

# Air Force Civil Engineer Center

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## Air Force Meets Challenges of PFOS/PFOA at Closed Installations

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*Battle Ready... Built Right!*



# Agenda

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- **BRAC Program Mission and Vision**
- **Background**
- **CERCLA Process**
- **BRAC Perfluorooctanesulfonic acid (PFOS)/Perfluorooctanoic acid (PFOA) CERCLA Status**
- **Drinking Water Impacts**
- **Protecting Drinking Water**
- **Spotlight**
- **Final Thoughts**



# BRAC Program Mission and Vision

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## *Mission*

*Execute the disposal of Air Force property in support of BRAC law, optimize post transfer management of assets and liabilities, eliminate or reduce environmental liabilities, and support other Real Property services and decisions.*

## *Vision*

*Complete property transfer by 2027 and achieve response complete at over 96% of all environmental sites by 2020; reduce liabilities to the lowest level that can be practicably achieved; maintain proactive and responsive relationships with communities; and retain and maintain unique BRAC capabilities.*



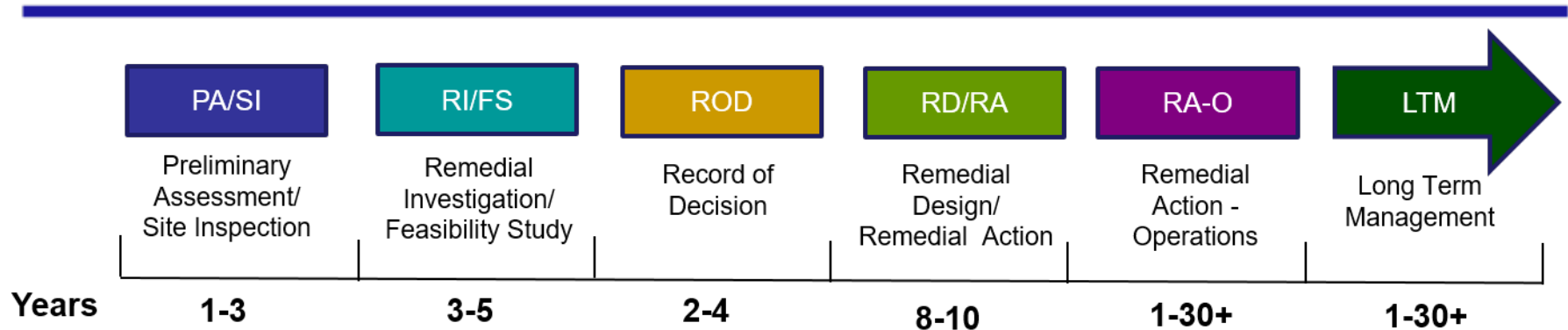
# Background

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- **1969 – Military Specification issued for Aqueous Film Forming Foam (AFFF)**
- **1970 – Air Force began use of AFFF containing PFOS/PFOA**
- **2009 – US EPA issued provisional health advisory (HA) for PFOS/PFOA**
- **2013 – Initiated Preliminary Assessments (PAs) and Site Inspections (SIs)**
- **2016 – EPA issued lifetime HA for PFOS/PFOA**
- **2017 – Air Force replaces legacy AFFF for use in firefighting vehicles**



# CERCLA Process



- **PA**
  - Review historical records
  - Identify potential release locations
- **SI**
  - Determine if release occurred
  - Identify drinking water receptors
  - May be expanded to include mitigation and investigation



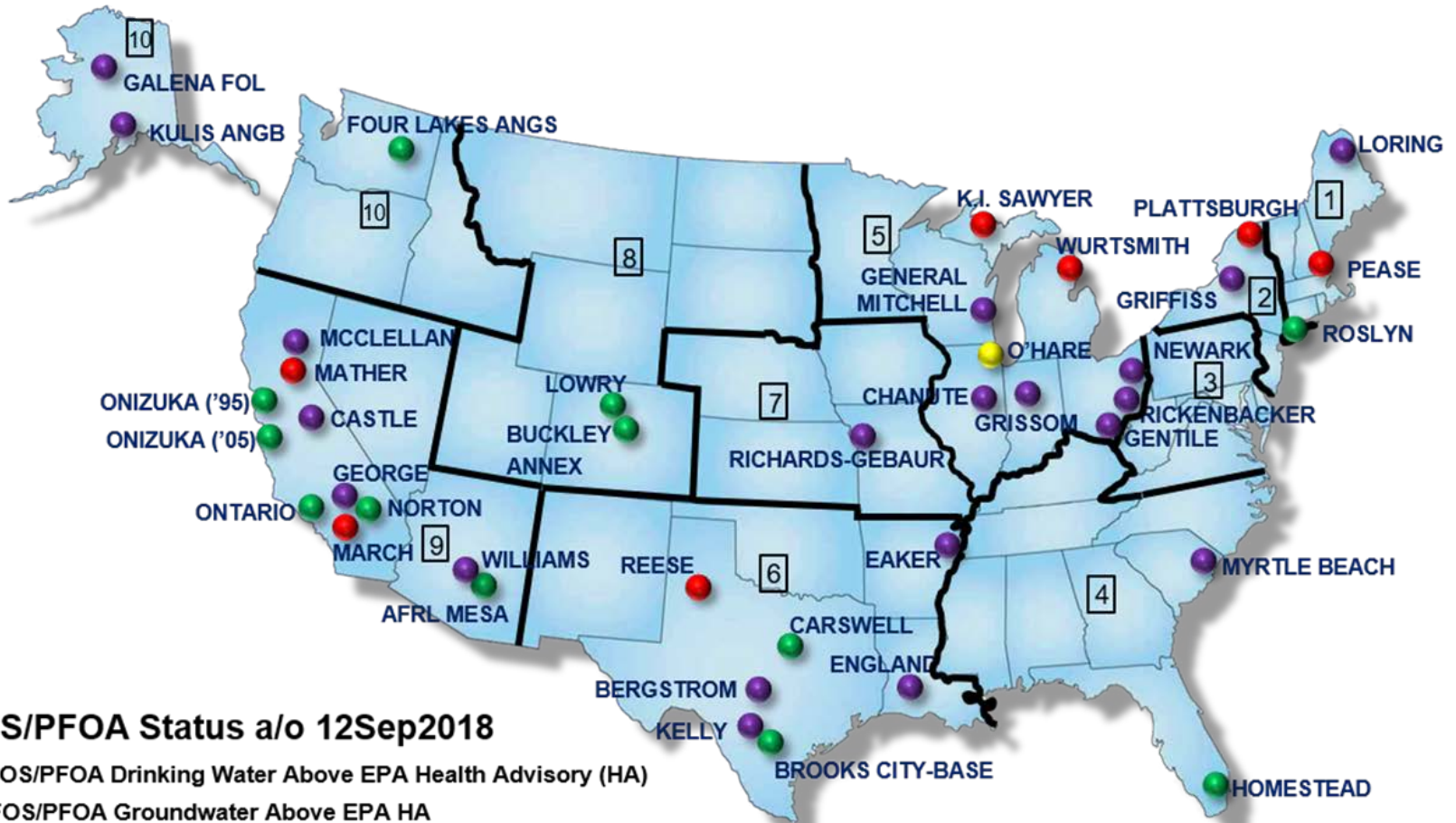
# BRAC PFOS/PFOA CERCLA Status

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- **Preliminary Assessment (PA) 2015-2016 – all 40 locations**
  - No SI required – 9 locations
- **Site Inspection (SI) 2015-2018 – 31 locations**
  - Determine release of PFOS/PFOA
  - Identify drinking water receptors
  - No release (1); SI Report complete (7)
- **PA/SIs completed by Dec 2018**
  - Mitigate impacts drinking water exposures above the HA
  - Delineate pathway to a drinking water exposure



# BRAC PFOS/PFOA CERCLA Status



## PFOS/PFOA Status a/o 12Sep2018

- PFOS/PFOA Drinking Water Above EPA Health Advisory (HA)
- PFOS/PFOA Groundwater Above EPA HA
- Field work Ongoing
- No Release and/or No Groundwater Above EPA HA

1 EPA Region



# Drinking Water Impacts

Installation	Public Wells		Private Drinking Water Wells	
	Number Sampled	Number Above HA	Number Sampled	Number Above HA
Former K.I. Sawyer, MI	4	0	2	1
Former March, CA	2	1	4	2
Former Mather, CA	2	1	6	0
Former Pease, NH	5	1	45	4
Former Plattsburgh, NY	0	0	50	4
Former Reese, TX <sup>1</sup>	3	3	474	191*
Former Wurtsmith, MI	2	0	54	1

EPA Health Advisory = HA

\*Includes exceedance of Texas criteria





# Protecting Drinking Water

- **Focus on protecting drinking water**
- **Use Supplemental SIs**
  - Evaluation of drinking water exposure pathway
- **Tiered approach for prioritization**

<b>PFOS/PFOA Tiered Prioritization</b>	
<b>Tier 1</b>	An Air Force release linked to contamination found in receptor drinking water > HA
<b>Tier 2</b>	An Air Force release linked to groundwater contamination > HA that will likely impact receptor drinking water
<b>Tier 3</b>	An Air Force release linked to groundwater contamination > HA with no drinking water receptors
<b>Other</b>	Other requirements*

\*Such as: applicable State requirements, meet permit or intent of permit requirements, regulatory enforcement, administrative order.



## BRAC – Former Pease AFB

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- **First AF PFOS/PFOA drinking water impact**
- **Municipal well shut down May 2014**
  - Tested above the EPA HA
  - 50% of the municipal supply capacity
    - Remaining capacity in two wells downgradient
  - 400 to 600 gallons per minute (gpm)
- **Limited supplemental water from system serving the rest of the community**
- **4 private drinking water wells tested above HA**
  - Installed whole-house treatment systems



# Final Thoughts

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- **PFOS/PFOA**
  - Changing regulatory horizon
  - Evolving requirements in response to public concerns
  - Rush to cleanup
  - Opportunities in lower cost treatment technologies
- **Managing resources**
- **Maintaining momentum on overall cleanup**

