

BULLET BACKGROUND PAPER

ON

PFOS/PFOA/PFAS ACTIVITIES AT THE 139TH AIRLIFT WING, MOANG

PURPOSE

To inform military and/or civic leaders of the current status of all PFAS sampling and remediation activities at the 139AW of the Missouri Air National Guard.

BACKGROUND

- Aqueous Film-Forming Foam (AFFF) used for fire suppression at the 139th AW, both in the aircraft hangar and in the fire trucks, contains Per- and Polyfluoroalkyl Substances (PFAS) which include Perfluoro octane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA)
- Military fire department established at Rosecrans Air National Guard base in the mid-1980s, and at that time AFFF was already in use by the Department of Defense
- Prior to the mid-2000s the fire department would test foam equipment and foam concentrations by spraying the foam at various locations on or around the airfield
- After that timeframe, the fire department moved away from testing the foam in the open and started testing equipment and foam concentrations in a more controlled manner
- The following timeline of events describes some of the main activities that have occurred at the 139th regarding AFFF and PFAS testing in the last few years:
 - April 2013: Programming documentation approved for a hangar renovation project that would remove the AFFF system and convert it to High Expansion Foam (HEF)
 - August 2015L Authority for design issued on hangar renovation project
 - March 2016: Members from NGB/A4 as well as the contractor Leidos visited the base for a site visit and preliminary assessment for a contract to test the soil and ground water for PFAS
 - November 2016: Pumped and drained all legacy C8 AFFF from all Fire Dept. trucks and trailers and replaced it with C6 AFFF as directed by National Guard Bureau (NGB)
 - February 2017: Disposed of all Fire station C8 legacy AFFF through Defense Logistics Agency
 - July 2018: Removed C8 legacy AFFF from the hangar and replaced with C6 AFFF as directed by NGB

- August 2018: Contractor Leidos performed initial PFOS/PFOA survey, sampling and monitoring wells were set up at various points at the 139AW and samples were taken
- February 2019: Contractor draft report was received. The report gave all sample readings. Leidos recommended that further sampling was needed for upgradient and downgradient of the base in order to determine if there was background contamination from outside the installation
- February 2019: Removed all AFFF from the former AFFF Retention building 9 and demolished building 9 as part of the hangar renovation
- August 2019: Removed all AFFF at the hangar as part of a remodeling project and replaced it with high expansion foam
- October 2019: Disposed of AFFF from the hangar per remodeling contract as part of hangar renovation project
- December 2019: At this time, there is no more legacy C8 AFFF at the 139AW, the Fire station carries C6 AFFF in their mobile equipment. It is used for real world emergencies only. Per conversation with Mr. Greg Wills, Restoration Project Manager at NGB/A4 on 3 December 2019, any further sampling and/or remediation efforts are awaiting government funding.
- March 2021: The 139AW Environmental office received the 2020 Annual Water Quality report from Missouri American Water (MAW), test results indicated there were no presence of PFAS contaminants in the St. Joseph community drinking water. Those results have remained constant to this day.
- March 2021: A community Involvement Plan was finalized by an NGB sponsored contractor, local leaders were canvassed about their understanding of PFOS/PFOA, what they know about it, how they feel the 139AW is handling any potential PFOS/PFOA activities. This plan chiefly consists of the five former Installation Restoration Program sites that are now closed since there have been no further PFOS/PFOA activities at the 139AW since the initial preliminary assessment in August 2018. If any further PFOS/PFOA activity occurs at the 139AW, the Community Involvement Plan will need updating.
- NOTE:** A rewritten version of the 2021 Community Involvement Plan is currently in draft to facilitate the 2025 Remedial Investigation.**
- December 2021: NGB has prioritized remediation funding for bases where both the base and community drinking water is contaminated by PFAS compounds. Since Rosecrans ANG does not supply its own drinking water, our cleanup priority is low. Base drinking water is supplied by MAW through remote underground aquifers. MAW 2021 Water Quality Report indicates that testing for PFAS shows no traces of PFAS compounds in the community drinking water.

- December 2021: A recent report released by the DoD titled “Highest levels of Groundwater Contamination at U.S. Military Installations” indicates that Rosecrans ranks 97th out of 100 military bases in terms of PFAS groundwater contamination
 - September 2022: 13 September the 139AW received a Relative Risk Site Evaluation (RRSE) for PFOS/PFOA footprint at the installation for review and approval, as it stands:
 - Soil contamination levels for the 6 PRL sites all fall in the LOW range
 - Groundwater contamination at both the old fire training area (IRP Site #2) and the old fire station (Bld. 3) are in the HIGH range
 - Groundwater contamination at the NEWLON Hangar and the old Nozzle testing area adjacent to Munitions was found to be in the MEDIUM range
 - Groundwater contamination in the old building 9 site and Vehicle maintenance was found to be in the LOW range
 - The 139AW currently ranks 57th out of 72 evaluated ANG bases for PFAS.
- In August 2024, USACE/ANG hosted a Phase 1 Remedial Investigation (RI) site survey at all 8 PFAS potential release locations (PRLs) to solicit bids for performing soil borings and monitoring well installation to take soil and groundwater samples at the PRL's to determine extent of future PFAS remediation activities at the 139AW.
- In September 2024, a contract based on a bid from the 14 August 2024 RI was awarded to contractor HydroGeoLogic, Inc. A Remedial Investigation is underway with field work to commence in Fall 2025..

PREVIOUS CONTRACTOR FINDINGS AND RECOMMENDATIONS

- The following information is from the report provided by the contractor Leidos for the initial PFOS/PFOA survey that was conducted in August of 2018:
 - Findings:
 - PFOS/PFOA compounds were detected in the soil, groundwater, sediment and surface water above the laboratory detection limits
 - Evaluation of groundwater and surface water results at sample locations adjacent to the installation boundary indicates PFOS/PFOA compounds are likely migrating offsite given their presence and magnitude at the installation boundary
 - Recommendations:

- Additional investigation is necessary to determine the nature and extend of PFOS/PFOA contamination due to detectible levels of PFOS/PFOA at the potential release locations. A follow up site investigation contract with the Army Corps of Engineers is pending.
- Develop an expanded conceptual site model that considers localized groundwater and surface water flow paths to select future sampling locations
- Complete the delineation of nature and extend of PFAS as part of an expanded site investigation or a remedial investigation
- Building 302 – Current fire station and an offsite fire training area were not investigated during the 2018 site investigation sampling activities. These two areas are recommended for investigation for the presence of PFOS/PFOA during the expanded site investigation or remedial investigation based on potential releases associated with the storage and use of AFFF at building 302 – Current fire station and likely AFFF use at the offsite former FTS (ERP Site 1).

SUMMARY

The Department of Defense (DoD) identified certain per- and polyfluoroalkyl substances (PFAS) as emerging contaminants of concern which affected installations across the Air Force. When the term "Air Force" is used in this fact sheet, it includes Air National Guard (ANG). Specifically, perfluoro octane sulfonate (PFOS), perfluorooctanoic acid (PFOA), and perfluoro butane sulfonic acid (PFBS) are components of legacy Aqueous Film Forming Foam (AFFF) that the Air Force began using in the 1970s as a firefighting agent to extinguish petroleum fires. The U.S. Environmental Protection Agency (EPA) issued lifetime drinking water Health Advisories (HA) for PFOS and PFOA, and health-based regional screening levels for PFBS.

The Air Force has systematically evaluated potential AFFF releases on all Installations and former Installations. It began with the Preliminary Assessments, or PAs, that identified potential release areas. First responders, fire chiefs, and hangar staff were interviewed to determine where a release or a spill may have occurred on an Installation (for example, aircraft crash site or an accidental hangar AFFF release). Once the information in the PA was collected, we began Site Inspections, or SIs, to take soil and water samples and analyzed the media for PFAS compounds at the potential release areas. The intention of the SI was to determine if a release had occurred and to determine the impacts to soil and/or groundwater. The next step in the process is called the Relative Risk Site Evaluation, or RRSE, which is a tool used to sequence Sites/Installations to begin a Remedial Investigation, or RI. Air Force Installations are at the beginning of the more detailed investigative stage, the RI, to determine, where action is needed and to identify remedial technologies.

Through the use of AFFF on base for testing activities and other potential release locations there is the potential that the 139th has contaminated both the soil and groundwater with PFAS. Several steps have taken place through the years to change the way in which testing is completed as well as removing AFFF from the hangar and changing out the formulation of AFFF that is used in our fire and emergency services vehicles. In addition to these steps, Guard Bureau also

awarded a contract to test the soil and groundwater at these potential release locations to determine the concentration of PFAS. The 139th has received the RRSE (Relative Risk Site Evaluation) and is now awaiting direction from National Guard Bureau as to whether funding will be forthcoming for following testing or remediation.

All PFOS/PFOA activities at the 139AW are documented on the 139AW Public Website.