Naval Facilities Engineering Systems Command

# PFAS Overview

**Treasure Island RAB**

07 February 2023

# What are Per-and Polyfluoroalkyl  Substances (aka PFAS)?

- Per- and polyfluoroalkyl substances (PFAS) are a class of man-made chemicals found in many consumer products such as stain-resistant textiles, nonstick cookware, food packaging, cleaning products, cosmetics, and some firefighting foams such as aqueous film forming foam (AFFF). These chemicals are useful for resisting heat, stains, grease, and water.
- DON's most common operational use of PFAS has been associated with AFFF used primarily for firefighting, including historic training and equipment testing.
- On, Treasure Island, firefighting foam is most common source of PFAS impacts.


Image Source: Department of Ecology, State of Washington

# PFAS on a Molecular Level

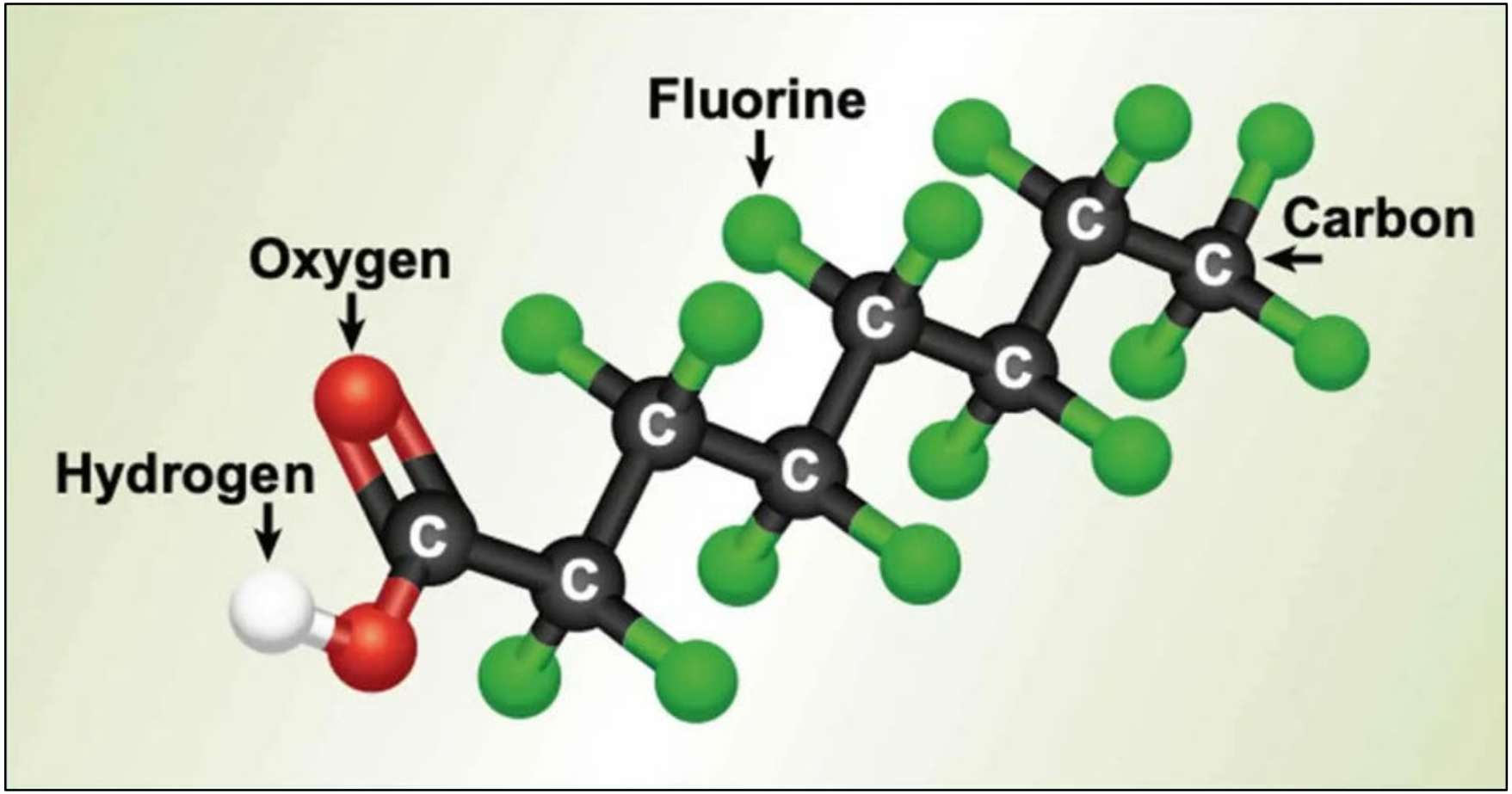



Image Source: National Institute of Environmental Health Sciences, March 2019

# Possible Routes of PFAS to the Environment

- **Spills during the following activities are the primary sources for PFAS entering our groundwater/surface water**
  - ***Drinking water at Treasure Island comes from off-island***
  - **Firefighting Activities using Firefighting Foams**
  - **Industrial Sites**
  - **Wastewater Treatment Plants/Biosolids**

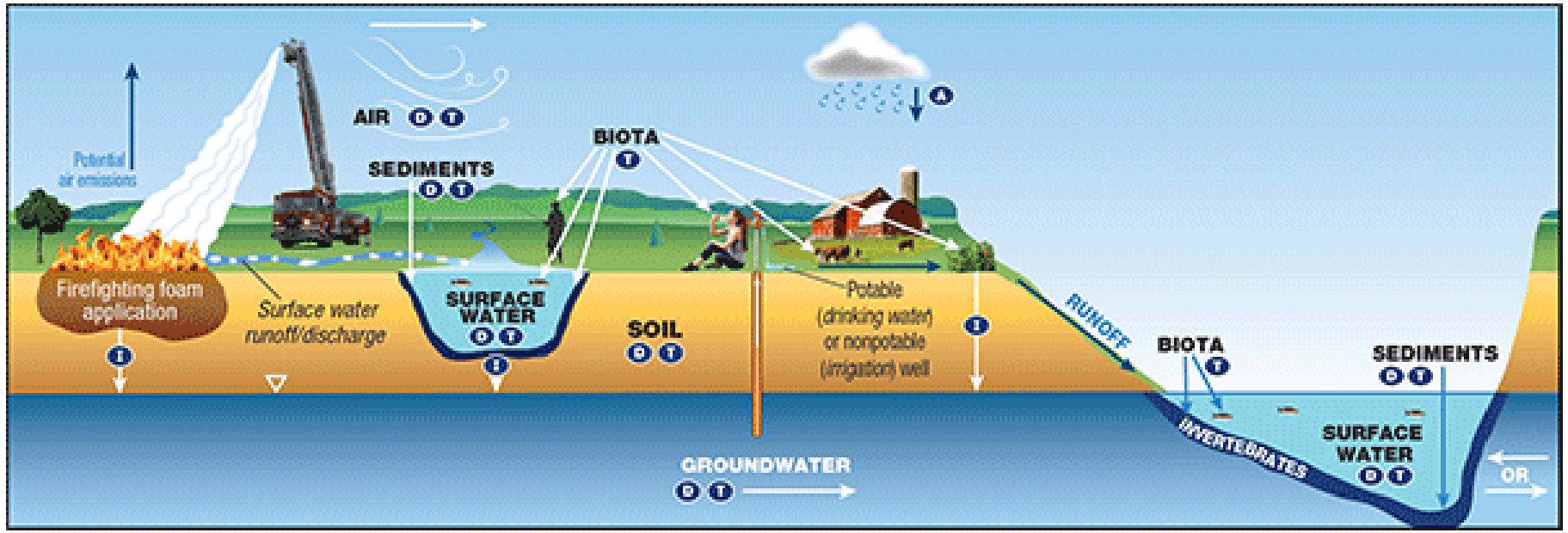
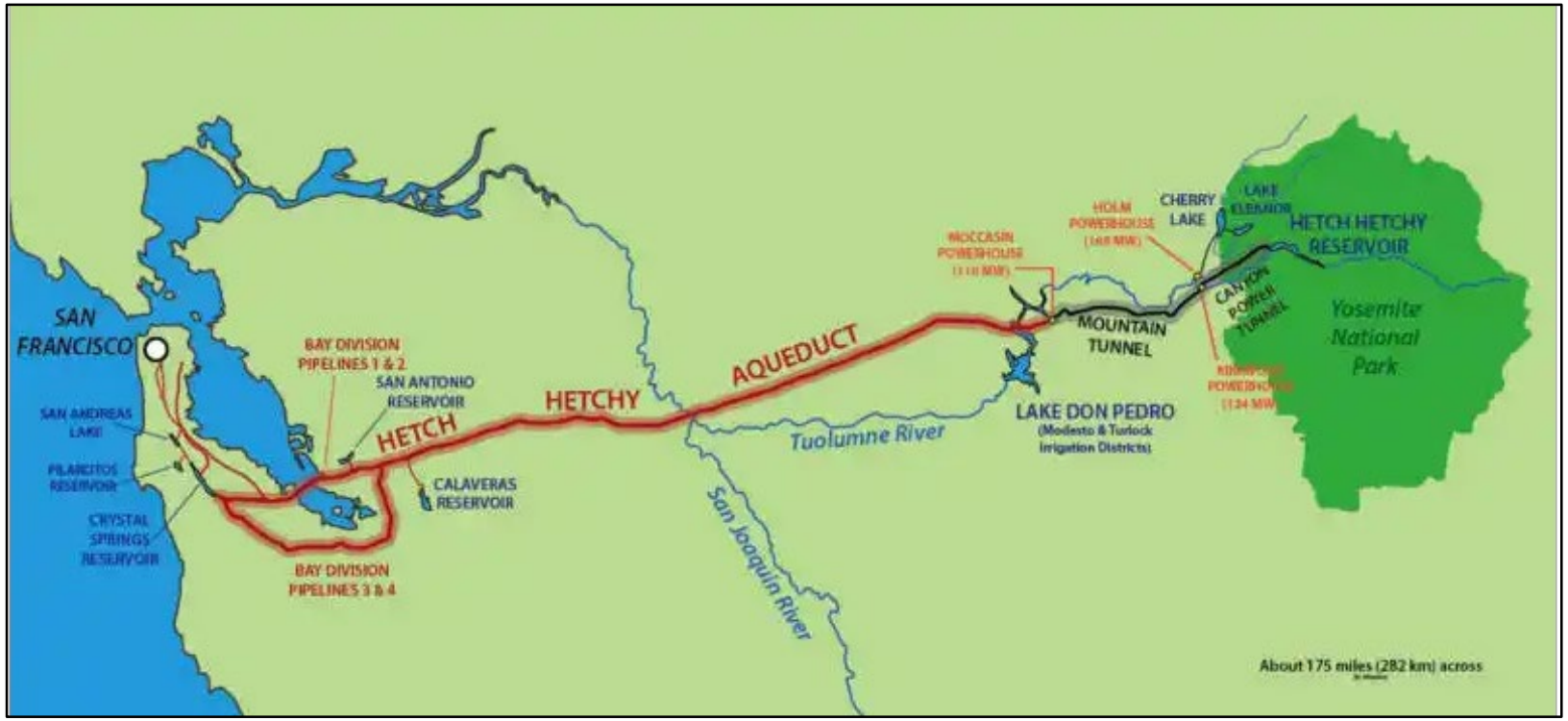


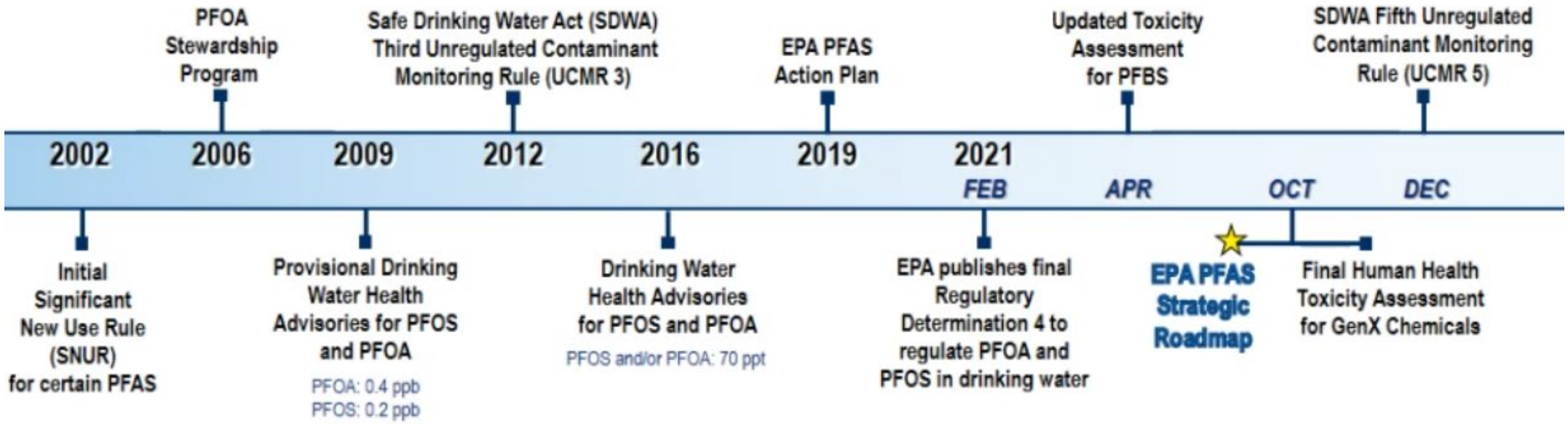

Image Source: ITRC

# Treasure Island Drinking Water Provided by SFPUC

- **Treasure Island Residents are not exposed to PFAS via drinking water.**
- **Drinking water is provided by San Francisco Public Utilities Commission via pipeline from Hetch Hetchy Reservoir**



# History of EPA Milestones Addressing PFAS as an Emerging Chemical of Concern




Primary goal is to determine what chemicals will be listed as hazardous substances.

# Tracking DON/DoD Response to PFAS – 2014-2019

| Policy | Date |
|---|---|
| **Department of the Navy, Office of the Assistant Secretary (Environment) [DASN (E)] Policy Memo** - Policy requiring on-base drinking water sampling for PFOA and PFOS for bases where groundwater was used as drinking water | October 21, 2014 |
| **Chief of Naval Operations (CNO) Policy Memo** - Specified that if levels of PFOS and/or PFOA in drinking water exceeded the current EPA health advisory, then alternative drinking water must be supplied | September 14, 2015 |
| **Assistant Secretary of Defense (ASD) Policy Memorandum** - Specified that decisions regarding drinking water should be based on the lifetime health advisories issued by EPA's Office of Water in May 2016 | June 10, 2016 |
| **DASN (E) Policy Memo** - Expanded the sampling PFOA and PFOS at all Navy installations where such sampling was not previously completed under EPA's UCMR3 | June 14, 2016 |
| **DASN (E) Policy Memorandum** -This policy defines the DON's intention to remove, dispose, and replace legacy AFFF that contains PFOS and/or PFOA | June 17, 2016 |
| **DASN (E) Policy Memo** - Identify and prioritize sites for investigation if drinking water resources, on- or off-installation, are thought to be vulnerable to PFOA/PFOS impacts | June 20, 2016 |
| **Secretary of Defense Memorandum** - Established a PFAS task force to ensure a coordinated, aggressive, and holistic approach to DoD-wide efforts to proactively address PFAS | July 23, 2019 |

NAVFAC Naval Facilities Engineering Systems Command

# Tracking DON/DoD Response to PFAS Continued – 2019-2020

| Policy | Date |
|---|---|
| **ASD Memorandum –** Provided clarification of toxicity values for PFOA and PFOS | October 15, 2019 |
| **ASD Memorandum –** "*Per- and Polyfluoroalkyl Substances Cleanup Cost Reporting*", Identifies new reporting requirement for funding data associated with investigating and cleaning up PFAS | October 15, 2019 |
| **ASD Memorandum –** Revised quarterly progress reporting requirements for installations with known or suspected PFAS releases. | October 23, 2019 |
| **ASD Memorandum –** Conduct community engagement with respect to PFAS issues | November 22, 2019 |
| **ASD Memorandum –** *"Establishing a Consistent Methodology for the Analysis of Per-and Polyfluoroalkyl Substances in Media Other than Drinking Water"*, Guidance on use of Draft Method 1633 | November 22, 2019 |
| **ASD Memorandum –** Establishes annual reporting requirements for AFFF usage or spills | January 13, 2020 |
| **Marine Corps Bulletin 11000 –** Assigns responsibility for a wide range of PFAS-related issues in the USMC | February 20, 2020 |
| **ASD Memorandum –** Requirements for PFAS drinking water sampling on DoD installations where DoD is the drinking water purveyor | March 2, 2020 |

ASD = Assistant Secretary of Defense

NAVFAC Naval Facilities Engineering Systems Command

# Tracking DON/DoD Response to PFAS Continued - 2021-2022

| Policy | Date |
|---|---|
| **ASD Memorandum** – *"Department of Defense Guidance on Using State Per- and Polyfluoroalkyl Substances Drinking Water Standards in Comprehensive Environmental Response, Compensation, and Liability Act Removal Actions"* | December 22, 2021 |
| **ASD Memorandum** – *"Response and Reporting of Aqueous Film Forming Foam Usage, and Accidental Releases/Spills on Military Installations and National Guard Facilities"* | April 7, 2022 |
| **ASD Memorandum** – *"Public Disclosure of Department of Defense Testing Results of Per- and Polyfluoroalkyl Substances in Drinking Water Within a Covered Area"* | April 26, 2022 |
| **ASD Memorandum – "***Temporary Prohibition on Incineration of Materials Containing Per- and Polyfluoroalkyl Substances (PFAS)"* Prohibits the incineration of DoD PFAS materials after April 26, 2022 | April 26, 2022 |
| **ASD Memorandum – "***Addressing Per- and Polyfluoroalkyl Substances at Base Realignment and Closure Locations"* DoD Components will follow a consistent approach, based on risk, under CERCLA, the National Contingency Plan (NCP), and the DERP, as well as DoD PFAS guidance, to investigate and implement appropriate response actions for PFAS releases at DoD facilities, including BRAC locations, based on risk | May 11, 2022 |

**Full list of DoD/DON PFAS Polices can be found at** https://denix.osd.mil/dod-pfas/osd-policies/
https://www.secnav.navy.mil/eie/Pages/DON-PFAS-POLICIES-AND-GUIDANCE.aspx

NAVFAC Naval Facilities Engineering Systems Command

# PFAS Investigation at Treasure Island

Image Source: SPUR

NAVFAC Naval Facilities Engineering Systems Command

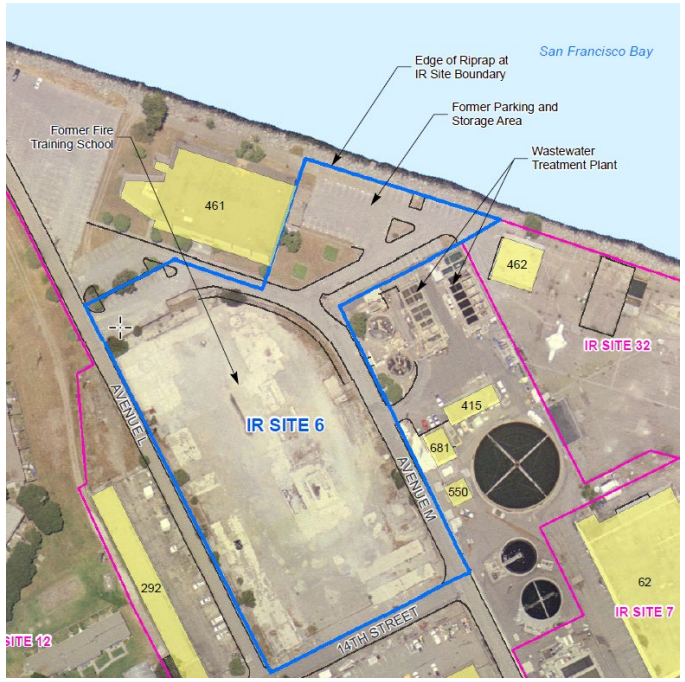
# PFAS Focus at TI

- **Site 6 - first site investigated - 2014**
- **Basewide investigation ongoing**
  - **Evaluation of onshore pathways**
    - Except drinking water as all water is piped onto Treasure Island
  - **Potential Eco Risk to Nearshore Environment**

NAVFAC Naval Facilities Engineering Systems Command

# Treasure Island – Site 6

- Former Fire Fighting Training School 50 Years
- Training overlapped with Navy's use of AFFF
- PFAS chemicals identified in soil in 2015 and groundwater in 2017 & 2020
- First area on TI investigated for PFAS. Most advanced in the CERCLA process (RI)




Site 6 Aerial

Training Facility Buildings (demolished)

# PFAS Site 6 Remedial Investigation

- **2023 - Draft PFAS Remedial Investigation to be Issued**
  - Characterization of PFAS at Site 6
    - Soil and Groundwater Data
  - Preliminary Human Health Risk Assessment
- **Recommendations to include:**
  - Supplemental RI for Nearshore
  - Supplemental risk assessment

NAVFAC Naval Facilities Engineering Systems Command

# PFAS Supporting Tasks - 2023

- **Background Ambient Sample Collection**
  - **Minimum of 20 Samples**
  - **Evaluate Data Distribution**
    - SFEI (San Francisco Estuary Institute)
    - Historical TI nearshore
    - Paradise Cove
- **Watershed Contamination Source Document**
  - **Evaluate of potential Navy and non-Navy PFAS sources**
- **Shoreline Pilot Study**
  - **Plume Stop technology**
  - **Granulated Activated Carbon**

NAVFAC Naval Facilities Engineering Systems Command

# Coordination with San Francisco Estuary Institute & The Aquatic Science Center

- **SFEI monitors for the presence of PFAS in Sediment, Surface Water, Fish, and Marine Mammals**
  - Sediment
  - Surface Water
  - Fish
  - Marine Mammals

Image Source: SFEI, 2022 RMP Annual Meeting

NAVFAC Naval Facilities Engineering Systems Command

# Remediation Technology – Capture of PFAS


Image Source: Regenesis

# Remediation Technology - Continued

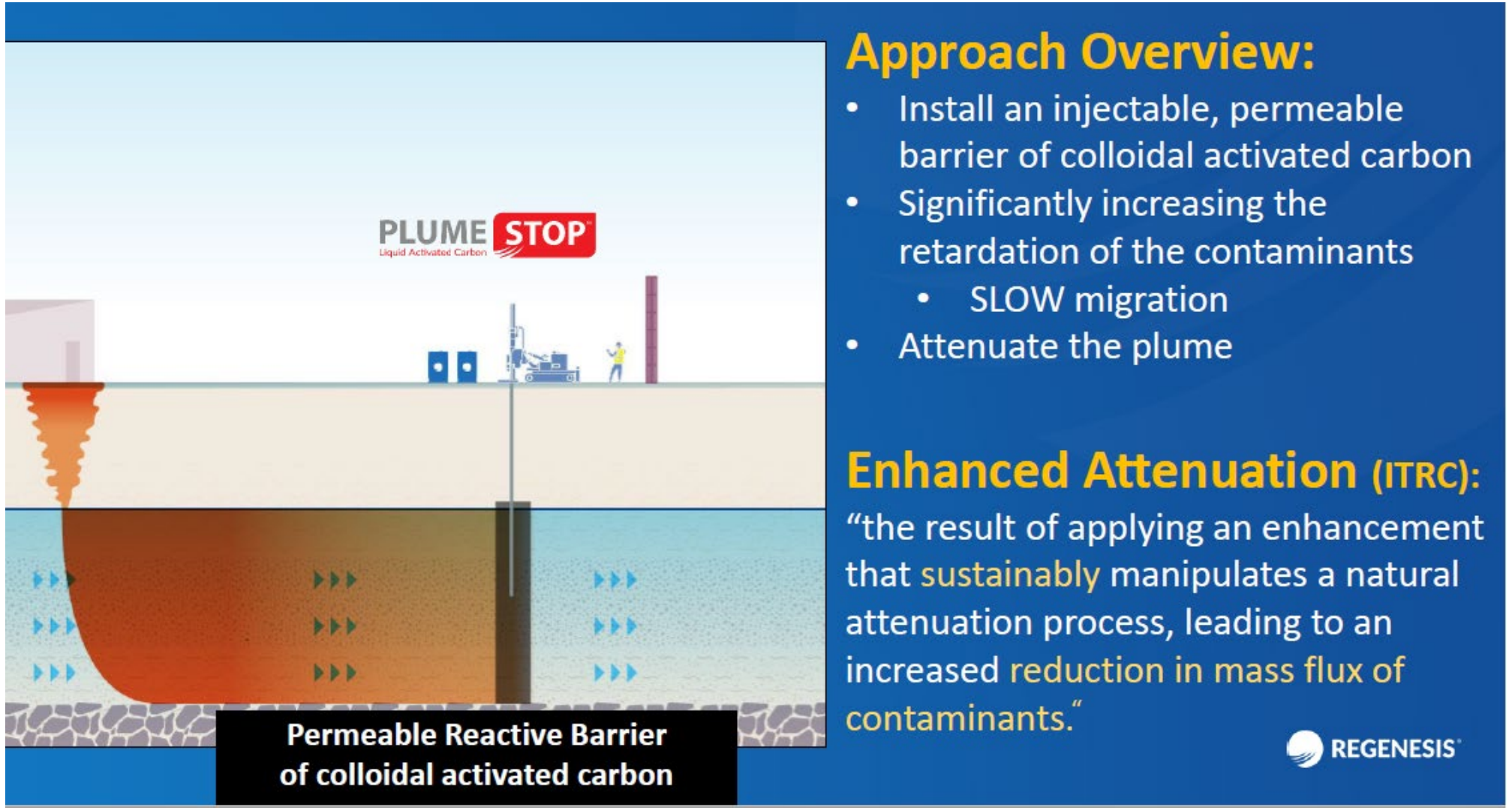
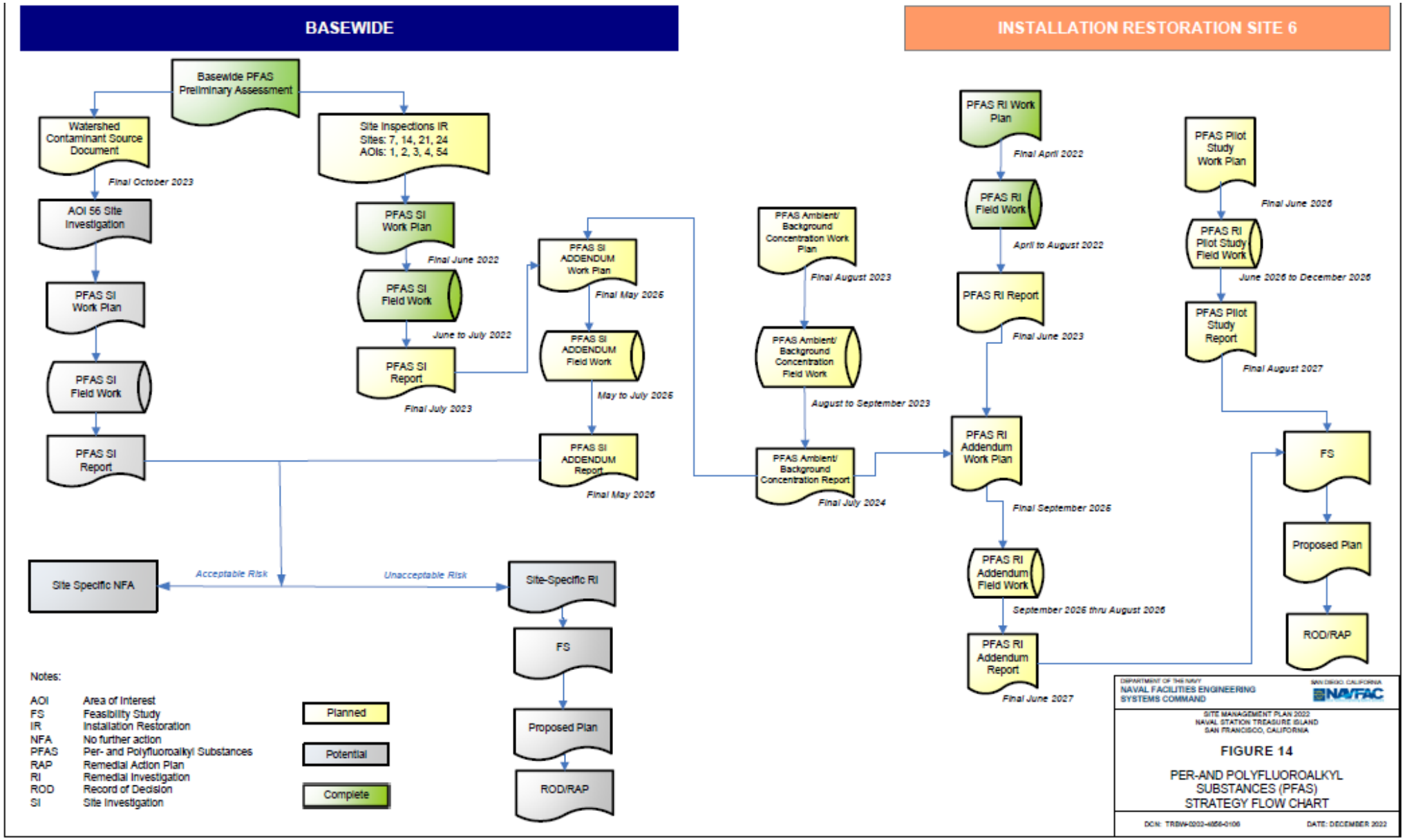



Image Source: Regenesis

# Basewide PFAS

- 2020 – Basewide PA evaluating 89 Areas Completed
  - Areas with potential PFAS based on previous activities
  - Areas requiring further investigation
  - Areas with no release of PFAS
- 12 of 89 Areas Identified for further investigation in an SI
  - 2022 Draft results and findings set to be published in Spring 2023

# PFAS Path Forward – Following the Process



# Questions?