



PFAS Contamination in the Marinette Peshtigo Area

Listening Session 5

January 15th, 2020



Welcome and Agenda

- What To Expect From This Listening Session
- Addressing PFAS Contamination in Marinette Peshtigo Areas
 - Who's Doing What
 - Status Of Investigation And Clean-Up
- Department of Health Services: Understanding PFAS Health Effects
- Upcoming Important Dates
- Listening Session

What is a Listening Session?

- **Open and ongoing communication** – ask questions, give feedback, let us know what topics you want to hear about.

- **Also – Email or Call**

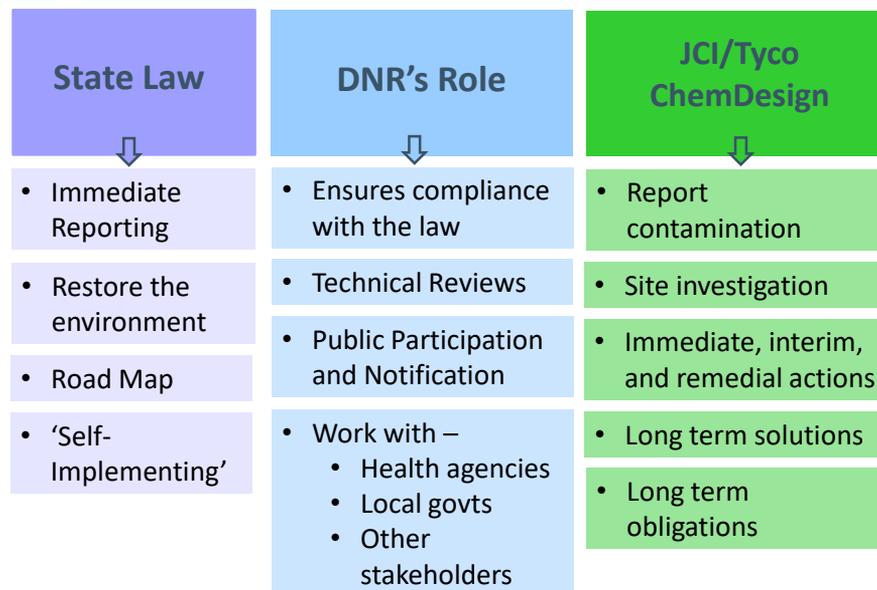
- Call (888-626-3244)
- email DNRJCIPFAS@wisconsin.gov



- **FAQs:**

<https://dnr.wi.gov/topic/Contaminants/Marinette.html>

Roles and Responsibilities





PFAS in Marinette & Peshtigo – The Basics

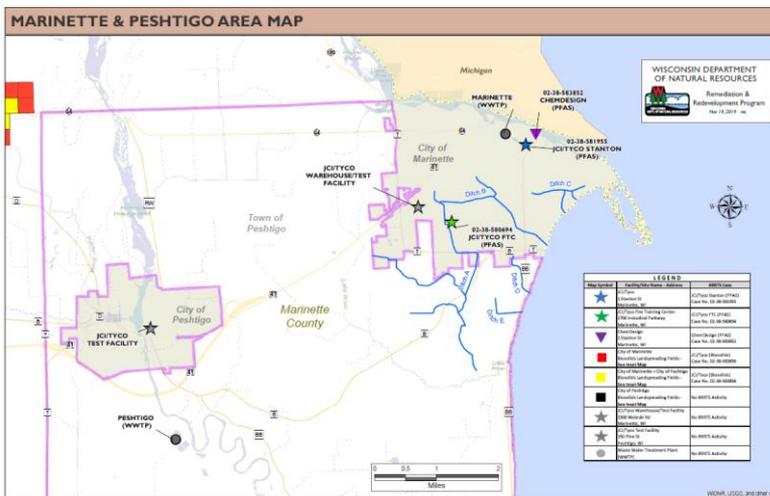
Open Site Investigations

- 1) JCI/Tyco Fire Technology Center – Marinette, WI
- 2) JCI/Tyco - 1 Stanton St – Marinette, WI
- 3) ChemDesign - 2 Stanton St – Marinette, WI
- 4) City of Marinette Biosolids Landspreading Fields (JCI/Tyco RP) – several impacted communities



PFAS in Marinette & Peshtigo – The Basics

- JCI/Tyco and ChemDesign must investigate and clean-up PFAS contamination in accordance with state law



Each case based on a site or facility where a discharge of PFAS occurred – each in a different stage of the investigation

Information and testing requested

- 1) City of Peshtigo Biosolids Landspreading Fields (PRP letter and request for testing)
- 2) JCI/Tyco Woleski Rd Warehouse/Test Facility – Marinette, WI (PRP letter issued)
- 3) JCI/Tyco Pine St Test Facility – Peshtigo, WI (PRP letter issued)

- DNR has not approved the groundwater site investigation for the FTC
- JCI/Tyco has only evaluated groundwater as a potential pathway of PFAS contamination – **additional pathways must be evaluated to completely define the affected area (i.e. surface water and air)**

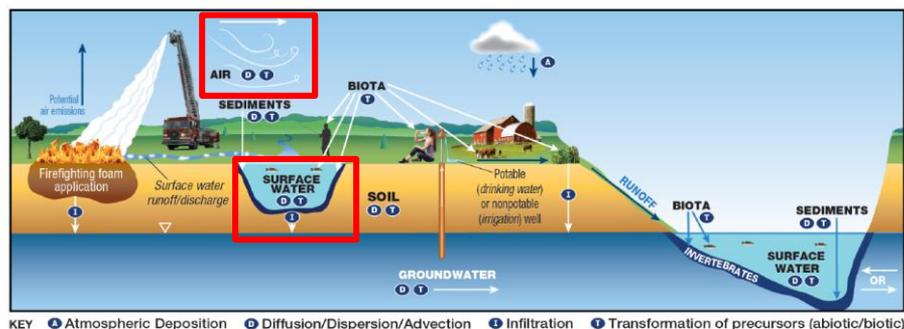


Figure 1. Conceptual site model for fire training areas.

(Source: Adapted from figure by L. Trozzolo, TRC, used with permission)

ITRC: https://pfas-1.itrcweb.org/wp-content/uploads/2018/03/pfas_fact_sheet_fate_and_transport__3_16_18.pdf

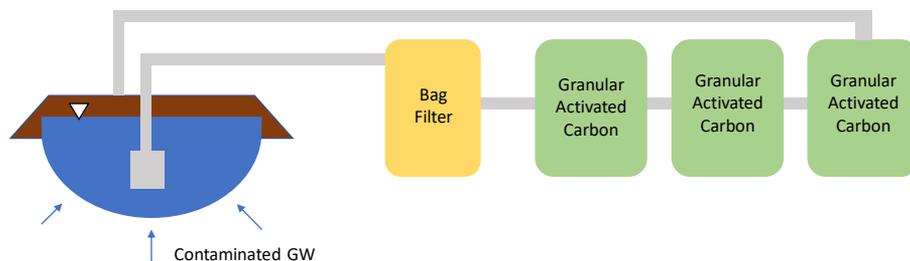
NR 716.14 Sample Results Notification Requirements

Samples From Water Supply Wells And Other Media

- Responsible parties shall report all water supply well sampling results to the department and to the well owner - within 10 business days
- Also report cause and significance of any contaminant concentrations observed in the samples

- DNR in receipt of Ditch A Treatment System Operations and Maintenance Report from JCI/Tyco in December 2019
- Ditch A Treatment System installed January 2019 just north of University Drive, just west of the County Jail

Ditch A Treatment System

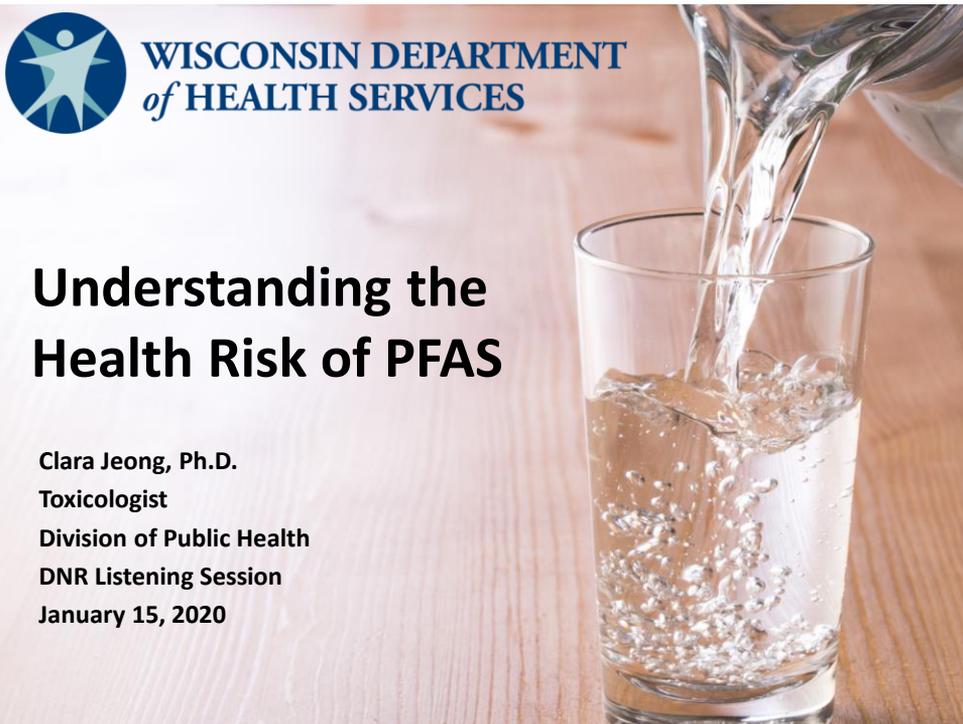


WISCONSIN DNR Department of Natural Resources
Surface Water Treatment Systems

Ditch A Treatment System Operations and Maintenance Report (Table 4)

Date	PFOS in Influent (ng/L)	PFOS in Effluent (ng/L)	Efficiency (%)	PFOA in Influent (ng/L)	PFOA in Effluent (ng/L)	Efficiency (%)
1/15/2019	33	< 0.51	100.00	70	< 0.80	100.00
1/21/2019	7.3	< 0.50	100.00	18	< 0.79	100.00
1/30/2019	14	< 0.52	100.00	27	< 0.82	100.00
Average:			100.00	Average:		
3/14/2019	5.5	< 1.9	100.00	7.5	< 1.9	100.00
3/19/2019	12	< 1.9	100.00	19	< 1.9	100.00
3/28/2019	350	0.7 J	99.80	480	< 1.8	100.00
Average:			99.93	Average:		
4/1/2019	250	< 1.7	100.00	610	< 1.7	100.00
4/8/2019	310	< 1.8	100.00	560	< 1.8	100.00
4/18/2019	360	0.55	99.85	460	< 1.9	100.00
4/25/2019	420	< 1.8	100.00	1300	< 1.8	100.00
Average:			99.96	Average:		
5/3/2019	390	< 2.0	100.00	1,100	< 2.0	100.00
5/8/2019	460	< 2.0	100.00	1,400	< 2.0	100.00
5/15/2019	460	< 2.0	100.00	1,200	< 2.0	100.00
5/22/2019	540	< 1.9	100.00	1,700	2.4	99.86
5/28/2019	460	< 2.0	100.00	760	0.84 J	99.89
Average:			100.00	Average:		
6/7/2019	780	2.0	99.74	1,800	< 1.8	100.00
6/11/2019	700	< 1.9	100.00	1,900	< 1.9	100.00
6/18/2019	840	< 1.9	100.00	1,800	< 1.9	100.00
6/26/2019	690	< 1.8	100.00	1,600	< 1.8	100.00
Average:			99.94	Average:		
Overall Average:			99.97	Overall Average:		

Notes:
 < = Result is less than the method detection limit (MDL)
 J = Result is less than the reporting limit (RL) and greater than the MDL. The result is estimated.
 ng/L = Nanograms per liter
 PFOA = Perfluorooctanoic acid



WISCONSIN DEPARTMENT of HEALTH SERVICES

Understanding the Health Risk of PFAS

Clara Jeong, Ph.D.
 Toxicologist
 Division of Public Health
 DNR Listening Session
 January 15, 2020

DHS' Work



Evaluating literature to determine safe levels in water



Identify exposure pathways at specific sites



Make recommendations to prevent or reduce exposure



Educate affected communities and local health professionals about site contamination and potential health effects

How we learn about adverse health effects



Human Health Studies:

Useful for detecting adverse health outcomes in exposed persons.



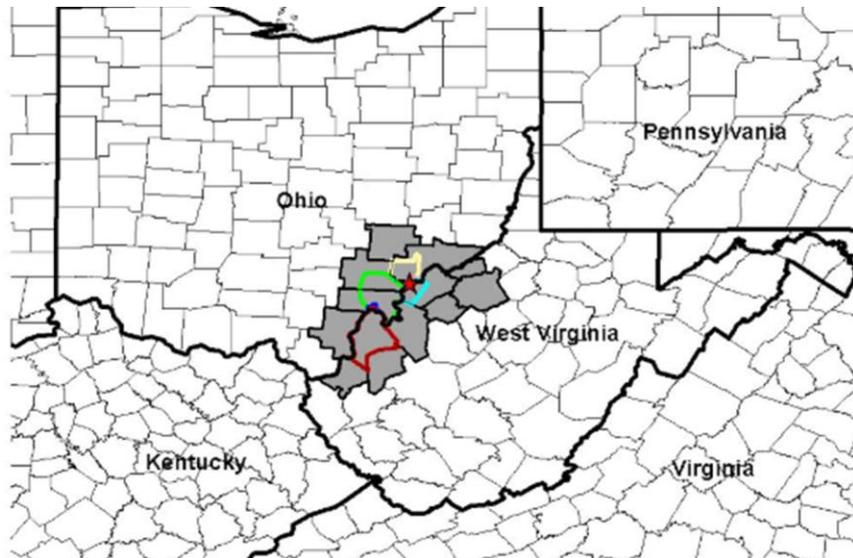
Animal Studies:

Useful for learning the mechanisms and for risk assessment.

An example of human studies:

The C8 Health Study

C8 Study Area



Map ©Joel Halverson

★ Dupont Plant

Average PFOA level in drinking water

Location	PFOA (ppt)
Little Hocking, OH	3,400
Lubeck, WV	520
Tuppers Plains, OH	310

ppt = $\mu\text{g/L}$

https://www.health.ny.gov/environmental/investigations/hoosick/docs/pfoa_blood_sampling_q_and_a_9_2_16.pdf

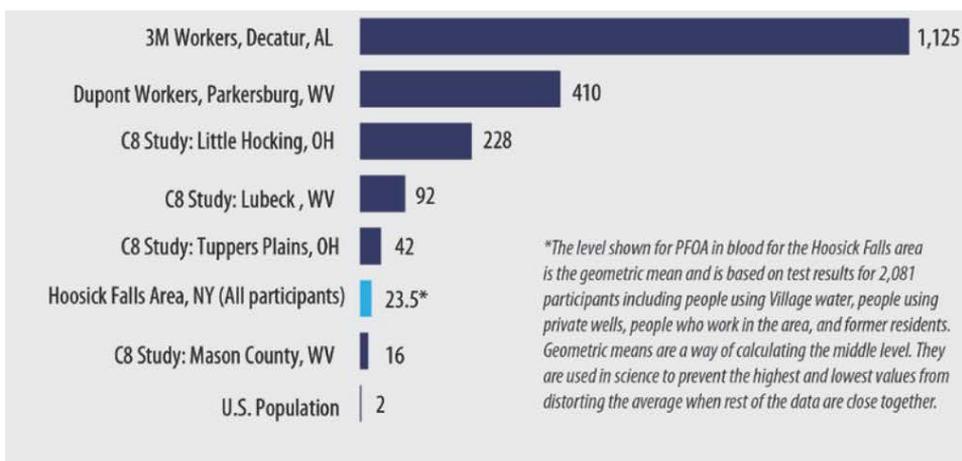
How was the health data collected?

69,000 participants

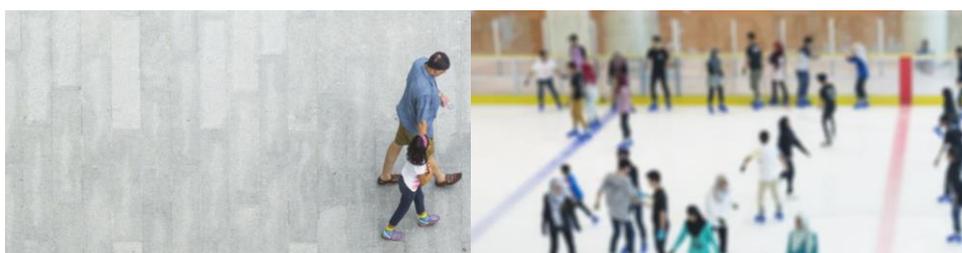
Gathered information through interviews
and questionnaires

Collected blood samples

Average PFOA level in blood ($\mu\text{g/L}$)



https://www.health.ny.gov/environmental/investigations/hoosick/docs/pfoa_blood_sampling_q_and_a_9_2_16.pdf



Various studies were conducted from the C8 project.



What health effects did they look for?

Respiratory Disease

Thyroid Disease

Osteoarthritis

Diabetes

Heart Disease

Liver Disease

Cancer

Birth Defects

Preterm birth

Neurological disorders

Preeclampsia

Infectious Disease

Pregnancy-Induced
Hypertension

Autoimmune Disease

Probable association were found between C8 (PFOA) exposure and:

Respiratory Disease

Thyroid Disease

Osteoarthritis

Diabetes

High Cholesterol

Liver Disease

Kidney/Testicular Cancer

Birth Defects

Preterm birth

Neurological disorders

Preeclampsia

Infectious Disease

**Pregnancy-Induced
Hypertension**

Ulcerative Colitis

High levels of PFAS may



Increase
cholesterol



Reduce
antibody
response



Decrease
fertility in
women

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PFAS and Cancer

Some evidence of increased risk of cancer of testis and kidney in highly exposed groups (PFOA).

No evidence of increase in breast, lung, bladder, liver, pancreas, colorectal, or overall cancer.

WHO considers human and animal evidence to be limited for PFOA and considers it possibly carcinogenic.

We do not know how much PFAS has to be in our blood to cause health effects.



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We can be exposed to PFAS from food, dust, and drinking water.

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Major exposure pathways to PFAS

Drinking contaminated water.

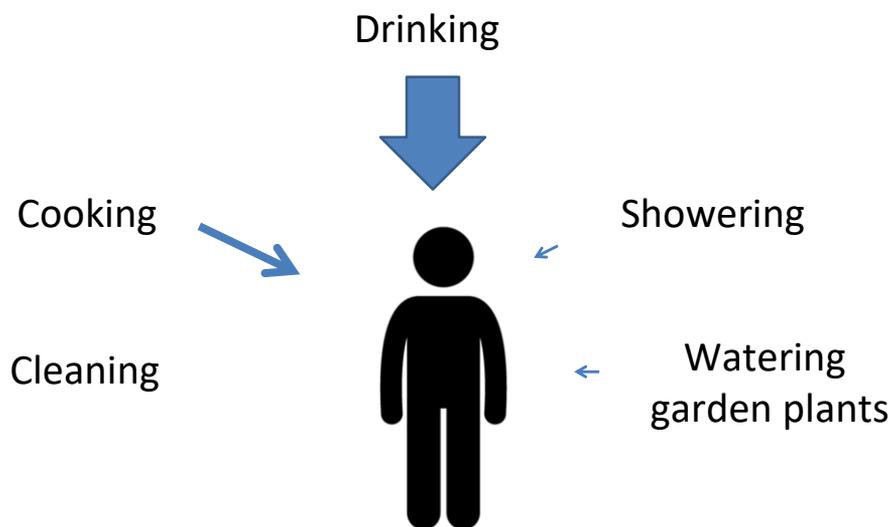
Eating fish caught from contaminated water (PFOS, in particular).

Accidentally swallowing contaminated soil or dust.

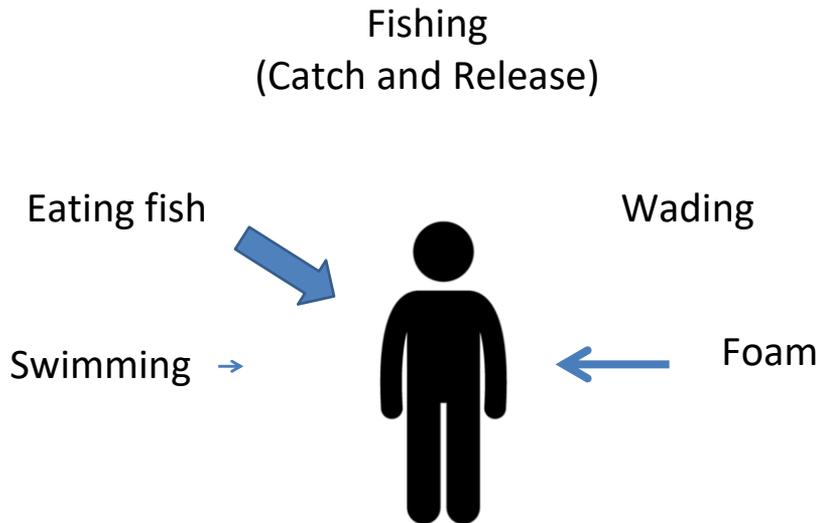
Eating food that was packaged in material that contains PFAS.

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Contaminated Private well

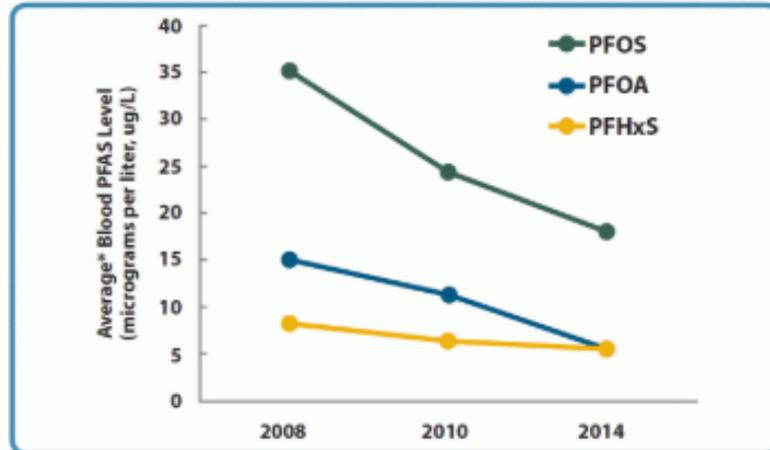


Contaminated Surface Waters



Interrupting PFAS
exposure will reduce
PFAS levels in our body.

Average Blood Level of Some PFAS after Installing a Water Filtration System



* Data shown are geometric means
Data Source: Minnesota Department of Health, Environmental Tracking and Biomonitoring, East Metro PFC3 Biomonitoring Project, December 2015 Report to the Community.

<https://www.atsdr.cdc.gov/pfas/pfas-in-population.html>

**Preventing further PFAS exposure
is the priority to protect
community health.**



Q & As

Thank you!

Clara Jeong, Ph.D.

Toxicologist

Bureau of Environmental and Occupational Health

Division of Public Health

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Upcoming Important Dates

January -

- 1) Natural Resources Board – request to start rule making process (establish gw, sw, dw standards)
- 2) JCI/Tyco reports due
- 3) Jan – March: Deer Sampling Planned
- 4) DNR and JCI/TYCO meeting to discuss next steps

February –

- 1) JCI/Tyco begin sampling private wells in expanded study areas - FTC and Biosolids (or DNR if JCI/Tyco refuses)



Upcoming Important Meetings

February -

- 1) Wed Feb 19th – 6th Listening Session (last scheduled listening session – to be discussed during open forum)

March –

- 1) AOC meeting for Menominee River
 - Will email information via email subscriptions– sign up in back if you haven't already



Listening Session Format

- **Format:**

- Open Q/A Session

- **Ground Rules:**

- Purpose of Listening Sessions
- 3-mins per person → everyone has the opportunity to voice concerns
- Keep comments constructive
- Attack the problem not the person