

Associated General Contractors and Omaha District Corps of Engineers

Environmental Remediation,
Military Munitions, and
Environmental Quality Programs

Drew Reckmeyer, PE, PMP
Environmental Remediation Branch Chief
Omaha District
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Andrew.w.reckmeyer@usace.army.mil
402-995-2764



US Army Corps of Engineers
BUILDING STRONG®



Omaha District Missions

■ CIVIL WORKS

- ▶ Flood Risk Reduction, Navigation, Hydropower
- ▶ Water Supply, Water Quality, Recreation, Irrigation
- ▶ Fish & Wildlife, Regulatory, Ecosystem Restoration
- ▶ Flood Control and Coastal Emergencies (FCCE)



■ MILITARY CONSTRUCTION

- Design & Construction Management
- 10 Active Air Force Installations
- 2 AF Reserve Installations; 2 Commands
- 1 Army Installation & 1 Reserve
- 3 Army Ammunition Plants
- 2 Major Reserve Commands



■ ENVIRONMENTAL PROGRAMS

- Environmental Remediation
- Environmental Compliance
- Military Munitions
- 600 Projects Nationwide

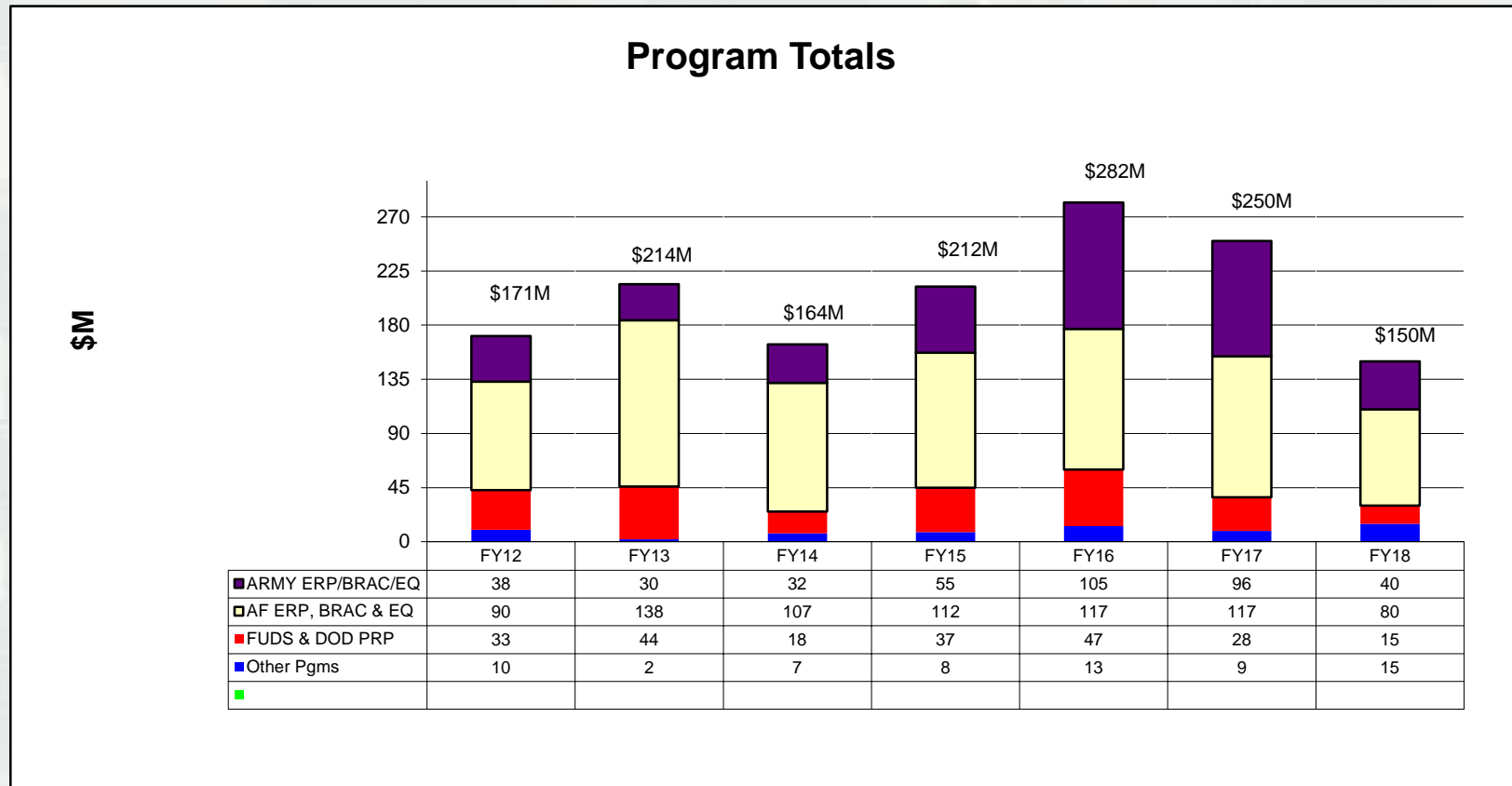


■ SPECIAL PROJECTS (IIS)

- DLA Fuels Program & SRM CONUS / OCONUS
- MILCON, SRM, EPA
- Rapid Response, and Fuels POC TCX
- Protective Design and Transportation Systems MCX



Environmental Remediation Program Workload Trends



The lower program totals in FY18 are a result of transferring several projects to other Corps offices.



Project Example

Environmental Remediation Branch

- Project: Emerging Contaminants - Perfluorinated Alkyl Substances (PFAS)
- Program: Army and Air Force Defense Environmental Restoration Program (DERP)
- PFAS contaminants within DOD are primarily PFOS and PFOA – Perfluorooctane Sulfonate and Perfluorooctanoic Acid.

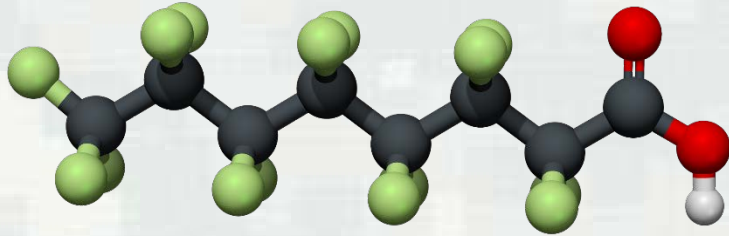


Perfluorinated Alkyl Substances (PFAS) – Emerging Contaminants

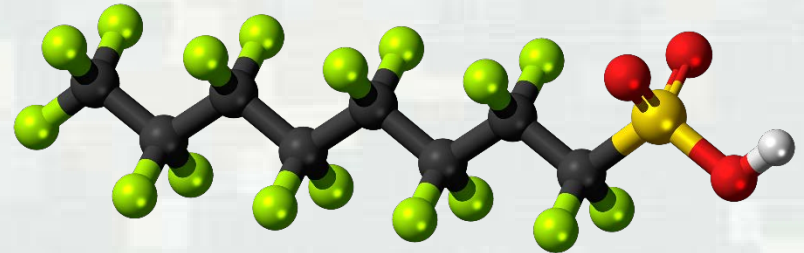
- PFASs are very stable, man-made chemicals. The chemical structure of PFASs is a chain of carbon atoms surrounded by fluorine atoms. PFASs with 8 or greater carbon atoms, including PFOA and PFOS, are long-chain PFASs. They are unique substances that repel oil, grease, and water.
- PFASs are substances that have many manufacturing and industrial applications because they impart useful properties, including fire resistance and oil, stain, grease and water repellency. These chemicals are used in a wide range of industrial applications and the manufacture of consumer goods, and may be found in cleaners, textiles (Teflon, Gor-Tex, Scotchgard), leather, paper and paints, fire-fighting foams, and wire insulation.



PFAS Chemistry



PFOA Molecule



PFOS Molecule

- Carbon Fluorine bond is extremely strong and hard to cleave, limiting treatment options.
- The compounds are ubiquitous, stable, and persistent.
- The molecule is miscible in water.
- Remedial strategies are limited to ex-situ treatments (Pump and Treat), which are expensive and less effective.



PFAS Uses

Sources of PFAS include firefighting foam, Teflon™, Scotchgard™, Gore-Tex®, etc.



The primary DoD use is
Aqueous Film Forming
Foam



Common in many household products

EPA initially adopted a Health Advisory Level (HAL) of 600 ppt for PFOS and PFOA. On 19 May 2016, EPA lowered the HAL to 70 ppt - roughly equivalent to 1 person in 2 world populations! The HAL is additive for PFOS and PFOA. Some states are currently proposing even lower values, e.g. New Jersey is proposing a HAL of 14 ppt.



PFAS – Chemical Uses

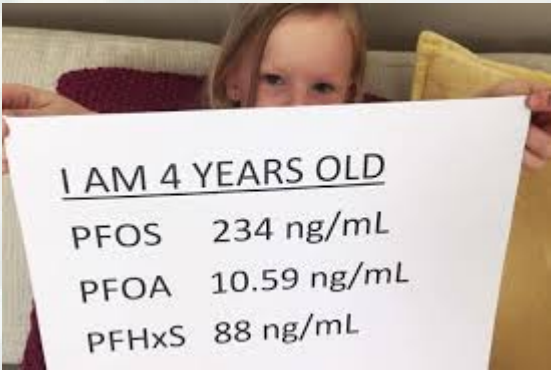
- In 1966, aqueous film forming foam (AFFF) was patented as a method for extinguishing fires. In 1969, the Department of Defense (DoD) issued military specification Mil-F-24385, which includes the requirements for AFFF liquid concentrate.
- AFFF meeting MIL-F-24385 specifications were developed by seven manufacturers since the 1960s for the use in extinguishing fires at military bases, airports, oil refineries, and firefighting training facilities throughout the U.S.
- They have also been used to make surfactants that are used in fire-fighting foams and mist suppressants for metal plating operations. DOD locations that may have sources of PFAS contamination include:
 - ▶ firefighting training areas and aircraft crash sites
 - ▶ metal coating and plating facilities,
 - ▶ airport hangars and other facilities storing fire-fighting foams
- Some water treatment systems and receiving water bodies have been contaminated from DOD sources.



PFAS – Politically Sensitive and High Media Coverage



Erin Brockovich is active in the community around Wurtsmith AFB. USACE is currently installing a treatment system for effluent water.



Media Campaigns are common and public concern is high.



PFAS Army Guidance

10 June 2016 Policy Memorandum

- Test the finished drinking water for PFOS and PFOA at all installations where DoD is the water purveyor (including overseas).
- If the test result for individual or combined concentrations of PFOS and PFOA is greater than 70 ppt, follow the EPA recommended actions, which include retesting, communication with state drinking water officials, proper notification to consumers, and evaluation of options to lower PFOS/PFOA concentrations, including the provision of alternative drinking water.
- Request that each DoD Component begin to implement these actions immediately.



PFAS Investigations



Off-base private well sampling is being conducted at several AF installations. Upon discovery of HAL exceedances, bottle water deliveries commence until a more permanent solution can be installed.

CERCLA Preliminary Assessments and Site Inspections

- ▶ Air Force Installations had the PAs completed in 2017. SI work began in 2016 and 2017. Further investigations continuing in 2018.
- ▶ CERCLA Conceptual Site Models are being conducted at 32 AF installations in support of SI activities.
- ▶ 23 AF Installations are undergoing expanded SI's to better define contamination. Due to lack of regulatory levels, CERCLA Remedial Investigations are not possible.



PFAS Treatment



The preferred large-scale treatment are granulated activated carbon vessels in series to treat PFOS and PFOA below 70 ppt.

Some Successes!

- ▶ Joint Base McGuire, Dix, Lakehurst – a positive result above the HAL was found at a convalescence home on December 29. Bottled-water deliveries were initiated the following day. A temporary GAC unit was in place by January 12th.
- ▶ Camp Carroll and Camp Walker in South Korea contract was awarded in 2017. A large-scale GAC units have been installed and are operational.
- ▶ Ellsworth AFB tied two homes into municipal water to bypass a heavily PFAS-contaminated well.
- ▶ Treatment systems are installed at Joint Base Lewis-McCord, Peterson AFB, Mountain Home AFB, Fairchild AFB, and Wright-Patterson.
- ▶ Ft. Leavenworth is evaluating options for an alternate water supply or treatment.



Environmental Programs

Contract NAICS Codes

- Environmental Remediation Services – 562910. Environmental remediation, hazardous waste disposal, and munitions cleanup
- Environmental Consulting Services – 541620. Environmental quality programs such as hazardous materials, storm water monitoring, and air monitoring.
- Engineering Services – 541330. Environmental Engineering, Corrective Action Plans, Investigations, Studies, Designs, Surveys, & Closure Plans
- Other Professional, Scientific, and Technical Services – 541990. Advisory and Assistance Services - Specialty services, expert advice, knowledge, and opinions.
- Oil and gas pipeline and related construction – 237120. UST compliance, removal, and AST replacement.



Environmental Proposal Opportunities

<u>Contract</u>	<u>Cost</u>	<u>Adv Date</u> (Mo/Yr)	<u>Awd Date</u> (Mo/Yr)
Environmental			
Environmental Remediation of Hazardous Waste and Munitions			
▪ Environmental Remediation Services, SB	\$ 120M	04/16	08/18
▪ Environmental Remediation Services, SDVOSB	\$ 60M	04/16	03/18
▪ Environmental Remediation Services, 8(a)	\$ 60M	05/16	07/18
▪ Environmental Remediation Services, SB	\$ 200M	04/17	06/18
Environmental Quality Programs			
▪ Environmental Consulting Services, SB	\$ 60M	02/19	11/19
▪ Environmental Consulting Services, 8(a)	\$ 60M	02/19	02/20
UST Compliance, Removal and Replacement			
▪ UST Removal/AST Installation/Compliance, SB & UNR	\$149M	03/19	03/20
<ul style="list-style-type: none"> ▪ Planning for post-MEGA MATOC Acquisitions. MEGA expires in March 2021. ▪ 8(a) Firms – The Branch has several 8(a) contracts with firms providing ERS, MMRP, ECS, Tank Work, and AAS. New 8(a) contracts are added quarterly. 			

