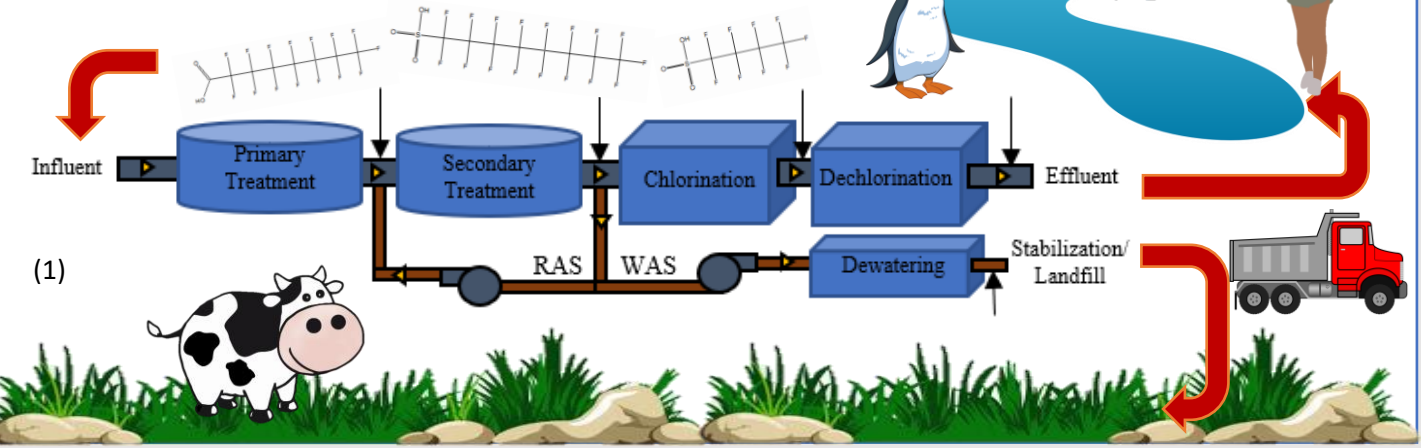
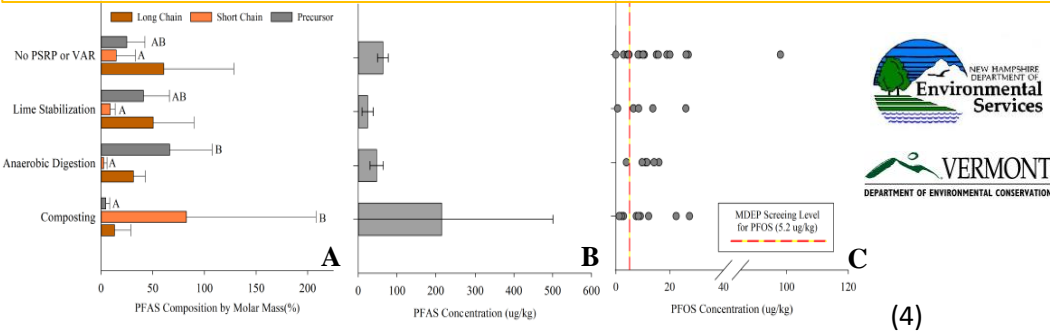


Wastewater treatment facilities (WWTF) are not optimized for the removal of per- and polyfluoroalkyl substances (PFAS), therefore effluent and biosolid release raise concern for human and environmental health.



(1)

PFAS composition in biosolids influenced by stabilization treatments. Concentration unaffected; most samples above MDEP screening levels for PFOS and PFOA



(4)

**Outreach and Extension: June to December 2020**

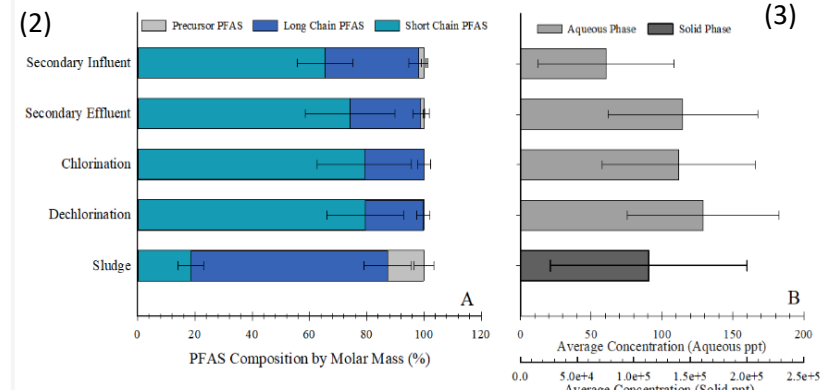
- Adams, Yates, Malley, Mouser. Fate of Long and Short Chain Per-and Polyfluoroalkyl Substances (PFAS) in Wastewater Biosolids. In prep for JNEWEA, 2/1.
- Adams et al: Oral presentation at NEWEA 2021 Annual Conference (120+ audience members) and Poster presentation at NEWEA 2020 Biosolids Conference.

**Progress, June to December 2020: Obtained and completed metadata analysis on UNH, NHDES, VTDEC PFAS data. Assessed trends in concentrations and compositions in solids. Key Findings:**

Diversity of PFAS congeners, especially long chain and precursor compounds is higher in sludge over WWTF effluent

Long chain and precursors sequestered in sludge; short chain in effluent. PFAS concentrations 100-1000 fold higher in sludge than effluent.

Group	Compound	WWTF 1		WWTF 2		WWTF 3		WWTF 4	
		Effluent	Sludge	Effluent	Sludge	Effluent	Sludge	Effluent	Sludge
Short Chain PFCA	PFBA	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
	PFHxA	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
	PFHpA	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
	PFDA	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
Long Chain PFCA	PFDoA	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
	PFNA	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
	PFTA	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
	PFTrDA	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
Short Chain PFSA	PFUnA	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
	PFBS	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
Long Chain PFSA	PFDS	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
	PFHpS	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
	PFHxS	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
	PFNS	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
Fluorotelomers and Precursors	PFOS	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
	PFPeS	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
	8:2FTS	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
	4:2FTS	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
	6:2FTS	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
	NEFOSAA	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
NMeFOSAA	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	
FOSA	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	

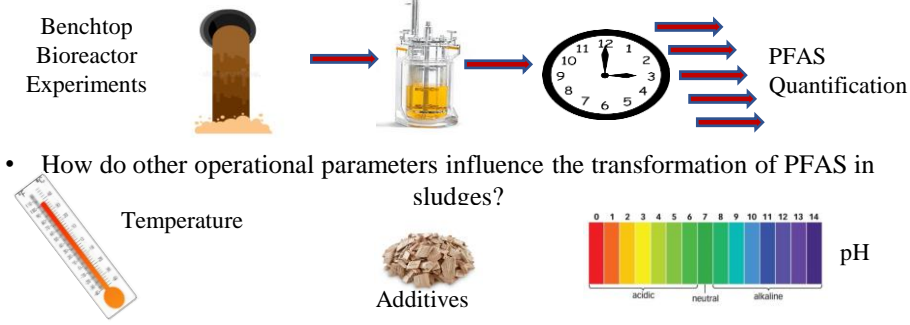


(2)

(3)

**Informing regulatory activity in NH, MA, and VT for surface water and biosolids. Next Steps: January-December 2021**

- (Controlled Experiments) How does hydraulic retention time influence the transformation of PFAS in sludges?



- How do other operational parameters influence the transformation of PFAS in sludges?

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