

Air Force Installation & Mission Support Center



PFAS Impacts to Drinking Water and Mitigation Measures

Ellsworth AFB

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Purpose



***To provide an overview of off-Base PFAS impacts to drinking water
and the mitigation measures taken at Ellsworth AFB***



Overview



- **Background**
- **Off-Base PFAS Drinking Water Impacts**
- **Mitigation Measures**
- **Communication Strategy**



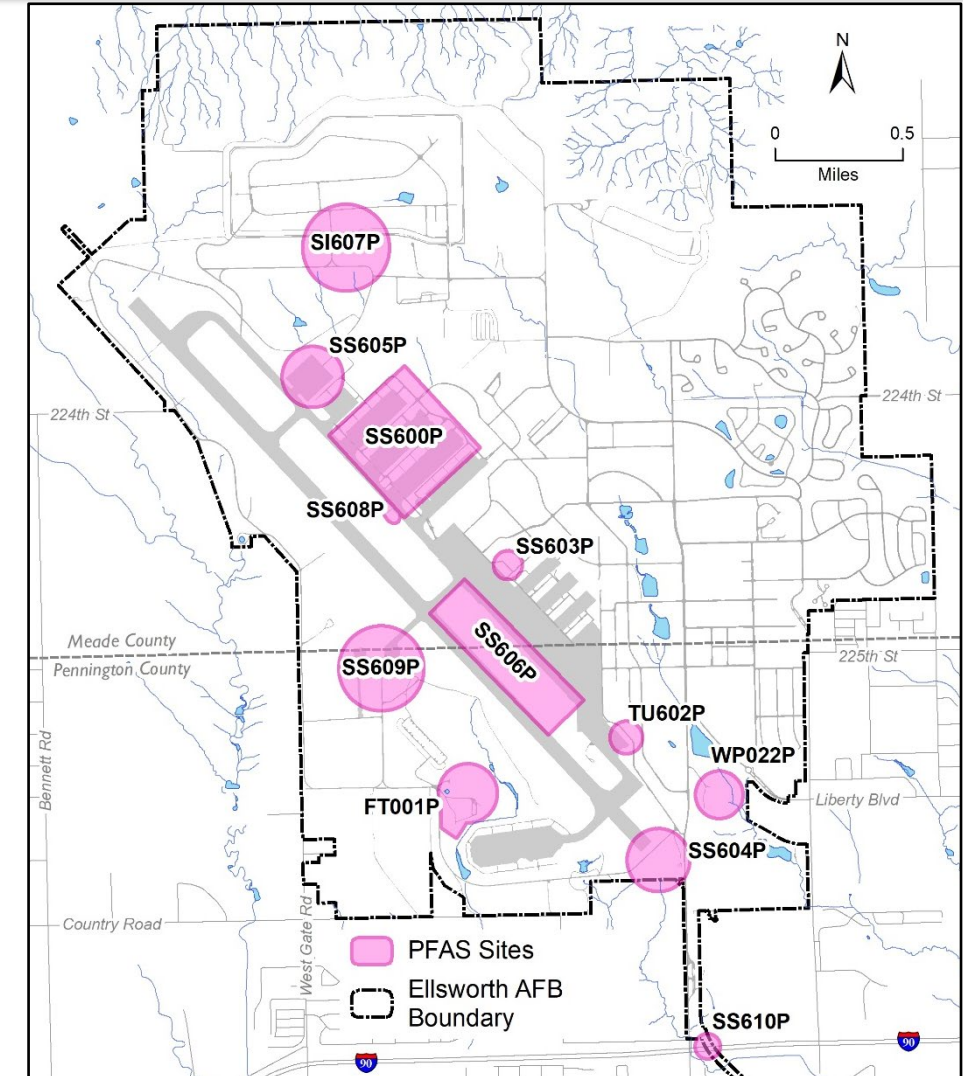
Background

- **PFAS are man-made chemicals found in commonly used products**
 - Fire fighting foam
 - Nonstick cookware (Teflon)
 - Stain-resistant fabric/carpet (Scotchgard)
 - Food packaging
- **1970 – Air Force began using aqueous film-forming foam (AFFF)**
- **May 2016 – EPA established Lifetime Health Advisories for PFOS/PFOA in drinking water**
- **November 2016 – Ellsworth discontinued use of legacy AFFF**



Background

- **2015 – Basewide Preliminary Assessment identified 12 locations for further investigation**
- **2019 – Basewide Site Inspection completed**
 - PFAS impacts identified in soil, shallow groundwater, surface water, and sediment
 - PFAS appeared to be migrating off-Base in groundwater and surface water
 - Prompted off-Base drinking water well survey
- **2020 – Basewide Remedial Investigation initiated**





Background



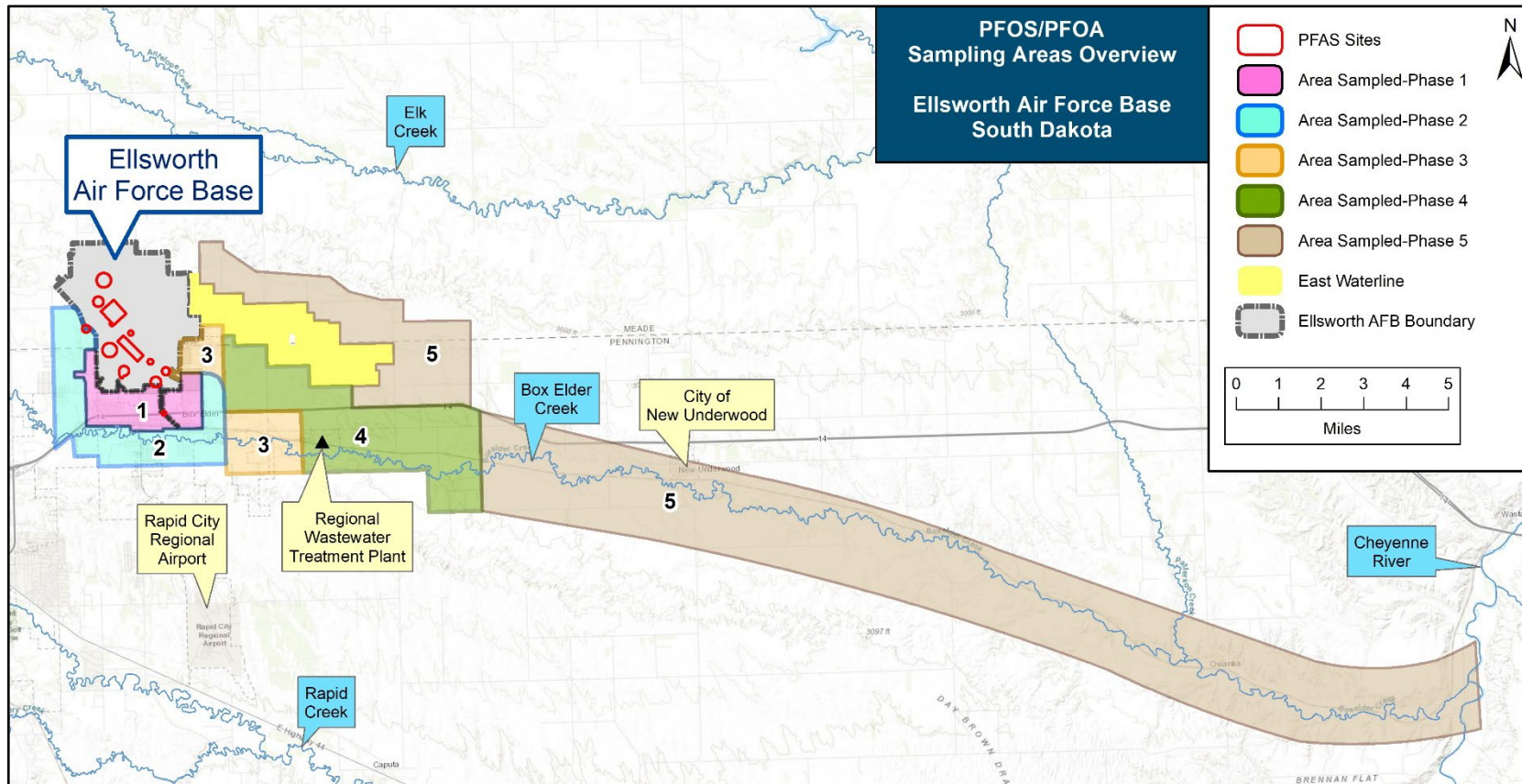
- **Ellsworth AFB drinking water:**
 - Supplied from Rapid City municipal system
 - Not impacted (sampled in 2016, 2021, and 2023)
- **City of Box Elder drinking water:**
 - Supplied from deep (>4,000 feet) Madison Aquifer wells
 - Not impacted (sampled in 2018)



Off-Base PFAS Drinking Water Impacts



- 2018-2019 – Five-phase drinking water well survey and sampling
- 117 drinking water wells sampled for PFAS





Off-Base PFAS Drinking Water Impacts

- 23 off-Base drinking water wells (94 residences) identified with PFOS/PFOA > 2016 Lifetime Health Advisories





Drinking Water Well Mitigation Measures – Individual Residences



- **Bottled water provided within 48 hours to 94 residences**
 - **Still providing bottled water at 3 residences (3 wells)**
- **Connected 6 properties (4 wells) to existing municipal systems**
- **Installed, operate, and maintain 20 household treatment systems (16 wells)**
- **Quarterly sampling where PFOS/PFOA results were less than 2016 Lifetime Health Advisories but above ½ Lifetime Health Advisories**
 - **1 well still in program – now sampled annually**



Typical household treatment system



Drinking Water Well Mitigation Measures – Mobile Home Park



- **Installed, operate, and maintain well-head treatment system**



Bag filter assembly and equilibration tank



Ion exchange resin treatment vessel



Long-Term Mitigation Measures (Areas C, D, and E)



- Area C – Connect to Sunset Ranch community water system – 2023
- Area D – Drill replacement shallow well – Test well installed May 2023
- Area E – Non-Environmental Restoration Program funds were used to purchase the property for wetlands banking for the new B-21 mission (completed in 2021)





Communication Strategy



- Quarterly Newsletters
 - Mailed to 270+ off-Base residents and local/state officials
 - Most recent issue – June 2023
 - Next Issue – September 2023
- Community Town Halls (hosted by Pennington County)
 - Last meeting – March 2023
 - Next meeting – March 2024
- Administrative Record Website
 - <https://ar.afcec-cloud.af.mil/>
 - Search for “Air Force Administrative Record”

**Restoration
NEWS**

June 2023 | Issue 25

NEXT NEWSLETTER
The next newsletter will be released in September 2023.

VISIT OUR WEBSITE
<https://www.ellsworth.af.mil/About-Us/Environmental/>
View the following:

- Past newsletters
- PFAS Updates
- Presentations
- Public announcements

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**FOR MORE
INFORMATION**
Visit the Administrative Record Website
<https://ar.afcec-cloud.af.mil/>

- From the “Installation List” on the left, scroll down and select “Ellsworth AFB, SD” (for Ellsworth) or “Badlands AFR, SD” (for the Air Force Retained Area of the Former Badlands Bombing Range)
- If you know the AR number enter it next to “AR #” and click “Search”
- Click on the eye icon to open
- Numerous other search blocks can be used

**ELLSWORTH
AIR FORCE BASE**

Keeping residents informed of cleanup activities

Air Force Partners with Oglala Sioux Tribe to Jointly Manage Air Force Retained Area of the Former Badlands Bombing Range
The former Badlands Bombing Range is located within the Pine Ridge Reservation in South Dakota. The 341,719-acre range was acquired by the U.S. War Department in 1942 for military training during World War 2. A majority of the land was acquired by purchase or condemnation of private property. According to a 1981 Oglala Sioux Tribe (OST) report, 125 to 130 families were permanently displaced before winter 1942. Most of the former Badlands Bombing Range was returned from 1948 to 1977. The Air Force retained 2,486 acres now known as the “Air Force Retained Area” (see reverse for location) due to unexploded ordnance (UXO) remaining from its use as an artillery range by the S.D. Army National Guard in the 1960s and 1970s. The Air Force Retained Area is remote land controlled by Ellsworth AFB, though it has been the longstanding mutual goal of the Air Force and OST (formalized in the 2008 Tribal Consultation Plan [AR # 6595]) to return ownership of the land. Numerous UXO removals were completed in the past. The most recent was completed in 2011 by qualified UXO Technicians under contract to the U.S. Army Corps of Engineers. Following the 2011 Removal Action, there is no known or suspected UXO in surface soil (less than 2 feet) at the Air Force Retained Area. However, the potential exists for UXO to be present in subsurface soil and along the White River escarpment. There is currently no legal mechanism to transfer the land directly to the OST. In accordance with Public Law 90-468, if the Air Force surrendered the land it would be transferred to the Department of Interior Bureau of Indian Affairs (BIA). In an August 17, 2016 letter (AR #8453), the BIA declined to accept the land due to potential environmental liability and suggested legislative action to allow the property to transfer directly to the OST. The 2020 Record of Decision (AR #8643) documented the selected remedy to address UXO hazards at the Air Force Retained Area. The selected remedy is land use controls with approved surface uses (cattle grazing, OST cultural activities, and hunting or other recreational uses). Although the original goal of returning the Air Force Retained Area has not yet been realized, the Air Force provides funds to the OST’s Badlands Bombing Range Department to co-manage land use controls and to educate the public on UXO safety. Additionally, Ellsworth AFB is currently working to develop a grazing plan with the goal of co-managing the natural resources with the OST. For further information about the Air Force Retained Area, see the Administrative Record (see instructions on the left).

Coloring books teach children the “3Rs” of UXO safety: Recognize, Retreat, Report.



Your Success is Our Mission!