	10:2 FTUCA		11Cl-PF3OUdS
11	PFUnA						
12	PFDoA	PFDoS					
13	PFTrDA						
14	PFTeDA						

DHS HAL EPA and DHS HAL Transforms in the environment to one or more substances with a HAL

Michigan EGLE whitepaper – substance of toxicological concern

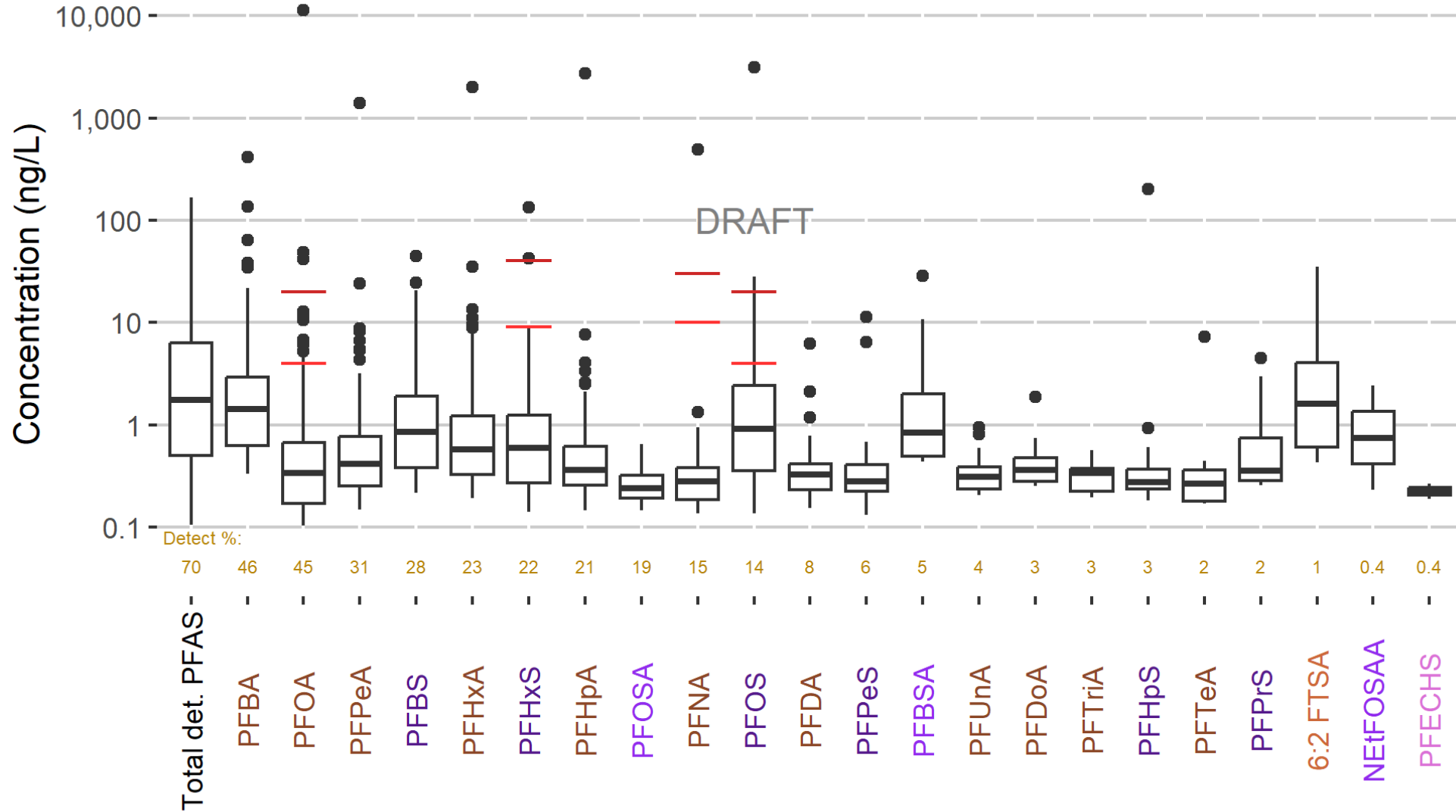
Hypothesized indicators of waste sources that may also generate PFCAs

Acronyms in first row: PFCAs = perfluoro carboxylic acids, PFSA = perfluoro sulfonic acids, FT = fluorotelomer

## Other compounds/parameters:

- Human waste indicators: acesulfame, carbamazepine, sucralose and sulfamethoxazole
- Herbicide metabolites: Alachlor ESA, Alachlor OA, Metolachlor ESA, Metolachlor OA
- Inorganics by FIA: NH<sub>x</sub> (ammonia/ammonium), NO<sub>x</sub> (nitrate plus nitrite), Cl
- Inorganics by ICP-OES: As, Ca, Cu, Fe, K, P, Pb, Mg, Mn, Na, S, Zn
- Alkalinity
- Total organic carbon

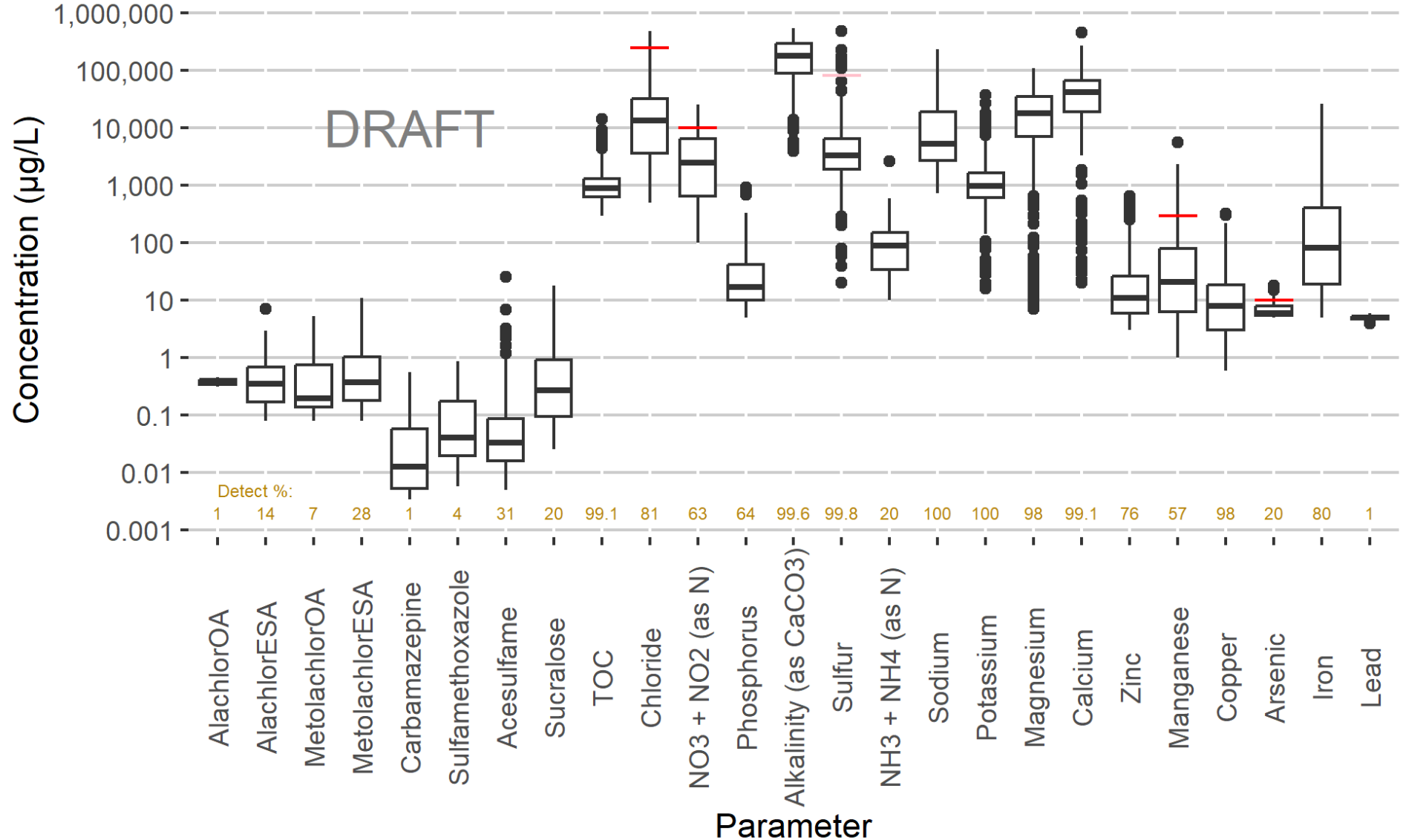
# PFAS prevalence





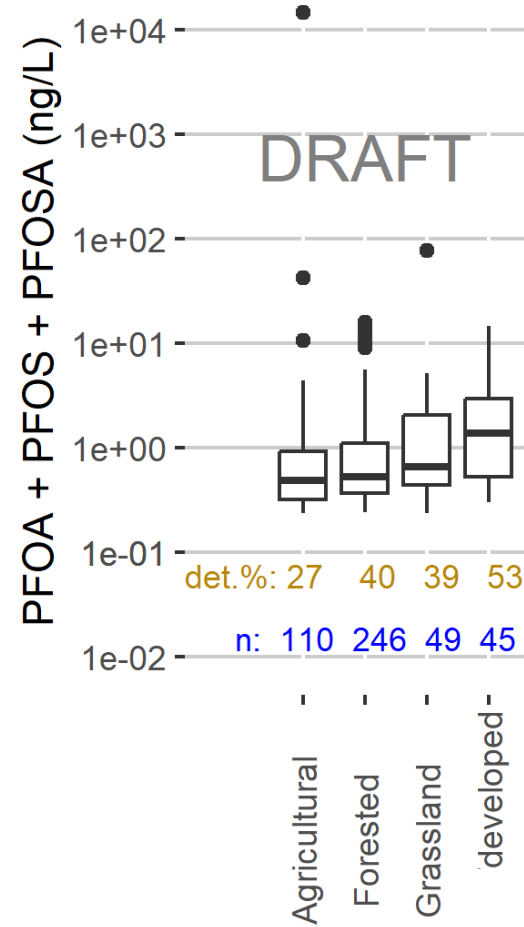
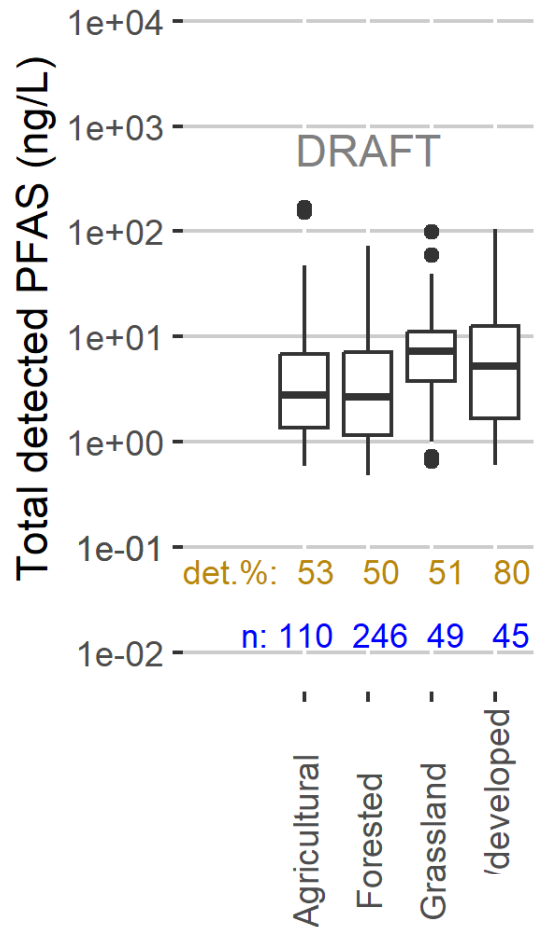
# Non-PFAS prevalence

- NR140 standard for which there are project sample results above that value
- NR140 public welfare standard for sulfate is 250 mg/L; value shown by line is the corresponding concentration of S, if all S is sulfate



# Differences between land uses

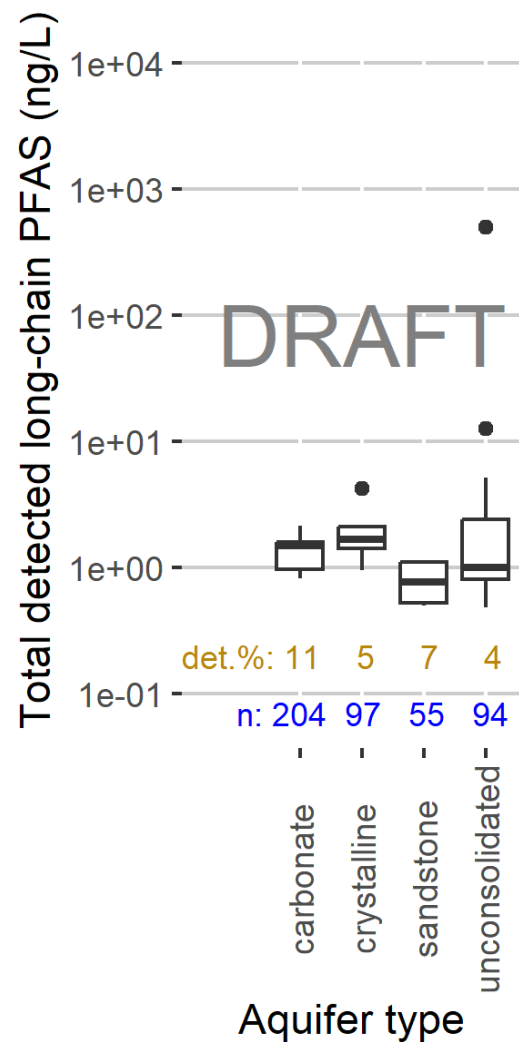
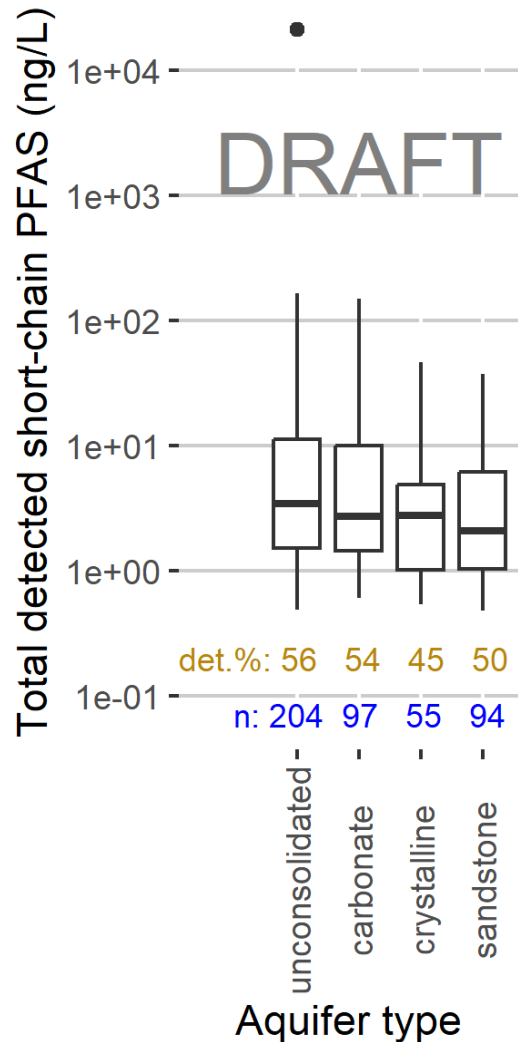
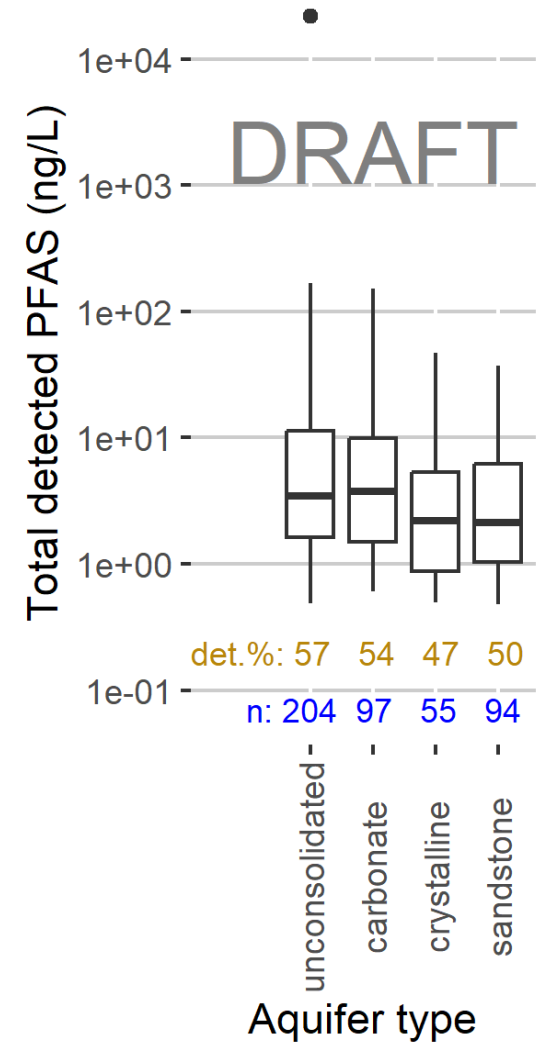
(largest land use category in 500 m circle around well/property)



## Significant differences between groups:

Comparison	p-value
Developed versus forested (total PFAS)	0.000007
Developed versus agricultural (total PFAS)	0.0004
Developed versus forested (PFOA+PFOS+PFOSA)	0.01
Developed versus agricultural (PFOA+PFOS+PFOSA)	0.0003
Agricultural versus forested (PFOA+PFOS+PFOSA)	0.02

# Differences between aquifer types?

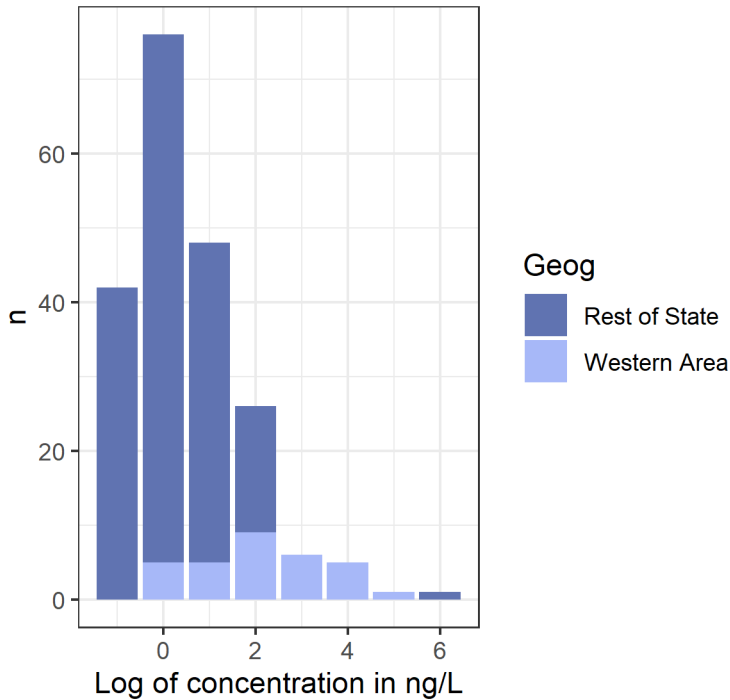


## Significant differences between groups:

Comparison	p-value
Unconsolidated versus crystalline (total PFAS)	0.04
Unconsolidated versus sandstone (total PFAS)	0.04
Unconsolidated versus crystalline (short-chain PFAS)	0.04
Unconsolidated versus sandstone (short-chain PFAS)	0.05

# Geographic results for PFBA

PFBA in Western Area vs. Rest of State



## Aquifer Type

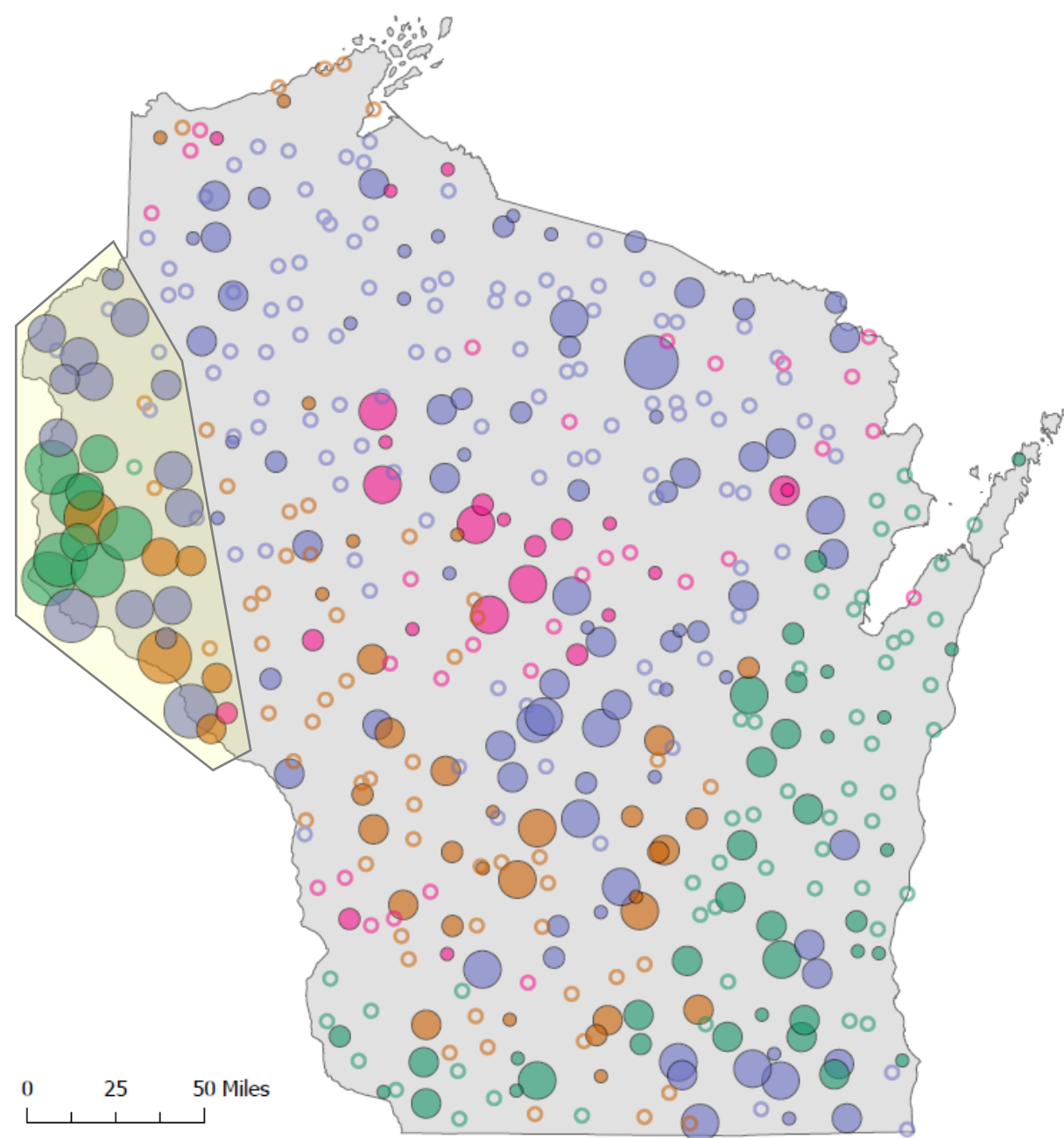
- Carbonate
- Crystalline Rock
- Sandstone
- Unconsolidated

## PFBA Log Concentrations

- 1.210 - 2.620
- 0.531 - 1.200
- 0.126 - 0.530
- -0.169 - 0.125
- -0.500 - -0.170

## ● Non-detects

A non-detect is reported for samples in which the result was below the Level of Detection (LOD) for the given compound.





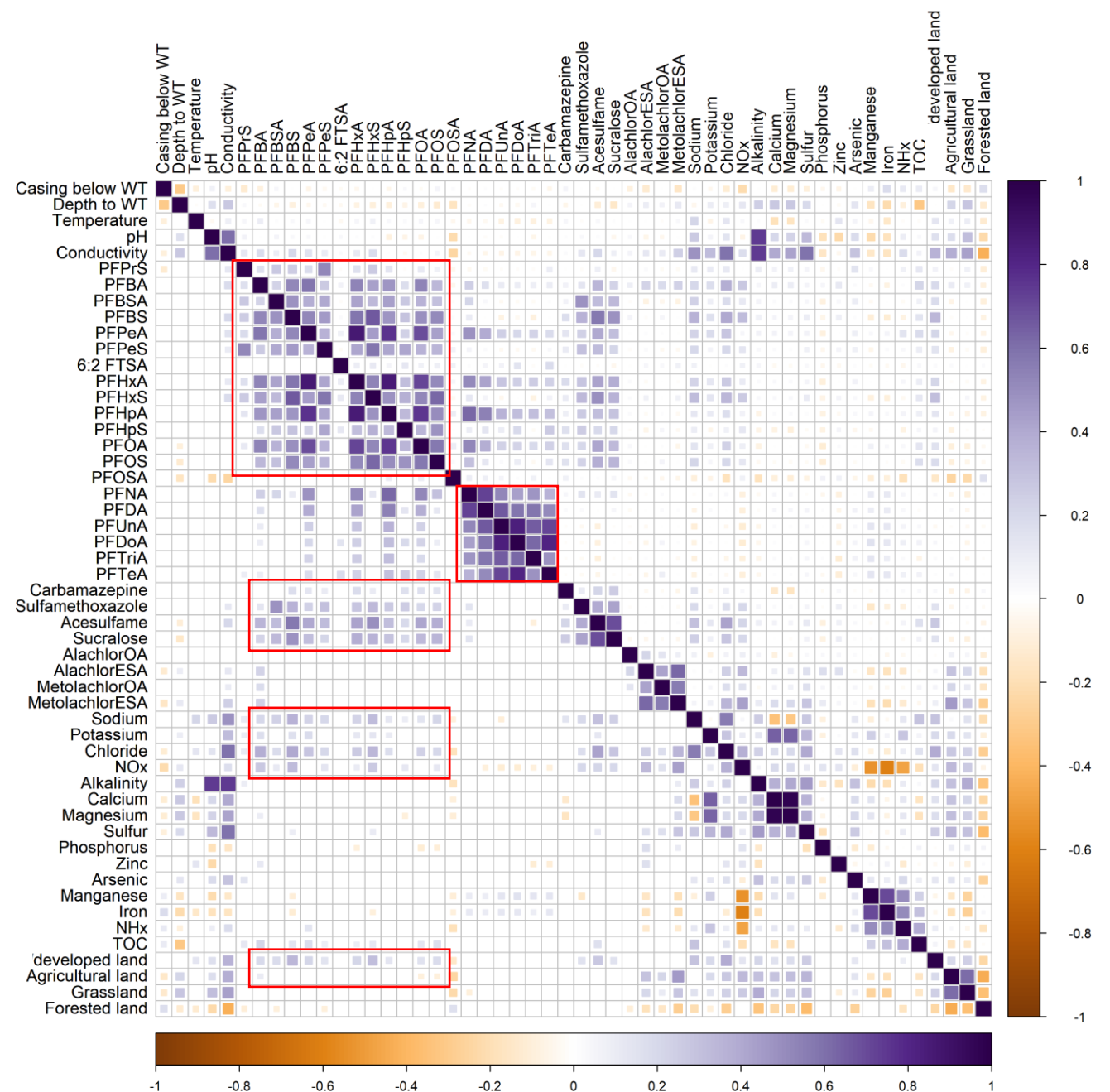
# Multi-variate analysis: correlations

Noteworthy correlations:

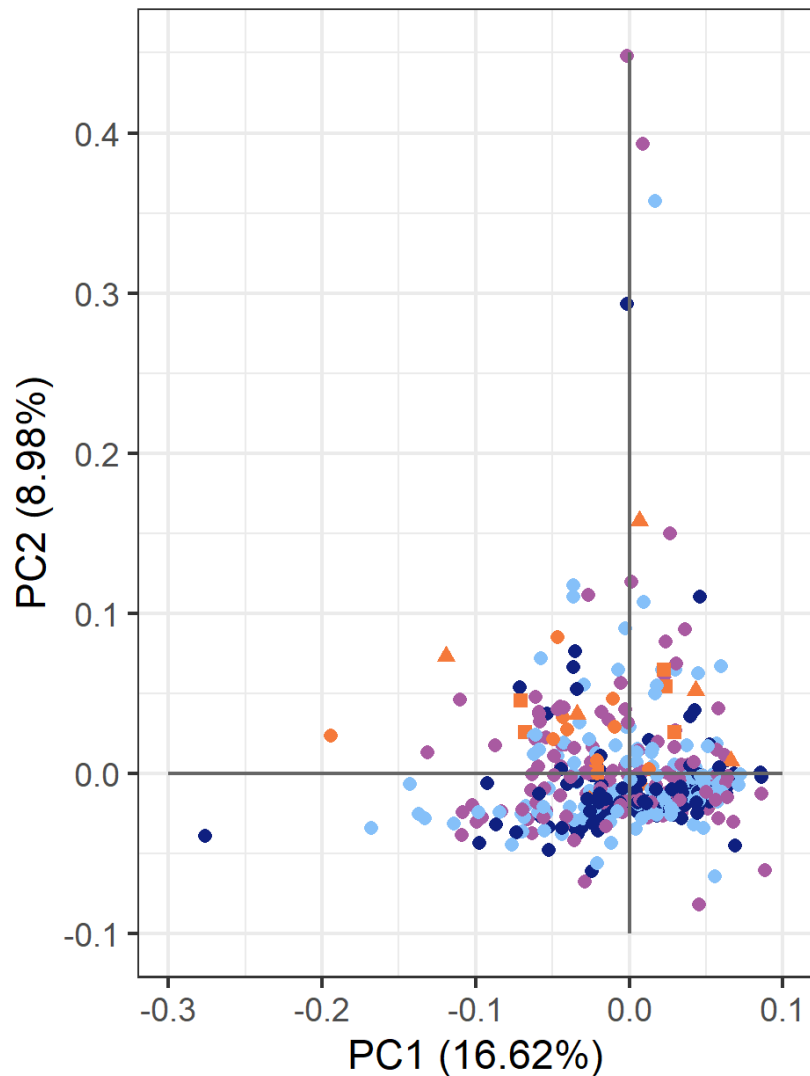
- Short-chain PFAS with other short-chain PFAS
- Long-chain PFAS with other long-chain PFAS
- HWIs & PFAS (especially short chain)
- Developed land and PFAS
- Nitrate, chloride, sodium and PFAS

Noteworthy lack of consistent and/or strong correlations:

- Herbicide metabolites and PFAS
- Agricultural land and PFAS
- Depth to WT and PFAS



# Multi-variate analysis: principal component analysis

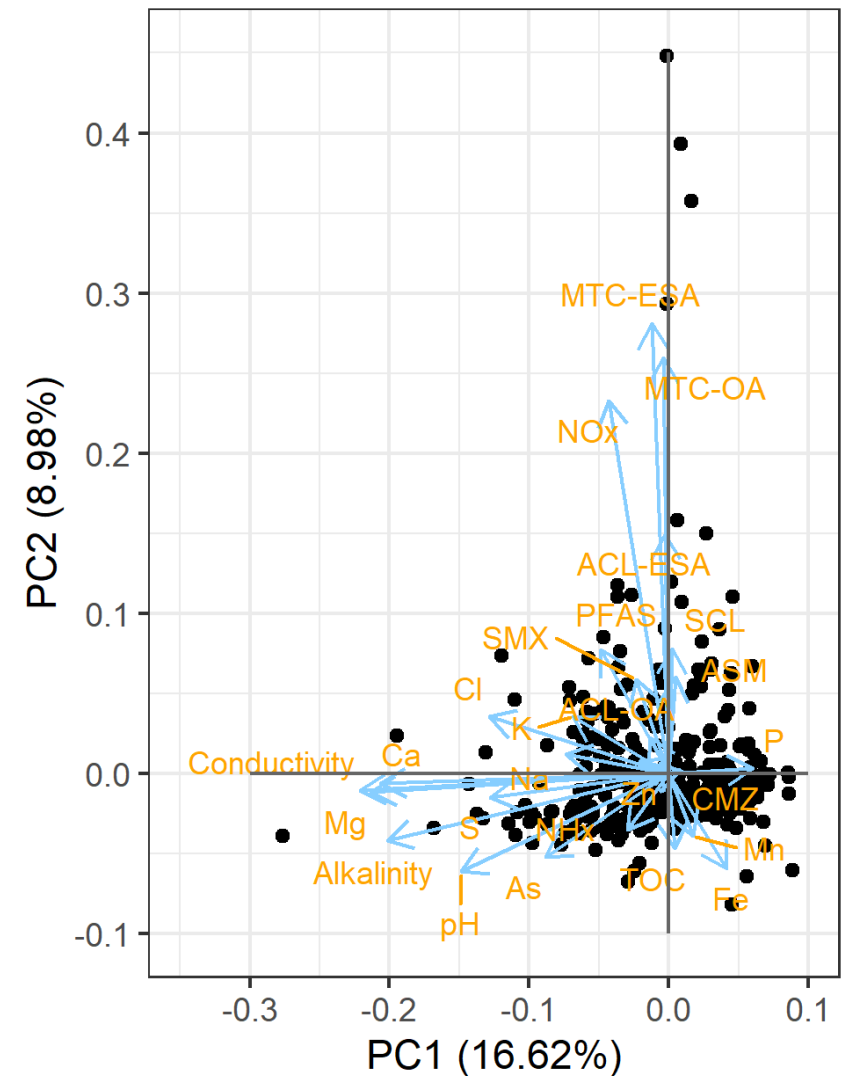


PFOA\_PFOS\_above\_EPA\_pMCL

- neither
- ▲ PFOA
- ◆ PFOS
- PFOA & PFOS

Total\_detected\_PFAS

- no PFAS detected
- detected, sum < 4 ng/L
- 4 < sum PFAS < 20 ng/L
- sum PFAS > 20 ng/L



# Summary and findings

- PFAS detected in 71% of samples but only 1% were above Wisconsin public health guidance levels
  - Reminder: wells selected for the study were shallow (casing no deeper than 40 feet into the aquifer)
- Overall, agricultural tracers and agricultural land not closely related with PFAS occurrence
- Human waste indicators and developed land use correlated with PFAS occurrence
  - Septic systems appear to be a likely source of PFAS to groundwater
- Developed areas more frequently have above-median concentrations than agricultural or forested areas, but the three highest the highest concentrations were found in agricultural areas

# Welcome and Introductions







**Thank You to Outgoing PWAC Members!**

**Eric Scheutte**

**Matt Niffenegger**

**THANK YOU**



# PWAC Board Membership

Advisory Council on Well Drilling and Pump Installing Membership and Terms – as of April 2022						
Appointing Organization Name	1 <sup>st</sup> Term Expires	2 <sup>nd</sup> Term Expires	3 <sup>rd</sup> Term Expires	4 <sup>th</sup> Term Expires	5 <sup>th</sup> Term Expires	6 <sup>th</sup> Term Expires
<b>WWWA - Well Drillers</b>						
Scott Haupt	1/31/23					
Troy Van de Yacht	1/31/21	1/31/24				
Terry Farago	1/31/22	1/31/25				
<b>DNR - Well Drillers</b>						
Kevin Olson	1/31/26					
Tim Butterfield	1/31/24					
<b>WWWA - Pump Installers</b>						
Dennis Crow	1/31/25					
Terry Marshall	1/31/25					
<b>DNR - Pump Installers</b>						
Steve Tessmer	1/31/22	1/31/25				
Bob Aune	1/31/26					
<b>Wisconsin Geothermal Association</b>						
Bruce Walker	12/31/17	1/31/21	1/31/24			
<b>Wisconsin Geologic and Natural History Survey</b>						
Pete Chase	<i>No limit</i>					
<b>Wisconsin Pump and Well Suppliers</b>						
Scott O'Brien	12/31/17	1/31/21	1/31/24			
Vacant						



WELCOME

**New PWAC Members!**

Kevin Olson - Well Driller

Bob Aune - Pump Installer

# Private Water Advisory Council

- **Wisconsin Geologic and Natural History Survey Updates**





# Break Time!



# Private Drinking Water Proposals in Governor's Budget

- Well Compensation
  - \$1 million in additional funding
  - Wells contaminated by at least 10 ppb of arsenic
  - Wells contaminated by at least 10 ppm of nitrates
  - TN public wells eligible
  - Increase income eligibility from \$65K to \$100K
  - Prioritize claims based on higher levels of nitrate
  - 100% of costs up to \$16,000



# Private Drinking Water Proposals in Governor's Budget

- Well Notification Fee
  - Increase fee from \$50 to \$70
  - \$180K in increased revenue used to maintain a new well notification purchasing system integrated with Well Construction Reporting System
    - Improve access to water quality data
- Well Variance Application Fee
  - \$100 to generate \$25 for improve well approval tracking system
    - Digitize historic variances and make them available online

# Staffing Updates

- Two new Compliance Review Assistants

- Kelcie Fuhrman

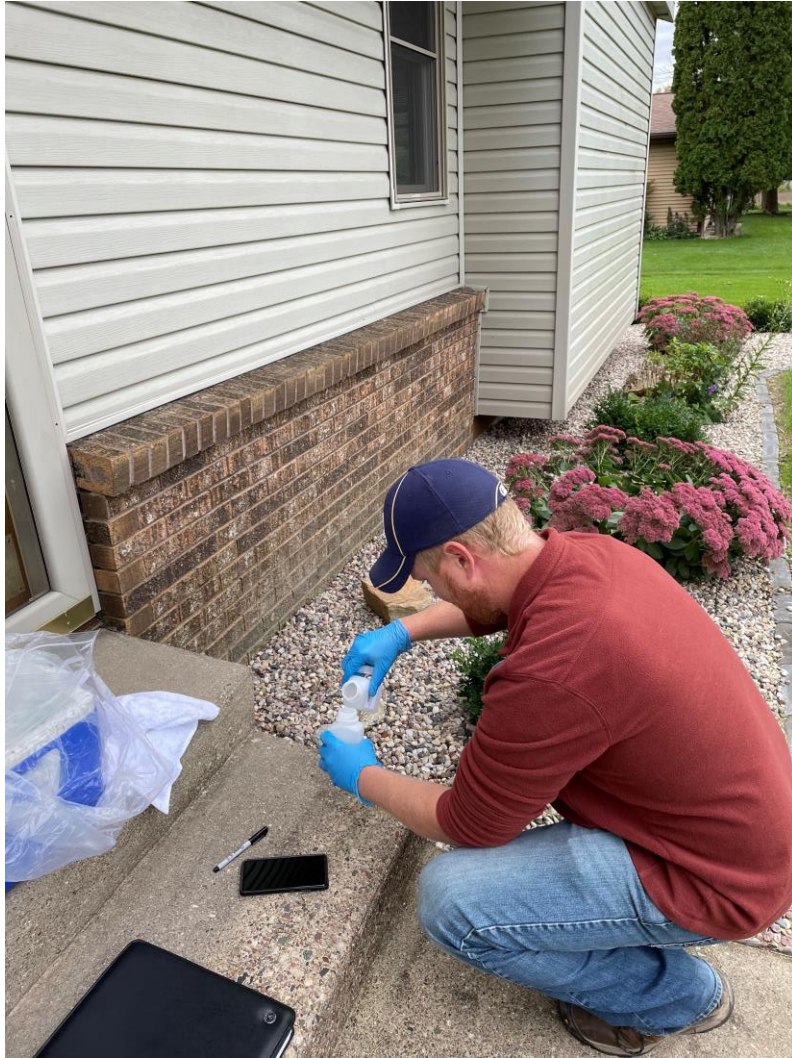


- Sophia Ziehr



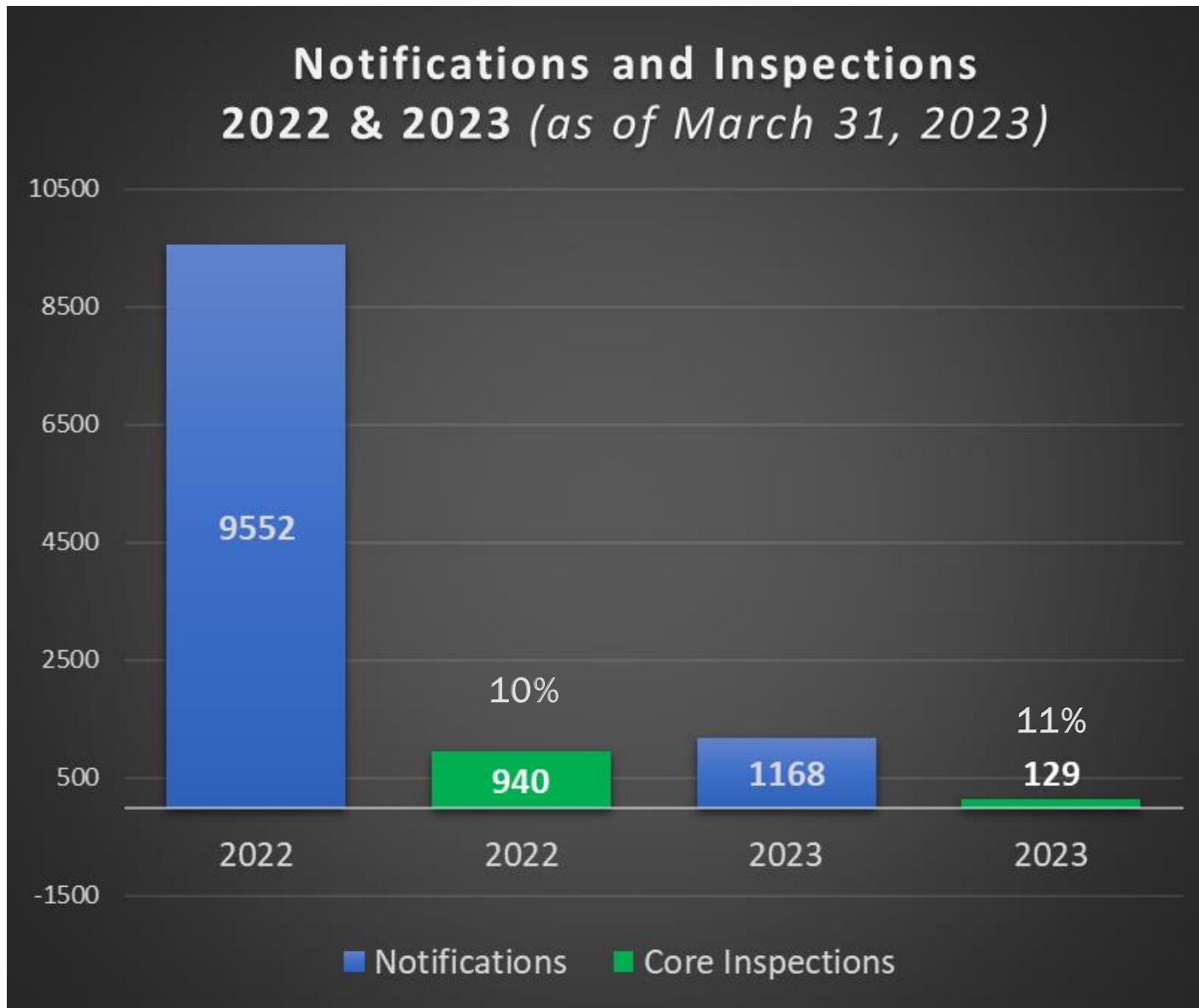


# Compliance Inspection Data





# Compliance Inspection Data



## 2022

January - December

## 2023

January - March 31, 2023

### Notifications

Purchased state well permits

### Core Inspections

Wells during construction  
(*notifications*)

Pump installation  
(*quarterly notices*)

Well filling and sealing

# Private Water Variances

## 2022 Variances Issued = 325

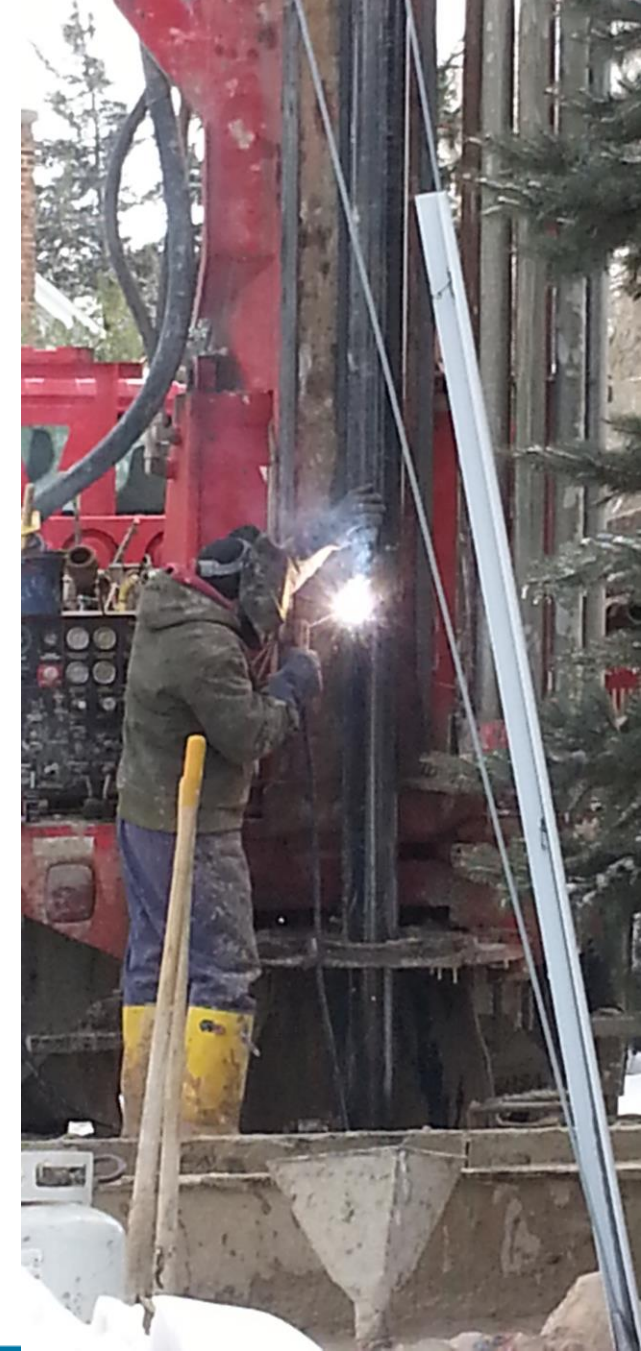
- Landfill Variances: 169
- Other Variances (setbacks, construction, etc.): 156

## 2023 Variances Issued = 33

- Landfill Variances: 19
- Other Variances (setbacks, construction, etc.): 14

## Most Common “Other” Variances:

- Location/Separation Distance
- Special Well Casing Depth Areas
- Well Construction/Casing Depth

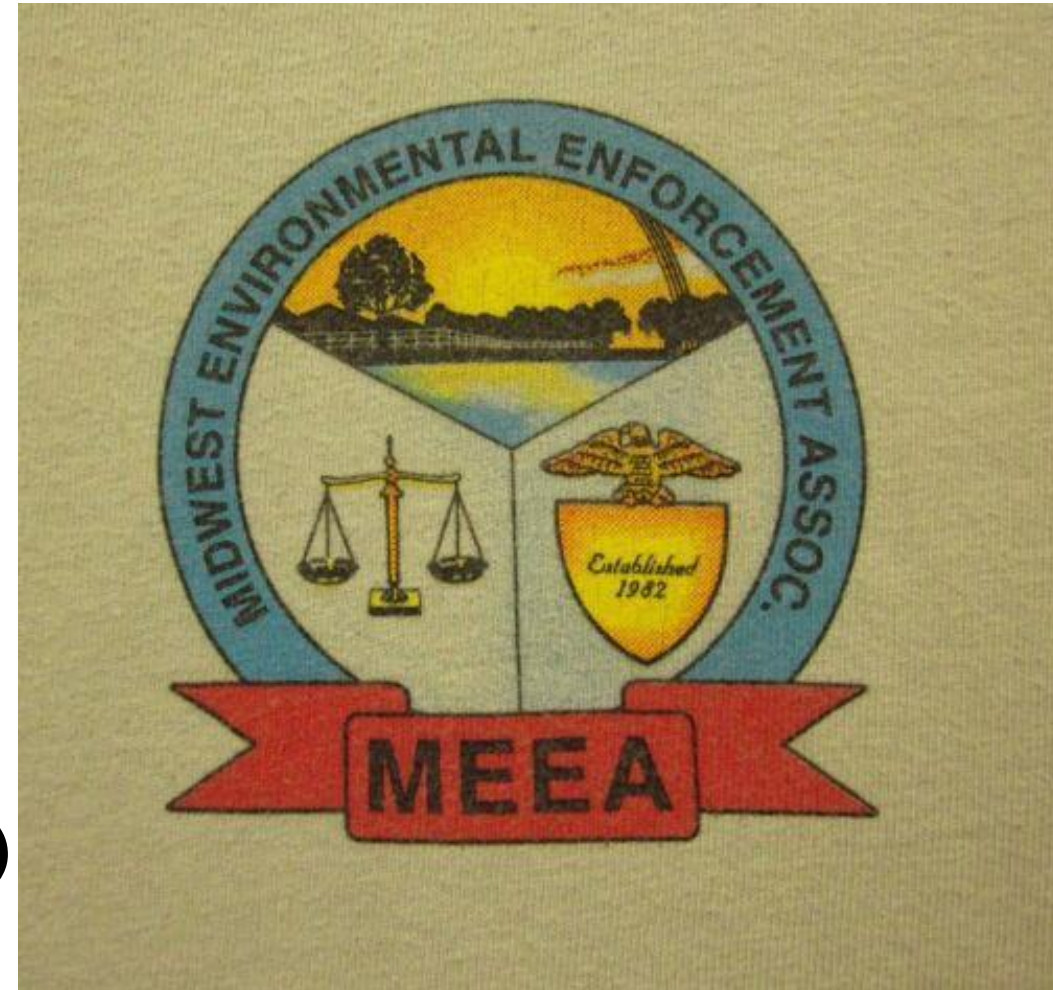




# Compliance & Enforcement

## 2022 Primary Enforcement:

- **Total NONs issued in 2023: 3**
- **NONs since January 18, 2023: 2**
- **Violations:**
  - **Unused Well Not Filled and Sealed**
  - **Flowing Well Air Gap/No Screen**
  - **Separation Distance (to Septic Sys.)**



# Compliance & Enforcement

- **Secondary enforcement:**
    - NOVs issued in 2023: 4
      - Unlicensed Work (2), Hi-Cap Constr. w/ no approval, Sampling (closed)
    - Citations issued, 2023: 1
    - Active cases: 3
    - Pending Cases: 7\*
      - Reporting: 4\*
      - Unlicensed work: 3
    - Closed Cases: 1 (Sampling – 1 Citation)
  - Referrals to DOJ:
    - 1 current DOJ referral (2017)
- STILL awaiting legislative closure



\* - Possibly as many as 14 new NOVs from 2019-2021 Annual Reports



# NR 812 Rule Revisions

- Board Order DG-07-22(E) & DG-08-22
  - Type IL Cement Added to NR 812
  - Emergency Rule Approved by NRB 12/14/22
  - Emergency rule in effect as of 01/12/23
  - Hearing on both rules 03/22/23
  - NRB Vote on Permanent Rule: 5/24/23
  - Emergency Rule Expires: 10/8/23\*
  - Permanent Rule Becomes Effective: 12/1/23\*\*

\* - All extensions expire

\*\* - If no delays during legislative approval process



# NR 146 Revision - Draft Scope Statement

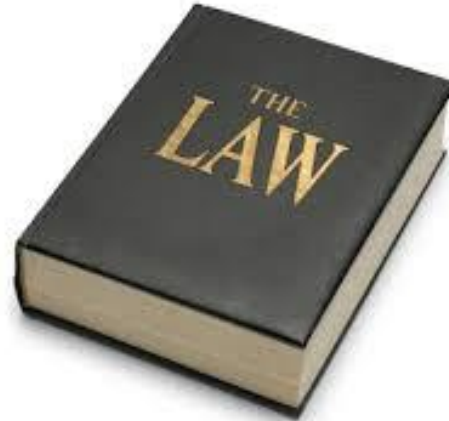
## General Objectives:

- Correction of grammatical, spelling and punctuation errors
- Definition of key terms used in rule language
- Amendment of redundancies and omissions
- Revisions to improve understanding and to clarify intent

# NR 146 Revision - Draft Scope Statement

## Specific Objectives:

- CE attendance requirements
- Streamline administrative processes
- Prerequisite license and registration requirements
- Responsibility in contractual agreements





# NR 812 Scope Statement

- Draft rule language may not be started before a Scope Statement is approved by the Natural Resources Board
  - Advisory committee to start work after Scope Statement Approved
  - Current Timeline: NRB approves Scope Statement 9/27/23
- **Scope Statement for NR 812**
  - Scope will be contained primarily to Subchapter III only (Pump Installation)
  - Objectives:
    - Correct grammatical, spelling and punctuation errors
    - Address redundancies, omissions and clarify to improve understanding and readability
    - Pump Installer Requirements
    - Non-Electric Pump and System Installations
    - Water Storage Vessels
    - Water Treatment
    - Hand Pumps
    - Vermin-Proof Well Caps and Seals
    - Yard Hydrants
- NRB Approval to hold prelim. hearing: 5/25/23
- NRB Approval of Scope: 6/22/23
- Est. for Rule Effective Date: 5/1/2026



**Private Water  
Advisory  
Council  
Wisconsin  
DNR Updates**

**LICENSING  
&  
CONTINUING  
EDUCATION**

# OPERATOR CERTIFICATION EXAM SURVEY

## REMOTE PROCTOR SURVEY RESULTS:

- Only 23% reported no issues
- 63% were dissatisfied or very dissatisfied with the process
- More than 50% required 30 minutes or more to launch
- Time required to launch reduced time allowed for exam
- DNR discontinued remote proctor option as of 3/31/2023

# IN-PERSON DNR PROCTORED EXAMS

- May 16 / Plover (postmark by April 25)
- May 17 / Plover (postmark by April 26)
- June 20 / Rhinelander (postmark by May 30)
- June 21 / Rice Lake (postmark by May 31)

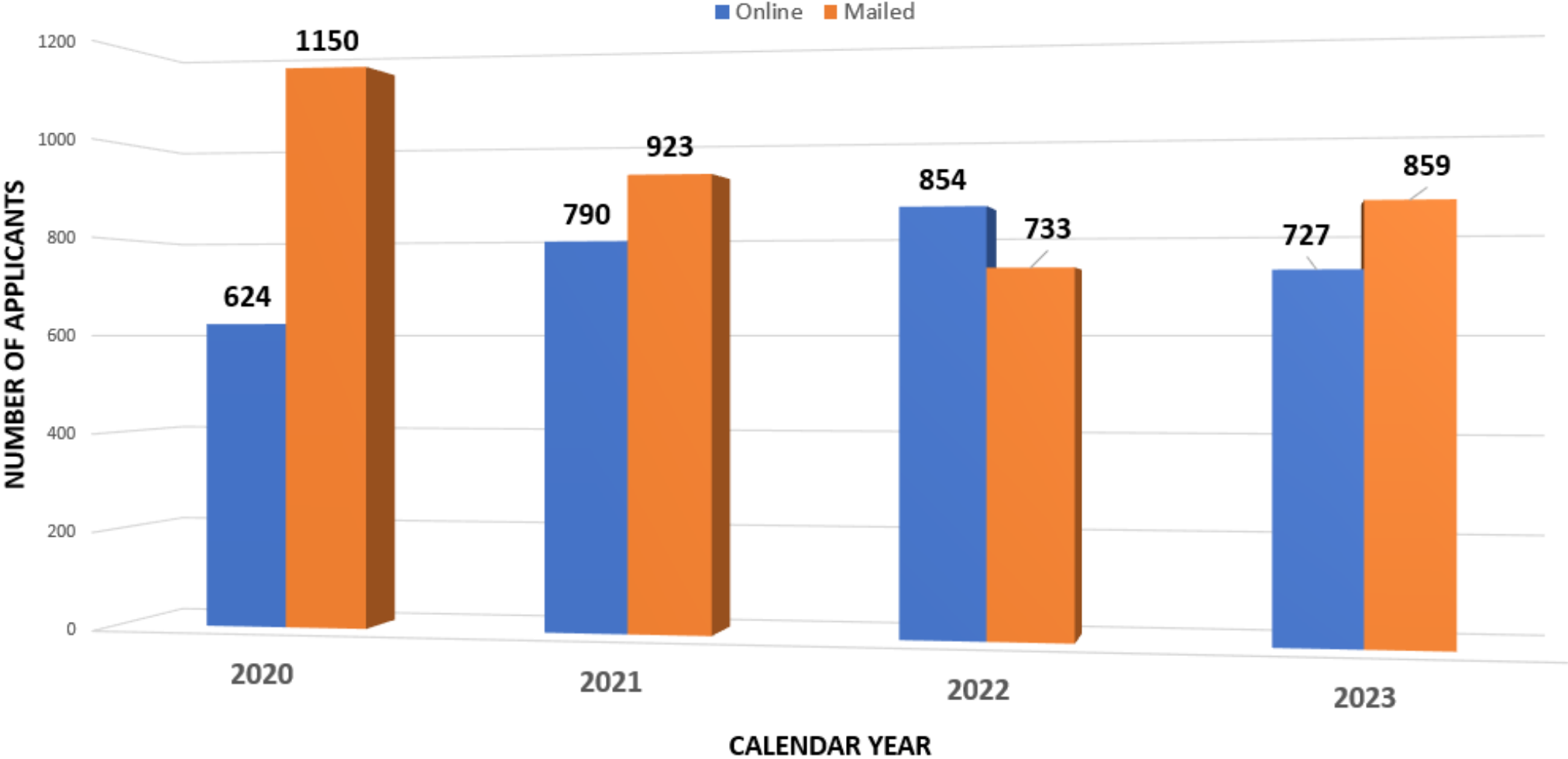


# EXPIRATIONS & REINSTATEMENTS

## 2023 Expirations & Reinstatements by License/Registration Type:

	Not Eligible	Did Not Renew	Expired Total	Reinstated	New	Net Change
PIP	28	14	42	2	15	-25
PIB	7	12	19	2	3	-14
WDP	1	4	5	0	2	-3
WDB	1	1	2	0	0	-2
WDRO	4	7	11	3	13	5
HEDB	0	1	1	0	0	-1
HEDRO	2	0	2	1	1	0
	43	39	82	8	34	-40

# Online vs Mailed Renewal Application Processing



# Renewal Application Process Survey

## • Online Renewal Application Process

- Goals – increase participation in online renewal to reduce errors and department processing.
- Evaluate the process
- What is working well?
- Where can the process be improved?



# APPLICATION AND ATTENDANCE REPORTING CHANGES - 2023

## INPUTS

Existing OpCert Form 4400-190  
Existing OpCert Form 4400-288  
Existing OpCert ELC Processes  
Training System -  
Upload Forms  
Training Attendance List  
Existing PW CE Provider Process  
PW Form 3300-252  
No session ID assignment  
Approval letters manually generated  
Existing PW CE Calendar  
Manual maintenance  
Reposted with each time revised  
Existing OpCert CE Calendar  
Auto updates synced to ELC data  
Online PW CE Status Portal  
3-year attendance history  
OpCert CE Status Portal



Shweta: 40 – 60 hours budgeted  
Form Revisions  
Build and Test: 4 weeks  
PW Training  
PW CE Provider training

## OUTPUTS

PW License Types Added to  
Forms  
4400-190  
4400-288  
Revised PW CE Provider  
Process  
Session ID # Assignment  
Auto generated provider approval email  
Integrated Attendance Tracking  
Training Attendance Spreadsheet  
Attendance Data Upload to ELC  
Integrated CE Calendar  
Integrated CE Status Portal



# Continuing Education Provider Survey

## Seeking feedback from Private Water Providers

- Goals – follow through with automated approval and attendance upload processes
- Improve the application and attendance reporting process for providers
- What did and did not go well?
- Seeking comments and suggestions



# Private Water Advisory Council

- **Old Business**
  - **Driller Track to Licensing (“road map” program (Jeff Beiriger/All)**
- **New Business**
  - **Bacteria Sampling after well is drilled, but before pump installation; why? (Beiriger/All)**
- **[January 2023 Meeting Notes](#)**
- **Future Meeting Dates**
  - **October 2023 – WGNHS Research Collections & Ed. Center, Mt. Horeb**
  - **January 2024 – WWWA Convention, Wisconsin Dells**



**STAY SAFE!**



# CONNECT WITH US



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"WILD WISCONSIN:  
OFF THE RECORD"