



PFAS Source Identification in New Hampshire

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**Highly Fluorinated Compound Conference
June 14, 2017**



PFAS in New Hampshire

2013-2015

- UCMR3
- 18 systems - 80 samples
- 3 systems with detections

April 2014

- Pease Tradeport Water System
- Haven Well - 2,500 ppt PFOS

February 2016

- SGPP facility – Merrimack
- Sink (public water source) – 30 ppt PFOA

April 2016

- Former TCI Amherst

April 2016 to
present

- Southern NH investigations and statewide assessment

NH Regulatory Framework

▶ AGQS - Ambient Groundwater Quality Standards (Env-Or 600)

- PFOA, total of all isomers – 70 ng/L or ppt
- PFOS, total of all isomers – 70 ng/L or ppt
- Combined total PFOA + PFOS – 70 ng/L or ppt

******NH is integrating the PFOA+PFOS sampling into all of applicable regulatory programs******

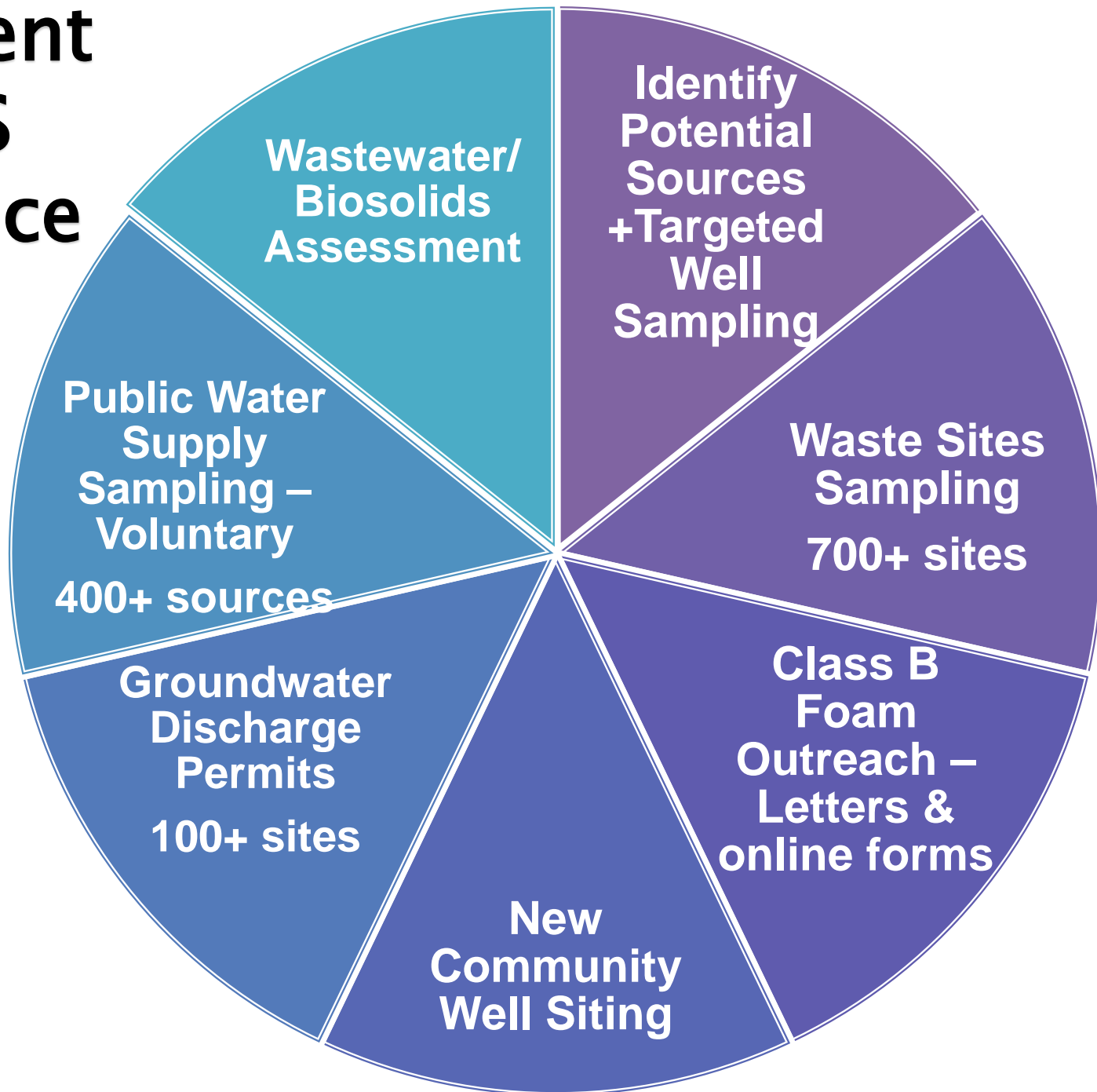
▶ Soil guidance - direct contact

- PFOA – 0.5 mg/kg (500 ppb)
- PFOS – 0.5 mg/kg (500 ppb)
- ***No leaching based standard***

▶ No surface water standard



Assessment of PFAS Occurrence In NH

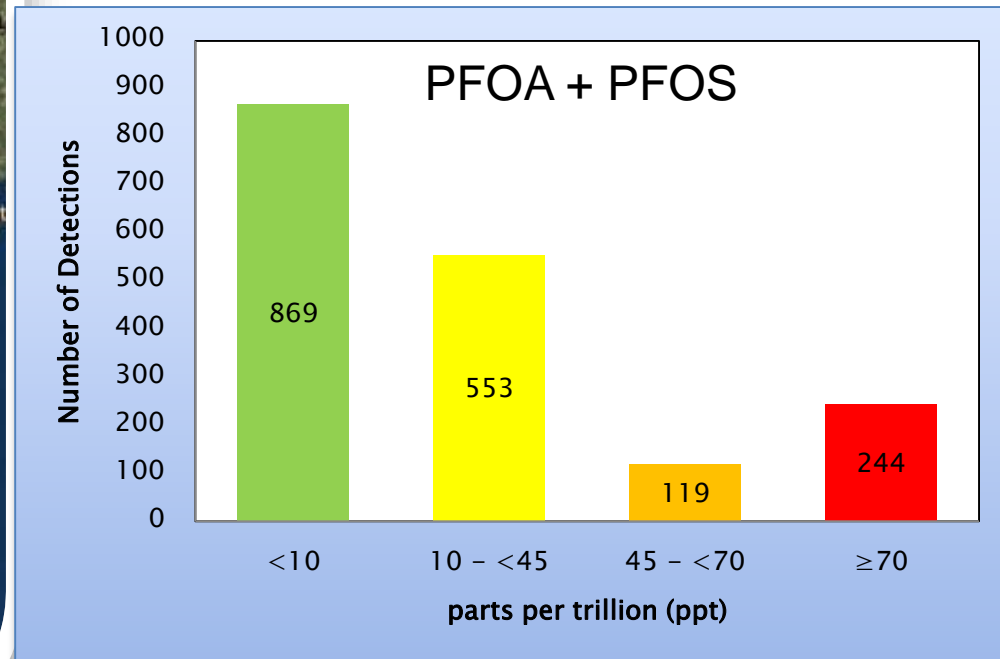
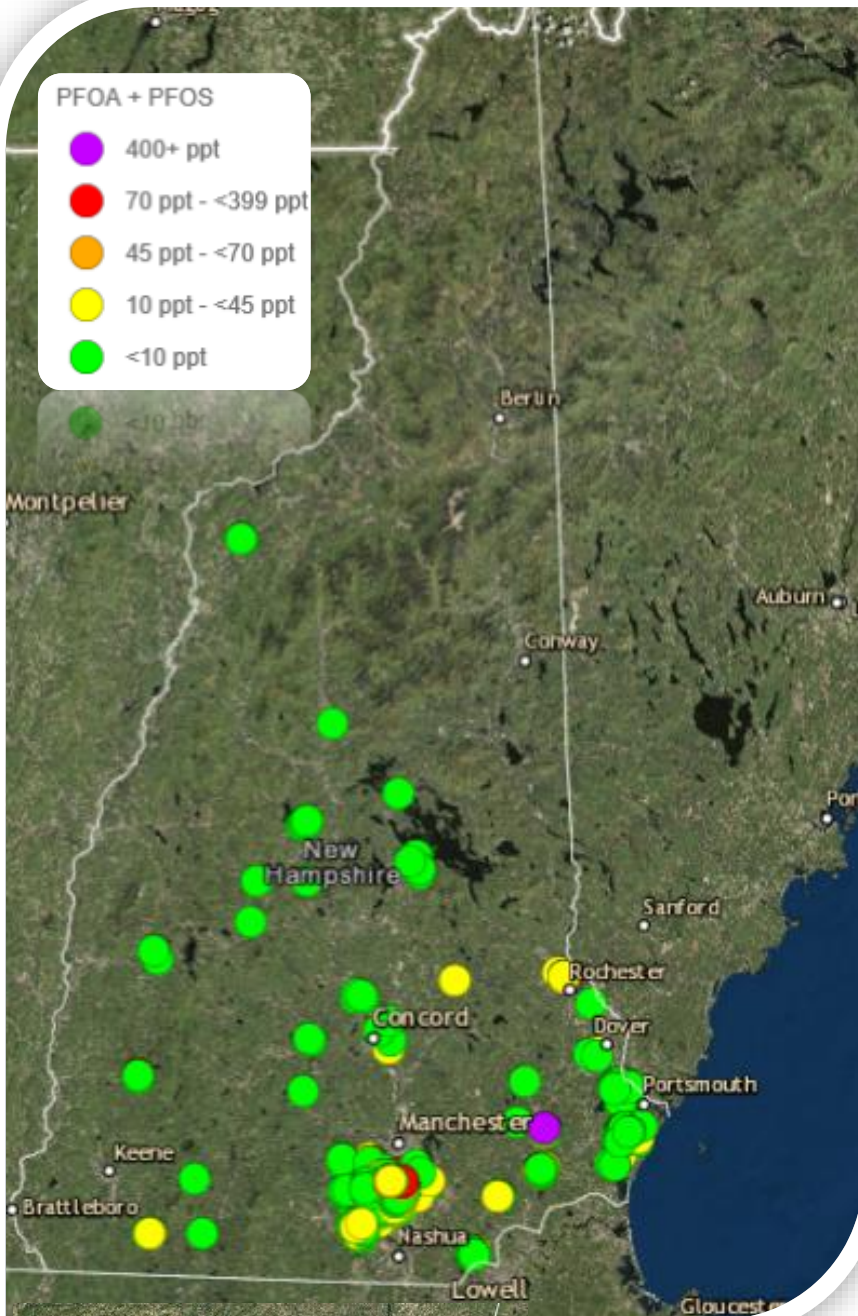


PFAS INVESTIGATION
 SAMPLING SUMMARY - MOST RECENT RESULT FROM ALL DISCRETE SAMPLING LOCATIONS
 (GROUNDWATER / DRINKING WATER / SURFACE WATER / WASTEWATER)
 May 23, 2017

SITE	SAMPLES	APPOINTMENTS SCHEDULED	RESULTS RECEIVED	PFOA & PFOS <10	PFOA & PFOS 10 - <45	PFOA & PFOS 45 - <70	PFOA & PFOS ≥70
SGPP	979	5	952	315	350	92	195
TCI AMHERST	264	1	257	135	81	17	24
MERRIMACK LF	119		119	76	40	1	2
LYDALL	16		16	7	4		5
LLS LF	44		44	41	3		0
SOUHEGAN LF	30		30	30			0
COAKLEY LF	86	2	85	70	10		5
BEDFORD LF	29		29	18	9	2	0
MEADOWOOD	10		10	8	2		0
ROCKINGHAM COUNTY COMPLEX	21		21	17	1		3
KINGSTON FD	46		46	23	18	1	4
NEW BOSTON FD	19		18	14	3	1	0
TROWBRIDGE DR	15		15	3	10		2
MAMMOTH RD	33		32	21	9		2
AMHERST RD	9		9	6	2	1	0
HAMPSTEAD MS	16		16	9	3	4	0
MARLOW ELEMENTARY	4		4	3			1
GILFORD MUNICIPAL	5		5	4		1	0
MADBURY METALS	4		4	3	1		0
HAVERHILL & LEDGE ROAD AREA	27	1	19	13	4		2
GENERAL INVESTIGATION	90		78	71	6	1	0
TOTAL	1,866	9	1,809	887	556	121	245

2,431 total PFAS samples collected

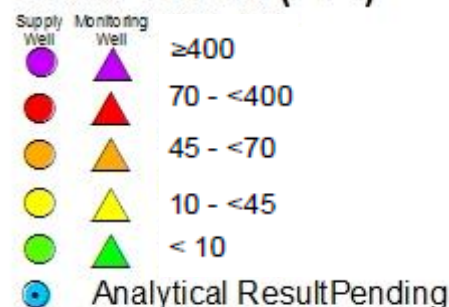
NHDES Sampling Results



SOUTHERN NH PFAS INVESTIGATION May 4, 2017

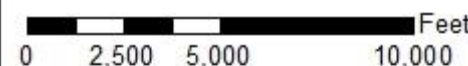


PFOA + PFOS (PPT)

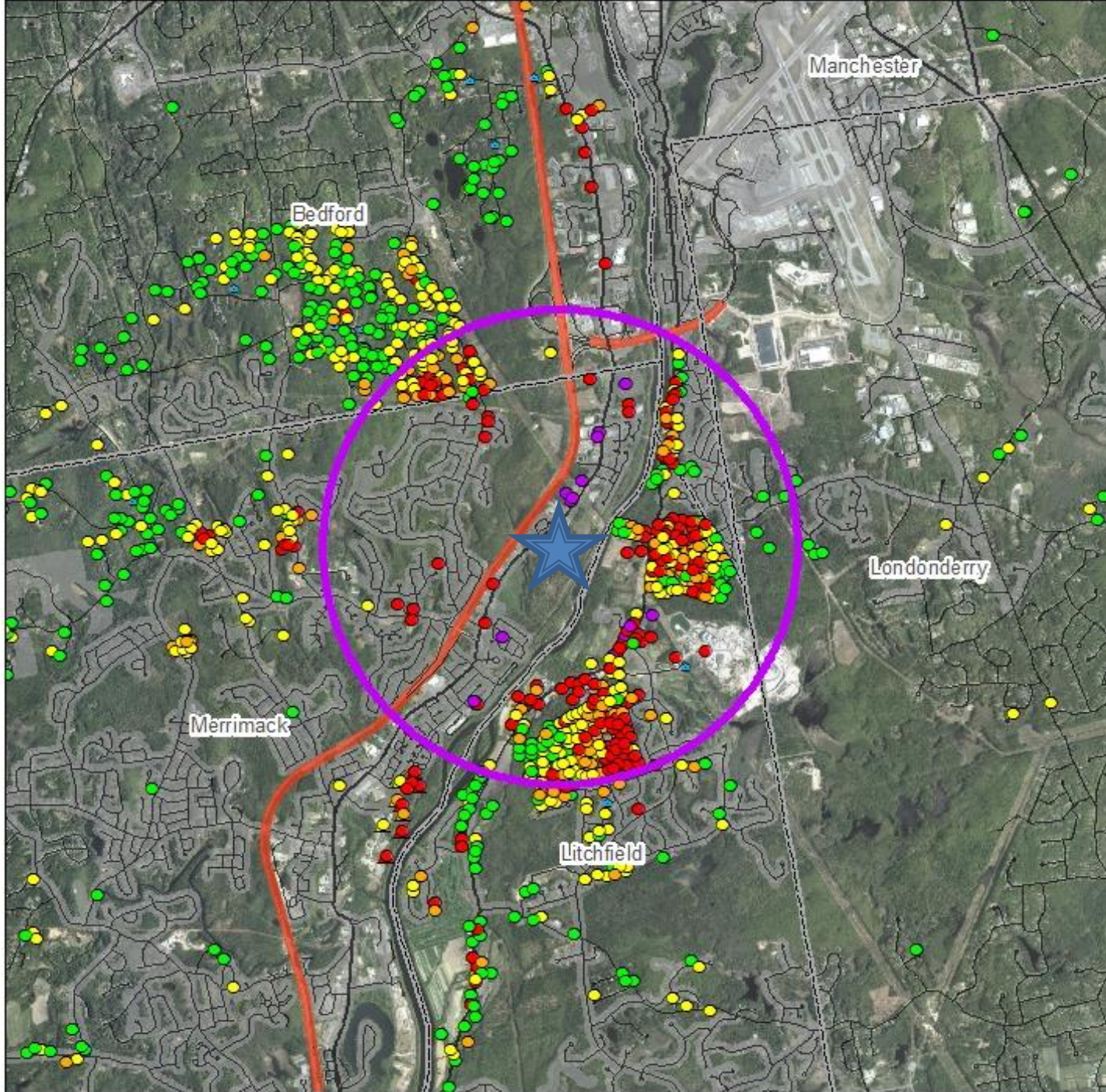


Public Water Supplies
Water Distribution

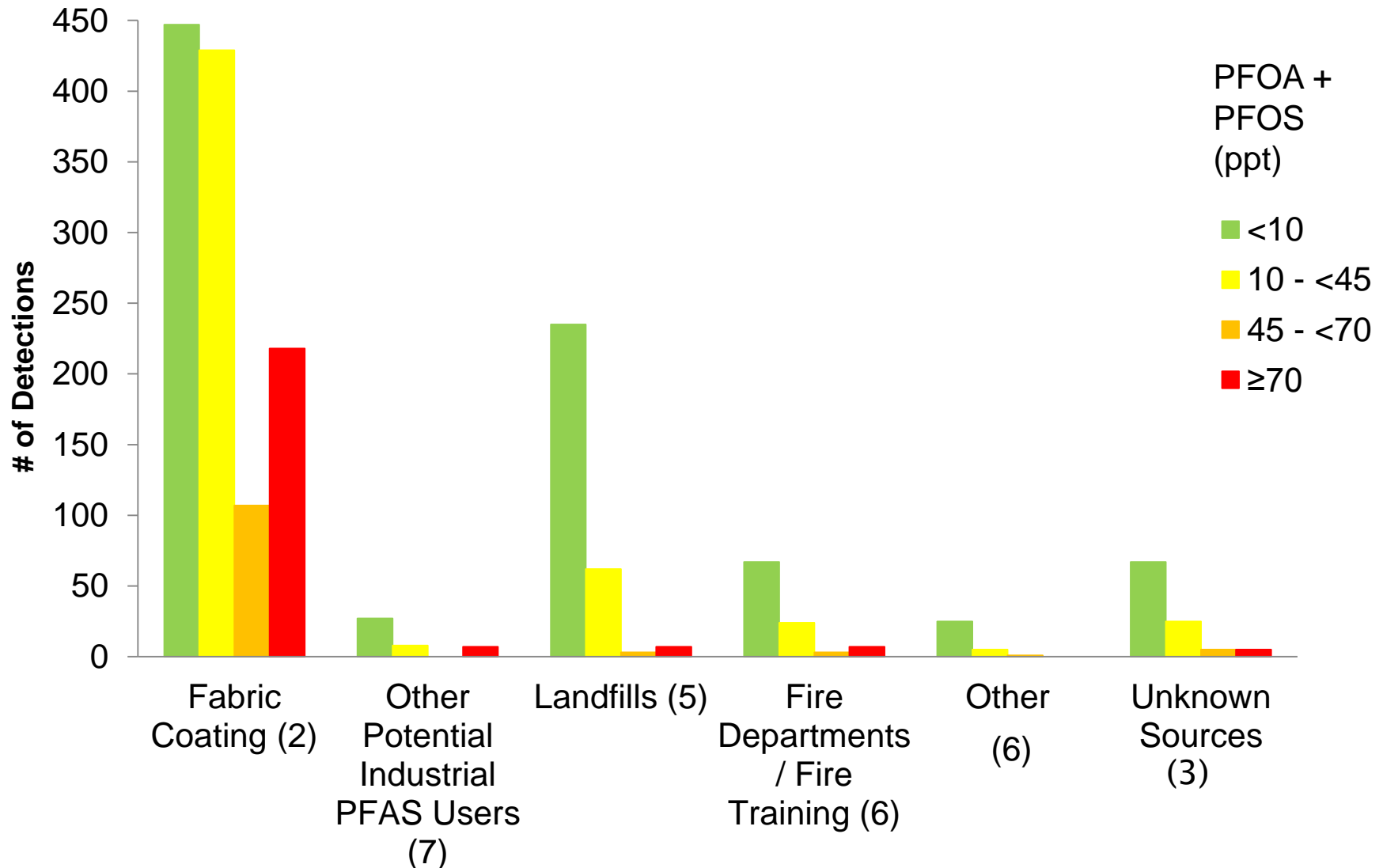
Political Boundary



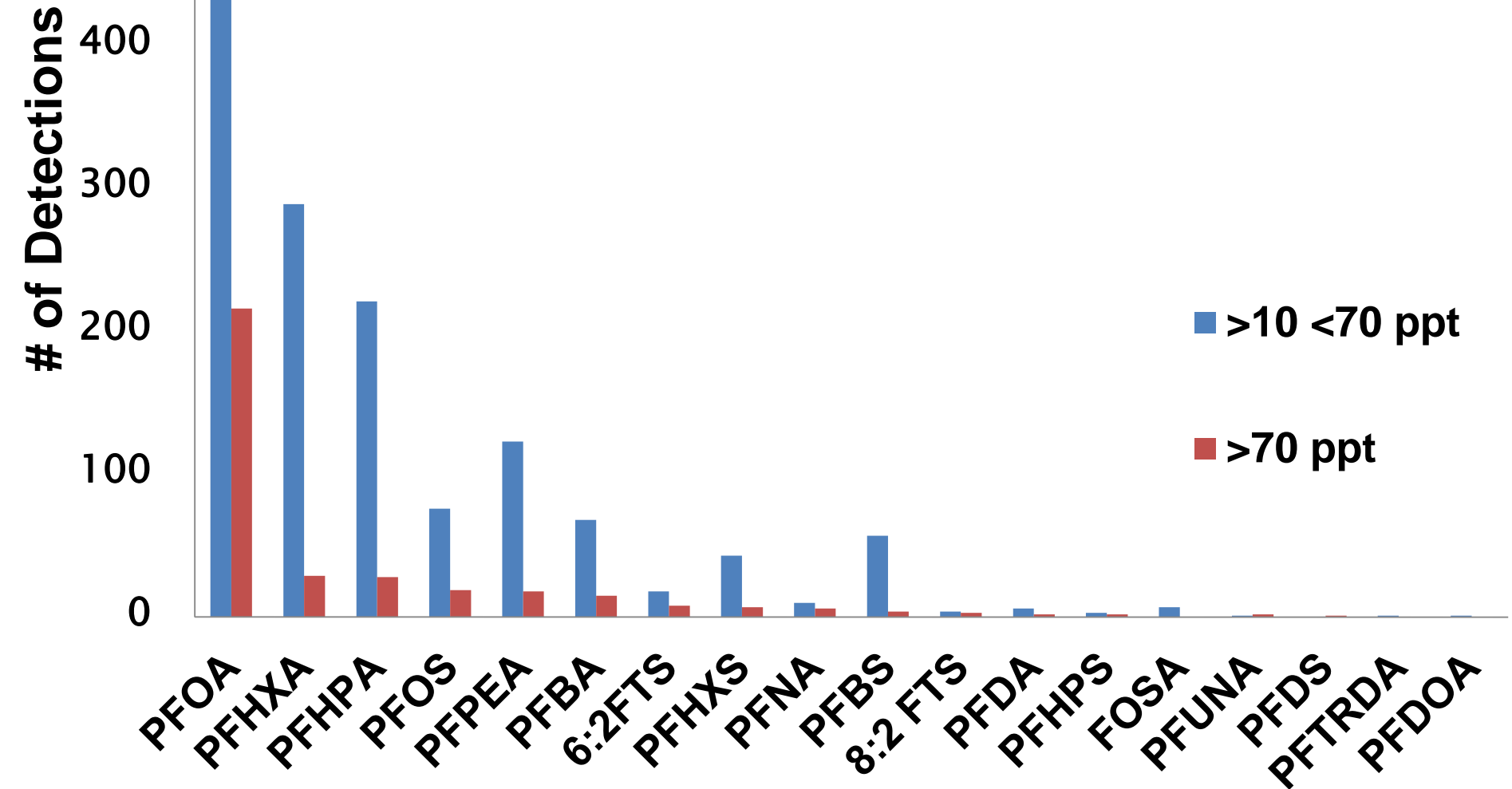
1 inch = 5,000 feet



NHDES Sample Results by Source



PFAS Occurrence



Laboratory Considerations and Challenges

Analytical Requirements

- Extended list (9–23 analytes)
- Low reporting limits (<5 ppt)

Analytical Issues

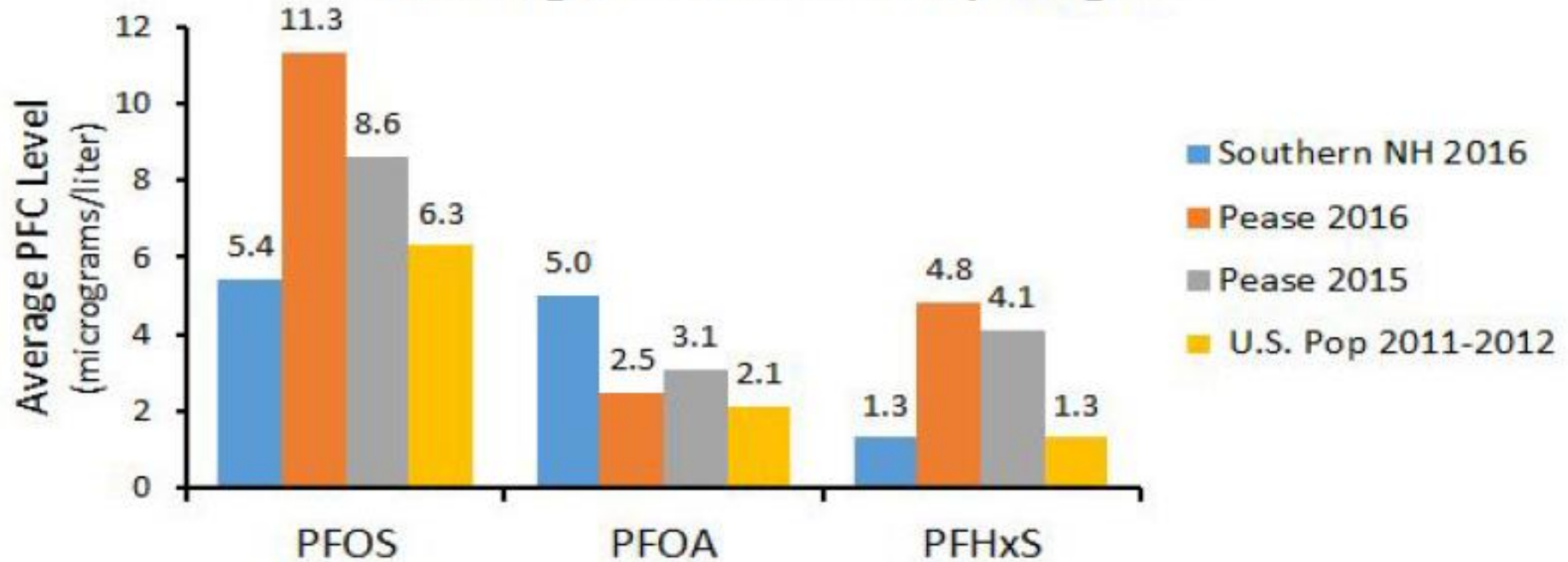
- PFOA (linear & branched)
- Labs reporting different forms of same compounds
- Standards from different vendors are off by 20%
- PE/PT Testing

Enhanced Assessment

- Other PFAS compounds not typically tested
- Forensic/finger-printing sources
- Holistic analytical approaches

PFAS Blood Testing in NH

Average PFC Levels by Region



PFAS Blood Testing in NH

95th Percentile PFC Levels by Region

