Presentation for the
Orient Civic Association

Per-& Polyfluoroalkyl Substances (PFAS)

February 9, 2023

Presented by:
Suffolk County Department of Health Services

OVERVIEW

- Background
- Potential Health Effects
- Regulations
- Contamination Sites and Investigations
- Orient Private Well Survey
- Questions/Comments

PFAS Background

What is PFAS and where does it come from?

PER- & POLYFLUOROALKYL SUBSTANCES (PFAS)

- PFAS have been used in a number of industrial and commercial products such firefighting foam, as well as coatings that repel water, oil, stains and grease
- They have been used in textiles, food packaging and non-stick cookware; though many major manufacturers in the United States have agreed to voluntarily reduce the content of PFAS in their products
  - By 2002 primary US manufacturer phased out PFOS production
  - 2006 EPA stewardship program set goals for eight leading manufacturers to reduce emissions of PFOA by 95% by 2010 & phase out production of PFOA & related chemicals by 2015
- PFOA (perfluorooctanoic acid) and PFOS (perfluorooctane sulfonate) have been the most extensively produced and studied of these chemicals. Both chemicals are persistent in the environment and in the human body

PFOA and PFOS Potential Sources

- PFOA
  - Mainly used in the manufacturing of fluoropolymers like PTFE (e.g. non-stick pans)
  - Also used as a component in fire fighting foams from ~1965-1975
- PFOS
  - Used in the production of fire fighting foams, hydraulic fluids and photolithography
  - Major consumer product-related uses are water repellant treatment for clothes, stain and dirt resistant for carpets, oil and grease repellant treatments for paper and packaging

As of 12/31/22, NYS prohibiting the sale of food packaging containing intentionally added PFAS

Sources: https://oehha.ca.gov/sites/default/files/media/downloads/crnr/pfoapfosphgdraft061021.pdf
https://www.riversideca.gov/press/understanding-pfas

PFAS Potential Health Effects

Why are we concerned about PFAS ?

PFAS Potential Health Effects

PFOS/PFOA: some important characteristics

- Highly persistent
- Concentrate in proteins
- Cleared slowly, primarily in urine

PFAS Potential Health Effects

PFOA:

Epidemiological Studies:

- Increased kidney cancer
- Liver and immune system toxicity
- Increase in total cholesterol
- Suggestion of preeclampsia; pregnancy-related hypertension

Animal Studies: confirm epidemiological observations

- Liver and immune system toxicity
- Thyroid toxicity
- Developmental and reproductive effects
- Cancer

PFAS Potential Health Effects

PFOS

Epidemiological Studies

- Immune system toxicity
- Increase in total cholesterol, alteration in lipid metabolism
- Suggestion of preeclampsia; pregnancy-related hypertension
- Inconsistent observations of breast, liver and pancreatic cancer

Animal Studies

- Liver and immune system toxicity
- Thyroid toxicity
- Developmental and reproductive effects
- Liver and pancreatic cancer

PFAS Exposure Pathways

- Drinking Water
- Diet (Food)
- Indoor/Outdoor Air

Source:
https://www.riversideca.gov/press/understanding-pfas

PFAS Regulations

What are Federal and State Regulators Doing?

Regulatory Status & Analytical Capability ~6 Years Ago

- Federal Unregulated Contaminant Monitoring (List 3)
  - Monitoring conducted 2013-2015
  - Minimum reporting levels
    - PFOS: 40 ppt
    - PFOA: 20 ppt
- Data From Suffolk County Public Water Supplies
  - Seven (7) detections of PFOS at 5 wellfields up to 530 ppt
  - No detections of PFOA
- Provisional Non-Enforceable Health Advisory Levels :
  - PFOS: 200 ppt
  - PFOA: 400 ppt
- NYS Enforceable Drinking Water Standard: 50,000 ppt

Note that a part per trillion (ppt) is comparable to 1 second in 31,500 years

Regulatory Status & Analytical Capability As of Winter 2023

- NYSDEC adopted an emergency regulation classifying PFOS and PFOA as hazardous substances 4/25/16
- NYSDOH drinking water standards for PFOS and PFOA at 10 ppt each - 8/26/20
- NYSDOH proposes new drinking water standards for PFNA, PFHPA, PFHxS, and PFDA, a combined MCL for 6 PFAS, and notification levels for an additional 19 compounds in public water - 10/5/22
- Federal Unregulated Contaminant Monitoring (List 5)
  - Includes 29 PFAS
  - Monitoring to be conducted 2023-2025

- Lower analytical detection limits (~2 ppt)

Potential Contamination Sites and Investigations

What else is Suffolk County doing to address PFAS?

Suffolk County Investigation Work

- SCDHS has been routinely coordinating with NYSDOH/NYSDEC and others for over 6 years with a specific focus on PFAS
- In areas of known or suspected PFAS groundwater contamination, SCDHS has:
  - Initiated ~50+ private well surveys across Suffolk County
    - Collection of ~1,500 domestic well samples
    - ~15% over the PFOS/PFOA NYS MCLs
    - Max PFOS/PFOA concentration detected: 3,350 ppt

SUFFOLK COUNTY INVESTIGATION WORK

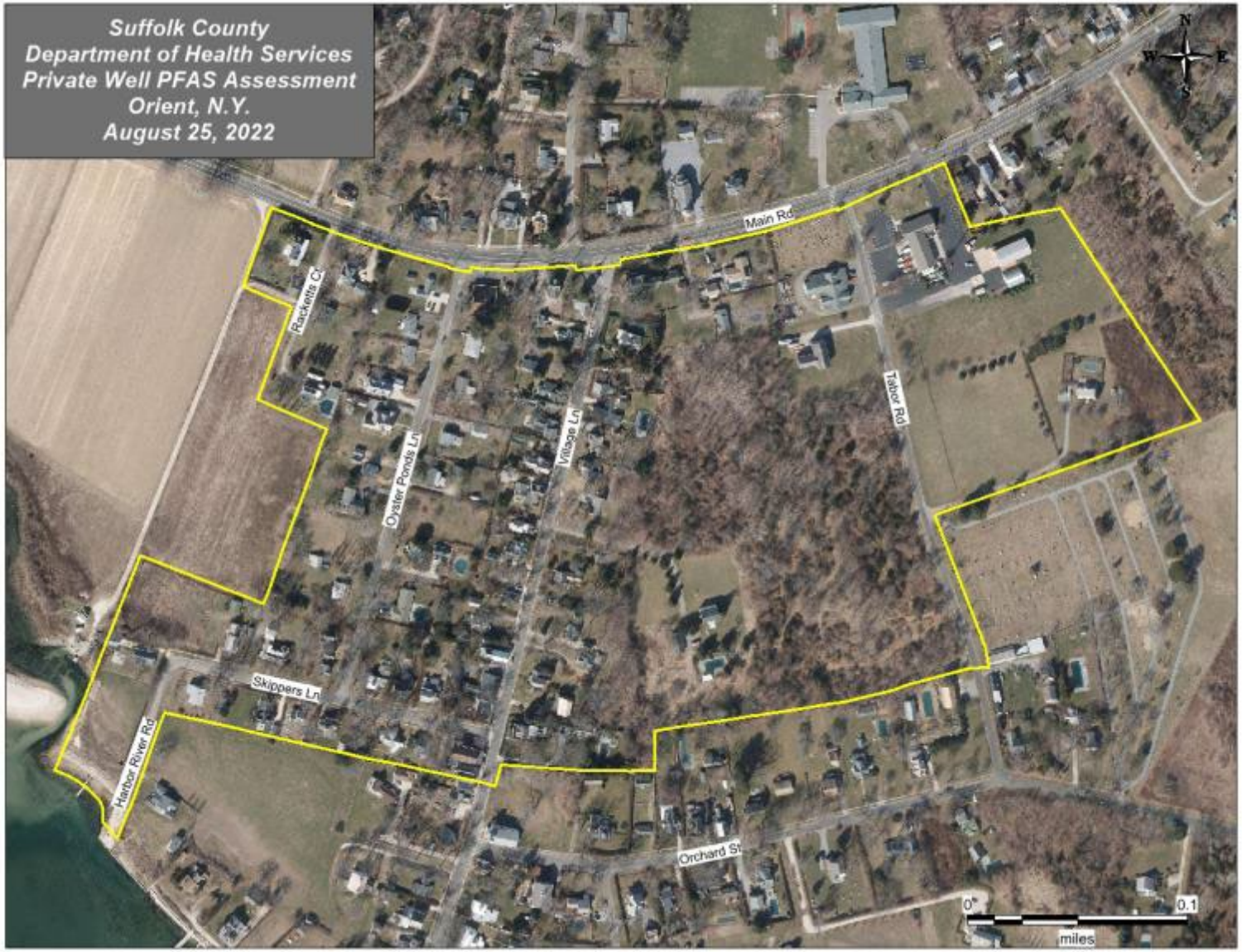
- Conducted 14 groundwater investigations at airports, county facilities, near public water supply wells, etc.
  - ~200 groundwater wells installed
  - >1,100 groundwater samples collected
  - ~11% over the PFOS/PFOA NYS MCLs
  - Max PFOS/PFOA concentration detected: 15,080 ppt
- Several of these sites were or became Superfund sites based on SCDHS work and analytical results including:
  - Gabreski Airport
  - Hampton Bays Fire District
  - Yaphank Firematics
  - East Hampton Airport
  - Former BOMARC facility

Orient Private Well Survey

BACKGROUND & STATUS

- SCDHS received PFAS testing data from public, private, and test well samples
  - 5 of the wells had detections of PFOS/PFOA above the MCLs
- 67 properties were selected for the original private well survey
  - Sampling and analysis free of charge
  - SCDHS OWR mailed letters to property owners and conducted door to door outreach within the survey area in October 2022 and again in January 2023
  - PFAS samples analyzed by a NYSDEC contract laboratory
  - Comprehensive analysis of VOCs, SVOCs, pesticides, inorganics, bacteria, etc. analyzed by SCDHS Public & Environmental Health Laboratory

Private Well Assessment Area



ORIENT PRIVATE WELL SURVEY SUMMARY

- As of 2/6/23, the number of potential private wells in the original survey area is 65, serving 64 properties

Status of the 65 Private Wells (serving 64 properties)

*Total number of wells sampled: 50

*Total number of residences that did not respond/pending sampling/vacant: 15

Analytical Results Summary for the 50 Private Wells Sampled for PFOS/PFOA

# of wells above the PFOS/PFOA MCL: 33 (up to a combined PFOS/PFOA concentration of 3,350 ppt)

***NYS providing alternate water for MCL exceedances**

# of wells with detections, below the PFOS/PFOA MCL: 13

# of wells with no detections of PFOS/PFOA: 1

# of wells with PFOS/PFOA results that are pending: 3

- **Based upon the analysis of drinking water results thus far, a private well survey expansion is underway to an additional 109 properties**

- **A groundwater investigation will also be initiated later this month to further evaluate groundwater contamination in this area**

Private Well Assessment Area Expansion

How to Respond & What to Expect

- Residents within the private well survey area may:
  - Submit their application by fax or mail to SCDHS Office of Water Resources, 360 Yaphank Ave- Suite 1C, Yaphank, NY 11980
  - Call SCDHS Office of Water Resources at 631-852-5810
- One of our trained public health sanitarians will contact you to schedule sample collection
  - An adult needs to be home at the time of sample collection
  - We will collect samples before and after any on-site filtration devices
- Notification of results
  - Staff will contact you as results are completed if a contaminant is detected over a drinking water standard and provide guidance. A letter will be mailed once the comprehensive test results are completed
  - If PFOS and/or PFOA are detected at or above a drinking water standard, NYS has been providing an alternate water source (e.g. bottled water, POET, public water connection where available)

Questions/Comments?